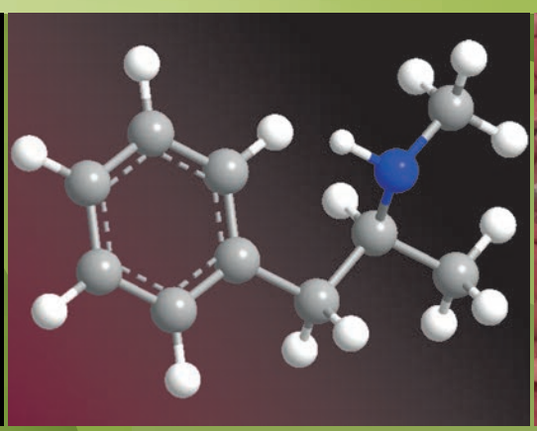
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Methamphetamine continues to dominate synthetic drug markets

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About the SMART Update

Synthetic drugs constitute one of the most significant drug problems worldwide. After cannabis, amphetamine-type stimulants (ATS) are the second most widely used drugs across the globe, with use levels often exceeding those of heroin and/or cocaine. Along with ATS, the continued growth of the new psychoactive substances (NPS) market over the last years has become a policy challenge and a major international concern. A growing interplay between these new drugs and traditional illicit drug markets is being observed. By December 2017, the emergence of NPS had been reported by 111 countries and territories. Trends on the synthetic drug market evolve quickly each year.

The UNODC Global Synthetics Monitoring: Analyses, Reporting and Trends (SMART) Programme enhances the capacity of Member States in priority regions to generate, manage, analyse, report and use synthetic drug information to design effective policy and programme interventions. Launched in September 2008, the Global SMART Programme provides capacity building to laboratory personnel, law enforcement and research officers in the Pacific, East and South-East Asia, South Asia, the Near and Middle East, Africa, Latin America and the Caribbean; and regularly reviews the global amphetamine-type stimulants and new psychoactive substances situation. Its main products include online drug data collection, situation reports, regional assessments and the UNODC Early Warning Advisory (EWA) on new psychoactive substances. The EWA is a web-portal that offers regular updates on new psychoactive substances, including trend data on emergence and persistence, chemical data, supporting documentation on laboratory analysis and national legislative responses (available at: www.unodc.org/NPS).

The Global SMART Update (GSU) series is published twice a year in English, Spanish and Russian. It provides information on emerging patterns and trends of the global synthetic drug market in a concise format. This issue is fully dedicated to the topic of methamphetamine. Past issues have covered topics such as the shift in the synthetic drug market, non-medical use of benzodiazepines, the fentanyl group of synthetic opioids, UNGASS 2016 recommendations, injecting use of synthetic drugs and legal responses to NPS. Electronic copies of the Global SMART Updates and other publications are available at: www.unodc.org/unodc/en/scientists/publications-smart.html.

* The information and data contained within this report are from official Government reports, press releases, scientific journals or incidents confirmed by UNODC Field Offices. This report has not been formally edited. The contents of this publication do not necessarily reflect the views or policies of UNODC or contributory organizations and neither do they imply any endorsement. Suggested citation: UNODC, "Methamphetamine continues to dominate synthetic drug markets", Global SMART Update Volume 20, August 2018.

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Methamphetamine continues to dominate synthetic drug markets

Introduction

The methamphetamine market has undergone remarkable changes in the last decade. From a market when manufacture was concentrated in specific subregions, it has evolved to a market with global trafficking flows and global seizure quantities growing more than 6 times since 2008.



Methamphetamine seizures reported by 55 countries

Methamphetamine seizures reported by 74 countries

Source: UNODC, responses to annual report questionnaire, 2008-2016.

And yet, the dynamics of the rapidly expanding methamphetamine market are not well understood. There are a number of questions that remain unanswered. For instance, what is the size of the methamphetamine market? Why is the global surge of methamphetamine seizures and reports of growing harms and threats not evidenced in methamphetamine use data? Who are the user groups for methamphetamine? To what extent is methamphetamine being used concomitantly with other drugs? Do different forms of methamphetamine (e.g. crystalline methamphetamine and methamphetamine tablets) appeal to different market segments? Are the health threats of methamphetamine use being underestimated?

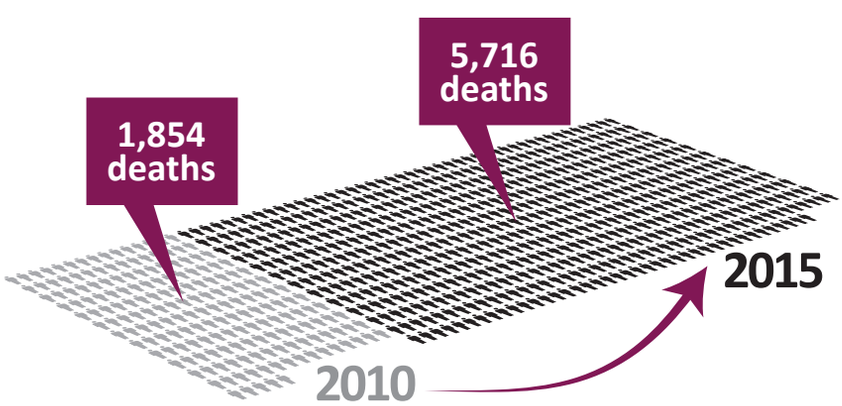
This current Global SMART Update aims to address some of these questions whilst analysing the key trends and drivers of the methamphetamine market. Given the rapid expansion of this market, information gaps and discrepancies need to be addressed with some urgency. Overall, seizure information, global trafficking flows and perceived increases in consumption indicate that East and South-East Asia and North America are the two main subregions for methamphetamine worldwide. However, there are no clear indications that the number of methamphetamine users globally has increased significantly. Rather the market for methamphetamine, which is available in powder, tablet and crystalline form, appears to be becoming more differentiated. The variety of physical forms for methamphetamine, sold at different prices and levels of purity, might contribute to this development in some parts of the world.

Despite growing reports of harms and deaths relating to methamphetamine use, the extent of the threat might nevertheless be greatly underestimated. Methamphetamine is often used in combination with other substances, which poses a significant challenge in determining the spread of methamphetamine use and in associating methamphetamine use to treatment cases and fatalities involving an additional combination of other drugs.

Are the threats of methamphetamine underestimated?

In recent years, there have been increasing reports of health harms, including the most extreme form of harm – death –, relating to methamphetamine use. Deaths and other harm related to drug use can be a direct consequence of drug use,

"Psychostimulants with abuse potential" deaths related to the use of methamphetamine in the United States



Source: National Center for Health Statistics/Centers for Disease Control; U.S. Department of Justice; Drug Enforcement Administration (October 2017) 2017 National Drug Threat Assessment.

