

**INFORMING THE DEVELOPMENT OF A PREVENTION
INTERVENTION TARGETING MEN WHO HAVE SEX WITH MEN
(MSM) WITH ACUTE HIV INFECTION: A REPORT BASED ON
REVIEW OF LITERATURE AND INTERVIEWS WITH STRATEGIC
INFORMANTS**

by

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ABSTRACT

To inform the development of a prevention intervention targeted to MSM with acute HIV infection (AHI), we conducted a literature review and strategic informant interviews with a sample of care providers and community leaders who serve the gay community in British Columbia. The literature indicated that interventions based on at least one behavioural change theory or model using multiple delivery methods with greater intervention exposure may have greater effectiveness. Strategic informants felt that the intervention should be delivered by counsellors who possess an in depth awareness of gay culture and sexuality and the ability to provide emotional support to persons with AHI. Informants believed that if MSM with AHI felt supported it would provide them with the basis to utilize knowledge gained in counselling to develop skills and self-efficacy in relation to safer sex. A key concern identified by the informants was stigmatization implied by language used to describe AHI.

Keywords: MSM, Acute HIV infection, Prevention, Testing

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1. INTRODUCTION AND BACKGROUND

Throughout the course of the HIV epidemic, men who have sex with men (MSM) has been one of the groups with the highest risk of HIV infection in western countries including Canada and in the province of British Columbia. HIV diagnoses among MSM were on the decrease in BC throughout the early 1990's, but have been increasing since 1999 according to testing statistics compiled by the BC Centre for Disease Control (BCCDC, 2008). In 2000 there was a 36% rise in the number of new infections among MSM, followed by further increases in the subsequent years which appeared to plateau beginning 2004. The increase can be seen in number but also in proportion. There were 176 positive tests among MSM in 2007 in the province, which represents approximately 43% of new HIV diagnoses for that year. This is an increase of more than 67% compare to 1999 when only 105 MSM tested positive which represented only 26.9% of new infections for that year. Similarly, a prospective cohort study in Vancouver of MSM aged 15 to 35 recorded an HIV incidence density in 2002-2003 nearly three times that which had been observed between 1997-2001 (Lampinen et al. 2005). This data is just an indication of the high and disproportionate incidence rate of HIV among MSM; the true incidence is unknown, however mathematical modelling performed by Health Canada has shown that the true incidence could be up to twice what is reported by the testing statistics (Geduld & Gatali, 2002).

The true prevalence of HIV in the MSM community in British Columbia is also unknown; in a cross-sectional survey conducted in BC approximately 12% of respondents self-reported being HIV positive (Trussler, Marchand et Gilbert, 2006). The true prevalence

could be much higher since it is estimated that about 27% of persons infected with HIV in Canada are unaware of their infection status (Boulos et al. 2005). Data collected in the MSM population using a self-administered questionnaire and dried blood spot for testing for HIV found that 23% of MSM in Montreal and 17% in Toronto and Ottawa were HIV unaware (Lambert et al. 2006, Remis et al. 2008). Data for Vancouver is unavailable as it is presently being collected using the same questionnaire and testing technology. Although the information is weak and imprecise, the burden of HIV in the MSM community is unquestionable, however there has been very little investment and few new strategies developed to address the HIV epidemic in the MSM population.

There is a new window of opportunity to reduce this trend of new infections among MSM through tackling prevention opportunities afforded through the early diagnosis and intervention among MSM with acute HIV infection. Acute HIV infection can be described as a time of brief but substantially increased risk for HIV transmission resulting from very high viral loads occurring in the first few months post-infection (Pilcher et al 2006). Growing evidence strongly suggests that a significant proportion of all new infections arise from highly infectious, acutely infected individuals who have recently acquired HIV. For example, the result of a recent study of a predominantly MSM cohort in Quebec suggests that persons in the early stages of infection accounted for approximately half of onward transmissions in this population (Brenner et al. 2007). Other studies have shown that persons with acute HIV infection generate between 11% and 49% of all new infections (Hayes et White, 2005, Fraser et al. 2006, Brenner et al. 2007) depending on the stage of the epidemic, the rate of partner change and partner concurrency (Hollingsworth et all 2006, Pao et al. 2005, Kretzschmar M, Morris M. 1996).

Over the last several years, as understanding regarding the importance of acute HIV infection has grown, the technology for identifying acute infections has also improved. Although these new technologies may be more costly, they provide the ability to diagnose HIV infection at the stage before production of antibodies is well established. Research is now underway in British Columbia to evaluate the use of these new testing technologies to narrow the gap between MSM who are aware and unaware of their HIV status and to identify people with acute infection. These new testing technologies also provide greater opportunity for effective counselling and intervention to prevent transmission. We know that people who are aware of their infection status usually reduce their risk of transmission to partners (Marks, Crepaz, Senterfitt and Janssen, 2005); however, research has also shown that about a third of individuals infected with HIV will continue engaging in high risk behaviours after receiving their diagnosis (Rotheram-Borus et al. 2004). This highlights the need to not only identify people with acute HIV infection, but also to provide risk-reduction counselling to prevent transmission to sexual partners.

Some risk reduction behavioural interventions, targeted to HIV positive and HIV negative MSM, have led to significant reductions in risk behaviours and in HIV transmission/acquisition (Woltiski, 2005). Among those interventions, individual and theory-based interventions have achieved significant results (Herbst, 2005). However, to our knowledge no interventions were performed immediately after delivery of a HIV positive diagnosis or in the context of acute HIV infection. Offering an intervention so soon after a diagnosis of HIV might be difficult since men might not be comfortable talking about their infection and might feel stigmatized by discussion of their highly infectious status. However, this is complicated, in the context of acute infection, by a brief window of opportunity to efficiently and immediately prevent onward transmission of

HIV infection by persons while they are highly infectious. For example, if one assumes a period of acute contagiousness lasting approximately 8 weeks, a 1 week delay to testing, 2 week delay for results, and 1 week for entry into prevention services would consume as much as half of the opportunity for intervention (Pilcher et al. 2006). These factors present challenges that need to be taken into account in the design of an effective intervention that would contribute to prevent HIV infection among MSM during the period of acute HIV infection.

2. OBJECTIVES

The overall goal of the study was to inform the development of a prevention intervention targeted to MSM with acute HIV infection to reduce their risk to partners and avoid transmission to others. More specifically, the research project set out to inform the development of three consecutive and inter-related components of the prevention intervention protocol:

- **Pre-test Counselling:** What should men be told when seeking testing or being advised to test that may prepare them for a possible acute HIV infection result?
- **Post-test Counselling:** How should men be informed of an acute HIV infection? What are the key pieces of information that should be provided in post-test counselling to encourage enhanced risk reduction strategies and to promote partner counselling and referral?
- **Enhanced intervention:** What should be the scope of an ongoing behavioural or counselling intervention for MSM with acute HIV infection to support HIV risk reduction strategies? Who should be providing these interventions? What would it take to engage men in these interventions and sustain their contact with the intervention through the acute infection period?

