**Table S1.** Variables mapped against relevant survey questions and response options

| Question | Responses | Variable name | Variable type | Variable components | Notes/definitions |
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| How old are you? (Tick one) | 18-29 years<br>30-39 years<br>40-49 years<br>50-59 years<br>60 years and over<br>Prefer not to answer | Age | Categorical (ordinal) | 18-29; 30-39; 40-49; 50-59; 60+ | N/A |
| How do you identify? (Tick all that apply) | Woman<br>Man<br>Non-binary person<br>Transgender<br>Cisgender<br>Other [open text]<br>Prefer not to answer | Woman | Categorical | Yes – woman | Any of the following responses: woman + no other option selected; woman + cisgender; woman + transgender |
| | | | | No – man | Any of the following responses: man + no other option selected; man + cisgender; man + transgender |
| | | | | No - non-binary* | Any of the following responses: man + woman; transgender and no other option selected; non-binary person and no other option selected |
| What is the postcode in which you live? | Open text | State | Categorical | Western Australia | Any 6000-6999 postcode, any online survey with an embedded source code related to Western Australia, or any print survey known to be received from a Western Australian project officer |
| | | | | Queensland | Any 4000-4999 postcode, any online survey with an embedded source code related to Queensland, or any print survey known to be received from a Queensland project officer |
| | | | | Victoria | Any 3000-3999 postcode, any online survey with an embedded source code related to Victoria, or any print survey known to be received from a Victorian project officer |
| | | | | South Australia | Any 5000-5999 postcode, any online survey with an embedded source code related to South Australia, or any print survey known to be received from a South Australian project officer |
| | | | | Other | Any Australian postcode from a state other than the four above |
| | | SEIFADecile | Categorical (ordinal) | 1-10 | Determined by mapping postcodes to Socioeconomic Indexes for Australia (SEIFA) 2016. A decile of 1 indicates lowest 10% of areas (most disadvantaged). |
| What is your residency status in Australia? (Tick one) | Permanent resident/citizen<br>Temporary – student visa<br>Temporary – work visa | PermanentCitizen | Categorical | Yes – permanent/citizen | Permanent resident/citizen selected |

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| | Temporary – holiday/tourist visa<br>Temporary – partner visa<br>Other [open text]<br>I prefer not to answer | | | No – non-permanent | Any of the temporary categories selected (or other if open text unable to be assigned to a predefined category) |
| In which country were you born? | Open text for print survey<br>Choice of 67 countries for online survey | BirthRegion | Categorical | Northeast Asia | Any of the following responses: China (mainland); China (Hong Kong or Macau); Japan; Mongolia; North Korea; South Korea; Taiwan |
| | | | | Southeast Asia | Any of the following responses: Brunei; Burma (Myanmar); Cambodia; Indonesia; Laos; Malaysia; Philippines; Singapore; Thailand; Timor-Leste; Vietnam |
| | | | | Sub-Saharan Africa | Any of the following responses: Angola; Benin; Botswana; Burkina Faso; Burundi; Cameroon; Cape Verde; Central African Republic; Chad; Comoros; Democratic Republic of Congo; Republic of Congo; Cote d'Ivoire; Equatorial Guinea; Eritrea; Eswatini; Ethiopia; Gabon; The Gambia; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Liberia; Madagascar; Malawi; Mali; Mauritania; Mauritius; Mozambique; Namibia; Niger; Nigeria; Rwanda; Sao Tome and Principe; Senegal; Seychelles; Sierra Leone; Somalia; South Africa; South Sudan; Sudan; Tanzania; Togo; Uganda; Zambia; Zimbabwe |
| How many years have you been living in Australia in total? | Open text | YearsInAus | Continuous | N/A | N/A |
| To whom are you sexually attracted? (Tick all that apply) | Women<br>Men<br>Non-binary people<br>Others [open text]<br>I prefer not to answer | MSM | Categorical | Men attracted to men | Any respondent allocated to variable 'Gender - Man' (see above) who responds 'Men' to sexual attraction question (even if other responses also chosen) |
| | | | | Men attracted to women only | Any respondent allocated to variable 'Gender - Man' (see above) who responds 'Women' to sexual attraction question (and no other response chosen) |
| What are the main languages you speak at home? | Open text | English | Categorical | English spoken at home | English listed as one of the languages spoken at home |
| | | | | English not spoken at home | English not listed as one of the languages spoken at home |
| Have you heard of HIV and/or AIDS? (Tick one) | Yes<br>No | HeardHIV | Categorical | Heard<br>Not heard | Anyone who answered 'No' excluded from subsequent analysis of HIV knowledge questions (KnowHIVTest, KnowViralLoad, KnowART, KnowPrEP) |
| | Yes<br>No | KnowHIVTest | Categorical | Correct | 'No' response |

