CSIRO PUBLISHING

REVIEW
https://doi.org/10.1071/SH22134

SEXUAL HEALTH

Australian sexually transmitted infection (STI) management guidelines for use in primary care 2022 update

Jason J. Ong[A,B,C,*], Christopher Bourne[D,E], Judith A. Dean[F], Nathan Ryder[D,G], Vincent J. Cornelisse[H,I], Sally Murray[J], Penny Kenchington[K], Amy Moten[L], Courtney Gibbs[M], Sarah Maunsell[M], Tyler Davis[M], Jessica Michaels[M] and Nicholas A. Medland[B,I]

For full list of author affiliations and declarations see end of paper

*Correspondence to:
Jason J. Ong
580 Swanston Street, Carlton, Vic. 3053, Australia
Email: Jason.Ong@monash.edu

Handling Editor:
Roy Chan

ABSTRACT

The 'Australian Sexually Transmitted Infection (STI) Management Guidelines For Use In Primary Care' (www.sti.guidelines.org.au) provide evidence-based, up-to-date guidance targeted at use in primary care settings. A major review of the guidelines was undertaken in 2020–22. All content was reviewed and updated by a multi-disciplinary group of clinical and non-clinical experts, and assessed for appropriateness of recommendations for key affected populations and organisational and jurisdictional suitability. The guidelines are divided into six main sections: (1) standard asymptomatic check-up; (2) sexual history; (3) contact tracing; (4) STIs and infections associated with sex; (5) STI syndromes; and (6) populations and situations. This paper highlights important aspects of the guidelines and provides the rationale for significant changes made during this major review process.

Keywords: chlamydia, gonorrhoea, guidelines, HIV testing, management, primary care, sexually transmitted infections, syphilis.

Introduction

The 'Australian Sexually Transmitted Infection (STI) Management Guidelines For Use In Primary Care' ('the guidelines') (www.sti.guidelines.org.au) provide evidence-based, up-to-date guidance targeted at use in primary care settings in Australia. In Australia, most STI testing and treatment occurs in the non-specialist primary care setting, including general practice, community health and Aboriginal community controlled health services. For this reason, the Australian guidelines are targeted at and accessible to primary care.

The guidelines were first developed in 2012 by the Australasian Sexual and Reproductive Health Alliance (ASRHA) and are managed by the Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM). They provide concise information on the prevention, testing, diagnosis, management and treatment of STIs for adults and adolescents, and are frequently cited by other guidelines. The website receives an average of 16 000 unique users each month. The guidelines are developed and updated using research, surveillance and practice data. A major review of the guidelines was undertaken in 2020–22. All content was reviewed and updated by a multi-disciplinary group of clinical and non-clinical experts, and was assessed for appropriateness of recommendations for key affected populations and organisational and jurisdictional suitability. The guidelines are designed to be complimentary to other well recognised international STI management guidelines, for example, the World Health Organization (WHO),[1] British Association for Sexual Health and HIV,[2] and US Centers for Disease Control and Prevention.[3]

The field of HIV/STIs and sexual health more broadly continues to evolve as new research and best-practice approaches to clinical management emerge. This paper highlights important key aspects of the guidelines and provides the rationale for significant changes made during this major review.

Received: 16 August 2022
Accepted: 15 October 2022
Published: 11 November 2022

Cite this:
Ong JJ *et al.* (2023)
Sexual Health, **20**(1), 1–8.
doi:10.1071/SH22134

Materials and methods

Before commencing this major review, the ASHM Sexual Health Program, in collaboration with ASRHA and the ASHM board, developed a new committee structure and review process. A Steering Committee was convened in 2020 to provide direction and leadership to the review process, including editorial standards, shape, scope, content, form and purpose. This committee consists of sexual health physicians, general practitioners, nurse practitioners, nurses and researchers in sexual health and from around Australia. The Steering Committee oversaw the 2020–22 major review of the guidelines.

