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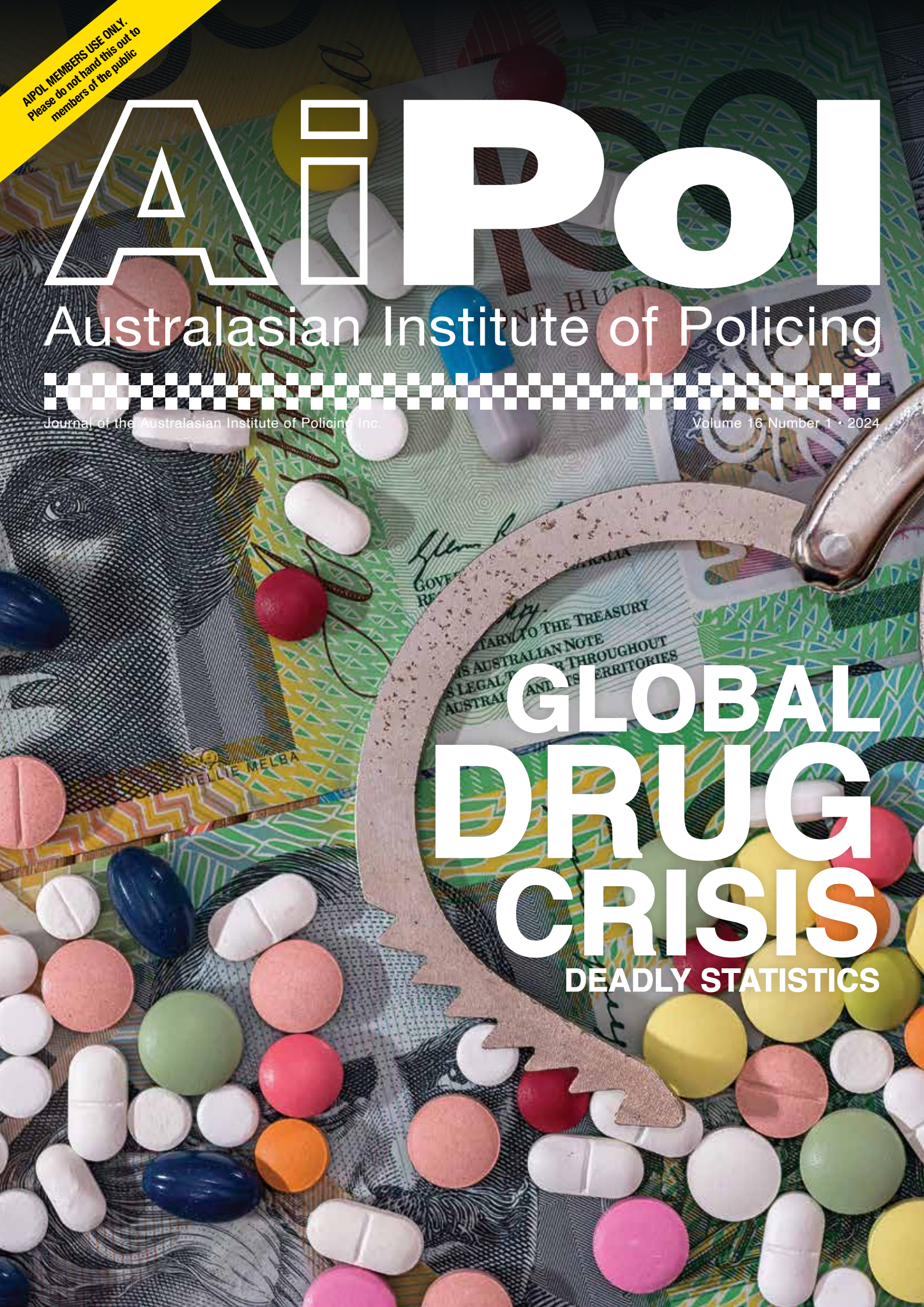