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| Is an HIV test done whenever someone has a blood test in Australia? (Tick one) | I don't know | | | Not correct | 'Yes' or 'I don't know' response |
| Is it safe to have sex without a condom with someone who has VERY LOW amounts of HIV in their blood? (Tick one) | Yes<br>No<br>I don't know | KnowViralLoad | Categorical | Correct | 'Yes' response |
| | | | | Not correct | 'No' or 'I don't know' response |
| Are there any medicines that people can take BEFORE sex to protect themselves against HIV? | Yes<br>No<br>I don't know | KnowPrEP | Categorical | Correct | 'Yes' response |
| | | | | Not correct | 'No' or 'I don't know' response; NOTE: Those who chose 'Yes' but then provided an incorrect name for the medicine were recoded 'Not Correct' |
| If you think there is a medicine that people can take before sex to protect themselves against HIV, what is the name of the medicine? (Tick one) | The name of the medicine is: (open text)<br>I don't know the name of the medicine | Know_Prep_Name | Categorical | Yes | Responses include: PrEP, pre-exposure prophylaxis, tenofovir, Truvada or other recognized chemical or brand name |
| | | | | No | 'I don't know' or incorrect name given |
| Can a person have an STI without any symptoms? (Tick one) | Yes<br>No<br>I don't know | STI_Know_Symp t | Categorical | Correct | 'Yes' response |
| | | | | Not correct | 'No' or 'I don't know' response |
| In the past twelve (12) months, how many people have you had sexual intercourse with (vaginal or anal)? (Tick one) | 0<br>1<br>2 to 5<br>6 to 10<br>11 or more<br>I prefer not to answer<br>I can't remember | AmtSexPartners1 | Categorical (ordinal) | 0; 1; 2-5; 6-10; 11+; Can't recall | Anyone who answered '0', 'I prefer not to answer' or 'I can't remember' excluded from analysis for variables CommittedPartner, CondomUsed and NoCondomReason |
| | | AmtSexPartners2 | Categorical | One partner only | '1' response |
| | | | | More than one partner | '2 to 5', '6 to 10' or '11 or more' responses<br>The purpose of this variable is only to include those who indicated they were sexually active |
| Which of the following best describes the MOST | | CommittedPartner | Categorical | Committed | 'Someone you are in a committed relationship with (e.g. husband / wife, boyfriend / girlfriend)' response |

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| RECENT person you had sex with? (Tick one) | Someone you are in a committed relationship with (e.g. husband / wife, boyfriend / girlfriend)<br><br>A casual sex partner<br><br>A sex worker | | | Not committed | 'A casual sex partner' or 'A sex worker' responses |
| Did you use a condom the MOST RECENT time you had sex? | Yes<br>No<br>I can't remember | CondomUsed | Categorical | Used | 'Yes' response |
| | | | | Not used | 'No'<br>'I can't remember' only included in basic descriptive analysis. |
| Why did you NOT use a condom the MOST RECENT time you had sex (Tick as many as apply) | My partner and/or I didn't have one<br>My partner and/or I couldn't afford one<br>My partner did not want to use one<br>I did not want to use one<br>My partner and/or I did not know where to get one<br>My partner doesn't like the way they feel<br>I don't like the way they feel<br>My partner or I was trying to get pregnant<br>It is against my or my partner's culture or religion<br>My partner and I don't have any illnesses that can be passed on through sex<br>My partner and I trust each other<br>Another reason (please specify) | NoCondom_Reason | Categorical | See column 2 | Each response option was coded 1 if selected and 0 is not selected |
| When did you have your most recent test for HIV, hepatitis B, hepatitis C or any sexually transmitted infections (we call these STI and/or BBV tests)? | Less than 12 months ago<br>1 to 2 years ago<br>More than 2 years ago<br>I have never been tested<br>I don't know | TestedRecently | Categorical | Within last two years | 'Less than 12 months ago' or '1 to 2 years ago' response |
| | | | | Not within last two years | 'More than two years ago', 'I have never been tested'<br><br>'I don't know' only included in basic descriptive analysis. |

