



# Knowledge of HIV pre-exposure prophylaxis among immigrant Asian gay men living in New Zealand

Jeffery Adams PhD,<sup>1,3</sup> Rommel Coquilla BS,<sup>1</sup> Jed Montayre PhD, RN,<sup>2</sup> Stephen Neville PhD, RN, FCNA(NZ)<sup>2</sup>

<sup>1</sup>SHORE & Whāriki Research Centre, Massey University, PO Box 6137, Auckland 1141, New Zealand

<sup>2</sup>Department of Nursing, Auckland University of Technology, Private Bag 92006, Auckland 1142, New Zealand

<sup>3</sup>Corresponding author. Email: j.b.adams@massey.ac.nz

## ABSTRACT

**INTRODUCTION:** HIV pre-exposure prophylaxis (PrEP) is a new bio-medical means of reducing the risk of HIV infection. Its use by individuals at high risk of HIV acquisition is recommended.

**Aims:** This study identifies the ways immigrant Asian gay men living in New Zealand talk about and understand issues related to PrEP.

**METHODS:** A qualitative descriptive methodology was used. Individual interviews were conducted with 18 immigrant Asian gay men who were not users of PrEP. Participants were aged 21–36 years and one-third had arrived in New Zealand within 3 years of completing the interview. Data were analysed using thematic analysis.

**RESULTS:** Three themes evident across the men's talk in relation to pre-exposure prophylaxis were identified: 'I'm not sure what PrEP is'; 'PrEP is not proven'; and 'PrEP is for others, not me'.

**DISCUSSION:** PrEP is necessary for working towards the elimination of HIV. To improve uptake among Asian gay men, improved literacy around HIV and pre-exposure prophylaxis is required. This knowledge needs to be improved at both the individual level in primary care services and collectively through health promotion initiatives. These services and health promotion initiatives need to be provided in ways that encourage engagement by Asian gay men.

**KEYWORDS:** Asian; gay; HIV pre-exposure prophylaxis

J PRIM HEALTH CARE

2019;11(4):351–358.

doi:10.1071/HC19076

Received 27 August 2019

Accepted 24 October 2019

Published 18 December 2019

## Introduction

HIV pre-exposure prophylaxis (PrEP) is a relatively new bio-medical prevention option for use by HIV-negative people to reduce their risk of HIV infection. It is a pill that effectively eliminates the possibility of HIV acquisition among people who adhere to approved treatment guidelines.<sup>1,2</sup> Its use by individuals at high risk of HIV acquisition is recommended by numerous international agencies.<sup>3</sup> At a population level, PrEP implementation is associated with a decline in HIV diagnoses among gay and bisexual men (GBM) in New South Wales, Australia.<sup>4</sup> HIV diagnoses were reported to have 'declined from 295 in the 12 months before PrEP

roll-out to 221 in the 12 months after (relative risk reduction 25.1%, 95% CI 10.5–37.4)'.<sup>4</sup> PrEP has also been identified as a major contributor to a decline in HIV diagnoses in London, UK.<sup>5</sup>

In New Zealand, PrEP is funded by Pharmaceutical Management Agency (PHARMAC) for high-risk gay, bisexual and other men who have sex with men, transgender people and for partners of people with unsuppressed HIV (Box 1).<sup>5</sup> Initially, access was funded through the New Zealand PrEP Demonstration Project (NZPrEP), a demonstration trial undertaken to determine the feasibility of PrEP's provision through a secondary sexual health

**WHAT GAP THIS FILLS**

**What is already known:** PrEP use around the world is low, including among gay ethnic minority men.

**What this study adds:** This research identifies immigrant Asian gay men in New Zealand as somewhat resistant to using pre-exposure prophylaxis. Interventions to improve pre-exposure prophylaxis knowledge and to counter conservative attitudes to sex and sexuality are required.

service.<sup>7</sup> PrEP is now more widely available through primary health-care providers, while options to import PrEP exist for individuals not eligible for publicly subsidised supply.

