

2016 United Kingdom national guideline on the sexual health care of men who have sex with men

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Abstract

This guideline is intended for use in UK Genitourinary medicine clinics and sexual health services but is likely to be of relevance in all sexual health settings, including general practice and Contraception and Sexual Health (CASH) services, where men who have sex with men (MSM) seek sexual health care or where addressing the sexual health needs of MSM may have public health benefits. For the purposes of this document, MSM includes all gay, bisexual and all other males who have sex with other males and both cis and trans men. This document does not provide guidance on the treatment of particular conditions where this is covered in other British Association for Sexual Health and HIV (BASHH) Guidelines but outlines best practice in multiple aspects of the sexual health care of MSM. Where prevention of sexually transmitted infections including HIV can be addressed as an integral part of clinical care, this is consistent with the concept of combination prevention and is included. The document is designed primarily to provide guidance on the direct clinical care of MSM but also makes reference to the design and delivery of services with the aim of supporting clinicians and commissioners in providing effective services.

Methodology: This document was produced in accordance with the guidance set out in the BASHH CEG's document 'Framework for guideline development and assessment' published in 2010 at <http://www.bashh.org/guidelines> and with reference to the Agree II instrument. Following the production of the updated framework in April 2015, the GRADE system for assessing evidence was adopted and the draft recommendations were regraded.

Search strategy (see also Appendix 1): Ovid Medline 1946 to December 2014, Medline daily update, Embase 1974 to December 2014, Pubmed NeLH Guidelines Database, Cochrane library from 2000 to December 2014. Search language English only. The search for Section 3 was conducted on PubMed to December 2014. Priority was given to peer-reviewed papers published in scientific journals, although for many issues evidence includes conference abstracts listed on the Embase database. In addition, for 'Identification of problematic recreational drug and alcohol use' section and 'Sexual problems and dysfunctions in MSM' section, searches included PsycINFO.

Methods: Article titles and abstracts were reviewed and if relevant the full text article was obtained. Priority was given to randomised controlled trial and systematic review evidence, and recommendations made and graded on the basis of best available evidence.

Piloting and feedback: The first draft of the guideline was circulated to the writing group and to a small group of relevant experts, third sector partners and patient representatives who were invited to comment on the whole document and specifically on particular sections. The revised draft was reviewed by the CEG and then reviewed by the BASHH patient/public panel and posted on the BASHH website for public consultation. The final draft was piloted before publication.

Guideline update: The guidelines will be reviewed and revised in five years' time, 2022.

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Design and delivery of sexual health services for men who have sex with men (MSM)

Access to sexual health care

Addressing the needs of subgroups of MSM. The high and rising incidence of sexually transmitted infection (STIs)¹ and HIV² observed in MSM in the UK are a significant public health priority and mean that in any geographical area a range of sexual health services is required. The needs of younger men, men from ethnic minorities, migrants, trans men and men who do not identify as gay or bisexual may not be met through services in Level 3 genitourinary medicine (GUM) clinics alone. Sexual dyad and network determinants and community and structural barriers³ may mean that some groups of men experience higher rates of HIV despite evidence of lower rates of direct behavioural risk factors. A range of structural and social disadvantages (termed 'syndemics')^{3,4} including depression, substance use, violence, sexual stigma and homelessness show a clear dose-response relationship with risk of unprotected anal intercourse (UAI) and HIV infection in MSM.^{5,6} There is limited evidence that such syndemics are associated with late HIV diagnosis in MSM in the UK.⁷ Several of the most effective prevention interventions⁸ are deliverable by clinical services and equity of access can be addressed. The interaction between mental health, drug and alcohol use and sexual risk is recognised in the recent Public Health England framework for health and well-being of MSM⁹ and associated action plan.¹⁰

Younger men across the world are disadvantaged in accessing services¹¹ and bear a disproportionate burden of STIs and HIV.^{12,13} Younger MSM may prefer to attend generic young people's sexual health services rather than MSM-specific services.^{7,14} Data from Scotland show that men under 25 are more likely to report UAI with two or more partners in the past year than men over 25 and data from Melbourne also suggest that teenage men are less likely to use condoms for receptive anal sex than older men.^{15,16} Young MSM are more likely to suffer life stressors, anxiety, depression, suicide attempts and post-traumatic stress disorder than their heterosexual peers.¹⁷

A UK cross-sectional study showed a higher HIV prevalence in black and lower prevalence in Asian MSM than in white British MSM¹⁸ and black and minority ethnic (BME) MSM attending a London clinic were more likely to be diagnosed with rectal gonorrhoea than a matched group of white British men.¹⁹ However, a large online survey showed no difference in reported rates of UAI ($p=0.8$) between any individual ethnic or migrant group.²⁰ It is not therefore clear whether black or minority ethnicity in the UK confers a greater risk of HIV acquisition in MSM. Phylogenetic analysis suggests that the proportion of HIV infections in UK attributable to transmission between men may be underestimated: 1–11% of samples examined, recorded as heterosexual, were actually from within an MSM cluster. This proportion was higher for Black African men in whom the proportion was 1–21%.²¹

Recommendations

- Addressing the sexual health needs of MSM in any geographical area requires a range of inclusive specialist services. These may include specialist MSM-identified clinics, outreach services and clinics attached to HIV services (1C)
- In order to address the needs of younger men, ethnic minority men, men affected by social deprivation and men who do not identify as gay or bisexual; generic sexual health services including Youth Services, Contraception and Sexual Health (CASH) and General Practice services, even if not explicitly identified as services for MSM, must be fully inclusive (1C)
- Younger men (under 25 years) are more likely to need intensive risk reduction interventions (1B)
- Black African men may be less likely to disclose sex with other men and opportunities for disclosure should be maximised (2C)

Service levels and settings. There are no studies comparing the effectiveness of different service models in detecting STIs in MSM, but there is evidence relating to models of HIV testing.²² Clinical services that are identified as MSM clinics can significantly increase MSM attendances in established GUM and sexual

health services^{23,24} but are the preferred option for only a minority of men.²⁵ Other services including CASH and GP services may be more acceptable, particularly to younger men and BME men.²⁶ In a UK survey of HIV-positive men, 9.4% reported using STI services remote from HIV care providers without disclosing HIV status.²⁷ A majority of MSM surveyed were happy to discuss sexual health with general practitioners but many had not been asked about sexual orientation and were less likely to disclose sexual orientation to a health care worker than family, friends or colleagues.²⁸ Young USA MSM were significantly ($P < 0.001$) more likely to disclose sexual orientation to a female health care provider than a male one.²⁹ In the USA non-disclosure of sex with other men is associated with being young, being black and having a low income.³⁰ Phylogenetic data suggest that this issue may also apply to Black African men in the UK.²¹ Many non-GUM sexual health services in the UK do not currently offer the full range of services to meet the needs of MSM³¹ and HIV/STI risk assessment and offer of HIV testing were among the poorest areas of performance in a UK national audit of Level 2 and 3 services.³²

Recommendations

- All sexual health services in a geographical area, including those offered by GPs, CASH and Young Peoples services, should offer a basic level of STI and HIV testing services for MSM (1C)
- Specialist MSM clinics can be used to increase MSM attendances in established services (2C)
- All health services should establish clients' sexual orientation and partner gender, using established (e.g. census) methodology at registration or during all routine consultations, in order to ensure that health needs are appropriately addressed (2D)

Service design and outreach services. Express-style services are acceptable to MSM³³ and opt-out self-screening has high acceptability in HIV clinics³⁴ but it is not clear what proportion of MSM attending services are suitable for self-screening services³⁵ and the approach has been questioned. Anogenital examination in asymptomatic clients including MSM yields few new STI diagnoses in retrospective studies.^{36,37} Many services across the UK offer services including partial or complete STI screens, HIV testing and vaccination for hepatitis A and or B in outreach settings including public sex environments, saunas^{38,39} at one-off events such as Pride events,⁴⁰ or at home,⁴¹ with small but potentially important numbers of new infections detected in a variety of settings. There is evidence

from the US that providing testing in sex-on-premises venues does not adversely affect client numbers.⁴² Offering point-of-care-testing (POCT) for HIV alone results in low levels of referral to mainstream services for other tests and vaccination,⁴³ suggesting that the aim should be to offer comprehensive screening and vaccination where practicable.

Recommendations

- Routine STI screening need not include examination in asymptomatic MSM (2C)
- Outreach services should offer a comprehensive package of STI tests (2B)

History taking

The 2013 British Association for Sexual Health and HIV (BASHH) UK National Guideline on consultations requiring sexual history taking addresses the elements of sexual history taking required in all patients, including MSM.⁴⁴ The history should form a comprehensive and holistic risk assessment including factors known to be associated with risk of STI and HIV infection, including frequency and number of condomless anal sex partners, serosorting, seropositioning, negotiated safety and use and understanding of antiretroviral drugs (ARVs) as HIV treatment-as-prevention (TasP) or pre-exposure prophylaxis (PrEP) ('STI and HIV prevention for MSM in the clinic' section). Details of sexual activities conferring risk for enteric infections ('The management of MSM with symptoms of sexually transmissible enteritis and proctitis' section) and hepatitis A including oro-anal sex (rimming) and for hepatitis C (including fisting; 'Hepatitis A, B and C' section) should be included. Discussion of ways of meeting partners including the use of the internet/geospatial social networking applications (apps) ('Pseudoanonymous partners' section), sex-on-premises or cruising venues may be helpful in assessing and addressing risk. Routine assessment of alcohol intake and the use of recreational drugs during sex, including practices such as injecting and booty-bumping (taking recreational drugs per rectum) ('Identification of problematic recreational drug and alcohol use' section), problems with sexual dysfunction ('Diagnosis' section) and condom use and errors⁴⁵ should be included. History-based screening of exposed anatomical sites is significantly better than symptom-based screening in detecting chlamydial and gonococcal infections in MSM,⁴⁶ but there are no studies comparing history-based screening with routine sampling from throat, urethra and rectum in every case. However, the high proportion of

symptomless infections and infections in single sites ('Testing for asymptomatic STIs' section) suggests that routine sampling of all sites may be a more appropriate protocol. This can help to avoid a 'tick box' approach to listing anatomical sites of potential exposure disliked by some men¹⁴ and allow history taking to be holistic and focus on other aspects of health and risk behaviour. A comprehensive risk assessment can be used to guide testing, recommended recall periods ('Recall arrangements and frequency of routine STI and HIV testing' section) and the need for behaviour change interventions. In men with rectal symptoms, the presence of tenesmus and constipation is significantly associated with infection with lymphogranuloma venereum (LGV)⁴⁷ and further detail may be required in men suspected of having sexually transmitted enteric infections (STEIs). History taking in men with rectal symptoms is covered in 'Diagnosis: History and examination' section.

Recommendations

- History taking should include a holistic risk assessment to identify the factors known to be associated with risk of STI including HIV (see 'Recall arrangements and frequency of routine STI and HIV testing' section) (1C)
- Appropriate questioning for hepatitis C risk should be included in the sexual history of all MSM (2C)
- In symptomatic men, review should routinely include questions relating to perianal and rectal symptoms (1C)
- Questions on drug and alcohol use should be routine in all MSM consultations (1C)

Identification of problematic recreational drug and alcohol use

Alcohol use is more common among adult MSM⁴⁸ and in adolescent MSM^{49,50} than their heterosexual peers, although data from the third National Survey of Sexual Attitudes and Lifestyles showed higher rates of smoking and recreational drug use but not current binge alcohol use in a population sample of 190 MSM compared to 5069 men who have sex exclusively with women.⁵¹ Attendees at sexual health clinics as a whole have high rates of excessive alcohol use which is associated with STI diagnosis.⁵² Self-reported surveys of convenience samples have consistently found that use of recreational drugs in the LGBT population is significantly higher than among women who have sex with women or heterosexual adults.^{53,54} This pattern is also replicated in MSM attending sexual health

clinics.⁵⁵ A systematic review of 23 studies found only use of methamphetamine and binge alcohol consumption to be significantly associated with increased sexual risk.⁵⁶ Evidence in HIV-positive MSM also associates polydrug use, but particularly the use of crystal methamphetamine with high-risk sexual behaviour and incident STI.^{57,58} A review of 14 studies on the use of sildenafil found an independent association of sildenafil use in MSM with increased odds of serodiscordant UAI as well as increased risk of STI in MSM living with HIV.⁵⁹ Use of inhaled nitrites (poppers) in isolation, without the use of other drugs is common; men may not regard this as recreational drug use and specific questioning may be required.

In recent years it is more common for men to report the use of multiple substances,^{58,60} including established 'club drugs' and a range of novel psychoactive substances (NPSs) which continually emerge,⁶¹ and for which the effects and influence on sexual behaviour are less clearly understood. Clinicians' awareness of 'chemsex' (using typically crystal methamphetamine, mephedrone or GHB/GBL specifically to facilitate or enhance sex) among a minority of MSM, particularly in Central and South East London but also in other major cities, has increased dramatically over recent years. Qualitative and observational evidence suggests sex parties involving group sex and use of club drugs has contributed to the high rate of new HIV and hepatitis C infections, including in a subset of chemsex users, transmissions through intravenous use of crystal methamphetamine or mephedrone ('slamming') by inexperienced users or through deliberate sharing of blood injecting equipment.⁶² 'Club drug' use was associated with higher rates of self-reported UAI in a study of 246 MSM attending clinics in Brighton⁶³ and self-report of chemsex on routine enquiry was associated with a significantly higher risk of bacterial STI diagnosis ($p < 0.001$) and with rectal STI diagnosis ($p < 0.001$) in MSM attending two London clinics.⁶⁴ Chemsex has also been strongly associated with outbreaks of sexually transmitted *Shigella flexneri* 3a infection among MSM^{65,66} as well as with cases of rectal LGV infection in HIV-infected MSM.⁶⁷

Specialist services report an increase in the proportion of clients seeking help with problems related to crystal methamphetamine, mephedrone or GHB/GBL.⁶⁸ A qualitative study of MSM in Lambeth described MSM involved in chemsex using drugs solely in association with sex, often in clearly defined 'marathon sessions' of up to three days and associated with predetermined decisions to have UAI with men believed to be seroconcordant but also associated

with loss of control.⁶⁹ High levels of function in other aspects of life such as employment are often maintained and men neither self-identify as drug users nor fit a stereotype of 'drug user'. Routine enquiry regarding recreational drug use is indicated in all men disclosing other risk factors for STI and HIV acquisition and there may be benefit in routinely assessing MSM (e.g. using self-completed screening tools) for problematic alcohol and recreational drug use. Brief interventions for problem alcohol use have been found to be effective in a range of primary care settings⁷⁰ including nurse-delivered brief interventions in a sexual health clinic⁷¹ and are recommended in NICE guidance.⁷² However, a large randomised controlled trial (RCT) in emergency departments showed no effect⁷³ and a recent RCT of 802 attendees (including 93 MSM) attending sexual health clinics found no significant difference in alcohol intake or condomless sex after six months between a group universally screened for alcohol use and provided with brief advice by a trained clinician and (where indicated) referral to an alcohol health worker compared to a control group.⁷⁴ BASHH has provided guidance and recommendations on appropriate screening questions for recreational drug use.⁷⁵ Although the harms associated with increased sexual risk in MSM using recreational drugs are of importance to sexual health clinicians, the direct harms of use of 'chemsex' drugs, including the high risk of overdose and low threshold for dependence with GHB/GBL are likely to be an important and immediate risk to health. Sexual health services may offer the sole opportunity for early intervention in MSM prior to presentation to emergency services. The Novel Psychoactive Treatment UK Network (Neptune) has published detailed guidance on the clinical management of acute and chronic harms of club drugs and NPSs, with specific reference to GUM clinics⁶¹ and including detailed guidance on the structure and content of brief interventions in clinical settings.

