

# Disparities in characteristics in accessing public Australian sexual health services between Medicare-eligible and Medicare-ineligible men who have sex with men

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Sexually transmitted infections (STIs) are increasing at a significant rate in men who have sex with men (MSM) in Australia.<sup>1,2</sup> Accessible healthcare is a key element of human immunodeficiency virus (HIV) and STI control because it allows timely testing and treatment to prevent ongoing transmission and also access to biomedical HIV preventions.<sup>3,4</sup> Consistent with this are studies showing a reduction in HIV incidence among Australian-born gay, bisexual and other MSM in Australia in the late 2010s after the implementation of HIV pre-exposure prophylaxis (PrEP).<sup>5,6</sup> However, there has been no reduction in new HIV cases among MSM who were not born in Australia, particularly among those who have recently arrived in Australia. Furthermore, the new diagnoses of HIV in MSM born overseas are diagnosed at a more advanced stage of HIV than in Australian-born MSM.<sup>7-9</sup> MSM who are born overseas and have recently arrived in Australia are less likely to have Australian citizenship or permanent residency; hence, they are more likely to not be eligible for Medicare. Medicare is a publicly funded universal healthcare insurance scheme in Australia that provides its beneficiaries with access to a wide range of health and hospital services. It is available to Australian citizens and permanent residents, as well as citizens of countries that have reciprocal health care agreements such as New Zealand, some European countries and the United Kingdom. Individuals without Medicare are charged the full costs of health services including pathology testing and

## Abstract

**Objectives:** Accessible health services are a key element of effective human immunodeficiency virus (HIV) and sexually transmitted infection (STI) control. This study aimed to examine whether there were any differences in accessing sexual health services between Medicare-eligible and Medicare-ineligible men who have sex with men (MSM) in Melbourne, Australia.

**Methods:** We conducted a retrospective, cross-sectional study of MSM attending Melbourne Sexual Health Centre between 2016 and 2019. Demographic characteristics, sexual practices, HIV testing practices and STI diagnoses were compared between Medicare-eligible and Medicare-ineligible MSM.

**Results:** We included 5,085 Medicare-eligible and 2,786 Medicare-ineligible MSM. Condomless anal sex in the past 12 months was more common in Medicare-eligible compared to Medicare-ineligible MSM (74.4% vs. 64.9%;  $p < 0.001$ ) although the number of partners did not differ between groups. There was no difference in prior HIV testing practices between Medicare-eligible and Medicare-ineligible MSM (76.1% vs. 77.7%;  $p = 0.122$ ). Medicare-ineligible MSM were more likely to have anorectal chlamydia compared to Medicare-eligible MSM (10.6% vs. 8.5%;  $p = 0.004$ ).

**Conclusions:** Medicare-ineligible MSM have less condomless sex but a higher rate of anorectal chlamydia, suggesting they might have limited access to STI testing or may be less willing to disclose high-risk behaviour.

**Implications for public health:** Scaling up access to HIV and STI testings for Medicare-ineligible MSM is essential.

**Key words:** sexual health, HIV, health service, men who have sex with men

medications. This may serve as a barrier for Medicare-ineligible individuals attempting to access healthcare services in Australia.

Given the considerable disparity in health outcomes between Australian-born and recently arrived MSM, this study aimed to compare the demographic characteristics, sexual practices, HIV testing practices and STI diagnoses among MSM accessing a public sexual health service in Melbourne, Australia,

to determine if there was evidence of reduced access to healthcare. The sexual health service provides free health care to all individuals regardless of their Medicare status.

## Methods

### Study design and population

This was a retrospective cross-sectional study using electronic medical records

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of MSM attending the Melbourne Sexual Health Centre (MSHC) between 30 August 2016 and 31 October 2019. MSHC is the largest publicly funded sexual health clinic in Victoria, Australia, and it provided a free walk-in service for approximately 50,000 consultations annually, with MSM accounting for 37% of these visits during the study period.<sup>10,11</sup> All services, including consultations, pathology testings and medication provision, were provided free of charge to all patients of MSHC regardless of their Medicare status. From 30 August 2016, all patients attending MSHC were asked to provide the details of their Medicare card number.

