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Caring infrastructures for sexual health and the implications of antibiotic-resistant STIs

Shiva Chandra^a, Alex Broom^a, Michelle Peterie^a, Damien Ridge^b, Bridget Haire^{c,d,e},
Catriona Bradshaw^{f,g,h}, Jennifer Broom^{i,j}, Katherine Kenny^a, Carla Treloar^k,
Lise Lafferty^{d,k}, Rebecca Guy^d and Tanya Applegate^d

^aSydney Centre for Healthy Societies, School of Social and Political Sciences, Faculty of Arts and Social Sciences, The University of Sydney, Sydney, Australia; ^bSchool of Social Sciences, University of Westminster, London, UK; ^cSchool of Population Health, University of New South Wales, Sydney, Australia; ^dKirby Institute, University of New South Wales, Sydney, Australia; ^eAustralian Human Rights Institute, University of New South Wales, Sydney, Australia; ^fMelbourne Sexual Health Centre, Alfred Health, Melbourne, Australia; ^gSchool of Translational Medicine, Faculty of Medicine, Nursing and Health Sciences, Monash University, Melbourne, Australia; ^hCentre for Epidemiology and Biostatistics, School of Population and Global Health, The University of Melbourne, Melbourne, Australia; ⁱSchool of Medicine and Dentistry (Sunshine Coast Campus), Griffith University, Sunshine Coast, Australia; ^jInfectious Diseases Service, Sunshine Coast Hospital and Health Service, Sunshine Coast, Australia; ^kCentre for Social Research in Health, University of New South Wales, Sydney, Australia

ABSTRACT

Infrastructures fundamentally shape sexual health, but their gaps and failings often only come into view during moments of crisis. Antimicrobial resistance (AMR) is a looming microbiological and global societal crisis, and one that is posing increasing challenges and risks for medical practice and public health alike. In sexual health, concerns have been raised about growing resistance in *Neisseria gonorrhoeae* and the less well-known *Mycoplasma genitalium*. In this article, we examine contemporary sexual health infrastructures and their adequacy in the context of rising antibiotic-resistant STIs. To do this, we draw on 49 semi-structured interviews with cisgender gay and bisexual men, and trans and gender diverse people (GBTQ+) in Australia. Findings reveal that growing costs, a lack of access to sexual healthcare services, complexities in navigating these services and lengthy wait times all present challenges to optimal care, and that growing resistance may further strain these socio-material-temporal arrangements. We argue that greater investment in sexual health infrastructures will increase capacity to accommodate complex lives, multiple subjectivities and ensure easier access to services. In the context of resistance, this frames sexual health infrastructures beyond ideas of simply 'coping with crisis' to being able to care well for people within a shifting environment.

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CONTACT Shiva Chandra ✉ shiva.chandra@sydney.edu.au Sydney Centre for Healthy Societies, School of Social and Political Sciences, Faculty of Arts and Social Sciences, The University of Sydney, Sydney, New South Wales, Australia

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Introduction

Sexual health is shaped by available infrastructures, including access to adequate services, ongoing research, funding models and collaboration across stakeholders (Chandra, Broom, Peterie, et al., 2025; Maheen et al., 2025; Mundie et al., 2025). The importance of robust infrastructures is particularly apparent during moments of ‘crisis’, when infrastructural gaps and failures often come into view (Peterie et al., 2026). This was the case during the HIV/AIDS crisis of the early 1980s, when societal and governmental lethargy in the US, for example, hindered the development of services to safeguard the well-being of sexual minorities (Richert, 2009; Trapence et al., 2012). The resultant establishment, by LGBTQIA+ people, of new infrastructure in the form of community organisations played a pivotal role in addressing the spread of the virus (Chambers, 1994; Trapence et al., 2012).

Today, antimicrobial resistance (AMR) looms as a serious threat to sexual health. AMR has been identified as a top global health threat by the World Health Organization (2019). In 2019, there were 4.9 million estimated deaths worldwide because of AMR (Murray et al., 2022), while modelling indicates that by 2050, this figure could reach 8.22 million deaths annually (Naghavi et al., 2024). Beyond mortality, decreasing antimicrobial efficacy will increase suffering in the form of longer recovery times, greater treatment uncertainty, and physical and psychological implications therein.

More specifically, there are growing concerns about the consequences of AMR for sexual health, primarily as it relates to *Neisseria gonorrhoeae* (gonorrhoea) and *Mycoplasma genitalium* (*M. genitalium*). Since the 1930s, gonorrhoea has become progressively resistant to multiple classes of drugs. This includes sulfonamides in the 1940s, penicillin in the 1970s, tetracycline in the 1980s and quinolones in the early 2000s (Unemo & Shafer, 2014). Currently, cephalosporins are the preferred mode of treatment, including ceftriaxone and cefixime, often in combination with azithromycin to delay the emergence of ceftriaxone resistance. However, ceftriaxone-resistant strains are emerging, particularly in the Western Pacific region, and most of these strains are also resistant to azithromycin. There has now been a move away from ceftriaxone and azithromycin dual therapy for gonorrhoea in many countries, with concerns about the selective pressure this also places on other organisms, including *M. genitalium* (CDC, 2021).

This contemporary context poses the question *will existing sexual health infrastructures be able to foster adequate care considering growing antibiotic-resistant STIs?* To explore this question from a community perspective,¹ we conducted 49 semi-structured interviews with gay and bisexual cisgender men, and trans and gender diverse people (GBTQ+) across Australia. We chose to focus on this group due to the higher burden of STI infections amongst men who have sex with men (MSM) and transgender people (WHO, 2024). Examining contemporary access to sexual health-care infrastructures provides an understanding of how they are experienced in the present, and what this means for a future where antibiotic-resistant STIs may be more ubiquitous.

Background

Thinking with infrastructures

Infrastructures can be conceptualised as the material and immaterial resources that underpin and organise social life. Bowker et al. (2010, p. 97) explain that the term infrastructures:

Evokes vast sets of collective equipment necessary to human activities, such as buildings, roads, bridges, rail tracks, channels, ports, and communications networks. Beyond bricks, mortar, pipes or wires, infrastructure also encompasses more abstract entities, such as protocols (human and computer), standards, and memory.

As such, it ‘provides the lens through which we can see the socio-material arrangements’ that constitute several day-to-day processes (Langstrup, 2013, p. 1010).

