

Stigma, gay men and biomedical prevention: the challenges and opportunities of a rapidly changing HIV prevention landscape

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Abstract. Improvements in biomedical technologies, combined with changing social attitudes to sexual minorities, provide new opportunities for HIV prevention among gay and other men who have sex with men (GMSM). The potential of these new biomedical technologies (biotechnologies) to reduce HIV transmission and the impact of HIV among GSM will depend, in part, on the degree to which they challenge prejudicial attitudes, practices and stigma directed against gay men and people living with HIV (PLHIV). At the structural level, stigma regarding gay men and HIV can influence the scale-up of new biotechnologies and negatively affect GSM's access to and use of these technologies. At the personal level, stigma can affect individual gay men's sense of value and confidence as they negotiate serodiscordant relationships or access services. This paper argues that maximising the benefits of new biomedical technologies depends on reducing stigma directed at sexual minorities and people living with HIV and promoting positive social changes towards and within GSM communities. HIV research, policy and programs will need to invest in: (1) responding to structural and institutional stigma; (2) health promotion and health services that recognise and work to address the impact of stigma on GSM's incorporation of new HIV prevention biotechnologies; (3) enhanced mobilisation and participation of GSM and PLHIV in new approaches to HIV prevention; and (4) expanded approaches to research and evaluation in stigma reduction and its relationship with HIV prevention. The HIV response must become bolder in resourcing, designing and evaluating programs that interact with and influence stigma at multiple levels, including structural-level stigma.

Additional keywords: community mobilisation, health promotion, men who have sex with men, policy, social inequality.

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Introduction

Recent biomedical developments in HIV prevention present great opportunities for reducing HIV epidemics and the impact of living with HIV among gay and other men who have sex with men (GSM). However, as the history of HIV prevention among GSM shows, the development and success of these new biomedical and behavioural interventions will be influenced by, and interact with, broader sociocultural attitudes towards non-heterosexual identities and sexual activities. Structural-level barriers effect the scale-up and success of strategies such as HIV post exposure prophylaxis (PEP), HIV pre exposure prophylaxis (PrEP) and the use of HIV treatment as prevention (TasP). For example, stigma directed towards gay men's sexual practices

and HIV-positive people can inform policies and services that reinforce discriminatory stereotypes and negative attitudes and act as barriers to GSM accessing and maximising their use of new biomedical interventions such as PrEP. In contrast, policies that reduce stigma and affirm GSM can maximise the HIV prevention benefits of PrEP, including reducing the anxiety and discrimination associated with relationships between GSM of different HIV status.

At a global level, stigmatising attitudes and responses to HIV and GSM are a well-documented barrier to the HIV response since the start of the epidemic.¹ The stigma towards non-heteronormative sexualities and sexual practices precedes the advent of HIV, and in many national jurisdictions has been

justified and driven by religious and cultural beliefs that privilege hetero-reproductive sexual identities and practices at the expense of same-sex sexual relationships and identities.

For GSM, the advent of HIV added to the stigma and pressures they already faced. Early in the epidemic, GSM were portrayed as the source of HIV and vectors of HIV transmission. For many, this fear of contagion justified and reshaped stigma directed at GSM, repositioning sex between men as not only unnatural or immoral, but also as a threat to the health and wellbeing of the entire population. For GSM affiliated with other minority populations, including those of colour and minority racial and ethnic affiliation, the interactions between homophobia and other forms of discrimination added to the stigma and pressures they faced.

The significant negative impact of stigma on population health has been well documented. Hatzenbuehler *et al.*² in their article describing the psychological and structural pathways through which stigma influences health, argue that *'because of its pervasiveness, its disruption of multiple life domains (e.g. resources, social relationships and coping behaviours) and its corrosive impact on the health of populations, stigma should be considered alongside the other major organising concepts for research on social determinants of population health'* (p. 813).

