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**Drug use monitoring in Australia:
2017 technical appendix**

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Data collection method

Participant eligibility

Due to the way that participants are invited to take part in the Drug Use Monitoring in Australia (DUMA) survey, the sample is not a random sample of all people detained by police. This is because the police officer in charge of the watch house or police station, or their delegate, can determine whether a detainee is eligible to participate in a DUMA interview. This eligibility assessment takes into consideration the level of risk a detainee may pose to the interviewer.

In 2017, 606 detainees (14% of the potential sample) were deemed by police to be unfit for interview. This varied by site, ranging from 29 percent (n=320) of detainees in Adelaide, 17 percent (n=41) of detainees in Surry Hills, 17 percent (n=43) in Bankstown, and 10 percent (n=174) in Perth to three percent (n=28) in Brisbane. Site variations may be due to the length of detention, the reason for detention or detention procedures governed by state legislation. Sites with longer holding periods present greater opportunities for participation.

Table 1 presents the fieldwork data for 2017. This includes when fieldwork was undertaken, the number of hours interviewers spent at the police station or watch house, the number of detainees approached and interviewed, and the number of urine samples collected at each site.

Due to the high rate of recidivism in the detainee population, it is likely that a small group of detainees were surveyed twice or more. The DUMA sample is collected on the basis of episodes of detention, rather than individual detainees, so these duplicates cannot be tracked across interview periods. Furthermore, names are not recorded as there is a strict code of anonymity and confidentiality attached to participation. To ensure that these data are collected, detainees are asked if they recall ever participating in the study on a previous occasion. In 2017, 11 percent (n=259) of the sample reported that they had previously participated in the study; a further one percent (n=24) could not recall if they had previously participated.

Consent

Detainees eligible for interview are approached by either a police officer or an interviewer and asked if they are willing to participate in the DUMA study. Detainees are notified that the interviewer is independent from the police and that anything they say will be treated in strict confidence. If detainees decline to participate in the study, the reason for their refusal is recorded. This decision has no impact on their criminal case or subsequent processing.

Where detainees agree to participate, they undergo an informed consent procedure where they are advised that the research project is funded by the Australian Government and that participation is voluntary and confidential. A plain language information statement is provided to them which describes the aims of the project. They are informed that they may end the interview at any time and can choose not to answer individual questions. Detainees are also informed that they can make a complaint to either watch house staff or the Australian Institute of Criminology (AIC) ethics secretariat if they feel they have been treated unfairly or unethically. The detainee is then asked to give verbal consent to participate in a structured interview and provide a urine sample (during relevant collection periods). Interview responses are included in the study regardless of whether a detainee provides a urine sample.

During the interview, detainees are reminded of the confidential nature of the research. Detainees' names are never recorded on the survey or on urine samples. In New South Wales, juveniles may be interviewed if both they and their primary caregiver give consent.

Charge and demographic information

Demographic information and details of the charges laid against detainees are collected after completion of interviews. These data are collected from police charge records. A maximum of 10 charges can be recorded and they must relate to the detainee's current period of detention. Protocols for collecting this information differ between jurisdictions. Gender is based on the gender assigned to the detainee on police charge records.

Data storage and management

Interviews are administered using a computer-assisted personal interviewing (CAPI) system and the information is stored in an electronic tablet. Each interview entry is protected by a unique password and data can be accessed from the tablet by the interviewer. The CAPI system allows interviewers to send interview data to the secure AIC server immediately after the interview.

Where paper questionnaires are used, they are secured until responses are entered by the interviewer into the CAPI system. Physical copies are destroyed after the end of each quarterly data collection period.

Drug testing

Although the DUMA program collects self-reported drug use data from police detainees, it does not primarily rely on these data to investigate drug-using habits of police detainees as these data may not be accurate. Problems with self-reported data include social desirability bias, perceptions about the consequences of reporting drug use, a lack of information about the purity and composition of purchased illicit drugs and recall issues (Darke 1998; Miller, Donnelly & Martz 1997). This may result in under-reporting of behaviours related to drug use and participation in illegal activities. To enhance the accuracy of self-report information in the DUMA study, and to cross-validate self-report drug use data, urinalysis is conducted on samples voluntarily provided by police detainees. Urine testing provides an objective measure of the presence of drugs and also provides a scientifically valid measure of drug use within the known limits of the test.