Within healthcare, this includes materiality such as hospitals, medications and clinics, alongside relationships between different actors within these networks, including human actors such as staff and patients. Infrastructures are not ‘simply maintained order’, rather they are ‘a human and non-human sociomaterial map of possibility that evolves as a practice of reconfiguration with respect of power relations’ (Nickelsen, 2019, p. 69). Moreover, the ‘embeddedness’ of infrastructures means that they are often ‘sunk into and inside of other structures’ (Star, 1999, p. 381), such as government bodies, which influences how they take shape and function. As such, infrastructures produce im/possibilities for medical care, treatment, and prevention, brought about by particularities of ‘socio-material [...] arrangements’ (Symonds-Brown et al., 2022, p. 1519).

In the context of AMR, antibiotics have been conceptualised as a form of infrastructure. This framing sees antimicrobials as constitutive of material, affective and political systems, shaping taken-for-granted ways of thinking and doing, such as standardised modes of production (Chandler, 2019). AMR in the context of STIs, therefore, represents a changing healthcare infrastructure, where antibiotics are less effective in creating the healthy bodies (materiality) they are ‘meant’ to, altering how the set-up functions. As such, the current study is conceptualised as an exploration of how existent sexual health infrastructures might provide care, as a crucial aspect of care (antibiotics) no longer work as effectively as they used to.

Critically, infrastructures are made for some more than others, and therefore are not ‘neutral’ (Star, 1999, p. 380). Thus, infrastructures are fundamentally influential relational productions operating from how things currently stand (Star & Ruhleder, 1996). For example, barriers faced by migrants in new healthcare settings illustrate how infrastructures are premised on the idea of ‘normative’ subjects that they cater to (Filler et al., 2020; Ilami & Winter, 2021). Accordingly, infrastructures have a ‘master narrative’, which ‘speaks unconsciously from the presumed center of things’ (Star, 1999, p. 384). Thinking through such dynamics alongside ‘bricks and mortar’ aspects of infrastructures provides a deeper understanding of how subjectivities come to interact with, and are made through, infrastructures, including what this means for care in the context of antibiotic-resistant STIs.

In this paper, we focus predominantly on how socio-material dimensions and the temporal arrangements entailed therein, function to create the conditions of sexual

healthcare, and what this means for resistance. As others have noted, ‘care infrastructures’ include the arrangements of people, space and materials that allow for the provision of healthcare (Langstrup, 2013; Van Pijkeren et al., 2021). However, in this paper, we ask a slightly different question, which is, how can these infrastructures be *organised* so they can be *caring* in the context of rising resistance?

Sexual health infrastructures

Drawing on the above, we conceptualise sexual health infrastructures as the socio-material-temporal arrangements that shape the provision of care and access to sexual healthcare services, as they are patterned by the broader systems within which they operate. In Australia, sexual health services are predominately funded by state and national governments (Gill-Atkinson et al., 2014). Medicare provides universal health insurance, which covers all national citizens (Collyer, 2023). This exists alongside the Pharmaceutical Benefits Scheme (PBS), which subsidises the cost of approved prescription medications for people with access to Medicare (Collyer, 2023). For example, anti-retroviral medication for the treatment of HIV infections is subsidised by Medicare, as is access to pre-exposure prophylaxis (PrEP) for HIV. Such services can be accessed at government-funded sexual health clinics, general practitioners (GPs) or private clinics specialising in sexual health.

Costs for these services are also premised on the structure of the clinic/practice. For example, government-run clinics attract no consultation fee, including providing free STI treatment. GPs, who provide primary care, may be completely subsidised by the government, in which case the service is ‘bulk-billed’ to Medicare and there is no out-of-pocket cost to the patient (Eckermann & Sheridan, 2016). Conversely, GPs may provide services with an out-of-pocket cost, or ‘gap fee’, which requires the patient to pay the full cost of the service, and then receive a Medicare rebate for a portion of it (Mudiyanselage et al., 2023). For example, in 2015, the national government froze Medicare rebates to GPs, which saw costs increasingly moved to patients, resulting in a reduction in service use, especially in lower socio-economic areas, and rural/regional locations (Mudiyanselage et al., 2023). Accordingly, we conceptualise sexual health infrastructures as embedded within broader systemic processes (i.e. government funding and attempts to cut costs, regulations, variations across place/space), which include the multiple spaces (i.e. specialised clinics, general practitioners) where this care takes place, including the differences between them.

The last decade has seen dramatic shifts in the provision of sexual healthcare, including a move towards greater consideration and integration of online/digital technologies in approaches to sexual health in Australia (Cardwell et al., 2023; Martinez-Andres et al., 2024). For example, people living with HIV in Australia have shown openness to telehealth consultations alongside in-person consultations (Martinez-Andres et al., 2024). Cardwell et al. (2023, p. 1) documented the proliferation of web-based STI and HIV testing services in Australia, observing ‘considerable variability’ in their ‘quality and reliability’. Concerns have also been raised about gaps, or blind spots, which may emerge from a reliance on online services, including missed opportunities for patient education, and the potential exclusion of vulnerable people (Lafferty et al., 2024; Medland et al., 2022). In this context, growing AMR may also see additional changes

in current socio-material arrangements of sexual healthcare. For example, this may include greater integration of resistance testing in the treatment of symptomatic STIs to curb the rise of resistance (Chandra, Broom, Haire, et al., 2025). Understanding such contemporary sexual healthcare infrastructures from the perspective of people who use them, and are most likely to be affected by growing AMR, is critical to evaluating their ability to provide care in this evolving context.

Methods

Recruitment and interviews

In this paper, we report on interviews with 49 people conducted in 2024. Participants were recruited through a variety of online and offline methods using a purposive sampling strategy. This included advertisement through Facebook and Instagram, ACON (Sydney based LGBTQ+ health organisation), sexual health services, professional mailing lists and researcher networks. The study sought to recruit gay and bi+ men, other men who are part of these sexual networks, and trans and gender diverse people aged 18 and over living in Australia. No personal experience with an AMR STI was required (see Chandra, Broom, Ridge, et al., 2025, for a detailed analysis of sampling strategy and rationale). All participants provided informed consent before taking part in a semi-structured interview, which explored five key topics: perceptions of antibiotic-resistant STIs, experiences with clinicians, population attitudes towards STIs, sexual practises and reflections on approaches to curb the rise of AMR. All interviews were conducted by Chandra, who is a cisgender gay man. Ethics approval was sought and granted from The University of Sydney Human Research Ethics Committee (Reference Number: 2024/060) and the ACON Ethics Committee (Reference Number: 202336). Pseudonyms are used throughout the article.

