


Why sexual health clinics are important in the 2020s

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ABSTRACT

To make services more accessible, acceptable and affordable, sexual health service delivery models have embraced innovation, technology, outreach and decentralisation. In particular, some routine high-volume services, like asymptomatic testing for sexually transmitted infections (STIs), can be delivered in general practice, online or in non-clinical settings. On the surface, sexual health clinics, like hospitals or other primary care clinics, might appear to be operating on a model that has not changed significantly in recent times. However, globally sexual healthcare needs are rising both in volume and complexity, not all of which can be adequately met through decentralised care. Sexual health clinics themselves are the site of considerable innovation. The importance of sexual health clinics in the diagnosis and treatment of symptomatic STIs is likely to increase with the increasing burden of disease, the complexity of treatment guidelines and the emergence of new infections. Services essential to patient health such as immediate or complex clinical care, partner notification and safeguarding, and activities essential to the health system like research, training and supervision require expertise to be located where it can be accessed and maintained at reasonable cost. We do not know whether increasing some services outside existing models can safely compensate for reducing other services inside them.

Keywords: efficiency, outreach, partner notification, research, safeguarding, services delivery, sexual health clinic, sexually transmitted infections, testing, training.

Introduction

The role of the sexual health clinic (SHC) in the delivery of services has changed significantly in recent years.¹ These changes have been led, or driven, by outreach and innovation on one hand, and cuts and redirection of public health funding on the other.^{2,3} Over time, an increasing range of services previously only offered within SHCs are now able to be offered outside them.²

Outreach services for testing for sexually transmitted infections (STI) are not new; clinic staff travelling to non-specialist clinic sites or non-clinical sites to provide services to vulnerable or key populations is an extension of the sexual health clinic model.^{2,4} In contrast, in the past decade, a range of innovations in the use of existing information technology have seen an acceleration in the decentralisation of many of the components of sexual health service delivery that previously were available only or predominantly at specialised SHCs.⁵

In this review, we examine the current context of service decentralisation to primary care and non-clinical settings (including private residences) and the key role that this process has played in service accessibility and affordability. Although many services offered by the specialist SHC could possibly be offered in primary care, the reality is that they are not; immediate and accurate clinical management of symptomatic STIs, partner notification and active contact tracing, pro-active prevention of sexual harm, abuse and neglect in vulnerable populations, and training and supervision of health workers are all largely delivered only in sexual or reproductive health settings. Here, we examine those services and activities that are essential to patient care and the health system and which require the concentration and co-location of infrastructure, expertise and service capacity only found in sexual health clinics.

In much of the global south, too, where sexual health strategic targets remain unmet and curable STIs and their clinical sequelae are rising, the sexual health service delivery model is being reconsidered to affordably create access where currently none exists.⁶ There is a growing acceptance that existing syndromic care models are no longer sufficient and that innovation and incorporation of new technologies is required.⁷ Arguably, future decades may see a convergence in the way that STI services are delivered across differently resourced settings, as has been observed in the global HIV response. This review, however, focusses on those settings where a comprehensive range of services currently or previously have been fully resourced.

Are new models enough?

Globally, prevalence and incidence of STIs remain high, particularly those bacterial infections that are most amenable to control through the provision of STI testing and treatment.⁸ As a result, STI control targets tend to focus on increasing testing.⁶ Although decentralised, outreach, online or home sampling and testing have the potential to increase both accessibility and volume of testing, there is little evidence for the population impact of asymptomatic testing on prevalence or incidence. In those resource-rich settings where innovative models of testing and treatment are being designed and implemented, the rise in serious, curable STIs is greatest; in particular syphilis, with its spectrum of serious clinical manifestations.⁹ Although testing and treatment underpin STI control, more frequent testing of those at-risk, earlier treatment and robust partner notification and management remain at the centre of the response to rising incidence and prevalence of gonorrhoea, chlamydia, and syphilis in affected populations.¹⁰ In many settings, SHCs remain the place where most people go for testing and treatment.¹¹ We specifically lack evidence that increasing services outside SHCs, as desirable as that may appear, can safely compensate for reducing services provided directly by them.

In some contexts, the expansion of decentralised service delivery – the new model – is being accompanied by the relative contraction of the delivery of a comprehensive package of services in sexual health clinics – the old model. Although the benefits of new models can be measured in well-designed program evaluations, the potential cost to individuals and public health of shrinking the old model is more difficult to identify. Although expansion of universal health care, particularly in the global south, is being proposed as a solution to STI control,¹² it seems that funding of comprehensive sexual health services in the global north is being rolled back.^{13–15}

More recently, the coronavirus disease 2019 (COVID-19) pandemic necessitated the rapid re-adaptation of sexual

health service delivery with less reliance on patients travelling into clinics for face-to-face consultations with clinical staff, and most services rapidly pivoted to telehealth.^{16,17} The long-term impacts of the COVID-19 pandemic on health system structures are yet to emerge, including those relating to health inequalities. Where evaluated, these changes have been found to be acceptable, although not always preferable to service users.^{18–20} The rapid transition to online and telehealth services during the COVID-19 pandemic has highlighted the potential and the limitations of these approaches, and the risk of digital exclusion of vulnerable people.²¹ However, hybrid approaches to telehealth and face-to-face service delivery, increasing decentralisation and the growth of digital services is likely to continue.

