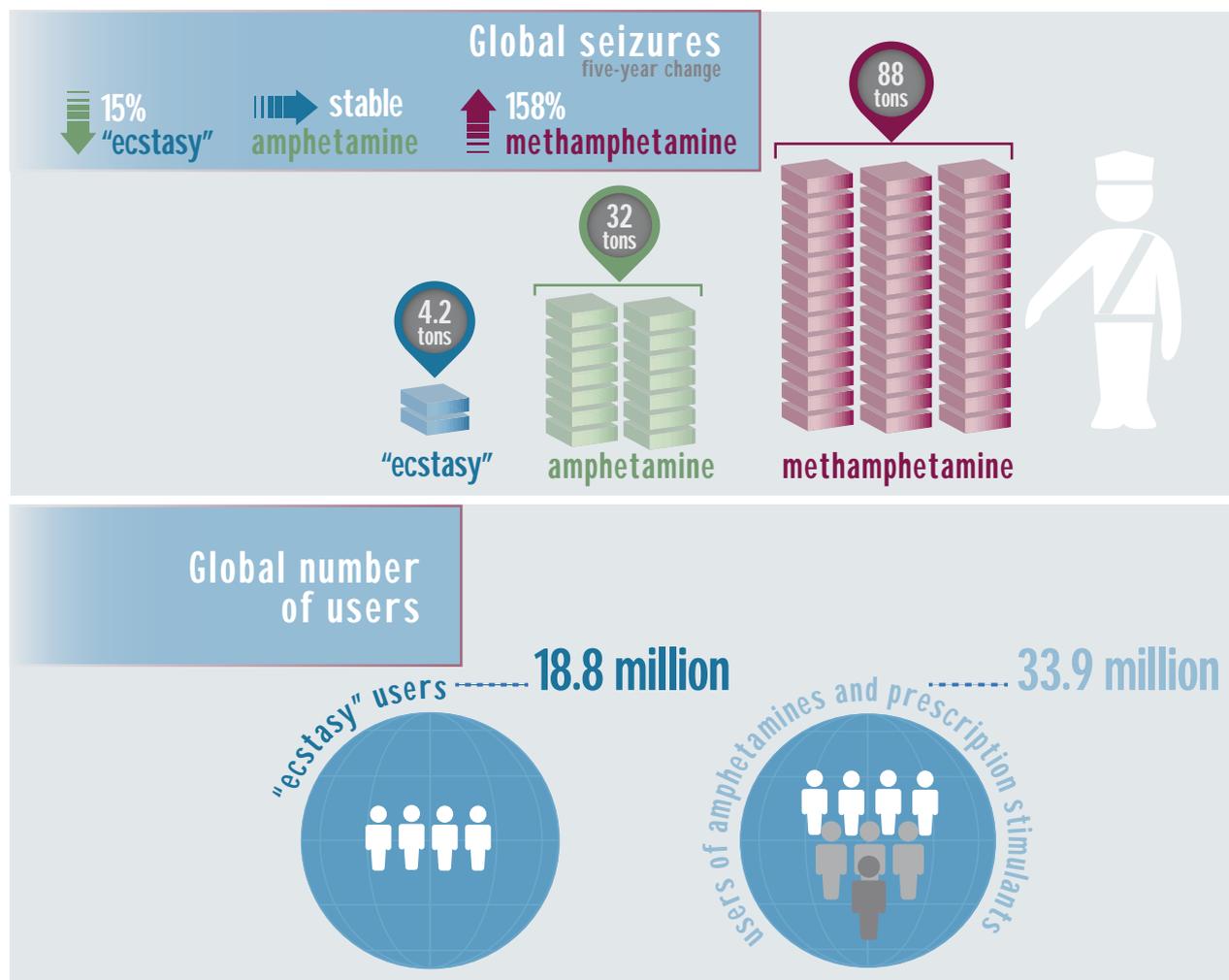


SYNTHETIC DRUGS:²⁹³ amphetamine-type stimulants and new psychoactive substances

Key figures



Note: Data for seizures and number of users are from 2013. Amphetamines include both amphetamine and methamphetamine.

The global market for synthetic drugs, which for the purposes of the present report includes amphetamine-type stimulants (ATS) and new psychoactive substances (NPS), continues to be dominated by methamphetamine, with East and South-East Asia accounting for the largest seizures reported worldwide. The market for methamphetamine is becoming increasingly diversified. In addition to the established and growing market for methamphetamine in East and South-East Asia, there are also indications of increasing use in parts of North America and Europe. Seizure data for "ecstasy" and its precursor chemicals point to the growing availability of "ecstasy" in East and South-East Asia.

Regarding the large numbers of NPS²⁹⁴ which have

emerged in recent years, it remains unclear whether they are displacing existing drugs under international control, in either the short or long term, or whether they are diversifying the range of synthetic drugs available on the market. Although prevalence figures for synthetic cannabinoids in the United States and mephedrone in the United Kingdom suggest declining use of these substances, a growing number of countries has been reporting a wider range of emerging NPS and worrying developments such as the injecting use of NPS. Up to December 2014, a total of 541 NPS were reported to the UNODC early warning advisory by 95 countries and territories, through data submissions from Member States and national drug testing laboratories participating in the international collaborative exercises programme.²⁹⁵ While there are large numbers of NPS available on the synthetic drugs market globally, emergence and persistence patterns of these substances show significant differences between countries and regions.

293 For the purpose of the present report, the term "synthetic drugs" includes ATS, the main drugs being amphetamine, methamphetamine and "ecstasy"-type substances, and NPS.

294 For the purposes of the present report, the analysis of NPS includes ketamine, which differs from other NPS in that it is widely used in human and veterinary medicine, while most NPS have little or no history of medical use.