Participant demographics

Of the 49 interviewees, 43 were recorded ‘male’ at birth, and 6 were recorded ‘female’ at birth. Eleven people identified with a gender that did not align with their sex recorded at birth. This included identifiers such as: genderqueer, agender, transgender man, non-binary and trans masculine. Of these 11 participants, some also identified with more than one gender, e.g. one participant identified as non-binary, genderqueer and agender.

Most participants identified as ‘gay’ (37) or ‘bisexual’ (5). One participant identified as ‘pansexual’; one as ‘gay and pansexual’; two as ‘gay and bisexual’; two as ‘bisexual and pansexual’ and one as ‘bisexual, queer and pansexual’. Ages ranged from 19 to 61. Thirty-four participants were born in Australia, and 15 were born overseas.

Participants came from all Australian states and territories and were spread across urban, rural and regional locations. Self-identified ethnic backgrounds included: Anglo (17); Anglo Celtic (3); Caucasian (3); White (2); Anglo Australian (1) Australian (1); Australian-Canadian (1); Aboriginal Australian (1); Asian (1); Malaysian Asian (1); Vietnamese (1); Chinese (1); Singaporean Chinese (1); Indonesian (1); Filipino Australian (1); Pakistani (1); Indian (1); Jewish (1); Scottish and Irish (1); Spanish (1); Turkish (1); Latino (1); White American (1); Eastern European (1); Greek (1); Italian (2) and one participant had mixed ethnicity.

When reporting participant quotes below, we have provided their age and the gender they identify with.

Analysis

Interviews lasted approximately 1 h in length and took place via Zoom or in person. They were audio-recorded and professionally transcribed. Data analysis drew on interpretive traditions in qualitative research, adopting an explorative approach to understand participants' subjective and complex experiences. To do this, we undertook a thematic analysis of the data (Guest et al., 2012). After each interview, detailed notes were written by Chandra, capturing key insights, observations of interest and an overview of participant experiences and reflections. This process identified key themes and included making connections between different interviewees' experiences, and noting divergent, atypical and conflicting experiences (Ezzy, 2002). This process included regular discussions with the broader team and centred around exploring the five key areas of interest highlighted above.

To systematically organise and analyse data, interviews were coded by Chandra using NVivo14 software, taking an inductive approach that drew on the notes, observations and team discussions, allowing for in-depth exploration of the data, and to reflect on the development of codes. More formalised coding involved two stages: first, the identification of broad overarching codes/themes, and then a second stage where broader codes were 'broken down' into sub-codes to create a more nuanced understanding of the data. Undertaking systematic coding of data after the initial exploratory stage of analysis highlighted above ensured themes that were identified during later interviews could be sought out and coded in earlier data, as could diverging experiences. This allowed us to group data that may have appeared unrelated at first, draw connections and complicate themes further. In this paper, we purposefully focus on limitations in access to care to draw out how services can be optimised and made more caring, especially in the context of antibiotic-resistant STIs, to help improve accessibility.

Results

Increasing costs

Access to sexual healthcare services is shaped by government decision-making, downstream effects on providers and how this interacts with participant subjectivities (Medland et al., 2022; Star & Ruhleder, 1996). Several interviewees spoke about easily accessing sexual healthcare and positive experiences, especially at sexual health clinics, whilst others noted greater difficulties getting the care they needed. When it came to visiting GPs, participants noted a growing paucity of bulk-billing services, which meant having to pay a 'gap fee'. For example, Lachlan (30 years, man) spoke about the limited number of bulk-billing services in his state, explaining:

... I think there was an article the other day and there were only a handful in the entire state that were bulk bill clinics. Like the shortage of GPs down here is pretty dire.

While these GP services exist alongside government-run sexual health clinics, which can be accessed for free, accessing a clinic may not always be the ideal option. For example,

Caleb (24 years, man) explained he prefers to see a GP as opposed to going to a sexual health clinic. He said:

... if I go to the GP, like no one knows what you're there for. But if you're walking in and out of a sexual health clinic, like people know what you're there for. [...] I think I have a bit of that like fear of being judged or something, even though like everyone else there is for the same thing. But it's more like even walking in and out the front door on the street like, 'What if someone I know's on the street?' or something. Like I think it feels a bit like you're waving a flag that you're, 'I might have STIs', sort of thing. So a bit of that stigma.

Caleb clarified he did not feel stigma around contracting an STI in and of itself, stating, '*I didn't feel that stigma around my friends. I could tell them openly*'. Rather, for Caleb, stigma emerges relationally, where a private matter, STIs, becomes known to non-intimate others who might judge. In such a context, the rising costs of GP consultations due to government decision-making (Mudiyanselage et al., 2023) can hinder access to sexual healthcare or make access more difficult.

For a couple of participants, increasing costs were an important consideration when thinking about antibiotic-resistant STIs. For example, a way to curb resistant STIs can be to implement resistance-guided treatment, which entails selecting antibiotics for treatment based on the resistance or sensitivity profile of an infection, requiring repeat visits to a service (Chandra, Broom, Peterie, et al., 2025; Klausner et al., 2021). This is available for *M. genitalium*, albeit not universally, and there is ongoing discussion in the medical community about attempts to implement more resistance-guided treatment for gonorrhoea. Leon (36 years, non-binary, genderqueer) explained this resistance-guided treatment would be feasible, however:

I guess the other thing is, for some people, and especially with bulk billing rates being very low at the moment [...] that's an additional however much cost for a second appointment, right? [...] Especially amongst – in little gay enclaves of Australia. The western suburbs of Perth, the eastern suburbs of Sydney, inner city Melbourne. These are places that, in particular, have very low bulk billing rates.

Axel (22 years, man) also explained that he would be concerned about the cost effects of antibiotic-resistant STIs. He said:

Especially when you're a young person who doesn't have a lot of money and relies on family, because I don't want to have to ask my dad for money for treatment for an STI. That's really embarrassing. We don't have that good of a relationship. What is that going to look like? That's what worries me.

When asked why this would be an issue, given the availability of free sexual health services, Axel elaborated:

... I am just unaware of the limits of that. Medical centres, their gap fees are growing bigger and bigger. I know that for certain sexual centres, they're completely free. It's bulk billed. But it's hard to tell which is what. I just never really trust that when I go into a session, I'm not going to get billed for it afterwards. [...] Mixed billing has significantly grown over the past five years. [...] Most doctors in my area are mixed billing. I know that in the sexual health centres it's different.