More recently still, monkeypox has highlighted the role of SHCs to rapidly respond to an emerging infection transmitted through sexual networks.²² At the same time, concerns are being raised that reduced SHC capacity due to COVID-19 pandemic adaptations, resource re-allocation and a longer-term trend of funding reduction may pose a risk to public health.²³

Diagnosis and treatment of STIs

Although good sexual health is more than just the absence of disease,²⁴ a key role of sexual health clinics is to diagnose, treat and manage individuals with genitourinary symptoms. In addition to benefiting health, reduction in the infectious period by reducing the time between infection acquisition and treatment has substantial public health benefit.

Although online services may reduce barriers to access for some, especially those who might find it challenging to attend in person, they may increase barriers for others.^{25,26} Although encouraging those with less complex needs to use self-sampling may help to preserve capacity within physical services for those with more complex needs,^{27–29} there is evidence that utilisation of these models is greatest among younger women, those with higher levels of education, and people of white ethnicity.^{25,27,30,31} Conversely, there are several important aspects relating to individual and public health that may be better provided through face-to-face services. Two examples discussed here are provision of an immediate and accurate diagnosis and the identification of need for additional interventions.

The use of self-collected samples for the diagnosis of bacterial and viral STIs is well established;^{31,32} however, some conditions can only be diagnosed following inspection (e.g. genital dermatoses) or clinical examination (e.g. pelvic inflammatory disease); pelvic inflammatory disease is a condition where averting serious clinical sequelae is highly dependent on the quality and appropriateness of care at initial presentation, where symptoms and signs may be

difficult to elucidate, particularly for a less experienced clinician.³³

Although nucleic acid amplification testing (NAAT) has become the standard for diagnosis of most bacterial STIs, NAAT point-of-care testing is not yet widely available. Currently, light microscopy of wet or gram-stained specimens (particularly to assist the diagnosis of gonorrhoea, bacterial vaginosis and trichomoniasis) and dark-field microscopy (which, although use is decreasing, is still used for the immediate diagnosis of syphilis in some places) are important to ensure patients receive the correct diagnosis and timely treatment. In the future, the application of NAAT point-of-care testing to immediate clinical management of symptomatic patients would require the co-location of the clinician, the diagnostic platform and the range of possible treatments; in practice, this is likely to occur mostly in sexual health clinics.³⁴

There are several important implications of not receiving an immediate and accurate diagnosis. For the individual, there is lack of certainty in a situation where emotional reassurance is a priority.³⁵ At both individual and public health levels, syndromic management of urethral and vaginal discharge lacks sensitivity and specificity for the diagnosis of infections.^{36,37} In turn, this leads to poor antimicrobial stewardship; providing antibiotics to individuals who do not need them or the wrong antibiotics for those who do. This applies not only to the index patient, but also in terms of partner notification and management. Opportunities to take additional samples for culture, important for the surveillance of antimicrobial resistance, may also be lost.

Over time, rising concerns about antimicrobial resistance in relation to incorrect and unnecessary antibiotic use, and a rapid growth in diagnostic technologies, in particular point-of-care NAAT tests and molecular antimicrobial resistance testing, are increasing the complexity of the ways in which sexual health care is being delivered and a greater need for specialist services.

Partner notification, patient counselling, safeguarding, and provision of additional services

Partner notification (also known as contact tracing) is a key public health intervention. It prevents onward transmission of undiagnosed infection while also contributing to improved individual health by treating infection in the exposed partner and preventing reinfection in the index case. It also is subject to varying levels of complexity. The notification itself, based on provided contact information, and the offer of testing and referral may in some cases be sufficient. However, in many situations, access to an individual's clinical records, establishing separate notification records and capacity to track attendance, test results and treatment is necessary.

Although each of these components might be offered in different parts of the health system, in practice, they are usually delivered through or in SHCs. The role of the SHC will continue to be integral to the delivery of partner notification. Where some aspects move to other settings and providers, either entirely or partially, governance and oversight, including data capture and reporting by the clinical service, will continue to be required.^{38–40}

Partner notification also affords the opportunity for health promotion and prevention interventions in partners.⁴¹ Although some aspects of partner notification require skilled and experienced sexual healthcare professionals who would normally be located in SHCs or in public health departments to maximise outcomes, there has been recent exploration of how some partner notification could be delivered utilising technology under patient control or service facilitated.^{42–44} Although anonymous patient-controlled partner notification programs are not new,^{45–48} their inability to capture the relevant outcomes makes it difficult to fully assess their public health benefit. In contrast, those partner notification activities facilitated by the service are challenged by similar barriers for engagement with standard partner notification, which are less adaptable to different partner types and, as typically being stand-alone systems, present significant staff–time capacity problems.