A multi-sectoral and multi-disciplinary Reference Committee was convened to provide input and feedback. The Reference Committee consisted of 44 clinical and non-clinical experts, community experts representing key affected populations, representative members of key collaborating sector organisations, Aboriginal community controlled health services, the Communicable Diseases Network Australia (CDNA), and jurisdictional representatives from the Australian Government's Blood Borne Viruses and Sexually Transmissible Infections Standing Committee (BBVSS) and other key stakeholders. A membership list of the Committees can be found in Appendix 1.

The process of the major review was as follows:

1. The Steering Committee and Reference Committee reviewed each section of the guidelines and provided initial feedback.
2. A lead from the Steering Committee was nominated for each section of the guidelines. The lead then convened a small group of writers with expertise in that section's topic to update the section.
3. Writers completed updates to their sections with the oversight of the Steering Committee. The Steering Committee provided guidance, structure and templates to ensure all updates were cohesive and in line with the goals of the guidelines.
4. The Reference Committee reviewed the updated and newly developed sections of the guidelines and provided feedback, which the Steering Committee and writers incorporated as appropriate.
5. The updated guidelines were posted on http://www.sti.guidelines.org.au/, with feedback sought from the broader sexual health workforce and affected communities. This public consultation was conducted from December 2021 to February 2022, with more than 200 suggestions from approximately 30 organisations and individuals.
6. The Steering Committee reviewed feedback from the workforce and community and made changes where deemed appropriate. Conflicting feedback was reviewed during a meeting of the Steering Committee, prior to implementing changes.
7. The Steering Committee finalised the major review and signed off on the updated guidelines.
8. Guidelines were submitted to BBVSS for endorsement as a national guideline. Organisational representatives were asked to confirm endorsement of the final version on behalf of their organisation.

Overview of the guidelines

Table 1 provides a summary of the major recommendations and implementation goals. The guidelines are divided into six main sections: (1) standard asymptomatic check-up; (2) sexual history; (3) contact tracing; (4) STIs and infections associated with sex; (5) STI syndromes; and (6) populations and situations.

Standard asymptomatic check-up

Key points

We recommend performing STI testing for asymptomatic people who: (1) request STI testing; (2) are at increased risk of STIs: new sexual partner(s), living in or travelling to areas of higher prevalence in Australia or internationally; (3) have a known exposure to any STI or history of an STI

Table 1. Summary of major recommendations in the 2022 Australian STI Management Guidelines.

Recommendation	Implementation goals
HIV and syphilis testing is recommended in all standard asymptomatic STI testing	Alignment of testing recommendations across all priority populations.
More frequent syphilis testing in pregnancy and antenatal period	Elimination of HIV and congenital syphilis by increasing testing when risk is not known or suspected.
Gonorrhoea treatment unchanged	Limit the development and dissemination of antimicrobial resistant gonorrhoea based on Australian data.
Single dose oral ciprofloxacin for gonorrhoea only when molecular susceptibility confirmed on NAAT or culture	
Sex-associated diarrhoea	Management of this condition in a sexual health framework.
Mycoplasma genitalium: do not screen asymptomatic individuals, updated treatment recommendations	Avoid unnecessary antibiotics.
Inclusive language throughout	Better health for trans and gender diverse people.

within the past 12 months; or (4) are a member of or have partner/s from priority sub-populations (e.g. MSM, sex workers, pregnant people, Aboriginal and Torres Strait Islander people, trans and gender diverse people).

Significant changes

We recommend that HIV and syphilis tests be included whenever STI testing is indicated. This reflects the aim of eliminating HIV transmission and the rise of syphilis notifications in Australia.[4] This is consistent with the WHO guidance for integrating HIV testing with STI clinical services to create opportunities for early diagnosis of co-infections and increase uptake of HIV testing among populations at higher risk for HIV infection.[5,6] HIV testing opportunities are still being missed for people tested for other STIs or diagnosed with STIs.[7]

Sexual history

Key points

This section provides practical advice on how to start the discussion, example questions for sexual history and detailed risk assessment, consent, special situations and additional resources. Starting the conversation about sexual health can involve using questions that normalise (e.g. 'We are offering STI testing to all sexually active people under the age of 30 as STIs are common and it's important to treat early. Would you like a test while you're here today?'); using a hook (e.g. 'We are seeing a lot more syphilis and gonorrhoea in recent months. These STIs can be serious but they are easy to test for and treat. Would you like a test today?'); or incorporating into existing discussions (e.g. 'Since you're here for a cervical screening test (or contraception), could we also talk about other aspects of sexual health?').