Map 1: Global methamphetamine seizures (cumulative 2012-2016)



Source: UNODC, responses to annual report questionnaire, 2012-2016.

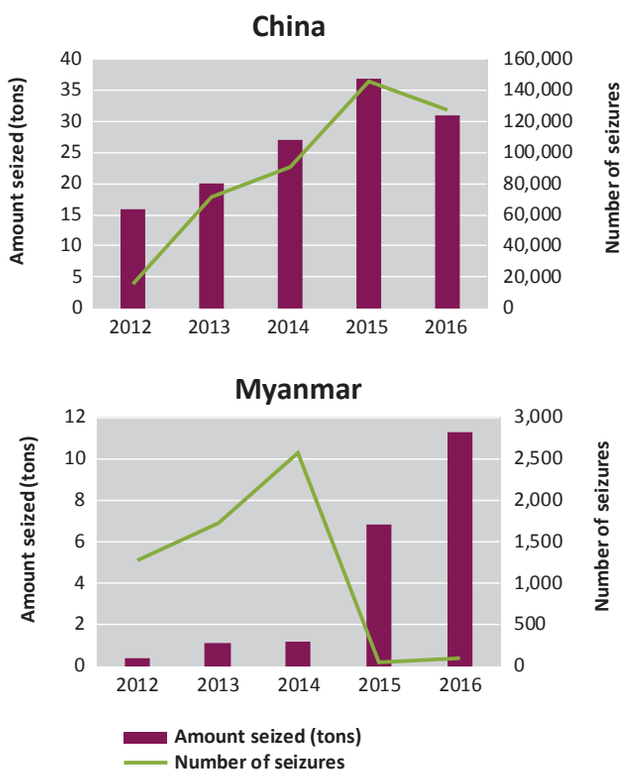
Note: The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dashed lines represent undetermined boundaries. The dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

Analysing methamphetamine seizures: a case study of China and Myanmar

In East and South-East Asia, methamphetamine seizures have annually increased since 2012 in almost every country of the subregion, totalling more than 60 tons in 2016. By far the largest quantities of methamphetamine seized in the subregion have been reported in China, where seizures have doubled from around 16 tons in 2012 to more than 30 tons in 2016. Alongside the increase of seized methamphetamine quantities, the number of methamphetamine seizure cases in the country have risen significantly too. Therefore, between 2012 and 2016, the annual average quantities seized per case remained steady, amounting to 1kg or less. Thus, the overall annual quantity of methamphetamine seizures in China is primarily due to an increase in the sheer number of seizure incidents in the country.

An analysis of methamphetamine seizures in other East and South-East Asian countries, shows that seizure dynamics vary between countries. For instance, in Myanmar, a large number of methamphetamine seizure incidents were reported between 2012 and 2014 when seizure quantities in the country were relatively low but dropped in number when seizure quantities increased in 2014 and 2015. The average quantity of methamphetamine seized in the country per seizure incident increased from less than 1kg in 2012 to 123 kg in 2016. In other words, annual quantities of methamphetamine seized in Myanmar did not increase because of a rise in seizure incidents, as was the case in China, but because the quantities of individual methamphetamine seizures had become larger. In 2012, seizures in Myanmar mostly occurred at retail level, whereas in 2016, particularly large shipments were seized which could be the result of changing law enforcement strategies (e.g. previously focussing on retail and then concentrating on wholesale), or a change in trafficking patterns.

Figure 1: Quantities of methamphetamine seized and number of seizures reported in China and Myanmar, 2012-2016



Source: UNODC, responses to annual report questionnaire, 2012-2016.

such as unintentional or intentional (suicide) overdose, but may also include a variety of indirect causes. Indirect causes, whose contribution to the overall negative health consequences of drug use is greater than that of overdoses, include for example HIV/AIDS or hepatitis attracted through unsafe injecting practices and unintentional deaths and trauma (e.g. motor vehicle accidents under the influence of drugs). As the definition and classification practices differ from country to country, data on drug-related harm and death may not always be comparable.

At a global level, the WHO Global Burden of Disease estimate found that, in 2016, the number of deaths attributable to amphetamines (including amphetamine and methamphetamine) use disorders showed the highest percentage increase compared to 2005 among all drug types.[1] In Oceania, studies analysing methamphetamine-related deaths in Australia found that fatalities had doubled in the country between 2009 and 2015.[2] In the United States, the Centers for Disease Control (CDC) reported that methamphetamine was annually mentioned in 85-90 per cent of all death certificates relating to the use of "psychostimulants with abuse potential"[3] between 2010 and 2015, for which the number of deaths almost tripled from 1,854 deaths to 5,716 deaths.[4]

...

1 World Health Organization (2018): *Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016.* Geneva.

2 Darke, S., Kaye, S. and Duflou, J. (December 2017) "Rates, characteristics and circumstances of methamphetamine-related death in Australia: a national 7-year study." *Addiction* 112 (12): 2191-2201; Kaye S., et al. (2008) "Methamphetamine-related fatalities in Australia: demographics, circumstances, toxicology and major organ pathology." *Addiction* 103: 1353–1360.

3 According to the United States Centers for Disease Control (CDC), the category "psychostimulants with abuse potential" groups methamphetamine together with those relating to MDMA, caffeine, phenylethylamine, ethylone, cathinones, and amphetamine.

4 National Center for Health Statistics/Centers for Disease Control; U.S. Department of Justice; Drug Enforcement Administration (October 2017) *2017 National Drug Threat Assessment*.

Attributing the cause of death

It can be hard to determine the true extent of the impact of methamphetamine use on deaths which may often be indirect as its use increases the risk of other health conditions or adverse events.[5] Chronic methamphetamine use, for example, is related to the development of heart diseases that can be potentially fatal.[6] Methamphetamine users may also suffer from depressions and/or psychosis, either of which can contribute to a higher risk of death by suicide.[7]

The difficulties in recording the impact of methamphetamine in the attributed cause of death has been conferred by a number of studies. In Taiwan Province of China, Japan and other parts of East and South-East Asia, specific studies have highlighted that suicides and accidents account for a large number of methamphetamine-related deaths.[8] Among methamphetamine-related deaths in Australia, natural disease, suicide and accident also comprised more than half of these deaths.[9]

Another significant caveat that complicates the analysis of methamphetamine as a contributing factor in fatalities is that methamphetamine is often used in combination with other substances. For instance, in cases of polydrug use involving heroin in combination with stimulants such as methamphetamine, drug users might attempt to offset undesired effects of these drugs by concurrently or sequentially using additional drugs with opposite effects.