The increasing use of home sampling for STI testing affords an opportunity to improve the delivery of partner notification and accelerated/expedited partner testing and treatment outside the physical setting of a sexual health clinic.^{49,50} Just as testing for specific conditions (e.g. HIV) is delivered within the community, often by peers, the delivery of partner notification within the same setting and by peers is likely to be acceptable.⁵¹

Furthermore, clinics can take on an important role in the protection of health, wellbeing and human rights, and prevention of harm, abuse and neglect. These principles are often collectively known as Safeguarding.⁵² Safeguarding activities in SHCs applies to all attendees, but has particular importance for children, young people and adults with specific vulnerabilities. They form a key resource for identifying people at risk of abuse, particularly sexual abuse and exploitation, sexual violence, and domestic abuse. Domestic abuse is common, and healthcare professionals can be the first to whom it is disclosed, although spontaneous disclosure is rare.^{53,54} Universal or targeted enquiry about domestic abuse is required; therefore, and is mandated in some health systems.^{55–57} Similarly, routine enquiry about non-consensual sex as part of sexual history taking in sexual health clinics is policy in some countries.^{57,58} Disclosure of either domestic abuse or sexual assault abuse can trigger the need for appropriate onward referrals to other specialist services or agencies in addition to meeting the immediate sexual healthcare needs.

More detailed enquiries as part of history taking for young people and vulnerable adults, as well as physical examination,

can identify child sexual exploitation, female genital mutilation honour-based violence, human trafficking, forced marriage, and sexualised drug use.^{57–59} STI services are well placed to identify young people at risk because STIs are a risk factor for the presence of child sexual exploitation.⁶⁰ Young people may first disclose sexual abuse in a sexual health clinic. Standardised approaches and appropriately trained staff are required to identify, prevent and respond to these issues.^{61,62}

Compared to Safeguarding in SHCs, online services have benefits such as perceived confidentiality and immediacy,^{63,64} but also limitations such as increased difficulty with making assessments where there are complexities such as language barriers or capacity issues.^{65,66} Service models are likely to be required where clear links and pathways between online and face-to-face services are available.^{65,67}

Service co-location, training and supervision

Co-location of multiple services and disciplines also creates opportunities to offer support and interventions that may not be the patient's main reason for presentation. Examples include hepatitis B vaccination, contraception, HIV post-exposure prophylaxis and, more recently, HIV pre-exposure prophylaxis (PrEP). The last example is a key clinical sexual health intervention that involves a complex interaction between understanding of risk, awareness of biomedical HIV prevention, healthcare service access and personal behaviour and which is delivered through SHCs, and in some jurisdictions predominantly or exclusively so.⁶⁸ In resource-rich settings where PrEP is often delivered by sexual health specialists, decentralisation allows more people to access PrEP with less expansion or diversion of existing specialist services.^{69–73} In more resource-limited settings, PrEP delivery outside clinical settings is proposed as a way of meeting PrEP coverage targets where there is little or no existing sexual health infrastructure.⁷⁴

Identifying people at risk of HIV infection who might not otherwise be aware of their eligibility for PrEP is a key component of PrEP guidelines and scale-up strategies; for example, attendances at sexual or reproductive health services where sexual risk is discussed, STI testing including HIV testing is offered or clinical management of STI presentation is performed, are ideal opportunities for initiating PrEP.^{75,76}

Service efficiency and effectiveness

Adverse funding environments and rising demand have stimulated the development of clinical service delivery innovations to increase service capacity and reduce unit costs while maintaining quality of care.² In Britain in 2012,

22.4% of women and 16.6% of men aged ≤ 24 years reported attending a sexual health service in the past year, most without referral from another service.¹¹ Early diagnosis and treatment reduces secondary transmission and clinical sequelae of STIs. Potential for delay in service delivery begins with the wait time to be seen in a clinic. Same-day and walk-in services, particularly when combined with rapid test turnaround times, have the potential to reduce the duration of infectiousness significantly.^{34,77}

After the patient arrives at the clinic, other innovations are available to facilitate the collection of key clinical information like sexual and symptom history, the way that information is used and to optimise allocation of resources. Many asymptomatic patients seeking testing do not require additional services or clinical review and few centres would provide it. Triage, however, does need to be reliably based on accurate patient information to ensure serious problems are not overlooked. When dealing with highly personal, culturally and socially sensitive information about sexual behaviour, attention to how it is best and most effectively gathered is critical, and age-old assumptions that person-to-person interview is necessary have been successfully challenged in the sexual health field; computer-assisted self interview (CASI) has been shown to be highly acceptable to patients and clinicians,⁷⁸ to improve the accuracy of sexual history information, in particular sensitive behavioural data.⁷⁹ Because it is collected directly into an electronic patient file, data are immediately available for triage. Furthermore, algorithms based on information provided through this method can be used to triage patients who require clinical intervention.⁸⁰

Triaging patients who do not require clinical examination or immediate treatment is a highly effective method to increase the number of patients receiving testing and freeing up clinical resources for those whose symptoms are suggestive of a STI or in whom guidelines might recommend immediate assessment and treatment; for example, those presenting because a sexual contact has been diagnosed with an STI.^{81,82}