Local PrEP-related research is limited. Available literature has enumerated the population eligible for it,<sup>8</sup> described the NZ PrEP trial protocol<sup>7</sup> and the characteristics of trial participants.<sup>1</sup> A research gap exists with regard to the New Zealand gay and bisexual male population not engaged with the NZ PrEP trial, or not accessing PrEP through primary health care or private means. Investigations of this group are important because international research has identified a range of issues affecting the

acceptability and uptake of PrEP, including low levels of knowledge,<sup>9</sup> misconceptions about prescribing regimes,<sup>10</sup> scepticism about its benefits,<sup>11</sup> and poor knowledge and discomfort among health-care providers about PrEP.<sup>12</sup>

Because immigration is a key determinant of health outcomes,<sup>13</sup> this study focused on immigrant Asian gay men living in New Zealand. In relation to HIV infection, for instance, over the past 5 years (2014–18), 18% ( $n = 120$ ) of all HIV diagnoses have been among Asian gay and bisexual men.<sup>14</sup> This is more than expected, given that the proportion of Asian people living in New Zealand over this period was estimated to be 12–15% of the country's population.<sup>15</sup> In addition, many Asian gay men have rudimentary sexual health knowledge and practices and are not well engaged with sexual health services.<sup>16,17</sup>

The aim of this study was to identify the views of Asian immigrant gay men about PrEP. This is critical to enhancing health-care provision and HIV prevention and health promotion initiatives for this group.

**Methods**

This qualitative study used individual interviews with immigrant Asian gay men who were not using

**Box 1.** Eligibility criteria to access funded HIV pre-exposure prophylaxis (PrEP)

Both:

1. Patient has tested HIV negative; and

2. Either:

2.1 All of the following:

2.1.1 Patient is male or transgender; and

2.1.2 Patient has sex with men; and

2.1.3 Patient is likely to have multiple episodes of condomless anal intercourse in the next 3 months; and

2.1.4 Any of the following:

2.1.4.1 Patient has had at least one episode of condomless receptive anal intercourse with one or more casual male partners in the last 3 months; or

2.1.4.2 A diagnosis of rectal chlamydia, rectal gonorrhoea or infectious syphilis within the last 3 months; or

2.1.4.3 Patient has used methamphetamine in the last 3 months; or

2.2 All of the following:

2.2.1 Patient has a regular partner who has HIV infection; and

2.2.2 Partner is either not on treatment or has a detectable viral load; and

2.2.3 Condoms have not been consistently used.

PrEP. Advertising and promotion of the research were primarily undertaken via social media, including postings on Facebook, Twitter and Instagram. In addition, several research team members promoted the study among their personal and professional networks. In line with the multi-lingual capabilities of expected participants, interviews were offered in English, Mandarin, Hindi and Filipino.

The interviews were digitally recorded and transcribed. Three interviews were conducted by a research assistant in Mandarin. They were translated into English by a research colleague who is a native Mandarin speaker. The remainder of the interviews were conducted in English. We used a codebook thematic analysis approach.<sup>18</sup> In this approach, both deductive (predetermined codes) and inductive (interview data) analysis is employed. All transcripts were printed, read independently and discussed by two researchers who then developed the themes. Final themes were agreed on by all authors. The quotes presented are slightly edited to facilitate ease of reading and pseudonyms are used. The research guidelines of Massey University guided this study and ethical approval was obtained from a Massey University human ethics committee.

## Results

### Participants

A total of 18 men were interviewed and all identified as gay. Two-thirds ( $n = 12$ ) of the participants had moved to New Zealand over the period 2011–15, the rest arrived in the period 2016–18, and 13 had moved directly from their birth country. Participants were born in China ( $n = 10$ ), the Philippines ( $n = 3$ ), Taiwan ( $n = 2$ ), Hong Kong ( $n = 1$ ), Thailand ( $n = 1$ ) and Vietnam ( $n = 1$ ). The age range of participants was 21–36 years (median age 28 years). The group was well educated (all but one had university qualifications) and were employed in a variety of work types (professional roles  $n = 3$ , technical and trade  $n = 2$ , community and personal  $n = 3$ , clerical and administration  $n = 2$ , job seeking = 3) and five were full-time tertiary students. Participants were more likely to be in de facto relationships or partnered ( $n = 12$ ) than single or not partnered ( $n = 6$ ). Sixteen lived in Auckland (largest city in New Zealand); the other two lived in

Hamilton and Tauranga cities. All participants were non-PrEP users.

