HEROIN

> KEY POINTS

- The number of global heroin seizures decreased in 2016, while the weight of heroin seized increased. Afghanistan remains the largest cultivator of opium in the world.
 - Drug profiling of both border and domestic seizures indicates the vast majority of heroin in Australia originates from South-East Asia.
- Overall, indicators of heroin supply and demand in Australia point to a small, relatively stable market in 2016–17.
 - Both the number and weight of heroin detected at the Australian border increased in 2016–17.
 - In August 2017 heroin was included in the National Wastewater Drug Monitoring Program for the first time, with consumption identified in all capital city sites.
 - The number of national heroin seizures decreased in 2016–17, with the weight of heroin seized nationally remaining relatively stable.
 - National heroin and other opioid arrests remained stable in 2016–17.

MAIN FORMS

Heroin (diacetylmorphine or diamorphine) is a derivative of morphine—an alkaloid contained in raw opium.

- Illicit cultivation of opium occurs on a large scale in three primary regions.
 - South-West Asia, known as the 'Golden Crescent', which encompasses large areas of Afghanistan and parts of Pakistan.
 - South-East Asia, known as the 'Golden Triangle', which encompasses the border regions of Myanmar, Thailand and Laos.
 - Latin America, primarily Mexico and Colombia.
- Of the four main 'grades' of heroin, grades 1 and 2 refer to heroin base, not commonly found in Australia. Grade 3 heroin is more refined than heroin base and less granular. Unsuitable for injection, it is most commonly heated and the vapours inhaled. Grade 4 powdered heroin is the most common grade used in developed countries. It is the purest form and is suitable for injection.
- In Australia, heroin is most commonly found either as a powder or a hard granular material, usually white or off-white in colour (though colour is not a reliable indicator of origin or purity).
- The most common route of administration for heroin is injection, followed by snorting, inhalation (through smoking), swallowing or as an additive to cannabis or tobacco (ADF 2017; EMCDDA 2017; UNODC 2016a, UNODC 2016b).

INTERNATIONAL TRENDS

Approximately 50 countries continue to produce opium illicitly, predominantly in the regions of South-West Asia (primarily Afghanistan), South-East Asia (Myanmar and, to a lesser extent, the Lao People's Democratic Republic) and Latin America (Mexico, Colombia and Guatemala; UNODC 2017).

Afghanistan remains the world's largest opium and heroin producer. According to the 2017 *Afghanistan Opium Survey*, the total estimated area under opium poppy cultivation in Afghanistan was 328 000 hectares—an increase of 63.2 percent on the 201 000 hectares reported in 2016. The United Nations Office on Drugs and Crime (UNODC) estimates Afghanistan's potential opium production in 2017 was 9 000 tonnes—an 87.5 percent increase on the 4 800 tonnes reported in 2016. The number of poppy-free provinces in Afghanistan continued to decrease, from 13 provinces in 2016 to 10 in 2017. The UNODC also noted increases in the overall land area dedicated to poppy cultivation, and that where opium-poppy cultivation is occurring, it now holds a greater share of available agricultural land than in 2016 (UNODC 2017; UNODC 2017a).

South-East Asia remains a major source of opium and heroin, both for internal (South-East Asian) and overseas markets, particularly Oceania. After Afghanistan, Myanmar is the world's second largest opium-producing country. Partial estimates¹ indicate a decline in potential

¹ Potential opium production for 2017 does not consider the Chin and Kayah States and is therefore not directly comparable to 2015 figures.

opium production in Myanmar (from 647 metric tonnes in 2015 to 550 metric tonnes in 2017). This decline in potential opium production is consistent with declines in cultivation and drug seizure figures for the country recorded since 2014 (UNODC 2017; UNODC 2017b; UNODC 2017c).