Contact tracing

Key points

Contact tracing is a critical component for controlling HIV/STI transmission, and the guidelines now emphasise that this is part of STI management. Specifically, contact tracing is the diagnosing clinician's responsibility, not the public health units'. Best practices and evidence for contact tracing are further elaborated in the Australasian Contact Tracing Guidelines.[8]

STIs and other infections associated with sex

Key points

This section provides recommendations for diagnosis and management of anogenital warts, chlamydia, donovanosis, ectoparasites, genital herpes simplex virus, gonorrhoea, hepatitis A and B, HIV, lymphogranuloma venereum, *Mycoplasma genitalium*, syphilis and trichomoniasis. For infections associated with sex, there are also recommendations related to bacterial vaginosis, candidiasis, and hepatitis C.

With the ongoing syphilis epidemic throughout Australia, there are increasing infection rates in heterosexuals and during pregnancy, in addition to outbreaks in many remote areas;[6] thus warranting a lower threshold to test for syphilis. We recommend syphilis testing whenever STI testing is offered in all populations, with particular attention to antenatal women and other pregnant people, with recommendations to test multiple times during pregnancy.[9]

For *M. genitalium*, we recommend only testing symptomatic patients and asymptomatic ongoing sexual partners of index patients. This is consistent with the United Kingdom guidelines,[10] to avoid potential harms associated with screening asymptomatic populations by exacerbating antimicrobial resistance.[11]

For gonorrhoea, we recommend pharyngeal swabs (for NAAT/polymerase chain reaction) for all people with multiple sexual partners, including MSM and sex workers; and offering anorectal swabs for anyone who has had anal sex, and all MSM. We highlight that gonococcal culture should always be collected before antibiotics are administered, but treatment should be administered without waiting for culture results.

For uncomplicated gonorrhoea, despite changes in the US and UK to recommend monotherapy with ceftriaxone,[12,13] the Australian treatment recommendations remain unchanged for uncomplicated anogenital gonorrhoea (i.e. ceftriaxone 500 mg intramuscular stat and azithromycin 1 g oral stat), after review by an expert panel convened by the CDNA.[14] Other countries should similarly review local STI epidemiology and background antimicrobial resistance to determine the value of a dual therapy regimen. Note that for uncomplicated pharyngeal gonorrhoea, the treatment recommendation is ceftriaxone 500 mg intramuscular stat and azithromycin 2 g oral stat. There is potential for increased gastrointestinal side effects with a 2 g dose, but may be better tolerated if the dose is split (i.e. 1 g followed by 1 g 6–12 h later).[15] Ciprofloxacin 500 mg orally immediately can be used to treat gonorrhoea, but only if susceptibility has been confirmed on NAAT or culture, and this should not delay treatment.

Significant changes

For chlamydia, doxycycline is the recommended treatment in all anatomical sites. There is evidence for the superiority of doxycycline over azithromycin for treating anorectal chlamydia.[16] So, for uncomplicated genital or pharyngeal chlamydia, doxycycline can cover non-genital or untested sites, with better efficacy for non-genital infections and may be pre-treatment for concurrent *M. genitalium*.[16] Azithromycin is the alternative treatment as it is effective when treating isolated genital chlamydia (i.e. when other anatomical sites test negative). Azithromycin can also be a useful option if there are concerns about poor adherence.