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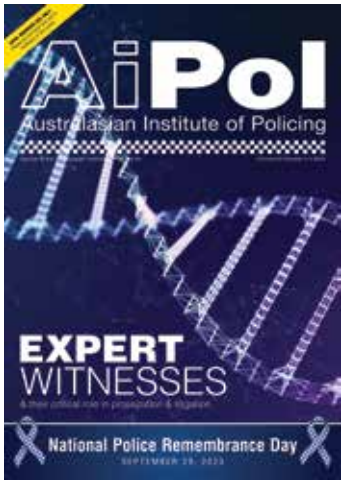

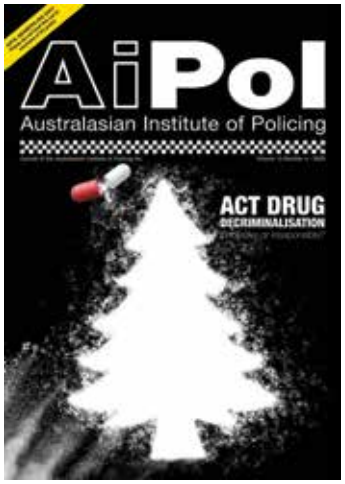

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Editorial

DR AMANDA DAVIES

Editor, Senior Researcher at the Charles Sturt University

Police, law enforcement, judiciary, health and Non-government agencies are continuing to develop solutions that are centred on saving lives.

Welcome to the first edition for 2024. This edition has been designed to bring you articles and discussion on strategies related to decriminalisation of illicit drugs for personal use.

As the UN World Drug Report 2023 states, world drug-related challenges are hindering Sustainable Development Goals progress across all areas, from peace and justice to health and human rights, the environment and equality. Importantly, the report acknowledges the challenges for law enforcement in responding to 'astonishingly agile criminal business models, as well as the proliferation of synthetic drugs, which are cheap and easy to bring to market'. Within this landscape governments and their respective agencies – police, law enforcement, judiciary, health and Non-government agencies are continuing to develop solutions that are centred on saving lives. These circumstances are not new knowledge to those on the frontline of policing and those tasked with contributing to developing strategies to address this local, national and international problem. The race between, not only illicit drug supply, also the development of new forms of illicit drugs vs the capacity for law enforcement to address this ever-expanding humanitarian challenge is illustrated in the article by Antonio Castañera. The report indicates the number of autopsies related to drug overdoses has steadily increased over the past 5 years and there is anticipated to be no change in this trajectory despite adoption of drug reform to decriminalise the use of some former illicit drugs for personal use. The situation is similarly reflected in Canada. The rate of deaths due to apparent opioid toxicity increased by 91% during the first two years of the COVID-19 pandemic (from April 2020 to March 2022; n = 15,134 deaths). The statistics emanating from the United States illustrate a similar situation where drug overdose deaths continue to be a significant public health burden given the rise in rates over the past 2 decades. From 2001 through 2021, age-adjusted rates increased from 6.1 per 100,000 standard population to 32.4, with a 14% increase from 2020 to 2021. As Jonathan Hunt-Sharman refers in his overview, a factor influencing the rate of deaths by drug overdose is the ever-changing strategies of criminal groups to 'cut' drugs with 'other' substances. Decriminalising the use of drugs for personal use may be the tactic to confront the criminal strategy. Whilst governments such as Portugal, Canada and our own ACT have introduced legislative reform to decriminalise drugs for personal use, there is currently insufficient scientific independent studies to evaluate such strategies on the rates of drug overdose and improvement positive health and social outcomes. It is well acknowledged the illicit drug challenge is both a health and a law enforcement dilemma and requires developing a coordinated approach from both areas, to best develop solutions that have a positive impact requires an evidence-based approach. The recent legislation adopted by the ACT Government in respect of decriminalising drugs for personal use is an opportunity to rigorously evaluate the impact of this strategy to inform on future policies and practice, locally, nationally and internationally in efforts to combat the mental and physical harm caused to society by the impure illicit drug market.

