

2006 United Kingdom National Guideline on the Sexual Health of People with HIV: Sexually Transmitted Infections

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Updates 2002 clinical standards for the screening and management of acquired syphilis in HIV-positive adults (US National Guideline Clearinghouse: NGC 2666 (www.guideline.gov and www.bashh.org/guidelines/ceguidelines)).

Introduction and Methodology

Scope and purpose

- To support people with Human Immunodeficiency Virus (HIV)¹ to enjoy good sexual health for their own personal well-being, as well as to help clinicians to provide treatment and care for people with HIV and to prevent onward transmission of the virus and sexual infections.
- Target population: adults infected with HIV.

This is the first of three planned guidelines to address the sexual health of people with who are HIV positive. The other two under consideration are reproductive health choices for women and sexual dysfunction in men with HIV. This guideline complements existing BASHH Clinical Effectiveness Group guidelines on individual sexually transmitted infections and screening and testing available at: www.bashh.org/guidelines/ceguidelines. There is also a separate BASHH guideline available on post-exposure prophylaxis after sexual exposure (PEPSE) [1].

Stakeholder involvement

The guideline has been produced by senior UK medical specialists from relevant disciplines with the input of HIV community organisations and people with HIV (PWHIV) from the outset. It

¹ Throughout this document HIV refers specifically to infection with Human Immunodeficiency Virus type 1 (HIV-1) unless stated otherwise.

takes on board concerns expressed from community groups that the sexual health needs of PWHIV have not been previously addressed in an appropriate manner. Successive drafts have been reviewed by HIV community organisations and individuals, and key professional organisations including members of BASHH and the British HIV Association (BHIVA).

Rigour of development

The guideline seeks to clarify and add to recommendations in existing Clinical Effectiveness Group (CEG) guidelines relevant to people with HIV, rather than repeat these at length. The process was commenced in 2003 by commissioning and reviewing seven key supporting papers from the HIV community, relevant BASHH special interest groups and the Faculty of Family Planning [2-8]. Contributions were also supported by Cochrane search strategies using multiple appropriate MeSH terms, searching both Medline and Web of Science, reviewing existing guidelines, conference abstracts and consulting with relevant communities, professional societies and individuals. The draft version of this guideline was put out to public consultation the BASHH website from November 2005 to February 2006 and was also circulated to key professional and non-statutory stakeholders. Comments received from a range of sources have been incorporated into this final document.

Management of Sexually Transmitted Infections in people with HIV

Many people living with HIV remain active sexually. It has been appreciated that provision of sexual health care for PWHIV has not been optimal [9,10]. Improved physical well-being following successful antiretroviral treatment has put sexual activity back on the agenda of PWHIV [11,12]. There is recognised synergy between HIV and STIs which may enhance transmission of both [13,14] and globally there is evidence that improved STI control reduces HIV spread [15], however there remains uncertainty regarding whether antiretroviral therapy can reduce sexual transmission of HIV [16]. Public health implications have been highlighted by several syphilis outbreaks which have disproportionately affected HIV-positive people, especially men who have sex with men [17,18]. Non disclosure of HIV-positive status to sexual partners has been reported as a frequent occurrence and is more common in casual encounters and non exclusive partnerships [19]. In a UK community study of gay men aware of their HIV-positive status, 24% reported unprotected anal intercourse (UAI) with more than one partner in the

previous year and 29% reported UAI with partners of unknown or discordant HIV status in the previous year [20]. 41% who reported being diagnosed with HIV over a year ago, also reported having an STI in the previous 12 months. Among men who have sex with men, there has been a rise in a vocal and politicised move towards a celebration of unprotected sex between men with HIV and the creation of positive only sex venues (Dr Paul Flowers, personal communication).

As time from first HIV diagnosis increases, PWHIV are more likely to be diagnosed with an STI [21]. Paradoxically, HIV prevention campaigns have previously focussed on those who are not known to be HIV infected, despite evidence that PWHIV may not adopt or maintain changes in sexual behaviour following initial diagnosis [22,23]. The public health implications of ongoing risky sexual behaviour has stimulated the incorporation of sexual health care and therefore HIV prevention into ongoing medical care provision [24].