If using azithromycin for anorectal infections, we recommend azithromycin 1 g oral stat and repeat in 12–24 h based on pharmacodynamics;[17] previously, we recommended repeating azithromycin 1 g in 1 week, but there is no evidence to support this. We recommend a test of cure after using azithromycin for anorectal infection. To improve antibiotic stewardship, recommendations for contact tracing are reworded to stress that immediate treatment is not recommended for all sexual contacts of chlamydia but instead to offer testing of exposed anatomical sites and await results.

For *M. genitalium*, in response to rising antimicrobial resistance, we have updated the special treatment situations when first-line therapy fails or is contraindicated. We suggest the consideration of: pristinamycin 1 g three times daily combined with doxycycline 100 mg daily for 10 days, which cures 75% of macrolide-resistant infections;[18,19] minocycline 100 mg twice daily for 14 days, which cures 70% of macrolide-resistant infections;[19] or doxycycline 100 mg daily combined with sitafloxacin 100 mg daily twice daily for 7 days, which has greater than 90% efficacy when other therapies fail.[20] Antibiotic recommendations remain an evolving area as we monitor treatment effectiveness, and the online guidelines will be updated as new evidence emerges.

For pubic lice, we recommend treatment with Pyrethrins 0.165% + Piperonyl butoxide 1.65% topical foam to pubic and other hair infested with lice, and wash off after 10 min. We removed Permethrin 1% because this is no longer available in Australia. It might be possible to use Permethrin 5%, but this is more expensive and there are no trial data to support its use for pubic lice.

For hepatitis C virus (HCV), this section was updated to concur with national HCV guidelines.[21] Specifically, we recommend using pan-genotypic medicines and no longer require HCV genotype for treatment. We highlight the utility of a clinical assessment tool.[22] There are also changes to recommendations for risk and screening populations. Populations at risk include: people with current or history of injecting drug use; people with a prison history; people born in HCV endemic countries and regions; people who received blood products before 1990 or in developing countries; people who engage in condomless anal sex with a partner with HCV infection; people who participate in group sex; and current HIV PrEP users. We emphasise that current injecting drug use must not be a barrier to starting treatment.

We removed the section on chancroid, given the rarity of this condition in Australia.

STI syndromes

Key points

This section provides recommendations for diagnosis and management of anogenital lumps, anogenital ulcers, anorectal syndromes, cervicitis, epididymo-orchitis, genital dermatology, pelvic inflammatory disease, sex-associated diarrhoea, skin rashes and lesions, urethritis, and vaginal discharge.

For urethritis, we recommend testing for *M. genitalium* using first-pass urine (in addition to testing for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*). If omitted initially, a test for *M. genitalium* can be conducted if there are persistent or recurrent symptoms after initial empirical treatment. Doxycycline 100 mg bd oral for 7 days is the only recommended treatment with no alternative regimen due to the increasing prevalence of macrolide-resistant *M. genitalium*; doxycycline is the lead-in treatment for *M. genitalium* if it is detected and is equally effective against *C. trachomatis* detected or untested at other anatomical sites.

Significant changes

The recommendations for sex-associated diarrhoea are an important new addition to the guidelines. There are reports of increasing detection of drug-resistant shigellosis among MSM, highlighting the need for expert local advice and stool culture when treating diarrhoea in MSM.[23] Also, other sex-associated causes of enteritis, proctocolitis and distal proctitis are often neglected in the differential diagnosis of diarrhoea and other gastrointestinal symptoms, and we now list these categorised by symptomatology.

The skin rash and lesions section has had a major rewrite, allowing primary care clinicians to consider general dermatology in relation to STIs and hepatitis. These changes will encourage the reader to think about STIs when examining, testing and managing clients with rashes, lumps and lesions that might not be on the genital skin.

In the genital dermatology section, the authors have considered causes for skin conditions on the anogenital skin that may not be STI, for example, autoimmune disorders, malignancies, trauma, and inflammatory conditions such as psoriasis and eczema. There is a comprehensive list of treatments for non-STI-related genital conditions and other practical advice such as the use of photography for clinical monitoring or electronic referrals to specialists.