Recommendations

- Binge drinking of alcohol, use of inhaled nitrites and methamphetamine should be employed as markers of increased STI risk in MSM (1A)
- The use of other recreational drugs including mephedrone, other NPSs and non-prescribed sildenafil are also likely to be reliable markers of increased STI risk in MSM (1C)
- Routine enquiry should cover the use of all drugs, including NPSs (2C)
- All individuals who report the use of any injectable drug should be asked if they are injecting and if so is equipment ever shared (1C)

STI and HIV testing in asymptomatic MSM

Testing for asymptomatic STIs

Introduction

The following recommendations relate to testing for STIs in asymptomatic MSM. For management of clinical syndromes, the appropriate BASHH guidance should be followed.

The range of tests provided. BASHH has produced Recommendations for Testing for Sexually Transmitted Infections in MSM in Level 3 services,⁷⁶ but all sexual health services should be able to meet the needs of MSM. All services offering STI testing should offer testing for MSM including NAAT testing for *Neisseria gonorrhoeae* (NG) and *Chlamydia trachomatis* (CT) from throat, urine and rectum, HIV, syphilis, hepatitis B and where indicated hepatitis C serology. National data from the Netherlands suggest that a majority of chlamydial and gonococcal infections in MSM would be missed if extragenital sites are not tested,⁷⁷ although there is no published cost-effectiveness data to compare this strategy with history-directed testing. Pooling of samples from pharynx, urine and rectum may be a means of reducing costs.⁷⁸ It is desirable that hepatitis B vaccination is offered in all settings but the advantages of expanding the availability of HIV and STI testing should not be lost if this is not practicable in outreach situations.

Recommendation

- All services offering STI testing should offer testing for MSM including NAAT testing for NG and CT from throat, urine and rectum, HIV, syphilis, hepatitis B and where indicated (see 'Hepatitis A, B and C' section) hepatitis C serology (1B)

Chlamydia and gonorrhoea. Chlamydia and gonorrhoea are among the most common STIs affecting MSM. Despite only 2.6% of the British male population reporting a same sex partner in last five years,¹ in 2015 MSM accounted for 70% (22,408/32,095) of gonorrhoea diagnoses (a 105% rise over 2012) and 21% (12,805/60,514) of chlamydia diagnoses among male attendees at GUM and integrated GUM/SRH clinic services in England.¹

Infection may be carried at genital and extra-genital sites in asymptomatic MSM. Extra-genital testing of the pharynx and rectum is likely to play an important role in the control of both infections. Prevalence of extra-genital infections is high in UK, European, American and Australasian cohorts of HIV-negative

and HIV-positive MSM.^{3–25} Whilst the risk of prevalent and incident Chlamydia and gonorrhoea infections is related to traditional markers of increased sexual risk and penetrative anal and oral sex, several non-penile intercourse practices such as rimming, fingering, fisting and sex toy use are also related to extra-genital infection.^{79–81} A substantial proportion of extra-genital infections (70–90% of rectal and 95–100% of pharyngeal) are asymptomatic.^{46,82,83} Many pharyngeal infections are restricted to the pharynx.^{46,84,85} Pharyngeal gonorrhoea has a high incidence:prevalence ratio, suggesting spontaneous resolution,^{86,87} in contrast to pharyngeal Chlamydia, where a high prevalence:incidence ratio supports longer-lived infection. Thus, pharyngeal Chlamydia may play an important role in onward transmission.⁸⁸ However, a recent longitudinal study did demonstrate spontaneous clearance of pharyngeal Chlamydia in 37% MSM after a median of ten days.⁸⁹

Infection of the urethra with Chlamydia and gonorrhoea is also common in MSM, and is associated with a history of penetrative oral and anal sex, but prevalence has been found at similar levels in men reporting only oro-insertive sex.⁹⁰ A recent retrospective Australian study suggested oral sex to be significantly associated with urethral gonorrhoea infection (and primary syphilis), but urethral Chlamydia was more strongly associated with anal sex.⁹¹ Both infections may be present in asymptomatic MSM, but in an Australian cohort of 4500 asymptomatic MSM, the prevalence of gonorrhoea in those without urethral symptoms (detected by NAAT) was only 0.04%.⁹²

Asymptomatic infection of the rectum with gonorrhoea and/or Chlamydia has been identified as a significant risk factor for HIV sero-conversion. This may be as a surrogate marker of sexual risk, or due to changes in local inflammation and immunity, enhancing susceptibility.^{93–96} Infection of the urethra (and possibly rectum) may increase likelihood of HIV transmission in HIV-positive MSM,⁹⁷ although interim data from the PARTNER study showed no transmissions from men with undetectable HIV viral loads, despite significant rates of incident bacterial STIs.⁹⁸ Higher rates of gonorrhoea and Chlamydia have been reported in HIV-positive MSM than in HIV-negative MSM.^{99–102} Thus, more frequent Chlamydia and gonorrhoea tests should be considered for sexually active HIV-positive MSM.

NAATs have been shown to be significantly more sensitive than culture in the detection of Chlamydia and gonorrhoea, particularly in extra-genital sites.^{103–108} Owing to cross-reactivity with non-gonorrhoea *Neisseria* species, all NAAT tests for gonorrhoea from all sites should be confirmed with supplementary tests to improve specificity.^{109–111} A positive predictive value (PPV) of at least 90% should be achieved in all

cases.^{112,113} Where possible, prior to treatment, all sites positive for gonorrhoea on NAAT should have a culture performed to monitor antimicrobial susceptibility.^{112,114} First-void urine is the specimen of choice for genital sampling for NAAT, but self-taken urethral meatus swabs have recently demonstrated equivalent sensitivity in the detection of both infections, and may be considered.^{115,116} There is evidence to suggest that self-collected pharyngeal and rectal swabs perform as well as clinician-taken swabs from both sites, although published studies are not powered to exclude a difference in performance. Self-taken swabs are highly acceptable to MSM.^{117–119}

Cost-effectiveness data are lacking for triple site testing for gonorrhoea and Chlamydia, but one modelling study examining the benefit of rectal screening on reducing HIV incidence alone in San Francisco has suggested that this a cost-saving intervention.¹²⁰

Recommendations

- Testing should be performed with NAAT tests, with supplementary molecular testing for gonorrhoea (1B)
- Detection of Chlamydia and gonorrhoea should be offered to all MSM, from all sites (urethra, pharynx and rectum) irrespective of HIV status or sexual history (2B)
- First-void urine or clinician/patient-collected meatal swabs are acceptable options in genital tract testing in asymptomatic MSM (2C)
- Extra-genital sites should be sampled with clinician-collected or self-collected swabs (2C)

LGV. The diagnosis and management of LGV is covered in a recent BASHH guideline.¹²¹ LGV, caused by the L serovars of CT, has been described in association with MSM in the US since the 1970s.¹²² Since 2003, LGV infection in MSM has re-emerged with outbreaks in Western Europe (including the UK), North America and Australia.^{123–127} The vast majority of cases identified have presented with a symptomatic procto-colitis, and typical cases have occurred in HIV-positive men practicing higher risk sex.^{128,129} There is a strong association between LGV infection and established or incident HIV infection and with incident hepatitis C infection.¹²⁵ Chemsex (specifically the use of GHB), condomless anal sex and fisting are associated with LGV infection.^{67,130,131} In the UK, the LGV outbreak started in 2003 and the prevalence of asymptomatic infections increased from 6% of serotypes in 2006 to 22% in 2012,^{132,133} meaning that LGV in the UK has now entered an endemic phase.¹³⁴

The extent to which LGV is present in asymptomatic MSM, and whether this contributes to sustained

cases in the UK, remains unclear. Some early European studies demonstrated a high prevalence of asymptomatic LGV infection in MSM.^{135,136} In contrast, the largest published case finding study in UK MSM to date found LGV positivity to be 0.9% in rectal samples overall, of whom only 5% were asymptomatic, and only 0.04% from the urethra.¹³⁷ Early US studies have also failed to detect LGV in asymptomatic cases.^{138,139} However, a more recent case finding study in the UK identified 69 (9%) LGV and 721 (91%) non-LGV CT serovars from 713 men. In those with LGV for whom data were available 15/55 (27%) overall were asymptomatic.¹⁴⁰

These observed differences may be due to methodological differences between studies, due to changes in LGV epidemiology, or secondary to changes in detection with more frequent extra-genital sampling in routine care. LGV testing should be performed in all MSM with proctitis, regardless of HIV status and in HIV-positive MSM with CT at any site whether symptomatic or asymptomatic.¹⁴¹

Recommendation

- Routine LGV typing of symptomatic and asymptomatic Chlamydia infection at any site is recommended in HIV-positive but not in HIV-negative MSM (2C)

Mycoplasma genitalium (MG). A UK GUM clinic study demonstrated the prevalence of MG infection at the urethra and rectum in MSM to be similar to that of Chlamydia and gonorrhoea (2–6%), and in HIV-positive MSM to be substantially higher (21%).¹⁴² US authors detected 27 (5.4%) positive rectal specimens for MG in 500 MSM, and again there was a strong association with known HIV infection.¹⁴³ Other studies have demonstrated much lower prevalence figures (<2%), usually independent of risk factors.^{144,145} Pharyngeal infection has not been described.¹⁴⁵

MG is well described as a cause of non-gonococcal urethritis (NGU).¹⁴⁴ However, MSM with NGU have a lower prevalence of MG than heterosexual men, possibly because of a greater number of possible aetiologies in the former.¹⁴⁶ In the UK MG study, urethral MG infection was strongly associated with dysuria and nearly all men with MG in the urethra were symptomatic.¹⁴² Conversely, rectal infection was largely asymptomatic, a finding reported in other studies, where no association with procto-colitis has been demonstrated.^{143,145} Urethral-to-anal transmission has been described in MSM couples^{147,148} and the asymptomatic nature of rectal infection may provide a reservoir.

A systematic review and meta-analysis has demonstrated an association of MG with HIV infection, although only two of 19 studies included MSM. However, few studies were prospective and thus the nature of the association and the direction of any putative causation remain unclear.¹⁴⁸ It may be that MG infection increases susceptibility to HIV infection, or may be more prevalent as it is a surrogate marker of sexual risk.

Recommendation

- As most urethral MG is symptomatic, and most rectal MG infection asymptomatic and of uncertain consequence, routine testing of asymptomatic MSM for MG infection is currently not recommended in the UK (2C)

Herpes simplex virus (HSV). The seroprevalence of infection with HSV types 1 and 2 is high in HIV-negative MSM and higher still in HIV-positive MSM.^{149,150} A bidirectional transmission synergy exists between HSV-2 and HIV infection. A meta-analysis of 19 prospective studies demonstrated prevalent HSV-2 seropositivity to be a statistically significant risk factor for HIV acquisition among MSM.¹⁵¹ However, suppression of HSV-2 viral replication with aciclovir in two RCTs has not demonstrated a reduction in the risk of incident HIV acquisition and transmission, possibly because suppression is incomplete with current antivirals.^{152,153} Studies with higher dose antivirals are ongoing. The effect of prevalent HSV-1 infection remains unclear.

Type specific serology can be used to detect prevalent HSV infection in asymptomatic MSM. Western blot testing is not commercially available, but several commercial assays are available which show high sensitivity and specificity in sexually active adults,¹⁵⁴ but PPV can still be diminished when used as a screening tool.¹⁵⁵ Pending further studies and the availability of future prevention strategies such as vaccines, the utility, cost-effectiveness and acceptability of routine screening for asymptomatic HSV infection in MSM attending GUM clinics remain to be determined.

Recommendation

- It is not recommended that routine HSV serology be offered to asymptomatic MSM (2C)

Hepatitis A, B and C. For full details, please see the BASHH National Guideline on the Management of the Viral Hepatitides A, B and C, 2015¹⁵⁶ and the BHIVA Immunisation Guidelines 2015.¹⁵⁷ The rationale for routine testing in asymptomatic MSM is discussed briefly below.

Hepatitis A

Evidence suggests MSM are not at greater risk for hepatitis A infection, and therefore routine screening or testing for susceptibility (with a view to vaccination) is not recommended.^{158,159} However, several outbreaks amongst MSM in metropolitan areas have been recorded, including an outbreak in England and Northern Ireland in 2016–2017.¹⁶⁰ Vaccination should be offered during such times to at-risk MSM attendees including those with multiple partners and those attending public sex venues.^{161,162} Testing for prior exposure before vaccination has been shown to be cost effective.¹⁶³

People who inject drugs and those living with HIV, hepatitis B and hepatitis C should be vaccinated in sexual health settings.

Hepatitis B

Incidence of acute hepatitis B in the UK remains low,¹⁶⁴ but MSM represent a risk group and routine testing and vaccination is recommended for those at elevated risk, comprising all MSM, male and female sex workers, and people who inject drugs.¹⁶⁵

Unless already known to be hepatitis B immune or chronically infected, asymptomatic MSM should be tested for previous hepatitis B exposure and vaccination initiated at first presentation. If testing identifies susceptible individuals, the vaccination course should be continued. Chronically-infected individuals should be evaluated and referred to specialist care.

Hepatitis C

Parenteral spread accounts for the majority of prevalent cases of hepatitis C virus (HCV) in the UK.¹⁶⁶ There has been a steadily rising incidence of acute HCV in MSM in England since 2000, largely associated with HIV infection.¹⁶⁶ Associated factors include the presence of other STIs (particularly syphilis and LGV), traumatic anal sex, fisting, shared sex toys, group sex, serosorting and concomitant use of recreational drugs (including injected recreational drugs such as crystal methamphetamine in 'chem-sex' party settings).^{167,168} Whilst permucosal transmission does account for acquisition in HIV-positive men, data are lacking to support significant permucosal transmission in HIV-negative MSM.^{169,170} A prospective US cohort study demonstrated an association of incident HCV with higher numbers of receptive UAI partners, as well as injecting drug use and HIV-positive status. HCV incidence was 0.5 per 1000 PY in HIV-negative MSM compared to 4.2 per 1000 PY in HIV-positive MSM.¹⁷¹ In a systematic review of 38 cross-sectional studies, the pooled HCV prevalence was found to be significantly higher in HIV-positive men (8.3%, 95% confidence interval [CI]: 6.7–9.9) than in HIV-negative men (1.5%, 95%CI 0.8–2.1). Of the 16 longitudinal studies

included, the pooled HCV incidence was markedly higher in clinic-based (7.0 per 1000 person-years, 95%CI 4.6–9.5) than in community-based (1.4 per 1000 person-years, 95%CI 0.7–2.1) studies, and in HIV-positive men (6.4 per 1000 person-years, 95%CI 4.6–8.1) than in HIV-negative men (0.4 per 1000 person-years, 95%CI 0–0.9).¹⁷² Cross-sectional prevalence of HCV amongst non-injecting HIV-negative MSM in the UK is <1.0%.¹⁷³ However, MSM eligible for PrEP appear to be a population at significantly increased risk of HCV. A higher baseline prevalence of hepatitis C was observed in men eligible for PrEP at enrolment in the Amsterdam PrEP demonstration project; 18/375 HIV-negative participants (4.8%, 95% CI 2.9%–7.5%) were anti-HCV and/or HCV RNA positive at enrolment; 15/18 (83%) had detectable HCV RNA. All HCV-positive MSM starting PrEP in this study were part of MSM-specific HCV clusters containing MSM with and without HIV.¹⁷⁴ In the UK PROUD study, five of 160 (3.1%) men tested more than once for HCV had incident infection¹⁷⁵ and incident infections have been reported in routine clinical PrEP follow-up.¹⁷⁶ The most cost-effective strategy for HCV testing among asymptomatic HIV-positive MSM is likely to be annual HCV antibody tests and 3–6 monthly testing of liver function.¹⁷⁷

