# AMPHETAMINE-TYPE STIMULANTS

## KEY POINTS

- Internationally, after cannabis ATS are the second most consumed drug worldwide. In 2015, methylamphetamine accounted for around two-thirds of the weight of ATS seized globally.
- Indicators of ATS supply and demand in Australia provide a mixed picture, but overall point to a large, relatively stable market in 2016–17.
  - While figures remain high, both the number and weight of ATS (excluding MDMA) detected at the Australian border decreased for the second consecutive reporting period in 2016–17.
  - Of the drugs tested in the National Wastewater Drug Monitoring Program, methylamphetamine was the most consumed illicit drug in regional and capital city sites.
  - Both the number and weight of MDMA detected at the Australian border increased this reporting period, with the 4 763 detections in 2016–17 the highest on record.
  - Of the substances tested by the National Wastewater Drug Monitoring Program, MDMA is one of the least consumed drugs.
  - Consistent with previous reporting periods, drug profiling data of both border and domestic seizures indicates ephedrine and pseudoephedrine remain the dominant methylamphetamine precursors.
  - Forensic profiling saw the re-emergence of the Leuckart route of manufacture in 2016. Last recorded in border samples in 2005, the method more commonly identified in methylamphetamine manufacture was identified in MDMA ENIPID samples for the first time.
  - While the number and weight of national ATS seizures decreased this reporting period, they remain high.
  - National ATS arrests remained relatively stable in 2016–17 following five consecutive increases to a record 47 625 reported in 2015–16.

# MAIN FORMS

Amphetamine-type stimulants (ATS) are a group of central nervous system stimulants which include amphetamine, methylamphetamine and 3,4-methylenedioxymethamphetamine (MDMA).

- Owing to differences in chemical composition, methylamphetamine is more potent than amphetamine, resulting in a stronger nervous system reaction.
- MDMA is a derivative of amphetamine, but has an important difference in chemical structure which provides MDMA's hallucinogenic (in addition to stimulant) properties. Amphetamine is most commonly found in powder and tablet form, which can be swallowed, snorted, smoked or (less commonly) injected.
- Methylamphetamine has four common forms—tablet, crystalline (often referred to as 'ice' and considered the most potent form of the drug[1]), base (also referred to as 'paste') and powder (also referred to as 'speed'). Methylamphetamine can be swallowed, snorted, smoked or injected.
- MDMA (also referred to as 'ecstasy'), is most commonly found in tablet form of varying colours and sizes, often imprinted with a picture or symbol. MDMA is also found in capsule, powder and crystal form. While MDMA is most commonly ingested, it can also be snorted, inhaled and injected (ADF 2017a; ADF 2017b; EMCDDA 2017; Degenhardt & Hall 2010).

# INTERNATIONAL TRENDS

After cannabis, ATS remain the second most widely used drug worldwide, with the reported number of users increasing between 2014 and 2015. The combined weight of global ATS seizures continued to increase, totalling more than 190 tonnes in 2015. Methylamphetamine accounted for the majority of global ATS seizures in 2015. At 132 tonnes, global seizures of methylamphetamine increased by 21.0 per cent between 2014 and 2015. Global seizures of amphetamines increased by 8.0 per cent (reaching a total of 53 tonnes) between 2014 and 2015, while global seizures of ecstasy declined by 35.0 per cent, totalling 6 tonnes in 2015 (UNODC 2017).

In 2015, the majority of global methylamphetamine seizures continued to occur in the regions of East and South-East Asia, and North America. Of note, 2015 marked the first year where South-East Asia accounted for the highest proportion of the weight of global methylamphetamine seizures. China also recorded a significant increase in the weight of methylamphetamine seized, totalling 37 tonnes in 2015. The regions of the Near and Middle East and South-West Asia accounted for the greatest proportion of the weight of global amphetamine seizures (20.3 per cent), followed by Central America (12.7 per cent) and Western and Central Europe (6.5 per cent). Of the 6 tonnes of ecstasy seized in 2015, the majority (close to 4 tonnes) was seized in Europe; with the remainder seized in Asia, the Americas and Oceania (accounting for less than 1 tonne each) (UNODC 2017).

1 While the crystalline form of methylamphetamine is typically of higher purity, appearance alone is not a reliable indicator of purity. Purity levels may be influenced by a number of factors, including the adulterants used.

Europe continues to be a key source region for ATS production and trafficking, including for export to Australia. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) has reported that Belgium, the Netherlands and Poland are the predominant producers of amphetamine in Europe, while the Czech Republic and certain regions in neighbouring countries produce the bulk of Europe's methylamphetamine. Belgium and the Netherlands are also the principal source countries for MDMA production in Europe (EMCDDA 2017; UNODC 2017).

According to World Customs Organization (WCO) data, the total number of amphetamine seizures reported by WCO agencies increased by 114.4 per cent between 2015 and 2016. Amphetamine accounted for 9.7 per cent of the number of seizures within the 'psychotropic substances' subcategory. The number of MDMA seizures increased by 312.2 per cent between 2015 and 2016, while the weight seized remained relatively stable. The 2 863 MDMA seizures accounted for the greatest proportion (25.3 per cent) of the number of psychotropic substance seizures in 2016. After MDMA, methylamphetamine was the second most frequently seized psychotropic substance, accounting for 19.4 per cent of seizures in this subcategory. Of the 2 917 seizures of MDMA globally, North America accounted for the highest proportion (2 098 seizures, or 71.9 per cent), followed by Western Europe (498 seizures, or 17.1 per cent). North America also accounted for the greatest proportion of the number of methylamphetamine seizures (77.1 per cent), followed by the Asia-Pacific region (14.9 per cent) (WCO 2017).

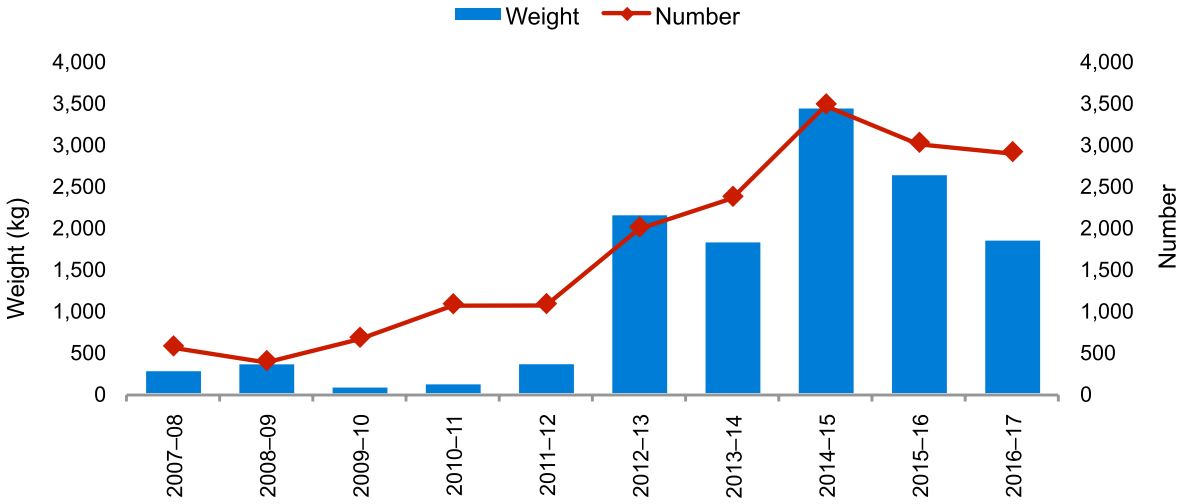
# DOMESTIC TRENDS

## AUSTRALIAN BORDER SITUATION

Large quantities of ATS, particularly methylamphetamine, continue to be detected at the Australian border. The number of ATS (excluding MDMA) detections decreased 3.7 per cent this reporting period, from 3 017 in 2015–16 to 2 905 in 2016–17. The weight detected decreased 30.0 per cent this reporting period, from 2 620.6 kilograms in 2015–16 to 1 833.9 kilograms in 2016–17 (see Figure 1). In 2016–17, 195 detections of ATS (excluding MDMA) weighed one kilogram or more. With a combined total weight of 1 707.6 kilograms, these 195 detections account for 6.7 per cent of the number of ATS (excluding MDMA) detections and 93.1 per cent of the weight of ATS (excluding MDMA) detected at the Australian border this reporting period.[2]