Provision of a urine sample

During relevant collection periods, detainees are asked to provide a urine sample at the end of the interview. Only detainees who have been in a custodial setting for less than 48 hours are eligible to provide a urine sample, as the majority of drugs have a limited detection time in urine (see Table 2). Where detainees decline to provide a urine sample, the following statement is provided to them:

Your participation is completely voluntary, but I would like to remind you that no names will appear on a specimen and the results will not be given to the police or affect the outcome of your case. An independent laboratory will perform the analysis, and the sample will be destroyed as soon as the tests have been done. There is no way that the results can be tied back to you. The urine sample cannot and will not be used for DNA extraction. Would you agree to provide a urine sample?

If the detainee still declines to provide a urine sample, they are thanked for their time and participation and escorted back to their cell.

If a detainee agrees to provide a urine sample, a urine collection pot is given to them and they are escorted to an appropriate location to provide the sample. The sample is returned to the interviewer and the detainee is escorted back to their cell.

Each urine sample is given a unique barcode, frozen and sent to an authorised testing laboratory in New South Wales.

Urinalysis

Urinalysis is conducted by the Forensic and Analytical Science Service of NSW Health Pathology. This laboratory is accredited to Australian Standard AS/NZS 4308-2008. Results from urinalysis tests are provided to the AIC in electronic format. Police and local data collectors are not informed of individual test results and all urine samples are destroyed once the AIC receives and validates the results.

The Forensic and Analytical Science Service tests urine samples for five classes of drugs—amphetamines, benzodiazepines, cannabis, cocaine and opiates. A secondary screening test is conducted for the pharmaceutical opiates methadone and buprenorphine. When the drug or its metabolite is detected at or above the cut-off level set in the Australian Standard, the test will yield a positive result. Table 2 indicates the average detection time and the cut-off levels for a positive result.

Where a sample tests positive for amphetamines or opiates, a confirmatory test is performed using gas chromatography-mass spectrometry to ascertain the specific drug present in the urine. Opiates are classified as either heroin or other opiates (including prescription opiates) and amphetamines are classified as methamphetamine, MDMA, MDA or other amphetamines (including prescription amphetamines). With the exception of cannabis and benzodiazepines, these results indicate whether the drug was consumed shortly before detention.

When reporting on urinalysis, the following should be taken into account:

- the screening test detects the class of drug, not the specific metabolite;
- false positives and false negatives can occur, although cut-off levels are designed to minimise their frequency;
- detection times vary based on the individual person's rate of metabolism and excretion;
- a positive result does not necessarily represent illicit use; and
- the presence of the drug does not necessarily mean the person was intoxicated or impaired.

Comparing urinalysis and reported drug use

Table 3 shows the percentage of detainees who tested positive via urinalysis to heroin, methamphetamine or cocaine by self-reported drug use in the previous 48 hours and previous 30 days.

Quality control

Before data collection, interviewers undergo training in the questionnaire and operational procedures specific to their site. During data collection, site coordinators audit questionnaires and report errors back to interviewers.

When data collection is complete, the AIC audits all questionnaires. Error reports are created by the AIC and distributed to each site manager prior to the next quarter. These error reports are supplied at both the site and interviewer level. Urine provision is also monitored by the AIC at both the site and interviewer level. These reports allow emerging issues to be identified and individual or site-based issues to be addressed if and when they arise.

Annual teleconferences are held with members of the AIC's DUMA team and the site managers and coordinators. These teleconferences provide a forum to discuss issues related to the administration of the questionnaire or addenda.

Data entry

After data are entered into the CAPI system, they are sent directly to the AIC over a secure network from each site's tablets. The data are downloaded and stored securely on the AIC's server for checking and analysis. Questionnaire responses and urinalysis data are matched by the AIC using barcode numbers.