Three themes evident across the men's talk in relation to PrEP were identified: (1) 'I'm not sure what PrEP is'; (2) 'PrEP is not proven'; and (3) 'PrEP is for others, not me'.

### 'I'm not sure what PrEP is'

Overall, participants did not confidently articulate a comprehensive knowledge of PrEP. Uncertainty about what PrEP is and how it works was evident. This included confusing it with post-exposure prophylaxis (a course of HIV treatment taken by people who may have been exposed to HIV) or believing it was a treatment for people with HIV. Other men expressed lack of familiarity about how often PrEP is taken (the regime promoted in New Zealand at the time of interviews was one pill a day).

'I don't know how long it takes for this medicine to work. Can you just take one pill, or do you need to take it for a long time?' [Fred, China]

Several men said they did not have sufficient information about PrEP to assess whether it was suitable for them. Understanding of where to seek information about PrEP varied. While some men were clear that the New Zealand AIDS Foundation provides generic information about PrEP, others were less certain about information access points. The participants were much less sure about ways to access PrEP. Some incorrectly identified the New Zealand AIDS Foundation as providing PrEP. A few men, such as Dennis, were aware that prescriptions for PrEP are available at sexual health services provided by district health boards.

'I think maybe there is a foundation ... they have this kind of free medicine and also free condoms, yeah, for people, who are going to use it. I think, maybe you go to some hospital or clinic, you can get that.' [Dennis, China]

Minimal promotion of PrEP was observed by the men. When seen, promotions had been viewed on Facebook or on the profiles of gay dating app users. A few men had been proactive and sought information by searching on the Internet. Many men were unclear about their eligibility for PrEP. While PrEP use is indicated and subsidised for men who meet certain clinical parameters (including men

likely to have multiple episodes of anal intercourse without condoms),<sup>19</sup> this was not discussed by participants, suggesting their lack of specific knowledge about PrEP. Rather, discussion of eligibility was limited to entitlement to publicly funded health services. Several said they were in New Zealand on short-term visas and thus not able to access publicly funded health care. Additionally, several men with resident visas, who are likely to be eligible for public funded health care and subsidised PrEP, were also unclear about their eligibility. For men not eligible for publicly funded PrEP, the cost of accessing it was a deterrent. In a couple of instances, men knew about the option to access PrEP privately.

'I don't know this very well [how to access PrEP]. I don't know if it is through family doctor, or can a hospital prescribe this medicine. Or whether it is a prescription drug or an over-the-counter drug? I don't know much about this.' [Fred, China]

'I think I'm not eligible for that because I'm not, not a resident or citizen. So, the only way that I can get PrEP [is] to order online for a generic medicine.' [Sidney, Taiwan]

Seeking detailed information about what PrEP is, the eligibility criteria and considering any potential benefits for them was largely dismissed by some men who felt PrEP was not for them (see theme 3). In doing so, these men appear to be making decisions about PrEP without the advantage of full information about what it may offer.

'I don't know [how to access PrEP] because I never think about it if I'm gonna use it. So, I never ask and I never find a way to buy it.' [John, China]

### PrEP is not proven

Strongly evident in the men's accounts was scepticism and concern about PrEP and its suitability for gay and bisexual men. This position is consistent with the men's lack of specific PrEP knowledge. It does not, however, reflect the strength of the science for PrEP's efficacy. Several participants expressed concerns that PrEP has not been proven to be effective in successfully keeping men from acquiring HIV.

'Is there any definitive data to prove it works? Is it 100% effective?' [Reza, China]

PrEP was also viewed unproven in relation to substantive medical side-effects, such as effects on kidney function. As the potential for side-effects exists and cannot be ruled out, this was a considerable barrier to PrEP uptake by some men.

'The only concern [with PrEP] may be side effects. Like you have to be monitoring renal function.' [Sidney, Taiwan]

PrEP was also considered by participants as unproven in relation to sexually transmissible infections (STIs). Here, the concern was that it would not protect individuals from acquiring STIs, and that STI rates may increase as it was more likely condoms would not be used by men taking PrEP.