Overall, there are signs of increasing harms and the threats of methamphetamine use emerging by the available data may be underestimated. In fact, there are reasons to assume that methamphetamine use contributes to deaths and other health harm more than mortality and morbidity statistics suggest.[10] While this is true for drugs in general, it may be particularly relevant for stimulants such as methamphetamine whose use has been found to be associated with increased exposure to health risks e.g. due to higher frequency of injecting and risky sexual practices.[11]

Prices along the methamphetamine trafficking chain

Within East and South-East Asia, there is extensive methamphetamine trafficking.Methamphetamine is manufactured in various countries in this subregion, such as China or Myanmar, where it is domestically sold at a relatively low retail price and trafficked onwards to other countries such as Australia, Japan and the Republic of Korea, for sale at a significantly higher price.

Figure 2: Examples of methamphetamine retail prices at different stages of the trafficking route within East and South-East Asia and Oceania, 2016



Source: UNODC, responses to annual report questionnaire, 2016.

The two hubs for methamphetamine: East and South-East Asia and North America

Since 2010, methamphetamine seizures have by far accounted for the largest share of quantities of ATS seized worldwide, annually increasing to more than 158 tons in 2016. Moreover, between 2015 and 2016, the number of methamphetamine seizure cases accounted for the third largest number of all drug seizure cases reported by countries worldwide, after cannabis and cannabis resin.[12]

5 McKetin R. (2017) "Why methamphetamine-related deaths need more attention." *Addiction* 112: 2203–4.

6 Kaye S. et al. (2007) "Methamphetamine and cardiovascular pathology: a review of the evidence." *Addiction* 102 :1204–11.

7 Chian-Jue Kuo and Chiao-Chicy Chen (November 2017) "What is the real distribution of methamphetamine-related causes of death?" *Addiction* 112: 2202–3.

8 Chian-Jue Kuo et al. (November 2011) "Causes of Death of Patients with Methamphetamine Dependence: A Record-Linkage Study." *Drug and Alcohol Review* 30(6): 621–628; Zhu B. L., et al. (2000) "Methamphetamine-related fatalities in forensic autopsy during 5 years in the southern half of Osaka city and surrounding areas." *Forensic Science International* 113: 443–447; Darke, S. et al. (February 2018) "Completed Suicide Among Methamphetamine Users: A National Study." *Suicide and Life-Threatening Behavior*.

9 Darke, S., Kaye, S. and Duflou, J. (December 2017) "Rates, characteristics and circumstances of methamphetamine-related death in Australia: a national 7-year study." *Addiction* 112 (12): 2191-2201.

10 UNODC. *2016* and *2018 World Drug Report*.

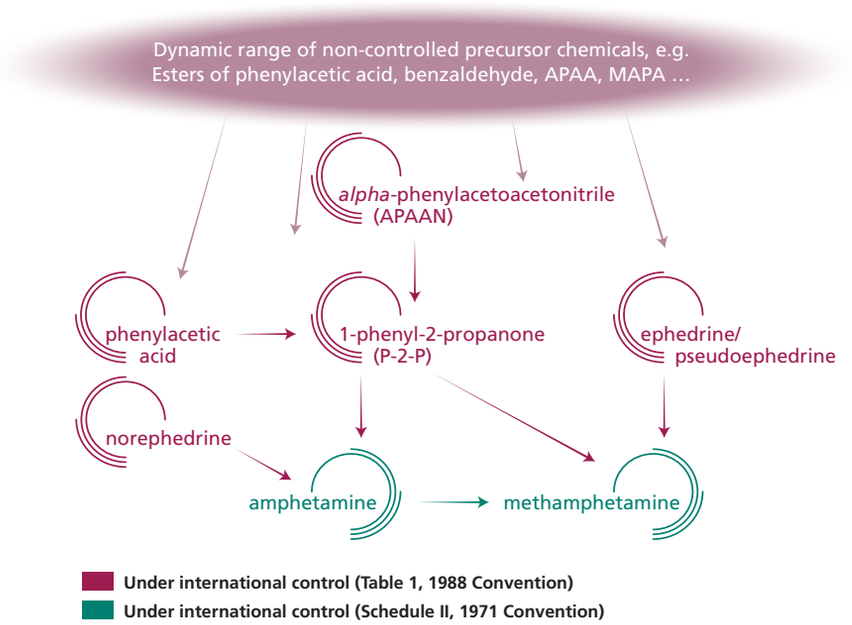
11 UNODC (March 2016), "Injecting use of synthetic drugs", *Global SMART Update*, Vol. 15.

12 UNODC. *2018 World Drug Report*.

Trends in methamphetamine manufacture

The clandestine manufacture and production of methamphetamine, and indeed many illicitly produced synthetic drugs, can be carried out using a wide range of precursor chemicals. The figure below shows the range of substances that are typically used to manufacture amphetamine and methamphetamine, differentiating those that are not under international control. Drug trafficking organizations attempt to modify their approaches and alter their manufacturing methods in response to national/international control and the efforts of law enforcement and industry in targeting and preventing the diversion of chemicals. One recent example of this is the use of APAA (alpha-phenylacetoacetoacetamide) in the illicit manufacture of methamphetamine following the international control of APAAN (alpha-phenylacetoacetonitrile) in 2014. The trends in the precursor chemicals provide important information that contributes to a more comprehensive understanding of synthetic drugs markets and how to tackle the illicit manufacture of methamphetamine and other synthetic drugs.

Figure 3: Precursors for methamphetamine



Source: UNODC, Laboratory and Scientific Section.

Methamphetamine is currently a feature of synthetic drug markets worldwide. For a number of years, East and South-East Asia and North America have been the main subregions for seized methamphetamine. (See box for an analysis of methamphetamine seizures in East and South-East Asia). Not only is methamphetamine trafficked extensively between countries within each of those subregions (for more information, see box on prices along the methamphetamine trafficking chain), but also most methamphetamine trafficked globally is destined for those two subregions.

Significant but smaller quantities of methamphetamine are also being seized in the Near and Middle East/South-West Asia and Oceania. Subregions such as West, Central and Southern Africa appear to be transit areas for methamphetamine trafficking.[13]

13 For more information, see UNODC, *World Drug Report 2018*.

From 2012 to 2016, a number of countries in Western and Central Europe[14], as well as India, the Islamic Republic of Iran, Nigeria and Turkey, have frequently been identified as the country of provenance of methamphetamine seized worldwide. Methamphetamine is a synthetic drug that, in principle, can be manufactured anywhere. Unlike heroin and cocaine, it does not depend on the cultivation of plants that require certain environmental conditions to grow. Small-scale ATS manufacture employs simple "recipes" in so-called "kitchen labs" to reach local markets. Large-scale ATS manufacture happens in clandestine laboratories with sophisticated manufacturing equipment that makes use of a range of precursor chemicals and synthesis routes (for more information, see box on methamphetamine manufacture).

Is methamphetamine use growing?

The lack of quantitative data on methamphetamine use in many countries makes it difficult to estimate trends. Qualitative and anecdotal information points to an increase in methamphetamine use which indicates that increases in seizures are, at least partially, the result of a demand-driven increased supply.