Evidence on how best to address the sexual health of those with HIV has only recently begun to emerge, and there are few large randomised studies. Therefore some recommendations given here stem from expert opinion, consensus and current practice (evidence level IV), which may be modified over time as new data emerges. It is hoped that the extensive consultation process in producing this guideline with specific input from HIV community organisations and PWHIV has increased the value of the expert and consensus views. There is a notable lack of evidence about how to address the diversity that exists between PWHIV, particularly in a culturally sensitive and appropriate manner or how to take account of differing degrees of immunosuppression. **Much of the relevant evidence on the management of STIs was produced in the era prior to effective antiretroviral therapy and therefore assumes subsequent loss of immune function, which may no longer invariably be the case.**

Further high quality studies to provide evidence-based approaches to sexual health issues for HIV-positive people in the era of effective antiretroviral therapy are required.

Sexual risk assessment and screening

In the UK, the majority of PWHIV are aware of their status [25] and regularly attend clinical services, providing an important opportunity for intervention. Therefore all service providers

should consider how best to include regular sexual health reviews as an integral component of routine HIV care. Obstacles that may prevent open discussion of sexual matters are lack of training or discomfort of clinic staff, insufficient facilities or lack of time during consultations [26]. Factors which reduce the likelihood of a sexual health screen in an HIV setting include having the screen performed elsewhere without shared notes and the primary speciality of the HIV physician [27,28]. HIV-positive people with more advanced disease might be less likely to be offered a screen either because of pressure of time to deal with other medical issues or perception by the HIV physician that sexual activity is less likely [29]. It is recognised that social exclusion also adds to stigma experienced by people living with HIV [30]. Ensuring cultural sensitivity requires appropriate use of language with the trained interpreters (who are not known to the person). Taking a sexual history requires appropriate knowledge, skills and attitudes. Different HIV populations may also require specifically targeted health promotion materials.

All HIV service providers should be able to provide ready access to staff trained in taking a sexual history and who can make an appropriate sexual health assessment.

(Evidence level III, B).

Frequency of syphilis serology tests, sexual history taking and sexual health screening

It is important to distinguish between these 3 distinct activities which require progressively more input by clinicians. There is evidence showing that testing for sexually transmitted infections (STIs) as part of routine HIV out-patient care is feasible, cost effective and has the potential to reduce both STI and HIV transmission [28,29]. The introduction of 3 monthly syphilis serology to coincide with other routine HIV related blood tests has been shown to increase detection of asymptomatic syphilis, some at an early stage of infection, thereby reducing the risk of harm to the individual and transmission to others [29,31,32]. Incorporating syphilis serology as a routine HIV blood test is achievable with one London centre reporting an increase in syphilis testing rates from 3% to 90% [29]. In another centre outside London, routine syphilis screening detected a third of all syphilis cases which would otherwise have been missed [Dr M Fisher: personal communication]. With regard to history taking, it is appropriate that sexual health issues should be discussed with HIV-positive patients who attend for regular follow-up with sexual health tests offered if indicated, as many STIs are asymptomatic or may recur long periods after initial

infection. This guideline recommends that syphilis testing is incorporated as a routine HIV blood test and that a formal sexual health assessment and other appropriate tests should be offered at 6 monthly intervals, with a reduction in this interval in an outbreak situation or if indicated by local epidemiology [33]. This 6 month recommendation for discussion of sexual health issues reflects existing practice in many HIV services and is consistent the current UK genitourinary medicine specialty standards for consultants that a sexual history should be taken at 6 monthly intervals in all patients under regular follow-up. [34,35,36] It is recognised that time pressure exists in HIV consultations and it is therefore acceptable if the assessment is performed by suitably trained staff other than the primary HIV physician, including by sexual health advisers or nursing staff depending on local circumstances.

A sexual health assessment including a sexual history should be documented at first presentation and at 6 monthly intervals for all HIV-positive people receiving long-term care. If appropriate, a full sexual health screen (including annual cytology in women) should be offered (regardless of reported history) and the outcome documented in the HIV case notes (Evidence level IIb, B). Syphilis serology should be incorporated into the routine HIV blood set and checked at 3 monthly clinic visits to detect asymptomatic cases (Evidence level IIb, B).