According to the 2017 *World Drug Report*, 587 tonnes of opium, 80 tonnes of heroin and 9.6 tonnes of morphine were seized globally in 2015. Compared to seizure data from 2014, this equates to an 11.0 percent increase in the weight of opium seized, a 5.0 percent decrease in the weight of heroin seized and a 54.0 percent decrease in the weight of morphine seized. The Islamic Republic of Iran (49.0 percent of seizures) and Pakistan (16.0 percent) accounted for the greatest proportion of the weight of opiates seized in 2015, followed by China, Turkey and Afghanistan (6.0 percent each) and the United States (US, 5.0 percent; UNODC 2017).

While the total number of heroin seizures reported by World Customs Organization (WCO) agencies decreased by 21.8 percent in 2016, the total weight of heroin seized increased by 29.5 percent.² North America accounted for the greatest proportion of global opiate seizures worldwide, totalling 763 incidents, of which 72.3 percent related to heroin (WCO 2017).

DOMESTIC TRENDS

AUSTRALIAN BORDER SITUATION

Both the number and weight of heroin detected at the Australian border increased in 2016–17. The number of heroin detections increased 36.5 per cent this reporting period, from 178 in 2015–16 to 243 in 2016–17, with the weight of heroin detected increasing 34.7 per cent, from 149.7 kilograms in 2015–16 to 201.6 kilograms in 2016–17 (see Figure 14). This reporting period 22 heroin detections weighed 1 kilogram or more. With a combined total weight of 188.8 kilograms, these 22 detections account for 9.1 per cent of the number and 93.7 per cent of the weight of heroin detected at the Australian border this reporting period.³



FIGURE 14: Number and weight of heroin detections at the Australian border, 2007–08 to 2016–17 (Source: Department of Home Affairs)

² Specific figures on total global seizures of heroin in 2016 (by weight and number) were not available in the 2017 report.

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

IMPORTATION METHODS

In 2016–17, detections of heroin occurred in the international mail, air and sea cargo and air passenger/crew streams. The international mail stream accounted for 87.7 per cent of the number and 23.5 per cent of the weight of heroin detected at the Australian border this reporting period. While detections of heroin in the air passenger/crew steam accounted for 2.1 per cent of the number of detections in 2016–17, this stream accounted for 35.8 per of the weight detected this reporting period. The sea cargo stream accounted for 0.8 per cent of the number and 32.1 per cent of the weight of heroin detections in 2016–17, with the air cargo stream accounting for 9.5 per cent of the number and 8.6 per cent of the weight.⁴

EMBARKATION POINTS

In 2016–17, 18 countries were identified as embarkation points for heroin detected at the Australian border, compared with 23 countries in 2015–16. By weight, Malaysia was the primary embarkation point for heroin detections in 2016–17. Other key embarkation points by weight this reporting period include Laos, Thailand, Cambodia, Vietnam, Madagascar, South Africa, the Netherlands, Germany and the United Kingdom.

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 regions of origin and manufacturing trends for samples of heroin 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 2005 and June 2017 from which samples were submitted to the NMI for routine analysis and profiling.⁵

In Australia, the vast majority of heroin seized originates from South-East Asia, in contrast to Europe where it mostly originates from South-West Asia. This is likely due to close geographic proximities (see Tables 9 and 10).

- Heroin originating from South-East Asia continued to dominate AFP seizures in 2016.
- Only a single item, weighing less than one gram, was determined to be of South-West Asian origin.
- Data from the first six months of 2017 indicates a continuation of this trend.

⁴ Figures for importation methods of heroin detected in 2016–17 will be available on the Crime Statistics Australia website. See http://crimestats.aic.gov.au/>.

⁵ Profiling data relate to seizures investigated by the AFP between 2005 to June 2017, and from which samples were submitted to the National Measurement Institute (NMI) for routine analysis and profiling. Improvements in information technology have brought about changes to how the data is collated and presented, and for this reason, care should be taken in comparing figures before 2010 to more recent data. For all reporting years, the data represent 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.