295 UNODC, early warning advisory on NPS.



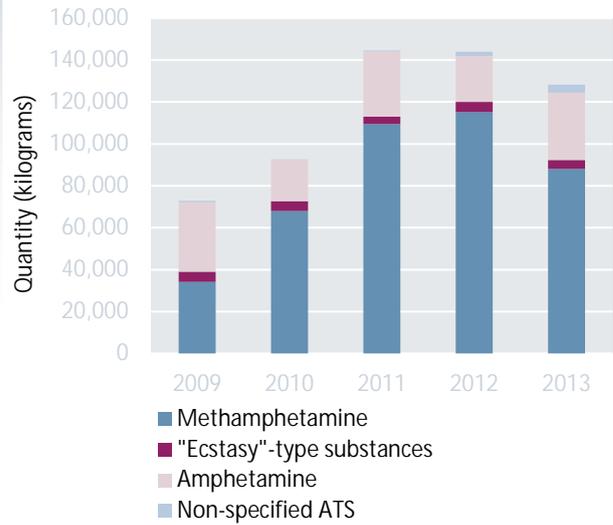
Methamphetamine is driving the increase in ATS seizures

Surging seizures since 2009 point to a rapid expansion of the global ATS market, with ATS seizures almost doubling to reach over 144 tons in 2011 and 2012 — the highest ATS seizure amounts since UNODC systematic monitoring began — before decreasing slightly in 2013 (see figure 69). The increase from 2009 is primarily attributable to the growing amount of methamphetamine seized, which increased from 34 tons in 2009 to 88 tons in 2013. The growing importance of methamphetamine is a rather recent feature of the global ATS market. Over the years, global amphetamine seizures have fluctuated, ranging between about 20 tons and 33 tons annually since 2009. Global “ecstasy” seizures were low compared with amphetamine and methamphetamine seizures and remained under 5 tons annually between 2009 and 2013.

Increasing interconnections in the methamphetamine market

While methamphetamine continues to be primarily trafficked within regions, significant increases in methamphetamine seizures observed in the past five years would seem to indicate the establishment of new trafficking routes linking previously unconnected regional methamphetamine markets (see map 3). New international supply channels linking major methamphetamine markets in North America and East and South-East Asia have been observed. In addition, methamphetamine trafficking

FIG. 69. Total seizures of amphetamine-type stimulants reported worldwide, 2009-2013

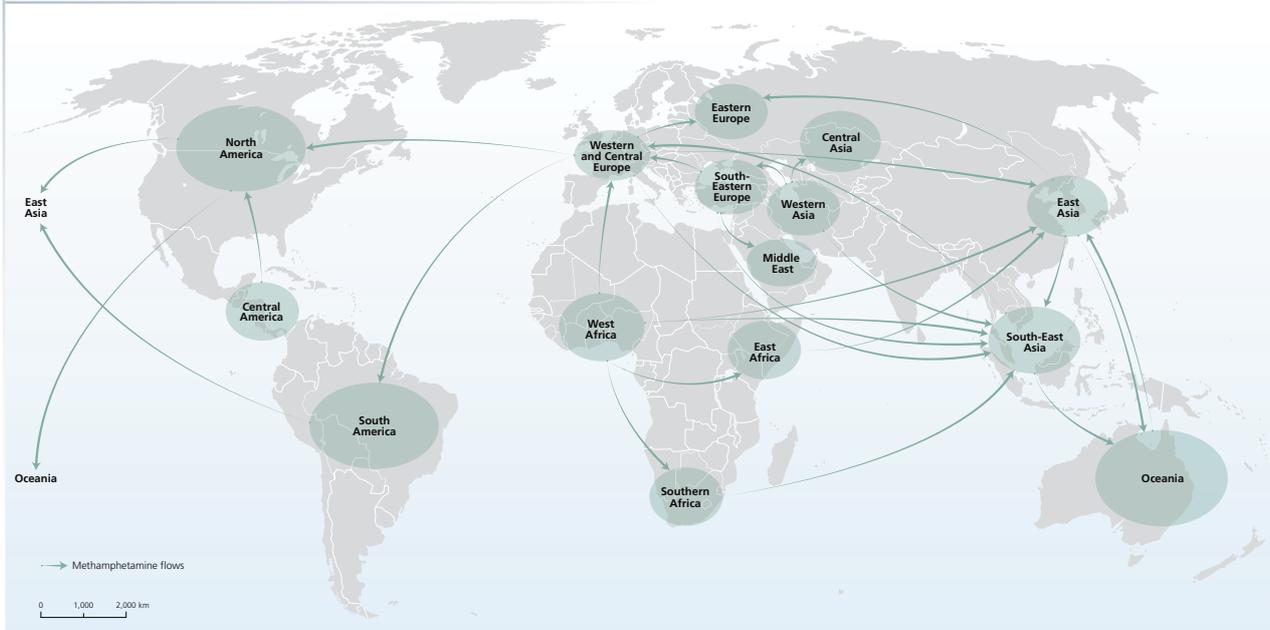


Source: UNODC, responses to annual report questionnaire, 2009-2013.

Note: The category “non-specified ATS” includes seizures reported to UNODC as ATS without indicating a specific substance and excludes prescription stimulants.

routes to East and South-East Asia have emerged from several parts of Africa and the Americas. West Africa in particular appears to have become an established source of methamphetamine trafficked to East and South-East Asia via South Africa or Europe. Turkey may have emerged

MAP 3. Methamphetamine flows as perceived by recipient countries, 2011-2013



Source: UNODC, responses to annual report questionnaire, 2011-2013.

Note: The origins of the flow arrows do not necessarily indicate the source/manufacture of methamphetamine. These arrows represent the flows as perceived by recipient countries. Flow arrows represent the direction of methamphetamine trafficking and are not an indication of the quantity trafficked. The boundaries shown 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 Sudan and South Sudan has not yet been determined.

as a transit point for methamphetamine smuggled from Western Asia to Western and Central Europe. Recently, there have also been reports of methamphetamine trafficking from Western and Central Europe to North America, South America and East and South-East Asia.

New trends in methamphetamine use

Methamphetamine use continues to be a major problem in large parts of East and South-East Asia and accounts for a large share of people receiving drug treatment in a number of countries in the subregion. In 2013, people receiving treatment for methamphetamine use accounted for the majority of people treated for drug use in many countries.^{296,297}

Methamphetamine use in the United States displays a stable trend, with annual prevalence of methamphetamine use among the general population aged 15-64 having remained in the range of 0.5 to 0.6 per cent between 2010 and 2013. However, there are recent indications of increases in methamphetamine use in certain parts of the United States. In Minneapolis/Saint Paul, a 19 per cent increase in the number of people treated for methamphetamine use between 2011 and 2012 was reported.²⁹⁸ In the state of Ohio, there was a 34 per cent increase in the number of people receiving treatment for methamphetamine use between 2009 and 2012.²⁹⁹ In San Diego, deaths related to methamphetamine use have increased by more than 70 per cent between 2008 and 2012.³⁰⁰

