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ORIGINAL PAPER

Promoting 'Equitable Access' to PrEP in Australia: Taking Account of Stakeholder Perspectives

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Abstract
As evidence of the safety and effectiveness of HIV pre-exposure prophylaxis (PrEP) has grown, so has attention to the views of prospective users and providers. However, far less attention has been paid to understanding the perspectives of other stakeholders in the rollout of PrEP access programs. We conducted 21 semi-structured qualitative interviews in 2017 with key stakeholders working across the policy, advocacy, research and/or clinical dimensions of the Australian HIV response, before federal support for a subsidised access scheme was achieved. Our analysis explored three areas of shared concern: who is a suitable candidate for PrEP; why are disparities in PrEP access important; and how can disparities be addressed? In examining how this diverse group of professionals grappled with the challenges of promoting 'equitable access' to PrEP in an increasingly resource rationed health system, we can see how the principles believed to underpin the Australian response to HIV were both reaffirmed and challenged through this period of significant change.

Keywords HIV pre-exposure prophylaxis (PrEP) · Equity · Access · Qualitative research · Australia

Resumen
Últimamente, viene acumulando evidencia para la seguridad y eficacia de la profilaxis pre-exposición al VIH (PrEP, siglas en inglés). Junto con esto, también se ha aumentado atención a las opiniones de los posibles usuarios y proveedores. Sin embargo, todavía sabemos muy poco sobre las perspectivas de otras personas interesadas, aunque tal vez menos directamente involucradas, en el despliegue de los programas de acceso a PrEP. En 2017, llevamos a cabo 21 entrevistas cualitativas semiestructuradas con "informantes claves" de la respuesta australiana al VIH, o sea, gente que trabaja en las dimensiones políticas, de abogacia, investigación y/o clínicas de la epidemia en el país. Las entrevistas fueron hechas antes de que se lograra el apoyo federal para un esquema de acceso subsidiado. Nuestro análisis exploró tres áreas de preocupación compartida: ¿Quién es un candidato apropiado para PrEP? ¿Por qué son importantes las disparidades en el acceso a PrEP? y ¿Cómo se puede abordar estas disparidades? Examinamos en particular la manera en que este grupo diverso de profesionales lidió con los desafíos de promover el "acceso equitativo" a PrEP, en un sistema de salud cada vez más racionado. Por esa óptica queda claro que, en este período de transformación significativa, los principios vistos como bases fundamentales de la respuesta australiana al VIH fueron tanto reafirmados como desafiados.

Background

In this paper, we take up a unique opportunity to examine how the complex social and structural issue of achieving 'equitable access' to a new HIV prevention technology was conceptualised by key stakeholders in an ostensibly resource-rich setting with a history of successful responses to the challenges of HIV.

Pre-exposure prophylaxis or 'PrEP' is the use of antiretroviral drugs to prevent HIV infection. This strategy was first found to be effective in preventing HIV acquisition among

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men who have sex with men and transgender women in a large international trial, completed in 2010 [1]. Multiple studies subsequently demonstrated PrEP to be highly effective in preventing HIV (> 90%) in a range of 'at risk' populations, if recipients adhere to the recommended regimen [2]. The high levels of adherence required to achieve these high rates of effectiveness have led to a range of studies also investigating long-acting and injectable forms of PrEP delivery [3], given it is well recognised that adherence can be difficult to maintain in 'real world' settings, and that people can hold complex relationships to pill-taking over time [4]. Although research on these and other factors that influence interest in and willingness to use PrEP have burgeoned over the last decade [5, 6], less attention has been paid to the significance of policy and other structural factors that influence PrEP implementation and access [7].

Whilst access to PrEP remains relatively limited internationally, the number of countries in which it is formally available is rapidly increasing.[1] The brief history of access to PrEP in Australia—a low-prevalence county with a concentrated epidemic—has been eventful. PrEP use by gay and bisexual men, the primary HIV-affected population in Australia, remained at or below 6% of HIV-negative men until 2016. There was a rapid increase in use in 2017 in Australia's largest cities, Melbourne and Sydney (see reasons below), to 14–16% of HIV-negative gay and bisexual men, with lower levels of use in other jurisdictions [8–10]. Access has been restricted because the drugs used for PrEP (tenofovir and emtricitabine) were licensed for HIV prevention by Australia's Therapeutic Goods Administration, but were not listed on the country's Pharmaceutical Benefits Scheme (PBS)—which provides a public subsidy and make the drugs affordable—until April 2018. Before that point, access was largely restricted to personal importation of less expensive, generic PrEP drugs (with a doctor's prescription) and publicly-funded demonstration projects, which provided PrEP for free or a low cost. These projects were remarkably successful, particularly in New South Wales and Victoria, revealing a huge demand for PrEP among high-risk populations in particular areas [11, 12]. However, they were also limited in terms of both timeframe and the communities targeted, raising a range of issues regarding both *sustainability*, and *equity*, of access to PrEP. Those who secured PrEP through personal importation were likely to be highly motivated and well engaged with the health system [8]. Those who secured PrEP through demonstration projects were living in the two largest—and arguably best serviced—cities in Australia, and also already well engaged with the health system [11, 13]. Smaller projects were then established in other jurisdictions (Australian Capital Territory, Queensland, South Australia and Western Australia), to offer interim access. National prescribing guidelines were developed [14], but there remained disparities in political support for PrEP, including the provision of funding and access programs.