Apart from the risk of recurrence of latent infection, there is evidence to support sexual health screens without consideration of reported risk; US data suggests that a screen should be performed at least annually regardless of whether a history of consistent condom use is given, as this has little effect on the STI prevalence in men who have sex with men [34]. STIs are often diagnosed at time of first HIV presentation therefore a sexual health assessment [31] should be offered as a priority at baseline within a month of initial HIV diagnosis. HIV is not uncommonly diagnosed at the time of a full sexual health screen, however if this is not the case, a full screen should be performed and documented within the next month. It is also relevant to take a sexual history and to offer STI testing to individuals that attend services for post exposure prophylaxis after sexual exposure (PEPSE) both at initial attendance and at follow-up. Routine syphilis serology as discussed will exclude infection at the upper limit of the 90 day incubation window for syphilis.

Sexual health care pathways

There are variations in the clinical practice of Genitourinary Medicine (GUM) clinics in the UK [37] including in arrangements for integrating sexual health care into HIV service provision [Dr A Butt, unpublished data]. This also applies to other settings outside sexual health, including dedicated HIV and Infectious Diseases (ID) units. Each provider should develop clear local policies or practice principles and critically ensure that these are actively communicated to staff (including administrative and clerical staff), PWHIV and community organisations. There are specific partner notification challenges when STIs are diagnosed as contact tracing needs to consider both the STI(s) as well as the possibility of HIV transmission. It is therefore important that care pathways include access to those with specific training in partner notification.

There are currently two main models of sexual health care pathways which might be considered; either providing full sexual health care in parallel at the HIV clinic itself (either immediately or at a dedicated visit) or facilitating onward referral to a separate sexual health service or primary care provider with suitable expertise. Both models have been assisted greatly by enhanced multidisciplinary roles especially sexual health adviser and nurse-led services. The latter model requires the establishment of reliable communication policies to ensure that clients have attended and for relevant results to be shared. There have also been advances in nucleic acid amplification technology which facilitate screening for infections such as Chlamydia on urine testing.

There should be documented local care pathways for diagnosis, treatment and partner work for sexually transmitted infections in people with HIV which can be actively communicated to all members of clinic staff and to HIV-positive people. (Evidence level IIb, B).

The remainder of this section on sexually transmitted infections considers those conditions with chronic sequelae where the management may differ significantly in HIV-infected people with significant immuno-suppression; syphilis, genital herpes and genital warts. The resurgence of lymphogranuloma venereum [38] highlights the importance of considering STIs in the differential diagnosis of symptoms in people with HIV. Although it is estimated that Chlamydia increases the risk of HIV transmission five-fold and gonorrhoea ten-fold [28], the management of

the following STIs do not differ significantly when compared with individuals not known to be infected with HIV:

- Gonorrhoea
- Non-gonococcal urethritis
- Genital tract *Chlamydia* infection
- Lymphogranuloma venereum (LGV)
- *Trichomonas vaginalis*
- Bacterial vaginosis

Full guidance on these and other STIs is available in the appropriate Clinical Effectiveness Group (CEG) guidelines at www.bashh.org/guidelines/ceguidelines. Also, consideration of scabies in PWHIV is provided in the relevant guideline.

The majority of sexually transmitted infections in people with HIV including gonorrhoea and Chlamydial infection can be managed the same as in people without HIV (Evidence level IIb, B). STIs should be considered in the differential diagnosis of presentations such as skin rash or proctitis in HIV+ people.

Management of syphilis in people with HIV

This section was issued in advance as a separate guideline in 2002 owing to the syphilis outbreaks which disproportionately affected PWHIV [2]. The guideline provided detailed information on the testing, diagnosis and management of syphilis in HIV-positive adults. It stressed the importance of increasing the frequency of sexual health assessments in an outbreak situation, including offering serological testing for syphilis every 3 months, to coincide with HIV follow-up attendances. As discussed previously, this recommendation still stands.