In Europe, while amphetamine and “ecstasy” continue to account for the bulk of ATS seizures, there appears to be increasing availability of crystalline methamphetamine, including in countries where reports on the use of methamphetamine have not been common in the past. According to the Federal Criminal Police Office in Germany, the number of first-time crystalline methamphetamine users increased by almost 7 per cent to 2,746 users in 2013, crystalline methamphetamine seizure cases rose by about 10 per cent to 3,847 cases and the quantity of the drug seized increased by 88 per cent to 75.2 kg in the same year.³⁰¹ The results of a survey in Frankfurt, Germany, found high methamphetamine use among people in the techno-party scene in 2012.³⁰² According to EMCDDA, there have been new reports from Greece and Turkey of the smoking of methamphetamine.³⁰³ In Greece, crystal-

line methamphetamine seizures increased from only 1 kg in 2012 to 15 kg in 2013 and, according to the Turkish National Police, crystalline methamphetamine makes up the majority of methamphetamine seizures in the country.³⁰⁴ EMCDDA also reports an emergence of crystalline methamphetamine smoking among people who inject opioids in southern European countries.³⁰⁵

For some years, methamphetamine has dominated the market in the Czech Republic and Slovakia. However, in 2013, methamphetamine seizures not only accounted for the largest share of ATS seizures reported in the Czech Republic and Slovakia, but also in some countries in the Baltics and Eastern Europe, such as Belarus, Latvia, Lithuania and the Republic of Moldova, as well as Cyprus, Greece and Portugal.

A diversified market for methamphetamine in East and South-East Asia

The methamphetamine sold in East and South-East Asia is presented in two main forms: methamphetamine tablets and crystalline methamphetamine. In both cases, methamphetamine is available in salt form, most frequently as methamphetamine hydrochloride, which, in principle, can be smoked, nasally insufflated, orally ingested and injected. Methamphetamine tablets, commonly known as “yaba” in the subregion, are small pills, typically of low purity, which are available in many different shapes and colours. In addition to methamphetamine, such tablets often contain a large portion of caffeine, plus a range of adulterants. In the case of methamphetamine tablets, both ingestion and smoking of the crushed tablets are common. Crystalline methamphetamine, also called “crystal meth”, “ice” or “shabu”, is usually of much higher purity than the tablet form. It is encountered on the illicit drug market as (crushed) colourless crystals of different sizes. In the case of crystalline methamphetamine, smoking, nasal insufflation and injecting are typical forms of consumption.³⁰⁶

Information on seizures and use indicate that the market for both forms of methamphetamine is expanding. Seizures of methamphetamine tablets and crystalline methamphetamine generally increased in East and South-East Asia between 2008 and 2013 (see figure 70). Crystalline methamphetamine seizures in the region almost doubled over this period, while methamphetamine tablet seizures have risen at a more rapid rate resulting in an eight-fold increase.

296 Based on data collected by the Drug Abuse Information Network for Asia and the Pacific.

297 Ibid.

298 United States, DEA, *National Drug Threat Assessment Summary*, November 2014.

299 Ibid.

300 Ibid.

301 UNODC, *Global SMART Update 2014*, vol. 12, (September 2014).

302 C. Bernard, B. Werse and C. Schell-Mack, *MoSyD Jahresbericht 2012: Drogentrends in Frankfurt am Main* (Frankfurt, Centre for Drug Research, Goethe University, 2013).

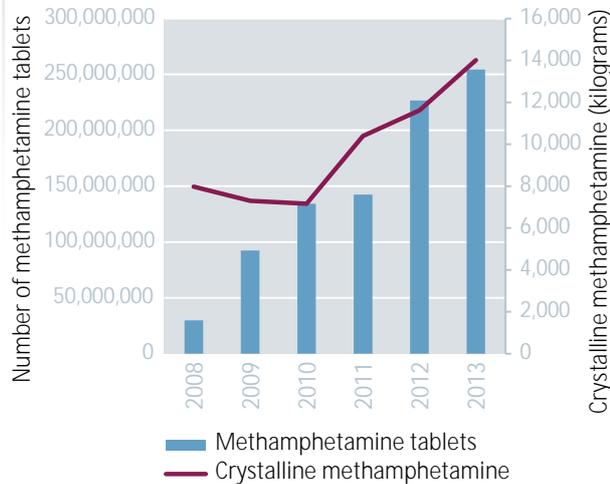
303 EMCDDA, *European Drug Report 2014*.

304 Turkish National Police, *Turkish Report of Anti-Smuggling and Organised Crime 2013* (Ankara, June 2014).

305 EMCDDA, *European Drug Report 2014*.

306 *Terminology and Information on Drugs* (United Nations publication, Sales No. E.03.XI.14); *Recommended Methods for the Identification and Analysis of Amphetamine, Methamphetamine and Their Ring-Substituted Analogues in Seized Materials: Manual for Use by National Drug Testing Laboratories* (United Nations publication, Sales No. E.06.XI.1).

FIG. 70. Crystalline methamphetamine and methamphetamine tablet seizures reported in East and South-East Asia, 2009-2013



Source: Drug Abuse Information Network for Asia and the Pacific.

Unlike methamphetamine tablets, which, by and large, have remained a feature of the Mekong region, crystalline methamphetamine has become geographically widespread across East and South-East Asia.³⁰⁷

Methamphetamine tablets are mainly manufactured in the Mekong region of East and South-East Asia, with seizure reports indicating that such tablets are mostly intended for markets within that subregion. Myanmar is perceived to be the main country of origin for methamphetamine tablets seized throughout the Mekong region and in some other parts of East and South-East Asia. Reports of methamphetamine tablets originating in Myanmar and seized in China and Thailand indicate that increasing quantities are being trafficked from Myanmar across the shared borders of those countries.³⁰⁸

Crystalline methamphetamine: increased interconnectedness

Although crystalline methamphetamine continues to be manufactured on a large scale in East and South-East Asia, a complex international trafficking pattern of crystalline methamphetamine originating in other parts of the world has evolved in recent years. For a number of years, crystal-

line methamphetamine has been trafficked from Africa to countries in East and South-East Asia, such as Cambodia, China, Indonesia, Japan, Malaysia, Thailand, Viet Nam and more recently the Philippines.³⁰⁹ Recently, East and South-East Asian countries have also reported crystalline methamphetamine seizures perceived to have originated in Western Asia.³¹⁰ Since 2013, shipments of crystalline methamphetamine seized in East and South-East Asia and Oceania have been perceived to have originated in Mexico. In particular, large consignments, perceived to have originated in Mexico, totalling more than 0.4 tons and 0.2 tons of crystalline methamphetamine, were reported to have been seized in Japan in 2013 and 2014, respectively.³¹¹ In 2013, Australia, the Philippines and the Republic of Korea also reported the seizure of crystalline methamphetamine perceived to have originated in Mexico.³¹²

In North America, there may be an increase in crystalline methamphetamine trafficking from Mexico to the United States. According to the United States Drug Enforcement Administration, between 2012 and 2013 the amount of methamphetamine seized in powder and crystalline form along the south-west border of the United States increased by 18.5 per cent.³¹³ Moreover, increasing trafficking to the United States of methamphetamine in liquid form for later conversion to crystalline methamphetamine was reported.³¹⁴ In 2013, Mexico also reported the seizure of more than 3.3 tons of liquid methamphetamine. However, not all of the crystalline methamphetamine manufactured in North America may be intended for the region. For instance, methamphetamine trafficked from Mexico to Japan is perceived to have increased in 2013, which further points to a more globalized crystalline methamphetamine market.