To meet these objectives, a literature review was conducted on individual-level interventions targeted at MSM to reduce their risk of acquiring or transmitting HIV, as

these were deemed to be most relevant in the context of a time-sensitive intervention linked to receipt of HIV test results (i.e., compared to group or community level interventions). The purpose of the literature review was to identify features of successful behavioural interventions. Following the literature review, qualitative research was conducted, consisting of strategic informant interviews to gather expert opinions on testing protocols for MSM who may be acutely infected. Strategic informants were also asked to identify the components of an enhanced post-test counselling that would reduce high-risk behaviours of acutely infected MSM. The methodology for both approaches is described below.

3. LITERATURE REVIEW

3.1 METHODOLOGY FOR LITERATURE REVIEW

The literature review only considered scientific articles that were published between 1990 and 2007 in a peer-reviewed journal. This review included articles that evaluated individual behavioural interventions that had objectives to reduce risks of transmitting or acquiring HIV. Interventions that were targeted to both HIV negative and HIV positive MSM were included, as well as interventions that had a large proportion of MSM in their sample (65 % or more).

Search queries were performed in the following electronic databases: Pub Med, MEDLINE, AIDSearch and Health Source: Nursing/Academic Edition. Searches used a combination of the following key words: HIV, AIDS, Intervention, Behavioral, Prevention, Counselling, MSM, Gay, Homosexual, evaluation studies, program evaluation, HIV positive. The reference list of included articles was also scrutinized to identify other articles. Studies of single interventions, meta-analyses and systematic reviews were included. In addition, meta-analyses and systematic review helped identify individual interventions to include in the literature review.

3.2 RESULTS FROM THE LITERATURE REVIEW

Results from systematic reviews and meta-analyses

Five systematic reviews or meta-analyses that included individual-level behavioural interventions for MSM were found in the literature (published between 2002 and 2007). All interventions reported were evaluated using randomized-controlled trial methodology.

Herbst and colleagues (2007) describe individual-level interventions as interventions that seek to influence HIV risk behaviours one individual at a time. Furthermore, these interventions assist clients in changing their HIV risk behaviours by changing their attitudes, beliefs, motivations, and self-efficacy, and/or providing facts or information about HIV/AIDS or STIs. Individual-level interventions can also influence moods, emotions or feelings and often encourage clients to make ongoing appraisals of their own behaviours, and facilitate their efforts to obtain services in both clinical and community settings. These interventions typically involve individual risk-reduction counselling, or motivational interviewing delivered by a well-trained counsellor, educator or other professional. Individual-level interventions can be delivered in different formats such as face-to-face individual counselling and couples counselling; and through different modes of delivery such as by phone, by internet and through outreach work. The results from systematic reviews and meta-analyses indicate that HIV behavioural interventions can reduce sexual HIV risk behaviours among MSM and HIV positive individuals (Herbst et al. 2005, Herbst et al. 2007, Johnson, Hedges et Diaz, 2002, Johnson et al. 2005). More specifically, individual-level behavioural interventions have been shown to effectively reduce the odds of unprotected anal intercourse among MSM, decrease the numbers of sexual partners and increase condom use during anal sex (Herbst et al. 2005, Herbst et al. 2007).

When compared to group and community level interventions, individual level interventions are believed to have the greatest potential for individual-level behaviour change because they are tailored and focused on the specific needs of the client (Herbst, et al. 2007). Johnson and colleagues (2005) also suggest that the highest risk clients may be better served by individual interventions than by small-group interventions that introduce them to potential new partners who are themselves at particularly high

risk. Meta-analysis has demonstrated that all effective interventions relied on at least one behavioural change theory or model. In two studies, no behavioural theory in particular seemed associated with significantly better outcomes (Lyles et al. 2007, Herbst et al. 2005). However, Herbst and his colleagues (2007) did find in their updated meta-analytic review of behavioural interventions targeted to MSM. They found that interventions based on the diffusion of innovations theory and the model of relapse prevention showed greater point estimates for reduction in risk-taking behaviour although they were not used for individual-level intervention. They also found that interpersonal skills training, skills training delivered by role-plays or lectures, multiple delivery methods, and greater intervention exposure complexity (number of session, durations and time span) may have greater efficacy.

Although individual-level interventions have demonstrated effectiveness, they also pose challenges and are sometime difficult to implement. The barriers most frequently reported in these studies involved challenges of recruitment, enrolment and retention of MSM in HIV behavioural interventions. Again, some MSM subgroups remain hard to reach because of numerous factors including geographic isolation, social isolation, fear of being exposed as MSM and failure of the intervention to address the cultural values and practices of the community (Herbst et al. 2007). Several studies linked difficulties in retaining MSM in HIV behavioural interventions to the frequent perception that interventions either are not sufficiently motivating and captivating, or are irrelevant to personal needs. Additionally, time constraints, competing interests, and substance use have been identified as influences on participation in prevention programs (Herbst, 2005).

It is important to note that interventions have shown varying degrees of success. The literature has shown that although some interventions have led to favourable outcomes others have led to null or even slightly unfavourable results while no explanation for these differences have been given (Johnson, Hedges et Diaz, 2002 Johnson et al, 2005). Therefore, an intervention is not necessarily better than no intervention. Future intervention efforts should also consider newly identified predictors of increased sexual risk taking among MSM, including HIV treatment optimism, social norms regarding intentional unsafe sex, and use of the internet to solicit partners (Herbst 2005). In British Columbia, the Sex Now survey identified that predictors of sexual risk taking among MSM in the province include feeling pressure to have unprotected sex, broken sex agreements, inconsistent concern about risky sex, high partner volume and methamphetamine use (Trussler, Marchand et Gilbert, 2006). These predictors can be considered when developing an intervention for British Columbia.

Individual level interventions

This review identified eight interventions in the scientific literature (see Appendix 1 for an overview of the interventions). The interventions were evaluated using randomized controlled trials and were published between 1990 and 2007, meaning that some of the interventions were developed and delivered before the arrival of antiretroviral therapy which occurred in the mid-1990s. Three out of eight interventions were targeted to HIV positive individuals but had a high prevalence of MSM in their studies (69-74%). Of the remaining interventions, (5/8) were targeted specifically to MSM either HIV negative (3/8) or positive (1/8) or both (1/8). Two of the interventions (2/8) were targeted to drug users: one that was targeted to methamphetamine-using HIV positive MSM and another targeted to substance-using HIV positive individuals between the age of 16 and 29 (with

69% of the sample being MSM); both of which had a strong focus on sexual behaviours as well as drug use.

All but one intervention were delivered by counsellors. The counsellors were mental health professionals, registered therapists or social workers. The single intervention not delivered by a counsellor was conducted by primary care providers and was targeted at HIV positive individuals. Interventions varied in duration, from a single session of 5 minute to 18 sessions of two hours each. All but one intervention had a theoretical basis underlying the intervention such as cognitive theory, Gold's theory of offline versus online thinking, social learning theory, motivational theory, social action theory, theory of reasoned action or motivational enhancement. One intervention was based on a prevention case management model and another was based on a loss or gain based approach.