'I'm not sure if it, it help to prevent other, like other disease, related to sex, and stuff.' [John, China]

PrEP was typically viewed as offering nothing more for men's sexual health and safety than condoms already do. Condoms were identified as familiar, safe and proven over time. Condoms also had the advantage of being a visible, physical barrier.

'I probably will prefer to use condom. I still think that it will be safe because it has been a long history. But PrEP, I'm not sure how long it has been, like, a medicine, invented or something. So, I still have a bit of, worry about, how effective it is. ... For me if you've got a condom, then probably that's better protection. But if you, just take the medicine, does it work, I don't know?' [Stephen, Hong Kong]

'I'm kind of a coward ... I prefer to believe in the physical, just like condom.' [John, China]

### PrEP is for others, not me

Participants characterised PrEP as somewhat of a 'double-edged sword'. On the positive side, PrEP was seen as a way for men to protect themselves from HIV, but at the cost of encouraging promiscuity. PrEP was largely perceived as being suitable for very sexually active gay and bisexual men. While participants did not have direct experience or knowledge of other men taking PrEP, they held a generally positive view of men who did take it, and viewed them as being proactive and taking personal responsibility for their sexual health.

'I think they will recognize their own sexual risk ... and they are finding a way to protect themselves from being infected with HIV.'  
[Sidney, Taiwan]

PrEP was considered suitable for highly sexual men. Several men observed that this excluded Asian men as they were seen as not being as sexually active as other men. Specific groups of men identified as highly sexual included older men and 'bears' (heavy set, masculine man) and sex-workers.

'I think for Asian, we're not haha. I don't know. I think right now, very addicted to sex.' [Denis, China]

'A little bit old maybe. Like, bears. Bears actually. Rough guys haha ... because they're more aggressive.' [Carl, Philippines]

Despite the acknowledged theoretical benefits of PrEP, all but a few participants viewed PrEP as not for them. Several rationales were provided to support the argument that PrEP is for other men. Most prominently, PrEP was dismissed through drawing on a romantic partner-orientated discourse. Within this, PrEP was discussed as unnecessary because being in a relationship was valued and was additionally viewed as protective against HIV infection. In these circumstances, sex outside of the relationship was either implicitly or explicitly identified as not occurring or unlikely to occur.

'I only have one sexual partner, we both don't have AIDS, so I won't take it because it is not necessary. My sex life is very simple, I will not be infected, then I don't need to take it. Because its purpose is to prevent AIDS, then it is not necessary.' [Reza, China]

PrEP was largely discussed as necessary only for people who are not partnered. Only one person specifically noted it would be good for people in relationships and recognised that partnered relationships are not necessarily protective of HIV.

'I think it's good for people who have a fixed partner. Many of them may be already having sex without condom in their daily sex life because as long as they don't engage in promiscuity, there may be no problem [of getting HIV]. However, there is still some risk, so, if you have this medicine it may be better for this group of

people, they can be even safer, that is, for those who already have a fixed partner.' [Fred, China]

The potential for promiscuous sexual behaviour by men who use PrEP was viewed negatively. Such behaviour was positioned as undesirable, regardless of relationship status. For men in relationships, this type of behaviour was characterised as potentially threatening the stability of relationships. Importantly, even though PrEP use was viewed negatively in these terms, the protection offered by it was acknowledged positively.

'So, people [using PrEP] can make love with everyone. But this is one way. For another way, if people ... keep the body healthy, keep people protected from AIDS, I think it's good, this way. But yeah, you know, when people in a relationship, or they can go out with everyone, that is not good to people's relationship.' [Lawrence, China]

Potential stigma against PrEP users was also identified as a factor in restricting its use. In particular, the men thought that PrEP users may be perceived by others to be sexually active and looking for sex without condoms. For some, being labelled negatively as a 'PrEP person' or a 'bareback person' carried with it the implication you were not taking sexual safety seriously.

'So, if you take PrEP probably people will say, oh you are being a bit slutty ... there's just probably some stigma.' [Ted, China]

'Once you take PrEP you become a PrEP person. And I think a PrEP person, they prefer to have bareback sex ... people gonna recognise you as a bareback person.' [John, China]

## Discussion

Research understanding of the social and cultural aspects of PrEP use in New Zealand is in its infancy. The key results of this study demonstrate some barriers to PrEP uptake among Asian gay men, and present several areas where primary health care and public action may be warranted to ensure optimal uptake of PrEP.