309 UNODC, *Patterns and Trends of Amphetamine-type Stimulants and other Drugs: Challenges for Asia and the Pacific* (November 2013); UNODC, *Global Synthetic Drugs Assessment: Amphetamine-type Stimulants and New Psychoactive Substances* (Vienna, 2014).

310 "Indonesia country report", presented by the National Narcotics Board of Indonesia at the Global SMART Programme regional meeting, Yangon, 20 and 21 August 2014; National Police Agency of Japan, October 2014; Malaysia drug situation report, presented by the Royal Malaysian Police at the Twenty-fourth Anti-Drug Liaison Officials' Meeting for International Cooperation, Jeju, Republic of Korea, 1-3 October 2014; and "Thailand country report", presented by the Office of the Narcotics Control Board of Thailand at the Nineteenth Asia-Pacific Operational Drug Enforcement Conference, held in Tokyo from 18 to 20 February 2014.

311 Information provided by International Safety and Security Cooperation Division, Ministry of Foreign Affairs, Japan, August 2014; National Police Agency of Japan, October 2014.

312 Presentation by the Philippine Drug Enforcement Agency at the Nineteenth Asia-Pacific Operational Drug Enforcement Conference, held in Tokyo from 18 to 20 February 2014; presentation by the Supreme Prosecutors' Office of the Republic of Korea, at the Global SMART Programme regional meeting, Yangon, 20 and 21 August 2014; presentation by the Australian Federal Police at the Nineteenth Asia-Pacific Operational Drug Enforcement Conference, held in Tokyo from 18 to 20 February 2014.

313 United States, DEA, *National Drug Threat Assessment Summary, 2014* (November 2014).

314 Ibid.

307 Based on expert perception on the use of main drugs of concern reflected in the Drug Abuse Information Network for Asia and the Pacific.

308 China, National Narcotics Control Commission, *Annual Report on Drug Control in China 2014* (Beijing, 2014); Official communication with the National Narcotics Control Commission of China, Ministry of Public Security, November 2014; Office of the Narcotics Control Board of Thailand, "Drug situation in Thailand and trends", presented at the Thirty-eighth Meeting of Heads of National Drug Law Enforcement Agencies, Asia and the Pacific (October 2014).

Regional shift in the “ecstasy” market?

In 2012, “ecstasy” seizures in East and South-East Asia and Oceania surged to almost 2 tons, just under the 2.3 tons seized in Europe, but much higher than the 0.7 tons seized in the Americas. East and South-East Asia and Oceania may be becoming an emerging driver of the global market for “ecstasy”, while seizures in the Americas have declined, dropping by 81 per cent between 2009 and 2012. Although “ecstasy” seizures in East and South-East Asia and Oceania declined to 1 ton in 2013, seizures continued to be at a higher level than in 2008–2011, and in 2014 multi-ton seizures were reported by law enforcement authorities in Australia³¹⁵ and Myanmar.³¹⁶

Insufficient data are available to establish the size of the “ecstasy” market based on use figures for East and South-East Asia and Oceania. Nevertheless, data on specific population groups suggest widespread use in certain countries. In Indonesia, a national survey among transportation workers in 2013 found that, at 1.4 per cent annual prevalence of use, “ecstasy” was the second most used drug after cannabis at 4.9 per cent.³¹⁷ At 1.3 tons, Indonesia reported the largest quantity of “ecstasy” seizures in the world in 2012, which was reportedly intended in its entirety for supplying the domestic market. This points to the presence of a large amount of “ecstasy” in the country in that year.

There have also been indications of “ecstasy” use emerging in the Mekong region. According to expert perceptions in 2012, “ecstasy” use had increased in Cambodia, Thailand and Viet Nam. Although low levels of “ecstasy” seizures were reported in Cambodia and Thailand, seizures in Viet Nam increased to almost 0.2 tons in 2012.

The large amount of MDMA chemical precursors recently seized in East and South-East Asia and Oceania implies that there may be considerable “ecstasy” manufacture in these subregions. Based on commonly used MDMA manufacturing methods, as outlined by the International Narcotics Control Board, the almost 66,000 litres of safrole and 3,4-MDP-2-P seized in the region in 2011 and 2012 could theoretically have been sufficient to produce about 44 tons of “ecstasy”.³¹⁸ This amount far exceeds the total “ecstasy” seized worldwide in both 2011 and 2012, which amounted to 9 tons. Although “ecstasy” is manufactured

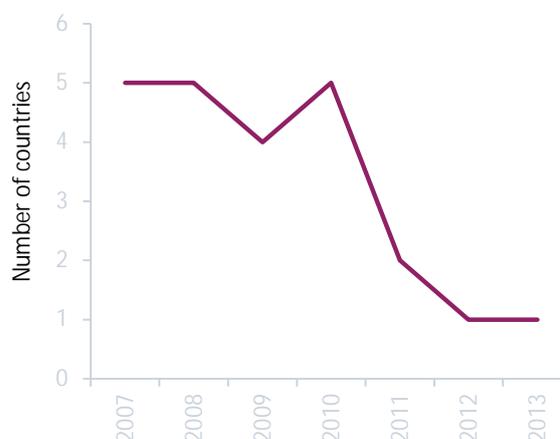
315 Australian Federal Police, “Media release: drugs worth \$1.5 billion seized by Joint Organized Crime Group”, 29 November 2014.

316 Official government communication by the Central Committee for Drug Abuse Control of Myanmar, March 2015.

317 Indonesia, National Narcotics Board, *Journal of Data on the Prevention and Eradication of Drug Abuse and Illicit Trafficking: Year 2013* (Jakarta, June 2014).

318 The calculation for East and South-East Asia is based on the conversion ratios provided by the International Narcotics Control Board; *Precursors and Chemicals Frequently Used In The Illicit Manufacture Of Narcotic Drugs And Psychotropic Substances: Report of the International Narcotics Control Board for 2012 on the Implementation of Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988* (E/INCB/2013/4).