These reflections speak to dwindling access to free medical care, and by extension, sexual healthcare, in Australia, including a distrust about whether services that appear to be free

really are. This has the potential to limit access to sexual healthcare as AMR becomes more critical.

Geographic service gaps

Geography also played an important role in people's ability to access services. Often, service gaps are imagined as differing between rural, regional and urban locations, with access problems increasing with distance from metropolitan regions (Malatzky & Hulme, 2022; Valentine et al., 2022). However, our findings reveal a more complicated picture, with infrastructural limitations 'cutting through' different spaces (see also Smith et al., 2025). Jackson (44 years, man) explained that he has difficulty accessing adequate sexual healthcare in his regional town. He said:

It's not like Sydney or Melbourne where everything's super-accessible. You can just get tested all the time, whenever it suits you. Over here, I need to negotiate with my GP. I need to negotiate with my pathology centres to get ... You know, most centres don't do anal swabs and things like that. You know, when my PrEP prescription runs out [...] when can I see my doctors? [...] is there a new sexual-health nurse around to get injections and stuff for treatment? All that sort of stuff. So, it is a negotiation up here.

The individual is required to actively cobble together the 'best' sexual healthcare experience for themselves within complex contexts. Jackson also said the sexual health clinic in his town experiences varying seniority of staff and high turnover, which means '*it's always a different person all the time*'. He elaborated, '*and they're [registrars] also very new. You're spending half your time teaching the baby registrars that don't know anything about what to do*'.

However, converse to these experiences, Vincent (20 years, man), who lives in the same location as Jackson, noted positive experiences at the sexual health clinic he visited. He explained *not* noticing '*a substantial difference*' in service between his current place of residence and what is arguably the more urban location he used to live in. In fact, Jackson noted that STI test results came back *faster* in the regional town. Recent research has also shown that trans people *can* experience affirming and positive care in rural Australia, including at times faster access to services in comparison to urban Australia (Del Tufo et al., 2023).

However, as suggested, gaps in service accessibility were not limited to rural/regional locations. For example, Aspen (31 years, man, non-binary, agender, trans masculine) explained that the recent closure of a sexual health clinic in Aspen's city means people must travel much further to attend a sexual health clinic:

[The clinic was shutdown in] probably the area that needs it the most as well. Like a lower socioeconomic area where people like in that area, they could access it really easily. It was sort of very accessible. And now the people in that area would have to go all the way to the other side of the city to get an appointment. I just don't think some people would be able to do it. [...] It was just kind of like, 'Well, you have to go to the other two clinics that are in the city or even further away'. And yes, it was not very good.

Aspen reflected that in the context of rising AMR, this could present difficulties in addressing the shifting situation:

... it would put a lot of strain on places. Particularly like locally like the [org. name] is already overwhelmed. Like if that became harder to get into, that would just be awful. Because they've been like – you know, they closed one of the clinics and stuff.

In a similar manner, Caspian (41 years, man) explained that access to free sexual health-care requires travel to the city from the suburbs, or paying someone privately in the latter:

So when I first moved here, I was chatting with some other gay men in the area. And so some guys who lived in the suburb over, they said that they visited a private practise and a gay GP worked out of that practise a couple of days a week or whatever. But I wasn't really willing to pay the \$45 or \$80, whatever it may be to get that routine testing done. [...] Yes, I guess a specialised sexual health clinic would be closer to the city.

He stated that one hears about '*outreach into some regional centres, but not much of a presence in the suburbs*'. In fact, Caspian found it easier to access sexual health services in a less densely populated region of Australia, as '*we still had clinics that we could visit without having to travel too far*'. Jackson also explained that while service accessibility is an issue for people in regional Australia, including difficulties avoiding homophobic GPs, friends in more urban parts of Australia also experienced similar issues:

... there's been a couple of friends in Melbourne that [...] ask for PrEP or they do something, and they get a stern warning and talking to about [...] the problems of gay sex. [...] conservativeness still exists up here [...] Outer suburbs of Melbourne. So, it's probably not the inner-city Melbourne. So, yeah, it's a huge, it's a very interesting sort of issue that, you know, inner-city people don't quite get. Outer-suburb issues.

This supports existent research, which has also found that sexual health infrastructures in outer suburban Australia fail to cater to sexuality and/or gender diverse populations (Smith et al., 2025). However, as noted by Leon, gay enclaves *also* have lower rates of bulk-billing services, which provides another limitation in accessibility of sexual care for people in these places. As such, these observations illustrate a complex configuration of service gaps across multiple spaces, which has implications for their ability to provide care in the context of resistant STIs.

(De)financing care

These infrastructures are located in larger systems of government spending (or lack thereof), which shape services important to addressing antibiotic-resistant STIs. For example, Emma (35 years, woman) spoke about recent changes to the sexual health clinic she used to visit. She explained that in the past, the clinic would give referrals for testing so a patient could use any service to get tested for STIs. Emma said, '*they'd bend the rules was my discussions with the nurses and the doctors there. Then they had an audit ...*'. Now the clinic only provides a referral to government-run testing facilities:

They weren't meant to give private pathology forms out. For instance, they were meant to be using the government pathology testing places. They were trying to make it easier for the people going there because then you can go anywhere. But then yes, they got cracked down on.

That is to say, the audit served to limit the 'tinkering practices' of staff, defined as the labour of working with 'ambivalence and shifting tensions', which they deployed to make the infrastructure work better for people (Mol et al., 2010, p. 14). Emma explained

that one of the government-run testing facilities is located in a hospital. This makes utilising the facility expensive due to parking costs. Emma said that, despite having capacity, the sexual health clinic will only do onsite testing if someone is symptomatic for an STI, or if they are a close contact of an individual who has tested positive for an STI. With some empathy for staff, she explained the clinic had also started encouraging patients to use a GP: *‘[t]hey would just say, and they were probably told to say for just routine PrEP, “You know you can get this from your GP, right?”’*. She said:

It was always a positive experience. They were just doing their job when they were trying to push things in certain directions. [...] They felt bad that they had to make that change and they were making it less accessible.

Due to these complexities, her partner now uses an online service to access PrEP, which is bulk billed and involves an online Telehealth consult. Critically, this example demonstrates that inaccessibility – or ‘infrastructural inconvenience’ – is not always accidental, but may be purposely manufactured by governments to weaponise time, and create inconvenience to nudge people into particular directions, such as using GP services as opposed to a free sexual health clinic. In the context of antibiotic-resistant STIs, this undermines sexual health infrastructures, which may struggle to deal with more complicated testing and treatment procedures necessitated by growing resistance.