Recommendations

- Routine HCV testing should be offered to asymptomatic HIV-negative MSM in the presence of additional risk factors (e.g. sex associated with trauma or injury, history of recreational drug use or rectal LGV) (2B)
- Hepatitis C testing should be offered at least annually to men eligible for three-monthly HIV testing ('Recall arrangements and frequency of routine STI and HIV testing' section) and those taking or eligible for PrEP (2B)
- HIV-positive MSM should be routinely screened for HCV at least annually, and whenever clinically indicated (1C)

Syphilis. Rates of infectious syphilis in MSM in the UK have continued to climb, with a 95% increase in cases from 2012 to 2015.¹ MSM accounted for 84% (4,192/4,971) of syphilis diagnoses among male GUM clinic attendees in England in 2014.¹

A third of MSM syphilis cases are in HIV-infected men. Infectious syphilis is endemic in London, Brighton and Manchester,¹⁷⁸ but recent localised MSM outbreaks have been described, often linked to the use of geospatial social networking applications.¹⁷⁹ Increased testing in all sexually active MSM may help contain the current epidemic.¹⁸⁰

Recommendation

- All asymptomatic MSM should be tested for syphilis as part of sexual health screening (1B)

HIV testing

Introduction

In 2014, 3360 (55%) of the 6151 new diagnoses of HIV in the UK were made in MSM.² Rates of late HIV diagnosis (a CD4 cell count <350 within three months of diagnosis) have declined since 2005 and are lower in MSM than in other transmission groups, although the absolute number of late diagnoses in MSM has declined only slightly from 1131 in 2005 to 974 in 2014.¹⁸¹ There is a significant geographical variation in rates of late diagnosis, with higher rates outside London. There has been a parallel increase in the proportion of recent infections as defined by the Recent Infection Testing Algorithm.¹⁸² In 2014, 32% of MSM were diagnosed within six months of acquiring infection, compared with 27% in 2012 and 23% in 2011. This finding is consistent with a high incidence of infection and suggests that a high proportion of undiagnosed infections are recently acquired. The proportion of recent infections was highest in the 15–24-year-old age group at 38%,² consistent with the age-related vulnerabilities outlined in the ‘Addressing the needs of subgroups of MSM’ section.^{15,16,183} Mathematical modelling suggests that the majority of new HIV infections are likely to originate from men unaware of their status and that increased testing, linkage to care and early treatment could contribute to reduced HIV incidence.¹⁸⁴ Hence there is a continued focus on avoiding harm to the individual from late diagnosis of HIV by encouraging and enhancing access to initial tests, but increasing attention to repeat testing to facilitate early diagnosis of recent infection for the purposes of prevention. Revised national BHIVA¹⁸⁵ and international WHO guidance¹⁸⁶ recommends starting ART before the CD4 cell count drops below 500 cells/mm³ based on the START study findings,¹⁸⁷ so early diagnosis offers individual clinical benefit but also the possibility of TasP¹⁸⁸ and potentially the use of PrEP for serodiscordant regular partners.

In English GUM clinics in 2014, 87% of eligible MSM attendees were tested.² However, seven hundred MSM diagnosed HIV-positive in 2013 were diagnosed on their first HIV test at that clinic¹³ and 88% of all individuals diagnosed with HIV at English GUM clinics in 2014 had not had a previous test at the same clinic in the preceding 43–365 days.² UK data collected in bars and online in both London and Scotland (n=2409) show that only 26.7% of men reporting higher risk UAI reported having had four or more

tests in the previous two years.¹⁸⁹ Public Health England has published a systematic evidence summary on reducing late HIV diagnosis in all patients groups.¹⁹⁰ Improving rates of testing for those with indicator conditions, routine testing in general practice and in acute medical admissions are all likely to improve late diagnosis in MSM in areas with higher overall HIV prevalence. Opt-out testing is the appropriate approach for MSM in all settings²² and is recommended in existing UK HIV Testing Guidelines¹⁹¹ and NICE Guidance,¹⁹² both of which are currently being updated. In all cases, identifying MSM in general medical services and general practice is key to routine testing in this group (‘Service levels and settings’ section) and will be particularly important in areas with lower overall HIV prevalence where universal approaches are not adopted and where existing evidence shows rates of late diagnosis to be higher.² A systematic review found RCT evidence that POCT and counselling in community outreach settings (not including general practice) increased uptake of HIV testing in MSM.²² POCT in community settings identified HIV infection in MSM at a significantly earlier stage than in GUM clinics¹⁹³ although whether this is attributable to the test or the setting is not clear. Significant improvements in both the rate and frequency of testing in MSM outside the GUM clinic setting are still required.

Recommendations

- Opt-out testing for HIV infection should be offered to MSM in all settings (1B)
- Opportunities for routine HIV testing in MSM in settings other than GUM clinics should be expanded (1C)
- POCT for HIV in community settings should be available to MSM (1B)

Motivation for and barriers to HIV testing. NICE Guidance recommends that staff should ensure the provision of culturally competent care in HIV testing and that POCT should be routinely be offered alongside fourth generation laboratory tests.¹⁹² There is some evidence that MSM prefer less intrusive oral HIV testing to blood testing, but if a blood test is used then the waiting time for results is cited by users as being important.¹⁹⁴ A conjoint analysis of factors affecting willingness to test in the US found that cost, timeliness of result and location (home versus clinic) were highly significantly associated with willingness to test.¹⁹⁵ A semi-structured interview study in Boston, US, found that MSM prefer HIV testing in a venue that is friendly, culturally competent, gay-positive and allows for normalisation of STI/HIV testing.¹⁹⁶ A UK study

showed the importance of psychological barriers to testing. It showed no reduction in clinic-related barriers to testing over time and highlighted that fear of a positive test result remained the single most important barrier to HIV testing.¹⁹⁷

Attendance for HIV testing is most commonly prompted by symptoms attributed by men to HIV infection and perceived HIV risk exposure.^{196,198} Learning of HIV infection in a partner or friends and peer encouragement to test are also cited as reasons to attend whereas fear of a positive result and not self-assessing as 'at-risk' are given as the main reason for not or never testing.¹⁹⁹ Intensive peer counselling also increased the uptake of testing.²² Alternative community venues²⁰⁰ are used for on-site testing including gay saunas,²⁰¹ event-related outreach⁴⁰ and college-based testing.²⁰² Offering other tests (e.g. for STIs, alcohol or drug use) along with HIV testing may increase uptake in some groups of MSM.²⁰³

It is estimated that 33–67% of HIV infections in MSM are acquired from primary sexual partners²⁰⁴ and in the UK approximately 40% of MSM are in a regular relationship at the time of diagnosis.⁷ A high proportion of young MSM interviewed in Scotland aspired to sex within relationships²⁰⁵ and testing within relationships was routine for a minority of men in an online survey of US HIV-negative MSM, in which younger men and those with higher levels of trust in a partner were less likely to test.²⁰⁶ Couples' counselling and voluntary testing (CVCT) has been utilised in both clinical and non-clinical settings and found to be acceptable and effective on a small scale in the US. An online survey of 5980 MSM found that 81.5% were willing to take part in CVCT.²⁰⁷ Of 95 couples tested in a study in Atlanta, 17% were serodiscordant.²⁰⁸

Recommendations

- Offering HIV tests along with other tests, such as tests for STIs or drugs and alcohol services, may improve uptake among some groups of hard-to-reach men (2C)
- CVCT for MSM should be provided and promoted (2C)

Home sampling and testing. Home sampling for HIV has high levels of acceptability among UK MSM, with a high proportion of users reporting never having tested before.^{41,209,210} A possible advantage over home testing is the capacity for laboratory confirmation of an initial reactive result and linkage to care. Home sampling may be promoted and incorporate risk assessment tools via social networking or other websites.^{209,211} Instant result HIV home testing kits were legalised in the UK

in April 2014²¹² and the first commercially available kit gained a CE licence in April 2015.²¹³ Mixed methods research on self-testing from the UK showed that amongst MSM (n=999), awareness of the test was low (55%) and that willingness to use was high (89%).²¹⁴ In the US licensing studies of one kit (OraQuick/Orasure, Orasure Technologies, Bethlehem, Pennsylvania, US), a lower sensitivity was observed in studies involving unsupervised users than in studies of professionals or supervised users.²¹⁵ This suggests that interpretation or possibly acceptance of positive test results may occasionally be an issue. One mathematical modelling study using this sensitivity figure suggested that HIV prevalence in MSM would increase if home testing were to universally replace clinic-based testing.²¹⁶ However, as a supplementary strategy home testing addresses some of the recognised barriers to testing¹⁹⁵ and may be utilised by high risk, hard-to-reach groups including MSM who are married to women.²¹⁷ The use of voucher systems²¹⁸ or incentives²¹⁹ for home testing has been explored in the USA but the uptake appears to be relatively low. Guidance for users and service providers has been prepared by a national action group on self-testing for HIV.²²⁰

Recommendations

- Home sampling should be made available as an option for testing to all MSM (1C)
- MSM should be made aware of the availability of instant result home testing as an option for HIV testing (2C)
- Clinic services should have pathways in place for quick access and confirmatory testing for those reporting reactive results after home sampling or home testing for HIV (1D)

STI and HIV testing

Recall arrangements and frequency of routine STI and HIV testing. International guidance from the USA, Australia and the UK recommends annual STI testing for all sexually active MSM.²²¹ US cost-effectiveness analysis suggests that HIV diagnosis is cost-saving up to a threshold cost of \$22,909²²² and that testing three-monthly in high risk (annual incidence 1%) and nine-monthly in moderate risk (annual incidence 0.1%) individuals in a test-and-treat model is cost effective.²²³ A further modelling study found that increasing testing from annually to three-monthly in MSM is cost saving.²²⁴ An Australian modelling study suggested that increasing HIV testing in MSM from one to four times per year was estimated to have the potential to reduce HIV incidence in NSW by 13.8% over ten

years.²²⁵ Cost-effectiveness analysis has been performed for syphilis testing in MSM living with HIV, suggesting three-monthly screening is cost effective,²²⁶ but there is no comparable evidence with respect to other STIs in HIV-negative MSM. A retrospective analysis of the impact of strictly applying (Australian)²²¹ testing frequency guidelines to MSM attendees at a large UK GUM clinic was estimated to increase MSM testing visits by 30%.²²⁷ There is currently no evidence on which to base a different frequency of routine testing for other STIs than the frequency of HIV testing.

The presence of an acute STI, such as syphilis, Chlamydia and gonorrhoea, is associated with increased HIV acquisition,²²⁸ the strongest association being with rectal infections.^{94,95,229} HIV incidence varied by the rate of incident syphilis, when controlled for known predictors of HIV in the iPrEx study of HIV PrEP.²³⁰ In a study of 301 MSM diagnosed with a bacterial STI in a London clinic recalled at three months for retesting, of whom 206 attended²³¹; 29 MSM per 100 person-years of follow-up were diagnosed with a new STI and there were five new cases of HIV infection. Given the high rate of HIV transmissions occurring immediately after STI acquisition, and the fact that fourth generation tests for HIV will detect the great majority of HIV infections at four weeks after exposure,²³² a routine test at first follow-up appointment in cases of syphilis, gonorrhoea infection at any site and rectal or urethral chlamydial infection, as well as at three months post diagnosis, will maximise the opportunity for early HIV diagnosis.

Known markers of STI and HIV risk are inconsistently applied across UK clinics,²³³ suggesting a lack of consistent evidence and guidance. International guidance on testing frequency from Australia^{221,234} and the USA²³⁵ use a number of observational studies including a weighted risk assessment²³⁶ to guide recommendations on more frequent testing in men at 'high risk' who have greater partner numbers or a history of recreational drug use. BASHH Recommendations for Testing for Sexually Transmitted Infections in Men Who Have Sex with Men, 2014, derived from an expert consensus meeting in 2014⁷⁶ suggest a much broader interpretation of MSM at 'high risk' to include any unprotected sexual contact (oral, genital or anal) with a new partner. CDC data also showed that there was no difference in HIV incidence rates in 7271 men in 21 cities between MSM identified as high risk those who were not.²³⁷

Recommendations

- Annual STI testing including HIV testing should be recommended to all sexually active MSM (other

than those with one long-term mutually exclusive partner*) (1C)

- Three-monthly STI testing including HIV should be offered to all those with:
 - UAI with partner(s) of unknown or serodiscordant HIV status over last 12 months (1B)
 - >10 sexual partners, over last 12 months (1B)
 - Drug use (methamphetamine, inhaled nitrites) during sex over last six months (1B) also, although the evidence base is less robust:
 - Drug use (GBL, ketamine, other NPSs during sex over last six months) (1C)
 - Multiple or anonymous partners since last tested (1C) and possibly, consistent with existing BASHH guidance and US cost-effectiveness data:
 - Any unprotected sexual contact (oral, genital or anal) with a new partner since last tested (2D)
- A repeat HIV test (alone, or with repeat STI testing depending on further risk) should be offered at follow-up attendance after treatment for syphilis, gonorrhoea or rectal or urethral chlamydial infection (at a test of cure or first follow-up serology appointment) (1C) and also at three-monthly intervals for one year afterwards (2C)
- Testing should form part of an integrated risk reduction strategy aimed at reducing behavioural risk (1A)

*The definition of long-term exclusive partner used is for more than two years, but there is no evidence on which to derive a threshold for reduced risk.

Recall reminders. SMS text message reminders significantly ($p < 0.001$) increased re-attendance for testing by Australian MSM²³⁸ and increase the detection of gonorrhoea, Chlamydia and latent syphilis.²³⁹ Smaller UK studies suggest SMS text reminders may be more effective in MSM than other risk groups²⁴⁰ but effectiveness is highly dependent upon physician prompts²⁴¹ or preferably automated systems.

Recommendation

SMS text reminders should be used to increase re-attendance and STI detection rates in MSM (1C)

The management of MSM with symptoms of sexually transmissible enteritis and proctitis

Introduction

Rectal symptoms among MSM presenting to GUM clinics are common.^{242,243} Symptoms may be attributable to STIs acquired through anal sex (typically

associated with proctitis) and/or those acquired through a faecal–oral route, typically causing gastroenteritis. These infections are referred to in this guideline as STEIs.

Diagnoses of *S. flexneri* 3a, *S. flexneri* 2a and *Shigella sonnei* in men without a travel history have increased markedly²⁴⁴ while diagnoses in women have remained stable, strongly suggesting sexual transmission between MSM as the cause, and there has been a recent cluster of verotoxin-producing *Escherichia coli* 0117:H7 (VTEC) found among MSM.²⁴⁵ It is particularly important to identify enteric pathogens as the cause of symptoms in MSM, as STEIs will often require collaborative work between primary care and GUM/HIV clinicians, microbiologists and local health protection teams to ensure appropriate clinical and public health management is undertaken in a timely manner.

For opportunistic enteric infections in HIV-positive MSM, refer to British HIV Association and British Infection Association guidelines, 2011.²⁴⁶

Aetiology

STIs causing proctitis (Table 1) are transmitted rectally through receptive anal intercourse or fomites (fingers, sex toys or other objects carrying these pathogens) or through oro-anal intercourse.

Enteric pathogens, which are statutorily notifiable, tend to cause enterocolitis, although symptoms may overlap with those caused by STIs and there may be dual pathologies.^{247–250} Acquisition of enteric pathogens may be linked to travel or occur in outbreaks related to food in addition to person-to-person transmission (e.g. for norovirus). However, there is increasing evidence that a range of enteric infections may be transmitted during sex between men (Table 1). Faeco-

Table 1. Aetiological agents of sexually transmitted proctitis and enteric infections.²⁵¹

Causes of sexually transmitted proctitis	Causes of sexually transmitted enteric infections
<i>Neisseria gonorrhoeae</i>	<i>Shigella</i> spp.
<i>Chlamydia trachomatis</i>	VTEC
Genotypes D-K	<i>Campylobacter</i> spp.
Genotypes L _{1,3} (LGV)	<i>Salmonella</i> spp.
<i>Treponema pallidum</i>	<i>Entamoeba histolytica</i>
Herpes simplex virus	<i>Cryptosporidium</i> spp. ^a
	Cytomegalovirus ^a
	<i>Giardia duodenalis</i>
	<i>Microsporidium</i> spp. ^a
	Hepatitis A

LGV: lymphogranuloma venereum; VTEC: verotoxin-producing *Escherichia coli*.