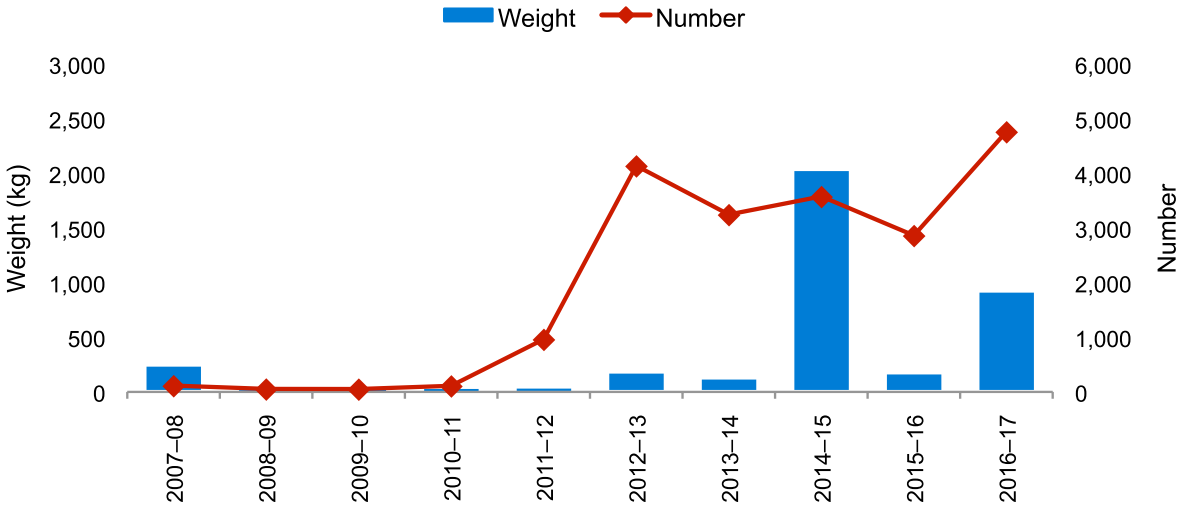
2 See Appendix 1 for significant border detections of ATS (excluding MDMA) in 2016–17.

FIGURE 1: Number and weight of ATS (excluding MDMA) detections at the Australian border 2007–08 to 2016–17 (Source: Department of Home Affairs)




The number of MDMA detections at the Australian border increased 66.3 per cent this reporting period, from 2 864 in 2015–16 to 4 763 in 2016–17. The weight of MDMA detected this reporting period increased 529.1 per cent, from 141.5 kilograms in 2015–16 to 890.2 kilograms in 2016–17 (see Figure 2). In 2016–17, 28 MDMA detections weighed one kilogram or more. With a combined total weight of 782.3 kilograms, these 28 detections account for 0.6 per cent of the number of MDMA detections and 87.9 per cent of the weight of MDMA detected at the Australian border this reporting period.[3]

FIGURE 2: Number and weight of MDMA detections at the Australian border 2007–08 to 2016–17 (Source: Department of Home Affairs)




3 See Appendix 1 for significant border detections of MDMA in 2016–17.

## IMPORTATION METHODS

In 2016–17, detections of ATS (excluding MDMA) occurred in the international mail, air and sea cargo and air passenger/crew streams. This reporting period the international mail stream accounted for 90.6 per cent of the number and 18.7 per cent of the weight of ATS (excluding MDMA) detected at the Australian border. The air cargo stream accounted for 8.1 per cent of the number and 23.4 per cent of the weight of the weight of ATS (excluding MDMA) detected in 2016–17, with the sea cargo stream accounting for 0.3 per cent of the number and 57.7 per cent of the weight. The air passenger/crew stream accounted for 0.9 per cent of the number and 0.2 per cent of the weight.[4]

In 2016–17, detections of MDMA occurred in the international mail, air cargo and air passenger/ crew streams. This reporting period the international mail stream accounted for 99.2 per cent of the number and 57.3 per cent of the weight of MDMA detected at the Australian border. The air cargo stream accounted for 0.6 per cent of the number and 42.4 per cent of the weight of MDMA detected in 2016–17, with the air passenger/crew stream accounting for 0.2 per cent of the number and 0.3 per cent of the weight.[5]

## EMBARKATION POINTS

In 2016–17, 52 countries were identified as embarkation points for ATS (excluding MDMA) detected at the Australian border, compared with 49 countries in 2015–16. By weight, the United States (US) was the primary embarkation point for ATS (excluding MDMA) detections in 2016–17. Other key embarkation points by weight this reporting period include China (including Hong Kong), South Africa, Malaysia, Canada, Taiwan, India, Cambodia and Vietnam.

In 2016–17, 28 countries were identified as embarkation points for MDMA detected at the Australian border, compared with 29 countries in 2015–16. By weight, Germany was the primary embarkation point for MDMA detected at the Australian border in 2016–17. Other key embarkation points by weight this reporting period include the Netherlands, the United Kingdom, France, Poland, Canada, the United Arab Emirates, Belgium, Ireland and the US.

## DRUG PROFILING

The Australian Federal Police (AFP) Forensic Drug Intelligence (FDI) team operates a forensic drug profiling capability through the National Measurement Institute (NMI), which enables the identification of the synthetic route of synthesis for samples of methylamphetamine and MDMA submitted from seizures made at the Australian border. The capability also allows for comparisons within and between seizures to identify distinct batches of drugs, the origin of drugs, or to demonstrate links between groups involved in illicit drug manufacture or trafficking. The following data relate to seizures investigated by the AFP between 2010 and June 2017 from which samples were submitted to the NMI for routine analysis and profiling.[6]

4 Figures for importation methods of ATS (excluding MDMA) detections in 2016–17 will be available on the Crime Statistics Australia website. See <http://crimestats.aic.gov.au/>.

5 Figures for importation methods of MDMA detections in 2016–17 will be available on the Crime Statistics Australia website. See <http://crimestats.aic.gov.au/>.

6 Profiling data relate to seizures investigated by the AFP between 2010 to June 2017, and from which samples were submitted to the National Measurement Institute for routine analysis and profiling. For all reporting years, the data represents a snapshot across the applicable reporting period. These figures cannot reflect seizures that have not been submitted for forensic examination due to prioritisation of law enforcement resources or those that have passed through the border undetected. Certain seizures/samples, such as those containing swabs or trace material, have been omitted from the analysis as they are not amenable to chemical profiling. It is difficult to extrapolate the impact of any observed border trends on drugs reaching consumers i.e. street level seizures in Australia. Samples from selected state and territory jurisdictions are submitted for chemical profiling as part of the Enhanced National Intelligence Picture on Illicit Drugs (ENIPID) project.

## METHYLAMPHETAMINE

Consistent with previous years, ephedrine/pseudoephedrine (Eph/PSE) remains the dominant precursor for methylamphetamine seized at the border (see Tables 1 and 2).

- In 2016, a total of 262.5 kilograms of methylamphetamine was seized during Operation BLEUE and found to be manufactured from Eph/PSE. This was the largest seizure in 2016.
- Op BLEUE relates to a highly sophisticated concealment methodology where approximately 86.0 kilograms of the methylamphetamine seized during the investigation was concealed within the flooring of three shipping containers declared as flat steel pallets. The shipping container originated from China, a large supplier of Australia's methylamphetamine.

In 2016 there were 192 seizures of methylamphetamine, representing a total weight of 2 356.5 kilograms.