Temporal dimensions

The financing of care also had implications for staffing – and the overall capacity – of clinics, shaping temporal dimensions of receiving care, including wait times for appointments, and when presenting at clinics. For example, Aspen said:

I think for sexual health stuff, I do go to the [org. name]. It’s a bit harder to get into. [...] They can like triage things through if it’s like an urgent thing. But if it’s just like a regular appointment that I want to get like a check-up and there’s no like urgent thing, it can sort of be like a month or so before I can get an appointment.

Leon similarly noted having to wait a longer period to get an appointment so they could begin taking PrEP. They explained that before beginning PrEP, an appointment is required that is longer than the average consult. As a result, Leon had to wait 3 months for the longer consultation at the government-run sexual health clinic to start PrEP. They said if they had chosen to go to the private clinic, which charges a gap fee, then it would have taken a month instead. Such wait times indicate the pressure certain clinics are under, and the limitations this would place on their ability to provide adequate care in the context of resistant STIs.

Self-testing for STIs without seeing a practitioner at clinics was offered as a solution by a couple of respondents to speed up the time spent at them. For example, Mallesh (37 years, man) said:

The only thing that I would want to change is the ability to get sooner appointments than later. [...] I wish there was an option for – let’s say you wanted some answers, or if you want to get self-tested for chlamydia or gonorrhoea or HIV. I wish there was an option to do a self-assessment, and then if you’re eligible, get a kit and do the test yourself because the test is pretty much – for some things, you have to do an anal swab or a urine sample and a blood test, but you don’t necessarily need a doctor.

Julian (29 years, man) explained he felt a way to address antibiotic-resistant STIs would be to increase testing (c.f. Chandra, Broom, Haire, et al., 2025 for a counter view to this). However, he noted:

But like every time we, we test, we have to see a nurse [...] and give them all this data. Whereas I would absolutely fuckin' love it if I could just walk into somewhere, take a packet of swabs, do the swabs, put down my deets, have someone check it with me and just, just that could be efficient.

He elaborated:

... so I had my treatment three, three and a half weeks ago [for an STI] and they said, 'Come back in two weeks for a follow-up'. I went to one of the drop-ins and they were full, so they just said, 'Oh, can you come back tomorrow?' [...] And I've been meaning to go back there [...] I have to drive all the way there, get there, maybe have the same result and come back.

In such a context, the possibility of a greater number of antibiotic-resistant STIs, which may lead to more involved treatment and management, can lead to 'infrastructural frictions' where changing non-human elements (i.e. microbes) create further tensions for already struggling infrastructures. For example, as noted earlier, more precise antimicrobial treatment can assist in curbing the rise of resistant STIs through measures such as resistance testing. However, this may require extra appointments. Leon noted:

that's fine but you better take my booking when I want it for the second appointment. You know, like I'm prepared to be flexible with that, as long as you're prepared to be flexible about – I've already had to come in for one appointment. I now have to come in for a second appointment. Don't make it on a Friday afternoon where I have to rearrange my entire fucking week for the second appointment, you know what I mean?

That is to say, addressing resistance is a process of (re)arranging the spatial-material-temporal dimensions of care, to produce infrastructures that can 'resolve' tensions, with participant receptiveness to self-testing, which can help with this. While there is scope for 'crisis management', such as fast-tracked appointments if someone is symptomatic for an infection, systems have very little room for the actual vicissitudes of sexual health (i.e. contracting an STI), or more involved forms of treatment. However, growing resistance in the context of STIs means thinking about how these may become more important, and what this means for care.

Navigating sexual health infrastructures

Critically, navigating infrastructures is a learned behaviour (Star & Ruhleder, 1996). The challenges posed to new migrants, who encounter sexual health infrastructures as 'objects to be learned about' (Star & Ruhleder, 1996, p. 113), illustrates its importance in accessing care. For example, Ali (35 years, man), an international student who has been in Australia for a short period, explained that knowing how systems work would be extremely helpful to him:

... for example, I'm considering to going to a sexual event at some time but, before doing that I must need to get more information about PrEP, if I can do it here and how much it would cost [...] how I can talk with professionals about this issue – and basically where to go. Like where is the address? [...] Like this is the most important information for me. [...] like I have [...] my health insurance. And the university covers our health

insurance. So, when I go to get like some kind of a health service and I would be also thinking about the financial side of it and how my insurance would work.

Ali said he would prefer to access this information online and would trust information from sources such as the government, universities and NGOs. He also said that it would be important to ensure information is accessible to people who do not speak English as a first language, which means *'in plain English as possible, keeping it concise as possible. [...] Like visuals would help a lot'*. He said while translation can be helpful, it is important to ensure the English version is clear (which may not always be the case), and that videos in other languages would be most useful. That is to say, sexual health infrastructures need to be made for multiple subjectivities, so nobody is left behind.

Tommy (31 years, man) also said that coming to a new country requires understanding how new complex sexual health infrastructures work. He felt a way to help people would be to streamline access to information through a digital application:

If we could have a combined app, people use apps more than websites, where you can see different services, different access, I think would be great. Otherwise, you have to collect information a bit from here, a bit from there. I've been here for five years, so I know over time. But it's hard for someone who's new. You might feel scared to go to [org. name]. 'Oh my God'. It might be exposing yourself into the public as gay. Some people might not be out in their home country, or they are new here. I think if you have an app, you have different services and you can read a bit, might feel a bit more comfortable to participate.

Digital applications can 'fast track' the forms of knowledge existent members of the 'community' (Star & Ruhleder, 1996) already possess. Importantly, this would also work with different subjectivities (i.e. people who are not public about their sexuality), who may otherwise not access services.

Importantly, issues in accessibility as it pertains to navigating infrastructures are not limited to newer migrants. For example, Sean (39 years, man), who was born in Australia, was unaware he could access free sexual health services for much of his life. He said:

... I'm 39. I'm just trying to say like so for my whole life, up until literally this year, I didn't know there were places [sexual health clinics] that do free testing, free medication, free – I paid the whole time. There were times in Sydney when like I couldn't afford to get the antibiotic.

Caleb recounted an incident where he had symptoms of an STI while he was visiting another part of Australia. He explained that when he called the clinic and asked for a test, he was told he had to wait for a week:

So I kind of had to put up with symptoms for a week before I could go in. And then when I finally got in they were like, 'Oh, you're symptomatic. You should have just walked through the door'. But I didn't know that was a thing. Or like yes, they were like, 'You should have come sooner'. I was like, 'I tried, but I couldn't get in anywhere'.