^aOpportunistic infections in advanced HIV-positive immunosuppression.

oral transmission may be through direct oro-anal practices, indirectly through oral sex after anal sex or via fingers (either directly into mouth or via food) or fomites.

Infectious causes of gastrointestinal infections in MSM include^{252–254}:

- Viruses: Hepatitis A (see ‘Hepatitis A, B and C’ section), norovirus (in immunocompetent patients, adenovirus and rotavirus are implicated in childhood gastroenteritis only)
- Bacteria: *Campylobacter* spp., *E. coli*, *Salmonella* spp., *Shigella* spp., *Yersinia enterocolitica* (N.B. gastrointestinal infections not associated with transmission via sexual practices in the UK: *Vibrio cholerae*, *Clostridium difficile*, *Bacillus cereus*)
- Parasites: *Cryptosporidium* spp., *Entamoeba histolytica*, *Giardia lamblia/intestinalis*, *Blastocystis* spp., *Dientamoeba fragilis*, *Isospora* spp., *Microsporidium* spp.

A national outbreak of *S. flexneri* 3a in MSM started in 2009, and there is good evidence of sustained transmission of *S. flexneri* 2a and *S. sonnei* between MSM since 2010, suggesting separate introductions in the MSM population.²⁴⁴ Most MSM with *S. flexneri* 3a were white, UK born, HIV-positive and reported high numbers of casual and regular partners, and infection was associated with (i) low awareness about enteric infections, (ii) chemsex and (iii) meeting sex partners and locating sex parties through social and sexual networking applications.^{66,244–256} Co-infections with other STIs and with viral hepatitis and HIV are also common.^{66,248,250,255,257,258}

Reduced sensitivity to antimicrobial agents, particularly to fluoroquinolones and macrolides^{259–262} is a significant problem for some enteric pathogens and for STIs such as NG^{263–265} and MG.^{145,266,267} Appropriate selection of antibiotics (antibiotic stewardship) is therefore required, based wherever possible on antibiotic susceptibility profiles.

Clinical features

MSM reporting symptoms of enteric or rectal infections usually fit into one of two presentation types, although mixed symptoms are not uncommon (Figure 1).^{247,248,250,268–270}

Symptoms of proctitis include rectal pain, discharge or bleeding, with or without tenesmus. The aetiology is usually classic STI pathogens (CT including LGV serovars, NG, *T. pallidum* and HSV) transmitted via receptive anal sex.^{247,249,250,268,271} Treatment of these pathogens is covered in the appropriate BASHH

guideline. MG, though found in the rectum, is not thought to be associated with a proctitis syndrome.^{142,143,145,272}

Patients with symptoms of enteric infections including diarrhoea and/or dysentery and abdominal pain usually have colitis or enterocolitis that is caused by enteric pathogens, referred to in this guideline as STEIs. Mixed proctitis/STEI presentations and multiple infections are not uncommon.

Management

Proctitis. Symptoms of rectal pain, bleeding with fresh blood and discharge are indicative of involvement of the rectum and the anal canal. See Figure 2 for assessment.

Diagnosis: History and examination. The history should include a description of symptoms and duration.^{44,273,274} The sexual history should focus on the four-week period prior to onset of symptoms (to cover the look-back period for LGV and gonorrhoea).²⁷⁵

A thorough genito-anal examination is required^{128,271} including examination with a proctoscope if tolerated.^{276,277} In cases of severe proctitis, blind (i.e. without the use of the proctoscope to visualise the mucosa) anorectal swabs may be necessary.

Diagnosis: Investigations. A full sexual health screen should be offered^{271,278,279} ('The range of tests provided' section). Microscopy of a Gram-stained rectal smear should be performed and where possible culture for NG from all sites prior to treatment if it is to be given. Additional swabs for HSV PCR and *T. pallidum* PCR (where available) should be taken if ulcers are present.

A finding of $>5^{280}$ or $>10^{136}$ polymorphonuclear cells/high power field on microscopic examination of a Gram-stained rectal swab smear indicates proctitis.

Recommendations

- A full sexual health screen should be offered (1B)
- Rectal swabs should be sent for culture and sensitivities for NG if treatment is to be given at presentation (1B)

Further investigations and treatment. Management is summarised in Figure 3. CT or LGV as an aetiology must be considered in addition to other diagnoses indicated by examination findings (such as HSV or syphilis with ulcerative features).²⁷¹

Examination and findings of microscopic examination of Gram-stained smears from rectal swabs should guide therapeutic decisions and follow the relevant

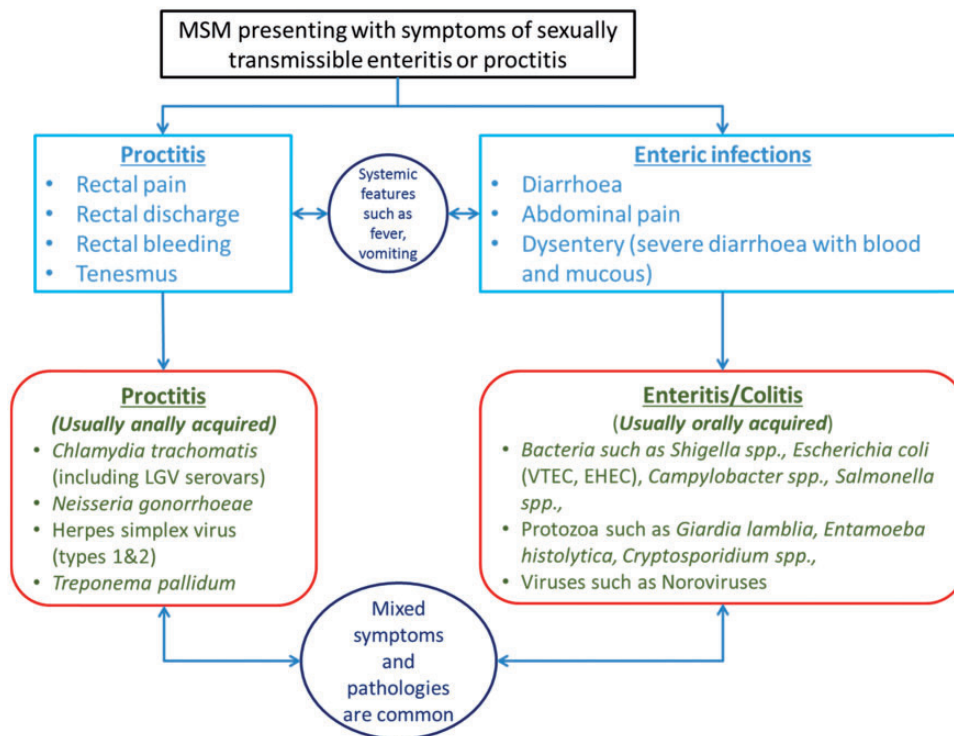


Figure 1. Classification of MSM presenting with symptoms of proctitis or STEI. EHEC: enterohaemorrhagic *Escherichia coli*; LGV: lymphogranuloma venereum; MSM: men who have sex with men; VTEC: verotoxin-producing *E. coli* O117:H7.

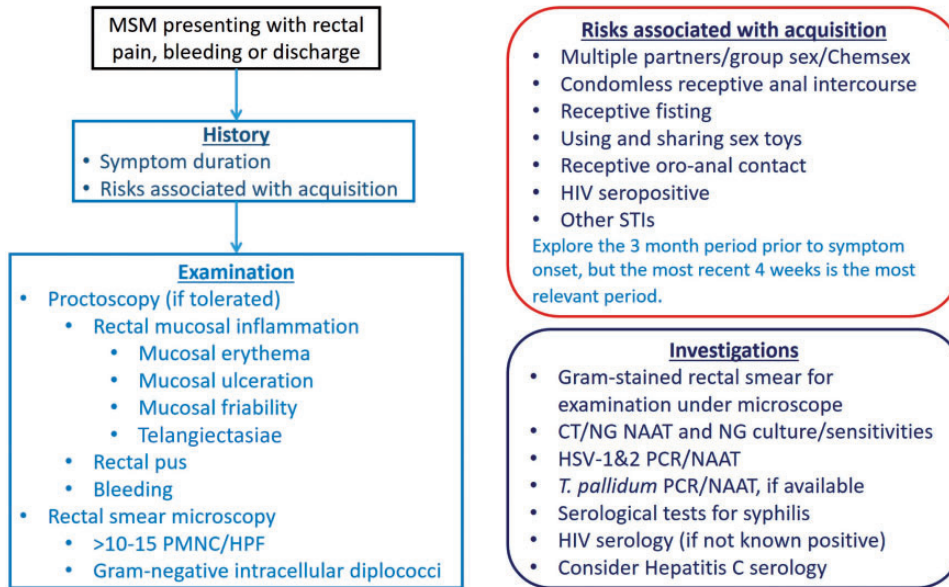


Figure 2. Assessment of MSM presenting with symptoms of proctitis. (Also assess for enteric infection; see ‘STEs’ section and Figure 4.) CT: *Chlamydia trachomatis*; HIV: human immunodeficiency virus; HPF: high-powered field; HSV-1&2: Herpes simplex virus-1&2; MSM: men who have sex with men; NAAT: Nucleic Acid Amplification Test; NG: *Neisseria gonorrhoeae*; PCR: polymerase chain reaction; PMNC: polymorphonuclear cells; STI: sexually transmitted infection.

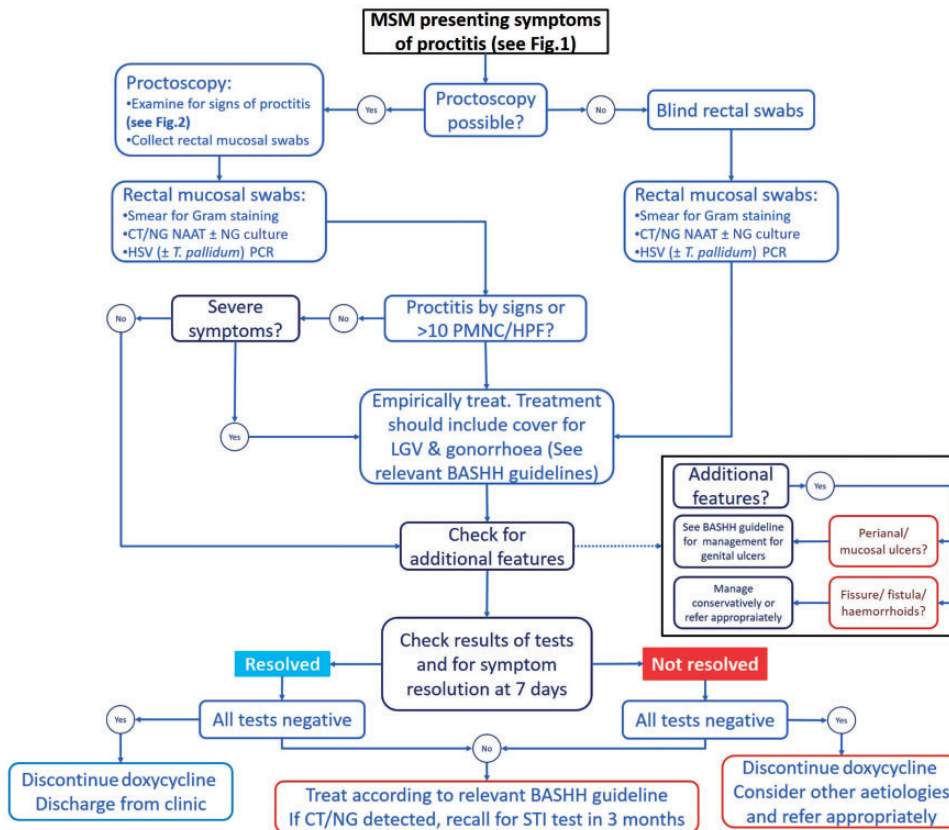


Figure 3. Management of MSM presenting with symptoms of proctitis.²⁷¹ BASHH: British Association for Sexual Health and HIV; CT: *Chlamydia trachomatis*; HPF: high-power field; HSV: Herpes simplex virus; LGV: lymphogranuloma venereum; MSM: men who have sex with men; NAAT: Nucleic Acid Amplification Test; NG: *Neisseria gonorrhoeae*; PCR: polymerase chain reaction; PMNC: polymorphonuclear cell.

specific infection guideline (accessed at: <https://www.bashh.org/guidelines>).

If CT is detected, testing for LGV-specific DNA should be done by sending the residual NAAT specimen or a fresh rectal swab to the local microbiology laboratory, where available or to Public Health England's Sexually Transmitted Bacteria Reference Unit in England and Wales or Health Protection Scotland's Scottish Bacterial Sexually Transmitted Infections Reference Laboratory in Scotland.¹⁴¹ Empirical treatment should cover LGV^{121,271} and gonorrhoea as the prevalence of NG amongst MSM is high and the sensitivity of microscopic examination of Gram-stained rectal swabs for gonorrhoea is low.²⁸¹ Patients with rectal STIs are at high risk for other STIs, including HIV and hepatitis C and so follow-up STI and HIV testing both at test of cure and at three months is recommended.²⁸²

Recommendations

- Rectal Chlamydia, if detected, should be typed for LGV serovars in HIV-positive and HIV-negative MSM with proctitis (1B)
- Examination and findings of microscopic examination of Gram-stained smears from rectal swabs should guide therapeutic decisions (1B)
- Empirical therapy, in symptomatic men with proctitis in whom the rectal chlamydial status is unknown, should include LGV (which also effectively treats syphilitic proctitis) and gonorrhoea treatment (1B)
- Offer hepatitis C testing to all HIV-positive MSM and HIV-negative MSM with risk factors at three months' follow-up (1D)

Contact tracing and treatment. Partner notification (PN) for STIs is covered in the BASHH statement on PN.²⁷⁵

Recommendation

- Active PN covering up to at least the four-week period prior to symptom onset should be attempted and documented (1B)

STEs. Enteric infections are characterised by sudden onset of diarrhoea, with or without vomiting and are usually transient disorders due to enteric infection with viruses, bacteria or protozoa, typically affecting the large bowel (the colon) and less commonly, the small bowel. Other symptoms include blood and/or mucous in the faeces (dysentery), and fever or malaise. The diagnosis is usually made on the basis of clinical symptoms and signs. Microbiological tests of faecal samples are necessary to determine the causative organism. Infectious bloody diarrhoea as a clinical syndrome is a notifiable infection and should be notified to the Local Authority Proper Officer ('Advice on preventing the non-sexual spread of infection'^{283,284} section).