Teaching and training

Sparse coverage of STIs and sexual health issues in traditional undergraduate medical and nursing curricula forces the need for high-quality training at a postgraduate level.⁵¹ Sexual health clinics coincide service provision with high volumes of training. As well as for undergraduate medical, nursing students and junior doctors, sexual health services provide specialist training in sexual health, and in sexual health components of other specialist training like family medicine, infectious diseases or obstetrics/gynaecology.⁸³

Postgraduate, diploma, certificate, or competency training to nurses, doctors or health workers provide transferable qualifications, ensuring a highly skilled workforce for the

future.⁵² Trainers must be suitably qualified and maintain their clinical experience and training skills. Because SHCs combine the concentration of patients, services and expertise with institutional governance, regulatory frameworks, quality standards and data management, they meet requirements for conducting high-quality and ethical research.⁸⁴

Summary and conclusions

In summary, the provision of sexual health services, in particular STI testing, outside of SHCs continues to pick up pace with benefits in access, which can be clearly demonstrated and are of significant benefit. Universal health care should include access for all to testing, including asymptomatic screening; however, there are a range of services that are provided through SHCs that are no less essential. Many of these have limited or no availability elsewhere, and it is likely that reduction in overall funding and service volume in SHCs has led to reduction in access to and accessibility of these services.

There is no part of the globe that can confidently claim to be adequately controlling STIs, despite the fact that many STIs are curable. Sexual health clinics are essential to reducing community STI harm, identifying and responding to STIs, and the conduct of research and provision of other essential services. Increasing services outside SHCs is not an argument for reducing services or funding inside them.

References

- House of Commons Health and Social Care Committee. Sexual health inquiry report. House of Commons Health and Social Care Committee; 2019.
- Dombrowski JC, Golden MR. Modernizing operations to improve efficiency and refine the role and mission of sexually transmitted infection clinics. *Sex Transm Dis* 2013; 40(1): 81–4. doi:10.1097/OLQ.0b013e31827de342
- Robertson R, Wenzel L, Thompson J, Charles A. Understanding NHS financial pressures. London, UK: The Kings Fund; 2017.
- Lister NA, Smith A, Tabrizi S, Hayes P, Medland NA, Garland S, *et al*. Screening for *Neisseria gonorrhoeae* and *Chlamydia trachomatis* in men who have sex with men at male-only saunas. *Sex Transm Dis* 2003; 30(12): 886–9. doi:10.1097/01.OLQ.0000099160.26205.22
- Fairley CK. Using information technology to control STIs. *Sex Transm Infect* 2011; 87(Suppl 2): ii25–7. doi:10.1136/sti.2010.048330
- World Health Organization. Global progress report on HIV, viral hepatitis and sexually transmitted infections, 2021. Accountability for the global health sector strategies 2016–2021: actions for impact. Geneva: World Health Organization; 2021.
- Wi TEC, Ndowa FJ, Ferreyra C, Kelly-Cirino C, Taylor MM, Toskin I, *et al*. Diagnosing sexually transmitted infections in resource-constrained settings: challenges and ways forward. *J Int AIDS Soc* 2019; 22(S6): e25343. doi:10.1002/jia2.25343
- Newman L, Rowley J, Vander Hoorn S, Wijesooriya NS, Unemo M, Low N, *et al*. Global estimates of the prevalence and incidence of four curable sexually transmitted infections in 2012 based on systematic review and global reporting. *PLoS ONE* 2015; 10(12): e0143304. doi:10.1371/journal.pone.0143304
- Spiteri G, Unemo M, Mårdh O, Amato-Gauci AJ. The resurgence of syphilis in high-income countries in the 2000s: a focus on Europe. *Epidemiol Infect* 2019; 147: e143. doi:10.1017/S0950268819000281