I commend the articles in this edition as they bring a comprehensive snapshot of the current state of the illicit drug market, the efforts by governments to address this market and what is know about the success of such strategies.

President's Foreword

Never let the truth get in the way of a good story

JONATHAN HUNT-SHARMAN

President, Committee of management, Australasian Institute of Policing

On 28 October last year, the Australian Capital Territory (ACT) became the first Australian jurisdiction to implement illicit drug decriminalisation for personal use. Cannabis, amphetamine; heroin; cocaine; methylamphetamine ('Ice' or 'Meth'); methylenedioxymethamphetamine ('MDMA' or 'Ecstasy'); lysergic acid; lysergide ('LSD', 'LSD-25') and psilocybin ('Magic mushrooms') are now decriminalised for personal use. A number of Australian States are considering similar reforms.

Adoption of this drug reform was based on the alleged success of other international jurisdictions including, Switzerland, Portugal, British Columbia in Canada, and Oregon in the USA. However, questions remain about the accuracy of reporting those successes.

From a policing perspective, I am aware that the perception by police in Portugal, British Columbia, and Oregon is that there is not enough independent academic analysis to determine the success or not of these reforms to decriminalise personal use. They also advise that in reality, due to the complexity of the administrative process, police officers are not issuing the drug offence notices as in their experience both fines and referrals are largely ignored by drug users. As a result, police believe this is a 'time waster' diverting them from community policing and criminal investigations. Indeed some police believe that this process would be better accepted by drug users if health department workers served the drug offence notices and encouraged diversionary options.

From a policing perspective, there appears to be genuine concerns that these reforms have minimal effect on diverting illicit drug users away from the criminal justice system or encouraging them to access health services and that the data collated may be being distorted about the success of these programs because police observations are not being taken into account.

From my perspective, the issue of distorted data occurs across many programs and initiatives and should not be a surprise to anybody familiar with the public sector. The old saying '***Never ask a question unless you know the answer***' should be the mantel for public sector reviews.

From my experience, reviews of government programs, including law enforcement initiatives, seek to find evidence of success - not failure. This is particularly evidenced, when the Terms of Reference are tailored in a way to ensure the outcome of the review justifies the initial decision to implement the policy and/or when reviewing the expenditure outlaid on the reform or policy. Simply, the initiators and decision makers of those policies and programs are normally funding the 'independent review', immediately creating a 'contractual' bias. At worst, words like '***Improvements' can be made in...***' or '***Since initial implementation of the policy/program environmental factors have impacted on...***' or '***A further review is necessary to determine whether...***' etc, etc, etc.

In a nutshell the 'decriminalisation' reforms aim to divert people who use drugs away from the criminal justice system and encourage them to access health services. But is it achieving this and more importantly, is it addressing the fundamental issue of protecting drug users from drug overdoses and serious harm?

The fundamental issue that is not being addressed, is the change in the pattern of drug use to more dangerous and unpredictable drugs, which is causing greater health and welfare harm to individuals, destabilising society and placing greater financial burden on our health and welfare sectors, the combination of which is impacting on community safety.

Across Europe, the USA, and Canada, there is an illicit drug overdose pandemic. Unfortunately, it is not unreasonable to accept that this pandemic is coming to Australia. Despite large seizures of illicit drugs by law enforcement, the average consumption of methylamphetamine, cocaine, MDMA, MDA, fentanyl and ketamine has increased across Australia.[1]

The latest National Wastewater Drug Monitoring Program Report[2] found that Australians are the sixth largest consumers of illicit stimulants out of 28 countries monitored from the Sewage Core Group Europe (SCORE), which covered 161 cities from 28 countries in Europe, Asia, North America and Oceania.

Australia has the third highest methylamphetamine ('Ice' or 'Meth') consumption per capita compared with 24 other countries.