### Data collection

All new patients and returning patients attending MSHC who had not been seen for three months were asked to complete a questionnaire using computer-assisted self-interview (CASI) that collected information regarding their demographic characteristics, Medicare number (if applicable) and sexual history.<sup>12</sup> STI results obtained from laboratory diagnosis were also recorded on a patient's electronic medical database. We extracted data on demographic characteristics, sexual history, HIV testing history, diagnoses of chlamydia and gonorrhoea and reasons for presentation.

### Selection criteria

Men were included in the study if they: i) were aged 16 years or above; ii) self-reported having sex with another man; iii) were a new patient of MSHC during the study period; and iv) were not living with HIV. We only included new patients attending MSHC to avoid the

bias of multiple visits from the same patient. Counselling sessions and consultations that did not test for HIV or STIs were also excluded. Furthermore, patients living with HIV were excluded as they were more likely to be asked to provide their Medicare card number to obtain HIV medication and care at MSHC. For this study, all men were categorised into three groups based on their self-reported Medicare status: i) Medicare-eligible (i.e. patients who provided a valid Medicare card number); ii) Medicare-ineligible (i.e. patients who reported they did not have a Medicare card number); or iii) Medicare-eligible but did not want to use Medicare card number (i.e. patients who reported they had Medicare card but did not want to provide the Medicare card number) for their consultation at MSHC.

### Statistical analysis

We compared the study variables between Medicare-eligible and Medicare-ineligible MSM using chi-square test for categorical variables (e.g. condom use) or Mann-Whitney *U* test for continuous variables (e.g. age, number of sexual partners). There was a small number of men who were Medicare-eligible but did not want to use their Medicare card for their consultation at MSHC; thus, we only reported the descriptive statistics for this group and no further statistical analyses were performed. All analyses were conducted using SPSS (version 25, Armonk, NY: IBM Corp).

### Ethics approval

Ethics approval for this study was obtained from the Alfred Hospital Ethics Committee, Melbourne, Australia (Project no. 487/17).

## Results

A total of 8,083 MSM attended MSHC for the first time between 30 August 2016 and 31 October 2019. We excluded 67 individuals, as no information on their Medicare status had been recorded. The final analysis included 8,016 MSM with 5,085 (63.4%) MSM who were Medicare-eligible, 2,786 MSM (34.8%) who were Medicare-ineligible and 145 MSM (1.8%) who chose not to use Medicare for the consultation at MSHC (Figure 1).

### Demographic characteristics

When comparing 5,085 MSM who were Medicare-eligible to the 2,786 MSM who were Medicare-ineligible, the median age of Medicare-eligible MSM was 28 (interquartile range [IQR] 24–35 years), which was significantly older than Medicare-ineligible (median=27; IQR 24–30 years), see Table 1. More than half (63.6%;  $n=3,116$ ) of the Medicare-eligible MSM were born in Australia and some (36.4%;  $n=1,781$ ) were born overseas; of these, the top three countries were the UK (20.0%,  $n=356$ ), New Zealand (10.6%,  $n=189$ ) and China (8.4%;  $n=150$ ). All (100%;  $n=2,274$ ) Medicare-ineligible patients were born overseas and the top three countries of origin were China (18.4%;  $n=418$ ), Chile (7.1%;  $n=162$ ) and Malaysia (6.5%;  $n=147$ ).

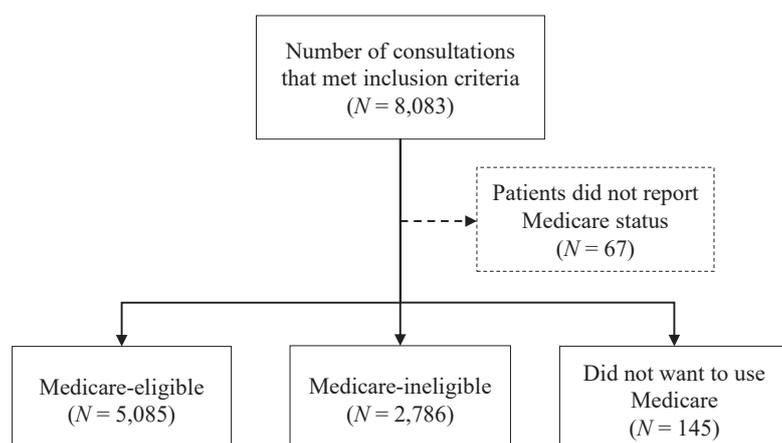
Of the overseas-born MSM, the median number of years since arriving in Australia was significantly longer for Medicare-eligible MSM than Medicare-ineligible MSM (median 5 years vs. 1 year;  $p<0.001$ ).