These individual interventions were successful at reducing risk behaviours related to HIV acquisition or transmission. The results vary from one intervention to another and are hard to compare since the outcomes measured are different, times of follow-up vary from 7 weeks to 48 months, and the data available in some cases are limited. However, results published show that reducing risk behaviours is possible through behavioural individual-level interventions.

For example, Dilley and his colleagues (2004) have evaluated the efficacy of a single session behavioural intervention with and without a diary and the use of a diary alone and they found that the three interventions led to a decrease in unprotected sex between 26% and 40% at 12 months follow up compared to a control group, with the behavioural intervention (without diary) having the greatest effect. Similarly, another single-session

intervention delivered by phone and targeted to both HIV positive and negative MSM engaging in unprotected intercourse resulted in less ambivalence from the participants about practicing safer sex (Picciano et al. 2001). In addition, participants in this intervention tended to report greater increases in intention to use condoms in comparison to the control group that did not receive the intervention. Robert and Rosser (1990) found also that a single one-on-one 10 to 30 minute counselling session led to an increase in practicing safer sex compared to other methods, which included a video, group intervention about eroticizing condom use, and no intervention.

One intervention targeted to HIV negative individuals actually looked for the outcome of acquisition of HIV in both the control and the intervention group. This intensive intervention involved 10 one-on-one counselling sessions followed by maintenance sessions every three months. The evaluation of the intervention found that the rate of acquisition of HIV was 18.2% lower in the intervention group compared to the control group (Explore Study team, 2004). This significant difference was thought to be explained by a lower occurrence of reported unprotected anal intercourse with HIV positive and unknown status partners in the intervention group at follow-up.

Results from interventions targeted to HIV positive individuals

In the literature, three interventions were found that targeted either HIV positive MSM or HIV positive individuals with a majority of MSM in their sample. An intervention targeted to HIV positive MSM methamphetamine users resulted in a greater percentage of protected sex at the nine and 12 months follow up by the intervention group compared to the control group (Mausbach et al. 2007). The nature of the intervention was five weekly individual sessions of 90 minutes, followed by three booster sessions. The sessions covered the following themes: context of unsafe sex, condom use, negotiating safer

sex, disclosure and enhancement of social support. Another intervention targeting HIV positive individuals (72% MSM) led to a reduction by 36% of potential transmission behaviours at the five month follow up visit. Unfortunately, the treatment effect was not sustained at the 10-month follow up visit. This intervention was delivered in 15 one-on-one sessions that addressed stress, coping, safer behaviours and health behaviours.

An evaluation of an intervention targeted towards young HIV positive substance-using individuals had a large sample of MSM. This intervention targeted youth 16 to 29 years old (69% MSM). This intervention was delivered either by phone or in-person and was quite lengthy comprising three health modules of six sessions each for a total of 18 sessions of two hours. The three modules covered were: improving physical health; reducing sexual and substance use acts; and improving mental health. The evaluation of this intervention concluded that there was a significantly higher proportion of protected acts in the intervention groups among all participants and with HIV-negative partners but not with HIV-positive partners. Participants from the in-person intervention had increased numbers of protected sexual acts with all partners compared to the control group, while the telephone group had a significant decrease of protected sexual acts with HIV negative partners compared to the in-person intervention over time. The evaluation also looked at the number of sexual partners and disclosure of HIV status to partners with no change noticed among the two interventions and the control group. Also, it is important to take into account that only 41% of those receiving the in-person intervention and 29% of those receiving the telephone intervention completed the 18 sessions.

Another intervention delivered to sexually active HIV positive individuals was evaluated. The five minutes intervention was delivered by primary care providers who had received

four hours of training prior to delivering the intervention. The five minutes intervention was delivered using two different approaches: one focused on the positive consequences of safer sex (gain framed); while the other focused on the negative consequences of unsafe sex (loss framed). When the analysis was performed for MSM, the loss-framed intervention reduced unprotected intercourse but no reduction was noted in the gain-framed intervention at the three-month follow-up (Richardson et al. 2004).

Summary of the literature review

In summary, we can say that individual behavioural interventions are successful, at least in the short term, in reducing risky behaviours among both HIV negative and HIV positive MSM. Both short and long-term interventions have shown positive results, although some long-term interventions might have difficulty retaining their participants through the end of the intervention which might affect the results. This review of the literature also suggests that in-person interventions might lead to greater results than interventions delivered by phone. Unfortunately none of the interventions included were delivered through the internet and future research may be required to evaluate the acceptability and efficiency of individual-level intervention delivered through the internet. Although these results may create an expectation of success for professionals developing interventions, it is difficult to determine which components of interventions most directly increase the likelihood of risk reduction. However, interventions based on at least one behavioural change theory or model, interventions using multiple delivery methods, with greater participant exposure to the intervention may have greater effectiveness.

Some limitations should be considered. Most studies relied on self-reported sexual behaviour which may be open to recall bias and socially desirable responding. Some of the longer interventions had low rates of completion which might have affected their results dramatically, highlighting the difficulty of retention in long-term individual behavioural interventions. Only one study used primary care providers to deliver the intervention which makes the generalization of these results to provider-delivered models difficult. It is also possible that our review may have been affected by positive publication biases where negative or null studies have not been published and therefore are not included in this review. A recent article published in the Lancet criticizes the importance given in the literature to behavioural change theories and the use of randomized controlled trial in the context of HIV behavioural interventions (Coates, Richter and Caceres, 2008). Behaviour change theories generally do not address the fact that HIV transmission is a social event and that many factors other than perceived threat, knowledge, self-efficacy, behavioural intentions, and perceived social norms affect whether or not an individual engages in risky behaviours. The authors also suggest that many interventions are not studied due to the fact that they cannot be placed into the framework of a randomized controlled trial.

As highlighted in previous research, further study is still required to identify the method that works best, in what context, and with whom (Herbst et al. 2007). It is important to mention that none of the interventions discussed in this review were targeted specifically towards HIV acutely infected individuals. Individuals acutely infected with HIV may have unique differences due to the recency of their diagnosis or ongoing grief in dealing with their HIV status.

4. METHODS AND FINDINGS

4.1 METHODOLOGY

Recruitment and participants

A purposeful sample of skilled informants with either experience performing HIV pre and post-test counselling or experience counselling or working with gay men and/or HIV infected individuals were recruited for the study. Strategic informants were identified by the research team in collaboration with community leaders who have extensive experience working in the gay and HIV communities. Informants were then contacted by the study team through email. Informants were selected in order to have representation from diverse professionals who work in different settings and capacities, and were recruited in both Vancouver and Victoria. A snowball sampling method was used by asking strategic informants during their interview for suggestions of other potential strategic informants. Only one informant was recruited through snowball sampling as most of the informants suggested other informants that had already been recruited into the study.