Methylamphetamine ('Ice' or 'Meth') is recognised as the most harmful illicit drug due to its high availability, high addiction effect, the subsequent serious mental and physical health impacts and the propensity to cause violent episodes.

As is evidenced overseas, organised crime syndicates are now lacing heroin, oxycodone, cocaine , cannabis and other illicit drugs with fentanyl. Fentanyl is a synthetic opioid up to 100 times more potent than morphine leading to an explosion of overdose deaths and serious health implications including permanent brain damage.

From cannabis to cocaine, illicit drugs purchased from organised crime syndicates now contain life threatening substances, including fentanyl because it is cheap, it requires only a small amount to increase the 'high' for the user and being highly addictive, creates a return stream of customers. It is the main contributor to illicit drug overdoses.

Australian policy makers in all Australian jurisdictions should be congratulated on their approach to drug users as they have implemented a number of harm minimisation strategies. It is still far too early

1. ACIC National Wastewater Drug Monitoring Program Report 19 data released 12 July 2023
2. Fifty-seven wastewater sites were monitored nationally, covering a population of 13.9 million Australians.

to determine whether the novel approach by the ACT to decriminalise drugs for personal use is to achieve its objectives. However, we are far more advanced than a number of countries. We are leading many countries with the provision of safe injection rooms; pill testing; and having naloxine available under the national Take Home Naloxone program which is free of charge and without prescription. It appears that safe injecting rooms, pill testing, and the naloxone program is saving lives.

Whilst policy makers, the media, the academics and the general public debate the pros and cons of criminalisation of personal use versus decriminalisation of personal use, police officers confront the negative results of people buying illicit drugs on the street.

It appears, from police officers 'on the ground' that in Portugal, British Columbia, and Oregon, drug addicts are not taking up drug diversion programs offered as part of the reform strategy. They are simply wanting to continue their addiction without police harassment. More worrying is that it appears police officers and the public are becoming desensitised to the pain and suffering of the addicts, as the numbers on the streets increase, the mental health issues increase and the death rate of overdoses increase.

No doubt, we are all trying to find the best way to address the illicit drug pandemic but what is needed is genuine, un-bias analysis of all programs and initiative being tried across countries.

It has been interesting researching the material for this edition to find that most academic research is based on significantly delayed data. For example, many academics are quoting finding of the Portugal policy based on its first years of implementation. I have been unable to find any contemporary data. It also appears that there is also no contemporary analysis of the British Columbia or Oregon reforms.

To me, it seems obvious that we have the opportunity to conduct a comprehensive and rigorous 'independent' academic review with universally agreed data measurements across these three jurisdictions and the ACT, to determine the true outcomes of this novel approach. Importantly, such a review should engage all parties involved including, but not limited to, the police practitioners, drug users and their families, those involved in the diversionary programs, medical practitioners, the courts etc in order to accurately to determine whether there is a reduced demand for illicit drugs as a result of the program and reduced harm to individuals and the community.

It is argued that criminalisation of personal drug use is not the solution and that decriminalisation for personal use will achieve more openness and transparency and public acceptance to enable illicit drug users to receive positive health and social outcomes. I hope it does, but without the evidence, how can we genuinely accept that decriminalisation of personal drug use is achieving the desired outcomes for individuals and society?

We need proper evaluation to make informed judgements in order to effectively address the international illicit drug pandemic. If criminalisation doesn't work and/or decriminalisation doesn't work, once we have the evidence, if necessary we can look at alternate solutions, what ever they may be.

As mentioned in our previous edition, ensuring access to a safe supply of drugs for those obtaining adulterated drugs from illegal markets must be an essential element of preventing overdose and reducing the physical and mental harm caused by those toxic elements included within the impure illicit drugs. People who use illicit drugs require an alternative to the toxic unregulated supply. We need to find an alternative to them risking their lives every time they use illicit drugs. This will obviously require greater thinking 'outside the box' by decision makers and of course the political will.