	South-East Asia	South-West Asia	South America	Unclassified	South-East Asia & Unclassified	South-West Asia & Unclassified
Year	%	%	%	%	%	%
Jan-Jun 2017	85.7	-	-	-	14.3	-
2016	95.2	4.8	-	-	-	-
2015	77.8	18.5	-	3.7	-	-
2014	52.2	37.0	-	2.2	4.3	-
2013	74.6	18.2	5.5	-	1.8	-
2012	70.7	25.9	-	3.4	-	-
2011	49.0	51.0	-	-	-	-
2010	63.8	27.5	-	5.8	-	2.9
2009	53.9	42.6	-	3.4	-	-
2008	44.1	44.1	-	11.8	-	-

TABLE 9: Geographical origin of heroin samples as a proportion of analysed AFP border seizures, 2008–June 2017⁶ (Source: Australian Federal Police, Forensic Drug Intelligence)

TABLE 10: Geographical origin of heroin samples as a proportion of total bulk weight of analysed AFP border seizures, 2005–June 2017⁷ (Source: Australian Federal Police, Forensic Drug Intelligence)

Year	South-East Asia %	South-West Asia %	South America %	Unclassified %	South-East Asia & Unclassified %	South-West Asia & Unclassified %
Jan–Jun 2017	99.7	-	-	0.3	-	-
2016	100.0	-	-	-	-	-
2015	97.4	1.8	-	0.8	-	-
2014	89.9	7.8	-	<0.01	0.2	-
2013	84.3	8.9	4.3	-	2.5	-
2012	98.4	1.3	-	0.3	-	-
2011	39.4	60.6	-	-	-	-
2010	93.3	5.8	-	0.9	-	-
2009	48.2	40.9	-	10.9	-	-
2008	26.0	66.3	-	7.7	-	-
2007	47.9	50.6	-	1.5	-	-
2006	70.1	27.4	-	2.7	-	-
2005	78.9	18.0	-	3.1	-	-

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

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

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, including importations seized and profiled from the border.

Heroin seized by state and territory police during 2016 and submitted to ENIPID largely reflected the situation at the border, with the majority of both samples and cases being of South-East Asian origin.

ENIPID data for the first six months of 2017 diverged from AFP data, indicating an increase in the proportion of South-West Asian heroin. Given the low number of samples, particularly in the first half of 2017, care should be taken when drawing conclusions (see Tables 5 and 6 in Appendix 2).

DOMESTIC MARKET INDICATORS

According to the 2016 National Drug Strategy Household Survey (NDSHS), the proportion of the Australian population aged 14 years or older who reported having used heroin at least once in their lifetime increased, from 1.2 per cent in 2013 to 1.3 per cent in 2016. In the same survey, the proportion reporting recent⁸ heroin use also increased, from 0.1 per cent in 2013 to 0.2 per cent in 2016 (AIHW 2017).

In a 2016 national study of regular injecting drug users, the proportion of respondents reporting the recent⁹ use of heroin decreased, from 58.0 per cent in 2015 to 56.0 per cent in 2016. This increased to 57.0 per cent in 2017. Within this user population, the reported median days of heroin use in the six months preceding interview decreased, from 90 days in 2015 to 75 days in 2016. This further decreased to 72 days in 2017.¹⁰

In the same study, the proportion of respondents reporting heroin as their drug of choice decreased, from 52.0 per cent in 2015 to 46.0 per cent in 2016. This figure remained unchanged in 2017 (Karlsson & Burns 2018; Stafford & Breen 2017a).

According to the Australian Needle and Syringe Program Survey (ANSPS), the prevalence of respondents reporting heroin as the drug last injected decreased, from 31.0 per cent in 2015 to 28.0 per cent in 2016. Nationally, methylamphetamine (43.0 per cent) again exceeded heroin as the most commonly reported drug last injected in 2016 (Memedovic et al. 2017).

In a 2016 national study of regular ecstasy users, the proportion of respondents reporting the recent use of heroin remained stable at 2.0 per cent. This figure remained unchanged in 2017. Within this user population the reported median days of heroin use in the six months preceding interview decreased, from 5 days in 2015 to 3 days in 2016. This further decreased to 2 days in 2017.¹¹

In the same study, the proportion of respondents reporting heroin as their drug of choice increased from <1.0 per cent in 2015 to 1.0 per cent in 2016. This figure remained unchanged in 2017 (Uporova et al. 2018; Stafford & Breen 2017b).