All of the fifteen identified as strategic informants by the study team agreed to be interviewed. Three informants were social workers, one was an addictions counsellor, one was a grief counsellor, three were physicians, three were staff or representatives of community-based organizations and four were nurses who work in sexually transmitted infection (STI) clinics. Twelve strategic informants were working in Vancouver while the remaining three were working in Victoria. Three of the participants interviewed self-

identified as HIV positive and were able to share both their professional and personal experiences. Twelve strategic informants identified as gay men.

Procedure

Interviews were conducted from January 2008 to April 2008. Interviews lasted between 40 and 100 minutes. Each interview was recorded and transcribed. One interviewer conducted all the interviews with the 15 participants using a semi-structured interview guide (appendix 2) that was designed by the study team based on the objectives of the study and informed by the literature review. One key informant was interviewed twice as the audio file of his first interview was corrupted and could not be transcribed. The interviews started with an explanation of the purpose of the study and of acute HIV infection. Strategic informants were then asked their opinion regarding what pre- and post-test counselling should encompass in order to prepare an individual for a possible diagnosis of acute HIV infection. The interviewer then explored with strategic informants through a series of questions the nature of a behavioural intervention that would help MSM testing positive with acute infection to reduce their risk behaviours during the acutely infected phase. Questions were also asked regarding the barriers to successful engagement of these men, and how the intervention during the acutely infected phase could be of long-term benefits. Participants were than allowed to make other points, express concerns or pose questions to the interviewer. Each interview was recorded and transcribed.

Data Analysis

Data analysis was conducted using an inductive approach (Creswell, 2003). The first step was to thoroughly read each transcript. During this initial reading, the goal was to become familiar with the data and identify the major themes and issues discussed by the

Strategic informants. Second, each interview was coded using a list of emerging codes (See appendix 3 for a list of emerging codes). Then the data was pile-sorted by themes and recoded according to sub-themes.

4.2 RESULTS

We present the findings in four broad categories that together provide insight into the opinion of strategic informants regarding appropriate counselling and interventions for MSM acutely infected with HIV: (1) pre-test counselling; (2) post-test counselling; (3) enhanced intervention; and (4) language.

Pre-test counselling

According to most strategic informants, the pre-test counselling session for a HIV test that may lead to an acute HIV infection diagnosis should remain the same as the standard session already recommended for HIV antibody testing according to most Strategic informants. Reflecting the opinion of many, one said,

I don't think it really needs to be that much different than regular HIV testing right? Because what you're doing is you're still testing to see if somebody is HIV positive so all issues are the same in that regard.

Informants suggested that the pre-test counselling for a potential acute HIV infection diagnosis should assess the client's readiness to know their HIV status, prepare clients for a positive result, assess the client's risk behaviours, and provide harm reduction and safer sex information. Although these components are part of the existing guidelines for pre-test counselling; it was mentioned by some informants that they are not consistently or appropriately covered by health care providers. In addition, informants believed that

pre-test counselling should be an opportunity for clients to ask questions and for health care providers to provide appropriate referrals.

However, most informants felt that pre-test counselling should include an explanation about the new testing technologies used, and more specifically, information should be given regarding the shorter window period with tests for acute HIV infection. Some informants felt that most MSM would be unaware of the possibility of being acutely infected and having a high viral load. As one informant said,

[Gay men] don't really know that when people are initially infected with HIV that they are hyper infectious because when I mention that now in pre-test counselling people go I never knew that. So, I think its one fact out there people don't generally know.

It was believed by most informants that information should be provided about acute infection to prepare them in case of a positive result and acute diagnosis.

Some strategic informants stated that the week between the test and the result could be a frightening and intense week for MSM testing for HIV, more so if they believe they have been infected recently. Some strategic informants suggested that ways of coping with anxiety and stress while waiting for result should be explored during the pre-test counselling as well as making appropriate referrals or offering support if needed. Some strategic informants also spoke of the importance for MSM who believed they have been infected recently of reinforcing the message that they may be highly infectious and should adopt safer sexual behaviours immediately prior to the receipt of test results.

Post-test counselling

Reactions to a diagnosis of acute HIV infection were not viewed as being different from reactions to a standard (non-acute) HIV result. Informants thought reactions would be varied and individual. One informant said,

We are going to need to be attuned to the possibility of multiple sub-cultures of gay men and they're going to have different reactions and it it's going to be based on their belief system about what it means for their future.

According to the key informants, most people will be in shock, even if they were expecting a positive result, and denial or anger may be a typical reaction following a diagnosis of HIV infection. However, some key informants were concerned that telling people they are highly infectious may be stigmatizing, make dealing with the diagnosis more difficult, and lead to a stronger grief reaction. A social worker explained that emotions may be intensified and be more complex when receiving a diagnosis of an acute infection:

They could be more significantly angry because it will be like, okay I know who that bastard was who infected me and he didn't tell me, or hurt, or betrayal, so there could be more targeted emotional response if they think they can identify who it was, that's what comes to mind.

Another informant added, "I think we will have people who experience greater anxiety and maybe even greater depression because they know they are in a particular phase."

Most strategic informants recognized that due to the devastating nature of the news being delivered, most MSM will not be able to hear or absorb much information during the post-test counselling session. Informants believed that acutely infected MSM should receive basic information regarding acute HIV infection and should be provided with risk

reduction and safer sex information. Some written information, as well as reliable websites and places to access more information were suggested as being important tools for post-test counselling. Some informants with experience conducting post-test counselling and HIV diagnosis delivery mentioned that in their practice many MSM newly diagnosed with HIV inquire about the next steps and some MSM acutely infected may also react in this way.

Offering emotional support was identified as being an important component of the post-test counselling as well as setting up a follow-up meeting. It was emphasized that people should be invited to return to discuss the important points covered during the post-test counselling and to ensure that people are receiving the appropriate care and support. It was also suggested that a confirmatory blood test is drawn as recommended as this may increase the likelihood of returning for a follow-up visit.

Enhanced Intervention

Some strategic informants believed that just knowing their HIV status will lead MSM to refrain from having sex or from engaging in high-risk behaviours, at least for a short period of time. One test provider said,

I think the biggest piece of information that's going to prevent onward transmission is just knowing they're positive. [...] My experience is if you find out you're positive you're just not going to be interested in sex so what happens is that it has a natural inhibitor effect on sex.

However, some strategic informants also believed that some MSM may use sex as a coping mechanism and may in fact have more sex in response to the stress caused by a diagnosis of acute HIV infection. One informant explained, "People's [...] reaction is they

want skin to skin contact and that skin to skin contact is a way of people healing from bad news or being told that they are not healthy".

For most strategic informants, an individual-level intervention was seen as the most appropriate intervention for men acutely infected with HIV. A group intervention was seen as inappropriate by many. One informant said, "I think it might be fairly challenging to get people to come to a group. People who are newly diagnosed - they're just not ready to come out with that". The community workers interviewed suggested that the intervention should be delivered by peers only (gay men and/or HIV positive individuals) or by peers in collaboration with health care workers. Other strategic informants believed that the intervention should be delivered by trained counsellors or outreach workers. Some suggested that it should be a collaborative effort between a nurse and a social worker or outreach worker. All strategic informants believed that the person delivering the intervention should have substantial knowledge about HIV and gay men's culture, health and sexuality. When behaviours were more likely to be influenced by knowledge it was believed that peer or outreach worker was needed but when behaviours change would be more likely to be influenced by emotional health key informants were more likely to suggest a counsellor or therapist.