- While an increase in the total weight of methylamphetamine was observed, a decrease in the number of seizures from 2015 was noted, highlighting that larger (and often more complex) seizures are being detected and subsequently examined by the AFP.
- Data for the first six months of 2017 suggests a further increase in the total weight of methylamphetamine seized compared to 2016.

During the first six months of 2017, there were 62 seizures of methylamphetamine, totalling over 1.7 tonnes.

- Analysis of seizure data to date shows a continuation of the use of Eph/PSE as a precursor in the manufacture of methylamphetamine destined for the Australian market.
- Interestingly, over 80.0 per cent of the total weight of methylamphetamine analysed in the first six months of 2017 consisted of 'mixed' seizures, containing methylamphetamine manufactured using the Eph/PSE and phenyl-2-propanone (P2P) methods.

**TABLE 1: Synthetic route of manufacture of methylamphetamine samples as a proportion of analysed AFP border seizures classified by precursor, 2010–June 2017[7] (Source: Australian Federal Police, Forensic Drug Intelligence)**

| | Synthetic Route | | |
|---|---|---|---|
| Year | Eph/PSE % | P2P % | Mixed/Unclassified % |
| Jan–Jun 2017 | 53.3 | 33.4 | 13.3 |
| 2016 | 81.9 | 7.0 | 11.1 |
| 2015 | 77.0 | 18.6 | 4.4 |
| 2014 | 77.9 | 13.8 | 8.3 |
| 2013 | 66.9 | 23.2 | 9.9 |
| 2012 | 71.8 | 19.1 | 9.1 |
| 2011 | 56.8 | 13.6 | 29.6 |
| 2010 | 80.4 | 5.9 | 13.7 |

7 This data may also include seizures destined for Australia which occurred offshore.

**TABLE 2: Synthetic route of manufacture of methylamphetamine samples as a proportion of total bulk weight of analysed AFP border seizures classified by precursor, 2010–June 2017[8] (Source: Australian Federal Police, Forensic Drug Intelligence)**

| | Synthetic Route | | |
|---|---|---|---|
| Year | Eph/PSE % | P2P % | Mixed/Unclassified % |
| Jan–Jun 2017 | 13.5 | 1.4 | 85.1 |
| 2016 | 63.4 | 1.7 | 34.9 |
| 2015 | 65.7 | 29.4 | 4.9 |
| 2014 | 48.0 | 5.5 | 46.5 |
| 2013 | 76.4 | 14.7 | 8.9 |
| 2012 | 72.2 | 27.8 | – |
| 2011 | 35.6 | 62.8 | 1.6 |
| 2010 | 48.5 | 1.8 | 49.7 |

The Enhanced National Intelligence Picture on Illicit Drugs (ENIPID) project extends this profiling to include state and territory seizures involving heroin, methylamphetamine, MDMA and cocaine. This enables detection of similarities between supply routes into different jurisdictions, links between different criminal groups, as well as comparison of trends between jurisdictions. The Proceeds of Crime Act (POCA) funded ENIPID project officially concluded on 30 June 2016. Since then, the ENIPID capability has been integrated into core AFP Forensic Drug Intelligence (FDI) duties to ensure its continued delivery through AFP Forensics.

- Western Australia Police Force, New South Wales Police Force and Victoria Police are the largest contributors to ENIPID. Combined, they accounted for 79.0 per cent of all samples submitted in 2016.
- As expected, and mirroring the border data, methylamphetamine manufactured from Eph/PSE continued to account for the greatest proportion of analysed ENIPID cases and samples in 2016. Data from the first six months of 2017 indicates a continuation of this trend (see Tables 1 and 2 in Appendix 2).

## MDMA

Similar to previous years, a large number of MDMA samples were produced using reductive amination via platinum hydrogenation. In 2016, a large number of samples were produced by reductive amination, however they were unable to be classified further. This may indicate a possible deviation from known methods or likely multiple drug bulks produced using different reductive amination methods mixed together to form a larger bulk (see Table 3).

8 This data may also include seizures destined for Australia which occurred offshore.

### TABLE 3: Synthetic route of manufacture of MDMA samples as a proportion of analysed AFP border seizures, 2010–2016[9] (Source: Australian Federal Police, Forensic Drug Intelligence)

| | | Reductive Amination | | | | |
|---|---|---|---|---|---|---|
| Year | Unclassified % | Borohydride % | Platinum Hydrogenation % | Palladium Hydrogenation % | Aluminium Amalgam % | Mixed/ Unclassified % |
| 2016 | 44.9 | 8.6 | 37.9 | – | – | 8.6 |
| 2015 | – | 2.1 | 83.0 | – | – | 14.9 |
| 2014 | 2.3 | 9.3 | 79.1 | 2.3 | – | 7.0 |
| 2013 | 7.8 | 14.1 | 71.9 | – | – | 6.2 |
| 2012 | 14.0 | 8.0 | 70.0 | – | – | 8.0 |
| 2011 | – | 58.3 | 16.7 | – | 8.3 | 16.6 |
| 2010 | – | 66.7 | 22.2 | – | – | 11.1 |

The total weight of MDMA seized is often heavily influenced by the detection of one or more large seizures, which consequently also influences the proportion attributed to specific synthetic routes of manufacture (see Table 4).

- In 2016, the majority of bulk weight was attributed to two large seizures (493.3 kilograms and 241.5 kilograms) originating from the Czech Republic.
- These two seizures were classified as reductive amination via platinum hydrogenation, which as a result has heavily influenced the overall proportions for 2016.
- This was similarly observed in 2014, where the bulk weight and resulting synthetic manufacture route were attributed to a single large seizure (1 918.4 kilograms).

### TABLE 4: Synthetic route of manufacture of MDMA samples as a proportion of total bulk weight of analysed AFP border seizures, 2010–2016[10] (Source: Australian Federal Police, Forensic Drug Intelligence)

| | | Reductive Amination | | | | |
|---|---|---|---|---|---|---|
| Year | Unclassified % | Borohydride % | Platinum Hydrogenation % | Palladium Hydrogenation % | Aluminium Amalgam % | Mixed/ Unclassified % |
| 2016 | 0.7 | <0.1 | 98.3 | – | – | 1.0 |
| 2015 | – | 0.01 | 64.9 | – | – | 35.1 |
| 2014 | <0.1 | 1.3 | 98.0 | <0.1 | – | <0.1 |
| 2013 | 94.7 | 3.3 | 1.7 | – | – | 0.3 |
| 2012 | 0.9 | 96.7 | 2.4 | – | – | – |
| 2011 | – | 70.6 | 26.6 | – | 2.0 | 0.8 |
| 2010 | – | 99.9 | 0.1 | – | – | <0.1 |

9 This data may also include seizures destined for Australia which occurred offshore. Please note from November 2016, MDMA is no longer routinely chemically profiled due to changes in the Memorandum of Understanding (MoU) for the provision of illicit drug analysis between the NMI and AFP.
10 This data may also include seizures destined for Australia which occurred offshore.

In 2016, the Leuckart synthetic route of manufacture re-emerged and is the first time it is has been identified in MDMA ENIPID samples. This method is more commonly noted in methylamphetamine manufacture and was previously last recorded in AFP border samples in 2005 (see Tables 3 and 4 in Appendix 2).

- Previous reporting periods show the dominance of the reductive amination via platinum hydrogenation method.
- ENIPID sample data for 2016 period mirrors that of the Australian border, showing a decrease in the reductive amination via platinum hydrogenation method noting a larger proportion of samples manufactured using the reductive amination (unclassified) route.
- The data indicates reductive amination (unclassified) is the most commonly noted manufacture method in ENIPID samples in all states and territories except for the Northern Territory. This is a shift from the last reporting period where reductive amination via platinum hydrogenation was the most commonly encountered method in all states and territories.

