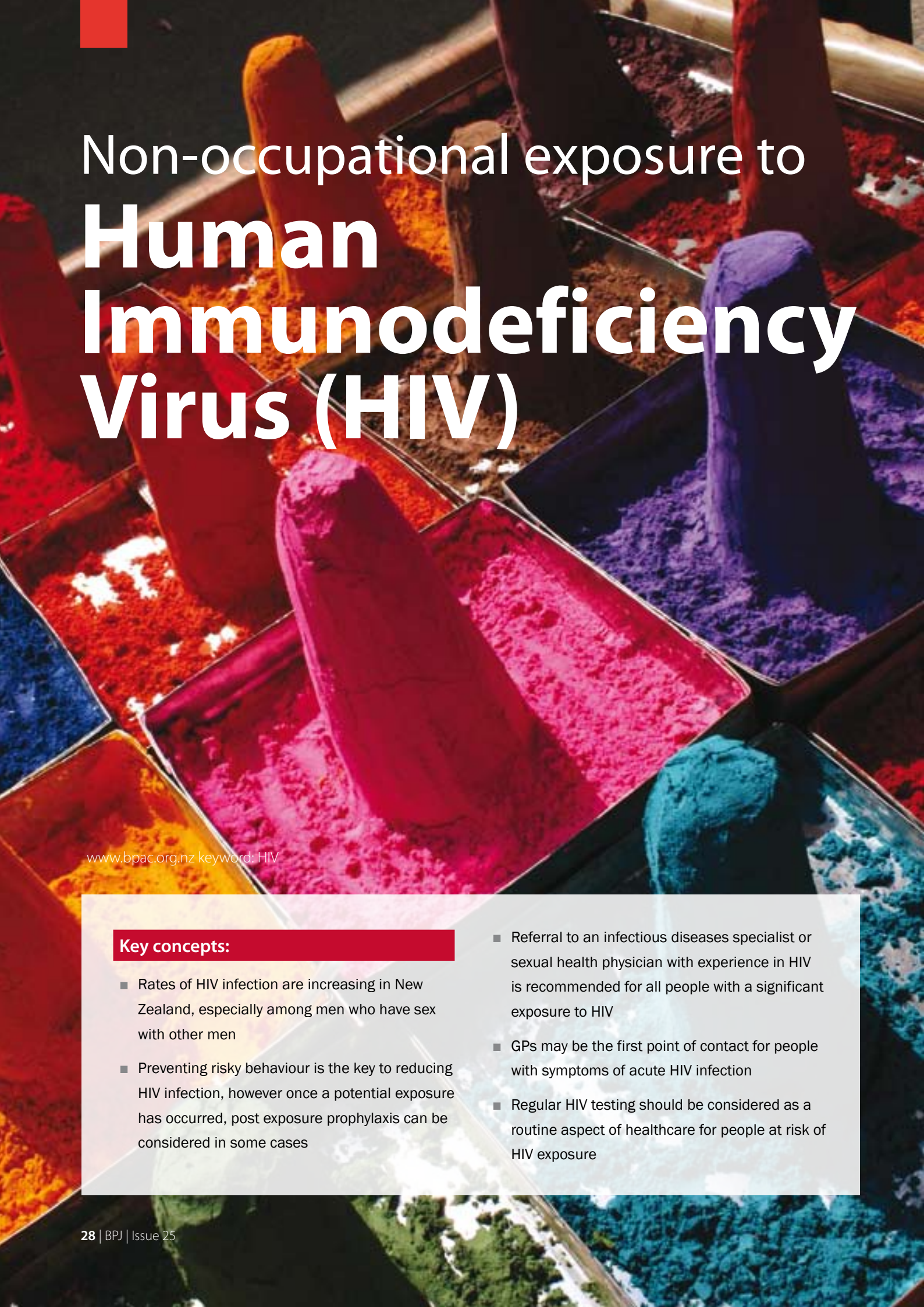

Non-occupational exposure to Human Immunodeficiency Virus (HIV)

www.bpac.org.nz keyword: HIV

Key concepts:

- Rates of HIV infection are increasing in New Zealand, especially among men who have sex with other men
- Preventing risky behaviour is the key to reducing HIV infection, however once a potential exposure has occurred, post exposure prophylaxis can be considered in some cases
- Referral to an infectious diseases specialist or sexual health physician with experience in HIV is recommended for all people with a significant exposure to HIV
- GPs may be the first point of contact for people with symptoms of acute HIV infection
- Regular HIV testing should be considered as a routine aspect of healthcare for people at risk of HIV exposure

New cases of HIV are increasing in New Zealand

In 2008 more people were diagnosed with HIV than in any other year since surveillance records began in the 1980s. This reflects a pattern of increasing numbers of notified cases since 2000. During 2008 a total of 184 people were newly diagnosed by antibody testing. A further 43 people, most of whom had previously had their HIV infection diagnosed overseas, were identified as the result of having their first viral load testing in New Zealand.

Half of the cases were men infected by having sex with other men (MSM), a third were men or women infected through heterosexual contact and the remaining cases were through injecting drug use, blood transfusion (overseas), mother to child transmission or unknown risk behaviours.[1]

HIV infection is most commonly diagnosed in European men aged 30–49 years. Among MSM with HIV, Māori and Pacific men are represented at around the same rate as in the general population.[1] However it has been suggested that Māori and Pacific men may get tested later than European men.

HIV infection by heterosexual transmission is often acquired overseas. Women from "Other" ethnicities have a proportionally higher rate of diagnosis than any other ethnicity, followed by men from "Other" ethnicities. Rates of infection among Māori, Pacific and Asian people were proportionally higher (even more so for women) compared to European people.[1]

A similar pattern is emerging in 2009. So far (January to June) 78 people have been diagnosed with HIV and a further 19 identified, after having their first viral load testing in New Zealand. Just under half of the total number were MSM.[2]

There is concern that the increasing infection figures reflects complacency about the continuing risk of becoming infected with HIV. Preventing risky behaviour is the key to reducing HIV infection. As well as educating individuals there is a need to try to reduce the likelihood of acquiring HIV once a potential exposure has occurred. One possible approach is to offer post exposure prophylaxis with the aim of reducing the risk of acquiring the infection and preventing further transmission to others.

Managing non-occupational exposure incidents

Scenario: A patient presents to general practice on Monday, after engaging in risky behaviour over the weekend that puts him/her at risk of HIV infection. What do you do?

Clinical assessment

First establish what happened

Take a detailed history of the incident e.g. what sexual activity took place, whether it was consensual, details of injecting drug use.

It is preferable to use medical terminology when discussing sexual practices and sexual health, however it is important that the patient understands the terminology used. Conversely, the clinician should ask for clarification of any colloquial terminology they are unfamiliar with. A non-judgemental attitude will help to ensure that any risky behaviours are fully disclosed.

See BPJ 20 (April 2009), Let's talk about sex.

If possible, find out any details that are known about the person who is the source of potential HIV exposure. If the patient does not know the source's HIV status and contact details are available, establish whether the patient or practice will attempt contact.

Check clinical history

- Has the patient had any previous HIV tests?
- Does the patient have any current or previous STIs?
- Check hepatitis B and hepatitis C status – recent tests or immunisation
- Consider taking a psychiatric, drug and alcohol history

Assess risk of HIV transmission

The risk of HIV transmission is determined by:[3]

- Method of exposure
- Risk that the source is HIV positive
- Co-factors associated with increased risk of transmission from the source to the exposed person

Method of exposure. The risk of HIV transmission with sexual contact is difficult to quantify as there are many additional factors that influence risk such as concurrent STIs or other genital conditions, cervical or anal dysplasia and circumcision status.[4] The highest risk behaviour is receptive anal intercourse without a condom with a person known to be HIV positive (Table 1). Oral intercourse poses the lowest risk but HIV may very rarely be transmitted by this method of exposure, particularly when there is a breach in oral mucosal integrity.[4]

Source status. If possible, the source should be contacted to establish their HIV status. If they do not know their status, request that they be tested.