Goffman³ in his seminal work, described three types of stigma: abominations of the body, such as physical deformities; blemishes of individual character such as taboo behaviours; and stigma attached to entire social groups by virtue of some shared, negative characteristic. Goffman's work has proven influential because it offers both a psychological and social explanation of stigma. In this way, stigma functions to regulate behaviours and preserve dominant social, political and economic processes.^{1,3} Most research on stigma relating to HIV has built on this concept, focusing on three key areas: perceived/felt stigma, which is the fear or belief that a person will be judged harshly or discriminated against; experienced/enacted stigma, which refers to acts of stigma or discrimination by others; or internalised stigma, which is where individuals apply judgement or shame associated with stigma to themselves.^{4,5}

However, as noted by Link and Phelan⁶ and Parker and Aggleton,¹ stigma can also manifest at a structural level, such as in discriminatory legislation and policies, disinvestment in targeted research or health promotion strategies, or culturally inaccessible or unsafe health services. This paper draws on the conceptual work of Parker and Aggleton¹ and explores the impact of stigma at the structural or social level on HIV prevention. 'Stigma and stigmatisation', they suggest operate *'at the point of intersection between culture, power and difference—and it is only by exploring the relationships between these different categories that it becomes possible to understand stigma and stigmatisation not merely as an isolated phenomenon, or expressions of individual attitudes or of cultural values, but as central to the constitution of the social order.'*¹ (p. 14). Parker and Aggleton¹ are critical of an exclusively psychological approach to stigma that focuses on individuals and ignores the underlying power structures that sustain stigma and, just as importantly, background the resistance that has been characteristic of GSM communities to stigmatising discourse over the course of the HIV epidemic. Recent examples of such resistance have been evident within

the response of GSM communities to the 'Truvada Whore' discourse that emerged early in the debates about PrEP through to the mobilisation of PrEP advocacy and access groups online.^{7,8}

This article focuses on how the interactions between structural stigma and recent developments in biomedicine effect GSM's access to and use of new HIV prevention biotechnologies. In order to meet the targets set by United Nations Programme on AIDS (UNAIDS) to reduce new HIV infections globally to fewer than 500 000 by 2020,⁹ and similar targets set by other countries, it is important that all those working in the area of GSM's sexual health and wellbeing consider the negative impact of ongoing structural stigma and discrimination. While these issues are relevant globally, this paper will focus on Western-developed countries in its analysis. The article opens with a brief review of the impact of HIV-related stigma and stigma directed towards sexual minorities on GSM's health and wellbeing. It highlights recent literature reviews on programmatic responses aimed at reducing stigma and its negative effects on GSM's health and HIV prevention behaviours. The article then describes four key challenges and opportunities over the next few years as we respond to an increasingly complex HIV prevention landscape.

Methods

A scoping search¹⁰ was conducted to provide an overview or 'map' of relevant literature and recent developments in the area. The search focused on the research literature on stigma and stigma-reduction interventions in HIV prevention and GSM's health promotion programs published between 2008 and 2015. Four databases were searched (PubMed/Medline, ProQuest, Scopus, Google Scholar). Search terms included: stigma, gay, MSM, HIV, policy, structural stigma, review, prevention, intervention, program, health promotion. Articles that were not reviews of multiple studies, not focused on MSM or concentrated epidemics in Western-developed countries, or not published in English were excluded. This resulted in 274 abstracts. These abstracts were reviewed and, where they met the criteria, the full text was accessed. Key article reference lists were also reviewed and supplemented by key articles and reports previously accessed by authors (an additional 14 publications). The publications were then reviewed by the first author for their contribution to discussing structural stigma and emerging and future challenges, with 46 publications identified. The results were summarised by the first author and themes and findings were discussed by all authors, drawing on their experience across social research, health promotion, community responses and policy analysis.

Results

Impact of HIV and GSM sexuality stigma on HIV prevention

Investigating the direct and indirect impact of stigma on the health of GSM and their communities has been a focus of research for some decades. As is the case throughout most of the world, sexuality-related stigma has long and deep historical and religious origins in most Western countries. However, more than three decades into the HIV epidemic, it is difficult

to disentangle the impact of HIV stigma from GSM-related stigma. Despite major social change in many countries, which has increased acceptance of GSM, stigma in this area continues to be intimately entwined with HIV stigma. Racial and class-based stigma adds another layer.

One approach to conceptualisation and measurement of the complex impact of stigma has been the minority stress model.¹¹ Minority stress refers to the additional stress to which individuals from stigmatised groups are subjected, ranging from external events (such as victimisation and violence or denied access to services) to internal responses (such as expectations of discrimination or rejection, feelings of shame, concealment of sexual identity), both of which are associated with poorer health outcomes for minority group members.^{2,11,12} The model can be useful for better understanding the internalisation of societal prejudice and stigma that result from multiple axes of social marginalisation that challenge HIV prevention efforts.¹³ However, the model is less explicit about impacts of stigma at a structural level, such as lack of service options or culturally irrelevant and ineffective health promotion responses.