### Reasons for presentation

A higher proportion of Medicare-eligible MSM presented to MSHC with symptoms suggestive of an STI (26.7% vs. 22.7%;  $p=0.002$ ). The median time between the onset of symptoms and the day of clinic presentation was seven days (IQR 3–14 days) in both groups. A total of 11.2% ( $n=878$ ) of MSM who presented to MSHC reported having recent sexual contact with partners who had an STI; however, this proportion did not differ between Medicare-eligible and Medicare-ineligible MSM (11.6% vs. 10.4%;  $p=0.103$ ).

Similarly, there was no significant difference in the proportion of MSM attending MSHC for HIV post-exposure prophylaxis (PEP) between Medicare-eligible and Medicare-ineligible MSM (10.3% vs. 9.5%;  $p=0.285$ ).

Figure 1: Flow chart of the selection criteria for final analysis.



### Sexual and drug use practices

There was no difference in the number of male partners between Medicare-eligible and Medicare-ineligible MSM. Both groups had a median of three partners (IQR 1–5 partners) in the past three months and five partners (IQR 2–10 partners) in the past 12 months. However, the proportion reporting condomless anal sex with male partners in the past three months was significantly higher among Medicare-eligible MSM compared to Medicare-ineligible MSM (73.2% vs. 64.4%;  $p < 0.001$ ) and in the past 12 months (74.4% vs. 64.9%;  $p < 0.001$ ). Medicare-eligible MSM were also much more likely to have been diagnosed with an STI in the past compared to Medicare-ineligible MSM (35.8% vs. 27.6%;  $p < 0.001$ ) and a higher proportion reported injecting drug use during their lifetime compared to Medicare-ineligible MSM (3.3% vs. 1.8%;  $p < 0.001$ ). Medicare-ineligible MSM were much more likely to have had sex overseas in the past 12 months compared to Medicare-eligible MSM (55.2% vs. 35.9%;  $p < 0.001$ ).

### HIV testing history and STI diagnosis

Overall, 76.7% ( $n = 5537$ ) of MSM had ever tested for HIV prior to their first consultation at MSHC and this proportion did not differ between Medicare-eligible and Medicare-ineligible MSM (76.1% vs. 77.7%;  $p = 0.122$ ). Of those who had ever tested for HIV, the median number of months since their last HIV test was six months (IQR 3–16) among Medicare-eligible MSM and seven months (IQR 3–14) among Medicare-ineligible MSM; this difference was not statistically significant.

Urethral gonorrhoea was slightly higher among Medicare-eligible MSM compared to Medicare-ineligible MSM (3.3% vs. 2.5%;  $p = 0.038$ ); however, anorectal gonorrhoea (7.7% in Medicare-eligible vs. 6.8% in Medicare-ineligible;  $p = 0.136$ ) and oropharyngeal gonorrhoea (7.0% in Medicare-eligible vs. 6.9% in Medicare-ineligible;  $p = 0.842$ ) were similar in both groups. Urethral chlamydia was also similar in both groups (3.5% in Medicare-eligible vs. 4.0% in Medicare-ineligible;  $p = 0.222$ ); however, anorectal chlamydia was more common among Medicare-ineligible MSM (10.6%) compared to Medicare-eligible MSM (8.5%;  $p = 0.004$ ).