Although subsidised access by the federal government is now in place, these discussions about potential and observed inequities and disparities in access to PrEP revealed important socio-political issues underpinning the approach to controlling or reducing the HIV epidemic in Australia. We became interested in understanding how this notion of disparities in access was being conceptualised and addressed by key stakeholders working across the Australian HIV response, at this important turning point, and the potential resonance for social science research on HIV prevention more broadly. We therefore conducted qualitative research to examine how key stakeholders in the Australian HIV sector, including policymakers, community advocates, researchers and clinicians conceptualised the issue of disparities in access to PrEP. We were particularly interested in the ways those tasked with developing solutions to address disparities in access thought about PrEP at a time when the resources available to fund the HIV response were static, constrained or (in some jurisdictions) reduced [15].

Our approach was inspired by Auerbach et al. and others, who have argued that social science perspectives are critical for understanding how a new technology such as PrEP will or will not work in practice, beyond the public health concern of 'getting drugs into bodies' [16]. In line with this viewpoint, Caceres et al. have called for a greater investment in: 'interdisciplinary studies and critical policy analysis to better understand how PrEP is actually adopted by at-risk communities and… how policy dialogue could be promoted to ensure that this strategy is considered fairly by governments.' [17, p. 6]. Yet very little research has been conducted with stakeholders to examine these critical social aspects of the implementation of PrEP. Research has been conducted with experienced and potential PrEP prescribers, in both HIV specialist or generalist clinical settings (e.g., [18–20]). Other key stakeholders have largely been neglected with the exception of interview studies with stakeholders on the potential benefits and feasibility of PrEP programs in six developing countries [21], with community representatives in Kenya [22], and with US-based scientists involved in PrEP trials almost a decade ago [23]. While these studies have provided important insights, there remains a clear gap in the literature on contemporary stakeholder perspectives on PrEP implementation in settings with robust health systems, such as Australia.

[1] The most comprehensive overview of international PrEP availability is available at: https://www.prepwatch.org/country-updates/.

Table 1 Participant professional and demographic characteristics

Jurisdiction single state/territory (11); national scope (7)	*Organisation type* government (11), non-government/community (5), university (5)
Primary responsibilities policy only (6), clinical (5), research (5), policy and advocacy (3), health promotion (2)	*Areas of expertise* HIV; sexually transmissible infections; blood borne viruses; LBGTI community health; sexual health medicine; sex work [with many crossovers in areas of expertise]
Ages 30s (5), 40s (8), 50s (7), 60s (1)	*Highest qualification* doctorate (7), masters (6), fellowship (4), bachelor (3), Jurisdoctor (1)
Gender identities female or ciswoman (10), male or cisman (11)	*Sexual identities* gay (9), heterosexual (6), lesbian (2), queer (2), bisexual (1), NA (1)
Cultural identities White/Caucasian/Anglo-Australian (11), English-speaking overseas heritage (4); Non-English speaking overseas heritage (3); no participants identified as Aboriginal or Torres Strait Islander in heritage	

Methods

With funding from UNSW Arts and Social Sciences, a qualitative, interview-based study was conducted to capture stakeholder views on the history, purpose and complexities of implementing PrEP in Australia. Ethical approval was provided by the UNSW Sydney Human Research Ethics Advisory Panel G: Health, Medical, Community and Social [HC17099] and the UCSF Institutional Review Board. Prospective participants from all seven states and territories were identified by our study team as holding appropriate expertise and insights regarding HIV prevention in general, and PrEP in particular, across a range of domains. All participants were professionals working in the health and social care sectors, across the fields of HIV prevention, research, care or community education and advocacy, aged 18 or older, and spoke fluent English. Participants were invited to participate via email. Those who declined did so because they were too busy, or required additional ethical approval by their employing organisation, which would have significantly delayed the timing of the study. Participants were given a copy of the information sheet to review. Incentives were not offered for participation, which is standard for stakeholder interview studies.

Interviews were conducted in person, by telephone, or by Skype, based on the participant's preference. CN and SH conducted the interviews from May through August 2017. At the start of each interview, participants were asked if they had reviewed the Information Sheet and were provided with an opportunity to ask questions about the research aims and processes. Verbal consent was then recorded at the start of each interview to ensure consistency across the phone/Skype and in-person interviews. Interviews were digitally audio recorded, transcribed by a professional transcriber, checked for accuracy and interviewer consistency, and fully de-identified to ensure all people, places and organisation names were replaced or removed. Given the highly identifiable nature of the stories being shared regarding PrEP access in different locations and/or populations, because this is a relatively small professional sector, particular care was taken to note any sections of transcript which required additional attention at the point of publication to ensure participant confidentiality would be maintained. Transcripts were analysed using the foundational process in qualitative research, thematic analysis, with a focus on developing both inductive themes, e.g., findings that emerge unexpectedly from the data, and deductive themes, e.g., findings that speak to the primary concepts of interest to the research team [24]. Taking a constant comparative approach, each transcript was coded line by line, with the aim of identifying consistent and dominant patterns across the data as well as variations and disconfirming cases [25]. CN and SH conducted this analysis of transcripts, to ensure compatibility in interpretation of the data. An analysis workshop was held in person with CN, SH, MH and HT, to brainstorm how to most effectively capture and explore the dominant patterns in the interviews, and to take account of any variations observed. Additional input was provided by AP during the manuscript writing process.