Knowledge about PrEP across the sample was low. As identified elsewhere, gay and bisexual men are not necessarily aware of the efficacy of PrEP, nor understand dosing schedules,<sup>20</sup> and do not necessarily trust PrEP will offer adequate protection

against HIV infection.<sup>21</sup> In primary health care, clinicians require good knowledge about PrEP, access to appropriate resources<sup>22</sup> and must be able to communicate comprehensive information about PrEP to gay and bisexual men. However, given overseas evidence, healthcare provider and professional views around PrEP may well be divided due to concerns about the potential effect of PrEP, including the possibility of an increased incidence of STIs. Others are more optimistic it will have a positive effect.<sup>23</sup> Accordingly, opportunities for building and developing an evidence-informed approach should be pursued.

Accurate and comprehensive information provided by clinicians to gay and bisexual men would contribute to reducing uncertainty and fear, and allow men to make informed decisions about the suitability of PrEP for them. We found strong support for condom use among this group, so building confidence in PrEP as an additional and valid HIV-prevention tool is required. Ensuring clear information is available about men's eligibility for publicly funded health care is also necessary. Health promotion initiatives should also focus on providing information in ways acceptable to these men. This may require language-specific resources and promotions.

The existing international research is extended by direct linking of conservative attitudes to sex and sexuality with PrEP use. Using PrEP was seen as potentially destabilising for men in relationships, while users were seen as likely to be shamed for being highly sexually active. Although such traditional and conservative views may be culturally desirable and consistent with norms of presenting a good image,<sup>24</sup> these views appear to both conflict with practice and align with the considerable HIV burden carried by Asian men in New Zealand. It follows then that interventions should address the understanding that PrEP is only for men without partners or for highly sexualised men, and place PrEP within a range of HIV-prevention strategies that men can engage with. While for particular couples it is entirely reasonable that condoms or PrEP may not be required for risk-free anal sex, it is important to recognise that research involving partnered gay and bisexual men as a group has found HIV is often transmitted within main-partner relationships.<sup>25</sup>

Engaging young and marginalised populations in health care, including HIV care and prevention, is acknowledged as difficult.<sup>16,26,27</sup> We also know that in New Zealand, disclosure of sexuality and sexual practices is difficult for many gay and bisexual men.<sup>28–30</sup> Given these difficulties, health-care environments must be carefully planned to ensure appropriate delivery of services.<sup>31,32</sup> Further discussion and debate may be required to ensure consistently high-quality sexual health services are available to all. These services should be immigrant-sensitive<sup>33</sup> and planned to ensure equity for Asian gay and bisexual men.<sup>9</sup>

## Limitations

The protocol for this study required men to initiate contact with the research team, which may have resulted in self-selection bias. To counter this, we advertised the study widely and used a range of professional and personal networks to recruit participants. Although we attempted to also recruit bisexual-identifying men, none responded to the research promotion. Nonetheless we expect many of the research findings to also be applicable to them. This article reports the views of the men we interviewed, but does not account for the views of all Asian gay men. The proportion of men who were in partnered relationships may have contributed to more conservative views being aired.

## Conclusion

PrEP is now considered necessary for working towards the elimination of HIV. In this study, we have identified impediments to achieving PrEP uptake among immigrant Asian gay men living in New Zealand. Such knowledge is vital to inform the responsiveness of public health, health promotion and primary care initiatives to meet the needs of these populations. The research provides key insights to inform agencies such as the New Zealand AIDS Foundation and the Ministry of Health in the development and funding of health promotion initiatives for this group. It also identifies issues for primary health-care providers to be aware of and respond to.

## Competing interests

The authors declare no competing interests.

## Funding

This research was funded by a Massey University Research Fund grant to the first author.

## Acknowledgements

We thank all the men who shared their views with us. We also thank Mingwei Qin who conducted interviews in Mandarin and Dr En-Yi Lin who translated these interviews.