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World Drug Report

Special Points of Interest

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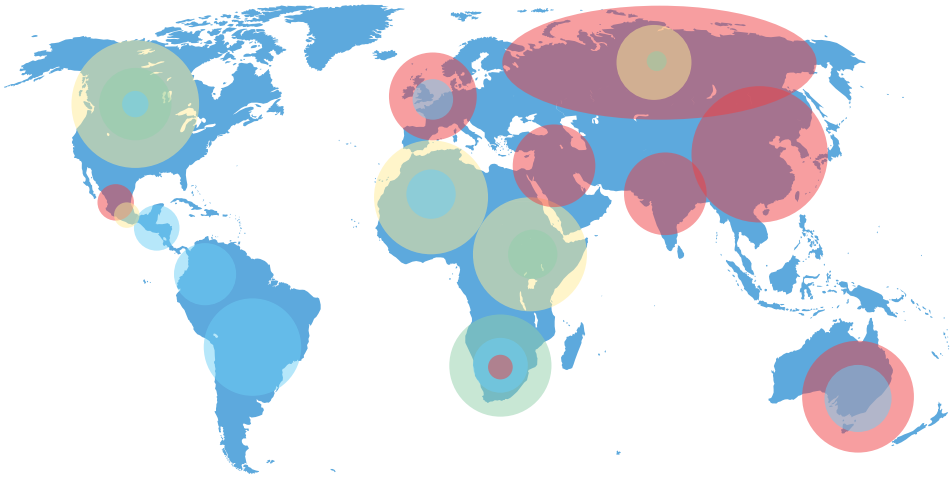
The World Drug Problem Common Challenge, Local Dynamics

While cannabis trafficking and use affect all regions worldwide, other drug issues pose additional threats in different geographical locations.

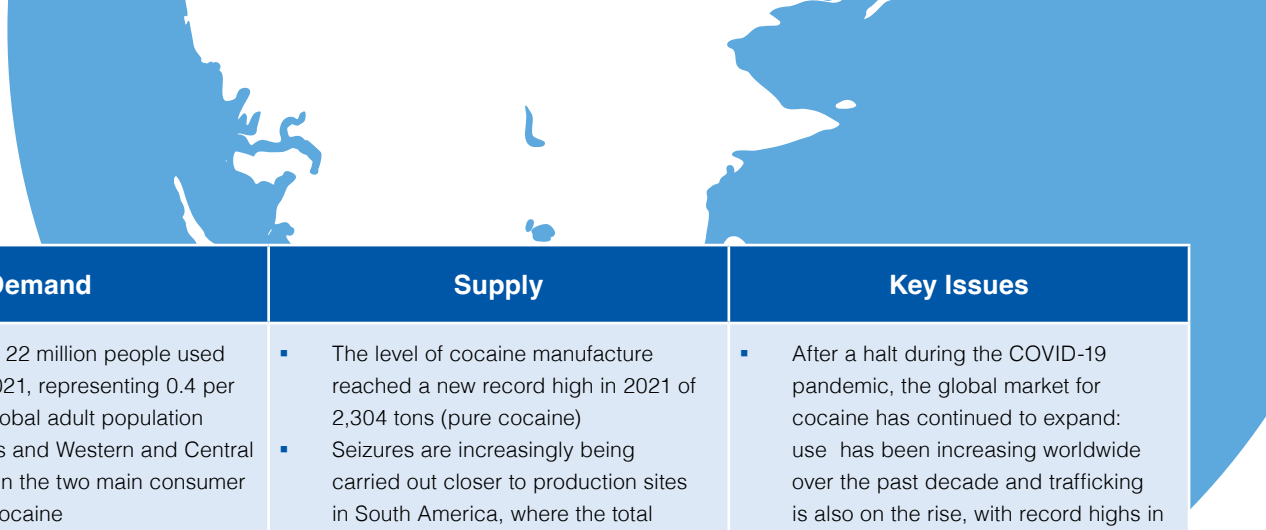


Key

- Cocaine
- Opioids/Opiates
- Amphetamine-type stimulants (ATS)
- HIV among people who inject drugs