Population and situations

Key points

This section provides testing and follow-up recommendations for Aboriginal and Torres Strait Islander people, adult sexual assault, MSM, people in custodial settings, people living with HIV, people who use drugs, pregnant people, refugees and migrants to Australia, regional and remote populations, sex workers, trans and gender diverse people, women who have sex with women, and young people.

Significant changes

The section on Aboriginal and Torres Strait Islander peoples has important contextual information outlining

some key factors behind the high prevalence of STIs and blood-borne viruses in some members of this population. The importance of culturally safe care is emphasised. Practice tips are added to encourage greater uptake of relevant Medicare Benefits Schedule item numbers and the involvement of Aboriginal health workers where possible.

The section for adult sexual assault has had major changes. It is now placed in a 'time from assault' framework as the assessment, management, and ongoing support will differ depending on how recently the assault occurred. The consideration for post-exposure prophylaxis (PEP) for STIs has been removed with the only PEP (after risk assessment) recommended for HIV, HBV and pregnancy. The clinician is encouraged to ensure post-assault follow-up for testing rather than considering potential infection from the outset. The timeframes for when to conduct particular tests are outlined in 'testing advice'. We included a new entry regarding historical sexual assault, as the primary care clinician may be the first to hear about childhood abuse. Clinicians should facilitate psychological support where necessary, and encourage their patients to involve the police and/or sexual assault support services when appropriate.

We highlight that people in custodial settings may engage in sexual practices that are different from their usual practices, and may share drug injecting equipment due to lack of needle and syringe programs in prisons. Hence, we recommend that all people in custodial settings should be offered screening for STIs and blood-borne viruses regularly throughout their incarceration period and after their release.

For people who use drugs, we now highlight the need for additional services and support, including prescription of naloxone for people who use opioids, referral to harm reduction services such as needle-and-syringe programs (NSP), peer-based services, and drug and alcohol services. We also highlight the importance of offering PrEP to this population.

The sex worker section has been updated to reflect recent changes in laws regarding sex work in some Australian jurisdictions. This section has also been updated to align with the information regarding laws and sexual health support available on the national peak Australian Sex Worker Association website.

The section for trans and gender diverse people required a major update, primarily incorporating current gender affirming language and addressing the deficiencies in published literature in this area. We acknowledge that in the past, the language of STI guidelines has been a barrier to good health care for trans and gender diverse people and that these guidelines also have an advocacy function. Attention to anatomy and sexual practices, rather than gender, with respect to acquisition and sites of STIs, and the use of inclusive language, has been incorporated across the guidelines. We removed references to gender diverse people using cross-hormone therapy and/or undertaking gender-affirming surgery as not all people who identify as trans and gender diverse are either ready, able to access, or want hormone therapy or surgery for their gender affirmation; it is also irrelevant to their STI testing and treatment. We recommend careful and sensitive history taking regarding preferred anatomical terms and sexual practices/partners and to avoid assumptions: discussing sexual practices and anatomy using words patients are comfortable with is key. We include a discussion of other issues that may be relevant to some trans and gender-diverse people, including the availability of PrEP and the need for effective contraception that does not interfere with their hormone treatment.

Conclusion

In conclusion, the revised 'Australian STI Management Guidelines for Use in Primary Care' provide important evidence-based updates for STI management in Australia. This timely revision ensures that this widely-used and well-regarded resource remains the primary source of guidance for STI testing and management in Australia. The simple, consistent layout and concise wording ensure the guidelines remain well-suited to point-of-care use. The consensus-based development process and strong community and stakeholder engagement give healthcare providers confidence that the guidelines reflect best practices in our local settings.