Response rates

Response rates are calculated by dividing the number of detainees who agreed to participate by the potential sample, which includes detainees deemed ineligible (for example, those who were mentally unfit or potentially violent) or were unavailable (for example, due to watch house constraints or because they had been taken to court).

In 2017, 2,319 detainees were interviewed, representing 55 percent of all detainees approached for interview. This response rate increases to 82 percent if calculated using only those deemed eligible to participate (n=2,838). Of the detainees deemed eligible, 2,293 were adults aged 18 years and over. Nine detainees from the two Sydney sites (Bankstown and Surry Hills) were juveniles and 17 detainees in Brisbane were aged 17 years. Until 2018, offenders in Queensland aged 17 years were dealt with by the adult justice system.

Of those who agreed to an interview and were eligible to provide a urine sample, 76 percent (n=852) provided a urine sample. Urine samples were not collected at any site in the second quarter of 2017. Only three sites (Adelaide, Brisbane and Perth) collected urine samples in quarter 3 of 2017, while only Bankstown collected urine samples in the fourth quarter of 2017. The proportion of detainees who provided a urine sample was five percentage points higher in 2017 than in 2016 (71%; n=1,193). The collection rate achieved was consistent with those of previous years. For a breakdown of urine provision rates by gender, Indigenous status, age and location, see Tables 4 to 7.

Table 8 shows the response rates for adult and juvenile detainees. No substantial differences existed in the proportions of male and female detainees who agreed to participate in the DUMA survey across any site except for Perth (42% male vs 35% female). A greater proportion of male than female detainees provided a urine sample at the Adelaide, Bankstown and Perth sites, while a greater proportion of female detainees provided a urine sample in Surry Hills. There was very little difference in the proportion of male and female detainees who provided a urine sample in Brisbane.

From January 1999 to December 2017, a total 8,723 detainees refused to be interviewed, 58,512 agreed to be interviewed and 40,165 provided a urine sample. Of those detainees who agreed to participate, 8,107 refused to provide a urine sample and 7,158 did not provide a urine sample for other reasons—for example, being unable or ineligible to provide a specimen.

Methodological considerations

Sample sizes vary across the analysis due to instances where detainees were unable or unwilling to respond to survey questions. To preserve the largest sample size possible, detainees were excluded from analysis only for variables for which data were missing. Furthermore, males are over-represented in the DUMA detainee sample. Thus caution should be taken when interpreting results for female detainees or making gender-based comparisons.

The number of standard drinks consumed by detainees is based on conversion figures consistent with those used by the Australian Institute of Health and Welfare's National Drug Strategy Household Survey. Cider was added to the core DUMA survey in the third quarter of 2017. The data about cider consumption pertains only to the last two quarters of the reporting period.

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Glossary of terms

A full glossary of terms can be found on the Crime Statistics Australia website (<http://www.crimestats.aic.gov.au/DUMA/glossary/>). The terms relevant to the 2017 report are listed below.

Box 1: Glossary of terms

Most serious offence

The most serious offence category is assigned to a detainee based on the most serious charge laid against them during the current period of detention. Charges are assigned to each detainee according to the Australian Bureau of Statistics' (2011) Australian and New Zealand Standard Offence Classification. The category is assigned to each detainee based on a hierarchy from the most serious to the least serious offences: violent, property, drug, driving under the influence (DUI), traffic, disorder, breach and other lesser offences respectively.

Violent offences

Characterised as offences where violence was involved, including: homicide and related offences; acts intended to cause injury; sexual assault and related offences; dangerous or negligent acts endangering persons; robbery, extortion and related offences; selling, possession and/or use of prohibited weapons or explosives; and unlawfully obtaining, possessing or misusing regulated weapons or explosives.

Property offences

Characterised as offences involving theft and/or where deception has been used to gain a benefit. This includes unlawful entry with intent, burglary or break and enter; theft and related offences; and fraud, deception and related offences.