# DOMESTIC MARKET INDICATORS

The number of clandestine laboratories detected nationally decreased 19.5 per cent this reporting period, from 575 in 2015–16 to 463 in 2016–17. Of the 463 clandestine laboratories detected in 2016–17, the majority were producing ATS (excluding MDMA). The number of laboratories detected this reporting period manufacturing MDMA more than halved, decreasing from 17 in 2015–16 to 8 in 2016–17 (see *Clandestine laboratories and precursors* chapter).

According to the 2016 National Drug Strategy Household Survey (NDSHS), 6.3 per cent of the Australian population aged 14 years or older reported using meth/amphetamine at least once in their lifetime, a decrease from the 7.0 per cent reported in 2013. In the same survey, 1.4 per cent reported recent[11] meth/amphetamine use, a decrease from 2.1 per cent in 2013.

- Despite the reported decrease in use, the reported frequency of use has increased. For those reporting recent meth/amphetamine use, the proportion reporting use once a week or more increased, from 15.5 per cent in 2013 to 20.4 per cent in 2016.
- The proportion of those reporting crystal/ice as the main form used increased, from 25.3 per cent in 2013 to 31.9 per cent in 2016.
- In relation to the form of the drug used, crystal/ice remained the main form reportedly used in the last 12 months, increasing from 50.4 per cent in 2013 to 57.3 per cent in 2016, with the proportion reporting powder/speed as the main form used continuing to decrease, from 28.5 per cent in 2013 to 20.2 per cent in 2016 (AIHW 2017).

In a 2016 national study of regular injecting drug users, the proportion of respondents reporting the recent[12] use of any form of methylamphetamine increased, from 72.0 per cent in 2015 to 75.0 per cent in 2016. This decreased to 71.0 per cent in 2017. Within this regular drug injecting user population, the reported median days of methylamphetamine use in the six months preceding interview increased from 24 days in 2015 to 36.5 days in 2016. This further increased to 38.0 days in 2017.[13]

11 In the NDSHS, recent use refers to reported use in the 12 months preceding interview.
12 In both the Illicit Drug Reporting System (IDRS) and the Ecstasy and Related Drugs Reporting System (EDRS), recent use refers to reported use in the six months preceding interview.
13 A figure for this data will be available on the Crime Statistics Australia website. See <http://crimestats.aic.gov.au/>.

- Within this user population, the proportion of respondents reporting the recent use of crystal methylamphetamine increased, from 67.0 per cent in 2015 to 73.0 per cent in 2016. While this decreased to 68.0 per cent in 2017, crystal methylamphetamine remains the predominant form used within this user population.
- The proportion of respondents reporting the recent use of speed decreased, from 25.0 per cent in 2015 to 20.0 per cent in 2016. This remained unchanged in 2017.
- The proportion of respondents reporting the recent use of methylamphetamine base decreased, from 10.0 per cent in 2015 to 8.0 per cent in 2016. In 2017 this increased to 10.0 per cent.
- In the same 2016 study, the proportion of respondents reporting methylamphetamine as their drug of choice increased, from 25.0 per cent in 2015 to 29.0 per cent in 2016. In 2017 this further increased to 32.0 per cent (Karlsson & Burns 2018; Stafford & Breen 2017a).

According to the Australian Needle and Syringe Program Survey (ANSPS), the prevalence of respondents reporting methylamphetamine as the drug last injected increased, from 36.0 per cent in 2015 to 43.0 per cent in 2016. In 2016, methylamphetamine again exceeded heroin (28.0 per cent), as the most commonly reported drug last injected nationally (Memedovic et al. 2017).

In a 2016 national study of regular ecstasy users, the proportion of respondents reporting the recent use of any form of methylamphetamine remained stable at 38.0 per cent. In 2017, this decreased to 31.0 per cent. Within this regular ecstasy user population, the reported median days of methylamphetamine use in the six months preceding interview increased, from 3 days in 2015 to 4 days in 2016. This decreased to 3 days in 2017.[14]

- Speed remained the most common form of methylamphetamine used within this user population, with the proportion of respondents reporting the recent use of speed remaining stable at 25.0 per cent in 2016. This decreased to 22.0 per cent in 2017.
- While the proportion of respondents reporting the recent use of crystal methylamphetamine remained stable at 19.0 per cent in 2016, it decreased to 13.0 per cent in 2017.
- The proportion of respondents reporting the recent use of base increased from 3.0 per cent in 2015 to 4.0 per cent in 2016, decreasing to 3.0 per cent in 2017 (Uporova et al. 2018; Stafford & Breen 2017b).

According to the 2016 NDSHS, 11.2 per cent of the Australian population aged 14 years or older reported using ecstasy at least once in their lifetime, an increase from the 10.9 per cent reported in 2013. In the same survey, 2.2 per cent reported recent ecstasy use, a decrease from the 2.5 per cent reported in 2013 (AIHW 2017).

14 A figure for this data will be available on the Crime Statistics Australia website. See <http://crimestats.aic.gov.au/>.

In a 2016 national study of regular ecstasy users, the reported median days of any ecstasy use[15] in the six months preceding interview increased, from 12 days in 2015 to 13 days in 2016. This further increased to 14 days in 2017.

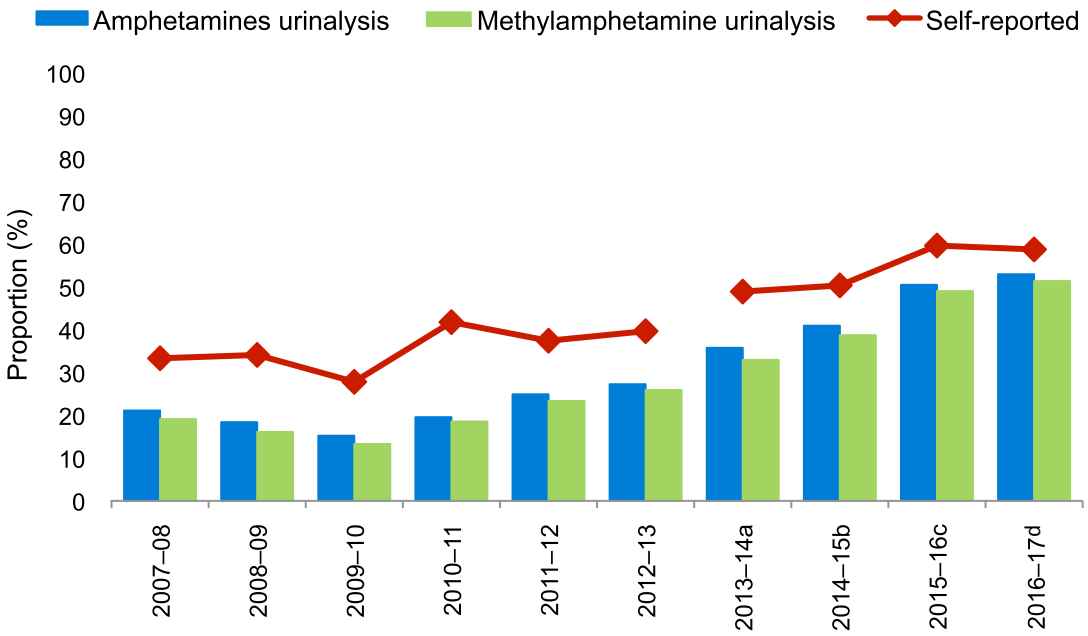
- Within this user population, the proportion of respondents reporting the recent use of tablets decreased, from 85.0 per cent in 2015 to 82.0 per cent in 2016. In 2017 this further decreased to 78.0 per cent.
- The proportion of respondents reporting the recent use of crystals increased, from 52.0 per cent in 2015 to 57.0 per cent in 2016. In 2017 this further increased to 67.0 per cent.
- The proportion of respondents reporting the recent use of capsules remained stable at 60.0 per cent in 2016, increasing to 71.0 per cent in 2017.
- The proportion of respondents reporting the recent use of powder decreased, from 22.0 per cent in 2015 to 21.0 per cent in 2016, before increasing to 30.0 per cent in 2017.
- Within this user population, the proportion reporting ecstasy as their drug of choice increased from 30.0 per cent in 2015 to 36.0 per cent in 2016 and has remained stable in 2017 (Uporova et al. 2018; Stafford & Breen 2017b).