Diagnosis: History and examination. Assessment is summarised in Figure 4.^{65,66,253,254,285,286} History should include questions on the severity of illness, medication and risk factors, including travel abroad and food history (Figure 5, Appendix 2). Sexual risks within the two weeks preceding onset of symptoms should be assessed including receptive oro-anal sexual contact (both direct as well as indirect, i.e. performing oral sex after anal penetration (of another partner)),

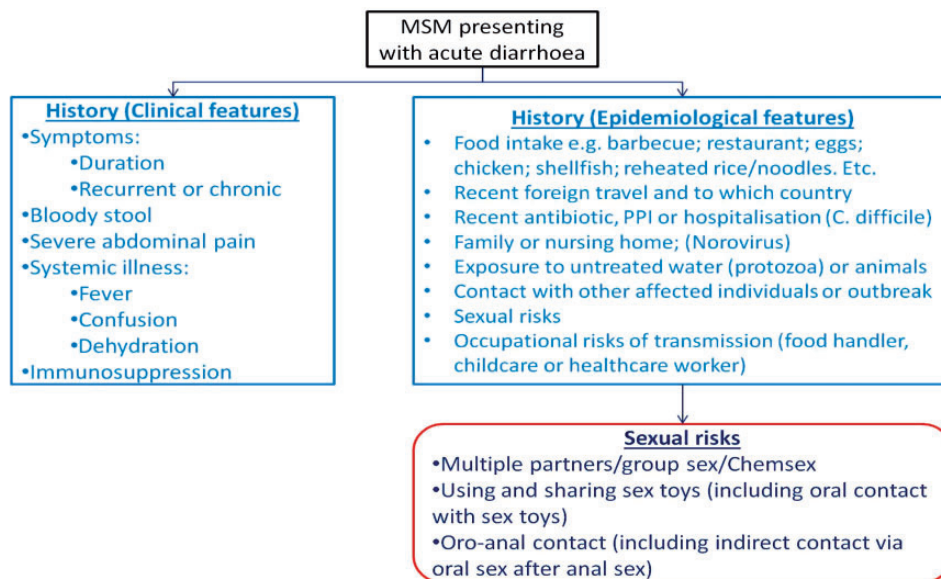


Figure 4. Summary of salient features of clinical history in assessing MSM with enteric infections. (Also assess for proctitis; see 'Proctitis' section and Figure 2.) MSM: men who have sex with men.

multiple sexual partners and participating in group sex, sexual activity involving recreational drug use (chemsex – ‘Identification of problematic recreational drug and alcohol use’ section) and sexual activities involving faeces (e.g. scat play).

Symptoms of diarrhoea may be mild and may not be elicited in the history without direct questioning if other symptoms of discomfort, pain or tenesmus predominate.

Symptoms of STEI tend to be acute. However, with parasitic infections such as giardiasis and amoebiasis, chronic symptoms are not uncommon. LGV may also present as a chronic enteritis with a presentation not unlike inflammatory bowel disease.

Examination should include assessment of the severity of infection, including the severity of dehydration (Appendix 2), particularly in patients who are unwell or frail (older age, advanced HIV infection or other comorbidities). The presence of blood/mucous in faeces, prolonged (more than seven days) diarrhoea and systemic features, such as fever (especially), weight loss and dehydration, would be considered indicative of severe infection and hospital admission should be considered.

Examination of the patient should include assessment for proctitis as described above (‘Diagnosis: History and examination’ section).

Recommendation

- History should cover assessment of duration and severity of symptoms, identify potential causes and risk factors for complications and public health risk (1B)

Diagnosis: Investigations. Investigations should include a full sexual health screen as described in ‘Diagnosis: Investigations’ section.

Microbiology examination of stool is recommended in all cases and is essential when the patient:

- needs antibiotics.
- is systemically unwell.
- needs hospital admission.
- has blood, mucous or pus in stool.
- has diarrhoea after foreign travel.
- is immunosuppressed.

Include examination for ova, cysts and parasites (up to three samples taken at three different occasions might be needed), culture with antibiotic susceptibility testing, and where available, molecular detection assays (such as PCR). It is important that the faecal samples are collected properly (as described in ‘Guidance on collecting a faecal specimen for microbiological examination’ section of Appendix 2) and for each investigation, a minimum of 1 ml of faeces is required.

Recommendations

- Assess for severity including evidence of dehydration (1A) and fever
- Consider referral to tertiary care or specialist inpatient units for severe infections (1A)
- Send faecal samples for microbiological examination (1A)
- Offer STI and HIV testing (1B)
- Assess for proctitis (1B)

Further investigations and treatment. The majority of patients with STEI have a brief self-limiting illness and can be managed conservatively.^{253,287–290}

Oral rehydration therapy, if required, consists of using oral rehydration salts taken after every loose stool passed for up to 48 h.^{253,289}

Antidiarrhoeal (or antimotility) drugs such as loperamide are contraindicated for the management of infectious diarrhoea.^{253,289,290}

The use of empirical antibiotic therapy, where the diarrhoea is mild and of unknown aetiology, is not recommended. Evidence suggests that they have minimal benefits, with high rates of side effects reported^{253,288,291} and their use promotes the development of resistant bacteria.^{260,291–293} Circulating *Shigella* spp. and other enteric infections are reported to have high prevalence of resistance to antibiotics, particularly macrolides and fluoroquinolones.^{259–262,292,294,295} However, empirical therapy guided by microbiology advice based upon most likely aetiology may be considered when:

- The patient is pyrexial (temperature $\geq 38^{\circ}\text{C}$)
- The stools are bloody
- Diarrhoea lasts more than seven days
- Co-morbidities (frailty, inflammatory bowel disease, immunocompromised state, e.g. advanced HIV infection, immunosuppressive agents, etc.) are present

Where a microbiological cause is known antibiotic therapy may be appropriate. The choice of agent is best guided by microbiology advice informed by either antibiotic susceptibility profile of an isolate or from local susceptibility data.

HIV-positive patients were reported to have more recurrent, persistent and invasive infections in the pre-HAART era. There are a few case reports of invasive shigellosis in MSM with well-controlled HIV infection. However, there are no data comparing clinical outcomes of STEI in well-controlled HIV-positive MSM and MSM without HIV.

Recommendations

- Advise on oral rehydration therapy (1A)
- Avoid antimotility agents if invasive disease or infectious agents are suspected (1A)
- Consider empirical antibiotic therapy only in severe disease or in the presence of complicating comorbidities (1A)
- Antibiotic therapy should be guided by local antimicrobial resistance patterns (1B)

Preventing the spread of infection

All patients with suspected or confirmed STEI should be provided with advice on the prevention of non-sexual and sexual transmission of infection. Clinical syndromes of infectious bloody diarrhoea, haemolytic uraemic syndrome and food poisoning, even of unproven aetiology, are statutorily notifiable ('Other public health actions' section).^{283,284}

*Advice on preventing the non-sexual spread of infection*²⁸⁵. Detailed advice should be provided on the non-sexual transmission of infection ('Advice on preventing spread of infection'²⁸⁵, section of Appendix 2).

Recommendations

- Advise on hygiene (1B)
- Advise to avoid return to work until 48 h after last episode of diarrhoea (1B)
- For patients who work as food handlers or with people vulnerable to infections, return to work should be guided by local public health authorities (statutory requirement, 'Other public health actions' section)

*Advice on sexual practices for preventing spread of infection*²⁹⁶.

- Wash hands, genitals and perianal skin before and after sexual activities such as intercourse, rimming, fingering or handling used condoms and sex toys. If possible, showering is advised as bacteria like *Shigella* may be present on other skin surfaces.
- Use condoms for anal sex and latex gloves for digital penetration or fisting. Dental dams or a condom cut into a square to make a barrier for rimming.
- Avoid sharing sex toys or douching equipment.
- Avoid recommencing sexual contact until seven days after the last episode of diarrhoea.

Recommendations

- Advise on hygiene practices before and after sexual contact (1B)
- Advise on barrier protection and refraining from sharing toys or personal hygiene devices (1B)

- Advise on abstinence from sexual contact for seven days after the last episode of diarrhoea (2D)

Other public health actions. Effective management of enteric pathogens requires notification to the Local Authority proper officers under the respective Health Protection (Notification) Regulations and Public Health Acts in each country.²⁸³ Lists of notifiable diseases and organisms and associated guidance on how to report in each country are available (see Health Protection (Notification) Regulations and Public Health Acts in each country). Clinical syndromes should be reported by the attending clinician who first saw the patient for the episode; laboratory diagnoses are, in addition, statutorily reported separately by laboratory personnel.

Local health protection teams and environmental health officers will often need to contact patients to undertake a questionnaire to ascertain the likely source of infection and linked cases. For patients diag-

Health Protection (Notification) Regulations and Public Health Acts in each country

1. England works to the Health Protection (Notification) Regulations 2010 (<http://www.legislation.gov.uk/ukxi/2010/659/contents/made>). The list of notifiable diseases and guidance on reporting in England can be accessed at: <https://www.gov.uk/guidance/notifiable-diseases-and-causative-organisms-how-to-report>
2. Wales works to The Health Protection (Notification) (Wales) Regulations 2010 <http://www.legislation.gov.uk/wsi/2010/1546/contents/made>. The list of notifiable diseases and guidance on reporting in Wales can be accessed at: <http://www.wales.nhs.uk/sites3/page.cfm?orgid=457&pid=48544>
3. Northern Ireland works to the Public Health Act (Northern Ireland) 1967 (<http://www.legislation.gov.uk/apni/1967/36/contents>). Northern Ireland uses the list of notifiable diseases as used in England (see 1. above)
4. Scotland works to the Public Health Scotland Act 2008. The full list of notifiable disease in Scotland can be accessed at: <http://www.legislation.gov.uk/asp/2008/5/schedule/1> and guidance on how to report in Scotland can be accessed at: <http://www.gov.scot/Topics/Health/Policy/Public-Health-Act/Implementation/Guidance/Guidance-Part2>

nosed with STEI it may be appropriate for the GUM clinic to assist in completing the questionnaire and obtaining this information, and collaborate closely with the local health protection teams.²⁸⁴

Recommendation

- The attending physician should report all cases, with contact details, of enteric infections, regardless of confirmation, to the relevant local health protection team (statutory requirement)²⁷⁵

Asymptomatic infections

The majority (>80%) of rectal STIs are asymptomatic²⁹⁷ and are a reservoir for onward transmission and increase the risk of HIV acquisition and transmission.^{298,299} Treatment results in a reduction in onward transmission of the infection³⁰⁰ as well as of HIV.²⁹⁸ However, there are no data on asymptomatic carriage of enteric pathogens within cohorts of MSM.

Testing and treating asymptomatic contacts of STEIs for enteric infections is not recommended at present. MSM with enteric infections, however, are part of a sexual network that is high risk for other STIs; engaging contacts of STEI with STI testing and prevention interventions is good clinical practice from a public health STI control perspective.

HPV infection and anal dysplasia in MSM

HPV infection

Two issues arise with HPV infection in the anogenital area in MSM; genital warts and epithelial neoplasia. HPV subtypes 6 and 11 cause genital warts; subtypes 16, 18, 31 and 33 are associated with neoplasia. HPV may also infect and persist in the oropharynx and may lead to oropharyngeal squamous cell carcinoma. Anogenital warts in MSM should be managed according to current BASHH guidelines.³⁰¹

Anal dysplasia. Screening for anal dysplasia in MSM using anal cytology remains controversial. Although biennial screening for AIN in HIV-negative MSM has been suggested³⁰² it is not routinely practiced and cost-effectiveness is unproven. MSM with HIV are reported to have a higher frequency of prevalent high-risk HPV strains, persistence of HPV, incident anal dysplasia, progression to and relapse of anal intra-epithelial neoplasia (AIN) and anal cancer than heterosexual men and women.^{303,304} An Australian meta-analysis estimated an anal cancer rate of 46 per 100,000 HIV-infected MSM, with US rates around 135 per 100,000.³⁰⁵ An evidence-based UK cost-effectiveness analysis in 2010 concluded that screening did not reach the cost-effectiveness threshold,³⁰⁶ although an Australian study published in 2000 showed that two- or three-yearly screening in MSM was cost effective.³⁰⁷ Smoking is identified as a risk factor for external genital warts, anal dysplasia and anal cancer among HPV-infected MSM.^{308,309} Lower CD4 cell counts (<350 cells/ μ l) are strongly associated with prevalent high-risk HPV strains (OR 3.65; 95% CI, 1.28–10.4).³⁰⁹ There are no RCTs evaluating impact of antiretroviral therapy (ART) on HPV or dysplasia. Some cohorts report lower prevalence of

HPV and anal dysplasia,³¹⁰ others report no effect with ART.³¹¹

Despite the high rates of abnormalities reported there are no evidence-based recommendations on screening for anal dysplasia. Where expertise in high resolution anoscopy exists, routine anal cytology may be performed,³¹² although the specificity of the technique in detecting high-grade lesions is only 32–59%,³¹³ meaning that a screening programme is likely to be highly resource intensive.

Retrospective studies of large-scale screening programmes suggest that the vast majority of anal cancers present with a lump and over half of anal cancers detected by digital examination are asymptomatic. There is limited evidence that a screening programme utilising perianal examination and digital ano-rectal examination (DARE) is both acceptable and depending on the base case variables used might be cost effective for HIV-positive MSM.³¹⁴ Screening those over 50 every two years yielded an incremental cost-effectiveness ratio per quality-adjusted life year of AUD 29,760 compared with AUD 45,484 for screening four-yearly.

However, questions remain. Only one small, short-term study on acceptability has been published.³¹⁵ In this study 28% of those approached declined to take part. The cost-effectiveness models above were partly based on this study. These models were very sensitive to the costs of managing false-positive results and to assumptions regarding sensitivity of screening and rates of progression. While non-Australian health care costs were modelled these findings were not published. The European AIDS Clinical Society Guidelines recommend that digital anal examination \pm PAP smear every 1–3 years in MSM with HIV infection should be considered but this is an expert recommendation only.³¹⁶ To date the recommendation has not been taken up by other guidelines. The possibility of using digital anal self-examination has been explored but there is insufficient evidence on which to base any recommendation.³¹⁷

HPV may also affect the oropharynx where it may lead to squamous cell carcinoma. Ong et al.³¹⁸ found 19% (33/173) of MSM with HIV had any oral HPV genotype detected, 43% of these had the same genotype detected three years later and 40% were high-risk genotypes. This compares with a prevalence of 7% for any oral HPV in general population.³¹⁹ HPV persisted in HIV-negative MSM for a median of 6.9 months for any HPV genotype and 6.3 months for high-risk strains.³²⁰ However, there are no data to suggest an increased frequency of oropharyngeal cancers in MSM and some to suggest that, in HIV-infected MSM at least, the frequency may be lower than in heterosexual men when matched for partner numbers and

other risk factors.³²¹ Oral HPV testing remains a research tool and is not currently recommended in clinical practice.

Recommendations

- Genital warts in MSM should be managed according to existing BASHH guidelines (1C)
- HIV units should develop either local clinical expertise or referral pathways for suspected anal cancer and anal dysplasia (2C)
- Regular DARE can be incorporated into routine HIV care and may be cost effective in MSM aged over 50 years (2B)

HPV vaccination in MSM

HPV vaccine is most effective when administered before the onset of sexual activity. However, in the UK, universal HPV vaccination is only available for girls. Unvaccinated heterosexual boys benefit from herd immunity but young MSM do not experience significant benefit.³²² In November 2014, the (UK) Joint Committee on Vaccination and Immunisation (JCVI) issued an interim position statement, having reviewed an unpublished impact and cost-effectiveness analysis on vaccinating MSM when attending sexual health clinics. JCVI recommended that a programme for the vaccination of MSM aged 45 years and younger should be implemented in GUM and HIV clinics in the UK using the quadrivalent HPV (qHPV) vaccine with a three-dose series (0, 1–3 and six months or 0, six and 12 months), subject to the programme being commissioned and implemented at a cost-effective price.³²³ Vaccination is available at a number of pilot sites in England and at clinics in Scotland. Dosage timings can be adjusted to correspond with routine sexual health or HIV clinic visits. For guidance, in a three-dose schedule, the second dose should be administered at least one month after the first dose and the third dose should be administered at least three months after the second dose. All three doses should ideally be given within one year; however, a 24-month period is clinically acceptable.