A number of countries worldwide, particularly in North America and East and South-East Asia, have reported methamphetamine to be one of the most worrying threats. For instance, in the United States methamphetamine was perceived to be the second greatest drug threat after heroin in 2016, and its availability, as reported by law enforcement agencies in the country, increased between 2013 and 2016.[15]

14 These countries include Austria, Belarus, Bulgaria, Czechia, Germany, Ireland, Lithuania, Poland, the Russian Federation, Slovakia, Switzerland and Turkey.

15 United States, Drug Enforcement Administration, 2017 National Drug Threat Assessment (October 2017).

In East and South-East Asia, experts perceived an increase in the use of crystalline methamphetamine in eight out of thirteen countries in the subregion, and China, Malaysia, the Philippines, Singapore, Thailand and Viet Nam have reported consecutive increases in the use of crystalline methamphetamine in the last two years or more.[16] The use of methamphetamine in tablet form is mainly prevalent in Cambodia, China, Lao PDR, Myanmar, Thailand and Viet Nam, where, apart from Thailand, experts perceived an increase in the use of methamphetamine tablets.[17]

Use trends vary

Despite widespread concerns, general population surveys indicate relatively varied levels of methamphetamine use. In East and South-East Asia, a general population survey conducted among people aged 10 to 59 in Indonesia in 2015 revealed that methamphetamine was the most used drug at 0.09 per cent, after cannabis at 0.18 per cent.[18] Nevertheless, declining levels of methamphetamine use have been reported in other subregions. For instance, in Oceania, the estimated annual prevalence of use of amphetamine and methamphetamine among the general population in Australia at 1.4 per cent in 2016 was significantly lower than the 2.1 per cent in 2013. Other indicators based on the same survey point to an increased frequency of use and an increased proportion of users consuming methamphetamine in crystalline form.[19]

In North America, methamphetamine use in the United States has remained stable, with annual prevalence of methamphetamine use among the general population aged 15-64 years reported at 0.5 per cent in 2012 and at 0.7 per cent by 2016.[20] Also, in Europe, the estimated annual prevalence of methamphetamine use among the general population in Czechia aged 15 to 64 remained stable at 0.8 per cent use in 2014 as well as in 2015.[21]

Overall, data generated by general population surveys do not demonstrate a clear trend. Thus, there appears to be a disconnect between the perceived extent of methamphetamine use and the data generated by drug use studies.

Polydrug use

Whereas high levels of methamphetamine use have only been reported in a few countries, methamphetamine use is being increasingly reported among polydrug users. Particularly, concomitant use of methamphetamine in combination with opioids features in several countries. For instance, this pattern of polydrug use can be evidenced in South-West Asia where a sizeable number of methamphetamine users in Afghanistan and the Islamic Republic of Iran appear to be using methamphetamine in combination with opioids as a means of over-coming their opioid dependence while not being aware of the dependence potential of methamphetamine.[22]

In North America, concerns have also been raised over the emergence of the practice of combining methamphetamine with heroin as the injecting use of methamphetamine has rapidly increased in the country.[23] Moreover, in Australia, an analysis of methamphetamine-related deaths showed that that in almost 90 per cent of the cases, other drugs such as benzodiazepines and morphine were detected in addition to methamphetamine.[24]

Wastewater studies

Generally, measuring any form of drug use is highly complex and can be problematic as drug use is a hidden practice. Subsequently, there is no individual indicator that can provide a full picture of the size of the methamphetamine market. Rather, a combination of indicators might help to provide a more comprehensive analysis of methamphetamine use.

For instance, significant and sometimes growing levels of methamphetamine have been identified in recent wastewater analyses conducted in certain countries. While wastewater analysis does not measure the number of users, results from the National Wastewater Monitoring Programme showed that methamphetamine was the most highly consumed illicit drug detected across all participating regions in Australia in 2017, suggesting the demand for it remains high in the country.

16 Drug Abuse Information Network for Asia and the Pacific. Refers to 2017 or latest year available.

17 Drug Abuse Information Network for Asia and the Pacific. Refers to 2017 or latest year available.

18 UNODC, Annual Report Questionnaire (ARQ) 2015 for Indonesia.

19 Australian Institute of Health and Welfare (AIHW), "National Drug Strategy Household Survey report (NDSHS) 2016 data & references", June 2017.

20 2016 National Survey on Drug Use and Health (NSDUH), Sept 2017.

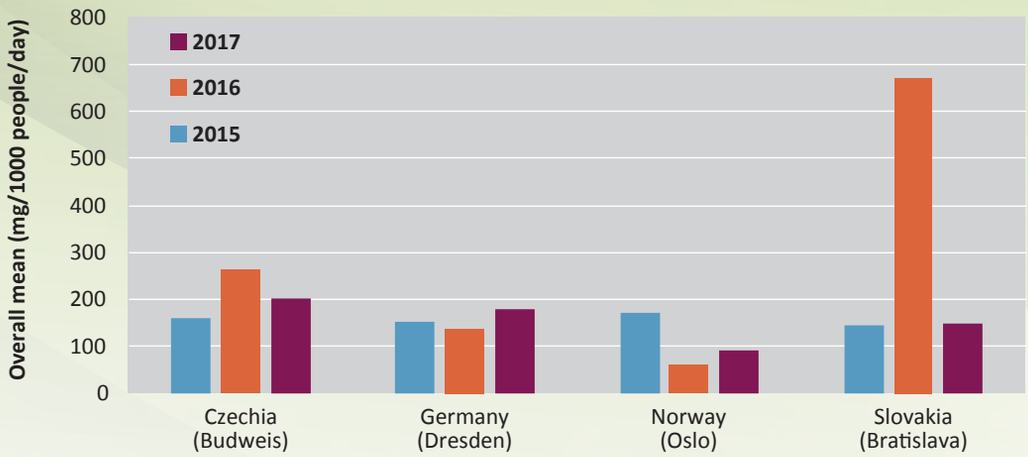
21 European Monitoring Centre for Drugs and Drug Addiction (2017), Czech Republic, Country Drug Report 2017, Publications Office of the European Union, Luxembourg.

22 UNODC (January 2017) *Afghanistan Synthetic Drugs Situation Assessment*; Radfar, S. R. et al. (April 2016) "Methamphetamine Use Among Patients Undergoing Methadone Maintenance Treatment in Iran; a Threat for Harm Reduction and Treatment Strategies: A Qualitative Study." International Journal of High Risk Behaviors and Addiction 5(4).

23 Al-Tayyib, A. et al. (July 2017) "Heroin and Methamphetamine Injection: An Emerging Drug Use Pattern." Substance Use and Misuse 52(8): 1051–1058.

24 Kaye S., et al. (2008) "Methamphetamine-related fatalities in Australia: demographics, circumstances, toxicology and major organ pathology." Addiction 103: 1353–1360.