Drug offences

Characterised as offences involving the possession, manufacture, distribution and/or use of drugs, including misuse of prescription drugs.

DUI offences

Characterised as offences where a detainee was driving under the influence of alcohol and/or drugs.

Traffic offences

Characterised as offences where a detainee was operating a vehicle in an illegal manner. This includes dangerous or negligent operation of a vehicle, driving while suspended and driving without a licence.

Disorder offences

Characterised as offences where a detainee has caused disruption or offence to the general public (for example: trespass, offensive conduct, consumption of alcohol in a regulated space) and property damage (for example: vandalism, graffiti, arson).

Breach offences

Characterised as offences where a detainee has breached a court order. This includes breach of violence orders, breach of custodial orders (for example: home detention, suspended sentence or escape from custody) or breach of community-based orders (for example: community service order, parole or bail).

Other lesser offences

Characterised as a range of offences including environmental pollution, pedestrian offences and offences against justice procedures, government security and operations.

Any drug

Detainees who have tested positive to any drug via urinalysis are those who have at least one of the following drugs in their system:

- amphetamines (including methamphetamine, MDMA, MDA and/or other amphetamines);
- benzodiazepines;
- cannabis;
- cocaine; and
- opiates (including heroin, methadone, buprenorphine and/or other opiates).

Multiple drugs

Detainees who have tested positive to multiple drugs via urinalysis are those who have two or more of the following drugs in their system:

- amphetamines (including methamphetamine, MDMA, MDA and/or other amphetamines);
- benzodiazepines;
- cannabis;
- cocaine; and
- opiates (including heroin, methadone, buprenorphine and/or other opiates).

Detainees who tested positive to more than one type of amphetamine or opiate were not classified as a multiple drug user unless they also tested positive to a drug of another class.

Appendix tables

Table 1: Fieldwork information, 2017

Quarter	Site	Period	Hours in facility	Detainees approached (n)	Detainees interviewed (n)	Specimens collected
1	Adelaide	05.01.17–02.02.17	302	233	108	83
	Brisbane	09.01.17–05.02.17	390	187	175	136
	Perth	08.01.17–06.02.17	288	532	194	146
	Surry Hills	16.01.17–15.02.17	298	125	69	61
2	Adelaide	11.04.17–12.05.17	301	359	161	–
	Bankstown	17.04.17–17.05.17	299	115	71	–
	Brisbane	10.04.17–07.05.17	390	177	164	–
	Perth	09.04.17–12.05.17	288	431	171	–
3	Adelaide	13.07.17–09.08.17	300	264	132	97
	Brisbane	12.07.17–08.08.17	390	202	194	162
	Perth	09.07.17–06.08.17	288	433	170	120
	Surry Hills	13.07.17–11.08.17	299	118	71	–
4	Adelaide	04.10.17–04.11.17	300	258	145	–
	Bankstown	11.10.17–11.11.17	300	145	75	47
	Brisbane	11.10.17–07.11.17	390	240	229	–
	Perth	08.10.17–05.11.17	297	421	190	–
Total	All sites	2017	5,120	4,240	2,319	852

Source: AIC DUMA collection 2017 [computer file]

Drug class	Cut-off levels (µg/L)	Average detection time ^a
Amphetamines	300	2–4 days
Benzodiazepines (hydrolysed)	200	2–14 days
Cannabis	50	Up to 30 days for heavy use; 2–10 days for casual use
Cocaine	300	24–36 hours
Opiates	300	2–3 days
Methadone	300	2–4 days
Buprenorphine	5	2–7 days

a: Depends on testing method and equipment, the presence of other drugs, level of drug present and frequency of use
Source: Australian Standard AS/NZS 4308-2008; Makkai 2000

Drug	Urinalysis results	Reported use past 48 hours (%)		Reported use past 30 days (%)		Total (n)
		Yes	No	Yes	No	
Heroin	Positive	48	52	63	37	54
	Negative	1	99	4	96	777
Methamphetamine	Positive	55	45	82	18	381
	Negative	2	98	16	84	448
Cocaine	Positive	44	56	75	25	16
	Negative	0	100	5	95	816