Acquisition of HPV. The prevalence of high-risk HPV increases quickly in MSM throughout the late teens and is strongly associated with numbers of sexual partners. In a group of 16–20-year-old MSM in Australia the proportion of men with anal HPV of any type increased from 10.0% in men reporting no prior receptive anal sex to 47.3% in men reporting ≥ 4 receptive anal sex partners ($P < .001$). A similar pattern was also seen with HPV type 16 ($P = .044$). However, there is also evidence that a substantial proportion of MSM

appear to remain uninfected with vaccine specific/targeted types into their 20s and 30s. In a London study 25.1% of MSM aged between 18 and 40 had DNA evidence of one quadrivalent vaccine HPV type, while only 7.4% had presence of two HPV vaccine types or more. These findings offer the possibility that HPV vaccination may also benefit older individuals.³²⁴

qHPV vaccine efficacy in MSM – HIV-negative. The efficacy of qHPV vaccine was investigated in a placebo-controlled trial of 4065 HIV-negative males including 602 MSM aged 16–26 years followed for a median of 2.9 years.³²⁵ Vaccination resulted in a 63.7% reduction in external genital lesions related to vaccine HPV types in heterosexual men and 70.2% (23.0–90.2) in MSM (intention to treat [ITT]). The per protocol efficacy was 90.5%.

The efficacy of qHPV vaccine in 16–26-year-old MSM against AIN was 50.3% (ITT) and 77.5% (per protocol).³²⁶ Incident AIN was 17.5 per 100 person-years in the placebo group.

qHPV vaccine is highly immunogenic in MSM.³²⁷ For those participants without serological or PCR evidence of infection with relevant HPV types at baseline, seroconversion rates at seven months were 96.5% for HPV-6, 97.4% for HPV-11, 94.1% for HPV-16 and 89.7% for HPV-18.

qHPV vaccine efficacy – HIV-positive. There is a comprehensive review of HPV vaccination in the recently published BHIVA vaccination guidelines.¹⁵⁷ HPV vaccination is considered safe and seroconversion rates are usually greater than 85%. In some but not all studies, seroconversion rates and antibody titres are highest in those receiving ART and those with higher CD4 cell counts. There is very limited cohort evidence that vaccinating individuals with high-grade anogenital dysplasia reduces the risk of recurrent dysplasia³²⁸ and that such a strategy would be cost effective or even cost saving.³²⁹ RCTs are needed.

Nonavalent (9-valent) HPV vaccine. The US Advisory Committee on Vaccination Practices recommended the use of 9-valent HPV vaccine for routine vaccination including MSM up to the age of 26 years in March 2015.³³⁰ US providers will move from the use of quadrivalent to 9-valent vaccine over the course of 2016. Discussion of 9-valent vaccine is not included in the recent JCVI interim statement on vaccination of MSM in the UK.³²³

Economic analysis. In a cost-effectiveness modelling analysis of targeted HPV vaccination of young MSM in the USA, vaccination was considered likely to be cost effective even when considering vaccination of 26-year-

olds with an assumption of exposure to vaccine HPV types of 50%.³³¹ In an unpublished UK analysis reviewed by the JCVI, vaccinating HIV-positive MSM was incrementally cost effective up to age 40 using the list price of qHPV. Vaccination of all MSM was cost effective at a threshold vaccine price (not stated) below list price but was not cost effective at list price.¹⁵⁷

HPV vaccination to reduce risks of HIV transmission. In a meta-analysis of observational studies, prevalent HPV was associated with an approximate doubling of risk of HIV acquisition.³³² However, in the one study within this report performed in MSM, infection with one HPV type compared with no HPV infection was not significantly associated with HIV acquisition (aHR = 2.0 [95%CI = 0.61–6.5]). However, the presence of infection with two or more HPV types compared with being HPV uninfected was associated with HIV acquisition (aHR = 3.5 [95%CI = 1.2–10.6]).³³³

HPV vaccine acceptability. In a systematic review of HPV vaccine perceptions amongst MSM, a wide range of views were reported. However, more than 50% of individuals were prepared to consider vaccination if offered. Most studies were conducted in North America. Further studies in those with little or no sexual experience, who would benefit most from HPV vaccination, are required.³³⁴

Recommendations

- MSM should be encouraged to attend sexual health services for preventative health interventions including hepatitis B and HPV vaccination at the time of considering commencement of sexual activity (1B) or as early as possible after commencing sexual activity (1B)
- All MSM aged 45 years and younger should be offered standard HPV vaccination (0, two and six months) irrespective of HPV and HIV status (1B)

Partner notification and MSM

Introduction

Partner notification (PN) in MSM should follow general guidance provided by the Society of Sexual Health Advisers³³⁵ and by BASHH in 2012.²⁷⁵ A systematic review of PN strategies and outcomes concluded that in MSM PN can reduce disease incidence, condomless sex, sex with infected partners, reinfection rates and other adverse outcomes.^{336,337} Recognised barriers to PN such as resistance affect MSM,³³⁸ but other factors including higher partner

numbers and sex with anonymous and pseudoanonymous partners may present additional challenges. Attitudes to PN vary significantly according to partner status and the infection involved.³³⁹

Anonymous partners

PN which relies on a case-finding approach alone has always had limited effect in MSM in whom sexual contacts may be anonymous, contacted through established methods of meeting partners including sex-on-premises venues such as saunas or in public sex environments. Where no contact details are available, 'hot spotting' is a technique for identifying where the index client met their contacts. Real or virtual venues or sites that are recurrently named as meeting places are targeted with health promotion information with the aim of facilitating testing. Although it may not be possible to identify a core group or individual in person it may be possible to reduce the ongoing transmission of infections through the identification of common venues.³⁴⁰ The delivery of such information may include online and app-based interventions.³⁴¹

Recommendation

- Information obtained in the course of individual case finding should be combined to identify and target locations where STI transmissions are likely to occur (2C)

Pseudoanonymous partners

Use of the internet to find sexual partners is extensive and more commonly reported by MSM than other STI clinic attendees.³⁴² Men who use the internet to meet partners have a greater number of partners³⁴³ and a higher probability of being diagnosed with an STI^{344,345} than men recruited in community-based or national probability samples. Meta-analysis showed that UAI, including UAI with serodiscordant partners, was more common in men who met partners online.³⁴⁶ Social media sites and more recently Geosocial networking smartphone apps (apps) are widely used in combination with pseudonyms, which preclude the use of names, addresses or telephone numbers in tracing contacts. A systematic review of new technology in PN identified 379 papers published 2000 to 2012.³⁴⁷ MSM were the first patient group in whom provider use of the internet for PN was reported and much of the published literature applies to MSM. Only one published study compared provider PN using the internet to 'conventional PN' in an unmatched patient group, finding it to be less effective when used instead of conventional methods.³⁴⁸ However, as an adjunct to

conventional methods it increased the number of syphilis contacts tested and treated by 26%.³⁴⁹ Several studies show it to be more acceptable to MSM than to the general population³⁵⁰ and a high proportion of English MSM reported that they would engage with a health care worker in an online chat room.³⁵¹ Patient-initiated PN is supported by the LetThemKnow tool used in Melbourne³⁵² and a digital contact slip piloted in the UK by SXT Health Community Interest Company (CIC).^{353,354}

Smartphone apps have overtaken the internet as the most common method for meeting partners for casual sex,³⁵⁵ but there are as yet no systems that allow direct linkage to these apps in order to send messages directly to contacts who need to be notified. The engagement of app providers with health care organisations is variable and some apps exist with the explicit purpose of facilitating condomless anal sex. A large cross-sectional study in Los Angeles found that men who used apps to meet partners had a higher probability of being diagnosed with Chlamydia and gonorrhoea (but not syphilis or HIV) than men who met using other methods.³⁵⁶ There is evidence that men who use apps have a higher number of partners (both on and offline) than men who meet partners offline alone, but do not differ in other demographics or personality variables.³⁵⁷ The app profile information often includes no true identity details, so patient referral is the only mode of PN currently possible in situations where an app contact has not been followed up by SMS text or internet contact. Patient-initiated PN using email appears to be more acceptable to MSM than to other patient groups but where options are available communication in person is preferred to the use of email or e-card, or to text messaging.³⁵⁸ Patient-led referral is preferred for regular and known partners whereas provider-led referral is preferred for casual partners.³³⁹

Recommendations

- Use of the internet to find partners should be employed as a marker of increased partner numbers, bacterial STI risk and risk of UAI with serodiscordant partners (1A)
- Provider use of internet partner notification or text or app-based PN increases the number of MSM contacts successfully contacted and should be used as an adjunct to conventional methods (1C)
- Patients should be advised of and supported in the use of internet, app or text-based PN but for patient-initiated PN communication in person or by phone is often the preferred option (2C)

STI and HIV prevention for MSM in the clinic

Introduction

Combination HIV prevention requires a multifaceted approach encompassing behavioural, biomedical, structural and increased testing interventions, including those delivered in clinical settings.³⁵⁹ Brief behaviour change interventions for MSM, including consideration of serosorting and negotiated safety for HIV-positive MSM are covered in the UK National Guideline on Safer Sex Advice.⁴⁵

Antiretroviral PrEP

PrEP effectiveness. An overall reduction in HIV transmissions of 44% (95%CI 15–63%) was reported in the iPrEx study, the first large randomised placebo-controlled efficacy trial of daily oral tenofovir disoproxil fumarate (TDF)–emtricitabine (FTC) as PrEP in MSM and transgender women.³⁶⁰ TDF alone has been demonstrated to be effective in heterosexual men and women but is not recommended in MSM in CDC or European PrEP guidelines (due to lack of evidence of effectiveness rather than evidence of no effect).²³⁵ The PROUD study, a pilot study of the use of daily oral PrEP (TDF–FTC), conducted in MSM attending 13 sexual health clinics in England was subject to early discontinuation of the deferred treatment arm due to an unexpectedly high rate of HIV in this group (nine per 100 person-years) and an 86% (90%CI 64–96%) reduction in HIV seroconversions in men in the immediate treatment arm.^{361,362} PROUD inclusion criteria were the reporting of condomless anal sex on one or more occasions in the last 90 days and the likelihood in the opinion of the participant of further condomless anal sex in the next 90 days. The ANRS IPERGAY study of ‘on demand’ use of TDF–FTC PrEP (two tablets 2–24 h before sex and one tablet a day through to two days after the last condomless sex act) also showed an 86% reduction in HIV seroconversions compared to placebo.³⁶³ Adherence to on demand PrEP (defined as reporting taking at least one tablet before and one tablet after sex) was 43%; no tablets before or after were taken in 28% of sex acts, and suboptimal adherence (one before or one after) was reported in 29% of acts. In spite of this, effectiveness was very high, suggesting that participants were able to judge the risk with reasonable accuracy. The median monthly dose of tablets of 15 was approximately half of the total monthly dose of tablets in the PROUD study. Such a regimen offers obvious potential financial and cost–benefit implications. Importantly it

offers a choice of regimen for MSM whose frequency of risk is diverse.

The CDC has provided comprehensive guidance on PrEP use.²³⁵ A joint BHIVA BASHH position statement on PrEP in UK was updated in May 2016 and includes guidance for clinicians providing advice on and monitoring for PrEP including that purchased online.³⁶⁴ A BASHH/BHIVA UK Guideline on PrEP is in preparation.

Recommendations

- PrEP with on demand or daily oral tenofovir-emtricitabine (TD-FTC) should be offered to HIV-negative MSM who are identified as being at elevated risk of HIV acquisition through condomless anal sex (1A)
- PrEP with on demand or daily oral TD-FTC should be offered to HIV-negative MSM whose regular partners are newly diagnosed with HIV infection, until the partner's serum viral load reaches undetectable levels (1C)
- TD alone should not currently be offered as PrEP to MSM (2C)

PrEP adverse effects. Adverse effects are an uncommon cause of discontinuing PrEP.³⁶⁵ Gastrointestinal effects were reported in <10% of those receiving TDF-FTC as PrEP in iPrEx were mild and resolved within one month of initiating therapy.³⁶⁰ Proximal renal tubular dysfunction and measurable loss in bone mineral density have been reported with therapeutic tenofovir (TDF) use. A 1% reduction in bone mineral density was observed when TDF was used as PrEP but has not been associated with increased fracture rate and no increase in renal complications was reported.³⁶⁶ Viral resistance to either TDF or emtricitabine was rare and almost all cases were thought to be infected at or immediately after enrolment in the study.^{360,361} A modelling study of the UK epidemic suggested resistance would have a negligible impact on PrEP efficacy at a population level.³⁶⁷ Baseline HIV testing using fourth generation serological testing, supported by a POCT if indicated, should always be undertaken on commencing PrEP, but a history of condomless sex within the HIV window period was not an exclusion criterion in the PROUD study. Starting PrEP should be avoided in men with current symptoms suggestive of HIV seroconversion until infection can be reliably excluded. There was no evidence of risk compensation with the use of PrEP in iPrEx, but this was a placebo-controlled study.³⁶⁸ In the PROUD study, after adjustment for the number of STI screens, there was no difference in the rate of bacterial STI between

the immediate and deferred groups and the rate of rectal infections was the same (RR 1.00) in both groups. However, a greater proportion of the immediate group reported receptive anal sex without a condom with ten or more partners at one year compared to the deferred group (21% versus 12%, $p=0.03$).³⁶¹ In the open label phase of the IPERGAY study there was a decrease in overall reported condom use over time ($P=0.0003$)³⁶⁹ and a large observational cohort of MSM on PrEP reported that condom use declined in 41% of those on PrEP.³⁷⁰ There is therefore some evidence of risk compensation among MSM taking PrEP; however, longer term real-world data are lacking. Repeat HIV testing and tests for other STIs should be offered every three months.^{235,364} Serum creatinine and estimated glomerular filtration rate should be checked every 3–6 months and hepatitis C serology at least once a year. Routine urinalysis for proteinuria with urinary protein:creatinine ratio and albumin:creatinine ratio if there is more than a trace of protein is recommended by some authorities. Provision of behavioural interventions alongside routine monitoring may be indicated in reducing the frequency and/or duration of PrEP use but there is currently very little evidence to support recommendations in this area.

Recommendations

- PrEP can be commenced while waiting for the results of baseline HIV testing (1A) unless there are symptoms suggestive of HIV seroconversion (1C)
- PrEP can be commenced while waiting for the results of baseline creatinine measurements (1C)
- PrEP should be offered as part of a package of care including regular (three-monthly) HIV and STI testing and monitoring of renal function (1C)
- MSM should be informed about the potential side effects of PrEP medication (1D)
- MSM receiving PrEP should receive advice on the high risk of other STIs and the need for regular testing (1B)
- PrEP provision should include condom provision and behavioural support (1D)

Awareness and availability of PrEP. Awareness of and willingness to use PrEP is higher in MSM than in other groups, most studies having been conducted in the US.³⁷¹ Community-based surveys in London³⁷² and Scotland³⁷³ have assessed awareness and willingness to use PrEP among UK MSM. In both studies around half of men questioned would consider PrEP use and reporting condomless anal sex was associated

with a higher likelihood of considering PrEP. An online study of MSM from Scotland, Wales and Northern Ireland who reported condomless anal sex with ≥ 2 men in the last year showed 34.5% of participants were aware of PrEP but 58.5% reported that they would be willing to use PrEP if it were available to them.³⁷⁴

A qualitative study of focus groups including MSM revealed concerns about adherence, condom non-use and other STIs.³⁷⁵ Use of PrEP following inclusion in RCTs is higher in older and more educated men,³⁶⁵ suggesting that additional information and publicity about PrEP is required to ensure equity of access. Cost-effectiveness of PrEP is highly dependent upon HIV incidence rates and the price of drug.^{376–378} Targeting MSM in serodiscordant relationships (in the absence of treatment) is most cost effective but has negligible effect on HIV incidence and less relevant as early treatment becomes the norm.^{376,379} UK cost-effectiveness studies give a wide range of possible outcomes in sensitivity analyses showing that PrEP cost-effectiveness in MSM is highly dependent upon uptake, duration of use, drug costs, real-life effectiveness and changes in HIV test uptake and condom use resulting from PrEP availability. Identification of subgroups of MSM with the highest HIV incidence, managing the duration of PrEP use and the use of event-based PrEP and obtaining antiretrovirals at a reduced price on the patent expiry of Truvada (Gilead Sciences, Foster City, California, US) in 2018 will be critical to ensuring cost-effective implementation.^{380,381}

PrEP access in NHS England is planned through a large-scale clinical trial (IMPACT) enrolling 10,000 participants over three years.³⁸² The European Medicines Agency recommended that Truvada was granted a marketing authorisation in Europe for PrEP in July 2016. In Scotland, a marketing license for PrEP was granted by the Scottish Medicines Consortium in April 2017, allowing PrEP to be made available through NHS clinics from July 2017. Where PrEP is indicated but not accessible through the NHS in the UK, MSM have accessed medication through private medical clinics or online. Purchase of PrEP online is increasingly routine.^{383,384} Guidance for individuals who wish to pursue this route is available and the GMC has provided advice for UK clinicians wishing to support monitoring (including therapeutic blood monitoring) for those using this route. Generic versions of Truvada can be legally imported to the UK for personal use.³⁸³ Guidance for patients on importing PrEP for personal use and on MRHA regulations is available online.³⁸⁵ Clinicians should clarify local arrangements for provision of advice and monitoring for non-NHS supplied medications. MSM obtaining PrEP either through NHS provision or personal import should be

provided with detailed guidance on the on-demand use of PrEP where appropriate³⁶⁴ and recommended tests including baseline fourth generation HIV test and serum creatinine.