There have been developments regarding the adequate treatment of syphilis since the original guideline was issued. These have come about because of changes in the availability of intramuscular Procaine penicillin G preparations, perceived difficulties in ensuing daily administration of penicillin injections for up to 3 weeks and a shift in expert opinion in the UK on

the adequacy of Benzathine Penicillin G to treat syphilis. The updated CEG guidelines in the management of early and late syphilis are available at www.bashh.org/guidelines/ceguidelines [39,40]. Dissemination of the original guideline highlighted existing areas where there was lack of consensus and contributed to the debate on how syphilis was best treated in those who are HIV-positive.

Finally, there has been extensive debate questioning the routine administration of intramuscular Procaine penicillin G for 17-21 days for all PWHIV regardless of the degree of immune suppression. HIV community organisations have highlighted that this approach has been perceived as a punitive measure to dissuade HIV-positive people with syphilis from engaging in future risky practices [3]. An approach which is felt by PWHIV to be authoritarian is unlikely to be successful if people are dissuaded from completing treatment and/or presenting for future sexual health screening. The pivotal trial from the US of Benzathine Penicillin G therapy in HIV and early syphilis co-infected individuals demonstrated a serological relapse rate of 18% at six months, even if the Benzathine Penicillin G was enhanced with amoxycillin plus probenecid [41]. As stated in the original 2002 CEG guidelines, Benzathine Penicillin G may be used in early syphilis, providing that adequate follow-up can be maintained to detect relapses. In line with CDC guidance from the US [42], this is now widespread practice in the UK which helps address some of the concerns listed above.

Primary or secondary syphilis can be treated with 2 doses of intramuscular Benzathine Penicillin G one week apart in HIV-positive people who are not profoundly immunosuppressed and in whom adequate follow-up can be maintained to detect relapses. (Evidence level Ib, A).

Use of an individual's CD4 cell count to determine what syphilis treatment regimen to use is unlikely to be a useful strategy as syphilis itself reduces the CD4 cell count and increases plasma HIV viral load, particularly in those with secondary syphilis and not receiving antiretrovirals [43]. In the absence of CD4 cell cut off data in the context of syphilis, profound immunosuppression can pragmatically be considered to be a state when PWHIV are at significant clinical risk of developing opportunistic infection. If this is the case, intramuscular Procaine penicillin G for 17-21 days may be a preferred option in discussion with the patient. Data remains

lacking on the adequacy of intramuscular Benzathine Penicillin G in HIV-positive individuals with late syphilis [2], and therefore the sequelae of complications, the arrangements for follow-up and the degree of immune suppression are important factors in determining treatment choice, which need to be made after full and informed discussion with the HIV-positive person. There is no evidence comparing the effectiveness of oral therapies for syphilis between people with and without HIV, however these are not recommended as first line therapy owing to lack of CSF penetration. It is still open to debate whether lumbar puncture is required if an adequate Penicillin regimen is to be used, in the absence of any neurological signs or symptoms, although in the US, it has been reasonably suggested that lumbar puncture should be performed if there is a high VDRL titre over 1:16.

Syphilis treatment with parenteral regimens other than Penicillin were reviewed in the 2002 guideline [2]. There is still no definitive data on the efficacy of Ceftriaxone in people with HIV however this agent does have good CSF penetration. A small prospective study of 31 PWHIV with asymptomatic syphilis randomised patients to 15 days of daily IM Ceftriaxone or Procaine Penicillin (with oral Probenecid) [44]. No differences were found in serological response but there were high rates of serological non-response and relapse in both arms. Despite some positive reports from resource poor settings [45], macrolide drugs including Erythromycin and Azithromycin are NOT recommended for the syphilis treatment in people with HIV owing to inadequate CSF entry and emerging data from the international outbreaks demonstrating significant macrolide resistance [46].