If the source is unable to be contacted or they refuse to disclose their status, the risk that they are HIV positive is based on seroprevalence (Table 2).

The United Nations AIDS organisation has information on worldwide prevalence of HIV and AIDS.

www.unaids.org/en/KnowledgeCentre/HIVData/Epidemiology/latestEpiData.asp

Table 1: Risk of HIV transmission with non-occupational exposure (Adapted from ASHM[3])

Type of exposure with HIV+ source	Estimated risk of HIV transmission per encounter
Receptive anal intercourse without a condom	1/120
Use of contaminated drug injecting equipment	1/150
Insertive anal intercourse without a condom	1/1000
Insertive or receptive vaginal intercourse without a condom	1/1000
Fellatio/cunnilingus	Not measurable
Bites, other trauma	Not measurable

Table 2: Estimated seroprevalence of HIV in New Zealand

Community group	HIV prevalence (estimated)[5]
MSM in Auckland	5 – 10%
MSM in other cities	2 – 5%
Injecting drug users in New Zealand	0.3 –1%
Commercial female sex workers in New Zealand	0.1 – 1%
Immigrants from developing countries:	
Africa	5 – 40%
Southeast Asia	1 – 5%
Heterosexual men and women in New Zealand	<0.1%

Co-factors that increase risk of transmission[3]

- High viral plasma load in source – a person is most infectious when they first contract the virus and when they have AIDS related symptoms
- STI in either the source or exposed person, especially genital ulcer disease and symptomatic gonococcal infections
- Breach in genital mucosal integrity e.g. trauma or genital tract infection
- Breach in oral mucosal integrity (in relation to oral sex)
- Exposed male is uncircumcised (inner mucosa of foreskin is more susceptible to infection and tears)

Management and referral

The role of the GP is to establish whether there has been significant risk of exposure to HIV. If this is the case, the patient should be referred immediately to an infectious diseases or sexual health physician with HIV experience. HIV testing and follow-up care takes place within this setting.

Non-occupational post exposure prophylaxis

Antiretroviral drugs may be prescribed for people who have had a significant risk of HIV exposure, to reduce the possibility of acquiring the infection. Non-occupational post exposure prophylaxis (NPEP) ideally should be started within a few hours of the exposure and no more than 72 hours later, as it is very unlikely to be effective after this time.

The use of NPEP is still controversial as there is currently limited evidence that it reduces the transmission of HIV and concern that it may encourage risky behaviour. It is also very costly ($1000 – $1500 per month) and adherence may be an issue due to the length of treatment required (28 days) and potentially serious adverse effects of the drugs.[6]

NPEP is currently not funded in New Zealand. PHARMAC has assessed an application for this indication and it is currently being considered alongside other funding priorities. Post exposure prophylaxis is funded by special authority for occupational exposure (e.g. needle stick injuries) and in some cases of sexual assault (usually covered by ACC).

If NPEP is being considered, the patient should be referred urgently to an infectious diseases consultant. PHARMAC has published a list of named specialists that have been approved to prescribe antiretrovirals in New Zealand.

See the Pharmaceutical Schedule Update, 1 January 2009, Page 4. Also available online at www.pharmac.govt.nz/2008/12/19/SU.pdf

Indications for NPEP

NPEP may be considered if the source is known to be HIV positive or the source status is unknown, but they are from a high-risk population, which includes:[4]

- Men who have sex with other men
- Men who have sex with both men and women
- Injecting drug users
- People from a country where HIV is prevalent
- Commercial sex workers
- People who have a sexual partner belonging to any of these groups

And there has been:

- Receptive or insertive anal or vaginal intercourse
- Shared drug injecting equipment