Through these processes, the concept of 'equitable access' was identified as a key theme which spanned across the dataset, producing a particular representation of the history, purpose and complexities of making a new HIV prevention technology available in a geographically and socially diverse nation with an HIV epidemic that is concentrated among gay and bisexual men [15]. In exploring how this concept of equitable access was construed in these stakeholder interviews, we have chosen in this paper to ask three simple but essential questions of the data: (1) who is a suitable candidate for PrEP; (2) why are disparities in PrEP access important; and (3) how can disparities be addressed?

Results

Of the 29 prospective participants invited, 21 were interviewed: 13 in person and 8 via phone/Skype. As outlined in Table 1, participants represented a broad range of organisations, responsibilities and areas of expertise, and were diverse in self-reported gender, sexuality and age, although they were not particularly diverse in cultural background,

with most identifying with an Anglo-Australian heritage. As expected from a study of this kind, this was a highly educated sample. All Australian states and territories were represented, except the Northern Territory. Minimal information has been provided about individual participants during the analysis, in order to protect their confidentiality, particularly as this is a relatively small professional sector.

Who is a Suitable Candidate for PrEP?

Although we did not specifically ask this question of interviewees, it emerged as a clear theme in all the interviews. Three distinctive groups stood out, in terms of stakeholders' constructions of suitable PrEP candidates. Differing configurations of HIV risk, empowerment, and desire for PrEP led to variation in who participants envisioned as potential targets for access programs. The first group emerged from the intersection of epidemiological understandings of HIV risk and a prioritization of individuals who were both aware of their risk and able to use PrEP in biomedically-sanctioned ways [26]. As such, suitable candidates for PrEP were seen to include men who have sex with men who appropriately appraised their own risk and sought out and self-administered PrEP as directed. As one non-governmental organisation (NGO) advocate told us:

> For men who have sex with men, [including those] that identify as either gay or bisexual, who have more than one partner, a few casual partners or tend to have quite a lot of regular sex with different partners, we know that for some of them it's very difficult, for a variety of reasons, to always be able to use condoms or practise safer sex. And some […] who, for a variety of reasons, just don't want to. So for them obviously PrEP is gonna make a big difference [P14].

Key to this representation is the notion of identification: there is alignment between these men's identity and their sexual practice, and acceptance of the way public health discourses link these elements to risk for HIV (for example, having a lot of sex with a lot of different partners). These conceptualisations resonate with the way PrEP users were envisaged in research and commentary during the early roll-out phase in the USA. PrEP users were positioned as 'at risk' to justify creating access to (what remains) a relatively expensive intervention, although the requirement for these populations to demonstrate 'riskiness' also raises important questions about how well those particular groups will actually make use of the technology [26].

This consonance (between notions of identity/practice/risk) was seen to qualify such men as suitable candidates for PrEP, especially when they did not want to or found it difficult to use condoms. One HIV researcher whom we interviewed emphasised the desire to avoid the discomfort or awkwardness of condoms as central to the question of who PrEP is for: 'expecting people to use condoms kind of forever […] was maybe unreasonable […] I guess I'm appreciating much more […] that a lot of men, when they're thinking about sex, are thinking about 'how things feel on my penis' […] and it seems to really matter' [P9]. Another advocate echoed this view that a desire for condomless sex was a primary motivation behind men's desire for PrEP, a claim which aligns with Australian survey research [27]. This participant also contextualized such desires, outlining the way socioeconomic factors shape capacity to seek out safe alternatives to condom use:

> The gay-male community want to be educated, they want to be informed and they want access to PrEP. And [this jurisdiction] being quite a relatively, in the scheme of things, high socio-economic, educated, urban community, that they will go out of their way to find ways to access it even if it's not available through PBS or trials […] They want to be able to have condomless, anal sex [with partners they do not know well] without the fear of HIV. And [PrEP] is one way to do that [P18].

We see here that PrEP is being viewed as primarily for gay-identified men who have the personal and social resources to seek out a relatively hard-to-access (at that time) prevention technology in order to have the kind of sex they want. These men are positioned as not waiting for the government to facilitate access, and sufficiently empowered to secure their own strategies for protecting their health. Governments are seen as needing to catch up.

The second group of 'suitable PrEP candidates' identified in the data encompassed this first core group of self-motivated, high-risk men, but added in *anyone who was motivated to use PrEP*. The primary way this group differed from the first stemmed from prioritizing potential users' perceived risk of acquiring HIV, rather than surveillance-based estimates of that risk. In this construction, the 'worried well,' those who are 'anxious' about HIV, even though they may not be at particularly high risk, become suitable candidates for PrEP. As one researcher told us:

> Prevention technologies are only going to work if men want to use them. And it seemed […] exactly the right sort of men want to [use PrEP] […] We needed to prove that targeted PrEP, towards the highest of the high risk, could lead to a big difference [in] HIV reduction … However, we've been very clear along the whole way […] that if there are other reasons for prescribing PrEP which would include, you know, somebody who is—and there are quite a few gay men who are almost phobic about sex—then why not? [P19]

The idea of PrEP being made easily available to those people who are not statistically at elevated risk of infection, but simply feel uneasy about it, is fuelled by the sex-positive ethos underpinning the introduction of PrEP in Australia, and elsewhere. This rationale frames the desire for less anxious sex as just as legitimate a reason to access PrEP as an elevated risk of acquiring HIV [28, 29]. As one clinician put it: 'People can take a medication every day and, if they're at risk of HIV acquisition or just very anxious about acquiring HIV, this can be a life-changing situation for them' [P12].