References

1 World Health Organization. Guidelines for the management of symptomatic sexually transmitted infections. Available at https://www.who.int/publications/i/item/9789240024168
2 British Association for Sexual Health and HIV. BASHH guidelines. 2022. Available at https://www.bashh.org/guidelines
3 Centers for Disease Control and Prevention. STI treatment guidelines, 2021. 2021. Available at https://www.cdc.gov/std/treatment-guidelines/default.htm
4 Green K, Schmidt H-MA, Vallely AJ, Zhang L, Kelly-Hanku A, Janamnuaysook R, *et al.* Ending AIDS in the Asia-Pacific region by 2030: are we on track? Policy, epidemiological and intervention insights. *Sex Health* 2021; 18(1): 1–4. doi:10.1071/SH20226
5 World Health Organization. Consolidated guidelines on HIV testing services: 5Cs: consent, confidentiality, counselling, correct results and connection 2015. Geneva: WHO; 2015. Available at https://apps.who.int/iris/handle/10665/179870 [cited 3 September 2021]
6 The Kirby Institute, University of New South Wales. HIV, viral hepatitis and sexually transmissible infections in Australia: Annual Surveillance Report 2021. The Kirby Institute, University of New South Wales; 2022. Available at https://kirby.unsw.edu.au/report-type/annual-surveillance-reports
7 Saleem K, Ting EL, Loh AJW, Baggaley R, Mello MB, Jamil MS, *et al.* Missed opportunities for HIV testing among those who accessed sexually transmitted infection (STI) services, tested for STIs and diagnosed with STIs: a systematic review and meta-analysis. *medRxiv* 2022. doi:10.1101/2022.06.24.22276855
8 Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine. Australasian contact tracing guidelines. 2016. Available at https://contacttracing.ashm.org.au/
9 Australian Government Department of Health and Aged Care. Pregnancy care guidelines – syphilis. 2019. Available at

https://www.health.gov.au/resources/pregnancy-care-guidelines/part-f-routine-maternal-health-tests/syphilis#362-syphilis-testing
10 Soni S, Horner P, Rayment M, Pinto-Sander N, Naous N, Parkhouse A, *et al.* British Association for Sexual Health and HIV national guideline for the management of infection with *Mycoplasma genitalium* (2018). *Int J STD AIDS* 2019; 30(10): 938–50. doi:10.1177/0956462419825948
11 Ong JJ, Ruan L, Lim AG, Bradshaw CS, Taylor-Robinson D, Unemo M, *et al.* Impact of screening on the prevalence and incidence of *Mycoplasma genitalium* and its macrolide resistance in men who have sex with men living in Australia: a mathematical model. *EClinicalMedicine* 2021; 33: 100779. doi:10.1016/j.eclinm.2021.100779
12 BASHH guidelines. British Association for Sexual Health and HIV national guideline for the management of infection with Neisseria gonorrhoeae. 2019. Available at https://www.bashhguidelines.org/current-guidelines/urethritis-and-cervicitis/gonorrhoea-2018/
13 St Cyr S, Barbee L, Workowski KA, Bachmann LH, Pham C, Schlanger K, *et al.* Update to CDC's treatment guidelines for gonococcal infection, 2020. *MMWR Morb Mortal Wkly Rep* 2020; 69(50): 1911–6. doi:10.15585/mmwr.mm6950a6
14 ASHM. Recommendations for treatment of gonococcal infections in the era of MDR/XDR gonorrhea. 2019. Available at https://ashm.org.au/resources/recommendations-for-treatment-of-gonococcal-infections-in-the-era-of-mdr-xdr-gonorrhoea/
15 Ong JJ, Aguirre I, Unemo M, Kong FYS, Fairley CK, Hocking JS, *et al.* Comparison of gastrointestinal side effects from different doses of azithromycin for the treatment of gonorrhoea. *J Antimicrob Chemother* 2022; 77: 2011–6. doi:10.1093/jac/dkac118
16 Lau A, Kong FYS, Fairley CK, Templeton DJ, Amin J, Phillips S, *et al.* Azithromycin or doxycycline for asymptomatic rectal *Chlamydia trachomatis*. *N Engl J Med* 2021; 384(25): 2418–27. doi:10.1056/NEJMoa2031631
17 Kong FYS, Horner P, Unemo M, Hocking JS. Pharmacokinetic considerations regarding the treatment of bacterial sexually transmitted infections with azithromycin: a review. *J Antimicrob Chemother* 2019; 74(5): 1157–66. doi:10.1093/jac/dky548
18 Read TRH, Jensen JS, Fairley CK, Grant M, Danielewski JA, Su J, *et al.* Use of Pristinamycin for macrolide-resistant *Mycoplasma genitalium* infection. *Emerg Infect Dis* 2018; 24(2): 328–35. doi:10.3201/eid2402.170902
19 Doyle M, Vodstrcil LA, Plummer EL, Aguirre I, Fairley CK, Bradshaw CS. Nonquinolone options for the treatment of *Mycoplasma genitalium* in the era of increased resistance. *Open Forum Infect Dis* 2020; 7(8): ofaa291. doi:10.1093/ofid/ofaa291
20 Durukan D, Doyle M, Murray G, Bodiyabadu K, Vodstrcil L, Chow EPF, *et al.* Doxycycline and sitafloxacin combination therapy for treating highly resistant *Mycoplasma genitalium*. *Emerg Infect Dis* 2020; 26(8): 1870–4. doi:10.3201/eid2608.191806
21 Hepatitis C Virus Infection Consensus Statement Working Group. Australian recommendations for the management of hepatitis C virus infection: a consensus statement (June 2020). 2020. Available at https://www.hepcguidelines.org.au/
22 ASHM. Decision making in hepatitis C. 2021. Available at https://ashm.org.au/resources/decision-making-in-hepatitis-c-2/?gclid=CjwKCAjwtcCVBhA0EiwAT1fY74Nh9plbebOBzxmQAZto3oOVADDOrZ5sWbCj-ClnQEeY0ODtew138xoCSuwQAvD_BwE
23 Williamson D, Ingle D, Howden B. Extensively drug-resistant shigellosis in Australia among men who have sex with men. *N Engl J Med* 2019; 381(25): 2477–9. doi:10.1056/NEJMc1910648