A clinician considering prescribing NPEP would usually calculate the risk of infection, based on the type of exposure and the risk of infection in the source (see Tables 1 and 2). In general, NPEP is considered if the transmission risk is greater than 1 in 15000.[3]

Examples of risk calculation–

1. Receptive anal intercourse with MSM source of unknown HIV status in Auckland:

   Unprotected receptive anal intercourse (1/120) x MSM in Auckland (10%) = 1/1200

2. Sharing of drug injecting equipment with an HIV positive source:

   Use of contaminated injecting equipment (1/150) x HIV positive source (100%) = 1/150

3. Insertive vaginal intercourse with a sex worker of unknown HIV status:

   Insertive unprotected vaginal intercourse (1/1000) x female sex worker in New Zealand (1%) = 1/100000

Antiretrovirals

For NPEP, a two or three drug regimen is prescribed for a course of 28 days.

The commonly recommended drug regimen for NPEP is zidovudine + lamivudine (Combivir) plus either efavirenz (Stocrin) or lopinavir + ritonavir (Kaletra). Clinicians may select a different drug combination, depending on specific patient factors related to the treatment history of the source patient (if known), or the risk of adverse effects.[4]

HIV testing

If the patient is being referred immediately to specialist care, HIV testing will not be required by the GP. Otherwise, an HIV test (HIV antibody) should be requested immediately, and testing will need to be repeated regularly (see follow up below) as it can take up to six months for infection to be detected.[7]

Additional investigation

Assess pregnancy risk and consider the emergency contraceptive pill if required.

Test for Hepatitis B, Hepatitis C and STIs (chlamydia, gonorrhoea, syphilis, depending on exposure history).

Follow up

- HIV repeat testing at four to six weeks, three months and six months after exposure[4]
- Provide support when discussing HIV test results
- STI repeat testing at four to six weeks and three months as appropriate
- Hepatitis C repeat testing (if indicated) at four to six weeks, three months and six months after exposure[4]
- Offer Hepatitis B vaccination if infection has been ruled out.
- Discuss precautions e.g. use condoms, avoid sharing blood-contaminated fomites (razors, toothbrushes) until final negative test at six months[4]
- Reinforce safer sex messages

If the patient is receiving NPEP, they will require ongoing assessment for adverse effects as well as LFT, CBC and electrolyte monitoring. Responsibility for this should be established with the prescribing physician.

Identifying acute HIV infection

Scenario: A patient presents to general practice with persistent flu-like symptoms. After taking a history it is discovered that the patient has recently engaged in risky sexual behaviour. Is this cause for concern?

Symptoms of acute HIV infection

When an HIV infected person first has an immune response to the virus infected cells, cytokines are released by the body's immune system, causing flu-like symptoms.[8] This is known as acute or primary HIV infection or seroconversion illness.[7] It usually occurs four to six weeks after initial infection. It is estimated that around 30 to 60% of people infected with HIV have these signs and symptoms.[7,8]

The symptoms of acute HIV infection are non-specific and can be easily missed, but history of risky behaviour is the key to diagnosis. Although there is some doubt that early treatment of HIV is beneficial, early diagnosis provides an opportunity to decrease the risk of transmission to other people. A person with HIV is very infectious during

this period. This may also be the only occasion when an HIV infected person visits their doctor, before advanced immunosuppression occurs many years later.[7]

Clinical assessment

Suspicion may be raised if a patient presents with flu-like symptoms (Table 3) out of flu season and the fever has lasted longer than three days.