The Drug Use Monitoring in Australia (DUMA) program, which examines drug use and offending patterns among police detainees, comprises an interviewer-assisted self-report survey and the voluntary provision of a urine sample which is subjected to urinalysis to detect licit and illicit drug use.[16] Consistent with previously observed trends, the proportion of detainees testing positive[17] via urinanalysis for amphetamines[18] increased, from 50.5 per cent in 2015–16 to 52.9 per cent in 2016–17 (see Figure 3), the highest percentage reported in the last decade. This increase continues to be the result of an increase in the proportion of detainees testing positive to methylamphetamine.

- Of the detainees testing positive for any amphetamines (52.9 per cent), the majority tested positive for methylamphetamine (51.4 per cent).
- The proportion of detainees testing positive for methylamphetamine continues to be higher than the proportion of testing positive for MDMA, heroin, cocaine, benzodiazepines and opiates (excluding heroin).
- For the second consecutive reporting period, the proportion of detainees testing positive for methylamphetamine in 2016–17 was higher than the proportion of detainees testing positive for cannabis (46.7 per cent). This continues a trend of increasing proportions of detainees testing positive for methylamphetamine in the past decade, while detainees testing positive to cannabis has remained relatively stable during the same period.
- In 2016–17, 58.7 per cent of detainees self-reported recent[19] methylamphetamine use, a decrease from the 59.7 per cent reported in 2015–16.

15 Includes ecstasy pills, powder, capsules and crystal.
16 Detainees can participate in the survey without providing a urine sample. Cases with missing data are excluded from the relevant analysis.
17 Amphetamines and their metabolites can be detected in urine up to 2 to 4 days after administration.
18 Amphetamines in the DUMA program include results for methylamphetamine, MDMA and other amphetamines.
19 Recent use in the DUMA program refers to self-reported use in the 12 months prior to arrest.

**FIGURE 3: National proportion of detainees testing positive for amphetamines/ methylamphetamine compared with self-reported recent use, 2007–08 to 2016–17[20] (Source: Australian Institute of Criminology)**



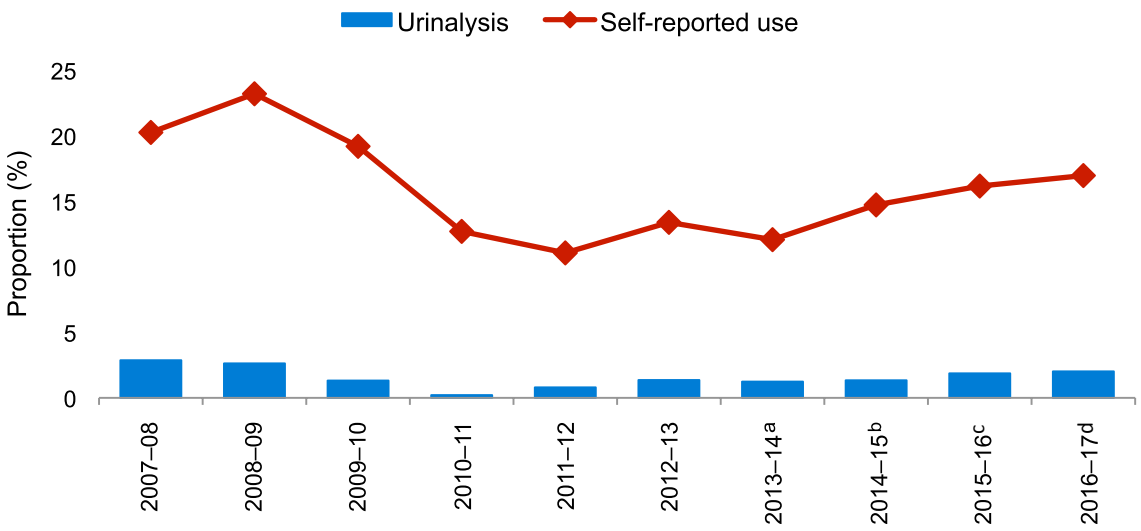

a. Urine was collected in the third and fourth quarter of 2013 and the first quarter of 2014.
b. Urine was collected in the third quarter of 2014 and the first and second quarter of 2015.
c. Urine was collected in the third quarter of 2015 and the first and second quarter of 2016.
d. Urine was collected in the third quarter of 2016 and the second quarter of 2017.

The proportion of detainees testing positive to MDMA via urinalysis increased, from 1.9 per cent in 2015–16 to 2.0 per cent in 2016–17 (see Figure 4).

- While the proportion of detainees testing positive to MDMA has remained low (under 2.9 per cent) for the past decade, self-reported recent MDMA use increased from 16.2 per cent in 2015–16 to 16.9 per cent in 2016–17.
- This continues the trend of increasing proportions of detainees self-reporting recent MDMA use since 2013–14.

20 From 2013–14, the self-report question changed from including 'amphetamine/speed/methylamphetamine' to 'methylamphetamine/speed/ice'.

**FIGURE 4: National proportion of detainees testing positive for MDMA compared with self-reported recent use, 2007–08 to 2016–17 (Source: Australian Institute of Criminology)**




a. Urine was collected in the third and fourth quarter of 2013 and the first quarter of 2014.
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c. Urine was collected in the third quarter of 2015 and the first and second quarter of 2016.
d. Urine was collected in the third quarter of 2016 and the second quarter of 2017.

Wastewater analysis has become the standard for measuring population-scale consumption of a range of different chemical compounds. The underlying concepts involved in wastewater analysis are well established in Australia and have been applied to a wide range of licit and illicit drugs. Estimates of drug consumption in a population can be back-calculated from measured concentrations of drug metabolites (excreted into the sewer system after consumption) in wastewater samples. In Australia, the National Wastewater Drug Monitoring Program (NWDMP) monitors drug consumption through wastewater analysis. The NWDMP began collecting wastewater samples for analysis in August 2016, at bi-monthly intervals in capital city sites and every four months in regional sites.

- During this period, methylamphetamine was consistently identified as the most consumed illicit drug of the substances tested, in both regional and capital city sites.
- Of the substances tested by the program, MDMA is one of the least consumed drugs. The NWDMP did not record noticeable differences in average MDMA consumption between capital city sites and regional sites. With the exception of South Australia, consumption of MDMA declined during the reporting period.[21]

## PRICE

Western Australia and Tasmania were the only states to provide a price for a street deal (0.1 grams) of amphetamine in 2016–17, which ranged between $50 and $500, compared with a price range of between $40 and $70 reported by Victoria in 2015–16. Only Tasmania and the Australian Capital Territory reported a price for a gram of amphetamine this reporting period, which ranged between $200 and $300, compared with a national price range between $150 and $800 in 2015–16. No price data was available for 1 kilogram of amphetamine in 2016–17.

21 The NWDMP tests for 14 substances including nicotine, alcohol, methylamphetamine, amphetamine, cocaine, MDMA, MDA, JWH-018, JWH-073, mephedrone, methylone, oxycodone, fentanyl and heroin. The public NWDMP reports are available on the ACIC website. See <https://www.acic.gov.au/publications/intelligence-products/national-wastewater-drug-monitoring-program-report>.

Queensland was the only state to report a price for a street deal (0.1 grams) of non-crystal methylamphetamine in 2016–17, which ranged between $50 and $100, compared with a price range between $30 and $150 in 2015–16. Queensland was also the only state to report a price for a gram of non-crystal methylamphetamine this reporting period, which ranged between $300 and $1 000, compared with a price range between $170 and $500 in 2015–16. No price data was available for 1 kilogram of non-crystal methylamphetamine in 2016–17.