Figure 4: Mean loads of methamphetamine detected in wastewater at selected sites in Czechia, Germany, Norway and Slovakia, 2015-2017



Source: European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) Wastewater analysis and drugs: a European multi-city study. Lisbon: March 2018.

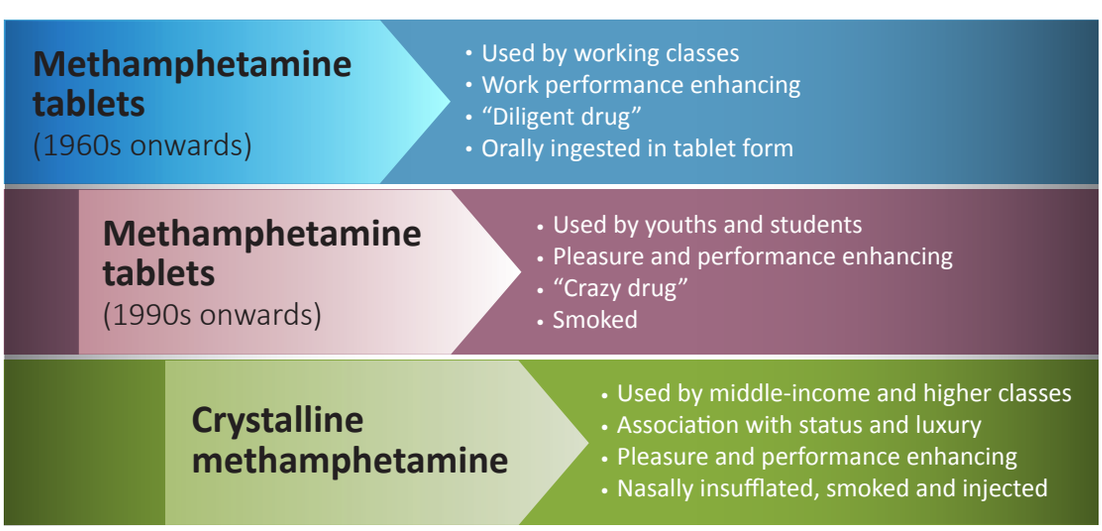
In Europe, a wastewater study conducted for a number of consecutive years in almost 60 cities in 19 countries across the continent showed that some of the highest levels of methamphetamine use are found in Czechia, Germany, Norway, and Slovakia. However, methamphetamine levels at sites in these countries do not demonstrate a consistent trend, but rather fluctuate between 2015 and 2017.

Although wastewater analysis offers an interesting source of information for monitoring the quantities of illicit drugs used at population level, this tool also has several limitations. Wastewater analysis cannot provide information on prevalence and frequency of use, route of administration, profiles of user groups, or the purity of the drugs. Additional challenges can also arise because of inconsistencies associated with the sampling of wastewater. Furthermore, translating the total consumed amounts into the corresponding number of average doses is complicated as drugs can be taken by different routes and in amounts that vary widely, and purity levels fluctuate. Data drawn from wastewater analyses therefore only serve as a complementary source of information on methamphetamine use rather than a substitute for data generated by drug use studies.

Diversification of the methamphetamine market

In East and South-East Asia and Oceania, methamphetamine has long been available in the form of both crystalline methamphetamine and methamphetamine tablets. Methamphetamine tablets, commonly known as "yaba" in East and South-East Asia, are small pills,

Figure 5: Methamphetamine use in East and South-East Asia



Source: UNODC, Laboratory and Scientific Section.

A case study: diversification among population sub-groups in East and South-East Asia

Based on available quantitative data on methamphetamine prices and purity, it remains unclear if, and how, tablet and crystalline methamphetamine use is linked and whether they serve distinct segments of the drug market. Purity-adjusted tablet and crystalline methamphetamine prices are not easily comparable and do not yet allow for an in-depth analysis. As with other drugs, users may attribute properties to one or the other form or have usage preferences which are not measurable in quantitative terms with one-dimensional indicators such as prices.

Instead, qualitative studies over the years have demonstrated that crystalline methamphetamine and methamphetamine tablets in East and South-East Asia appeal to different market segments for variety of reasons. In the 1960s and 1970s, methamphetamine tablets were predominantly used by workers, including truck drivers and factory workers, to enhance their performance over long working-hours and was commonly referred to as a "diligent drug" ("ya-khayan") in countries such as Thailand.[1] However, by the 1990s, methamphetamine tablets had shifted from being a purely occupational drug to one of leisure among youths and students, attractive for their relatively low price and high availability.[2]

Once methamphetamine tablets had become popular among youths in East and South-East Asia, this type of methamphetamine became widely referred to as the "crazy drug" ("yaba").[3] Although analyses of methamphetamine use among youths have shown that methamphetamine tablets are often used to increase performance levels, such tablets are also most especially used during social gatherings and have been described as a means of having fun and heightening a sense of belonging and inclusion among social groups.[4] In this context, "yaba" is usually smoked to enhance the euphoric effect and add a sense of solidarity in social settings, rather than being ingested orally in tablet form common among workers. This transformation in the market appeal for methamphetamine tablets has particularly been observed in Lao People's Democratic Republic (Lao PDR) and Thailand.[5]

Unlike methamphetamine tablets, crystalline methamphetamine use in East and South-East Asian countries is perceived as a highly luxurious and exclusive practice, probably due to its relatively high price.[6] Whereas methamphetamine tablet use is associated with the lower and working classes, crystalline methamphetamine use is often associated with educated and well-connected high-ranking professionals of status. Recently, crystalline methamphetamine use has particularly been reported among men who have sex with men in Malaysia and Thailand, often at luxurious "ice parties".[7]

Crystalline methamphetamine



Source: UNODC, Laboratory and Scientific Section (LSS).

1 Pates, R. and Riley, D. (2009) Interventions for Amphetamine Misuse. John Wiley & Sons.

2 Pates, R. and Riley, D. (2009) Interventions for Amphetamine Misuse. John Wiley & Sons; Sherman, S. G. et al. (2008) "Initiation of methamphetamine use among young Thai drug users: A qualitative study." Journal of Adolescent Health 42(1): 36–42.

3 Cohen, A. (2014) "Crazy for Ya Ba: methamphetamine use among northern Thai youth." International Journal of Drug Policy 25(4): 776-82.

4 Sherman, S. G. et al. (2008) "Initiation of methamphetamine use among young Thai drug users: A qualitative study." Journal of Adolescent Health 42(1): 36–42.

5 Sherman, S. G. et al. (2008) "Initiation of methamphetamine use among young Thai drug users: A qualitative study." Journal of Adolescent Health 42(1): 36–42; Sychareun, V. et al. (2018) "Methamphetamine-type stimulant use in Lao PDR: qualitative findings from users aged 15–25 years in Vientiane Capital and Vientiane Province." Harm Reduction Journal 15 (17).