Caleb said that when he looked for GPs, *'either they were all booked out, not taking new patients, or they had an out-of-pocket fee which I wasn't prepared to fork out'*. This situation not only speaks to the increasing cost of care and a lack of access to services, but, critically, services provide very little information on how they work in the first place. Caleb's not

knowing that he could walk in as a symptomatic patient *is* indicative of infrastructural failure, where patients are not educated on how they can use services to maximise care. Populations understanding how to navigate infrastructures is important to accessing sexual healthcare, especially considering the potential for a growth in resistant STIs.

Discussion and conclusions

Antibiotic-resistant STIs represent a shifting microbial landscape, which has implications for sexual health infrastructures and their ability to cope with this changing context. While current treatments are still more or less effective against *Neisseria gonorrhoeae*, and less so against *M. genitalium*, growing resistance has led to concerns about the future of STI treatment (Chandra, Broom, Ridge, et al., 2025; Ludwick et al., 2025). However, unlike the sudden appearance of HIV/AIDS in the 1980s and mpox more recently, time and foresight are on our side. In this paper, we have used this foresight to appraise existing sexual health infrastructures. Building on extant research documenting shifts and fractures in Australia's healthcare systems (e.g. Cardwell et al., 2023; Martinez-Andres et al., 2024), we have reflected on participant experiences in the present to imagine an anticipated future of growing resistance and what this means for 'caring' infrastructures.

By sampling across Australia, we have illustrated how sexual health infrastructures can be imagined as a 'patchwork' where different experiences emerge at the intersection of multiple material-spatial-temporal arrangements (Langstrup, 2013). This shows the importance of contextualised understandings, which may challenge 'common-sense' assumptions. For example, the assumption (common in extant scholarship) that urban STI care is 'better' may not always be true (see also Del Tufo et al., 2023). People in inner city locations may find it difficult to access bulk-billing services, whilst people in suburbs may not be able to access sexual health clinics and bulk-billing services as well. In the context of rising resistance, this suggests carefully thinking through challenges and opportunities as they are present across many contexts, including potentially as fine-grained as the level of the clinic or within a city itself.

Critically, these infrastructures are embedded within broader systems of government spending, prevailing priorities and power dynamics, that shape the im/possibilities of care. A decrease in bulk-billing options at GP clinics limits people's options for receiving free care, and affect, such as feelings of shame/stigma, means visiting a specialist STI clinic may not be an option for all. This *makes* class a variable in access to sexual healthcare; it is not the attribute of an individual: rather, class barriers are made relationally in the funding of services. Extending work on how social structures, systems and institutions can be designed to harm (Broom et al., 2023; Peterie et al., 2026), we argue that they can also be designed to create 'inconvenience', by shaping the temporal-spatial dimensions of care (i.e. making people travel further, hence extending time spent in receiving care). Arguably, such design acts as a form of manipulation to shape behaviours (i.e. 'encourage' use of a GP rather than a specialist STI clinic). In such instances, 'uncaring' arrangements are made to 'care' through the tinkering efforts of clinicians (Mol et al., 2010), who bend rules, subjecting clinicians to the power of state actors, who oversee and potentially stop them from making services more accessible. That is to say, infrastructures end up caring in ways they were not set up to, and exist in tension with the broader systems they are embedded within.

Importantly, we argue that infrastructures ‘coping’ is not necessarily the same as them caring. *Caring infrastructures* can work with the complexity of people’s lives, multiple subjectivities, and are easy to use and efficient. However, ‘crisis management’ approaches (i.e. ‘squeezing’ a symptomatic person for an appointment) are not necessarily caring. In such instances, complexity, or contracting an STI, become ‘aberrations’, rather than a part of life, sex and receiving sexual healthcare. Moreover, such infrastructures are premised on the idea of an imagined ‘organised subject’, who makes bookings well in advance, and as such caters to them. However, lives become complicated, and not all people occupy such subjectivities due to different circumstances. Our point is not to argue that appointments should not be made; it is critical to ensure that infrastructures can deal with the complexities of people’s lives, and different types of people (i.e. new migrants), which will be important in the context of rising AMR. Robust infrastructures are also important because there is a risk that if AMR becomes more ubiquitous and requires longer time and resources in the provision of care, then not only will they be unable to cope with this, but other forms of ‘non-essential’ or ‘non-critical’ care may fall to the wayside too.

While better funding of sexual health services, and healthcare broadly, is vital to ensuring caring infrastructures, this exists alongside other possibilities, which can help strengthen care now and for the future. Receiving adequate care is not simply about the existence of services, rather access is as much about the ability to navigate and make use of them. As such, infrastructures are ‘objects’ that are learnt about over time, and accessibility is relationally premised on this learning. Digital platforms, including online applications, can play an important role in providing this learning, which while not limited to new migrants, can be helpful to people unfamiliar with the socio-material arrangements of care. This means expanding the possibilities of digital applications beyond simply accessing sexual health information (Muehlmann & Tomczyk, 2023) to thinking about how they can assist in accessing ‘brick and mortar’ services. Self-testing for STIs, which does not require a clinician, also represents an opportunity to create more accessible services. For example, in instances where a test of cure after treatment may need to be performed, this could be particularly useful as these appointments often do not require a clinician; a test simply needs to be performed to ensure that treatment was successful. However, in saying this, it is important to ensure that such measures do not become ‘band aids’ for service gaps and structural issues, or to reduce costs at the expense of optimal care. As Mol et al. (2010) note, care is fundamentally about working through individual needs, materialities and everyday circumstances to optimise health and well-being, and we argue this also means organising spatial-material-temporal dimensions to create caring arrangements in and of themselves.

Note

1. While we use ‘community/communities’ to describe LGBTQ+ people as a collective, we acknowledge the complexities of belonging and the tensions therein (Chandra et al., 2024).

Author contributions

CRedit: **Shiva Chandra:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing;

Alex Broom: Conceptualization, Funding acquisition, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing; **Michelle Peterie:** Writing – review & editing; **Damien Ridge:** Methodology, Writing – review & editing; **Bridget Haire:** Methodology, Writing – review & editing; **Catriona Bradshaw:** Funding acquisition, Methodology, Writing – review & editing; **Jennifer Broom:** Methodology, Writing – review & editing; **Katherine Kenny:** Writing – review & editing; **Carla Treloar:** Funding acquisition, Writing – review & editing; **Lise Lafferty:** Writing – review & editing; **Rebecca Guy:** Funding acquisition, Writing – review & editing; **Tanya Applegate:** Funding acquisition, Writing – review & editing.