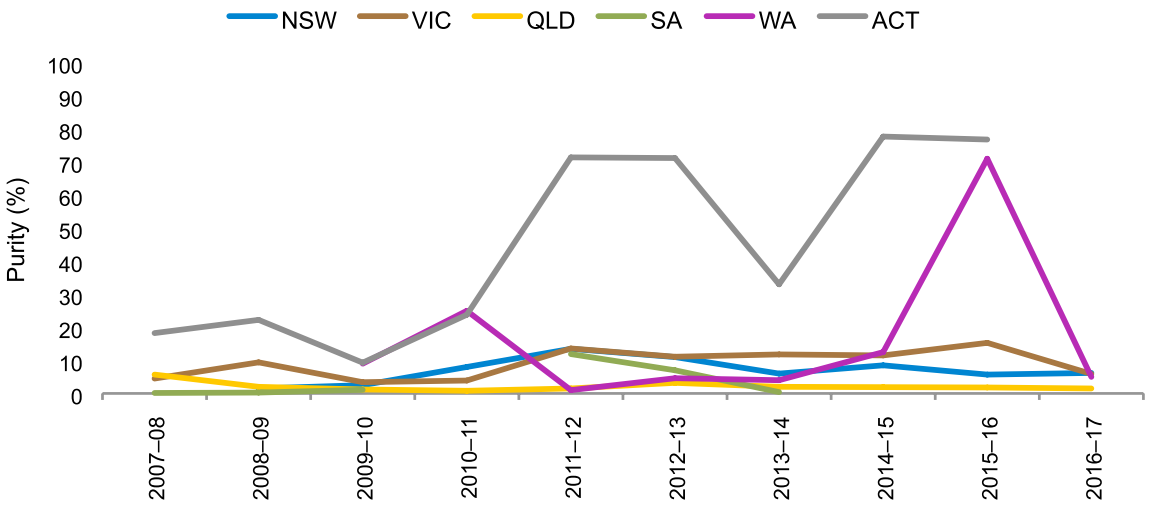
Nationally, the price for a street deal (0.1 grams) of crystal methylamphetamine ranged between $17 and $150 in 2016–17, compared with a price range between $20 and $200 in 2015–16. Nationally, the price for 1 gram of crystal methylamphetamine ranged between $250 and $1 000 this reporting period, compared with a price range between $150 and $1 200 in 2015–16. Nationally, the price for 1 kilogram of crystal methylamphetamine ranged between $50 000 and $280 000 in 2016–17, compared with a price range between $75 000 and $280 000 in 2015–16.

Nationally, the price for a single MDMA tablet/capsule ranged between $4 and $50 in 2016–17, compared with a price range between $20 and $50 in 2015–16. Nationally, the price for 1 kilogram of MDMA remained relatively stable this reporting period, ranging between $30 000 and $60 000 in 2016–17.

## PURITY

Since 2007–08, the annual median purity of analysed amphetamine[22] samples has ranged between 0.1 per cent and 77.7 per cent (see Figure 5). In 2016–17, the annual median purity ranged from 1.5 per cent in Queensland to 6.2 per cent in New South Wales. This reporting period New South Wales reported an increase in the annual median purity of amphetamine, while a decrease was reported in Victoria, Queensland and Western Australia. This reporting period the quarterly median purity of amphetamine ranged between 1.3 per cent in the first quarter of 2017 and 25.7 per cent in the second quarter of 2017, both reported in Queensland.

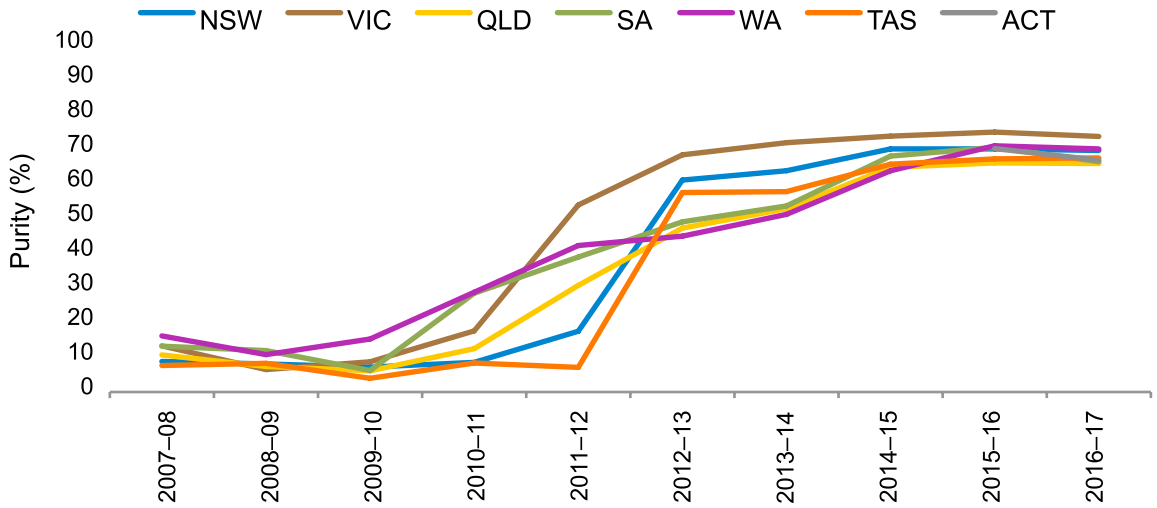
**FIGURE 5: Annual median purity of amphetamine samples, 2007–08 to 2016–17**




22 Amphetamine is a manufacturing by-product of some commonly used methods of methylamphetamine production. This can result in two separate purity figures for a single drug sample—one as methylamphetamine with considerable purity and another of amphetamine with low purity.

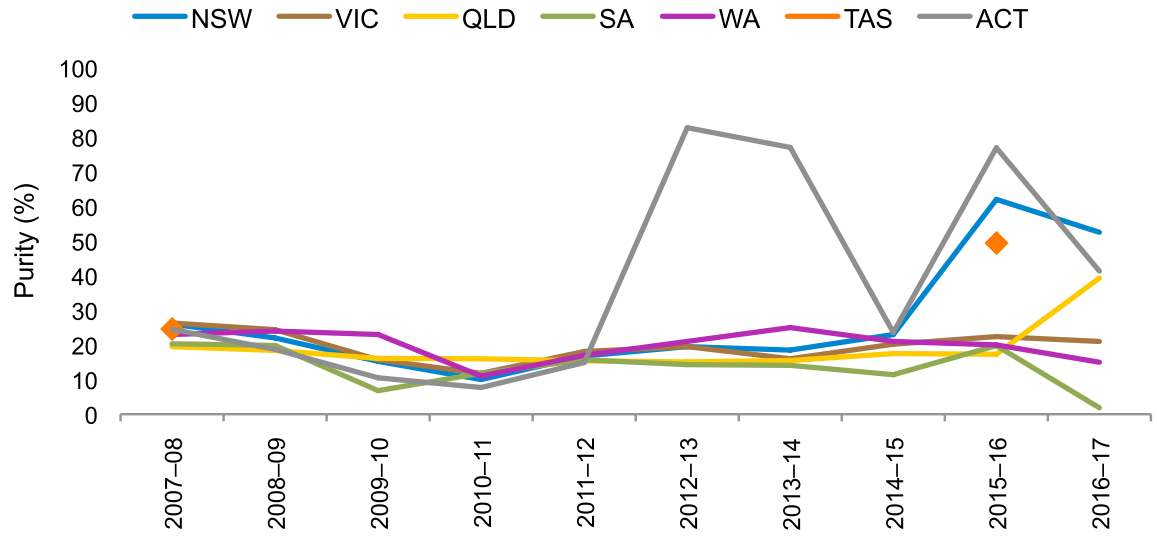
Since 2007–08, the annual median purity of analysed methylamphetamine samples has ranged between 4.4 per cent and 83.4 per cent (see Figure 6). In 2016–17, with the exception of Tasmania which reported an increase, all states and the Australian Capital Territory reported a decrease in the median purity of methylamphetamine. This reporting period the annual median purity ranged between 73.3 per cent in Queensland and 82.0 per cent in Victoria. This reporting period the quarterly median purity of methylamphetamine ranged between 53.5 per cent in the Australian Capital Territory in the first quarter of 2017 and 82.5 per cent in Victoria in the first quarter of 2017.