FIG. 71. Number of times countries in East and South-East Asia and Oceania have been identified as countries of origin for “ecstasy” seized in other regions worldwide, 2007–2013



Source: UNODC, responses to annual report questionnaire, 2007–2013.

in East and South-East Asia and Oceania, a decreasing number of “ecstasy” trafficking attempts from these countries are being intercepted in other parts of the world (see figure 71).

Links and interaction between new psychoactive substances and other drugs

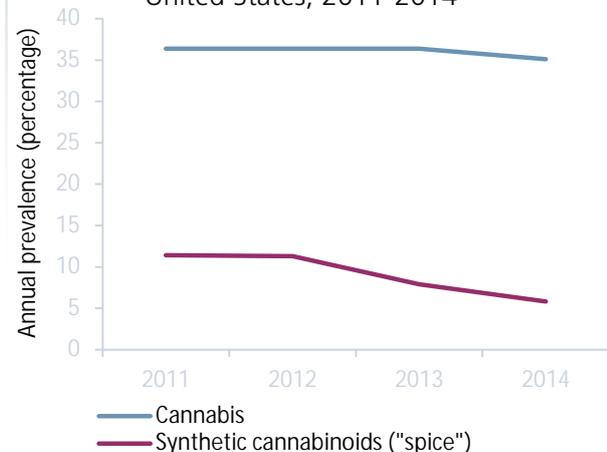
In the past few years, a growing number of NPS have been sold on illicit drug markets. NPS available on the market may or may not share effects and profiles similar to the substances under international control that they are designed to mimic.³¹⁹

Only limited data series are available that allow the comparison of prevalence of use trends of NPS and other drugs. The annual prevalence of cannabis use among twelfth-grade students in the United States remained stable at 36.4 per cent between 2011 and 2013 and declined only slightly in 2014 to 35.1 per cent, while synthetic cannabinoid (“spice”) use almost halved from 11.4 per cent in 2011 to 5.8 per cent in 2014 (see figure 72). The perceived harmfulness of synthetic cannabinoids among secondary school students (twelfth grade) increased between 2012, the first year of measurement, and 2014, which may have contributed to the decline in use.³²⁰ Data from a recent qualitative study suggest that use of both herbal cannabis and synthetic cannabinoids may not be uncommon. Users may choose one or the other depending on

319 For more information, see UNODC, *The Challenge of New Psychoactive Substances* (Vienna, March 2013).

320 United States, National Institute on Drug Abuse, *Monitoring the Future: National Survey Results on Drug Use 1975–2014*.

FIG. 72. Annual prevalence of cannabis and synthetic cannabinoid (“spice”) use among twelfth-grade students in the United States, 2011-2014



Source: United States, National Institute on Drug Abuse, Monitoring the Future survey, national survey results on drug use, 1975-2014.

the situation, for example preferring synthetic cannabinoids when trying to avoid a positive drug test result.³²¹

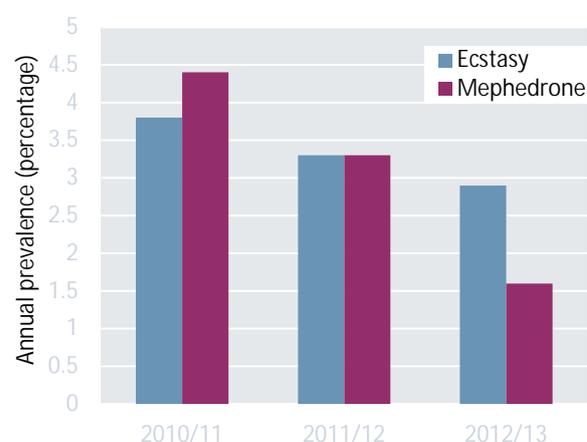
For some time, the market for “ecstasy” has been on the decline in several European countries and mephedrone and other NPS may have been serving as a substitute for “ecstasy”. However, annual prevalence data for the United Kingdom show that mephedrone use may have fallen below that of “ecstasy” in recent years (see figure 73).³²² Between 2010 and 2013, annual prevalence rates of both “ecstasy” use and mephedrone use among people aged 16-24 in the United Kingdom have been on the decline. Mephedrone use among this population segment fell by almost two thirds from 4.4 per cent in 2010/11 to 1.6 per cent in 2012/13, while “ecstasy” use declined only from 3.8 per cent to 2.9 per cent over the same period. Although the prevalence of mephedrone use among people aged 16-24 in 2010/11 was 0.6 percentage points higher than that of “ecstasy”, by 2012/13 “ecstasy” use was almost twice as high as mephedrone use.

Despite a possible decline in the overall demand for mephedrone in the United Kingdom, high levels of use have been observed among some segments of the population. Mephedrone use appears to be particularly common in London dance clubs. Indeed, in the Crime Survey for England and Wales in 2012/13, at 4.4 per cent the highest mephedrone use rate was found among adults

321 D. Perrone, R. D. Helgesen and R. G. Fischer, “United States drug prohibition and legal highs: how drug testing may lead cannabis users to spice”, *Drugs: Education, Prevention, and Policy*, vol. 20, No. 3 (2013), pp. 216-224.

322 While no clear link has yet been established, government activities aimed at raising awareness about the health risks associated with using NPS and the introduction of national controls for mephedrone, scheduled as a class B drug under the Misuse of Drugs Act in 2010, took place simultaneously.

FIG. 73. Annual prevalence of “ecstasy” and mephedrone use among people aged 16-24 years in the United Kingdom, 2010/11-2012/13



Source: United Kingdom, Home Office, Drug Misuse: Findings from the 2012/13 Crime Survey for England and Wales (July, 2013).

who had visited a nightclub on four or more occasions in the past month.³²³ Similarly, another survey of visitors to nightclubs in Rome in 2013 found that NPS were being used in addition to drugs such as cocaine.³²⁴ Polydrug use can involve unpredictable effects and poses a serious challenge for health-care providers.

According to EMCDDA, there has been a decline in the injecting of illicit drugs in Europe, but there have been recent reports of the injecting of NPS, particularly synthetic cathinones.³²⁵ For instance, based on reports from the treatment and needle and syringe programmes in Hungary, synthetic cathinone injecting has increased since 2010, while injecting heroin use has declined. By 2012, the number of people in Hungary treated for injecting synthetic cathinone use accounted for about 34 per cent of people in that programme.³²⁶ Moreover, a needle and syringe programme in Bucharest reported in 2012 that 51 per cent of people in the programme injected NPS (primarily synthetic cathinones), 44 per cent injected heroin and 5 per cent injected both NPS and heroin.³²⁷ In Austria, a survey among people receiving treatment for drug use in Graz in 2010 identified that almost 60 per cent of people were injecting mephedrone,³²⁸ and the use of the

323 United Kingdom, Home Office, *Drug Misuse Declared: Findings from the 2012/13 Crime Survey for England and Wales* (July 2013).