**Table 1: Demographic, behavioural, HIV testing and STI diagnoses among MSM, stratified by Medicare status.**

Variables	Medicare-Eligible n = 5,085	Medicare-Ineligible n = 2,786	P-values (comparing Medicare Eligible and Medicare Ineligible)	Did not want to use the Medicare card n = 145
<b>Demographics</b>				
<b>Age</b>			<0.001	
Median [IQR]	28 [24-35]	27 [24-30]		29 [21-42]
<b>Country of birth</b>			<0.001	
Australia	3,116 (63.6)	0 (0)		116 (82.3)
Overseas	1,781 (36.4)	2,724 (100)		25 (17.7)
Not reported	188	62		4
<b>Years since arrival<sup>a</sup></b>			<0.001	
Median [IQR]	5 [1-12]	1 [0-2]		6 [0.5-13.5]
<b>Sexual and drug use practices</b>				
<b>Number of male partners</b>				
In the past 3 months <sup>b</sup>			0.213	
Median [IQR]	2 [1-5]	3 [1-5]		2 [1-4]
In the past 12 months <sup>c</sup>			0.295	
Median [IQR]	5 [1-10]	5 [2-10]		3 [2-7]
<b>Condom use with male partners</b>				
In the past 3 months			<0.001	
Always	1,128 (26.8)	856 (35.6)		35 (31.3)
Not always	3,083 (73.2)	1,550 (64.4)		77 (68.7)
Not reported	874	380		33
In the past 12 months			<0.001	
Always	1,149 (25.6)	882 (35.1)		41 (34.4)
Not always	3,337 (74.4)	1,627 (64.9)		78 (65.6)
Not reported	599	277		26
<b>Sex overseas in the past 12 months</b>			<0.001	
Yes	1,681 (35.9)	1,414 (55.2)		44 (33.8)
No	3,003 (64.1)	1,148 (44.8)		86 (66.2)
Not reported	401	224		15
<b>Any previous STIs</b>			<0.001	
Yes	1,680 (35.8)	681 (27.6)		35 (26.5)
No	3,010 (64.2)	1,786 (72.4)		97 (73.5)
Not reported	395	319		13
<b>Sex worker status</b>			0.203	
Yes	25 (0.5)	20 (0.7)		1 (0.7)
No	5,060 (99.5)	2,766 (99.3)		144 (99.3)
Not reported	0	0		0
<b>Any past injectable drug use</b>			<0.001	
Yes	160 (3.3)	45 (1.8)		2 (1.5)
No	4,701 (96.7)	2,533 (98.2)		133 (98.5)
Not reported	224	208		10
<b>HIV testing history</b>				
<b>Any previous HIV tests</b>			0.122	
Yes	3,580 (76.1)	1,957 (77.7)		77 (59.7)
No	1,124 (23.9)	561 (22.3)		52 (40.3)
Not reported	381	268		16
<b>Months since last HIV test</b>			0.251	
Median [IQR]	6 [3-16]	7 [3-14]		7 [3-17.75]
<b>STI test results</b>				
<b>Gonorrhoea: urethral infection</b>				
Positive	162 (3.3)	68 (2.5)	0.038	2 (1.4)
Negative	4687 (96.7)	2,662 (97.5)		139 (98.6)
Not tested	236	56		4
<b>Gonorrhoea: anorectal infection</b>				
Positive	339 (7.7)	169 (6.8)	0.136	8 (6.8)
Negative	4,042 (92.3)	2,331 (93.2)		110 (93.2)
Not tested	704	286		27

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**Table 1 cont.: Demographic, behavioural, HIV testing and STI diagnoses among MSM, stratified by Medicare status.**

Variables	Medicare-Eligible n = 5,085	Medicare-Ineligible n = 2,786	P-values (comparing Medicare Eligible and Medicare Ineligible)	Did not want to use the Medicare card n = 145
<b>Gonorrhoea: oropharyngeal infection</b>			0.842	
Positive	334 (7.0)	183 (6.9)		7 (5.3)
Negative	4,434 (93.0)	2,476 (93.1)		124 (94.7)
Not tested	317	127		14
<b>Chlamydia: urethral infection</b>			0.222	
Positive	169 (3.5)	110 (4.0)		9 (6.3)
Negative	4,722 (96.5)	2,639 (96.0)		133 (93.7)
Not tested	194	37		3
<b>Chlamydia: anorectal infection</b>			0.004	
Positive	373 (8.5)	265 (10.6)		9 (7.6)
Negative	4,005 (91.5)	2,236 (89.4)		109 (92.4)
Not tested	707	285		27
<b>Reason for accessing healthcare services</b>				
<b>Symptomatic on presentation</b>			0.002	
Yes	855 (26.7)	413 (22.7)		28 (30.4)
No	2,351 (73.3)	1,403 (77.3)		64 (69.6)
Not reported	1879	970		53
<b>Duration of symptoms (days)</b>			0.925	
Median [IQR]	7 [3-14]	7 [3-14]		10.5 [3-29.5]
<b>Contact of infection</b>			0.103	
Yes	589 (11.6)	289 (10.4)		11 (7.6)
No	4,496 (88.4)	2,497 (89.6)		134 (92.4)
Not reported	0	0		0
<b>Post-Exposure Prophylaxis (PEP)</b>			0.285	
Yes	524 (10.3)	266 (9.5)		18 (12.4)
No	4,561 (89.7)	2,520 (90.5)		127 (87.6)
Not reported	0	0		0