It should be noted that, as in the above quote, men who have sex with men were still often the implicit archetype in these imaginings. As another interviewee observed about what colleagues in the HIV sector tend to mean when they raise the issue of diversity: 'when they talk about people from CALD [culturally and linguistically diverse backgrounds], they're talking about gay men [from these backgrounds]' [P6]. When asked for other examples of groups that might feel at risk for HIV and wish to take PrEP despite relatively low quantitative estimates of risk—beyond subpopulations of gay men—several interviewees mentioned serodiscordant heterosexual couples. In one instance, this centred around using PrEP prior to the positive partner becoming virally suppressed or while trying to conceive children (though it was noted in the latter case that treatment-as-prevention would in theory also prevent HIV transmission at that time). In another instance, a researcher attempted to assess PrEP's attractiveness from the perspective of women in mixed-status relationships, saying, 'Even if the [HIV-positive partner] had an undetectable viral load, I personally would find it very hard to be having to hang my safety on somebody else's pharmaceutical intervention. Much easier to rely on my own' [P9]. The detail of these responses, in terms of when and why members of such couples might be interested in PrEP, differed markedly from other mentions of mixed-status couples, which were not numerous in any case.

These first two understandings of 'suitable PrEP candidates' share the idea of the self-motivated and self-organised health consumer [30]. The individual learns about and seeks out the product, rather than the provider having to do any or much work in educating and engaging those who they believe would benefit from a new health promotion intervention. This is where the first two groups differ most markedly from the third group of potentially suitable PrEP candidates that might be targeted by access programs, and where the issue of equitable access begins to become particularly complex. This is because the largest and most opaque group of PrEP candidates was, in contrast to the first two, constructed as *requiring active intervention on the part of governments and communities to be engaged with PrEP*. The following two quotes are both from policymakers based in different state government departments:

> In lieu of universal access through primary care with a PBS listing, jurisdictions have had to assume the cost burden for creating access to PrEP for at-risk communities. Unfortunately, the bank isn't endless [which] has created inadvertent disparities of access. Whilst it's created good access for gay and bisexual men […] the hard work [is in reaching] those communities who don't find access easy. So it could be Aboriginal [people] who inject drugs. It could be people from high-prevalence countries, travellers […] It could be young people who are just kind of coming into their kind of sexual lives […] we need to redirect our efforts into the future, to ensure that those communities will benefit from access to PrEP as well, and all that that means within different cultural contexts [P11].

> We've got an under-representation [in our PrEP access program] among people from culturally and linguistically diverse backgrounds [and we want to make] sure that irrespective of where you live, that you are able to access PrEP […] [But] it's harder to get the people who don't access healthcare, who aren't [gay] community-attached, who don't recognize that they're at risk of HIV, [and] people who are young […] who may not have English as their first language, who may not want to identify as gay [P1].

As both of these quotes reveal, policymakers and other key stakeholders were very aware of the many people who did not fit within the 'self-motivated' groups, but who could still potentially benefit from PrEP. Some of these people were believed to be unaware of their HIV risk, whether that was because of their age, location, linguistic or cultural background, or willingness or capacity to reflect on their practices. As Caceres has argued: 'some people who could benefit most from PrEP are those who find it most difficult to come routinely to a health service' [17, p. 5].

It is interesting to note that in the first of these stakeholder quotes, the issue of limited resources is used to explain why there has been a lack of capacity to expand PrEP access beyond people who might be self-motivated to seek PrEP. This more complex set of individuals, who are bound together only by the notion of their potential role as future PrEP users, were recognised as being difficult for those working in health promotion and services to reach. Thus, the issue of who PrEP is suitable for becomes entangled with the issue of who the health system *can* engage, opening up important questions about health policy equity and resourcing.

Why Do Disparities in Access to PrEP Matter?

In addition to these different ways of thinking about who PrEP is for, we also observed different arguments for why

equitable access to PrEP matters. On one hand, equity was seen as necessary because disparities in access would impact the evolution of the epidemic, and thus require redress for HIV elimination to be feasible. On the other hand, the idea that equity in PrEP access was essential was portrayed as stemming from a notion of justice as integral to good public health practice. These alternate framings should not be understood as mutually exclusive or exhaustive; rather, they may be seen as two ends of a continuum, encompassing all of the pertinent responses in the data set. Some interviewees tended to emphasize one orientation more than the other, while some offered multiple versions of equity.