- British Association for Sexual Health and HIV, Terrence Higgins Trust. The state of the nation: sexually transmitted infections in England. 2020. Available at <https://www.tht.org.uk/our-work/our-campaigns/state-of-the-nation>
- Tanton C, Geary RS, Clifton S, Field N, Heap KL, Mapp F, *et al*. Sexual health clinic attendance and non-attendance in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Sex Transm Infect* 2018; 94(4): 268–76. doi:10.1136/sextrans-2017-053193
- Klausner JD, Broutet N. Health systems and the new strategy against sexually transmitted infections. *Lancet Infect Dis* 2017; 17(8): 797–8. doi:10.1016/S1473-3099(17)30361-4
- Kirby T. UK sexual health services struggle with public health cuts. *Lancet HIV* 2018; 5(5): e207–e8. doi:10.1016/S2352-3018(18)30068-7
- Leichtner JS, Heyer K, Peterman TA, Habel MA, Brookmeyer KA, Arnold Pang SS, *et al*. US public sexually transmitted disease clinical services in an era of declining public health funding: 2013–14. *Sex Transm Dis* 2017; 44(8): 505–9. doi:10.1097/OLQ.0000000000000629
- Cuffe KM, Leichtner JS, Gift TL. Assessing sexually transmitted disease partner services in state and local health departments. *Sex Transm Dis* 2018; 45(6): e33–e7. doi:10.1097/OLQ.0000000000000803
- Phillips TR, Fairley CK, Donovan B, Ong JJ, McNulty A, Marshall L, *et al*. Sexual health service adaptations to the coronavirus disease 2019 (COVID-19) pandemic in Australia: a nationwide online survey. *Aust N Z J Public Health* 2021; 45(6): 622–7. doi:10.1111/1753-6405.13158
- Cheng Y, Boerma C, Peck L, Botfield JR, Estoesta J, McGeehan K. Telehealth sexual and reproductive health care during the COVID-19 pandemic. *Med J Aust* 2021; 215(8): 371–2. doi:10.5694/mja.2.51219
- Henderson L, Gibbs J, Quinn J, Ramasami S, Estcourt C. Maintaining access to HIV pre-exposure prophylaxis in a pandemic: a service evaluation of telephone-based pre-exposure prophylaxis provision. *Int J STD AIDS* 2022; 33(7): 718–21. doi:10.1177/09564624211068766
- Bosó Pérez R, Reid D, Maxwell KJ, Gibbs J, Dema E, Bonell C, *et al*. Access to and quality of sexual and reproductive health services in Britain during the early stages of the COVID-19 pandemic: a qualitative interview study of patient experiences. *BMJ Sex Reprod Health* 2022. doi:10.1136/bmjsex-2021-201413
- Dema E, Gibbs J, Clifton S, Copas AJ, Tanton C, Riddell J, *et al*. Initial impacts of the COVID-19 pandemic on sexual and reproductive health service use and unmet need in Britain: findings from a quasi-representative survey (Natsal-COVID). *Lancet Public Health* 2022; 7(1): e36–e47. doi:10.1016/S2468-2667(21)00253-X
- Doctors of the World. A rapid needs assessment of excluded people in England during the 2020 COVID-19 pandemic. London, UK: Doctors of the World; 2020.
- Girometti N, Byrne R, Bracchi M, Heskin J, McOwan A, Tittle V, *et al*. Demographic and clinical characteristics of confirmed human monkeypox virus cases in individuals attending a sexual health centre in London, UK: an observational analysis. *Lancet Infect Dis* 2022. doi:10.1016/S1473-3099(22)00411-X
- Collins S, Dewsnap C, Gold D, Green I, McManus J, Martin P, Nutland W, Sparrowhawk A, Waters L. Consensus statement on response to the UK monkeypox outbreak [press release]. 2022. Available at <https://www.nat.org.uk/press-release/consensus-statement-response-monkeypox-outbreak>
- World Health Organization. Sexual health. World Health Organization; 2022. Available at <https://www.who.int/health-topics/sexual-health>
- Kersaudy-Rahib D, Lydié N, Leroy C, March L, Bébérac C, Arwidson P, *et al*. Chlamyweb Study II: a randomised controlled trial (RCT) of an online offer of home-based *Chlamydia trachomatis* sampling in France. *Sex Transm Infect* 2017; 93(3): 188–95. doi:10.1136/sextrans-2015-052510
- Middleton A, Pothoulaki M, Woode Owusu M, Flowers P, Mapp F, Vojt G, *et al*. How can we make self-sampling packs for sexually transmitted infections and bloodborne viruses more inclusive? A qualitative study with people with mild learning disabilities and low health literacy. *Sex Transm Infect* 2021; 97(4): 276–81. doi:10.1136/sextrans-2020-054869