## References

- Saxton PJW, Azariah S, Franklin RA, et al. Baseline characteristics of gay and bisexual men in a HIV pre-exposure prophylaxis demonstration project with equity quotas in Auckland, New Zealand. *Sex Health*. 2019;16:47–55. doi:10.1071/SH18056
- World Health Organization. What's the 2+1+1? Event-driven oral pre-exposure prophylaxis to prevent HIV for men who have sex with men: update to WHO's recommendation on oral PrEP. Geneva, Switzerland: World Health Organization; 2019.
- US Preventive Services Task Force. Preexposure prophylaxis for the prevention of HIV infection: US Preventive Services Task Force recommendation statement. *JAMA*. 2019;321:2203–13. doi:10.1001/jama.2019.6390
- Gulich AE, Guy R, Amin J, et al. Population-level effectiveness of rapid, targeted, high-coverage roll-out of HIV pre-exposure prophylaxis in men who have sex with men: the EPIC-NSW prospective cohort study. *Lancet HIV*. 2018;5(11):e629–e37. doi:10.1016/S2352-3018(18)30215-7
- Nwokolo N, Hill A, McOwan A, Pozniak A. Rapidly declining HIV infection in MSM in central London. *Lancet HIV*. 2017;4:e482–3. doi:10.1016/S2352-3018(17)30181-9
- PHARMAC. Decision to fund HIV pre-exposure prophylaxis (PrEP). Wellington, New Zealand; 2018. [cited 2019 May 15]. Available from: <https://www.pharmac.govt.nz/news/notification-2018-02-07-prep/#criteria>
- Azariah S, Saxton P, Franklin R, et al. NZPrEP Demonstration Project: protocol for an open-label, single-arm trial of HIV pre-exposure prophylaxis (PrEP) to determine feasibility, acceptability, adverse and behavioural effects of PrEP provision to gay and bisexual men in publicly funded sexual health clinics in Auckland, New Zealand. *BMJ Open*. 2019;9:e026363. doi:10.1136/bmjopen-2018-026363
- Saxton PJW, McAllister SM. Enumerating the population eligible for funded HIV pre-exposure prophylaxis (PrEP) in New Zealand. *Sex Health*. 2019;16:63–9. doi:10.1071/SH18058
- Frankis J, Young I, Flowers P, McDaid L. Who will use pre-exposure prophylaxis (PrEP) and why?: understanding PrEP awareness and acceptability amongst men who have sex with men in the UK — A mixed methods study. *PLoS One*. 2016;11:e0151385. doi:10.1371/journal.pone.0151385
- Kurtz SP, Buttram ME. Misunderstanding of pre-exposure prophylaxis use among men who have sex with men: public health and policy implications. *LGBT Health*. 2016;3:461–4. doi:10.1089/lgbt.2015.0069
- Jaspal R, Daramilas C. Perceptions of pre-exposure prophylaxis (PrEP) among HIV-negative and HIV-positive men who have sex with men (MSM). *Cogent Med*. 2016;3:1256850. doi:10.1080/2331205X.2016.1256850
- Wood BR, McMahan VM, Naismith K, et al. Knowledge, practices, and barriers to HIV preexposure prophylaxis prescribing among Washington State medical providers. *Sex Transm Dis*. 2018;45:452–8. doi:10.1097/OLQ.0000000000000781
- Thomas F, Chase E, Aggleton P. Health education and migration. *Health Educ J*. 2019;78:3–8. doi:10.1177/0017896918813592
- AIDS Epidemiology Group. AIDS – New Zealand: issue 78. Dunedin, New Zealand: AIDS Epidemiology Group, University of Otago; 2019.
- Statistics NZ. Population projections tables. Wellington: Stat NZ; 2017. [cited 2019 June 10]. Available from: [http://archive.stats.govt.nz/tools\\_and\\_services/nzdotstat/tables-by-subject/population-projections-tables.aspx#ethnic](http://archive.stats.govt.nz/tools_and_services/nzdotstat/tables-by-subject/population-projections-tables.aspx#ethnic)
- Neville S, Adams J. Views about HIV/STI and health promotion among gay and bisexual Chinese and South Asian men living in Auckland, New Zealand. *Int J Qual Stud Health Well-being*. 2016;11:30764. doi:10.3402/qhw.v11.30764