Two major components were identified by informants as being key to an effective intervention that would support men during the acute infection period to reduce their risk of transmission to others: emotional support and sexual support. The importance of providing emotional support has already been addressed by strategic informants in the post-test counselling and was highlighted in the enhanced intervention by many informants due to the shock of the new diagnosis. One commented:

I think it's produced a crisis for the person and that has to be addressed in whatever way, because I've seen people when they get the news- they have all kinds of different responses, but sometimes it's just like complete denial so they go and engage in unprotected sex all over the place, they're just not really addressing it.

Emotional health was important to informants not only in terms of the emotional health of men dealing with their infection but also for preventing onward transmission. Comments included:

I think what matters is just the support and that person feels that they're supported and connected and somebody is on their side and there's somebody that believes in them and that they're connected. Those kinds of things matter more than anything else.

I think it's important for us to remember that when we talk about safety that we are not only talking about onward transmission of HIV [...]. We have to keep our clients physically and emotionally safe. We have to keep the public safe but I think if we address people's emotional safety we can support them in a compassionate way, then that goes a long way to addressing onward transmission.

The second key component that was identified by informants as being an important part of the enhanced intervention is related to gay men's sexuality, and a man's opportunity to gain knowledge and feel supported to make changes to the sex they are having during the acute period. Although it was recognized that MSM need some knowledge, it

was clearly stated by many informants that the intervention must go beyond just giving information. One informant said:

There's always room for education about proper condom use and that kind of thing, but anything that stops at here's how you put a condom [...] is next to useless in my mind". Informants felt that the most important piece of information was around acute infection and the increased infectivity during that period.

Sexuality and why people engage in sexual behaviours was viewed as complex by informants. One said, "People have sex for very complicated reasons, practically, emotionally and physically you know, so we have to take those things into account". For this reason, most informants suggested that the intervention should be an opportunity for acutely infected MSM to explore the reasons for their risky sexual behaviour, discuss their barriers to safer sex, and develop strategies around condom use and safer sex. It was believed that men would need to explore these issues by having a frank discussion regarding sexuality that would address many topics such as disclosure of HIV status, assumptions about HIV status of partners, serosorting (i.e., choice of sex partners based on HIV status), difficulties with negotiating condoms, sexual needs, and stigma associated with being newly diagnosed with HIV.

Additionally, strategic informants believed that men will have different needs and challenges and the intervention will have to be flexible and designed according to individual needs. Flexibility will also be required in the scheduling of appointments, and the intervention should be offered in multiple locations. Some suggested an outreach model where the person doing the intervention could potentially meet a client at his house or at least in his neighbourhood. Strategic informants also suggested that the

intervention should offer men practical advice and practical steps they could take to maintain safer sexual behaviours but also to maintain their health. Strategic informants also agreed that the intervention would be a great opportunity to provide referrals to various services and agreement to these referrals should be arranged ahead of time so that MSM who are acutely infected could be fast-tracked into care or other programs such as addiction services. Lastly, the informants felt that participation in the intervention would be greater if men could meet the person doing the intervention at the time of post-test counselling.

Strategic informants were informed of the possibility that people with acute HIV infection may be able to obtain antiretroviral drugs (ARV) over the period of their high infectiousness because it may reduce their viral loads and reduce their infectivity. Strategic informants believed that ARV would not change men's behaviours but may help prevent denial regarding the illness. It may also reduce risk behaviours because men may experience strong side effects that would prevent them from being sexually active. Strategic informants also believed that ARV would change the nature of the intervention since medical follow-up would be required and it would add an extra layer of complexity. Some strategic informants recognized that there is a lack of knowledge regarding ARV during the acute infection phase and that more research may be needed in that regard. Some believed it would increase stigmatization of men acutely infected if ARV was offered. This sentiment was captured by a physician:

It would be very touchy because if you give it to people, and they understand, then they're going to hear: You are a risk to society. You're dirty and you're a liar or unpredictable and we need to protect society from you by you taking drugs. We need to contain you; we need to put the drug cage on you, a drug muzzle on you somehow

Language

Stigma surrounding HIV/AIDS and homosexuality has existed since the beginning of the epidemic and strategic informants have indicated that if the intervention is not well designed it could potentially increase feelings of guilt and stigma to MSM acutely infected with HIV. More specifically, informants indicated that particular attention should be given to choosing the language that would be used to describe acute infection at all stages of the intervention. Informants felt that terms such as "acute" infection, "highly" and "hyper" infectious could further stigmatize MSM acutely infected. This was well captured by some informants: "The whole issue with HIV is people feel infectious and dirty and whatever, and then to use language like highly infectious or increased infectivity could increase that." Or:

If you said to me you are acutely infected that makes me even worse than somebody who is not acutely infected. So the language that you chose will be very important because "acute" means "alarm" and the bells go off.

Infected says you're infected. It doesn't matter if it was two months ago or last week.

Some informants felt that we should be careful when telling MSM that they are more infectious at certain periods of time, such as the acute infection. For example, one informant said:

It's also problematic to tell HIV positive people that sometimes they are more infectious than at other times, [...] Because ideally you don't behave less safely when you're less infectious. Ideally you have to maintain the same level of guardedness about your behaviours throughout the rest of your life regardless of your level of infectiousness.

When asked if we should recommend any behavioural changes during the acute infection phase such as abstinence, 100% condom use or disclosure, most strategic informants believed that such recommendations were unrealistic. It was seen as inappropriate to use language such as "you must, you need or you have to". Strategic informants believed that a more appropriate response would be to provide acutely infected MSM with the most accurate information and discuss with them strategies for harm reduction, and reducing the risk of transmission. There was some concern that by telling men what to do we may increase the stigma associated with acute HIV infection.

As one physician stated:

Don't have sex for two months. I kind of doubt that's going to happen.
And is that really ethical, or not ethical but it's probably not realistic. I think that means that you're reinforcing the negative kind of impression that they're lepers or that they're so contagious. You've got to be careful with this message not to stigmatize it even more because it could backfire and just so people don't think, they just saying that we're spreading the virus or we're highly infectious, we're lepers, they're stigmatizing us, they're blaming all the infection on us.

Partner notification or partner counselling was another area where strategic informants mentioned that the language and the messages will have to be crafted carefully. Some informants were concerned that if too much information is provided about the recency of the exposure, the anonymity of persons acutely infected may not be preserved during the notification process. In addition to the issue of impaired confidentiality, some informants were afraid that this knowledge may lead to negative consequences such as violence. One informant said:

Some of my worries around that with something that's so specific is that people might be targeted. Right. Cause they can go well I know that in the last two weeks I've only been with, you know, Casey and Joe, or something like that. And so I'm gonna go after those guys [..] whether they intentionally did it or not.