The impact of stigma on minority stress in GSM has been associated with decreased access to and uptake of health care, in particular HIV services, increased HIV risk and a complex syndemic¹⁴ of adverse mental health conditions and problematic drug use.^{15–18} The relationship between syndemics and individual sexual risk behaviour is complex and contested. However, when communities experience high levels of widespread health and social challenges such as syndemics, we know this undermines the accessibility and effectiveness of prevention programs, testing services and access to treatment.¹⁹

While most studies of GSM-related stigma have focused on internal and interpersonal-level stigma,^{20–23} there have been recent empirical investigations of the relationship between structural-level stigma and HIV prevention among GSM in the USA¹⁵ and in Europe.²⁴ Pachankis *et al.*²⁴ reported on the European GSM Internet Survey (EMIS), where a survey of 174 209 GSM across 38 European countries enabled country-level analysis of the impact of stigma by comparing national laws and policies affecting sexual minorities, attitudes held by the citizens of each country, sexuality and HIV status concealment, and HIV-preventive services, knowledge and behavioural outcomes. The study found that GSM in countries with higher levels of stigma (assessed using a combination of national legislation audits and general population attitudes towards sexual minorities) were more likely to have fewer sexual partners but more likely to report sexual risk behaviour, unmet prevention needs, less HIV testing and not discussing their sexuality in testing services. They also found that concealment of sexual orientation mediated these associations with country-level stigma, in that concealment reduced opportunities to be exposed to HIV, but also reduced people's ability to access HIV prevention services, education and other health promotion programs. Similar results were found by Oldenburg *et al.*¹⁵ in their study comparing levels of structural stigma in different states in the USA and sexual risk behaviour and awareness of biomedical prevention such as PrEP. Looking at broader health impacts, data linkage work by Hatzenbuehler *et al.*²⁵ found sexual minorities living in

communities with high levels of anti-gay prejudice experienced a reduced life expectancy by ~12 years (95% C.I.: 4–20 years) compared with low-prejudice communities. Pachankis *et al.*²⁴ noted in their European study that the interaction between GSM may increase as social media technologies change and become more accessible. However, they also noted this is occurring without the HIV knowledge or other structural supports (health services and so forth), and recent surveillance has indicated an increase in new HIV diagnoses among GSM across Europe, particularly in high-stigma European countries.

The combination of GSM sexuality and HIV-related stigma have been found to reinforce and multiply other social inequalities such as race and class, exacerbating the impact of stigma on minorities. Recent studies¹⁶ concerning black and white GSM, particularly in the US and UK, provide an example. Beyrer *et al.*¹⁶ in their review about the increases in the global GSM epidemic, summarised multiple studies and reviews comparing black and white GSM, particularly in the US and UK. Beyrer *et al.*¹⁶ found black GSM were more likely than other GSM to have a low income, to be unemployed, to ever be incarcerated or to have a low education, and that each of these factors was associated with a greater likelihood of HIV infection. Beyrer *et al.*¹⁶ also found that black GSM with HIV were least likely to be diagnosed or to be in care compared with other GSM with HIV, and so were least likely to be virally suppressed than other GSM. Due to this, studies consistently showed that the partner pool for black GSM placed them at increased risk for HIV infection despite less risk behaviour than other GSM. This is an alarming example of the double jeopardy experienced by African-American GSM living with HIV; the negative impact of racism and HIV stigma from the mainstream combined with homophobia and HIV stigma from within African-American communities. These complex interactions of different types of structural stigma and discrimination lead to increased pressures and reduced access to health care and health promotion for African-American GSM living with HIV. Similar results have been found in other studies in the USA and UK.^{13,16,26} Projecting current rates of HIV infection, it has been estimated that ~50% of black GSM and 25% of Latino GSM in the US will be diagnosed with HIV during their lifetime.²⁷

There is substantial evidence of the association between HIV stigma and downstream, negative impacts on the physical and mental health of people living with HIV, including delayed testing, reduced access to care, lower adherence to treatments and less social support,^{20,22,28,29} resulting in both individual and social consequences.³⁰ However, understanding the complex mechanisms of how individual people living with HIV (PLHIV), and people at risk of HIV, are affected by HIV stigma in ways that ultimately impact their health is more difficult. For example, concealment of HIV may result in fewer experiences of stigma and discrimination, but also reduced social support, access and adherence to treatment, and less engagement with health services.²⁴ Disclosure of HIV status may result in increased experiences of stigma, but less anxiety from maintaining secrecy³¹ and more challenging of stigma at a community level.