Data availability. All relevant data has been published in the manuscript. Further details can be obtained by writing to the corresponding author.

Conflicts of interest. JJO is the Special Issue Editor of *Sexual Health* and was blinded from the peer-review process for this paper. All other authors declare no conflicts of interest.

Declaration of funding. The Australian Government Department of Health funded the original development and this major review of the guidelines.

Acknowledgements. We thank all committee members and stakeholders who have contributed to the guidelines update (see Appendix 1).

Author contributions. NAM chaired the steering committee that oversaw the review of the guidelines. JJO wrote the first draft and all authors critically revised the manuscript. All authors approved the final version.

Author affiliations
[A]Melbourne Sexual Health Centre, Alfred Health, Melbourne, Vic., Australia.
[B]Central Clinical School, Monash University, Melbourne, Vic., Australia.
[C]Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, UK.
[D]Centre for Population Health, New South Wales Health, Sydney, NSW, Australia.
[E]Sydney Sexual Health Centre, South Eastern Sydney Local Health District, Sydney, NSW, Australia.
[F]School of Public Health, Faculty of Medicine, The University of Queensland, Herston, Qld, Australia.
[G]HNE Sexual Health, Hunter New England Health District, New Lambton, NSW, Australia.
[H]Kirketon Road Centre, New South Wales Health, Sydney, NSW, Australia.
[I]The Kirby Institute, University of New South Wales Sydney, Kensington, NSW, Australia.
[J]South Terrace Clinic, Fremantle and Fiona Stanley Hospitals, Fremantle, WA, Australia.
[K]Townsville Sexual Health Service, Queensland Health, Townsville, Qld, Australia.
[L]Shine SA, Adelaide, SA, Australia.
[M]ASHM, Sydney, NSW, Australia.