324 A. E. Vento and others, “Substance use in the club scene of Rome: a pilot study”, *BioMed Research International*, vol. 2014, (2014), pp. 1-5.

325 EMCDDA, “Perspectives on drugs: injection of synthetic cathinones”, Perspectives on Drugs Series, 27 May 2014.

326 A. Péterfi and others, “Changes in patterns of injecting drug use in Hungary: a shift to synthetic cathinones”, *Drug Testing and Analysis*, vol. 6, Nos. 7 and 8 (2014), pp. 825-831.

327 See footnote 325.

328 Marion Weigl and others, *2012 National Report (2011 Data) to the*

synthetic cathinone 4-MEC³²⁹ by people who inject drugs in Paris was reported in 2012.³³⁰ EMCDDA has also reported that injecting use of synthetic cathinones has emerged among specific population segments in Austria, Belgium, the Czech Republic, France, Germany, Ireland, Poland, Romania, Spain and the United Kingdom.³³¹

Use data for NPS at the substance level are still limited. Among the reasons for this are that there is a large number of different NPS available on the market, and some of them are sold under street names that could imply a variety of different substances. For instance, the term “spice”, often used in reference to the use of synthetic cannabinoids, does not relate to a specific substance and could instead refer to a large variety of substances. Given that users can often not identify their actual substance of use, other sources of information gain in importance. Information emerging from early warning systems on NPS has helped to identify the use of NPS and associated health risks at an early stage.³³² In Sweden, for example, a toxicovigilance system documented widespread use of many different NPS mainly by adolescents and young male adults.³³³ Based on its European early warning system on NPS, EMCDDA has undertaken an increasing number of risk assessments of NPS (eight in 2014 alone, compared with only two in the period 2009-2013), documenting the presence of NPS associated with serious negative health consequences in the region.³³⁴ Early warning systems on NPS have also been established in a number of other countries to make information available on the emergence of NPS, health risks associated with their use and best practices to respond to those risks.

Number of new psychoactive substances reported

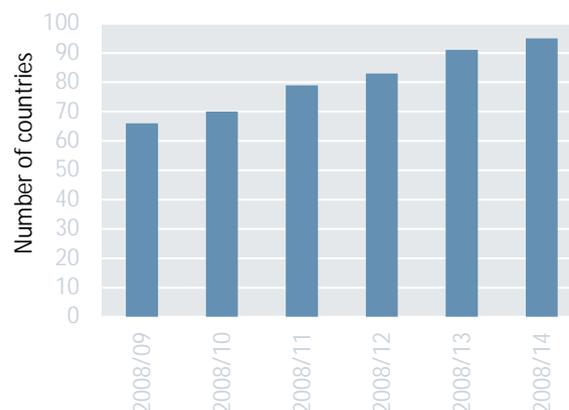
By December 2014, 95 Member States and territories had reported the emergence of NPS to the UNODC early warning advisory under the global Synthetics Monitoring: Analysis, Reporting and Trends (SMART) programme, with notable variations in the number and type of NPS

encountered (see figure 74).³³⁵ The four countries or territories that reported for the first time in 2014 were the Cayman Islands (Americas), Montenegro (Europe), Peru (Americas) and Seychelles (Africa). The majority of countries and territories that reported the emergence of NPS up to December 2014 were from Europe (39), Asia (27), Africa (14), the Americas (13) and Oceania (2).

Up to December 2014, a total of 541 NPS had been reported to the UNODC early warning advisory (see figure 75). In 2014, 450 substances were reported, an increase from the 430 substances reported in 2013. Although this does not indicate a major increase, it is noteworthy that of the 450 substances reported in 2014, 69 were reported to the advisory for the first time. The large increase in NPS reported to the advisory between 2012 and 2013 was due to the expansion of data sources and data completeness in the system as well as increasing laboratory capacity to identify NPS.

In 2014, synthetic cannabinoids continued to account for the majority of NPS reported (39 per cent), followed by phenethylamines (18 per cent) and synthetic cathinones (15 per cent) (see figure 76). More synthetic cannabinoids and, to a lesser extent, synthetic cathinones were reported in 2014 than in 2013, with the majority of the other NPS substance groups remaining stable. Some decreases have been identified regarding NPS belonging to ketamine and phencyclidine-type substances, with only half the number reported in 2013 being reported in 2014 and a slight decrease in the number of reports for tryptamines. Of all reported substances in 2014, 69 were reported to the UNODC early warning advisory for the first time, including 25 synthetic cannabinoids, 16 phenethylamines and synthetic cathinones, 8 other substances and 2 aminoindanes and tryptamines.

FIG. 74. Number of countries and territories reporting new psychoactive substances, 2008-2014



Source: UNODC, early warning advisory on NPS, 2008-2014.

EMCDDA by the Reitox National Focal Point: Austria — New Development, Trends and In-Depth Information on Selected Issues (Vienna, Gesundheit Österreich GmbH, 2012).

329 4-MEC is the chemical abbreviation of 4-methylethcathinone, a synthetic cathinone not under international control.

330 T. Néfau and others, “Drug analysis of residual content of used syringes: a new approach for improving knowledge of injected drugs and drug user practices”, *International Journal of Drug Policy*, vol. 26, No. 4, pp. 412-419.

331 EMCDDA, “Perspectives on drugs: injection of synthetic cathinones”, *Perspectives on Drugs Series*, 27 May 2014.

332 D. M. Wood and others, “Using poisons information service data to assess the acute harms associated with novel psychoactive substances”, *Drug Testing and Analysis*, vol. 6, Nos. 7 and 8 (2014), pp. 850-860.

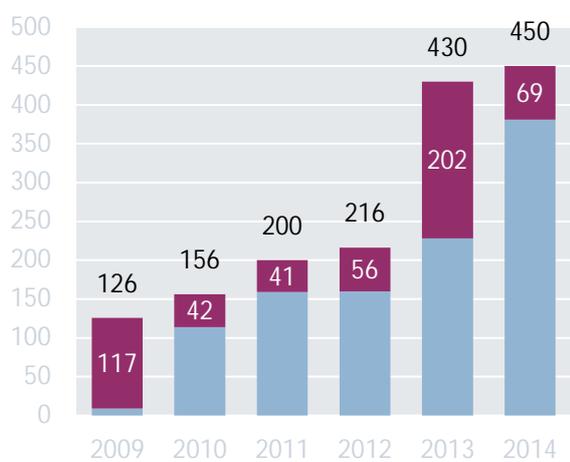
333 A. Helander and others, “Detection of new psychoactive substance use among emergency room patients: results from the Swedish STRIDA project”, *Forensic Science International*, vol. 243 (2014), pp. 23-29.