**FIGURE 6: Annual median purity of methylamphetamine samples, 2007–08 to 2016–17**




Since 2007–08, the annual median purity of analysed phenethylamine[23] samples has ranged between 1.8 per cent and 82.7 per cent (see Figure 7). In 2016–17, the annual median purity of phenethylamines ranged from 1.8 per cent to 52.5 per cent. Queensland reported an increase in the annual median purity of phenethylamines, while New South Wales, Victoria, South Australia, Western Australia and the Australian Capital Territory reported a decrease this reporting period. This reporting period the quarterly median purity of phenethylamines ranged between 0.4 per cent in South Australia in the third quarter of 2016 and 76.3 per cent in the Australian Capital Territory in the second quarter of 2017.

**FIGURE 7: Annual median purity of phenethylamine samples, 2007–08 to 2016–17**




23 Phenethylamines are synthetic drugs similar in chemical composition to amphetamines. The most widely known phenethylamine is MDMA.

## AVAILABILITY

In a 2016 national study of regular injecting drug users, the proportion of respondents reporting crystal methylamphetamine as easy or very easy to obtain increased, from 95.0 per cent in 2015 to 96.0 per cent per cent in 2016. This decreased to 95.0 per cent in 2017. The proportion of respondents reporting speed as easy or very easy to obtain decreased, from 77.0 per cent in 2015 to 75.0 per cent in 2016. This further decreased to 72.0 per cent in 2017. The proportion of respondents reporting base as easy or very easy to obtain increased, from 62.0 per cent in 2015 to 68.0 per cent in 2016. This figure remained unchanged in 2017 (Karlsson & Burns 2018; Stafford & Breen 2017a).

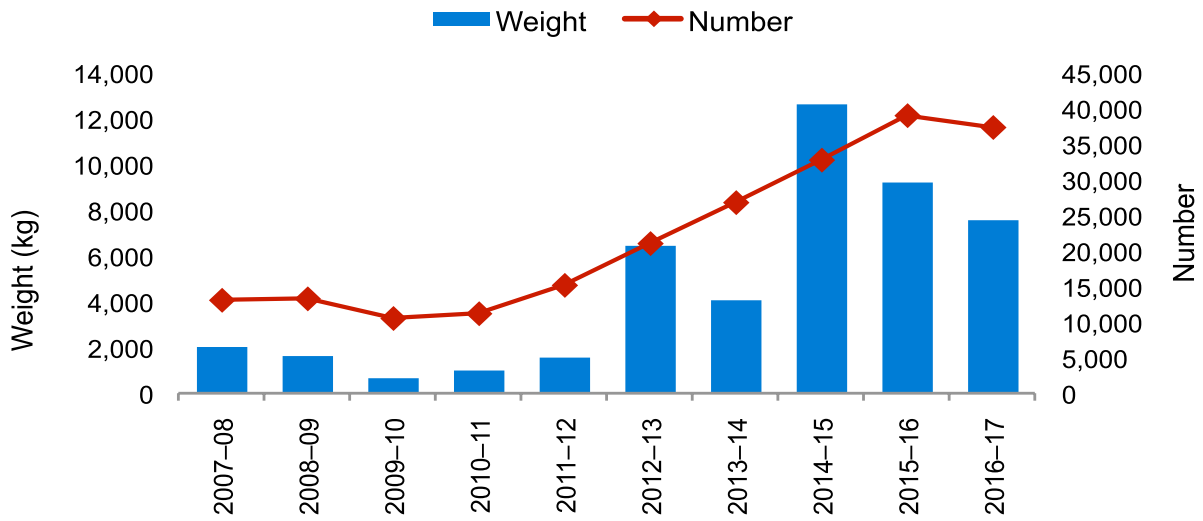
In a 2016 national study of regular ecstasy users, the proportion of respondents reporting crystal methylamphetamine as easy or very easy to obtain decreased, from 97.0 per cent in 2015 to 92.0 per cent in 2016. This further decreased to 90.0 per cent in 2017. The proportion of respondents reporting speed as easy or very easy to obtain increased, from 59.0 per cent in 2015 to 60.0 per cent in 2016. This further increased to 65.0 per cent in 2017. The proportion of respondents reporting base as easy or very easy to obtain also increased, from 53.0 per cent in 2015 to 64.0 per cent in 2016. This further increased to 74.0 per cent in 2017 (Uporova et al. 2018; Stafford & Breen 2017b).

In the same 2016 study, the proportion of respondents reporting ecstasy tablets, powder and capsules as easy or very easy to obtain were 93.0 per cent, 97.0 per cent and 93.0 per cent respectively. In 2017, these proportions decreased to 88.0 per cent, 70.0 per cent and 86.0 per cent respectively (Uporova et al. 2018; Stafford & Breen 2017b).

## SEIZURES AND ARRESTS

The number of national ATS seizures decreased 4.3 per cent this reporting period, from 39 014 in 2015–16 to 37 351 in 2016–17. The weight of ATS seized nationally decreased 17.9 per cent this reporting period, from 9 218.2 kilograms to 7 571.9 kilograms, the third highest weight on record (see Figure 8).

**FIGURE 8: National ATS seizures, by number and weight, 2007–08 to 2016–17**



The Australian Capital Territory reported the greatest percentage increase in the number and weight of ATS seized this reporting period. New South Wales accounted for the greatest proportion of the number (36.9 per cent) and weight (63.1 per cent) of national ATS seizures in 2016–17 (see Table 5).

**TABLE 5: Number, weight and percentage change of national ATS seizures, 2015–16 to 2016–17**

| | Number | | | Weight (grams) | | |
|---|---|---|---|---|---|---|
| State/Territory[a] | 2015–16 | 2016–17 | % change | 2015–16 | 2016–17 | % change |
| New South Wales | 13 749 | 13 787 | 0.3 | 3 487 494 | 4 780 255 | 37.1 |
| Victoria | 3 438 | 2 355 | -31.5 | 4 896 036 | 2 388 794 | -51.2 |
| Queensland | 8 294 | 8 421 | 1.5 | 147 601 | 229 486 | 55.5 |
| South Australia | 1 166 | 1 143 | -2.0 | 82 216 | 39 785 | -51.6 |
| Western Australia | 10 640 | 9 872 | -7.2 | 566 726 | 118 906 | -79.0 |
| Tasmania | 679 | 650 | -4.3 | 4 809 | 4 875 | 1.4 |
| Northern Territory | 507 | 543 | 7.1 | 30 831 | 5 231 | -83.0 |
| Australian Capital Territory | 541 | 580 | 7.2 | 2 580 | 4 657 | 80.5 |
| **Total** | **39 014** | **37 351** | **-4.3** | **9 218 293** | **7 571 989** | **-17.9** |

a. Includes seizures by state and territory police and Australian Federal Police for which a valid seizure weight was recorded.