6 Guadamuz, T. E. and Boonmongkon, P. (2018) "Ice parties among young men who have sex with men in Thailand: Pleasures, secrecy and risks." International Journal of Drug Policy 55: 249-255.

7 Guadamuz, T. E. and Boonmongkon, P. (2018) "Ice parties among young men who have sex with men in Thailand: Pleasures, secrecy and risks." International Journal of Drug Policy 55: 249-255; Lim, S. H., et al. (2015) "Latent class analysis of substance use among men who have sex with men in Malaysia: Findings from the Asian Internet MSM Sex Survey." Drug and Alcohol Dependence 1(151): 31-7.

Table 1: Typical features of methamphetamine tablets and crystalline methamphetamine in East and South-East Asia and Oceania

	METHAMPHETAMINE TABLETS	CRYSTALLINE METHAMPHETAMINE
Street names	"yaba"	"crystal meth", "ice" or "shabu"
Route of administration	• Oral consumption • Injection (as a solution of powder dissolved in distilled or saline water)	• Nasal insufflation • Smoking • Injection
Retail price range (not adjusted for purity)	2-54 US$ per tablet	50-700 US$ per gram

Source: UNODC (March 2016) Terminology and Information on Drugs. 3rd Edition; Drug Abuse Information Network for Asia and the Pacific; UNODC, Annual Report Questionnaire (ARQ) for 2016.

typically containing between 5 and 20 mg of methamphetamine per tablet, which in addition to methamphetamine often contain a large portion of caffeine, plus a range of adulterants. Although prices can vary considerably, these tablets are largely available among the low-priced segment of drug markets in East and South-East Asia.

Also called "crystal meth", "ice" or "shabu", crystalline methamphetamine is usually of much higher purity[25] than the tablet form. For instance, almost all of the 2,762 samples analysed in China in 2015 had purity levels higher than 80 per cent.[26] Thailand also reported that the vast majority (89 per cent) of samples analysed in the country in 2015 had a purity of over 90 per cent.[27] Crystalline methamphetamine seized in Brunei Darussalam, Indonesia, Malaysia, and Singapore had purity levels ranging between 70-80 per cent.[28]

There are two forms of methamphetamine products in East and South-East Asian countries, methamphetamine tablets and crystalline methamphetamine. Both of these products have shown recent increases in terms of seizures and use. Methamphetamine tablets and crystalline methamphetamine generally appeal to distinctly different user groups (for more information, see box on an in-depth case study of East and South-East Asia).

25 The price and purity of crystalline methamphetamine and methamphetamine tablets vary considerably between countries in the region. A caveat regarding the analysis of tablet purity data is that the actual weight may vary from tablet to tablet and batch to batch as they are produced under clandestine conditions.

26 Drug Abuse Information Network for Asia and the Pacific.

27 Drug Abuse Information Network for Asia and the Pacific.

28 Drug Abuse Information Network for Asia and the Pacific.

SHORT SEGMENTS

AFRICA

Benin: Police seize 97 kg of methamphetamine in 2017

PORTO-NOVO, Benin – 2017. On the basis of intelligence information received from the Nigerian Combined Inter-Agency Task Force (CIATF), 97 kg of methamphetamine were seized by police in Benin in 2017. According to the National Drug Law Enforcement Agency in Nigeria, Benin is among the West African transit countries for methamphetamine trafficked from Nigeria.

National Drug Law Enforcement Agency. "Regional and International Cooperation to Tackle Illegal Drug Trafficking (Nigeria Perspective)." Asia-Pacific Conference on Operational Drug Enforcement, Tokyo, Japan, 6–8 February, 2018.



Source: UNODC

South Africa: Police and customs officials seize large amounts of crystalline methamphetamine at airports in Johannesburg and Cape Town

JOHANNESBURG AND CAPE TOWN, South Africa – February 2018. In February 2018, customs officials of the South African Revenue Service (SARS) made two seizures of crystalline methamphetamine at a total value of 18 million South African Rand (approximately US$ 1.3 million) at OR Tambo International Airport (ORTIA) in Johannesburg. The first amount of crystalline methamphetamine had a value of about 17 million South African Rand and was discovered in the baggage of a passenger who had arrived in South Africa from Nairobi, Kenya. The second crystalline methamphetamine seizure, which had a value of just under 1 million South African Rand, was found in a parcel that was destined for Malaysia. Prior to these incidents, the South African Police Service reported to have seized 26 kg of crystalline methamphetamine at an estimated street value of 9 million South African Rand at Cape Town International Airport from the luggage of a passenger who had travelled from Lagos, Nigeria via ORTIA.

South African Revenue Service (SARS). "Over R18 million worth of crystal meth nabbed at ORTIA." 20 February 2018. Accessed at: http://www.sars.gov.za/Media/MediaReleases/Pages/20-February-2018---Over-R18-million-worth-of-crystal-meth-nabbed-at-ORTIA-.aspx

South African Police Service. "Media Statement from Western Cape Media Centre." 8 June 2017. Accessed at: https://www.saps.gov.za/newsroom/selnewsdetails.php?nid=11466

AMERICAS

Canada: Crystalline methamphetamine with traces of fentanyl sold in Vancouver

VANCOUVER, Canada – May 2017. A total of 1,009 drug tests conducted over a nine-month period from July 2016 to March 2017 at the Insite Supervised Injection Centre in Vancouver revealed that 82 per cent of crystalline methamphetamine samples were also found to contain fentanyl. Overall, 79 per cent of all drugs that were checked were found to contain traces of fentanyl. Fentanyl was also discovered in 40 per cent of cocaine samples that were checked and 83 per cent of heroin samples. So far, it remains unclear to what extent this combination of substances is intentional.

Harm Reduction International. "Media Release." 25th Harm Reduction International Conference, Montreal, Canada, 14–17 May, 2017.

Vancouver Coastal Health. "Drug checking at Insite shows potential for preventing fentanyl-related overdoses." 15 May 2017. Accessed at: http://www.vch.ca/about-us/news/news-releases/drug-checking-at-insite-shows-potential-for-preventing-fentanyl-related-overdoses

United States: Methamphetamine containing fentanyl and its analogues are being seized since 2014

WASHINGTON D.C., United States – October 2017. According to the United States Drug Enforcement Administration (DEA), there have been seizures of methamphetamine containing fentanyl and its analogues across the country since 2014. Between 2014 and 2016, DEA forensic laboratories reported to have detected fentanyl sometimes containing carfentanil, cocaine and heroin in 23 samples of methamphetamine seized in a total of 10 states (e.g. Florida, Georgia, Pennsylvania, Massachusetts, Michigan, New Jersey, New York, North Carolina, Tennessee, and Washington). So far, it remains unclear to what extent this combination of substances is intentional.