The ways in which stigma may impact on the policy and health systems intended to support HIV responses has also been

raised by several reviewers.^{16,25,26,32–35} For example, does stigma within policy circuits influence the focus of funded research into GSM communities, the availability and sustainability of such services to meet the needs of GSM in the first place, or the trust that community and policy have in GSM community-led responses? Does HIV stigma within health services, such as excessive infection control measures, accentuate already existing race-related discrimination? As Beyrer *et al.*¹⁶ describe, while the HIV disparities between black and white GSM make explicit the degree to which black GSM remain marginalised, few HIV prevention interventions or services target black GSM compared with lower-risk populations, despite being at the epicentre of the US HIV epidemic. Strömdahl *et al.*¹⁷ in their systematic review of GSM-focused HIV prevention programs for consideration in Europe, found that the need for programs to be implemented in combination and packaged together was undermined by structural barriers including human rights violations, homophobia, direct and indirect discrimination and obstructive policies and laws in Europe that limited the effectiveness and scope of HIV intervention programs and compromised the quality of services. Beyrer *et al.*¹⁶ and Oldenburg *et al.*¹⁵ have further argued that HIV prevention strategies with GSM, such as TasP and PrEP, offer promise, but are limited by structural factors including, discrimination, criminalisation and barriers to health care, which impact on the social contexts in which people live their lives and their ability to access and adhere to such biomedical prevention.

While HIV and GSM sexuality stigma within GSM communities has always been present to some extent, there had previously been evidence that engagement in the gay community by PLHIV was associated with fewer experiences or less impact of HIV stigma than from the general community.³⁶ However, this may be changing. Smit *et al.*²¹ conducted a review of HIV-related stigma within gay communities and found that gay men can experience multiple layers of stigma and discrimination based on their sexuality, behaviour and their HIV status from other HIV-negative and HIV-positive gay men. For example, online communities and dating apps have provided new ways for HIV-negative GSM to exclude HIV-positive GSM, either explicitly or through search filtering. While there were limited studies, the review found the impact of HIV-related stigma within communities of gay men was both personal and community-wide, from mental health and general wellbeing to HIV prevention and testing behaviour, and evidence of a significant divisive influence between and among gay men at both a community and individual level.²¹ Recently, de Wit *et al.*³¹ in their study of gay men in Australia, found no association between experienced or expressed HIV stigma and gay community engagement, and suggested that gay communities and gay media may play less of a role in shaping how gay men experience living with HIV and respond to PLHIV as they did in the past.

Responding to HIV and sexuality/GSM stigma

Over the past 15 years, there have been a series of systematic reviews of HIV stigma reduction interventions, including Brown *et al.*³⁷ Mahajan *et al.*²⁰ and Sengupta *et al.*³⁸ However, these reviews found that most HIV stigma reduction interventions

focused on reducing stigma towards PLHIV among the general population through individual-focused information dissemination, empathy induction, counselling and cognitive behavioural therapy.²⁰ The Sengupta *et al.*³⁸ review examined 19 of these individual-focused HIV prevention interventions, of which 14 demonstrated effectiveness, although only two met the full evidence criteria for the review.