Management of genital herpes in people with HIV

There is epidemiological synergy between herpes simplex virus (HSV) and HIV [47,48]. Herpes simplex infections activate HIV replication [49-53] and may facilitate onward HIV transmission to sexual partners [54-57]. The natural history of genital herpes in untreated PWHIV is significantly different from that in HIV-negative individuals. The most important risk factor for herpes reactivation is the degree of HIV associated immunosuppression [58,59]. Much of the evidence on herpes management in PWHIV comes from studies performed before the era of combination antiretroviral therapy; prospective studies performed early in the epidemic showed that clinical lesions may be persistent and progressive in those with HIV [60,61]. Systemic

antiviral drugs that have been shown to successfully treat genital herpes include aciclovir, valaciclovir, and famciclovir [62]. These are also the drugs most commonly employed in the treatment of genital herpes in PWHIV. Because resistance to these agents is more common in those with HIV co-infection, drugs such as foscarnet, trifluorothymidine, and cidofovir have also been used [63,64].

First episode genital herpes

In the absence of good immune function, primary genital herpes may not resolve spontaneously and may persist with progressive, severe, multifocal and coalescing mucocutaneous anogenital lesions. Moreover, serious and potentially life-threatening systemic complications, such as fulminant hepatitis, pneumonia, neurological disease and disseminated infection have been reported. Prompt initiation of therapy is recommended if herpes is suspected clinically. If new lesions are still forming after 3-5 days, a repeat viral culture with susceptibility testing should be performed and the dose of herpes medication increased [65]. Definitive studies in PWHIV are lacking.

First episode genital herpes in HIV-positive people should be treated with aciclovir 400 mg five times daily for 7-10 days. Alternative oral regimens include valaciclovir 1 gram twice daily for 10 days or famciclovir 250-750 mg x3/day for 10 days. (Evidence level IIb, B). In severe cases, initiating therapy with aciclovir 5-10 mg/kg body weight IV every 8 hours may be necessary. (Evidence level IV, C).

Recurrent Genital Herpes

Both clinical and subclinical reactivations of genital herpes are more frequent and may lead to persistent and progressive anogenital mucocutaneous lesions, especially in PWHIV with CD4 cell counts less than 50 per cubic millimetre. Optimising the control of HIV replication with combination antiretroviral therapy is of fundamental importance for the management of recurrent genital herpes. Thereafter, specific antiviral drugs can be used for either episodic or suppressive treatment.

Episodic herpes therapy

Aciclovir, famciclovir and valaciclovir can all be used as episodic herpes therapy in PWHIV (Evidence level Ib, A). In controlled trials in HSV and HIV co-infected persons, famciclovir 500 mg twice daily for 7 days was as effective as aciclovir 400 mg five times daily for 7 days [66] (Evidence level Ib, A).

Valaciclovir 1 g twice daily for 5 days was no less effective than aciclovir 200 mg five times daily for 5 days [67] (Evidence level Ib, A).

The US Centers for Disease Control and Prevention [68] recommend the following drug regimens for episodic herpes (Evidence level IV, C):

- Aciclovir 400 mg orally three times daily for 5-10 days
- Aciclovir 200 mg five times daily for 5-10 days
- Famciclovir 500 mg twice daily for 5-10 days
- Valaciclovir 1 g twice daily for 5-10 days

There is no clear evidence of superiority for any of the above regimens for episodic herpes.

Suppressive herpes therapy

The efficacy of suppressive antiviral therapy in PWHIV appears to be less than in HIV-negative people. It is recommended that intermittent cessation of suppressive antiviral therapy for genital herpes should occur, especially in those in whom there is also adequate inhibition of HIV replication and rising CD4 cell counts. In some PWHIV with less frequent outbreaks of genital herpes, episodic treatment may be substituted. In others, where the pre-treatment pattern of recurrences resumes, suppressive treatment may need to restart (Evidence level IV, C).

Drug resistant genital herpes

If lesions persist or recur in a PWHIV receiving herpes antiviral therapy, herpes resistance should be suspected and a viral isolate should be obtained for sensitivity testing [69-71]. (Evidence level Ib, A).