Source: AIC DUMA collection 2017 [computer file]

	Male		Female		Total	
	n	%	n	%	n	%
Provided urine	684	76	148	75	832	75
Did not provide	220	24	50	25	270	25

Note: Sample size may vary as cases were excluded due to missing data. Percentages were calculated for the quarters in which urine samples were requested—quarters 1, 3 and 4 2017

Source: AIC DUMA collection 2017 [computer file]

	Indigenous		Non-Indigenous		Total	
	n	%	n	%	n	%
Provided urine	193	75	638	76	831	75
Did not provide	66	25	204	24	270	25

Note: Sample size may vary as cases were excluded due to missing data. Percentages were calculated for the quarters in which urine samples were requested—quarters 1, 3 and 4 2017

Source: AIC DUMA collection 2017 [computer file]

Table 6: National DUMA sample by urine provision and age, 2017

	18–20		21–25		26–30		31–35		36+	
	n	%	n	%	n	%	n	%	n	%
Provided urine	70	83	147	79	157	73	143	76	315	73
Did not provide	14	17	39	21	58	27	44	24	115	27

Note: Sample size may vary as cases were excluded due to missing data. Percentages were calculated for the quarters in which urine samples were requested—quarters 1, 3 and 4 2017

Source: AIC DUMA collection 2017 [computer file]

Table 7: National DUMA sample by urine provision and location, 2017

	Adelaide		Brisbane		Perth		Bankstown		Surry Hills	
	n	%	n	%	n	%	n	%	n	%
Provided urine	179	75	283	79	264	73	46	64	60	88
Did not provide	61	25	75	21	100	27	26	36	8	12

Note: Sample size may vary as cases were excluded due to missing data. Percentages were calculated for the quarters in which urine samples were requested—quarters 1, 3 and 4 2017

Source: AIC DUMA collection 2017 [computer file]

Table 8: Response rate by gender, adult status and location, 2017					
	Adelaide	Bankstown	Brisbane	Perth	Surry Hills
Adult male detainees					
Approached (n)	894	200	672	1,380	183
Agreed to interview (n)	443	116	639	573	107
Agreed to interview (%)	50	58	95	42	58
Agreed to interview during urine collection quarters (n)	190	60	315	286	53
Provided urine specimen (n)	145	39	252	206	47
Provided urine (of those who agreed to interview during urine collection quarters; %) ^a	76	65	80	72	89
Adult female detainees					
Approached (n)	220	43	116	434	56
Agreed to interview (n)	103	24	106	152	30
Agreed to interview (%)	47	56	91	35	54
Agreed to interview during urine collection quarters (n)	50	12	43	78	15
Provided urine specimen (n)	35	7	35	60	14
Provided urine (of those who agreed to interview during urine collection quarters; %) ^a	70	58	81	77	93
Juveniles in New South Wales sites					
Approached (n)	0	17	0	0	4
Agreed to interview (n)	–	6	–	–	3
Agreed to interview (%)	–	35	–	–	75
Agreed to interview during urine collection quarters (n)	–	3	–	–	1
Provided urine specimen (n)	–	1	–	–	0
Provided urine (of those who agreed to interview during urine collection quarters; %) ^a	–	33	–	–	0
Brisbane 17-year-olds					
Approached (n)	0	0	18	0	0
Agreed to interview (n)	–	–	17	–	–
Agreed to interview (%)	–	–	94	–	–
Agreed to interview during urine collection quarters (n)	–	–	11	–	–
Provided urine specimen (n)	–	–	11	–	–
Provided urine (of those who agreed to interview during urine collection quarters; %) ^a	–	–	100	–	–

a: Percentages were calculated for the quarters in which urine samples were requested—quarters 1, 3 and 4 2017

Note: Detainees were eligible to provide a urine sample only if they had been in custody for 48 hours or less. Cases were excluded where gender was not recorded

Source: AIC DUMA collection 2017 [computer file]

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