A 2013 review by Stangl *et al.*²² of 48 studies found that, while individual-level interventions dominated the published research, there was a small body of research on interventions targeting organisations and community, and some emerging research on interventions targeting multiple socio-ecological levels. However, they noted there were critical gaps that impede the identification of effective stigma and discrimination-reduction strategies that can be brought to scale. While most studies continue to target a single socio-ecological level (individual level), they do not adequately address the broader community or structural level manifestations of stigma that can shape attitudes and behaviours. Stangl *et al.*²² also noted that while stigma was commonly cited as a barrier to prevention efforts, they found few studies that included stigma reduction (individual or structural level) as a key component of the intervention tested. Stangl *et al.* also found few interventions specifically designed to reduce the overlapping stigmas that key affected populations such as GSM often face, noting that such strategies will be important to maximise the participation of key populations in biomedical prevention. They also noted that the influence of biomedical prevention approaches on HIV-related stigma, either positively or negatively, were yet to be studied quantitatively in the literature.²²

Reviews of stigma reduction programs found that interventions specifically targeting sexuality-related stigma, were largely absent from the literature.^{16,22} However, a review by Cahill *et al.*³⁹ examined community- and structural-level interventions targeting the reduction of GSM stigma, and found that gay-affirming, school-based interventions and resiliency-focused social marketing campaigns have shown positive impacts on health outcomes of young gay men but needed to be implemented on a broader scale to challenge GSM stigma and affirm the healthy formation of gay and transgender identities.

Overall, while several studies have looked at the impact of structural-level stigma,^{15,24,40} there has been much less on determining the most effective responses to reducing such stigma, or the role that programs and developments in HIV prevention can play in either increasing or decreasing stigma. There is a significant gap in studies that explore combinations of strategies across individual, interpersonal and structural levels, which are most effective in reducing stigma and creating an enabling environment for effective HIV prevention in GSM communities.²² In rapidly changing social conditions, such integrated programs would require significant partnerships and real-time data from across the HIV sector.

Discussion

We have an HIV prevention landscape that is changing rapidly, incorporating bold targets for a reduction in transmission, as well as changing social conditions and cultural responses to

GMSM. This creates a very complex and evolving environment. In high income countries where TasP and PrEP are being scaled up or considered, social and sexual norms within GSM communities are already evolving in response.^{41,42} Looking towards 2020, we foresee further examples. The continued evolution of social media technology has enabled more GSM to meet and negotiate a broader range of risk-reduction strategies,⁴³ as seen in online profile identifiers for HIV-positive GSM with an undetectable viral load or HIV-negative GSM on PrEP. This is also likely to see the development of attitudes that position PLHIV who are on medications and undetectable against those who are not on medications or unable to achieve undetectable viral load. Treatment advocacy, promotion and health services will need to navigate the promotion of treatment without creating a privileged 'good' or 'safe' way to live with HIV and a stigmatised 'bad or risky' way to live. Another example is while there have been major social, cultural and legal changes regarding GSM in many countries, this has brought with it more organised resistance from conservative anti-GSM groups, as well as types of gay relationships and citizenship that may be considered more socially acceptable, such as monogamy,⁴⁴ resulting in another mechanism of stigma towards those relationships or ways of expressing sexuality that are deemed socially unacceptable. The reinforcement of such stigmatising attitudes is likely to impact on the uptake of testing choices, as well as uptake of opportunities such as PrEP. While PrEP and TasP are interacting with the meaning of safe sex negotiations, stigma contributes to these understandings being diffused inconsistently across communities.

Hatzenbuehler *et al.*² argued that the robustness of the relationships between stigma and health outcomes endure, despite other changes, because new intervening mechanisms are created. In other words, if we only respond to episodes of discrimination, and not address the structural factors, then in a rapidly changing environment new mechanisms may arise by which to stigmatise PLHIV and GSM populations. This means that in the lead-up to 2020, HIV prevention may continue to have significant challenges as we navigate an increasingly complex environment and endeavour to maximise the opportunities. We highlight four areas for particular attention.

Respond to structural and institutional stigma

The reviews cited have all highlighted the prevailing dominance of individual-focused stigma-reduction strategies, with less investment in the implementation and evaluation of structural or multilayered strategies.^{20,22,38,45} Structural or multilayered responses to the social and political drivers of the HIV epidemic among GSM are required to tackle stigma and to respond to HIV.^{18,24,25,40} Discriminatory legislation, criminalisation of HIV exposure or transmission, differential access to health care across minority groups, and negative social attitudes regarding homosexuality and HIV, and their complex intersections with racism, all undermine access to HIV prevention and health promotion programs and diffusion of community-level knowledge. Positioning of GSM as both at-risk and a risk,⁴⁶ or segmenting GSM and PLHIV into deserving and undeserving,

can impact on policy of how PEP, PrEP, TasP, or new testing technologies are budgeted and scaled up. Stigmatising policy not only undermines the effectiveness of HIV prevention and health service investments, but also makes programs vulnerable to political interference and undermines their sustainability. If we only respond to the symptoms of stigma by targeting individuals, we fail to respond to structural and institutional factors that produce and intensify stigma and discrimination, and the layered effect of racism and stigma. This allows for the continuation and formation of new forms of stigma and discrimination that will continue to undermine the scale-up of new prevention technologies.