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References

- Bowker, G. C., Baker, K., Millerand, F., & Ribes, D. (2010). Toward information infrastructure studies. In J. Hunsinger, L. Klasttrup, & M. Allen (Eds.), *International handbook of internet research* (pp. 97–117). Springer.
- Broom, A., Peterie, M., Kenny, K., Ramia, G., & Ehlers, N. (2023). The administration of harm: From unintended consequences to harm by design. *Critical Social Policy*, 43(1), 51–75. <https://doi.org/10.1177/02610183221087333>
- Cardwell, E. T., Ludwick, T., Fairley, C., Bourne, C., Chang, S., Hocking, J. S., & Kong, F. Y. (2023). Web-based STI/HIV testing services available for access in Australia: Systematic search and analysis. *Journal of Medical Internet Research*, 25, e45695. <https://doi.org/10.2196/45695>
- CDC. (2021). *Gonococcal infections among adolescents and adults – STI treatment guidelines*. <https://www.cdc.gov/std/treatment-guidelines/gonorrhea-adults.htm>
- Chambers, D. L. (1994). Gay men, AIDS, and the code of the condom. *Harvard Civil Rights-Civil Liberties Law Review*, 29(2), 353–385.
- Chandler, C. I. R. (2019). Current accounts of antimicrobial resistance: Stabilisation, individualisation and antibiotics as infrastructure. *Palgrave Communications*, 5(1), 53. <https://doi.org/10.1057/s41599-019-0263-4>
- Chandra, S., Wark, T., & Nguyen, L. (2024). *Local LGBTQ+ legacies: Uncovering migrant and multicultural contributions to Sydney's LGBTQ+ history*. Western Sydney University, ACON & the City of Sydney. <https://doi.org/10.26183/31JT-FM14>
- Chandra, S., Broom, A., Haire, B., Ridge, D., & Broom, J. (2025). Sampling and recruiting LGBTQ + populations in health research: Reflections on community consultations about antibiotic resistant STIs. *Health Sociology Review*, 34(2), 200–211. <https://doi.org/10.1080/14461242.2024.2422878>
- Chandra, S., Broom, A., Peterie, M., Ridge, D., Kenny, K., Lafferty, L., Treloar, C., Applegate, T., & Broom, J. (2025). Emerging dilemmas in the age of resistance: The case of sexually transmitted infections. *Qualitative Health Research*, 35(13), 1437–1449. <https://doi.org/10.1177/10497323241302668>
- Chandra, S., Broom, A., Ridge, D., Peterie, M., Lafferty, L., Broom, J., Kenny, K., Treloar, C., & Applegate, T. (2025). Treatment ‘cultures’, sexually transmitted infections and the rise of antimicrobial resistance. *Sociology of Health & Illness*, 47(1), e13832. <https://doi.org/10.1111/1467-9566.13832>
- Collyer, F. (2023). The Australian healthcare system. In P. Cook & A. Possamai-Inesedy (Eds.), *The sociology of health & illness* (pp. 48–65). Pearson Australia.

- Del Tufo, A., Foster, R., Haire, B., Newman, C. E., Smith, A. K., Crowley, M., Burn, D., & McNulty, A. (2023). Understanding the health care needs of transgender and gender diverse people engaging with rural Australian sexual health centres: A qualitative interview study. *Sexual Health*, 20(4), 339–346. <https://doi.org/10.1071/SH22159>
- Eckermann, S., & Sheridan, L. (2016). Supporting medicare health, equity and efficiency in Australia: Policies undermining bulk billing need to be scrapped. *Applied Health Economics and Health Policy*, 14(5), 511–514. <https://doi.org/10.1007/s40258-016-0258-x>
- Ezzy, D. (2002). *Qualitative analysis*. Routledge.
- Filler, T., Jameel, B., & Gagliardi, A. R. (2020). Barriers and facilitators of patient centered care for immigrant and refugee women: A scoping review. *BMC Public Health*, 20(1), 1013. <https://doi.org/10.1186/s12889-020-09159-6>
- Gill-Atkinson, L., Vaughan, C., & Williams, H. (2014). Sexual and reproductive health and philanthropic funding in Australia. *Sexual Health*, 11(4), 298. <https://doi.org/10.1071/SH13204>
- Guest, G., MacQueen, K., & Namey, E. (2012). *Applied thematic analysis*. SAGE.
- Ilami, A., & Winter, S. (2021). Iranian migrants' lived experiences of access to sexual and reproductive healthcare services in Western Australia: A conventional content analysis. *Sexuality Research and Social Policy*, 18(3), 533–546. <https://doi.org/10.1007/s13178-020-00478-2>
- Klausner, J. D., Bristow, C. C., Soge, O. O., Shahkolahi, A., Waymer, T., Bolan, R. K., Philip, S. S., Asbel, L. E., Taylor, S. N., Mena, L. A., & Goldstein, D. A. (2021). Resistance-guided treatment of gonorrhea: A prospective clinical study. *Clinical Infectious Diseases*, 73(2), 298–303. <https://doi.org/10.1093/cid/ciaa596>
- Lafferty, L., Rautenbach, C., McNulty, A., Ryder, N., Slattery, C., Houghton, R., Kenigsberg, A., Murray, C., Carrington, N., & Patel, P. (2024). Client and staff perceptions of acceptability of MyCheck: A direct-to-pathology telehealth and e-testing service for comprehensive bloodborne virus and sexually transmissible infection screening. *Sexual Health*, 21(3), 1–8. <https://doi.org/10.1071/SH23194>
- Langstrup, H. (2013). Chronic care infrastructures and the home. *Sociology of Health & Illness*, 35(7), 1008–1022. <https://doi.org/10.1111/1467-9566.12013>
- Ludwick, T., Vo, T. D., Ware, L., Cardwell, E. T., Riley, B., Chow, E. P., Coombe, J., Grace, D., Hocking, J. S., & Kong, F. Y. (2025). Are clinicians open to less asymptomatic STI screening for *Chlamydia* and *Gonorrhea* in gay, bisexual, and other men who have sex with men and the possibility of not treating positive diagnoses? *AIDS Patient Care and STDs*, 40(1), 31–37. <https://doi.org/10.1177/10872914251399618>
- Maheen, H., Damabi, N. M., & Lassi, Z. S. (2025). Improving engagement with sexual and reproductive health services among young African migrants in Australia. *Sexual Health*, 22(2), SH24186. <https://doi.org/10.1071/SH24186>
- Malatzky, C., & Hulme, A. (2022). 'I love my job ... it's more the systems that we work in': The challenges encountered by rural sexual and reproductive health practitioners and implications for access to care. *Culture, Health & Sexuality*, 24(6), 735–749. <https://doi.org/10.1080/13691058.2021.1880640>
- Martinez-Andres, J., Fairley, C. K., Krulic, T., Ong, J. J., Owen, L., McNulty, A., Bissessor, M., Thng, C., Bell, C., Ratnayake, M., & Murphy, D. (2024). Telehealth for HIV care and management among people living with HIV in Australia: Results from an online survey. *Sexual Health*, 21(6), SH24067. <https://doi.org/10.1071/SH24067>
- Medland, N. A., Taylor, R., Saunders, J., Rayment, M., Fox, A., & Sullivan, A. (2022). Why sexual health clinics are important in the 2020s. *Sexual Health*, 19(4), 329–335. <https://doi.org/10.1071/SH22078>
- Mol, A., Moser, I., & Pols, J. (2010). *Care in practice*. Verlag.
- Mudiyansele, S. B., Dona, S. W. A., Abimanyi-Ochom, J., & Watts, J. J. (2023). Impact of the Medicare Benefits Schedule Rebate (MBSR) freeze on General Practice (GP) use: Multivariable regression analysis. *BMC Health Services Research*, 23(1), 588. <https://doi.org/10.1186/s12913-023-09569-3>
- Muehlmann, M., & Tomczyk, S. (2023). Mobile apps for sexual and reproductive health education: A systematic review and quality assessment. *Current Sexual Health Reports*, 15(2), 77–99. <https://doi.org/10.1007/s11930-023-00359-w>