- 27 Banerjee P, Thorley N, Radcliffe K. A service evaluation comparing home-based testing to clinic-based testing for Chlamydia and gonorrhoea in Birmingham and Solihull. *Int J STD AIDS* 2018; 29(10): 974–9. doi:10.1177/0956462418767180
- 28 Gilbert M, Thomson K, Salway T, Haag D, Grennan T, Fairley CK, et al. Differences in experiences of barriers to STI testing between clients of the internet-based diagnostic testing service GetCheckedOnline.com and an STI clinic in Vancouver, Canada. *Sex Transm Infect* 2019; 95(2): 151–6.
- 29 Gilbert M, Salway T, Haag D, Elliot E, Fairley C, Kraijden M, et al. A cohort study comparing rate of repeat testing for sexually transmitted and blood-borne infections between clients of an internet-based testing programme and of sexually transmitted infection clinics in Vancouver, Canada. *Sex Transm Infect* 2019; 95(7): 540–6. doi:10.1136/sextrans-2019-054071
- 30 Manavi K, Hodson J. Observational study of factors associated with return of home sampling kits for sexually transmitted infections requested online in the UK. *BMJ Open* 2017; 7(10): e017978. doi:10.1136/bmjopen-2017-017978
- 31 Barnard S, Free C, Bakolis I, Turner KME, Looker KJ, Baraitter P. Comparing the characteristics of users of an online service for STI self-sampling with clinic service users: a cross-sectional analysis. *Sex Transm Infect* 2018; 94(5): 377–83. doi:10.1136/sextrans-2017-053302
- 32 Ogale Y, Yeh PT, Kennedy CE, Toskin I, Narasimhan M. Self-collection of samples as an additional approach to deliver testing services for sexually transmitted infections: a systematic review and meta-analysis. *BMJ Glob Health* 2019; 4(2): e001349. doi:10.1136/bmjgh-2018-001349
- 33 Workowski KA, Bachmann LH, Chan PA, Johnston CM, Muzny CA, Park I, et al. Sexually transmitted infections treatment guidelines, 2021. *MMWR Recomm Rep* 2021; 70(4): 1–187. doi:10.15585/mmwr.r7004a1
- 34 Whitlock GG, Gibbons DC, Longford N, Harvey MJ, McOwan A, Adams EJ. Rapid testing and treatment for sexually transmitted infections improve patient care and yield public health benefits. *Int J STD AIDS* 2018; 29(5): 474–82. doi:10.1177/0956462417736431
- 35 Mapp F, Wellings K, Mercer CH, Mitchell K, Tanton C, Clifton S, et al. Help-seeking for genitourinary symptoms: a mixed methods study from Britain's Third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *BMJ Open* 2019; 9(10): e030612. doi:10.1136/bmjopen-2019-030612
- 36 World Health Organization. Guidelines for the management of symptomatic sexually transmitted infections: Web Annex A. Syndromic management or point of care tests for urethral discharge: systematic review and mathematical modelling. Geneva: World Health Organization; 2021.
- 37 World Health Organization. Guidelines for the management of symptomatic sexually transmitted infections: Web Annex B. Updated systematic review of the performance of the vaginal discharge syndromic management in treating vaginal and cervical infection: a systematic review and meta-analysis. Geneva: World Health Organization; 2021.
- 38 Estcourt CS, Gibbs J, Sutcliffe LJ, Gkatzidou V, Tickle L, Hone K, et al. The eSexual Health Clinic system for management, prevention, and control of sexually transmitted infections: exploratory studies in people testing for Chlamydia trachomatis. *Lancet Public Health* 2017; 2(4): e182–e90. doi:10.1016/S2468-2667(17)30034-8
- 39 Htaik K, Fairley CK, Bilardi JE, Chow EPF, Ong JJ, Chen MY. Evaluation of the online partner messaging service for sexually transmitted infections let them know. *Sex Transm Dis* 2022; 49(1): 12–4. doi:10.1097/OLQ.0000000000001505
- 40 Harding-Esch E, Nardone A, Gibbs J, Sutcliffe L, Sonnenberg P, Estcourt C, et al. Can remote STI/HIV testing and eClinical Care be compatible with robust public health surveillance? *Dh15* 2015; 2015: 129–30. doi:10.1145/2750511.2750517
- 41 Rayment M, Curtis H, Carne C, McClean H, Bell G, Estcourt C, et al. An effective strategy to diagnose HIV infection: findings from a national audit of HIV partner notification outcomes in sexual health and infectious disease clinics in the UK. *Sex Transm Infect* 2017; 93(2): 94–9. doi:10.1136/sextrans-2015-052532