- Adams J, Neville S. Exploring talk about sexuality and living gay social lives among Chinese and South Asian gay and bisexual men in Auckland, New Zealand. *Ethn Health* 2018;. doi:10.1080/13557858.2018.1439893
- Braun V, Clarke V, Terry G, Hayfield N. Thematic analysis. In: *Handbook of Research Methods in Health and Social Sciences*. Liamputtong P, editor. Singapore: Springer; 2019. p. 843–60.
- Saxton PJ, Giola M, Coughlan EP, et al. Implementing HIV pre-exposure prophylaxis (PrEP): let's not get caught with our pants down. *N Z Med J*. 2018;131:64–73.
- Grov C, Kumar N. HIV pre-exposure prophylaxis (PrEP) is coming to Europe, but are gay men ready to accept it? Qualitative findings from Berlin, Germany. *Sex Res Soc Policy*. 2018;15:283–9. doi:10.1007/s13178-017-0278-9
- Williamson I, Papaloukas P, Jaspal R, Lond B. 'There's this glorious pill': gay and bisexual men in the English Midlands navigate risk responsibility and pre-exposure prophylaxis. *Crit Public Health*. 2018;29(5):560–71.
- New Zealand AIDS Foundation. PrEP information for clinicians. Auckland, New Zealand; 2019. [cited 2019 August 01]. Available from: <https://www.nzaf.org.nz/hiv-aids-stis/hiv-prevention/prep/prep-information-for-clinicians/>.
- Holt M, Newman CE, Lancaster K, Smith AK, Hughes S, Truong H-HM. HIV pre-exposure prophylaxis and the 'problems' of reduced condom use and sexually transmitted infections in Australia: a critical analysis from an evidence-making intervention perspective. *Social Health Illn*. 2019;. doi:10.1111/1467-9566.12967
- Chiang S-Y, Fleming T, Lucassen MFG, et al. From secrecy to discretion: the views of psychological therapists on supporting Chinese sexual and gender minority young people. *Child Youth Serv Rev*. 2018;93:307–14.
- Sullivan PS, Salazar L, Buchbinder S, Sanchez TH. Estimating the proportion of HIV transmissions from main sex partners among men who have sex with men in five US cities. *AIDS*. 2009;23:1153–62. doi:10.1097/QAD.0b013e32832baa34
- Closson K, Chown S, Armstrong HL, et al. HIV leadership programming attendance is associated with PrEP and PEP awareness among young, gay, bisexual, and other men who have sex with men in Vancouver, Canada. *BMC Public Health*. 2019;19:429. doi:10.1186/s12889-019-6744-y
- Hannaford A, Lipshie-Williams M, Starrels JL, et al. The use of online posts to identify barriers to and facilitators of HIV pre-exposure prophylaxis (PrEP) among men who have sex with men: a comparison to a systematic review of the peer-reviewed literature. *AIDS Behav*. 2018;22:1080–95. doi:10.1007/s10461-017-2011-3
- Adams J, McCreanor T, Braun V. Doctoring New Zealand's gay men. *N Z Med J*. 2008;121:11–20.

29. Ludlam AH, Saxton PJ, Dickson NP, Hughes AJ. General practitioner awareness of sexual orientation among a community and internet sample of gay and bisexual men in New Zealand. *J Prim Health Care*. 2015;7:204–12. doi:10.1071/HC15204
30. Neville S, Henrickson M. Perceptions of lesbian, gay and bisexual people of primary healthcare services. *J Adv Nurs*. 2006;55:407–15. doi:10.1111/j.1365-2648.2006.03944.x
31. Nelson LE, McMahon JM, Leblanc NM, et al. Advancing the case for nurse practitioner-based models to accelerate scale-up of HIV pre-exposure prophylaxis. *J Clin Nurs*. 2019;28:351–61. doi:10.1111/jocn.14675
32. Witzel TC, Nutland W, Bourne A. What qualities in a potential HIV pre-exposure prophylaxis service are valued by black men who have sex with men in London? a qualitative acceptability study. *Int J STD AIDS*. 2018;29:760–5. doi:10.1177/0956462418755224
33. Villa S, Raviglione MC. Migrants' health: building migrant-sensitive health systems. *J Public Health Res*. 2019;8:1592. doi:10.4081/jphr.2019.1592