Drug-By-Drug Developments in Brief

	Demand	Supply	Key Issues
Cannabis	▪ Cannabis remains by far the world's most commonly used drug ▪ An estimated 219 million people used cannabis in 2021, representing 4 per cent of the global adult population ▪ The number of people who use cannabis has increased by 21 per cent over the past decade ▪ Cannabis use remains the highest in North America, where 17.4 per cent of the population aged between 15 and 64 used the drug in 2021 ▪ Cannabis remains the main drug of concern for the majority of people in treatment in Africa ▪ The percentage of women among those who use cannabis varies across regions and subregions, from 9 per cent in Asia to 42 per cent in North America (2021)	▪ Qualitative assessments suggest that cannabis cultivation continued to increase in 2021, although at a lower rate than in 2020 ▪ Seizures of cannabis resin dropped in 2021 after a record high in 2020 but remained the second highest level ever reported ▪ Seizures of cannabis herb declined in 2021, after a substantial increase in 2020, which followed a downward trend over the previous decade driven by large decreases in seizures in North America	▪ Periods of lockdown during the coronavirus (COVID-19) pandemic drove increases in the use of cannabis, both in terms of the amount used and frequency of use. ▪ Cannabis accounts for a substantial share of drug-related harm globally, owing in part to its high prevalence of use: an estimated 41 per cent of drug use disorder cases globally are cannabis use disorders (2019). In 2021, around 46 per cent of countries reported cannabis as the drug associated with the greatest number of drug use disorders and 34 per cent of countries reported it as the main drug of concern for people in drug treatment ▪ There is evidence of the effectiveness of cannabinoids in treating a few conditions but for many other conditions the evidence is limited. Many countries have made provisions for the medical use of cannabis but the regulatory approaches to medical cannabis differ widely among those countries
Opioids	▪ An estimated 60 million people used opioids in 2021, representing 1.2 per cent of the global adult population. Half of those were in South Asia or South-West Asia ▪ Of those using opioids in 2021, an estimated 31.5 million used opiates, mainly heroin ▪ The global level of opioid use remained stable in 2021, having increased slightly between 2017 and 2019 ▪ About 38 per cent of all people in drug treatment in 2021 cited opioids as their primary drug of use ▪ Opioids remain the most lethal group of drugs, accounting for two-thirds of deaths related directly to drugs (mostly overdoses) ▪ The share of women among people who misuse pharmacological opioids in 2021, compared to most other drugs, is notably high (47 per cent), whereas the overall percentage of women among all opiates users is lower: 25 per cent	▪ The global area under opium poppy cultivation increased by 28 per cent in 2022. Opium production decreased by 3 per cent in 2022, but following the drug ban in Afghanistan a substantial decrease may be expected in 2023 ▪ Afghanistan continued to account for the majority (80 per cent) of global illicit opium production in 2022 ▪ The Balkan route remains the main trafficking route for opiates, with individual drug seizures rebounding in 2021 after being affected by the onset of the COVID-19 pandemic in 2020 ▪ Seizures of pharmaceutical opioids increased sharply in 2021, in line with a long-term upward trend	▪ The two epidemics of non-medical use of opioids, one related to fentanyls in North America and the other to the non-medical use of tramadol in North Africa, West Africa, the Near and Middle East and South-West Asia, continue to pose significant health risks ▪ In Africa, there have been signs of increases in the non-medical use of tramadol and related harm in recent years ▪ In North America, overdose deaths, driven by the use of fentanyls, reached unprecedented levels during the COVID-19 pandemic ▪ Access to pharmaceutical opioids for pain management and palliative care continues to vary considerably between low- and middle-in-come countries and high-income countries