Recommendations

- MSM at risk of HIV infection should be made aware of the availability of PrEP through all services providing sexual health care (1C)
- If PrEP is not available to men at risk who are willing and able to pay for it, they should be directed to guidance on reputable sources of medication (1D)
- PrEP provision should include condom provision and behavioural support (1D)

Antiretroviral post-exposure prophylaxis following sexual exposure (PEPSE)

A BASHH/BHIVA guideline on PEPSE was updated in 2015.³⁸⁶ PEPSE provision is not recommended in cases where the index individual is HIV-positive with a viral load of < 200 copies/ml, regardless of the type of sexual exposure. Convenience samples of HIV-negative MSM found that 34% of MSM in Spain and 36% in the USA were aware of PEPSE availability; having a higher number of sex partners was significantly associated (OR 5.1, $p = 0.02$) with higher rates of awareness.^{387,388} Awareness was higher (52–66%) in MSM living with HIV.^{389,390} Men who accessed PEPSE in Los Angeles were found to have greater odds of having had gonorrhoea or to have used methamphetamine or inhaled nitrites in the previous year than other men who were ‘high risk’, but there was no difference by race or ethnicity.³⁹¹ Analysis of an Australian database of PEP prescribing found that repeat presentation for PEPSE occurred in 17.5% of users and that 1.2% of individuals were HIV-positive at baseline.³⁹² Higher lifetime and recent sexual risk behaviour was associated with lower adherence to PEPSE in a small study of high risk, methamphetamine-using MSM.³⁹³ An increased HIV incidence of 6.4 per 100 person-years among MSM prescribed PEPSE versus 1.6 in a control group was found in an Amsterdam cohort of MSM³⁹⁴ and was higher in PEPSE users than other MSM in an Australian data linkage study.³⁹⁵ A UK study comparing 8801 MSM receiving PEPSE between 2011 and 2013 with 141, 151 who did not, found an adjusted HR of subsequently receiving a positive HIV diagnosis in the same service of 1.19 (1.04–1.37) in those who had received PEPSE,³⁹⁶ suggesting that PEPSE use is a marker of elevated risk. PEP prescribing outside the parameters defined in UK guidelines is relatively common and is unrelated to prescriber’s grade,

setting or experience.³⁹⁷ Emergency departments need education, training³⁹⁸ and protocols to increase health care provider knowledge and use of PEP.³⁹⁹

Recommendations

- PEPSE should be provided through sexual health and out-of-hours services and availability publicised to MSM (1C)
- Education of emergency department staff and local protocols are required to ensure appropriate advice, baseline HIV testing and follow-up for MSM who present requesting PEPSE (1C)
- MSM who present for PEPSE constitute a high-risk population and should be offered additional prevention interventions including frequent HIV and STI testing and PrEP (1B)

Sexual health of HIV-positive MSM

The sexual health needs of MSM living with HIV should be addressed at diagnosis and as part of routine holistic HIV care and monitoring.⁴⁰⁰ Guidance on sexual and reproductive health of people living with HIV (2008)⁴⁰¹ (currently undergoing revision), the management of STIs in people living with HIV (2006)⁴⁰² and on Safer Sex advice (2012)⁴⁵ are directly applicable to MSM living with HIV, but do not incorporate recent significant developments relating to the reduction in risk of sexual transmission. Following a diagnosis of HIV, highly significant reductions in partner numbers were observed in the first 12 months in a cohort of 193 MSM.⁴⁰³ There is evidence that among MSM the number of episodes of UAI with partners of unknown status and the age-adjusted number of sexual partners do not increase up to five years after diagnosis.⁴⁰⁴ A UK study using phylogenetic analysis and clinical data found that HIV transmission was strongly associated with younger age, recently-acquired HIV infection, being antiretroviral therapy (ART) naive or having concomitant STI. The majority of new infections appeared to be acquired from men who had not yet been diagnosed with HIV.⁴⁰⁵ Mathematical modelling suggests that the proportion of new infections attributable to transmission from undiagnosed men is 82%.¹⁸⁴ The contribution of MSM on effective treatment to onward HIV transmission is likely to be small. However, the population rate of acute bacterial STI is up to four times higher in HIV-infected compared to HIV-uninfected or undiagnosed men and this ratio appears to have increased over recent years.⁴⁰⁶ Particular attention is required to interventions to reduce transmission risk in MSM the first year following HIV diagnosis, particularly those have yet to commence or have recently commenced ART, and

to addressing rates of bacterial STI in men on effective ART.

Advice on HIV transmission risk. Advice on HIV sexual transmission risk through oral and anal sex may be required by MSM living with HIV and their partners. Clinical trial HPTN 052 trial found that initiating ART in HIV-positive individuals regardless of CD4 level in heterosexual serodiscordant relationships reduced HIV transmission by 96%.⁴⁰⁷ Only 2% of couples in the trial were MSM. A comparable reduction in transmission risk attributable to ART was reported in a small longitudinal clinic-based study of 859 MSM in whom a likely transmitter was identified by phylogenetic analysis in 41 cases.⁴⁰⁵ Interim findings from the PARTNER study updated in July 2016^{98,408} included 22,000 occasions of anal sex in 340 gay MSM couples. The upper 95% confidence limit for the risk of transmission per year through anal sex with a partner with undetectable serum HIV viral load was 0.89% (2.7% in the subgroup reporting receptive anal sex with ejaculation) due to the low number of person-years accumulated. However, no phylogenetically linked transmissions occurred despite 16% of MSM acquiring other STIs during follow-up and the lower 95%CI for the risk of transmission was zero. The investigators' best estimate for the risk of transmission was zero. Thirty-four per cent of men reported condomless sex with other partners, underlining the potential risk of both other STIs and of HIV acquisition from non-primary partners. A systematic review of studies of oral HIV transmission risk in cohorts including untreated individuals reported a non-zero upper confidence limit based on limited data⁴⁰⁹ but biological data⁴¹⁰ and longitudinal studies support the contention that the risk is significantly lower than that for vaginal or anal sex and may be zero in some untreated individuals.⁴⁵ There is no published estimate for an upper confidence limit for transmission risk through oral sex with undetectable HIV viral load but given that sexual behaviours in both HPTN 052 and the PARTNER study would include oral sex in both heterosexual and MSM couples, it seems that a best estimate of transmission risk for oral sex with undetectable viral load is zero. It also follows that this estimate can be made with greater confidence than for vaginal or anal sex. BHIVA Treatment Guidelines recommend that the benefits of starting treatment to reduce transmission (TasP) should be discussed with all HIV-positive patients at diagnosis and treatment initiated if the patient wishes.⁴¹¹ Modelling suggests that starting ART at diagnosis is both cost effective and cost saving in MSM in the UK.⁴¹² NHS England has published a Clinical Commissioning Policy on Treatment as Prevention.⁴¹³

Recommendations

- MSM in the first year following HIV diagnosis should be offered additional psychological support to address HIV and STI risk behaviours (1B)
- Younger men living with HIV may require particular attention (2B)
- The risk of HIV transmission through receptive oral sex with a partner with high serum viral load (such as in acute seroconversion) is unknown, but is thought to be non-zero. MSM should be advised that oral sex carries an onward transmission risk in this situation (1D)
- MSM should be advised that the risk of HIV transmission through oral sex with undetectable viral load is highly likely to be zero (1B)
- MSM should be advised that the risk of HIV transmission through insertive or receptive anal sex with undetectable viral load and in the absence of other STIs is low and may be zero. The upper estimate of the risk of unprotected receptive anal sex with an HIV-positive partner with undetectable HIV viral load may be as high as 2.7% per year. This upper estimate may fall as further evidence accumulates (1B)
- All HIV-positive MSM including those newly diagnosed with HIV should be offered TasP (1B)

STI testing for HIV-positive MSM. Of MSM newly diagnosed with HIV in England in 2013, 25% had a concurrent STI and in that year MSM with diagnosed HIV infection accounted for 40% of all new syphilis diagnoses.¹³ In 2008–9, 6.7% of MSM had an incident STI in the year after diagnosis (excluding those at baseline), the rate being 18.8% in MSM aged 16–19 years.⁴¹⁴ Routine testing of cohorts of MSM in HIV clinics reveals high rates of asymptomatic STIs^{101,415–418} and a systematic review found a point prevalence in all HIV-infected individuals of 16%.⁹⁷ Opt-out self-screening is effective and acceptable³⁴ and the detected incidence of STIs in MSM was doubled when testing was supported by prompts in the electronic patient record.⁴¹⁹ BASHH/BHIVA/FSRH sexual health in HIV guidelines recommend at least an annual offer of STI screening⁴⁰¹ and the BHIVA monitoring guideline recommends 3–6-monthly syphilis testing to increase detection of asymptomatic infections,⁴⁰⁰ consistent with BASHH guidance for all MSM.⁷⁶ Regular serological testing for syphilis can increase the detection of asymptomatic infections.⁴²⁰ Cost-effectiveness analysis suggests that three-monthly syphilis testing is cost effective in HIV-infected MSM.²²⁶ Hepatitis C infection is more common in HIV-infected MSM^{421,422} and annual antibody testing is recommended, with more frequent testing for those with specific risk factors

(see ‘Herpes simplex virus [HSV]’ section). Bacterial STIs are common in MSM screened as part of routine HIV care⁴¹⁶ but PN procedures may be incomplete in HIV clinics. Having an STI at baseline is an independent predictor of incident STI in HIV-infected MSM⁴²³ and a risk score developed from observational data on 2129PY of follow-up in a large cohort of HIV-infected MSM identified prior STI, UAI with other HIV-infected men, >10 partners and methamphetamine use as predictors of asymptomatic bacterial STI.⁴²⁴ Similar predictors have been identified in other cohorts.⁴²⁵ These predictors closely parallel predictors in HIV-negative MSM (see: Recall arrangements and frequency of routine STI and HIV testing, p11) but identification requires regular sexual history taking which is not always reliably performed.⁴²⁶ Inclusion of sexual risk assessment and history taking in an HIV care Integrated Care Pathway can improve recording.⁴²⁷ A small study of the use of prophylactic doxycycline in HIV-positive MSM with a history of two or more episodes of syphilis showed a highly significant reduction in new diagnoses of bacterial STI despite lower levels of condom use⁴²⁸ but this is not routine practice in the UK.

Recommendations

- Syphilis serology should be performed at least annually as part of routine monitoring in sexually active HIV-infected MSM (1B)
- A sexual history should be documented at least annually in the routine care of HIV-infected MSM (1C)
- MSM under the age of 20 years and those with risk factors including prior STI, UAI with other HIV-infected MSM, recreational drug use associated with sex, chemsex, and >10 partners should be offered opt-out STI screening at every HIV care visit and/or at three-monthly intervals (2B)

Sexual problems and dysfunctions in MSM

Introduction

Sexual problems and dysfunctions affecting MSM can have significant adverse effects on quality of life and have been associated with a self-reported history of sexually transmitted infections in a large cross-sectional internet survey sample.⁴²⁹ It has also been argued that they can contribute to sexual risk taking.^{430–432} In addition to individual interventions, suggested population interventions have included greater clarity on the criminalisation of HIV transmission and efforts to reduce HIV-related stigma.⁴³³

Clinical features and aetiology

Problems including low sexual desire, erectile dysfunction (ED) and ejaculatory dysregulation have been reported in large samples of MSM across the UK, US, Australia and Europe.^{429–431,433–436} Distress associated with anodyspareunia (pain with receptive anal penetration) has also been reported as having a negative impact on sexual pleasure and activity.⁴³⁶ Sexual problems are associated with depression, performance anxiety, low self-confidence and poor self-image^{429,431,433,437} and there are complex interactions between depression, anxiety, general wellbeing, sexual risk taking and HIV infection.^{431,432} Recreational drug use and problematic alcohol use have also been identified as risk factors for sexual dysfunction.^{429,437}

MSM living with HIV report greater numbers of sexual problems and dysfunctions compared to MSM who are HIV-negative.^{431,435,436,438} This has been related to psychological factors⁴³² and to duration of ART, but no association has been found with any specific class of antiretrovirals.⁴³⁹ Sexual problems such as erectile dysfunction have also been associated with using sex as an avoidant strategy to cope with daily life stress and sexual risk taking in casual encounters.⁴³⁰ Both delayed ejaculation (PE) and erectile difficulties have also been associated with antidepressant SSRIs in HIV-positive MSM.⁴³²

Diagnosis

Men may present with symptoms of sexual dysfunction as the primary concern. However, questions relating to sexual dysfunction should be part of the routine assessment of men reporting high-risk sexual behaviour. Particular attention should be paid to men living with HIV and those reporting problematic alcohol or recreational drug use. Identifying whether the problem is primary or secondary is helpful in directing treatment.

Recommendation

- Assessment of sexual risk behaviour in MSM should include routine inquiry into sexual dysfunction (2C)

Management

To date, evidence-based reviews and treatment guidelines for psychological interventions with male sexual difficulties have been based on heterosexual men. It has been argued that the models used to conceptualise and treat sexual problems such as ED or premature ejaculation (PE) are based on the heterosexual experience, with little acknowledgement of how it could be different for MSM.⁴⁴⁰ Such issues are likely to apply

to the assessment of suitability for, but not the prescribing of, pharmaceutical therapies.

There is also a general lack of evidence to guide a more holistic sense of sexual wellbeing in MSM. An analysis of nearly 13,000 UK responses from the 2010 European Men-who-have-sex-with-men Internet Survey to a general question on what constitutes the 'best sex'⁴⁴¹ found that the most commonly identified theme was a desire for sex within committed relationships, followed by a desire for sex that is emotionally or psychologically connected.