Ensure programs recognise and leverage the interrelationship with stigma and a rapidly changing environment

The introduction of PrEP, and how it has disrupted the meaning of safe sex and sexual freedom, has highlighted the complexity inherent in the changing HIV landscape,^{47,48} and will continue to interact with community understandings of safe sex, homophobia and moralism about sexual behaviour, and health literacy disparities in ways that cannot easily be predicted. PrEP has the capacity to simultaneously increase judgement and stigma about sexual behaviour and to decrease fear and stigma in sexual encounters.⁴⁵ The sero-status divide in GSM communities has long been a characteristic of the HIV epidemic.^{21,49} How will TasP and PrEP disrupt these social meanings? Will they disrupt the sero-status divide or add additional categories? Will this weaken or strengthen the changing social connections of the gay community through which much HIV prevention has occurred?

However, in such a complex environment, public health strategies also need to be implemented with consideration of the unintended consequences of these efforts. Over the past three decades, public health strategies in HIV, and sexual health generally, have sometimes unintentionally contributed to and reinforced a culture of stigma, fear and blame.⁵⁰ Interventions and policies can challenge stigma (such as valuing targeted programs working with sexually adventurous/high-risk men, political leadership that endorses PrEP) or be regressive (such as criminalisation of HIV, shaming of sexual behaviour, or only targeting the 'politically palatable or deserving'). As noted by Stangl *et al.*²² in their review, few HIV prevention interventions included the measurement of a decrease (or increase) in experienced stigma as an outcome. For example, establishing a restrictive 'high-risk' criterion for accessing PrEP could unintentionally reinforce stigma related to sexual behaviour and types of relationships, stigmatise people taking PrEP as needing medical intervention, and so providing a further barrier for individuals self-identifying that it may be of benefit to them personally, their partners and their community. Will the cost of accessing PrEP and TasP further accentuate socioeconomic and racial differences in access to health care and so exacerbate the already disproportional burden on minority groups?

The next few years towards 2020 will require careful monitoring, in real time, of how stigma is either reinforced or resisted, and how it mediates health outcomes, as the structural

and cultural environment transitions. This may require rethinking of the approaches and sources of data for such monitoring.⁴⁵ If we get this right, there are significant stigma-reduction opportunities afforded by PrEP and TasP and other social and biomedical developments that could be maximised.

Enhance the mobilisation and participation of GSM communities and PLHIV across responses

Successful HIV responses in GSM communities in high-income countries have been characterised by the active participation and leadership of GSM in advocacy, education, research and design and delivery of prevention, treatment and care programs.^{16,33} Over a decade ago, Parker and Aggleton¹ argued that the time was ripe to draw on the empirical evidence and community-organising literature to develop new models for advocacy and social change in HIV policy to ‘*unleash the power of resistance on the part of stigmatised populations and communities*’ (p. 21) in tandem with interventions at the structural level.

As Pachankis *et al.* noted,²⁴ it will be difficult to predict the impact in highly stigmatised GSM communities of technology aimed at increasing interaction between GSM. For example, this may enhance the connection and mobilisation of such emerging communities to build shared resilience and enhance access to HIV prevention strategies. In many countries, mobilised communities have challenged stigmatising policy circuits to increase targeted and community-led research, leading to support for tailored and sustained HIV prevention interventions.

However, in the maturing of the HIV response and the momentum to scale up biomedical prevention, some communities have experienced a devaluing or distancing of community-led responses.^{16,33,51} In many settings, the engagement in the response of GSM, including many cultural minority GSM, ‘*has often been complicated by a history of neglect and mistreatment by researchers, healthcare systems, and government*’.¹⁶ Responding to issues of background prevalence, access to care and different cultural manifestations of stigma in different communities of GSM, will be key to the successful implementation of new biomedical technologies. Navigating through this complex and changing environment is likely to require even closer relationships with GSM and PLHIV communities. As has been articulated for many years (e.g. GIPA Principles⁵²), the active participation and leadership of communities in policy and programs to overcome layered stigmas of race, class, sexuality and HIV will be critical to the success of current and new HIV prevention opportunities.