**Notes:**

Data are presented as either median [interquartile range] or n (%). Proportion were calculated excluding those with missing data.

a: For Non-Australian born patients

b: The number of partners in the past 3 months were calculated among men who self-reported having sex with men in the past 3 months: 4,798 Medicare-eligible MSM (287 men declined to answer or reported no sex with men were excluded); 2,640 Medicare-ineligible MSM (146 men declined to answer or reported no sex with men were excluded); 134 men who did not want to use the Medicare card (11 men declined to answer or reported no sex with men were excluded).

c: The number of partners in the past 12 months were calculated among men who self-reported having sex with men in the past 12 months: 4,926 Medicare-eligible MSM (159 men declined to answer or reported no sex with men were excluded); 2,697 Medicare-ineligible MSM (89 men declined to answer or reported no sex with men were excluded); 138 men who did not want to use the Medicare card (7 men declined to answer or reported no sex with men were excluded).

## Discussion

This cross-sectional study examined the demographic characteristics, sexual practices, HIV testing history and STI diagnoses among 5,085 Medicare-eligible and 2,786 Medicare-ineligible MSM attending a public sexual health centre in Melbourne, Australia. We found there was no difference in the proportion of men who had ever tested for HIV and the time since last HIV test between Medicare-eligible and Medicare-ineligible MSM, which indicates that at least among MSM attending a public sexual health service, there are no disparities in accessing HIV testing. Additionally, we did not find any major difference among men attending the clinic for HIV PEP or as a contact of STI. Medicare-ineligible MSM used condoms more than Medicare-eligible

MSM yet were more likely to have anorectal chlamydia than Medicare-eligible MSM. These findings indicate that both groups of MSM are accessing our free sexual health service equally, but further research is needed to address the Medicare-ineligible MSM populations who are not accessing our service.

This study has some limitations. First, the study was conducted at one inner-city sexual health clinic in Melbourne and is therefore unlikely to represent the broader population of MSM in Victoria or Australia. Additionally, access to sexual healthcare in the community and general practice (GP) settings are not represented in this dataset. However, it is difficult to conduct such a study in GP settings as not all men attending GP clinics disclose their sexual orientation

and discuss their sexual health during a consultation. Second, this data was largely derived from self-reported information, which is susceptible to recall bias and social desirability bias. It is important to note that Medicare-ineligible MSM were more likely to decline to report their sexual history (e.g. the number of partners and condom use) in comparison to Medicare-eligible MSM,<sup>13</sup> and this may be due to different cultural backgrounds or language barriers. This is concerning, as men who decline to report their sexual history are found to have a higher risk of acquiring HIV or an STI.<sup>13</sup> Third, there was a small proportion (1.8%; n=145) of MSM who were Medicare-eligible but did not want to use Medicare for the consultation. The pattern of demographic characteristics and sexual practices of this group is slightly different to those who chose to use Medicare; however, we were unable to conduct any statistical comparison due to the small sample size of this group.

Timely access to health services is an important aspect of disease control. Currently, there has been only one government-funded community-based peer-led rapid HIV testing service for MSM in Melbourne (i.e. PRONTO!).<sup>14</sup> PRONTO! is located in an inner suburb of Melbourne (north-east of the city of Melbourne) and allows MSM who are eligible for Medicare access free STI testing and free rapid HIV testing outside standard business hours. Increasing the number of community-based HIV/STI testing centres and public sexual health clinics could increase the accessibility of sexual health services to the public, particularly to those Medicare-ineligible individuals.