Another informant also captured the issue well:

If we're talking about the nature of the test, and the fact that they may be able to identify exactly when they were infected, what are they going to do with that information? [...] Is there going to be a vendetta on a particular individual, because that's not where we, I think, would intend to go with this type of test.

Strategic informants were informed that the research project was planning the development of a social marketing initiative that would promote the testing technologies used for detecting acute infection. Concern was also expressed about the language in this initiative. Here's what a community worker had to say about the language in the social marketing:

My fear is that if we don't do the social marketing component correctly, the media and the general population will just hear: oh, hyper-infectious people, stay away from them, sort of thing. So it's important to examine that and work the details out of that. I certainly don't have those answers off the top of my head. But in some way to fashion a message that prevents any sort of hysteria from going on about people who are in a hyper-infectious state.

Some strategic informants suggested that to avoid further stigmatization of acutely infected MSM, care and support providers should speak about the virus as being infectious and not the individual, or to explain that the acute phase of HIV is just like the acute phase of any virus like influenza for example. It was strongly suggested that the language used be chosen carefully.

5. DISCUSSIONS AND IMPLICATIONS

Sex between men is thought to account for between 5 and 10% of global HIV infections, although the proportions of cases attributed to this mode of transmission varies considerably between countries (UNAIDS, 2005). It is the predominant mode of transmission in much of Western European and North American countries (UNAIDS, 2005). In North America, prevention among MSM has been widely affected in the last seven years due to misinterpretation of the declining incidence in the late 1990's which wrongly implied that HIV was a diminished threat for gay men and MSM (Stall et all. 2000). Funding has been also diminished due to the transfer of some funding to other populations and shifts in governments, public health and social service agencies that diminished their attention to gay men's prevention (Stall et all. 2000, Marchand, 2001). As HIV is on the increases among MSM in the US and western countries, Canada has not been immune. Recent estimates suggest MSM infections are on the rise and now present in excess of 45% of all new annual HIV infections in Canada (PHAC, 2007).

Throughout Canada and British Columbia, most of the HIV prevention work has been initiated and continues to be done by community organizations often with limited funding, limited resources and little connection with local, provincial and federal health authorities (Trussler, Marchand et Gilbert, 2006). The work of community organizations has been focused on education and mobilization of the community affected and infected with HIV. HIV testing has also played an important role in the control and prevention of onward transmission. New testing technologies that may detect acute HIV infection combined with risk reduction counselling for those testing positive, may make a significant

contribution to the work already in place. However, these technologies and risk reduction interventions with acutely infected individuals should not be considered as an alternative to primary prevention already in place but should be considered as a small part of a comprehensive HIV prevention strategy.

As demonstrated by our research project, offering pre and post-test counselling, and an enhanced behavioural intervention to MSM acutely infected with HIV, presents many challenges. This study has identified many points to consider in developing a protocol for pre and post-test counselling for acute HIV infection, and offering a behavioural intervention that could potentially lead to a reduction in onward transmissions from acutely HIV infected MSM.

Strategic informants shared a high level of enthusiasm for this research study and many indicated that they would provide support in the future and showed a desire to be involved or connected to the project. It was obvious that strategic informants recognized the importance and the potential contribution of using new testing technologies for detecting acute infection combined with an enhanced intervention to preventing HIV in the gay and MSM community. The qualitative section of our research has demonstrated strong community support from professionals who are working in the field and are influential the gay community.

Strategic informants who participated in this study were selected because of their diversity and their experience providing testing and/or counselling to MSM or positive individuals. There was remarkable consistency across interviewees on the key components of an intervention that would lead to reduced risk of transmission among MSM acutely infected. It should be noted that community workers felt that peers should

be delivering the intervention, while other professionals felt it should be done by a trained counsellor or outreach worker. Nevertheless, all felt that a strong knowledge of gay men's sexuality and culture was an important qualification for the person delivering the intervention.

It seems clear that although key informants have great knowledge of the gay and HIV community and HIV testing process, they were less able to identify the key components of a behavioural intervention that would successfully help acutely infected MSM to reduce or eliminate their risk behaviours during the acute phase. This may be due to a lack of knowledge or expertise from strategic informants on individual-level behavioural interventions or a lack of understanding regarding the sub-population of MSM that are likely to be diagnosed with acute HIV. Strategic informants did provide information regarding the context in which the intervention should happen. It seems obvious from key informants that the current public health setting would require a shift if we want to offer enhanced counselling that would have a greater impact on reducing risk behaviours and the risk of transmitting HIV from acutely infected MSM. Strategic informants suggested that a modified approach would require a client-centred approach that would focus on emotional support and sex counselling.

It was strongly suggested by informants that by providing compassionate and non-judgmental emotional support, we would meet the needs of the clients and fulfil the public health mandate of preventing further transmission of HIV. Informants felt that emotional support combined with a clear focus on sex counselling would provide not only knowledge but would also serve as an opportunity for clients to develop skills and their self-efficacy in relation to sex and safer sex forming the components of a successful intervention. It was clear from informants that the intervention should address the bigger

pictures of men's sex lives by exploring their needs for intimacy, their barriers to safer sex, the complexity of their relationship (s) and the impact of their new identity on their sex lives.

The interviews with strategic informants also helped to identify an important challenge that will need to be taken into account in the development of the enhanced intervention. Much stigma is already associated with HIV and homosexuality, but diagnosing MSM with acute infections could potentially lead to increased stigmatization. In fact, informants strongly believed that the language used to describe acute infection such as "acute", "highly" or "hyper" infectious has the potential to increase feelings of shame and guilt. Furthermore, informants stated that the language used in all communications, including social marketing to pre and post-test counselling has the potential to stigmatize individuals acutely infected if not selected and designed appropriately.

The review of literature that we performed indicated that an individual intervention that would successfully reduce the risk of transmission of HIV among MSM would be an intervention based on at least one behavioural change model or theory, with multiple delivery methods and greater intervention exposure. None of the strategic informants interviewed mentioned the need for an intervention to be based on a behavioural theory. As none of the key informants interviewed were expert on the design of behavioural intervention programs this finding was not surprising. However, our analysis of the informant interviews suggests that a non-directive and client-centred approach to counselling such as motivational interviewing would be suited for MSM with acute HIV infection. Motivational interviewing or motivational enhancement is an approach to counselling which involves a partnership that honours the expertise and perspective of the client (William & Rollnick, 2002). In this approach, the counsellor provides an

atmosphere that is conducive rather than coercive to change; the resources and motivations for change are presumed to reside within the client. Motivation for change is enhanced by drawing on the client's own perceptions, goals, and values. Although none of the informants named this approach, their descriptions of an acceptable intervention is similar to the definition of motivational interviewing indicating that this approach would probably be acceptable with that population. Motivational interviewing was also suggested as an appropriate approach for MSM in the literature; this approach was successfully used in two of the eight interventions reviewed in this paper. This approach was also suggested by meta-analysis as a successful theory framework.