Encouragingly, we have seen recently, and perhaps because of the above challenges, the emergence of PrEP advocacy and access initiatives driven by communities of gay men that by-pass the current health system structures (such as prepster.info, www.prepaccessnow.com.au, www.prepwatch.org and others). We will need investment in peer leadership from within affected communities to gain real-time insights to enhance and refine programs and identify unintended consequences (positive and negative influences), which may not be predictable. In the lead up to 2020, many areas of the HIV response will be in a state of transition. To maximise the new HIV technologies, gay

communities will require enhanced resources, capacity and opportunities to serve and lead.¹⁶

Expanding our approach to research and evaluation in stigma reduction and its relationship with HIV prevention

The focus of stigma research on individuals, or single-level analysis, is not limited to HIV, but is present across much of public health research, thereby obscuring the full significance of stigma as a fundamental driver of population health.² Evaluating structural stigma-reduction interventions pose significant methodological challenges as they usually involve multiple components occurring simultaneously at multiple levels, with social changes taking much longer than individual-level changes. HIV stigma not only interacts with GSM sexuality stigma, but also stigma against people who use drugs, sex workers, people of African descent and other communities disproportionately affected by HIV. However, given the strong role that the social and political sciences have played throughout the HIV response, and the recognition of the role of stigma, the HIV social and public health research sector may be amongst the most capable to contribute.

A rapidly changing environment brings with it opportunities for building a deeper understanding of the structural drivers of stigma and opportunities for change. For example, Strömdahl *et al.*¹⁷ in their review of GSM programs for Europe, identified that as lesbian, gay, bisexual, transgender and intersex (LGBTI) rights improve in diverse European settings, there will be opportunities for monitoring and evaluating the health impacts that might be achieved due to structural and policy changes. These rare ‘natural experiment’ opportunities should not be missed. We also have the opportunity to gain more value from the stigma and discrimination-reduction strategies being implemented by communities of PLHIV and GSM. Although the community sector is where the majority of such programs are conducted, currently, most have few resources for evaluation and are not present in the peer-reviewed and grey literature.^{22,45} While there is much in the literature about impact stigma has on HIV programs, there is much less on the role that general HIV prevention programs and health services could play in disrupting the manifestation of HIV and GSM stigma.^{22,45,53} We need collaborative multi-level research models to identify the most critical areas to target for reducing structural stigma in future interventions.

Conclusion – Towards 2020

Since early in the HIV epidemic, it has been recognised that the causes and consequences of HIV were ‘*deeply embedded in social, cultural and political processes*’,⁵⁴ including the manifestation of stigma in these spaces.¹ This is reflected in the model of combination HIV prevention, the strategic combining of behavioural, biomedical and structural interventions in order to respond to this complexity.^{55–57} However, structural interventions, aimed at influencing social, political and institutional enablers, barriers and drivers of HIV epidemics, such as stigma, are often least emphasised in practice.^{45,47,58}

If we are to maximise the health of GSM as we head towards and beyond 2020, we need to enhance the positive

social changes occurring for GSM communities in many countries and maximise the opportunities and benefits of PrEP and TasP, not only to prevent transmission, but also to disrupt the stigmatising experiences and meanings of HIV and GSM sexuality. As we have outlined in this article, achieving this will likely need investment in HIV research, policy and programs that target four critical areas: (1) responding to structural and institutional stigma; (2) health promotion and health services that recognise and work to address the impact of stigma on GSM's uptake and use of new HIV prevention biotechnologies in a rapidly changing environment; (3) enhanced mobilisation and participation of GSM and PLHIV in new approaches to HIV prevention; and (4) expanded approaches to research and evaluation in stigma reduction and its relationship with HIV prevention. If we are to overcome continuing barriers and maximise the impact of new HIV prevention opportunities, then researchers, health and community practitioners, and funders must become bolder in the resourcing, design and evaluation of programs that interact with and influence stigma domains at multiple levels, including structural-level stigma.

Conflicts of interest

None declared.

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