Our findings show that Medicare-ineligible MSM are less likely to report condomless sex with male partners, despite anorectal chlamydia being more common among Medicare-ineligible MSM compared to Medicare-eligible MSM. Our finding is consistent with a previous Australian study showing anorectal chlamydia was more commonly detected in Asian-born MSM (who are predominately Medicare-ineligible) compared to Australian MSM (who are Medicare-eligible) newly diagnosed with HIV.<sup>9</sup> The reasons of this difference are unclear, but it is possible that the actual sexual risk might be under-reported due to language barriers or cultural factors. Furthermore, previous research has shown that Medicare-ineligible MSM, including international students, have a higher prevalence of STIs in comparison

with Medicare-eligible MSM.<sup>9</sup> Most of these Medicare-ineligible individuals originated from south-east and central Asia, where the stigma surrounding homosexuality is highly prevalent and sexual health literacy levels are quite low.<sup>15,16</sup> Without adequate sexual education, it is possible that these individuals may have used condoms incorrectly,<sup>17</sup> which could be contributing to the rising levels of STIs and HIV in this population group. Social desirability bias may be more likely to occur among Medicare-ineligible MSM where homosexuality is highly stigmatised or discriminated in their home country, resulting in a lower likelihood of them disclosing high-risk behaviour.

Furthermore, our findings have shown that Medicare-ineligible MSM are more likely to have sex overseas. It has been observed that migrants returning to their countries of origin are more likely to underestimate the national prevalence of HIV,<sup>15</sup> and are less likely to engage in safe sex during this visit,<sup>18</sup> increasing their risk of disease transmission upon return to Australia. As rates of STIs continue to rise not only in Australia but worldwide,<sup>3,19-21</sup> it is crucial that clinicians are aware of this issue and emphasise the importance of practising safe sex to individuals who are at an increased risk of contracting HIV when travelling.<sup>22,23</sup> It is also possible that the higher rate of chlamydia in the Medicare-ineligible group reflects less chlamydia testing; however, we did not collect data on past chlamydia or STI testing in our study.

We found that about three-quarters of MSM reported they had ever tested for HIV regardless of Medicare status, the median time since last HIV test was about six to seven months and it did not differ in regards to Medicare status. This suggests Medicare status does not influence HIV testing practice among MSM. However, we did not collect data on the reason for the last HIV test. Medicare-ineligible MSM would have undergone HIV testing as part of certain visa and permanent residency applications to stay in Australia.<sup>24</sup> Despite the findings of this study, it is important to note that HIV testing is associated with fear in non-Medicare beneficiaries as a positive test has wide-ranging implications on the success of their visa applications and concerns about returning to their home countries due to stigma, discrimination and lack of support.<sup>25-27</sup> Fear of testing in these communities has also been linked to the non-

subsidised cost of HIV treatment, concerns about confidentiality and fear of judgement of their sexual practice.<sup>28</sup> Therefore, it is important that clinicians encourage Medicare-ineligible patients to have frequent HIV tests, while still addressing any issues around fear, trust and confidentiality they may have about the testing process.

Medicare status may have created some barriers to prevent Medicare-ineligible individuals from accessing the same quality of care available to their Medicare-eligible counterparts. For example, HIV pre-exposure prophylaxis (PrEP) has been subsidised by the Australian Pharmaceutical Benefits Scheme (PBS) since April 2018; this means individuals who have a valid Medicare card can purchase PrEP medication at a discounted rate in Australia. Individuals who do not have a Medicare card can also purchase PrEP online or import the medication from overseas. Although the cost for online PrEP is comparable to the PrEP on the PBS, Medicare-ineligible MSM may need to pay for the PrEP co-payment, consultation fee and pathology testings at a substantial cost. Medicare-ineligible MSM were able to access PrEP through the MI-EPIC (Medicare Ineligible – Expanded PrEP Implementation in Communities in NSW) service in New South Wales funded by the State Government in mid-2019; and through the PrEPME (PrEP for those without Medicare) service in Victoria in early 2020. Since then, scaling up such programs is important to provide PrEP access to Medicare-ineligible individuals to address the rise in HIV incidence among overseas-born MSM who do not have a Medicare card. It would also be beneficial to implement further workforce development for GPs in this field as well as advocating for more support to be available to these patients in the primary healthcare setting. Further quantitative studies are also required to understand the disparity in STI diagnoses and sexual practices between the two groups in order to design specific HIV/STI interventions for this population.

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