- Mundie, A., Mullens, A. B., Fein, E. C., Bell, S. F. E., Debattista, J., Ariana, A., Daken, K., Wenham, K., Gilks, C. F., Doherty, P., Durham, J., Gu, Z., & Dean, J. A. (2025). University students' access and use of sexual and reproductive health services in Australia. *Culture, Health & Sexuality*, 27(10), 1261–1277. <https://doi.org/10.1080/13691058.2024.2410834>
- Murray, C. J., Ikuta, K. S., Sharara, F., Swetschinski, L., Aguilar, G. R., Gray, A., Han, C., Bisignano, C., Rao, P., Wool, E., & Johnson, S. C. (2022). Global burden of bacterial antimicrobial resistance in 2019: A systematic analysis. *The Lancet*, 399(10325), 629–655. [https://doi.org/10.1016/S0140-6736\(21\)02724-0](https://doi.org/10.1016/S0140-6736(21)02724-0)
- Naghavi, M., Vollset, S. E., Ikuta, K. S., Swetschinski, L. R., Gray, A. P., Wool, E. E., Aguilar, G. R., Mestrovic, T., Smith, G., Han, C., & Hsu, R. L. (2024). Global burden of bacterial antimicrobial resistance 1990–2021: A systematic analysis with forecasts to 2050. *The Lancet*, 404(10459), 1199–1226. [https://doi.org/10.1016/S0140-6736\(24\)01867-1](https://doi.org/10.1016/S0140-6736(24)01867-1)
- Nickelsen, N. C. M. (2019). The infrastructure of telecare: Implications for nursing tasks and the nurse-doctor relationship. *Sociology of Health & Illness*, 41(1), 67–80. <https://doi.org/10.1111/1467-9566.12781>
- Peterie, M., Kenny, K., Broom, A., & Ramia, G. (2026). *Infrastructures of informal care*. Policy Press.
- Richert, L. (2009). Reagan, regulation, and the FDA: The US Food and Drug Administration's response to HIV/AIDS, 1980–90. *Canadian Journal of History*, 44(3), 467–488. <https://doi.org/10.3138/cjh.44.3.467>
- Symonds-Brown, H., Ceci, C., & Judge, H. (2022). Sand in the works? *Sociology of Health & Illness*, 44(9), 1517–1532.
- Smith, A. K. J., Brener, L., Broady, T. R., Saliba, B., Keen, P., Prain, B., Treloar, C., & Partnership, N. H. P. (2025). Stigma and patient work: Understanding cumulative inequities for gay and bisexual men in accessing HIV healthcare services. *Social Science & Medicine*, 367, 117729. <https://doi.org/10.1016/j.socscimed.2025.117729>
- Star, S. L. (1999). The ethnography of infrastructure. *American Behavioral Scientist*, 43(3), 377–391. <https://doi.org/10.1177/00027649921955326>
- Star, S. L., & Ruhleder, K. (1996). Steps toward an ecology of infrastructure: Design and access for large information spaces. *Information Systems Research*, 7(1), 111–134. <https://doi.org/10.1287/isre.7.1.111>
- Trapence, G., Collins, C., Avrett, S., Carr, R., Sanchez, H., Ayala, G., Diouf, D., Beyrer, C., & Baral, S. D. (2012). From personal survival to public health: Community leadership by men who have sex with men in the response to HIV. *The Lancet*, 380(9839), 400–410. [https://doi.org/10.1016/S0140-6736\(12\)60834-4](https://doi.org/10.1016/S0140-6736(12)60834-4)
- Unemo, M., & Shafer, W. M. (2014). Antimicrobial resistance in *Neisseria gonorrhoeae* in the 21st century: Past, evolution, and future. *Clinical Microbiology Reviews*, 27(3), 587–613. <https://doi.org/10.1128/CMR.00010-14>
- Valentine, J. A., Delgado, L. F., Haderxhanaj, L. T., & Hogben, M. (2022). Improving sexual health in U.S. rural communities: Reducing the impact of stigma. *AIDS and Behavior*, 26(S1), 90–99. <https://doi.org/10.1007/s10461-021-03416-4>
- Van Pijkeren, N., Wallenburg, I., & Bal, R. (2021). Triage as an infrastructure of care: The intimate work of redistributing medical care in nursing homes. *Sociology of Health & Illness*, 43(7), 1682–1699. <https://doi.org/10.1111/1467-9566.13353>
- WHO. (2019). *Antimicrobial resistance*. <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>
- WHO. (2024). *Implementing the global health sector strategies on HIV, viral hepatitis and sexually transmitted infections, 2022–2030: Report on progress and gaps 2024*.