Constructions of equitable PrEP access as *fundamental to controlling the HIV epidemic* were often observed in interviewees' talk about whether implementation trials and personal importation—which, as noted in the background, were the main ways to access PrEP in Australia for a considerable length of time [8]—enabled sufficient numbers of people to use PrEP. One participant noted the uneven availability of trials across Australia's distinctive jurisdictions, then summarised the significance of the access inequities this created in terms of the impact on achieving the shared goal of elimination: 'It's not just about making PrEP available for those who might have an interest in it: it's actually about getting it to scale in a sufficiently short time, in order to have the population effect, that it can deliver' [P3: NGO policy/advocacy]. An interviewee from the government sector was also among those who were pessimistic about what PrEP would be able to deliver, given the constraints of the early roll-out: 'some individuals are going to avoid an HIV infection by participating in PrEP, but we're probably not saturating the at-risk population to a point where it will have any noticeable impact on our epidemic' [P4]. These constructions tended to co-occur with notions of cost-effectiveness, less so with the idea that providing PrEP to the 'worried well' was a cost that should be borne by the government. In both of the above quotations, and others, the 'at-risk' population being referenced was the first group of 'suitable PrEP candidates' outlined previously: gay and bisexual men who knew they wanted PrEP. The inequity was that not all similarly-vulnerable such men had access to the medication. This was important because it meant PrEP was less likely to reduce HIV incidence, which was prioritized as 'the overall public good, not just the personal good. [PrEP] provides a public health benefit when you've got a high coverage among people who are at high risk' [P1: government policy].

There were differing viewpoints articulated regarding whether inequities in access would do more than simply dampen reductions in new infections, particularly when considering sub-groups of gay and bisexual men, or other populations. In response to an interviewer's question about whether disparities would impact the overall success of HIV prevention, one researcher demurred: 'The people who are at the fringes shouldn't really be contributing that much to new HIV infections just based on the way I understand their behaviour' [P8]. In contrast, others felt strongly that, given the level of uptake among gay and bisexual men, 'we may, as a consequence, see the shape and profile of the epidemic in Australia changing as we see the declines of new notifications in gay men, but we won't have had PrEP uptake in other at-risk communities to the levels that we need it' [P11: government policy]. Another researcher who took part in the study made a similar, more elaborated argument:

> We do run the risk in this situation of HIV becoming a real disease of the marginalised, which is something we've managed to avoid in Australia […] Gay, community-attached, high-risk men all wanna be on PrEP and that's going, you know, really wonderfully […] So epidemiologically, then, I think we are interested in the margins. So equity becomes epidemiology […] And unless we get [to] those margins, there'll always be new introductions of virus back into the mainstream. So, you know, I think equity, if we're serious about, you know, getting to the virtual elimination of HIV […] then we do have to start working with the marginalised groups. There's no doubt, you know. Otherwise, it won't work [P19].

This fascinating quote wove together the sometimes disparate discourses of epidemiology and social justice-inflected understandings of equity to situate PrEP within a particular paradigm of prevention science. Overlooking any at-risk groups was represented as not only a disease control problem, but also justice problem. The argument that the model simply 'won't work' unless issues of marginalisation and exclusion are satisfactorily addressed reads as an attempt to counter the suggestion that equity is primarily a political issue, rather than essential to the objectives of HIV prevention. The 'both/and' stance evident in this excerpt also highlighted the flexibility of the discursive resources available to interviewees, and the fact that assertions about the importance of equitable access to PrEP were typically couched in technical language and specialist discourse, which often serves as a way to claim authority [31].

Other explanations of why equity in PrEP access matters tended to emphasize notions of justice as essential to *good public health practice*. One researcher explained:

> We're meant to live in a country that has a health system where everybody is treated equally. And while we know that there are vulnerabilities and inequities within that […] one of the basic things around, you know, public health intervention, is public health interventions should usually be really trying to protect the vulnerable [P9].

Translating this ideal into PrEP access was demonstrated by interviewees saying things like, 'We want to make sure that everybody who needs PrEP is actually able to access it' [P2: policymaker], and, even more expansively, '[PrEP] absolutely should be made available to anybody who wants it' (P15: NGO advocacy]. 'Equity' concepts are at play in these claims not only because everyone should have the opportunity to use PrEP, but also because not all people have equal ability to use other forms of HIV prevention, and because similar forms of sexual self-expression confer greater risks on some people than others. Regarding the former, multiple interviewees mentioned young, Asian-born gay men, as well as women in heterosexual relationships with men from non-Anglophone sexual cultures as examples of those who might not have sufficient power to insist on condom use. In terms of the latter concern, condomless sex, whether for emotional intimacy or physical pleasure, was seen as more likely to cause harm to gay and bisexual men than other groups. Both situations were construed as unjust.

In contrast to the prioritization of population-level effects discussed previously, it is notable that 'equity as justice' framings often evinced concern with individual outcomes: both avoiding HIV infection and the opportunity to have fulfilling sex without being haunted by fear. This difference in focus permitted easier inclusion of a broader range of people in the conceptualisation of who was suitable for PrEP. A commitment to equity in public health notwithstanding, there was also recognition that achieving this is difficult in practice. As a clinician told us, echoing Caceres [17]:

> It's always the people who need it most, who are the people least likely to get it. You know, you have to be quite organised […] [But] alcohol and drug issues, difficulty with adherence, all of those issues that put someone at great, at very high risk for HIV, [mean they] probably won't access this sort of service, easily […] [So] there's always gonna be people who are outside, in those hard-to-reach groups, that are difficult. [P13]

These 'hard-to-reach' individuals match up with the third, most diverse group of 'PrEP candidates' discussed above, the people who confront the greatest barriers and require the most assistance to make use of this bio-behavioural prevention strategy. There was no assumption evident here that a technology should only be available to those who are organised enough to know about and to access it by themselves. Public health, from this perspective, means working to ensure that no-one is left behind while simultaneously acknowledging this is not always achievable.