334 EMCDDA website, publication search.

335 All data in the present section of this report were extracted from the UNODC early warning advisory on NPS, available at www.unodc.org/nps, unless otherwise indicated.



FIG. 75. Number of new psychoactive substances reported, 2009-2014



- Number of new psychoactive substances reported in current year for the first time
- Number of new psychoactive substances reported in current year but not for the first time

Source: UNODC, early warning advisory on NPS, 2009-2014.

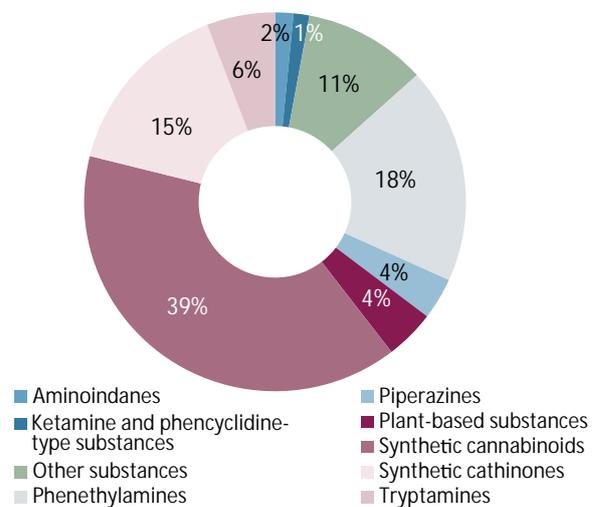
Note: This graph represents only the number of different NPS reported during the respective reporting year. Not all NPS reported in one year were necessarily reported in the following year(s).

Using the early warning advisory for NPS, different patterns in the emergence and persistence of these substances have been identified. There is frequently heterogeneity in the emergence of NPS at the country level, even within regions; that is, the overlap between different NPS found in one country and in a neighbouring country within a given period of time can be small. Some NPS have an established presence on the market and have been reported by a large number of countries over several years. These include ketamine (58 countries), khat (51 countries), mephedrone (46 countries) and JWH-018 (44 countries). More than a quarter of all countries reporting the emergence of NPS worldwide have reported only one substance, most of which were reports of plant-based NPS and ketamine. About 47 per cent of countries reporting the emergence of NPS have identified 10 substances or less, while approximately 18 per cent have identified more than 100 different NPS since 2008.

Synthetic cannabinoids: the challenge of diversity

Synthetic cannabinoid receptor agonists, commonly referred to as synthetic cannabinoids, constitute the largest, most diversified and fastest growing group of NPS on the market. Since 2004, many different synthetic cannabinoids have been detected in herbal smoking blends sold on the Internet and in specialized shops under a variety of brand names. These products typically contain dried and shredded plant material with no intrinsic psychoactive

FIG. 76. Number of new psychoactive substances reported, by substance group, 2014



Source: UNODC, early warning advisory on NPS, 2014.

properties, but which is soaked in or sprayed with one or several synthetic cannabinoids.

In 2014, 177 different synthetic cannabinoids were reported to the UNODC early warning advisory. The emergence of products containing synthetic cannabinoids on the market is not a new phenomenon; however, it is only since 2008 that their use has gained increasing popularity as “legal cannabis substitutes”. Since then, the emergence of hundreds of products containing different synthetic cannabinoids has been reported to the advisory by 58 countries and territories, and the attention of the international community has been drawn to their clandestine manufacture, the serious risks they pose to public health and society and the challenges for drug control.

Since the discovery of the cannabinoid receptors CB₁ and CB₂ in the 1980s, there has been continued growth and evolution of a series of chemical families of synthetic cannabinoids. Their emergence on the NPS market has been characterized by the introduction of successive structural modifications seemingly to keep their legal status ambiguous. This can be illustrated by the emergence of naphthoylindoles (e.g. JWH-018) and the more recent emergence of naphthoylindazoles (e.g. THJ-018) and indazole carboxamides (e.g. AKB-48).³³⁶

The structural diversity and rapid development of new derivatives of synthetic cannabinoids pose serious challenges to legislative control at the national and international levels. In response to these challenges, innovative legal approaches complementing the traditional control of drugs have been adopted at the national level by some countries to protect the population from health risks caused by the open sale of synthetic cannabinoids. An

³³⁶ For more information, see UNODC, “Synthetic cannabinoids in herbal products” (Vienna, 2011).

example of this approach is the control of synthetic cannabinoids based on their effect on the brain recently used in some countries, including the United States and Luxembourg. The United States introduced the neurochemical approach to control synthetic cannabinoids or “cannabinomimetic agents”, under the Synthetic Drug Abuse Prevention Act 2012 and defined them as “any substance that is a cannabinoid receptor type 1 (CB1 receptor) agonist as demonstrated by binding studies and functional assays” within defined structural classes. The definition includes a group of substances with possible chemical variations, but which have a specific effect through binding to the CB₁ receptor.

During its fifty-eighth session, in March 2015, the Commission on Narcotic Drugs decided to place 10 NPS under international control, among them two synthetic cannabinoids, JWH-018 and AM-2201, which were added to Schedule II of the Convention on Psychotropic Substances of 1971.

The transient nature of new psychoactive substances

Although a growing number of NPS are being reported by a larger number of countries every year, some NPS are found to be transient. For instance, of the 541 NPS reported up to December 2014, 16 substances had not been reported since 2012 and 49 had not been reported since 2013. Several NPS have only been reported by a small number of countries in a particular year and some substances seem to have disappeared from the market entirely. For example, the tryptamine 5-MeO-DPT³³⁷ was reported by eight countries between 2009 and 2012, but since then there have been no further reports of its availability by countries submitting to the UNODC early warning advisory. Other substances such as the synthetic cannabinoid CP-series have shown large variations in market availability since 2009. For example, the CP-47,497 series was first reported by four countries in Europe in 2009, but in 2012 only two countries in Europe reported its presence to the advisory, whereas 10 countries reported its presence in 2013, as did six countries in 2014. Compared with other synthetic cannabinoids (e.g. aminoalkylindoles), the synthesis of non-classical cannabinoids such as the CP-series is elaborate and complicated, which may have influenced this pattern.³³⁸

Enhancing efforts for an integrated response

The market for synthetic drugs is expanding and is becoming increasingly interconnected. Moreover, the synthetic drugs market has become increasingly diversified with a

growing number of NPS available worldwide and an expanding market for crystalline methamphetamine in the United States and Europe. Further information and data are needed, however, to improve analysis of the relationship between NPS and substances under international control, while continuing to monitor emerging developments in the NPS market. Data on recent developments in polydrug use and injecting drug use involving NPS also remain limited. As these particular forms of drug use pose a serious challenge for treatment and health-care providers, information exchange and enhanced cooperation at the national and regional levels is crucial for establishing an effective response. Given the rapidly changing nature of the synthetic drugs market, there is a continued need for analysis of the scope and magnitude of the synthetic drugs problem based on forensic and scientific data and qualitative information.