- 42 Pellowski J, Mathews C, Kalichman MO, Dewing S, Lurie MN, Kalichman SC. Advancing partner notification through electronic communication technology: a review of acceptability and utilization research. *J Health Commun* 2016; 21(6): 629–37. doi:10.1080/10810730.2015.1128020
- 43 Kutner BA, Pho AT, López-Rios J, Lentz C, Dolezal C, Balán IC. Attitudes and perceptions about disclosing HIV and syphilis results using smarttest, a smartphone app dedicated to self- and partner testing. *AIDS Educ Prev* 2021; 33(3): 234–48. doi:10.1521/aeap.2021.33.3.234
- 44 Lessard D, Aslan A, Zeggagh J, Morel S, Michels D, Lebouché B. Acceptability of a digital patient notification and linkage-to-care tool for French PrEPers (WeFLASH®): key stakeholders' perspectives. *Int J STD AIDS* 2019; 30(14): 1397–407. doi:10.1177/0956462419878043
- 45 Bourne C, Zablotska I, Williamson A, Calmette Y, Guy R. Promotion and uptake of a new online partner notification and retesting reminder service for gay men. *Sex Health* 2012; 9(4): 360–7. doi:10.1071/SH11132
- 46 Woodward CLN, Roedling S, Edwards SG, Armstrong A, Richens J. Computer-assisted survey of attitudes to HIV and sexually transmissible infection partner notification in HIV-positive men who have sex with men. *Sex Health* 2010; 7(4): 460–2. doi:10.1071/SH09146
- 47 Huffam S, Fairley CK, Chung M, Sze JK, Bilardi J, Chen MY. Facilitating partner notification through an online messaging service: let them know. *Sex Health* 2013; 10(4): 377–9. doi:10.1071/SH13007
- 48 Bilardi JE, Fairley CK, Hopkins CA, Hocking JS, Kit Sze J, Chen MY. Let them know: evaluation of an online partner notification service for chlamydia that offers E-mail and SMS messaging. *Sex Transm Dis* 2010; 37(9): 563–5. doi:10.1097/OLQ.0b013e3181d707f1
- 49 Althaus CL, Turner KM, Mercer CH, Auguste P, Roberts TE, Bell G, et al. Effectiveness and cost-effectiveness of traditional and new partner notification technologies for curable sexually transmitted infections: observational study, systematic reviews and mathematical modelling. *Health Technol Assess* 2014; 18(2): 1–100. doi:10.3310/hta18020
- 50 Golden MR, Whittington WL, Handsfield HH, Hughes JP, Stamm WE, Hogben M, et al. Effect of expedited treatment of sex partners on recurrent or persistent gonorrhea or chlamydial infection. *N Engl J Med* 2005; 352(7): 676–85. doi:10.1056/NEJMoa041681
- 51 Nguyen VTT, Phan HT, Kato M, Nguyen Q-T, Le Ai KA, Vo SH, et al. Community-led HIV testing services including HIV self-testing and assisted partner notification services in Vietnam: lessons from a pilot study in a concentrated epidemic setting. *J Int AIDS Soc* 2019; 22(Suppl 3): e25301. doi:10.1002/jia2.25301
- 52 NHS England. Safeguarding. NHS England. 2020. Available at <https://www.england.nhs.uk/safeguarding/>
- 53 Feder GS, Hutson M, Ramsay J, Taket AR. Women exposed to intimate partner violence: expectations and experiences when they encounter health care professionals: a meta-analysis of qualitative studies. *Arch Intern Med* 2006; 166(1): 22–37. doi:10.1001/archinte.166.1.22
- 54 Bacchus L, Mezey G, Bewley S. Experiences of seeking help from health professionals in a sample of women who experienced domestic violence. *Health Soc Care Community* 2003; 11(1): 10–8. doi:10.1046/j.1365-2524.2003.00402.x
- 55 National Institute for Care and Excellence. Domestic violence and abuse: multi-agency working: Public health guideline. National Institute for Care and Excellence; 2014. Available at <https://www.nice.org.uk/guidance/ph50/resources/domestic-violence-and-abuse-multi-agency-working-pdf-1996411687621>
- 56 The Scottish Government. Overview of gender based violence. The Scottish Government; 2018. Available at <http://www.healthscotland.scot/health-topics/gender-based-violence/gender-based-violence-overview/overview-of-gender-based-violence>
- 57 Gamoudi D, Flew S, Cusini M, Benardon S, Poder A, Radcliffe K. 2018 European guideline on the organization of a consultation for sexually transmitted infections. *J Eur Acad Dermatol Venereol* 2019; 33(8): 1452–8. doi:10.1111/jdv.15577
- 58 Brook G, Church H, Evans C, Jenkinson N, McClean H, Mohammed H, et al. 2019 UK National guideline for consultations requiring sexual history taking: clinical effectiveness group British