In prospective studies, aciclovir-resistant strains have been found in around 5-7% isolates from genital herpes lesions in HIV-infected persons. Aciclovir resistance is confirmed if isolates require aciclovir concentrations >1-3 mg/l for inhibition. Aciclovir resistance is most commonly related to a mutation in the gene encoding HSV thymidine kinase (TK), which is responsible for initial phosphorylation of aciclovir to its active form, resulting in TK that either has reduced affinity for aciclovir or is not synthesised. TK-deficient strains are of reduced pathogenicity in immunocompetent individuals but may cause serious local and systemic disease in severely immunocompromised individuals [72-74]. They appear less likely to be associated with the development of latency; hence, subsequent clinical reactivations of genital herpes are often caused by aciclovir-sensitive isolates. Partially resistant strains may sometimes be successfully treated with high dose intravenous aciclovir and other nucleoside analogues but fully aciclovir-resistant strains are resistant to valaciclovir and ganciclovir, and the majority are resistant to famciclovir [75]. TK-deficient strains are susceptible to foscarnet and cidofovir which do not depend upon TK but which inhibit viral DNA polymerase.

Both topical 1% foscarnet cream [74] and 1% cidofovir gel [77] have been shown to produce significant benefits in lesion healing, pain reduction and virological effect in drug resistant herpes in PWHIV. (Evidence level Ib, A).

There is limited evidence to support the use of topical trifluorothymidine alone or in combination with interferon-alpha [78,79]. (Evidence level IIb, B).

Systemic therapy with either foscarnet or cidofovir is generally preferred to treat drug resistant herpes in those with HIV. There is evidence for:

- Foscarnet 40 mg/kg IV daily [79-81] (Evidence level Ib, A)
- Cidofovir 5 mg/kg body weight weekly IV infusion for 2 weeks [82-84] (Evidence level IV)

Cidofovir is administered with oral probenecid and requires dilution with normal saline and adequate hydration to reduce the risk of nephrotoxicity. The recommended induction dose of cidofovir is 5 mg/kg body weight (given as an intravenous infusion over an hour) administered once weekly for two consecutive weeks. It may be effective in aciclovir-resistant infections that

are also resistant to foscarnet [85,86]. Systemic treatment should continue until clinical resolution is attained. Alternating courses of treatment with aciclovir and cidofovir for subsequent recurrences has been advocated as a strategy that may reduce the development of cidofovir-resistant strains. The efficacy, safety, and durability of the therapeutic response of these agents have yet to be determined in prospective controlled trials.

Management of genital human papilloma virus (HPV) infection in people with HIV

HIV infection and, in particular, increasing immunosuppression, increase the risk of cervical HPV infection and the development of cervical neoplasia. Abnormal cervical cytology is 4-5 times more common in HIV infected women compared to uninfected women and there is an increased likelihood of developing cervical intraepithelial neoplasia (CIN) [87,88]. Rates of CIN progression are higher and relapse after treatment greater in HIV infection [89]. Although cervical cancer has a more aggressive course in association with HIV infection [90] there are currently no data to suggest an increasing incidence of invasive cervical cancer in HIV infected women. There is also insufficient data currently available to make recommendations on the use of HPV vaccine in people with HIV.

HIV infected women should undergo annual cervical cytology (Evidence level IV, C).

Treatment of low grade CIN should be considered, particularly in women with low CD4 cell counts, in view of the risk of disease progression (Evidence level IV, C).

Ano-genital warts can be more difficult to treat in PWHIV, particularly in those with low CD4 cell counts. Ano-genital warts have been reported in 20-40% of HIV infected homosexual men and anal HPV DNA in the absence of clinically obvious lesions, in 50-90% [91-94]. Anal intraepithelial neoplasia (AIN) has been found in 26-40% of HIV infected homosexual men, the risk increasing with worsening immunosuppression [92-94]. Anogenital warts may be more extensive and often run a protracted course in HIV infected individuals [95]. Anal cytology in conjunction with colposcopic examination of the anal canal may prove useful for detecting anal intraepithelial neoplasia and could be considered in HIV infected homosexual men, women with CIN and all individuals with anal warts. However, the exact role of anal cytology as a method of

screening for AIN is yet to be determined, and evidence is still emerging. In the interim, proctoscopy should be performed in PWHIV with ano-genital warts after full explanation.