H. CONCLUSIONS

Drug-use prevention and treatment: a change of perspective

New data remain insufficient to determine if substantial changes have occurred in the magnitude of drug use globally. Information is available only for western countries and does not reflect the situation in the highly populated regions of Asia and Africa. Yet the fact that an estimated 27 million people worldwide suffer from drug-use disorders shows that a large population is in need of health interventions, although only one in six of these people has access to treatment. A growing body of research has highlighted that drug-related health interventions can be effective and State and non-State actors now have the scientific basis for planning appropriate interventions.

Research shows the need to rethink drug-prevention strategies and shift the focus from counter-productive, fear-arousing messages to a more positive approach recognizing that children and youth start to use drugs in the context of personal or environmental vulnerabilities that are largely out of their control. Effective drug prevention can provide children and youth with the skills and opportunities to develop safe and healthy behaviour in their families, schools and communities.

There is no cure-all remedy for problem drug use. Drug use is a multi-faceted chronic health condition that requires long-term and continued care. Likewise, there is a need to revisit how success in drug treatment is measured, as treatment effectiveness on a person's overall well-being can be evaluated only when the treatment is ongoing, not before or after treatment.

Where are increased quantities of opiates going?

The cultivation and production of opiates has been steadily increasing since 2009, reaching record levels in 2014.

337 5-Methoxy-N,N-dipropyltryptamine (5-MeO-DPT) is a tryptamine not under international control.

338 See *Recommended Methods for the Identification and Analysis of Synthetic Cannabinoid Receptor Agonists in Seized Material: Manual for Use by National Drug Analysis Laboratories* (ST/NAR/48).



But existing data on seizures and opiate use do not yet reveal a big shift in the global opiate market beyond the United States, where a resurgence in the heroin market is currently under way. The apparent stabilization in trafficking and demand for opiates can be explained by the fact that opiates may take a few years to reach destination countries, or that changes in the demand for opiates are going undetected. For example, Africa is being increasingly targeted by traffickers as a transit hub for heroin from Afghanistan and may be developing into a non-negligible consumption market.

Afghanistan is supplying 90 per cent of Canada's heroin and may be increasingly supplying the United States. Seizures indicate that heroin from Afghanistan currently accounts for relatively few cases in the United States, but this may be changing. The reach of organized criminal networks is increasingly global and organized criminal groups are increasingly sophisticated and versatile, posing new challenges for national law enforcement agencies, whose strategies and interventions need constant revision. A prime example is the dark net, an anonymous online marketplace used for the illicit sale of a wide range of products including drugs. International cooperation and inter-agency collaboration has proved crucial in countering drug trafficking on the dark net but, as dark web technology grows and becomes increasingly accessible, and drug trafficking moves increasingly into the dark markets, such interventions may need to be rethought.

Changing the perception of cannabis

Amid the growing public debate on the advantages and disadvantages of the legalization of cannabis, and in the context of its actual legalization in some States, there is growing evidence that it is time to change the widespread perception of cannabis as an illicit drug without serious health consequences. The current cannabis market is far more complex and sophisticated than in the past and there is a far larger variety of cannabis products on the market than ever before, some of which appear to be more harmful than their predecessors. Highly potent strains of herbal cannabis, such as sinsemilla, which have high THC content (the main psychoactive ingredient) coupled with low CBD content (a cannabinoid with anti-psychotic properties), are becoming increasingly popular in some markets. Given that there is growing evidence of links between cannabis use and some forms of mental illness, these developments may lead to even greater morbidity; an issue worthy of close monitoring.

New psychoactive substances: taking a pragmatic approach to the problem

Different countries report that NPS continue to proliferate in the marketplace, in terms of both quantity and diversity, although some are of a transient nature and disappear as quickly as they materialize. However, the paucity of data on the harmfulness and prevalence of use of NPS

makes it difficult to facilitate risk assessment at the international level. There is an overriding challenge requiring enhanced efforts by some countries to understand whether or not certain NPS are replacing other "traditional" drugs, either in the short or the long term, or if they are merely supplementing the range of existing drugs under international control. There is also a need to identify the most prevalent, most persistent and most dangerous of the some 500 potentially harmful NPS that require action at the international level. Little may be known about the size and nature of the increasingly diversified NPS market, but given that injecting NPS poses a particular health threat to users, this rapidly evolving and dynamic phenomenon requires an adequate response.

Time to consider prison health an integral part of public health

Drug use, including injecting drug use, takes place in the prison environment. In some countries, there is clear evidence that drug use is higher among prison populations than in the community outside. Prison is a high-risk, controlled environment where drug use is prohibited but it can occur and often does so in unsafe conditions. Prison environments are characterized by high levels of infectious diseases (in particular HIV, but also hepatitis C and tuberculosis) as well as limited access to prevention and treatment, which increases the risk of contracting blood-borne viruses. The rapid turnover of a large number of people between the prison environment and the wider communities outside prison calls for strategies that consider prison health an integral part of public health, with a corresponding level of continuity of care. Equality of care for people held in prisons is a basic right guaranteed under international law.

Premature deaths remain unacceptably high among people who inject drugs

Among all people who use drugs, PWID face some of the most negative health outcomes. In spite of the fact that effective, evidence-based interventions are available for preventing overdose deaths and for the prevention, treatment and care of PWID living with HIV, premature death is common among this group. Considering that overdose deaths are preventable, continued efforts could address this through a number of interventions. Prime among these is the administration of naloxone, which can immediately reverse the effects of opioid overdose. Making naloxone available and easily accessible, and empowering first aid workers and drug users' peers and family members with the necessary skills to administer naloxone, is a life-saving intervention. The health consequences of injecting drug use go beyond the risk of overdose and in many regions and countries PWID experience high levels of HIV infection. There is therefore an urgent need to scale up evidence-based comprehensive harm reduction services to reach the goal of ending AIDS by 2030.