A recent systematic review⁴⁴² concluded that psychological therapies improved sexual functioning but it was recognised that the methodological quality of many of the studies was limited. International Society for Sexual Medicine evidence-based guidelines for psychological interventions in men who have ED and PE concluded that the psychological literature has made an important contribution to the description, aetiology and diagnosis of these difficulties but there is a lack of large, randomised and controlled studies demonstrating the efficacy of such interventions.⁴⁴³ Interventions for ED included psychodynamic interpretations of anxiety, systematic desensitisation, sensate focus, couples therapy, behavioural experiments, psychosexual education, communication skills training and masturbation exercises. Overall, it is not clear which of these interventions in combination or alone has the greatest efficacy but the evidence clearly indicates that these interventions help men to improve their relationship and sexual life.⁴⁴³

For PE, psychological interventions range from psychodynamic to systemic, behavioural and cognitive approaches. Besides teaching self-control techniques to delay ejaculation, psychological interventions aim to reduce performance anxiety, improve communication with sexual partners and resolve issues that precipitate and maintain the sexual problem. Psychological interventions for PE are generally effective but the evidence base for such interventions is not considered to be as clear or reliable as the findings from the research on ED.⁴⁴⁴ Combining pharmacological and psychological treatments can be especially useful in men with acquired PE where there is a clear psychosocial precipitant or lifelong cases where the individual or couple's responses to PE are likely to interfere in the medical treatment and ultimate success of therapy.⁴⁴⁵ NICE has recently issued guidance on the use of dapoxetine in the first-line treatment of PE.⁴⁴⁶ For men with PE and comorbid ED, combination therapy may also be helpful to manage the psychosocial aspects of these sexual dysfunctions.⁴⁴⁴

The existing guidelines for treating men who have sexual dysfunctions such as ED and PE,^{443,444,447}

including men who are HIV-positive,⁴⁰¹ are applicable to working with MSM. However, none of these guidelines provide specific guidance in working with MSM, regardless of HIV status.

Recommendations

- Psychosexual counselling, behavioural interventions, pharmaceutical and/or psychological therapy should be offered to MSM as part of treatment for sexual dysfunctions such as low sexual desire, erectile difficulties or ejaculatory dysregulation (1C)
- Interventions should be relevant and appropriate to the sexual identities, sexual practices and sexual desires of MSM (1D)

Auditable Outcomes Services

- Proportion of services offering STI testing for MSM that include NAAT testing for NG and CT from throat, urine and rectum, HIV, syphilis, hepatitis B and where indicated hepatitis C serology. Target 100%
- Proportion of services offering opt-out testing for HIV infection to all MSM. Target 100%

History taking

- Proportion of MSM in whom a history of alcohol and recreational drug use, including injecting drug use is recorded. Target 97%
- Proportion of MSM in whom risk factors for hepatitis C are recorded (including traumatic anal sex, fisting, shared sex toys, group sex, serosorting and concomitant use of recreational drugs). Target 97%
- Proportion of men with identified risk factors for hepatitis C in whom the offer of a hepatitis C test is documented. Target 97%

STI testing

- Proportion of MSM STI screens which include a test for syphilis. Target 97%
- Proportion of MSM screens including an HIV test, after excluding known HIV-positive individuals. Target 87%

Recall and testing frequency

- Proportion of MSM with rectal bacterial STI diagnosed who are recalled for HIV testing at three months: Target 97%
- Proportion of MSM retested for HIV infection within four months of attendance for treatment for

syphilis, gonorrhoea or rectal or urethral chlamydial infection. Target 50%

STETs

- Proportion of cases rectal chlamydia in HIV-positive MSM typed for LGV serovars. Target 97%
- Proportion of symptomatic men with proctitis in whom rectal chlamydia status is unknown who are treated with recommended LGV treatment. Target 97%

PrEP

- Proportion of men reporting condomless anal sex with more than one partner in the last three months advised on the availability of PrEP with daily or event-based (on demand) oral TD-FTC. Target 97%

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Statement of editorial independence

This guideline was commissioned, edited and endorsed by the BASHH CEG without external funding being sought or obtained.

All members of the guideline writing committee completed the BASHH conflicts of interest declaration detailed below at the time the guideline's final draft was submitted to the CEG.

Example BASHH Conflict of interests declaration

Editorial independence of the BASHH CEG

The BASHH Clinical Effectiveness Group (CEG) receives funding exclusively from BASHH for room hire and refreshments and for travel from either BASHH or from member's employers. The professional activities of BASHH are funded by membership fees from the health care professionals subscribing to the organisation. The recommendations made in the

clinical guidelines commissioned by the CEG are based on evidence from the medical literature synthesised according to the guideline production manual. The CEG functions independently of the BASHH board and so we believe that the no views or interests of the funding body influence the final guideline recommendations.

Ensuring editorial independence of the BASHH CEG members and guideline authors

Whenever possible, members should not have CoI relevant to their role and members with CoI should represent not more than a minority of the group. The chair or co-chairs should not be a person(s) with a CoI.

For CEG members the guideline CoI form is completed at least every three years and for authors before they commence work on a guideline. If an individual's circumstances regarding CoI change a new form should be submitted as soon as possible.

All CoI of each member should be reported and discussed openly by the prospective development group prior to the onset of the work. Each panel member should explain how their CoI could influence the guideline development process or specific recommendations. Chairs and vice chairs should not have any personal professional financial interests that are relevant to guideline production.

Potential for bias should be taken into account through a combination of factors, for example, systematic literature review, critical appraisal, peer review, editorial independence and a conflicts-of-interest policy. Details on the credibility and any potential bias of the guidance in general, and the conclusions and recommendations in particular, should be stated in the guideline in question.

As a current member of the CEG, or as an author involved in guideline production for the BASHH CEG I declare that

Prior to accepting the invitation to participate in the BASHH CEG or a guideline development group I declared all interests and activities potentially resulting in conflicts of interest (CoI) with development group activity, by written disclosure to those convening the group. This disclosure reflects all current and planned commercial, non-commercial, intellectual, institutional, and patient/public activities pertinent to the potential scope of the guideline. If my circumstances with regard to this change during guideline production I will inform the BASHH CEG editor and lead guideline author.

Any CoIs have been clearly declared and the impact they may have on the guidance process and

development of recommendations has been stated and considered by the CEG.

I have divested myself of financial investments I or my family have in, and not participate in marketing activities or advisory boards of those whose interests could be affected by the guideline recommendations

Any relevant personal professional interests are declared here including personal professional financial interests:

Name:

Signature:

Guideline group: UK National guideline on the sexual health of MSM

BASHH CEG Composition

From January 2015 the membership of the CEG is:

Dr Keith Radcliffe (Chair)

Dr Darren Cousins

Dr Mark FitzGerald

Dr Deepa Grover

Dr Sarah Hardman

Dr Stephen Higgins

Dr Margaret Kingston

Dr Michael Rayment

Dr Ann Sullivan

Appendix I. Search terms

Section 1:

MSM AND Access to care, Outreach, generic, Service, Primary Care. MSM OR Gay AND Proctoscopy, Sexual History, Examination, Hepatitis

Section 2.1

MSM AND chlamydia, gonorrhoea, Lymphogranuloma venereum, *Mycoplasma genitalium*, HSV, Syphilis

Section 2.2

Men who have sex with men OR MSM OR gay men AND HIV, HIV seroconversion, acute seroconversion, HIV testing, HIV AND Home sampling, HIV AND home testing, MSM AND couples AND HIV testing

Section 3

PubMed Search up to December 2014 using MeSH terms:

(((((('colitis'[MeSH Major Topic] OR 'enterocolitis'[MeSH Major Topic]) OR 'proctocolitis'[MeSH Major Topic]) OR 'proctitis'[MeSH Major Topic]) OR 'gastroenteritis'[MeSH Major Topic])) AND

((gay[MeSH Major Topic]) OR homosexual[MeSH Major Topic]) OR MSM[MeSH Major Topic])

(((((dysentery[Title/Abstract]) OR diarrhoea[Title/Abstract]) OR shigella[Title/Abstract]) OR ETEC[Title/Abstract]) OR EHEC[Title/Abstract]) OR vero[Title/Abstract]) OR VTEC[Title/Abstract])) AND ((MSM[Title/Abstract]) OR gay[Title/Abstract]) OR sexual[Title/Abstract])

(((((('colitis'[MeSH Major Topic] OR 'enterocolitis'[MeSH Major Topic]) OR 'proctocolitis'[MeSH Major Topic]) OR 'proctitis'[MeSH Major Topic]) OR 'gastroenteritis'[MeSH Major Topic])) AND 'Disease transmission, infectious'[MeSH Major Topic]

(((((('colitis'[MeSH Major Topic] OR 'enterocolitis'[MeSH Major Topic]) OR 'proctocolitis'[MeSH Major Topic]) OR 'proctitis'[MeSH Major Topic]) OR 'gastroenteritis'[MeSH Major Topic])) AND 'Therapeutics'[MeSH Major Topic]

(((((('colitis'[MeSH Major Topic] OR 'enterocolitis'[MeSH Major Topic]) OR 'proctocolitis'[MeSH Major Topic]) OR 'proctitis'[MeSH Major Topic]) OR 'gastroenteritis'[MeSH Major Topic])) AND 'Diagnosis'[MeSH Major Topic]

- (i) 2013 European Guideline on the management of proctitis, proctocolitis and enteritis caused by sexually transmissible pathogens
- (ii) Sexually Transmitted Diseases Treatment Guidelines, 2010. Centers for Disease Control and Prevention
- (iii) Clinical Knowledge Summaries, National Institute for Health and Care Excellence (<https://cks.nice.org.uk/>, accessed 2 December 2017)
- (iv) Cochrane Collaboration Databases (www.cochrane.org)

Section 4

Men who have sex with men OR MSM OR gay men AND HPV OR genital warts. Imiquimod AND anal warts

Section 5

MSM AND Partner Notification, Apps, Online

Section 6

Men who have sex with men OR MSM OR gay men AND HIV, HIV seroconversion, acute seroconversion, PEP, PrEP, HIV prevention, MSM or Men who have sex with men AND HIV infected AND STI

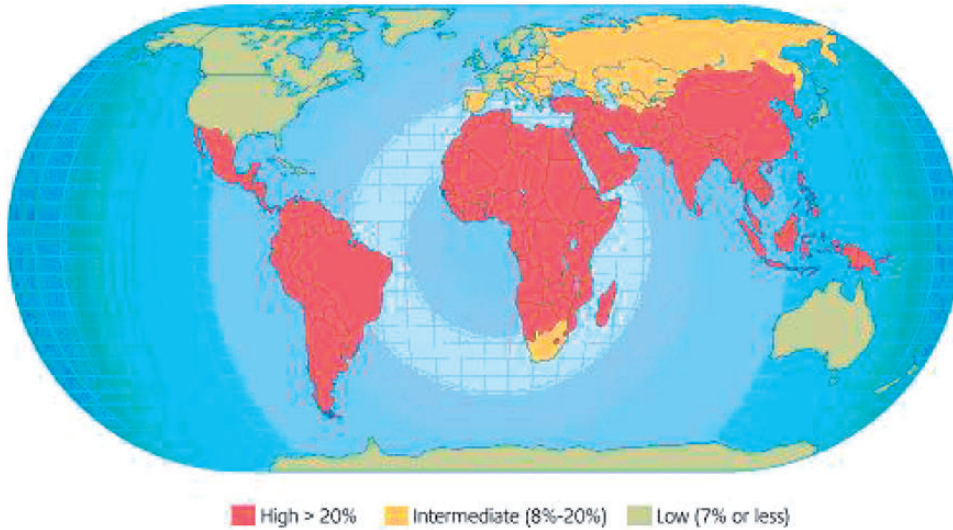
Section 7

MSM AND sexual, psychosexual, difficulties, premature ejaculation, erectile dysfunction, (low) sexual desire, sexual compulsion

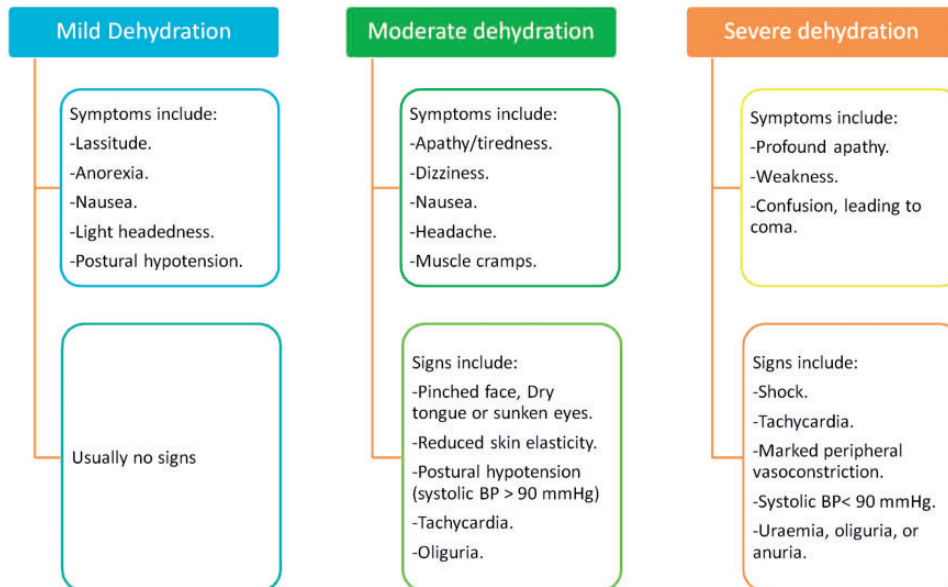
Appendix 2. Additional information on symptomatic gastrointestinal infections

Map

Figure 5. Map showing risk zones for travellers’ diarrhoea. Source: <https://travelhealthpro.org.uk/factsheet/53/travellers-diarrhoea>.



Assessment of severity of dehydration



Guidance on collecting a faecal specimen for microbiological examination

Collecting a stool specimen for microbiological examination

1. DO NOT mix urine with the stool sample. If you need to pass water, do so first.
2. Place a wide mouth container (potty, empty plastic food container e.g. 1 litre ice cream carton) in the bowl, or put clean newspaper or plastic wrap over the toilet seat opening (this prevents the faecal/stool specimen from falling into the toilet bowl). (Collection container does not have to be sterile, but must be clean).
3. Pass stool onto the potty, plastic container, newspaper or plastic wrap.
4. Using the spoon built into the lid of the collection tube (or the wooden sticks, if supplied), place small scoopfuls of stool from areas which appear bloody, slimy or watery into the tube. DO NOT OVERFILL. Try not to spill stool on the outside of the tube.
5. Replace the collection tube lid and screw on tightly.
6. Dispose of remaining stool in your potty, plastic container or newspaper down the toilet. Clean potty with hot soapy water. Wrap plastic container, newspaper or plastic wrap in newspaper and dispose of in normal refuse in a plastic bag.
7. Label the collection tube with your name, date of birth and the date of collection
8. Place the container in the plastic bag attached to the specimen request form.
9. Wash your hands thoroughly in hot running water with soap.
10. Deliver to the surgery/laboratory as soon as possible.
11. If specimen cannot be delivered immediately, refrigerate in surgery fridge until delivery.



Advice on preventing spread of infection²⁸⁵

- Hands should be washed thoroughly with (preferably liquid) soap in warm running water and dried after going to the toilet and before preparing or serving food or eating meals.
- Towels and flannels should not be shared.
- A flush toilet should be used if possible. If a commode or bedpan must be used, it should be handled with gloves, the contents disposed of into the toilet and the container then washed with hot water and detergent and allowed to dry.
- Soiled clothing and bed linen should be washed separately from other clothes and at the highest temperature they will tolerate (for example 60°C or higher for linen), after removal of excess faecal matter into the toilet. Soaking in disinfectant is not necessary. The washing machine should not be more than half full to allow for adequate washing and rinsing.
- Toilet seats, flush handles, basin taps, surfaces and toilet door handles should be cleaned at least once daily with hot water and detergent. A disinfectant (if available) and a disposable cloth (or one dedicated for toilet use) should be used to clean toilets.
- They should not go to work or other institutional settings until at least 48 h after diarrhoea has stopped. Public health authorities will advise if a pathogen is isolated from the person's stool sample: longer periods of exclusion are required in some circumstances.
- They should avoid entering swimming pools for two weeks after the last episode of diarrhoea.