Within the group of statements that framed equity as undergirding good public health practice, we identified a sub-set that further suggested this association is especially crucial in Australia. Sometimes this emerged specifically in contrast to the US, with participants lauding Australia's national health system or pragmatic focus on evidence of effectiveness (vs. becoming mired in debates emphasizing 'moralising angles' on PrEP). But it also focused on the notion of the *partnership approach to HIV* which has been valued in Australia since the early years of the epidemic, and which is credited internationally for underpinning many of the country's prevention successes [29, 32, 33]. Some interviewees spoke about support for PrEP coming from many sectors, e.g., medical providers, NGOs, community members, politicians, and others, and expressed confidence that equity issues could be addressed by working together. Others saw the heavy emphasis on gay and bisexual men in PrEP implementation efforts as a suggestion that this traditionally Australian approach could be changing. As one policymaker put it:

> There's gay men and then there's 'the other group' who shall be unnamed […] This is a real sliding-doors moment for our response to HIV, and we're about to completely lose the pillars on which the HIV response in Australia has been built, which is around equity of access and equality and non-discrimination. Because we're all in this together. Whether you are an injecting drug user, a woman, a heterosexual man, a gay man, an immigrant, whatever you are […] in theory, you are deserving of the same treatment. And that's been the absolute strength of this response. If you look at other countries, if you look at the UK, if you look at the US—the only ones that we can really compare ourselves with—they haven't had that.

This interviewee concluded: '[So] in terms of equity of access, no, I don't think it is equitable […] [HIV] will not be eliminated for some. Who those 'some' are, we don't know, but we can kind of guess where this is going' [P6]. This was the most trenchant critique we heard regarding the way PrEP implementation was unfolding at that point in the history of the Australian HIV response. It appeared to be grounded in a tension between competing definitions of 'equitable access': one that requires prevention technologies be made *equally available to all who need it*, and another that justifies targeting prevention to the *most affected groups*. The interviewee privileged the former conceptualisation by evoking what they believed to have been a shared set of values and practices, portrayed the foundation of a unique national response to HIV. There was no concurrent recognition in this quote, however, that targeted prevention also played an important role in responding to the epidemic, and in fact continues to be regularly credited for underpinning some historic successes [34].

In this case, as in the example provided earlier that brought together discourses of epidemiology and justice, the emphasis placed on one way of explaining this history

serves to advance a particular interpretation of the kind of equity that Australia should be striving to achieve through PrEP implementation. Such choices aside, there is consistency between this stakeholder and the rest of the sample in representing the HIV response as facing a critical turning point. As Brisson and Nguyen have put it, PrEP is viewed here as a 'revolutionary technology believed to hold the power to change the course of the dynamic of the epidemic' [35, p. 1068]. In addition, virtually all interviewees agreed in principle that PrEP availability had been far too restricted in Australia, and that it was important to reduce disparities in access, albeit with some variation in the amount of detailed, critical consideration they appeared to have given to what, precisely, enhancing equity would require.

How Can Issues of Equitable Access be More Successfully Addressed?

As the final part of this analysis, we examine the approaches or strategies that these stakeholders argued were needed to more successfully promote equitable access to PrEP, as a key new element of the Australian HIV response. There was a consensus among the interviewees who addressed this issue that the best way to reduce disparities in PrEP access would be to list the medication on the PBS and allow general practitioners (e.g., family doctors) to prescribe it. Many participants agreed with an NGO representative who asserted that other means (e.g., trials, personal importation) were not appropriate for making preventive health care available at the population level, and 'what will allow us to achieve something much closer to scale is actually a PBS solution' [P3]. That said, some interviewees also stressed that, while a PBS listing could be seen as necessary for equity, it might also pose new challenges. As one researcher asked: 'If your local GP that you go to, that you've been going to since you were a kid, doesn't really know a lot about PrEP and doesn't want to talk to you about sexual health generally, then what kind of barrier is that putting up?' [P8]. A clinician also raised this issue, with specific reference to geographic areas that might lack 'a whole workforce of gay-friendly doctors,' suggesting that providing GPs sufficient training on PrEP might be an obstacle, 'And we'll have to think carefully about that in terms of the mainstreaming, I think' [P16].

The second argument we heard regarding the successful promotion of equitable access was that we need to better understand the specific needs of sub-populations at risk of HIV and respond by engaging in culturally-appropriate outreach. In the words of a government policymaker:

> We need to have tailored responses for particular priority populations so the message cuts through. So, if it's young people in educational settings or if it's people from high, endemic countries, or it's gay boys down at [gay-friendly part of the city] […] The messages will need to be different, but the ingredients are the same. It's just the, yeah, we need to work with communities to make sure that the messages that they get about these choices are the ones that they understand and relate to.