⁸ In the NDSHS, recent use refers to reported use in the 12 months preceding interview.

⁹ In both the Illicit Drug Reporting System (IDRS) and Ecstasy and Related Drugs Reporting System (EDRS), recent use refers to reported use in the six months preceding interview.

¹⁰ A figure for this data will be available on the Crime Statistics Australia website. See http://crimestats.aic.gov.au/>.

¹¹ A figure for this data will be available on the Crime Statistics Australia website. See http://crimestats.aic.gov.au/>.

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.¹²

- The proportion of detainees testing positive to heroin¹³ via urinanalysis increased this reporting period, from 5.7 per cent in 2015–16 to 7.3 per cent in 2016–17.
- The self reported recent use¹⁴ of heroin decreased this reporting period, from 12.5 per cent in 2015–16 to 11.5 per cent in 2016–17 (see Figure 15).

FIGURE 15: National proportion of detainees testing positive for heroin 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. 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.

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.

- From August 2017, the NWDMP has included heroin among the substances tested.
- Heroin consumption was detected in all capital cities in August 2017, but not in all regional areas.
- Average heroin consumption was higher in capital city sites than regional areas for the states and territories where heroin consumption was detected. The exception was New South Wales, where average heroin consumption was higher in regional areas.¹⁵

HEROIN

¹² Detainees can participate in the survey without providing a urine sample. Cases with missing data are excluded from the relevant analysis.

¹³ Heroin and its metabolite can be detected in urine for 6 hours after administration.

¹⁴ Recent use in the DUMA program refers to self-reported use in the 12 months prior to arrest.

¹⁵ 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-reports.

PRICE

Nationally, the price for 1 gram of heroin ranged between \$100 and \$700 in 2016–17, compared with a price range between \$200 and \$700 in 2015–16. Nationally, the price for an 8-ball¹⁶ of heroin ranged between \$750 and \$2 000 in 2016–17, compared with a price range between \$800 and \$1 700 in 2015–16. No state or territory reported a price for 1 kilogram of heroin this reporting period.

PURITY

Figure 16 illustrates the annual median purity of analysed heroin samples over the last decade. Since 2007–08, the annual median purity of heroin has ranged between 12.7 per cent and 71.0 per cent. In 2016–17, the annual median purity of heroin ranged from 17.0 per cent in Victoria to 71.0 per cent in Western Australia. This reporting period New South Wales, Victoria, South Australia and Western Australia reported an increase, while Queensland reported a decrease in the annual median purity of heroin. This reporting period the quarterly median purity of heroin ranged between 16.4 per cent in Victoria in the second quarter of 2017 and 77.5 per cent in Western Australia in the first quarter of 2017.

FIGURE 16: Annual median purity of heroin samples, 2007–08 to 2016–17



AVAILABILITY

In a 2016 national study of regular injecting drug users, of the respondents able to comment on the availability of heroin, 91.0 per cent reported heroin as being easy or very easy to obtain, an increase from 88.0 per cent in 2015. In 2017 this decreased to 89.0 per cent (Karlsson & Burns 2018; Stafford & Breen 2017a).

SEIZURES AND ARRESTS

The number of national heroin seizures decreased 6.2 per cent this reporting period, from 2 081 in 2015–16 to 1 951 in 2016–17, the second highest number reported in the last decade. The weight of heroin seized nationally increased 1.9 per cent this reporting period, from 220.7 kilograms in 2015–16 to 224.9 kilograms in 2016–17 (see Figure 17).

¹⁶ An 8-ball equates to 3.5 grams.



FIGURE 17: National heroin seizures, by number and weight, 2007–08 to 2016–17

The Northern Territory reported the greatest percentage increase in the number of heroin seizures in 2016–17, while South Australia reported the greatest percentage increase in the weight of heroin seized. This reporting period New South Wales accounted for the greatest proportion of national heroin seizures (52.2 per cent), followed by Western Australia (18.2 per cent) and Victoria (16.4 per cent). Combined these three states account for 86.8 per cent of the number of national heroin seizures in 2016–17. Victoria accounted for the greatest proportion of the weight of heroin seized this reporting period (56.8 per cent), followed by New South Wales (38.1 per cent). Combined these two states account for 94.9 per cent of the weight of heroin seized nationally in 2016–17 (see Table 11).