- Association for sexual health and HIV. *Int J STD AIDS* 2020; 31(10): 920–38. doi:10.1177/0956462420941708
- 59 Royal College of Nursing. Female Genital Mutilation RCN guidance for sexual health care. Royal College of Nursing; 2020. Available at <https://www.rcn.org.uk/professional-development/publications/rcn-fgm-sexual-health-care-pub-009376>
- 60 Ward C, Hughes G, Mitchell HD, Rogstad KE. Association between STI and child sexual exploitation in children under 16 years old attending sexual health clinics in England: findings from a case-control study. *Sex Transm Infect* 2019; 95(6): 412–5. doi:10.1136/sextrans-2018-053842
- 61 Rogstad K, Johnston G. Spotting the signs: a national Proforma to identify child sexual exploitation in sexual health services. BASHH Brook; 2014. Available at <https://legacy.brook.org.uk/our-work/spotting-the-signs-cse-national-proforma>
- 62 Flavell S, Forsyth S, Wilkinson D. Updated UK National guideline on the management of STIs and related conditions in children and young people. *Sex Transm Infect* 2020; 96(4): 237. doi:10.1136/sextrans-2020-054478
- 63 Spencer-Hughes V, Syred J, Allison A, Holdsworth G, Baraitser P. Screening for Child Sexual exploitation in online sexual health services: an exploratory study of expert views. *J Med Internet Res* 2017; 19(2): e30. doi:10.2196/jmir.5911
- 64 Day S, Kinsella R, Jones S, Tittle V, Suchak T, Forbes K. Safeguarding outcomes of 16 and 17-year-old service users of Sexual Health London (SHL.uk), a pan-London online sexual health service. *Int J STD AIDS* 2020; 31(14): 1373–9. doi:10.1177/0956462420933462
- 65 Faculty of Sexual & Reproductive Health and British Association of Sexual Health and HIV (FSRH BASHH). Standards for online and remote providers of sexual and reproductive health services. FSRH BASHH; 2020. Available at <https://www.fsrh.org/standards-and-guidance/documents/fsrhbashh-standards-for-online-and-remote-providers-of-sexual/>
- 66 Sullivan V, de Sa J, Hamlyn E, Baraitser P. How can we facilitate online disclosure of safeguarding concerns in under 18s to support transition from online to face-to-face care? *Int J STD AIDS* 2020; 31(6): 553–9. doi:10.1177/0956462420913438
- 67 Day S, Singh GJ, Jones S, Kinsella R. Sexual assault reporting amongst users of online sexual health services. *Int J STD AIDS* 2021; 32(3): 280–5. doi:10.1177/0956462420963940
- 68 Hillis A, Germain J, Hope V, McVeigh J, Van Hout MC. Pre-exposure Prophylaxis (PrEP) for HIV prevention among men who have sex with men (MSM): a scoping review on PrEP service delivery and programming. *AIDS Behav* 2020; 24(11): 3056–70. doi:10.1007/s10461-020-02855-9
- 69 Charest M, Sharma M, Chris A, Schnubb A, Knox DC, Wilton J, et al. Decentralizing PrEP delivery: implementation and dissemination strategies to increase PrEP uptake among MSM in Toronto, Canada. *PLoS ONE* 2021; 16(3): e0248626. doi:10.1371/journal.pone.0248626
- 70 Siegler AJ, Mayer KH, Liu AY, Patel RR, Ahlschlager LM, Kraft CS, et al. Developing and assessing the feasibility of a home-based preexposure prophylaxis monitoring and support program. *Clin Infect Dis* 2019; 68(3): 501–4. doi:10.1093/cid/ciy529
- 71 Refugio ON, Kimble MM, Silva CL, Lykens JE, Bannister C, Klausner JD. Brief report: PrEPTECH: a telehealth-based initiation program for HIV pre-exposure prophylaxis in young men of color who have sex with men. A pilot study of feasibility. *J Acquir Immune Defic Syndr* 2019; 80(1): 40–5. doi:10.1097/QAI.0000000000001873
- 72 Siegler AJ, Steehler K, Sales JM, Krakower DS. A review of HIV pre-exposure prophylaxis streamlining strategies. *Current HIV/AIDS Rep* 2020; 17(6): 643–53. doi:10.1007/s11904-020-00528-9
- 73 Pleuhs B, Quinn KG, Walsh JL, Petroll AE, John SA. Health care provider barriers to HIV pre-exposure prophylaxis in the United States: a systematic review. *AIDS Patient Care STDS* 2020; 34(3): 111–23. doi:10.1089/apc.2019.0189
- 74 Janamnuaysook R, Green KE, Seekaew P, Ngoc Vu B, Van Ngo H, Anh Doan H, et al. Demedicalisation of HIV interventions to end HIV in the Asia-Pacific. *Sex Health* 2021; 18(1): 13–20. doi:10.1071/SH20172
- 75 Brady M, Rodger A, Asboe D, Cambiano V, Clutterbuck D, Desai M, et al. BHIVA/BASHH guidelines on the use of HIV pre-exposure prophylaxis (PrEP) 2018. *HIV Med* 2019; 20(S2): s2–s80.
- 76 The Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine (ASHM). National PrEP Guidelines Update. Prevent HIV by Prescribing PrEP. Sydney: ASHM; 2021. Available at <https://ashm.org.au/resources/the-ashm-national-prep-guidelines/>
- 77 Hoyos-Mallecot Y, Garcia JN, Sulleiro E, Esperalba J, Salmeron P, Zarzuela F, et al. Drassanes Exprés: a public and confidential testing service for asymptomatic STIs with same-day result notification. *Sex Transm Infect* 2022; 98(3): 166–72. doi:10.1136/sextrans-2020-054779
- 78 Vodstrcil LA, Hocking JS, Cummings R, Chen MY, Bradshaw CS, Read TR, et al. Computer assisted self interviewing in a sexual health clinic as part of routine clinical care; impact on service and patient and clinician views. *PLoS ONE* 2011; 6(3): e18456. doi:10.1371/journal.pone.0018456
- 79 Richens J, Copas A, Sadiq ST, Kingori P, McCarthy O, Jones V, et al. A randomised controlled trial of computer-assisted interviewing in sexual health clinics. *Sex Transm Infect* 2010; 86(4): 310–4. doi:10.1136/sti.2010.043422
- 80 Chambers LC, Manhart LE, Katz DA, Golden MR, Barbee LA, Dombrowski JC. Evaluation of an automated express care triage model to identify clinically relevant cases in a sexually transmitted disease clinic. *Sex Transm Dis* 2017; 44(9): 571–6. doi:10.1097/OLQ.0000000000000643
- 81 Rukh S, Khurana R, Mickey T, Anderson L, Velasquez C, Taylor M. Chlamydia and gonorrhea diagnosis, treatment, personnel cost savings, and service delivery improvements after the implementation of express sexually transmitted disease testing in Maricopa County, Arizona. *Sex Transm Dis* 2014; 41(1): 74–8. doi:10.1097/OLQ.0000000000000070
- 82 Gratrix J, Bergman J, Brandley J, Parker P, Smyczek P, Singh AE. Impact of introducing triage criteria for express testing at a Canadian sexually transmitted infection clinic. *Sex Transm Dis* 2015; 42(11): 660–3. doi:10.1097/OLQ.0000000000000363
- 83 Huang Z, Choong DS, Ganesan AP, Logan S. A survey on the experience of Singaporean trainees in obstetrics/gynecology and family medicine of sexual problems and views on training in sexual medicine. *Sex Med* 2020; 8(1): 107–13. doi:10.1016/j.esxm.2019.12.001
- 84 World Health Organization. Handbook for good clinical research practice (GCP): guidance for implementation. World Health Organization; 2005.

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