Most informants did not address the need of having multiple delivery methods and greater intervention exposure as identified in the literature review. As front line workers, informants recognized the need of having different methods of engaging with MSM acutely infected but they also recognized that longer interventions may not be feasible. The uptake and drop-out rate of participants may increase with longer interventions.

Our literature review was limited by the fact that none of the interventions reviewed were developed specifically for acutely infected MSM. Also, none of the key informants had actually experienced working with acutely infected MSM and had limited knowledge regarding acute infection. An intervention for acutely infected MSM might be difficult to develop as research is non-existent regarding the experience of gay men and other MSM in regards to receive a diagnosis of acute infection. As researchers in British Columbia are working on method for detecting acute HIV infection, information regarding the experiences of the men

diagnosed with an acute infection could greatly benefit the design of future interventions targeted to acutely infected MSM.

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APPENDICES

Appendix 1: Individual behavioural Intervention to reduce risk of acquiring or transmitting HIV

Reference	Study Design	Population Targeted	Theoretical Basis	Nature of the Intervention	Who delivered the intervention	Duration of intervention and/or Follow up	Outcome reported
Dilley et all. 2002. Changing Sexual behavior among gay male repeat testers for HIV: a randomized, Controlled trial of a single session intervention, <i>J Acq Immune Def Syndr</i> , 30 (2): 177-186	Randomized Controlled Trial n= 62 Control n= 62 Standard counselling + Diary n= 62 Intervention counselling n= 62 Intervention counselling + diary	MSM with a history of at least one previous negative HIV test result and self-reported UAI in the previous 12 months with partners of unknown or discordant HIV status.	Gold's theory of online versus offline thinking, cognitive theory	3 interventions 1) Single-session cognitive-behavioural intervention counselling + Sex Diary 2) Single-session cognitive-behavioural intervention counselling 3) Sex Diary only	Mental health professional	Duration of Intervention: a single, one hour session Follow up: 6 and 12 months.	At 12 months, UAI was only 1% below the baseline proportion (44% vs. 45%, p = .856) among subjects in the standard counselling group. The additional decrease in UAI among the three intervention groups was significant: 26% (43% relative decrease from baseline) for the diary group (p =.013), 40% (61% relative decrease from baseline)for the self-justifications counselling group (p < .001), and 28% (46% relative decrease from baseline) for the combined intervention group (p= .031)
The Explore Study Team. 2004. Effect of a behavioural	Randomized Controlled trial	HIV negative MSM	Information-motivation-behavioural	10 one-on-one counselling session followed	Counsellors	The 10 sessions are delivered over	The rate of acquisition of HIV was 18.2% lower in the intervention group

intervention to reduce acquisition of HIV infection among men who have sex with men: the EXPLORE randomized controlled study. Lancet; 364 (9428): 41-50	n= 2144 Intervention group n= 2151 Control group		skills model, social learning theory, motivational enhancement.	by maintenance sessions every three months		4 months. Follow up every 6 months for 48 months.	(95% CI 4.7 to 36). Adjustment for baseline covariates attenuated the intervention effect to 15.7 % (95% CI 8.4 to 34.4). The effect was more favourable in the first 12-18 months of follow-up. The occurrence of receptive UAI with HIV positive and unknown status partners was 20.5% (10.9 to 29) lower in the intervention group.
Healthy Living Project Team, (2007). Effects of a Behavioral Intervention to Reduce Risk of Transmission Among People Living with HIV: The Healthy Living Project Randomized Controlled Study. <i>Journal of Acquired Immune Deficiency Syndrome</i> ; 44(2): 213-221	Randomized Controlled Trial n= 467 Intervention group n= 469 Control	HIV positive Individuals 72% MSM	Social Action theory	15 session, one-on-one behavioural intervention that addressed stress and coping, safer behaviours and health behaviours.	Experienced Masters or PHD level Mental health practitioners (with minimum 3 years experience).	5 and 10 months after completion	The intervention group had reduced transmission risk acts by an average of 36% compared with the control group at 5 months. The treatment effect in terms of HIV transmission risk acts was not maintained at the 10 months follow- up
Mausbach, Brent T. et al. 2007. Efficacy of a behavioural intervention for increasing safer sex behaviours in HIV positive MSM	Randomized Controlled Trial n= 170 intervention group	HIV-positive MSM methamphetamine users	Social cognitive theory and the theory of reasoned actions.	5 weekly individual counselling sessions (90 min.) followed by 3 booster sessions at three weeks interval	Master's level clinical psychologist.	Follow-up assessments were conducted at 4, 8 and 12 months post-baseline.	Participants in the intervention engaged in more protected sex at 8 months ($p= 0.034$) and 12 months assessment ($p= 0.007$). At 12 months, a greater percentage of protected sex acts was

<p>methamphetamine users : Result from the EDGE study. <i>Drug and Alcohol Dependence</i>; 87, 249-257</p>	<p>n= 171 Control</p>			<p>(90 minutes). Module: 1) Context of unsafe sex 2) Condom use 3) Negotiating safer sex 4) Disclosure 5) Enhancement of social support</p>			<p>observed by the intervention group (25.8%) vs control (18.7%).</p>
<p>Picciano, et al. 2001. A telephone based brief intervention using motivational enhancement to facilitate HIV risk reduction among MSM: a pilot study. <i>AIDS Behavior</i>; 5: 251-262</p>	<p>Randomized Controlled Trial n= 46 Counselling n= 43 Control</p>	<p>MSM engaging in UAI (both positive and Negative individuals)</p>	<p>Motivational Enhancement, stages of change.</p>	<p>A single 90-120 min session to enhance readiness for change, promote greater intentions to use condoms, and to support safer sex practices.</p>	<p>Counsellors</p>	<p>Follow-up : 7 weeks</p>	<p>Participants reported significantly less ambivalence about practicing safer sex at follow-up (p-value = .03), and tended to report greater increases in intentions to use condoms.</p>
<p>Richardson, J. et al. 2004. Effect of a brief counselling by medical providers to HIV-1seropositive patients : a multi-clinic assessment. <i>AIDS</i>; 18:1179-1186</p>	<p>Randomized Control Trial n= 196 Control n= 214 Loss-Framed group n= 175 Gain-framed group</p>	<p>Sexually active HIV positive persons (73.85% MSM)</p>	<p>Two approaches: -Gain-framed approach (positive consequences of safer sex) -Loss-framed approach (negatives consequences of unsafe sex).</p>	<p>Brief counselling session (5 minutes) supplemented with written information.</p>	<p>Primary care providers</p>	<p>4 hours training for health care providers. One brief intervention (5 minutes) during medical visit. Follow-up: 3 months</p>	<p>When the analysis was performed on MSM only, the loss framed intervention reduced unprotected intercourse (OR 0.43 95% CI 0.19-0.94) but no reduction was noted in the gain framed intervention.</p>