After full explanation, proctoscopy should be performed in people with HIV who are found to have ano-genital warts and any atypical lesions should be biopsied and sent for histological examination. The role of anal cytology as a screening method is not yet known. (Evidence level IV, C).

Clinical experience suggests that warts at penile and vulval sites may be more extensive and difficult to clear in HIV infected individuals, although published data are limited. Imiquimod acts as an immuno-potentiator at the epithelial site of application and is considered a useful method of treating anogenital warts in immunosuppressed patients [96,97]. However, studies comparing Imiquimod with podophyllotoxin and other treatment modalities have not yet been performed in immunocompromised patients.

Imiquimod 5% cream can be used as a topical treatment for genital warts and may prove more effective than other treatments, however comparative studies have not yet performed. Surgical methods of wart removal (e.g. diathermy, scissor excision, laser ablation) may be effectively used at an earlier stage of disease management compared to immunocompetent patients (Evidence level IV, C).

Issues other than sexually transmitted infections

Onward HIV transmission

In HIV sero-discordant partnerships, there is a risk of transmitting both STIs and HIV to the uninfected partner during sexual contact. In sero-concordant partnerships, there is a possibility that drug-resistant HIV and STIs may be transmitted.

It is not possible to precisely quantify the risk of HIV transmission in individual circumstances for different sexual acts as there are multiple confounding variables including HIV viral load of

the infected person, the presence of concomitant STIs, ulceration, menstruation or bleeding and possibly HIV clade type. Lower HIV plasma viral load has been shown to correlate with reduced seminal fluid viral load [98] however despite biological plausibility this has not been proven to reduce the risk of HIV transmission. It should be emphasised that an undetectable HIV plasma viral load does not mean the PWHIV is no longer able to transmit the virus. Conversely it is also known that urethritis increases seminal fluid HIV viral load [99,100].

An uninfected individual is thought to be most at risk of acquiring HIV by unprotected receptive anal sex (see table below). There has also been increased recognition that oral sex alone carries a risk of HIV transmission [101,102] as well as STIs such including syphilis (particularly in co-infected individuals).

Risk of HIV transmission following an exposure from a known PWHIV (adapted from the UK guideline on post-exposure prophylaxis after sexual exposure [1]):

Type of exposure	Estimated risk of HIV transmission per exposure
Blood transfusion (one unit)	90-100%
Receptive anal intercourse	0.1-3.0%
Receptive vaginal intercourse	0.1%-0.2%
Insertive vaginal intercourse	0.03%-0.09%
Insertive anal intercourse	0.06%
Receptive oral sex (fellatio)	0-0.04%
Needlestick injury	0.3% (95% CI 0.2%-0.5%)
Sharing injecting equipment	0.67%
Mucous membrane exposure	0.09% ((95% CI 0.006%-0.5%)

As in many countries, the prevalence of transmitted drug-resistant HIV the UK has been increasing. Although this varies between populations and is dependent on prior antiretroviral drug exposure, data from the UK HIV drug resistance database has shown a rise in the prevalence

of transmitted resistance from 10% in 1996-97 to 21% in 2004 [103]. There is therefore evidence to show that it is possible to transmit resistant HIV and therefore jeopardise future treatment options. A further concern is sero-concordant partnerships is that HIV super-infection with a more virulent strain of the virus may occur, however there are no significant studies. The final informed decision therefore remains to be made by PWHIV in light of emerging information. Service providers and HIV community organisations (notably the Terrence Higgins Trust in the UK) have an important role in supporting PWHIV to make informed choices.

Legal and ethical issues

In February 2001, a man was convicted in Scotland of recklessly causing injury after his ex-partner contracted HIV. This was followed by prosecutions under English law confirming in the UK that the principle that reckless transmission of HIV amounts to grievous bodily harm has been accepted. A comprehensive briefing paper on the details and implications UK convictions to October 2005 has been produced by Sigma Research [104]. It is not yet possible to include a definitive statement on the legal issues as this is a rapidly evolving area. For PWHIV, the implications appear to hinge on whether their behaviour is considered to be “reckless” in legal terms, for example failure to disclose HIV status and choosing not to use condoms. The parameters of what will, and will not, be prosecuted are still being debated and explored and thus, currently, there is much anxiety and uncertainty amongst PWHIV. In the UK, the Terrence Higgins Trust is advising PWHIV that if they know they have HIV, and fail to disclose, and choose not to use condoms, and pass the virus on, then they face a risk of complaint and subsequent prosecution. Complaints can only be successfully made by the person infected; no case has been taken where the infected party has not been the complainant. For the most up to date information, clinicians and patients in the UK can telephone THT Direct on 0845 12 21 200 or access the NAM website at www.aidsmap.com where information is available in English, Spanish, Portuguese and French.