Some participants, particularly those who tended to speak in terms of the third, most diffuse group of 'suitable PrEP candidates,' recognized that the tailoring required to make messaging resonate could be fairly extensive and, hence, costly. One NGO representative felt very strongly that it was still worthwhile:

> The areas that would have been […] working with disadvantaged populations have been so gutted by state and federal health cuts, budget cuts, over the last couple of years, that a lot of those people are … already working beyond capacity. And it's a numbers game. They go, 'Well, we agree this should be available and we want it to be available. But we're talking relatively small risk numbers, compared to other things' […] [But] so what if we're talking about a few guys, you know? This [HIV] is huge and it impacts them for the rest of their life [P14].

In this view, the work of engaging populations who are harder to reach was seen as an essential investment, even when the numbers of affected individuals are potentially small.

At the same time, stakeholders felt that equity-centred HIV prevention efforts should not exclusively focus on PrEP. Indeed, participants generally conceptualised PrEP as *one* element of a combination prevention approach: as 'just one more tool in the toolkit' [P2: government policymaker]. Further, a handful of interviewees cautioned against assuming that PrEP would or should be universally relevant. After all, even among Australian gay and bisexual men (e.g., the archetypal candidates for PrEP), only a minority actually want to take PrEP, although interest has increased over time [8]. As a policymaker/advocate based in a non-government organisation argued:

> While [PrEP] absolutely should be made available to anybody who wants it […] it's *part* of the toolkit but it's not *the* answer […] A lot of focus has gone into PrEP […] [but] a pill in itself is not a prevention strategy […] A pill in itself is not gonna engage communities […] [And] for certain communities, it's just not a practical kind of solution. I think it really only makes sense to a, probably a relatively smaller group of people. And that is a problem, the fact that so much attention is focused on it and so much of the advocacy and around the HIV sector [P15].

This quote highlights that both the potential appeal and the limitations of PrEP may play out differently for the various communities affected by HIV. It also, as with other quotes in this section, links to the third issue we heard discussed right across the participant sample: the resourcing context and implications of PrEP implementation.

While this theme does not speak to a concrete recommendation or even nascent program idea for how equity in PrEP access can be addressed in the Australian context, we raise it here because it seemed to condition most interviewees' thinking about what was possible in this regard, and what might be possible in the future. As one policymaker succinctly remarked: 'there's always an opportunity cost. If the government or basically any kind of provider is going to provide a service or a medication, there's something else that they're not spending the money on' [P1]. Indeed, many participants argued that issues of resourcing and structural support needed to be more explicitly recognised as fundamental to an effective response, particularly given that the people who are most at risk of missing out on having access to effective prevention tools will take additional time, collaboration and care to engage. One clinician identified how health system structure can impede these efforts. Speaking in particular about Aboriginal community-controlled health services, s/he commented:

> It would be good if they could get more involved with [PrEP]. But so much of their work centres on chronic disease, mental health, child and maternal health, and there's not really a place often in their key performance indicators for HIV prevention. It's, it doesn't fit in so well and they're often not funded particularly well for it [P7].

This quote illustrates how the *metrics by which success is evaluated* can heavily, and in an a priori way, influence definitions of *what success is*. In this case, the lack of key performance indicators around 'HIV prevention' means that, bureaucratically speaking, it is immaterial to securing 'success' in Aboriginal health, which makes adequate support for PrEP less likely. Though the concern in this example was supporting access for Aboriginal-identified people, the same logic could apply to other sub-populations who may be eligible for and benefit from access to PrEP.

Beyond the specific issue of securing funding support to address issues of disparities in access in the short term, participants also expressed concern about the longer-term future, including the fragility and volatility of public health funding, and the political dimensions of changes in strategic focus over time. Some interviewees were skeptical about the likelihood of continued support for PrEP if the desired population-level effect (reductions in HIV notifications) did not materialize after a national roll-out. As one researcher put it:

> When [PrEP] becomes something that's just part of the public slather, it's difficult to say, will it still be supported in the same way? Will there still be the same marketing money put behind it? When the government doesn't see the magic decline or the end of HIV that they're hoping for, will the political will evaporate? [p8]

Interestingly, however, similar worries also surfaced in conjunction with an imagined future in which HIV notifications *did* decline. Another researcher explained:

> If we are really, really successful, say over the next 5 years in driving down infections in our largest states and, and other states as well, we could actually then start to see governments withdrawing funding from HIV and taking, just completely taking their focus away. Basically, having the attitude, 'This problem's now solved. We don't really have to look at this.' And if they do that at the wrong time then we could absolutely see a gigantic resurgence of HIV infections [P20].

This concern with anticipating the future points more generally to the trend that those we interviewed believed that the complexities of making a new technology available to all those who 'need it' were unlikely to be fully resolved in the short term. As the same researcher also noted, 'As a sector, and more broadly as a community […] I just think we have to constantly remind ourselves this is just the very beginning of PrEP.' This participant evokes an image of 'the sector' as a professional world with a shared ethos, and a shared agenda. Holt has described the Australian HIV sector as an 'epistemic community': a field with a shared sense of purpose and views of how to tackle HIV [33]. However, when we conducted our research, it was unclear whether participants believed there was a shared view across the sector about how to implement or achieve equitable access to PrEP. What was evident, instead, was a shared recognition that the 'story of PrEP' was only just beginning, and a palpable sense that HIV-related policy and practice was in a state of flux.