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| Note: it doesn't matter if the test was in Australia or another country<br><br>(Tick one) | | | | | |
| What was your MOST RECENT STI and/or BBV test for?<br><br>(Tick as many as apply) | HIV<br>Chlamydia and / or gonorrhoea<br>Syphilis<br>Hepatitis B and / or hepatitis C<br>I don't know – it was a blood test<br>I don't know – it was a urine test<br>I don't know – it was a blood and urine test<br>Other [open text] | HIVTest | Categorical | HIV test | 'HIV' response (either alone or in combination with another response) |
| | | | | Other test | 'Chlamydia and/or gonorrhoea' or 'Syphilis' or 'Hepatitis B and / or hepatitis C' or 'I don't know – it was a urine test' response without 'HIV' also being chosen<br><br>Two 'I do not know – it was a blood test' option only included in basic descriptive analysis |
| Why did you NOT have an STI and/or BBV test in the last two years? (Tick as many as apply) | I did not do anything to put me at risk<br>I was too embarrassed<br>I could not afford extra tests<br>I didn't know where to get one<br>I was scared about the result<br>I don't like needles/blood tests<br>I did not have any symptoms<br>I did not have the time to get tested<br>I did not think it was important<br>I couldn't get to a service/clinic<br>Another reason (open text) | Various | Categorical | See column 2 | Multiple responses permitted |
| What was the reason for your MOST RECENT STI and/or BBV test? (Tick as many as apply) | I was applying for permanent residency<br>I had a new sexual partner<br>I shared injecting equipment with someone<br>Something happened that may have put me at risk<br>I was pregnant and had a check up<br>I was getting contraception/birth control<br>My doctor/nurse suggested it<br>My doctor/nurse just did it<br>I wanted to know if I had a sexually transmitted infection or a blood-borne virus<br>I had symptoms<br>It was part of my regular health check<br>I like to get regular STI/BBV tests | Various | Categorical | See column 2 | Each response option was coded 1 if selected and 0 is not selected |

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| | It was a requirement for my work/study<br>Another reason (open text) | | | | |
| How would you feel if a doctor in Australia offered you STI and BBV tests during an appointment without you requesting any of these tests? (Tick any that apply) | Offended – why are they asking me<br>Worried – do they think I have an illness?<br>Surprised – I wasn't expecting that<br>Okay – STI and BBV testing is normal<br>Relieved – now I don't have to asl for the tests<br>Embarrassed – I'd rather not talk about these things<br>Other (open text) | Various | Categorical | See column 2 | Each response option was coded 1 if selected and 0 is not selected |
| If a close friend in Australia told you that they were going to get tested for STIs and BBVs, how would you feel? (Tick any that apply) | Fine – it's none of my business<br>Shocked – I didn't think they would need to get tested<br>Proud – it's a responsible thing to do<br>Supportive – I am here if they need my help<br>Worried – I hope they are okay<br>Disappointed – they must have done something wrong<br>Other (open text) | Various | Categorical | See column 2 | Each response option was coded 1 if selected and 0 is not selected |
| Since January 2018, how many times have you visited any country outside of Australia? (Tick one) | 0<br>1 to 2 times<br>3 to 4 times<br>5 to 6 times<br>7 or more times<br>I can't remember the number of times | OverseasTravel | Categorical | Travel | '1 to 2 times', '30 to 4 times', '5 to 6 times', '7 or more times' or 'I can't remember the number of times' |
| | | | | No Travel | '0'<br><br>Anyone who answered '0' excluded from analysis for variable TravelCondomUsed |
| On any of the overseas visits since January 2018, did you have sexual intercourse with at least one person who lives outside of Australia? (Tick one) | Yes<br>No<br>I prefer not to answer | TravelCondomUsed | Categorical | Condom used | 'Yes' response |
| | | | | Condom not used | 'No response' |