Number of methamphetamine seizures analyzed by DEA laboratories containing fentanyl and its analogues, 2014–2016

Methamphetamine seizures containing...	Number of seizures
Fentanyl	9
Carfentanil	1
Fentanyl and Heroin	10
Fentanyl and Cocaine	1
Fentanyl, Heroin, and Cocaine	2
Total	**23**

U.S. Department of Justice; Drug Enforcement Administration (October 2017) *2017 National Drug Threat Assessment.*

United States: Majority of PWID in Denver inject both methamphetamine and heroin

DENVER, United States – July 2017. The results of a drug use survey conducted in 2015 among 592 people who inject drugs (PWID) in the United States in Denver, Colorado, showed that 50 per cent reported to have injected both methamphetamine and heroin during the past 12 months, whereas 29.2 per cent reported to have only injected heroin and 20.8 per cent reported only to have injected methamphetamine. The number of reported overdoses among people injecting both heroin and methamphetamine was associated with a 2.8-fold increase in the past 12 months. Furthermore, the share of participants that reported methamphetamine as the most frequently injected drug increased from 2.1 per cent in 2005 to 29.6 per cent in 2015, while the share of participants reporting heroin as the most frequently injected drug fluctuated and increased from 48.4 per cent in 2005 to 58.4 per cent in 2015.

Al-Tayyib, A. et al. (July 2017) "Heroin and Methamphetamine Injection: An Emerging Drug Use Pattern." *Substance Use and Misuse* 52 (8): 1051-1058.

ASIA



Source: UNODC

China: Authorities dismantle 338 methamphetamine laboratories in 2016

BEIJING, China – 2018. According to a recently released report of the Office of the China National Narcotics Control Commission, 338 methamphetamine laboratories were dismantled in China in 2016 accounting for the majority of the 438 illicit drug manufacturing laboratories dismantled in the country that year. In 2016, large amounts of precursor and pre-precursor chemicals used in the illicit manufacture of methamphetamine were also reported to have been seized in the country. For instance, in a series investigations conducted in 2016, 27 laboratories, used to manufacture and store 171 tons of ephedrine and 2-bromopropiophenone, were dismantled.

Office of China National Narcotics Control Commission (2017) *Annual Report on Drug Control in China.*



Source: UNODC

India: Narcotics Control Bureau reports methamphetamine seizures suspected to have originated from Myanmar and destined for Bangladesh

KOLKOTA, India – August 2017-February 2018. Between August 2017 and February 2018, the Kolkata Zonal Unit of the Indian Narcotics Control Bureau reported to have seized quantities of methamphetamine that were suspected to have originated from Myanmar and destined for Bangladesh. For instance, on 8 February 2018, the Kolkata Zonal Unit made an arrest in connection with a seizure 0.8 kg of methamphetamine that was suspected to have originated from Myanmar and destined for Bangladesh. Previously, the Kolkata Zonal Unit made arrests in connection with another seizure of 2,000 methamphetamine tablets on 2 August 2017 that were suspected to have originated from Myanmar and on 9 August 2017 seized 720 tablets of methamphetamine, together with a large number of other substances, that were suspected to have been destined for Bangladesh.

Narcotics Control Bureau (August 2018) *Drug Situation Report/ Significant Events Report for India for the Month of August 2018*. New Delhi, India.

Narcotics Control Bureau (August 2017) *Drug Situation Report/ Significant Events Report for India for the Month of August 2017*. New Delhi, India.

Islamic Republic of Iran: Methamphetamine seizures and reports of concomitant use increase

TEHERAN, Islamic Republic of Iran – March 2018. According to the annual drug report of the Islamic Republic of Iran, methamphetamine seizures in the country have increased from 1.8 tons in 2016 to 2.3 tons in 2017. Methamphetamine use in the Islamic Republic of Iran has been described as a form of polydrug use among opiate users which has also been the case in other parts of South-Western Asia, such as Afghanistan. Between December 2013 and February 2014 a qualitative study conducted among 7 focus groups with a total of 45 participants undergoing drug use treatment at centres in Isfahan, in the Islamic Republic of Iran, showed that the majority of patients decided to start using or continued to use methamphetamine concomitantly with other opiates as an attempt to manage and/or offset the effects of their methadone substitution therapy.

Drug Control Headquarters (March 2018) *Concise report on the activities of the Islamic Republic of Iran in combating the world drug problem 2017*. Islamic Republic of Iran.

Radfar, S. R. et al. (April 2016) "Methamphetamine Use Among Patients Undergoing Methadone Maintenance Treatment in Iran; a Threat for Harm Reduction and Treatment Strategies: A Qualitative Study." *International Journal of High Risk Behaviors and Addiction* 5(4).



Source: UNODC

Malaysia: 1.2 ton record seizure of crystalline methamphetamine at Port Klang

PORT KLANG, Malaysia – May 2018. On 22 May 2018, Royal Malaysian Customs seized 1.2 tons of crystalline methamphetamine worth US$ 18 million at Port Klang. The crystalline methamphetamine had been concealed in a shipment of tea bags trafficked from Yangon in Myanmar. According to Malaysia Customs, the seized methamphetamine was intended for onward trafficking to a Malaysian trading company based in the suburbs of Kuala Lumpur. Three Myanmar nationals and three Malaysian national were arrested in connection with the case. Although investigations are still ongoing, Malaysia Customs suspect that this case involves a syndicate with connections to Myanmar.

Channel News Asia. "Malaysia makes record bust of crystal meth, shipped from Myanmar." 28 May 2018. Accessed at: https://www.channelnewsasia.com/news/asia/malaysia-considering-asking-us-doj-to-get-goldman-sachs-to-10409876

EUROPE

Czechia: Methamphetamine and benzodiazepines account for the majority of non-fatal drug intoxications

PRAGUE, Czechia – June 2018. Data from the Czech Public Health Service show an increase in non-fatal drug intoxication cases since 2011. Cases relating to the use of methamphetamine and benzodiazepines accounted for the majority of the 1,205 non-fatal intoxications reported in the country in 2015. Data from specialized treatment centers in Czechia also show that methamphetamine was the most frequently reported primary substance of use for new patients entering drug treatment in 2014, followed by cannabis. Polydrug use commonly featured among people entering treatment for methamphetamine use who often reported injecting methamphetamine in combination with buprenorphine or other opioids such as heroin.

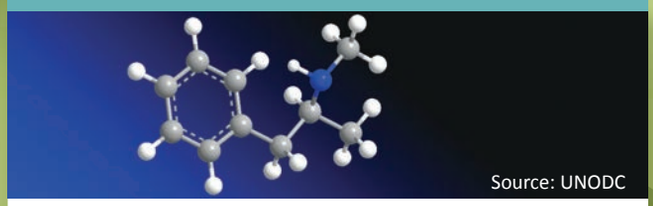
European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). *Czech Republic Drug Report 2018*. June 2018.