Discussion

We believe this analysis provides a timely and novel set of insights regarding the way that PrEP and PrEP access issues were conceptualised by those working in positions of influence in an advanced democratic nation. It is true that our qualitative method and focus on Australia means these findings are not generalizable and may not be comparable to many other settings. However, the particular challenges and complexities grappled with—access to an effective new prevention technology in an increasingly resource rationed

funding context—may resonate beyond the specific research context. While participants viewed PrEP as only one tool in the HIV prevention 'toolbox', the way that issues of access were conceptualised revealed much about the contemporary context of the HIV response, and how the key principles which underpin that response were being both reaffirmed and challenged through a period of change in the prevention landscape.

The first conclusion to draw from our findings, with relevance to understanding how the concept of 'equitable access' was construed by these key stakeholders, is that the most commonly expressed critiques of PrEP were conspicuously absent in our data. For example, very few of these stakeholders were concerned that PrEP represented a 'biomedicalization' of HIV prevention, which has been suggested by some social and behavioural scientists [17]. There was concern expressed about the risk of PrEP contributing to increasing STIs, but less so about the potentially disruptive effects of PrEP on sexual and prevention cultures [28]. And there was almost no concern expressed regarding long-term medication use in otherwise healthy bodies, which has also been identified in the literature [36]. This is important to recognise, given that views on the value and benefit of PrEP are intimately entangled with and influential in shaping views on equity and access. Indeed, most of the stakeholders we interviewed were largely in support of broadening access to a technology they believed had been proven safe and acceptable. While this may well have been influenced by the aims of our research, which made clear we wanted to understand how stakeholders were making sense of the issue of disparities in PrEP access, there was sufficient opportunity provided to explore the range of complexities and consequences of PrEP in the interviews, and most participants did indeed have a very good understanding of these more critical perspectives. Despite these various complexities, there seemed to be an overall belief that PrEP simply needed to be made available.

However, building on that first conclusion, we also heard contested views about to whom PrEP should be made available. These divergences appeared to stem from different ways of conceptualising who would benefit most from using PrEP. Holt has argued that the early advocacy work regarding PrEP encouraged a notable emphasis on 'talking up' the riskiness of potential users, in order to justify its development [26]. While that analysis did not explore perceptions of who could and would successfully use PrEP in practice, our analysis showed that there were similar ways of imagining particular populations as inherently risky, and therefore in greater need of securing access to PrEP. However, stakeholders also recognised that these ideas about risk and benefit are shaped by the particular contexts where use occurs. Clearly, there is much at stake in determining which conception of 'suitable PrEP users' and which definition of 'equity' become enshrined in policy. We urge further socially situated, in-depth research to inform the development of guidelines and/or targeted outreach. For example, exactly which heterosexual people would be interested in using PrEP and why? What do Aboriginal and Torres Strait Islander people think about PrEP? Are people who inject drugs willing to use PrEP? There has been very little of this acceptability research conducted in Australia, which underscores the belief expressed by many of our participants that the focus has been directed towards first achieving access to PrEP for gay men at high risk of HIV, with the understanding—or perhaps more accurately, the hope—that everyone else would achieve access later.

Our second conclusion extends out from this focus on the PrEP user, to consider how systems of PrEP access were conceptualised in these interviews. In their analysis of interviews with stakeholders involved in the early PrEP trials (2007–2008), Rosengarten and Michael described the enactment of a 'multiplicity of PrEPs' in experts' expectations of this new technology [23]. In our research, we see a similar degree of complexity in the way that PrEP was viewed and understood, extended beyond multiple expectations of what the technology might achieve to encompass the myriad ways that access might need to be configured in diverse communities. Frustration was expressed regarding how to resolve these complex issues in an increasingly resource constrained environment, despite Australia's status as a high-income country with a relatively well-funded HIV response. Do you focus on targeting those groups who are known to be most affected, and who you know how to reach, or those who may well also be at risk, but who have complex needs, including those relating to gender, sexuality and culture, and for whom engagement with the health system and health messaging has previously been challenging? And how exactly do you address an intractable issue like health system inequity when it is difficult enough to engage the majority effectively, and to ensure continuing funding and support for those mainstream strategies?

Hankins et al. have argued that: 'The extraordinary feat of proving PrEP's efficacy may turn out to have been easier than ensuring that it is used well' [37, p. 5]. We want to build on this to suggest that the work involved in ensuring PrEP is used well in Australia also creates a unique opportunity to investigate how public health 'problems' are construed in contemporary and comparative contexts, including through the debates regarding appropriate 'solutions' [38]. Meaningfully achieving equity in PrEP access will require continuing discussion about who constitutes a suitable candidate for PrEP, and which key groups in need are being missed. The parallel challenge will be working out what those groups want from PrEP and how they want to engage with it, and how to sustain or invest more in making PrEP accessible to those people [29]. While the

passion and commitment of these professionals to ensuring that issues of equity were prioritized through a time of significant change was inspiring, it will clearly take more than enthusiasm to resolve these complex issues. We hope the coming years will reveal additional evidence of the creative solutions which will be required to make HIV prevention accessible to everyone who needs it in Australia and elsewhere.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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