	Number			Weight (grams)		
State/Territory ^a	2015–16	2016–17	% change	2015–16	2016–17	% change
New South Wales	992	1 018	2.6	95 746	85 622	-10.6
Victoria	381	320	-16.0	115 196	127 858	11.0
Queensland	219	169	-22.8	2 636	3 211	21.8
South Australia	50	28	-44.0	396	2 537	540.7
Western Australia	385	355	-7.8	6 326	4 153	-34.4
Tasmania	4	27	575.0	13	46	253.8
Northern Territory	1	8	700.0	<1	21	_
Australian Capital Territory	49	26	-46.9	432	1 477	241.9
Total	2 081	1 951	-6.2	220 745	224 925	1.9

TABLE 11: Number, weight and percentage change of national heroin seizures, 2015–16 to 2016–17

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

The number of national heroin and other opioid arrests remained stable this reporting period. Consumer arrests continue to account for the greatest proportion of arrests, comprising 82.7 per cent of national heroin and other opioid arrests in 2016–17 (see Figure 18). However, the Northern Territory reported more heroin and other opioid provider arrests than consumer arrests in 2016–17.

•Total 🗕 -Consumer -Provider 3,500 3,000 2,500 Number 2,000 1,500 1,000 500 0 2007-08 2008-09 2009-10 2011-12 2012-13 2013-14 2014-15 2015-16 2016-17 2010-11

FIGURE 18: Number of national heroin and other opioid arrests, 2007–08 to 2016–17

The Northern Territory reported the greatest percentage increase in heroin and other opioid arrests in 2016–17. This reporting period Victoria accounted for the greatest proportion of national heroin and other opioid arrests (44.3 per cent), followed by New South Wales (28.7 per cent). Combined these two states account for 73.0 per cent of national heroin and other opioid arrests in 2016–17 (see Table 12).

TABLE 12: Number and percentage change of national heroin and other opioid arrests,2015–16 and 2016–17

State/Territory ^a	Arrests			
	2015–16	2016–17	% change	
New South Wales	817	852	4.3	
Victoria	1 297	1 315	1.4	
Queensland	399	309	-22.6	
South Australia	146	115	-21.2	
Western Australia	258	311	20.5	
Tasmania	44	52	18.2	
Northern Territory	2	4	100.0	
Australian Capital Territory	12	12	0.0	
Total	2 975	2 970	-0.2	

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

NATIONAL IMPACT

In 2016, the number of global heroin seizures decreased, while the weight of heroin seized increased. Afghanistan remains the largest cultivator of opium in the world, with the estimated potential opium production in Afghanistan increasing to 9 000 tonnes in 2017. South-East Asia remains a major source of opium and heroin, both for internal (South-East Asian) and overseas markets, particularly in Oceania.

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

- According to the 2016 NDSHS, both the reported recent and lifetime use of heroin increased. Surveys of a regular injecting drug user population indicate an increase in the reported recent use of heroin, with the reported median days of use decreasing in 2017.
- Data from the ANSPS reported a decrease in the proportion of respondents reporting heroin as the last drug injected.
- According to a national study of police detainees, the proportion of detainees testing positive to heroin increased in 2016–17, while the self-reported recent use of heroin within this population decreased.
- The NWDMP identified heroin consumption in all capital cities, but not in all regional areas.

Indicators of heroin supply include border detection, seizure, arrest and purity.

- In 2016–17, both the number and weight heroin detected at the Australian border increased.
- The number of national heroin seizures decreased this reporting period, while the weight of heroin seized nationally increased in 2016–17.
- The number of national heroin and other opioid arrests remain stable.
- The median purity of heroin fluctuated in 2016–17.
- Forensic heroin profiling identified South-East Asia as the predominant source of heroin in Australia.

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