Turkey: Methamphetamine-related incidents increase in 2016

ISTANBUL, Turkey – 2017. According to the 2017 Turkish National Drug Report, the number of methamphetamine-related incidents (e.g. cases reported by law enforcement entities) in the country increased by 85 per cent from 1,915 incidents in 2015 to 3,545 incidents in 2016. The number of methamphetamine-related incidents in 2016 is higher than the total number of captagon- (436 incidents) and cocaine-related incidents (1,476 incidents) that year, but lower than that of "ecstasy" (5,259 incidents), heroin (8,176 incidents) and cannabis (39,948 incidents). From 2015 to 2016, the number of suspects arrested in connection with methamphetamine also increased from 2,977 suspects to 5,284 suspects, whereas the annual quantity of methamphetamine seizures remained relatively stable ranging between 250 and 260 kg.

Turkish Monitoring Centre for Drugs and Drug Addiction. *2017 Turkish National Drug Report (2016 Data)*. Ankara: 2017.

OCEANIA



Source: UNODC

Australia: Methamphetamine is the most consumed illicit drug in Australia excluding cannabis

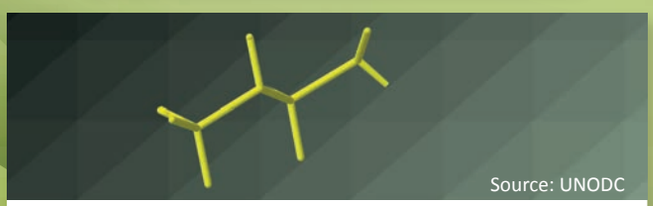
CANBERRA, Australia – March 2018. A wastewater analysis of 12 licit and illicit drugs (excluding cannabis) conducted by the National Wastewater Drug Monitoring Program (NWDMP) of the Australian Criminal Intelligence Commission (ACIC) between August 2016 and December 2017 shows that methamphetamine was the most consumed illicit drug among those tested across all regions in Australia. The highest methamphetamine wastewater levels were observed in Adelaide, in South Australia and sites in Western Australia excluding Perth. According to the ACIC, the total combined estimated weight of cocaine, MDMA and heroin consumed in Australia annually equates to only around 60 per cent of the estimated weight of methamphetamine consumed annually. Furthermore, in relation to national seizure data, wastewater findings show that the quantity by weight of methamphetamine seized in the country equated to more than 40 per cent of the total estimated quantity needed to meet national demand.

Australian Criminal Intelligence Commission. *National Wastewater Drug Monitoring Program—Report 4*. March 2018.

New Zealand: Methamphetamine is more available than cannabis throughout New Zealand

WELLINGTON, New Zealand – March 2018. Findings of an online survey completed by 6,100 people from November 2017 to February 2018 showed that respondents perceived methamphetamine to be more available than cannabis in all regions of New Zealand. Overall, 54 per cent of those who used methamphetamine in the past six months reported the current availability of methamphetamine as "very easy". In contrast, only 14 per cent of respondents who used cannabis described the current availability of cannabis to be "very easy". With respect to online drug availability, 31 per cent of methamphetamine users reported that they were able to purchase methamphetamine in 20 minutes or less, whereas only 14 per cent of cannabis users could purchase cannabis within the same time span.

Wilkins, C. (March 2018) "What drug is more available in New Zealand: Cannabis or Methamphetamine?" *Bulletin 1*. Shore and Whariki Research Centre.



Source: UNODC

New Zealand: New method of chemical 'masking' employed to traffic methamphetamine

WELLINGTON, New Zealand – February 2018. According to the New Zealand National Drug Intelligence Bureau, a novel method is being employed to chemically mask methamphetamine trafficked from China to New Zealand. In this case, *tert*-butyloxycarbonyl (t-BOC) group is added to methamphetamine to produce a masked product not under international control. Once the masked methamphetamine has been successfully trafficked into the country the t-BOC can be easily removed to produce methamphetamine.

New Zealand National Drug Intelligence Bureau. "New Zealand Police ADEC 2018." Asia-Pacific Conference on Operational Drug Enforcement, Tokyo, Japan, 6–8 February, 2018.

INTERNATIONAL

EMCDDA: Wastewater analysis in Europe reveals methamphetamine use in Czechia, Slovakia, Cyprus, the east of Germany, Spain, Switzerland and northern Europe

LISBON, Portugal – March 2018. Methamphetamine use has historically been concentrated in Czechia and Slovakia. A recent wastewater study conducted in almost 60 cities in 19 countries across Europe over a one-week period during seven consecutive years from 2011 to 2017, showed that while some of the highest levels of methamphetamine were indeed discovered in wastewater at sites in Czechia and Slovakia, methamphetamine was also present in other parts of the continent, such as Cyprus, Finland, the east of Germany, Lithuania, Norway, Spain, Sweden, and Switzerland. At some of these sites, methamphetamine levels were higher than those detected for cocaine and ecstasy that year. In Cyprus, methamphetamine was first discovered in wastewater analysis conducted in Nicosia and Limassol in 2013 signifying the lowest levels in Europe, but which by 2017 have exceeded levels observed at sites in Germany and Slovakia.

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) *Wastewater analysis and drugs: a European multi-city study.* Lisbon: March 2018.

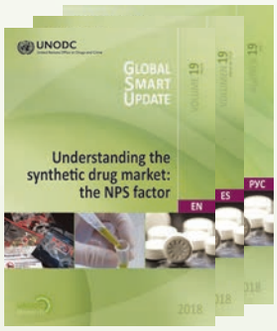
The Global Drug Survey: The percentage of drug users that need to seek emergency medical treatment is higher following the use of methamphetamine than for "synthetic cannabis" and "MDMA/ Ecstasy"

LONDON, United Kingdom – 2017. The results of the online Global Drug Survey conducted among people who had used a drug over the last year, showed that people most commonly needed to seek emergency medical treatment following the use of methamphetamine, at a rate of 4.8 per cent. This signifies a higher rate than that of "synthetic cannabis" at 3.2 per cent, alcohol at 1.3 per cent and "MDMA/Ecstasy" at 1.2 per cent. Among those users that needed to seek emergency medical treatment following the use of methamphetamine, the rate for women at 8.2 per cent was more than double than that of men at 3.7 per cent.

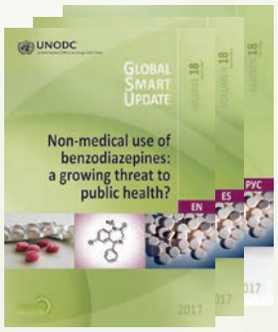
GLOBAL DRUG SURVEY

Global Drug Survey 2017: Global overview and highlights. 2017.

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World Drug Report 2018



Terminology and Information on Drugs 2016 (now in Spanish)



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