Taking clinical judgement into consideration, patients presenting with flu-like symptoms should be asked about their history of risky sexual behaviour or injecting drug use.[8]

Table 3: Key signs and symptoms of acute HIV infection (adapted from Anderson, 2003[8])

General	Fever for three or more days (90% cases)
	Lethargy and malaise
	Myalgia and arthralagia
	Lymphadenopathy (40 – 70% cases)
CNS	Headache (especially retro-orbital, worsening on lateral eye movements)
	Signs of meningism with stiff neck on passive flexion
	Photophobia
Skin	Rash (particularly maculopapular on thorax and arms)
	Desquamation reactions of the hands and feet
Gastrointestinal	Diarrhoea
	Mouth ulcers
	Sore throat (sometimes candidal)

Managing acute HIV infection

HIV testing

If an acute HIV infection is suspected based on patient history, HIV tests should be requested. HIV antibodies can be negative for up to six months after the start of the illness, so retesting may be required.[8] Some literature recommends that negative results are repeated in seven days,[7] however modern tests are rarely falsely negative.

Referral

Anyone with a positive HIV test should be referred to an infectious disease or sexual health physician with HIV experience.

Treating symptoms

The physical symptoms can be treated symptomatically e.g. with analgesics. Hospital admission may be required if symptoms are severe or if rehydration is required, however most patients can be managed at home. Symptoms usually resolve spontaneously within two to three weeks.[7]

Psychological support is imperative. The patient may be referred to counselling or a peer support group. The New Zealand AIDS Foundation offers a network of patient support (see contact details at end of article).

HIV testing for at-risk people

Scenario: A patient who may be at risk of exposure to HIV presents to general practice for a routine visit. Should they be offered an HIV test?

There continues to be a stigma associated with HIV testing and many people are reluctant to get checked out. As the number of HIV cases has been increasing in New Zealand over the past ten years, it is important that people at risk are regularly tested and safer behaviours are discussed. HIV testing should be normalised and regarded as a standard aspect of healthcare for those for whom testing is relevant. Advances in treatments means that for many people, HIV can now be regarded as a long-term illness rather than the death sentence that it once was.

Who should be tested?

HIV testing should be offered and recommended to the following people:[7, 9]

- Sexual partners of people known to be HIV positive
- Men who have disclosed sexual activity with other men
- Female sexual contacts of men who have sex with other men
- Any other person who has a history of unprotected sexual exposure that could result in HIV transmission
- People from a country where there is a high prevalence of HIV
- All people who report sexual contact overseas or have sexual contact with a person from an area of high prevalence
- People seeking assessment for a STI
- Prospective partners in a new sexual relationship
- People with a history of injecting drug use that involves the sharing of needles, syringes, spoons, filters etc

These people should be tested annually or more often if they have a high frequency of risky behaviour.[7]

N.B. In addition to the scenarios based on risk behaviours above, HIV testing is also recommended for all pregnant women and all people recently diagnosed with tuberculosis (can be associated with HIV and AIDS).[9]

How should testing be approached?

Pre-test discussion

Testing should be voluntary and only undertaken with the patient's knowledge, consent and understanding.[9]

Make sure the patient understands why they are at risk of HIV and why it is recommended they get tested. If a patient refuses to be tested, explore the reasons for this choice and ensure that it is not due to incorrect beliefs about the virus or consequences of testing.[7]

Discuss and agree upon how the results will be given. Face-to-face provision of results is strongly encouraged. However recent practice at a number of sexual health clinics has been to discuss giving results by phone at the initial interview, with the proviso that should any results be of concern the patient will agree to come in the same day for face-to-face discussion.

Ensure that language and cultural barriers are addressed and that the patient understands what a positive or negative result will mean i.e. positive does not mean good news.[7]

If partners are tested together discuss whether they will disclose the results to each other and how the results will be acted upon.

Post-test discussion

If the result is positive, the patient should be referred to an infectious diseases physician or sexual health physician with HIV experience at the earliest possible time, preferably within 48 hours.[7]

Have an established recall process if a patient fails to attend an appointment to receive results, particularly if positive.

A negative result may be used as an opportunity to reinforce safer sex messages.

Resources

Infectious Disease or Sexual Health physicians at local hospitals are the most appropriate source of information for GPs.

The New Zealand AIDS Foundation provides patient information and support through a network of nationwide services:

Phone 0800 80 AIDS (2437)

www.nzaf.org.nz

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