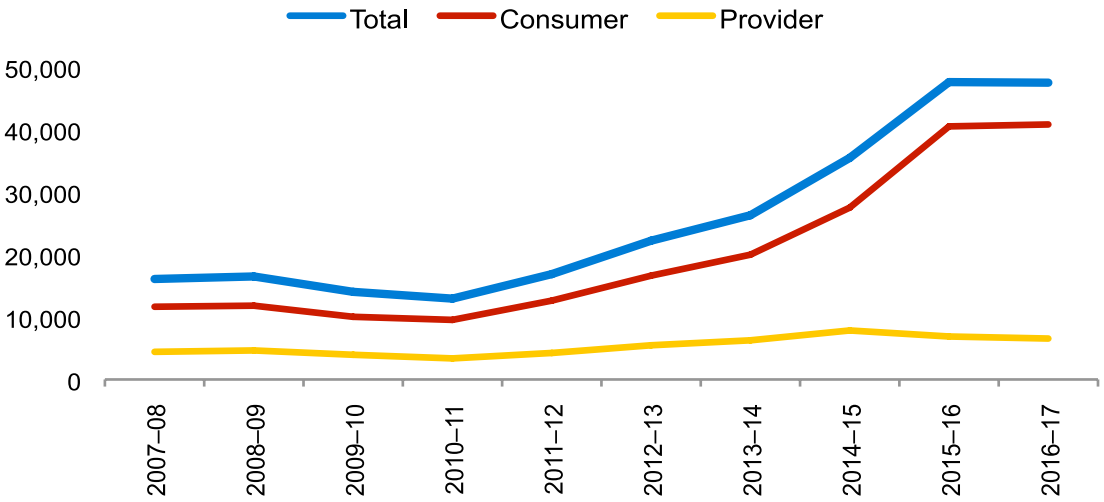
Amphetamines[24] accounted for 81.7 per cent of the number of national ATS seizures in 2016–17, followed by MDMA (17.5 per cent) and other ATS (0.8 per cent). The number of national amphetamines seizures decreased 6.8 per cent this reporting period, from 32 723 in 2015–16 to 30 513 in 2016–17. The number of national MDMA seizures increased 9.8 per cent this reporting period, from 5 967 in 2015–16 to 6 550 in 2016–17, with the number of other ATS seizures decreasing 11.1 per cent this reporting period, from 324 in 2015–16 to 288 in 2016–17. ATS seizures in crystalline form accounted for 66.2 per cent of the number of national seizures in 2016–17, followed by other (16.2 per cent), powder (10.8 per cent) and tablet (6.8 per cent).[25]

Amphetamines accounted for 50.5 per cent of the weight of ATS seized nationally in 2016–17, followed by other ATS (30.7 per cent) and MDMA (18.8 per cent). The weight of amphetamines seized decreased 15.2 percent this reporting period, from 4 505.4 kilograms in 2015–16 to 3 821.0 kilograms in 2016–17. The weight of MDMA seized decreased 67.2 per cent this reporting period, from 4 352.7 kilograms to 1 426.7 kilograms, while the weight of other ATS seized increased 545.4 per cent, from 360.1 kilograms in 2015–16 to 2 324.1 kilograms in 2016–17. ATS seizures in crystalline form also accounted for the greatest proportion of the weight of ATS seized nationally in 2016–17 (70.0 per cent), followed by powder (22.4 per cent), other (6.5 per cent) and tablet (1.1 per cent).[26]

The number of national ATS arrests decreased 0.2 per cent this reporting period, from 47 625 in 2015–16 to 47 531 in 2016–17. Consumer arrests continue to account for the greatest proportion of arrests, comprising 85.9 per cent of national ATS arrests in 2016–17 (see Figure 9). All states and territories reported more ATS provider arrests than consumer arrests in 2016–17.

24 Amphetamines include amphetamine, methylamphetamine, dexamphetamine and amphetamines not elsewhere classified.
25 A figure for this data will be available on the Crime Statistics Australia website. See <http://crimestats.aic.gov.au/>.
26 A figure for this data will be available on the Crime Statistics Australia website. See <http://crimestats.aic.gov.au/>.

FIGURE 9: Number of national ATS arrests, 2007–08 to 2016–17




The Australian Capital Territory reported the greatest percentage increase in the number of ATS arrests in 2016–17. Queensland accounted for the greatest proportion of national ATS arrests this reporting period (25.3 per cent), followed by Victoria (22.8 per cent) and New South Wales (20.3 per cent). Combined, these three states account for 68.3 per cent of national ATS arrests in 2016–17 (see Table 6). Amphetamines continue to account for the greatest proportion of national ATS arrests, accounting for 86.2 per cent in 2016–17, followed by MDMA (13.5 per cent) and other ATS (0.3 per cent).

TABLE 6: Number and percentage change of national ATS arrests, 2015–16 to 2016–17

| | Arrests | | |
|---|---|---|---|
| State/Territory[a] | 2015–16 | 2016–17 | % change |
| New South Wales | 9 605 | 9,636 | 0.3 |
| Victoria | 10 895 | 10,817 | -0.7 |
| Queensland | 12 507 | 12,023 | -3.9 |
| South Australia | 5 979 | 6,146 | 2.8 |
| Western Australia | 7 516 | 7,882 | 4.9 |
| Tasmania | 530 | 510 | -3.8 |
| Northern Territory | 445 | 281 | -36.9 |
| Australian Capital Territory | 148 | 236 | 59.5 |
| **Total** | **47 625** | **47,531** | **-0.2** |

a. The arrest data for each state and territory include Australian Federal Police data.

# NATIONAL IMPACT

International data indicate that following cannabis, ATS are the second most consumed drugs worldwide. In 2015, methylamphetamine accounted for around two-thirds of the weight of ATS seized globally, with the trafficking of methylamphetamine worldwide expanding to previously unconnected routes.

Indicators of ATS (excluding MDMA) demand—including surveys of drug users, police detainees and wastewater analysis—provide a mixed picture for ATS use in Australia.

- According to the 2016 NDSHS, the reported recent use of meth/amphetamine and use in lifetime decreased, however, the frequency of reported use increased, with the crystal form of the drug remaining the most commonly used.
- According to a national study of police detainees, the proportion of detainees testing positive to methylamphetamine increased to a record high in 2016–17.
- The NWDMP identified that of the drugs tested, methylamphetamine was the most consumed illicit drug in both regional and city sites. While consumption has fluctuated over the reporting period, demand for methylamphetamine remains resilient.

Indicators of ATS (excluding MDMA) supply include border detection, seizure, arrest, purity and clandestine laboratory data.

- In 2016–17, both the number and weight of ATS (excluding MDMA) detected at the Australian border decreased for the second consecutive reporting period.
- A decrease in both the number and weight of national amphetamines seizures was also recorded this reporting period, with the number of national amphetamines arrests also decreasing.
- The median purity of analysed methylamphetamine samples remained relatively stable this reporting period.
- Drug profiling data indicated the continued prominence of methylamphetamine manufactured from Eph/PSE.
- Although the number of clandestine laboratories detected nationally decreased in 2016–17, the majority continue to produce ATS (excluding MDMA), with the related proportion increasing this reporting period.

Indicators of MDMA demand—including surveys of drug users, police detainees and wastewater analysis—also provide a mixed picture for MDMA use in Australia.

- According to the 2016 NDSHS, the reported use of ecstasy in lifetime increased, while reported recent use decreased.
- According to a national survey of police detainees, while figures remain low and relatively stable, both the self-reported use and proportion of detainees testing positive to MDMA increased in 2016–17.
- The NWDMP identified that with the exception of new psychoactive substances, MDMA was consistently the lowest consumed drug of those tested nationally.

Indicators of MDMA supply include border detection, seizure, arrest, purity and clandestine laboratory data.

- In 2016–17, both the number and weight of MDMA detected at the Australian border increased.
- While the weight of MDMA seized nationally decreased this reporting period, both the number of national MDMA seizures and arrests increased to record highs in 2016–17.
- The median purity of analysed phenethylamine samples—the majority of which relate to MDMA—fluctuated this reporting period.
- Forensic MDMA profiling this reporting period saw the re-emergence of the Leuckart route of manufacture. Last recorded in border samples in 2005, the method more commonly identified in methylamphetamine manufacture was identified in MDMA ENIPID samples for the first time in 2016.
- In 2016–17, the number of clandestine laboratories detected nationally producing MDMA more than halved.

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