The criminalisation of HIV transmission has implications for the clinical care of PWHIV. In the course of providing sexual health care as described in this guideline, healthcare workers may become aware of circumstances of non-disclosure of HIV status to partners where there is a significant risk of onward viral transmission as well of STIs. Healthcare workers have a duty to

maintain the confidentiality of patient information unless the patient has consented to disclosure or disclosure is necessary in the public interest. In the first instance, the clinician should advise the PWHIV how to protect sexual partners from infection. In exceptional circumstances, it may become necessary to consider disclosing information to a known sexual contact of a PWHIV where there is reason to think that the patient has not informed that person, and cannot be persuaded to do so. The clinician (usually their HIV consultant) should tell the patient before the disclosure, and be prepared to justify the decision to disclose if required. It is advisable that this decision be discussed with others in the team and fully documented. The PWHIV should be fully supported and given information on how to contact external agencies such as THT or NAM, ideally in writing.

Expert opinion [105] states that the risk of civil or criminal liability for clinicians regarding failure to prevent onward transmission is remote. The best safeguard currently is to follow General Medical Council (GMC) guidance on disclosure and confidentiality [106, 107] and to obtain further advice from the GMC and/or from a medical defence organisation. In summary, GMC guidance makes it clear that there is no duty as such to report ongoing risk to a third party, but that there is the ability to do so if the clinician, in consultation with both the patient and with other colleagues, feels that the ongoing risk to a named other party outweighs the risk to the existing patient relationship and to trust in confidentiality. In such cases, current guidance allows for disclosure to the party at risk after notification of the original patient. It is then up to that individual to decide whether to take the matter further in a legal sense. Where the other party has no capacity to consent (e.g. through learning disabilities or because they are under the age of consent), then the clinician can report the matter on their behalf. The British HIV Association are in the process of producing a briefing paper to cover these complex and rapidly evolving issues [108]. At time of completion of this guideline, this paper was not generally circulated but is expected to become available later in 2006.

Key auditable outcome measures

- A. Local outcome: Percentage of PWHIV with a documented sexual history in the HIV case notes within 4 weeks of initial HIV diagnosis. This can be in 4 weeks before or after first HIV-positive test (Audit target = 100%).
- B. Local outcome: Percentage of PWHIV with documented offer of sexual health screen in HIV case notes including syphilis serology within previous 6 months (Audit target = 100%).
- C. Local outcome: Percentage of HIV+ women with cytology result in HIV casenotes taken within previous year. Cytology can be performed at settings outside HIV clinic (Audit target = 95%).
- D. National or regional outcome: Percentage of service providers who can provide documentation of local care pathways for sexually transmitted infections in PWHIV (Audit target = 100%).

Benefits and cost of implementation

Not assessed to date.

Funding and editorial independence

No specific or external funding was sought or provided in the development of this guideline. The content was developed independently by members of the British Association for Sexual Health and HIV (BASHH) supported by others.

Mode of consensus development & expertise of authors

This guideline was produced by reaching agreement after assessing the evidence by four key stakeholder groups prior presentation to the CEG for wider dissemination. The process took place through extensive re-drafting 2003-2006 and remains ongoing.

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Declarations of interest

Dr Nandwani: 3M Healthcare, Boehringer Ingelheim, Gilead and Roche Pharmaceuticals. Non-pharmaceutical: Member of the Broadcasting Council for Scotland (non-remunerated public body). The Herpes Simplex Advisory Panel, the Human Papilloma Virus and the HIV Special Interest Groups are special interest groups of BASHH. They have received sponsorship by

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