Robert, B. and Simon Rosser, S.. 1990. Evaluation of the efficacy of AIDS Education interventions for homosexually active men. Health Education Research.	Randomized Control trial n= 30 counselling n= 36 control n= 32 video n= 31stop AIDS project n= 30 eroticizing condom	MSM	Not mentioned	A 20-30 minutes counselling intervention using a behaviourally oriented risk assessment system.	Health counsellors	Follow-up 6 months.	Trend analysis found that the counselling group was the only intervention that appeared to be efficacious to increases participants practicing safer sex X2 = 2.83
Rotheram-Borus, M.J. et al. 2004. Prevention for Substance-Using HIV positive Young People: Telephone and IN person Delivery. Journal of Acquired Immune Deficiency Syndrome. Vo. 37 (supplement 2), S68-S77	Randomized Controlled Trial n = 59 Teleph one n= 61 In person n= 55 Delayed	Substance using HIV positive Youth between the ages of 16-29 years old. 69 % MSM	Prevention Case management model	3 modules of 6 sessions each focused on a different target behavior: improving physical health, reducing sexual and substance use acts, and improving mental health. Modules were delivered either in person or by phone.	Licensed therapist or clinical social worker.	3 interventions modules of 6 sessions each totalling 18 sessions of 2 hours. Follow up at 15 months.	Participants in the in-person intervention increased their proportion of protected sexual acts across all partners compared with delayed group ($t=2.57$, $df=380$; $p<0.01$). The telephone group had a significant decrease of protected act with HIV negative partner compared with the in person group. Number of sexual partner and disclosure didn't change.

Appendix 2: Interview guide

Background information:

BCCDC will initiate a collaborative research project in early 2008, to run over the next 5 years. This will be funded from a grant from CIHR. The overall objective is to look at the use of new HIV testing technologies to detect very recently acquired infections among MSM. The rationale is to be able to offer prompt interventions at a time when infected persons are highly infectious and often in the window period when routine tests are negative. Thus, not only would men be able to find out sooner after infection that they got infected, but they could potentially learn that they are highly infectious. It is estimated that during this highly infectious period (acute HIV infection period) of approximately 60 days after exposure, men are more likely (up to 28 times) to transmit the virus compared to the later asymptomatic stage.

The focus of this interview is to hear your suggestions about what an intervention would look like that would:

- provide MSM with an acute infection result
- provide supportive risk reduction counselling to reduce risks behaviours and avoid transmission to sexual partners, and
- achieve early enrolment into care and support programs for MSM with acute infections .

1. Pre-test counselling

-What should men be told when seeking testing or being advised to test that may prepare them for a possible acute HIV infection result?

2. Post-test counselling

-Do you think that persons receiving news that they are acutely infected and highly infectious will react any differently than if they were to have received a 'normal' HIV positive result? In other words, how do you think men will react to the news that they are likely to have an acute infection?

-How should men be informed of their acute HIV infection and their highly infectious condition? Do you think it should be different from a "regular" diagnosis? (NOTE: Men who have been identified as being acutely infected will need to have a confirmatory test that will require a further blood specimen so this may factor into the discussion)

Alternate suggestions for this question:

Many counsellors feel that persons who receive HIV positive results do not hear much more than their diagnosis and therefore one needs to be very circumspect about information/messages provided. Assuming this to be the case:

- a) What key pieces of information should be provided in this post test counselling session?
- b) What message(s) do you think should be conveyed at this time? If more than one message, please list these in order of priority.

3. Enhanced prevention for persons who have acute HIV infection

Persons with acute HIV infection will be highly infectious for approximately 60 days following exposure to infection. Thus, in order for prevention measures to be effective one needs to consider a prevention intervention that would have an impact over that time period. Let us assume that, on average, a person will receive an HIV test

approximately one week after exposure. Results of this test will take one further week.

This leaves an intervention period of about 40 to 45 days.

a) What do you think the ideal intervention should look like?

b) How easy do you think it will be to engage with those men? What will it need?

c) Including the post test counselling session, how often and what frequency should the person be seen?

d) Who's in the best position to perform the intervention? Who do you think should be delivering the intervention? Should different professionals be involved at different stages of the intervention? Should this be a team approach or be facilitated / led by one individual. If a team approach, can you define the members of the team and their roles? If a team approach, who do you suggest takes on the role of facilitator/leader of the team – or do you think this is unnecessary?

e) You suggested key messages that should be provided to persons during post test counselling. Building on this / these, what key messages do you suggest should be conveyed and reinforced and supported during the enhanced prevention intervention?

What do you think should be the recommendation regarding behaviour change /modification? How can we obtain immediate behaviour change? (Should we recommend men to be abstinent for the highly infectious period? Should we recommend them to disclose their HIV status/ highly infectious status? Maintain 100% condom use?)

f) What do you think would be the challenges to those men to maintain sexual safety and how could they be addressed? What do you think can help them to maintain safe behaviour during the entire period of high-infectivity? (Please refer to the messages you have suggested and suggest ways /strategies / prevention approaches in which the person can be supported to achieve prevention goals.)

g) There is the possibility that persons with acute HIV infection will be able to obtain ARVs over the period of their highly infectiousness. Theoretically, ARVs during this

period may lower viral loads and reduce highly infectiousness but this will not happen overnight nor render the person non infectious making it important to sustain risk reduction strategies. Knowing this, do you feel that providing ARVs should alter the nature of the intervention that you have suggested above? Do you think that persons receiving ARVs will be less likely to sustain prevention strategies? Why?

h) How can we ensure that the short term intervention also has some long term benefits? How can the intervention be linked to a long-term intervention?

Closure

Summarize what has been said.

- Do you have any question or other points you would like to make?
- Do you have any feedbacks about the interview?
- Do you have any suggestions regarding other professionals or community leaders we should consider for future interviews?

Appendix 3: List of Emerging Codes

PRE	Pre-test counselling
Info	Information
Read	Readiness to get result
Res	Resources
In between	period between pre and post-test counselling
POST	Post-test Counselling
Asses	assess risk of client
STI	Sexually transmitted infections assessment
Ref	Referrals to appropriate services)
WI	Written information)
Edu	Education
24h	Support available 24 hours
Flex	Flexible
C-centered	Client-Centred
Legal	Legal issues regarding disclosure
Viol	Issues of violence and abuse
REACT	Reaction
Bla	Blame
Gui	Guilt
Unpred	Unpredictable
Shock	Shock
Var	Variable
P. notice	Partner Notification
Deivery	How should the results be delivered?
Under	Underestimate gravity of result
Care	Medical care
F-up	Follow up meeting
ENH	Enhanced counselling
Emo sup	Emotional support
Icomp	Intervention components
Safe	Client Safety
Group	Group level intervention

Ind	Individual level intervention
LANG	Language
Phone	Phone Intervention
Gay	Gay culture
OFTEN	How many visits
WHO	Who should be delivering intervention?
MD	Physician/Medical Doctor
Nurse	Nurse
Couns	Counsellors
Peers	Peer support
B MOD	Behaviours modification
CHA	Challenges
Sex Cope	Sex as coping
A&D	Alcohol and drug
Enro	Enrolment
HELP	What would help men maintaining safety?
ARV	Antiretroviral therapy
L-TERM	Long term
SS	SS Serosorting