Appendix 1

Steering committee

Chair: Dr Nicholas Medland, *Sexual Health Physician* (Representing ASHM Board, Sexual Health National Advisory Group)
Dr Vincent Cornelisse, *Sexual Health Physician* (Representing ASHM HIV National Advisory Group)
A/Prof Dr Jason Ong, *Sexual Health Physician* (Representing ASHM Sexual Health National Advisory Group)
Penny Kenchington, *Nurse Practitioner* (Representing ACNP)
Dr Christopher Bourne, *Sexual Health Physician* (Representing BBVSS NSW)
Dr Judith Dean, *Senior Research Fellow* (Representing ASHA)
Dr Sally Murray, *Sexual Health Physician*
Dr Amy Moten, *General Practitioner* (Representing RACGP)
Jessica Michaels, *Director of Programs* (Representing ASHM Sexual Health Program)
Dr Nathan Ryder, *Sexual Health Physician & Researcher* (Representing RACP AChSHM)

Reference committee

Chair: Dr Vincent Cornelisse, *Sexual Health Physician* (Representing ASHM HIV National Advisory Group)

Organisational representatives

Shannon Woodward, *Australasian Sexual Health and HIV Nurses Association* (ASHHNA)
Anna Pierce, *Australasian Society for Infectious Diseases* (ASID)
Joanne Perks, *Australian Primary Health Care Nurses Association* (APNA)
Lauren Bradley, *Australian Injecting and Illicit Drug Users League* (AIVL)
Brent Mackie, *Australian Federation of AIDS Organisations* (AFAO)
Teddy Cook, *ACON Trans & Gender Diverse Health Equity Program*
Fiona Bisshop, *Australian Professional Association for Trans Health* (AusPATH)
Kathleen McNamee, *Family Planning Alliance Australia* (FPAA)
Eleanor Freedman, *Forensic and Medical Sexual Assault Clinicians Australia* (FAMSACA)
John Didlick, *Hepatitis Australia*
Catriona Melville, *MSI Australia*
Jules Kim, *Scarlet Alliance*
Toby Vickers, *Sexual Health and Surveillance Program, Kirby Institute*
Natali Smud, *The Multicultural HIV and Hepatitis Service* (MHAHS)
Andrew Webster, *The National Aboriginal Community Controlled Health Organisation* (NACCHO)
Daniel Reeders, *The National Association of People with HIV Australia* (NAPWHA)
Kirsten Black, *The Royal Australian and New Zealand College of Obstetricians and Gynaecologists* (RANZCOG)

Individuals

Prof Peter Aggleton, *Sociologist and Educationalist*
A/Prof Catherine O'Connor, *Sexual Health Physician*
Dr Belinda Wozencroft, *General Practitioner*
Rebecca Houghton, *Nursing Unit Manager*
Dr Lewis Marshall, *Sexual Health Physician*
Eloise Williams, *Microbiology Registrar*
Prof Meridith Temple-Smith, *Sexual and Reproductive Health Researcher*
Dr Darren Russell, *Sexual Health Physician*
Prof David Templeton, *Sexual Health Physician*
Dr Manoji Gunathilake, *Sexual Health Physician*
Dr Anna McNulty, *Sexual Health Physician*
Katie Edmondson, *Clinical Nurse Consultant/Midwife*
Joanne Leamy, *Clinical Nurse Consultant*
Anne Roseman, *Sexual Health and BBV Coordinator*

BBVSS/CDNA

Dr Mahesh Ratnayake, *Sexual Health Physician* (Representing BBVSS SA)
Dr Donna Mak, *Public Health Physician* (Representing BBVSS WA)
Megan Howitt, *Director Sexual Health and Blood Borne Viruses* (Representing BBVSS NT)
Michael West, *Manager – Sexual Health and Viral Hepatitis* (Representing BBVSS VIC)
Heather O'Donnell, *Lead for STI Policy* (Representing BBVSS VIC)
Stuart Manoj-Margison, *Director – Blood Borne Viruses, Sexually Transmissible Infections, and Torres Strait Health Policy Section* (Representing BBVSS Commonwealth)
Dr Jessica Rotty, *Physician* (CDNA)

ASHM staff

Courtney Gibbs, *Program Manager*
Sarah Maunsell, *Program Manager*
Tyler Davis, *Project Officer*