	Demand	Supply	Key Issues
Cocaine	▪ An estimated 22 million people used cocaine in 2021, representing 0.4 per cent of the global adult population ▪ The Americas and Western and Central Europe remain the two main consumer markets for cocaine ▪ Demand in Africa and Asia has risen over the past two decades, but regional demand remains uneven and lack of data prevents a clear understanding of the level of use in these two regions	▪ The level of cocaine manufacture reached a new record high in 2021 of 2,304 tons (pure cocaine) ▪ Seizures are increasingly being carried out closer to production sites in South America, where the total quantity seized is now more than three times higher than that seized in North America ▪ Cocaine is mostly being trafficked by sea and through a wider geography of routes, with around 90 per cent of seizures outside South America linked to maritime trafficking	▪ After a halt during the COVID-19 pandemic, the global market for cocaine has continued to expand: use has been increasing worldwide over the past decade and trafficking is also on the rise, with record highs in manufacture and seizures ▪ Markets for cocaine are also expanding outside the traditional markets of North America and Western Europe, into Africa and Asia ▪ New cocaine trafficking hubs have emerged with Africa's role in global supply on the rise
AMPHETAMINE-TYPE STIMULANTS (ATS)	▪ An estimated 36 million people used amphetamines in 2021, representing 0.7 per cent of the global population ▪ Qualitative assessments suggest an increase in the use of amphetamines in 2021 and over the last decade ▪ The prevalence of use and the number of users of amphetamines are highest in North America, with the second largest number of users being in East and South-East Asia ▪ An estimated 20 million people used "ecstasy"-type substances in 2021, representing 0.4 per cent of the global adult population	▪ Record-high quantities of amphetamine-type stimulants) (ATS) were seized in 2021, dominated by methamphetamine at the global level ▪ Trafficking in ATS, in particular methamphetamine, has spread geographically, with notable growth observed in non-traditional markets ▪ The market for "captagon" in the Near and Middle East continues to flourish, with seizures reaching a record high in 2021 ▪ Seizures suggest a shift in the manufacture of methamphetamine towards the use of precursors of 1-phenyl-2-propanone (P-2-P) and away from the use of ephedrine and pseudoephedrine, although the use of the latter two substances remains widespread	▪ The gender gap in treatment is particularly acute for women who use ATS, as women account for almost one in two users of amphetamines but only one in four people in treatment for ATS-use disorders ▪ Methamphetamine manufacture and use have continued to spread beyond the traditional markets for the drug, namely East and South-East Asia and North America, most notably into South-West Asia, Europe and Africa ▪ The increase in the use and manufacture of methamphetamine in Afghanistan is of growing concern in South-West Asia, where trafficking in the substance is expanding beyond this region
NEW PSYCHOACTIVE SUBSTANCES (NPS)	▪ The level of use of new psychoactive substances (NPS) is lower than that of drugs under international control ▪ NPS were used in most countries in 2021 ▪ The limited data available, mainly from high-income countries, suggest that the most commonly used NPS are synthetic cannabinoid receptor agonists ("synthetic cannabinoids") and ketamine ▪ Use of NPS may be decreasing in North America and Europe, but Eastern Europe, Asia and, possibly, Africa are likely experiencing mid-term increases in use ▪ Many users of NPS use them unknowingly, consuming the substances as adulterants or in place of other drugs, sometimes with fatal consequences	▪ Seizures of plant-based NPS, dominated by kratom and khat, continued to fall in 2021 from the record high of 2019 ▪ A total of 44 countries reported seizures of synthetic NPS in 2020 and 2021, up from 36 countries a decade earlier. These seizures were small and most commonly involved ketamine, followed by synthetic cathinones and cannabinoids ▪ The number of different NPS on the market increased from 555 NPS identified in 2020 to 618 in 2021, of which 87 were identified for the first time ▪ Increases were reported in almost all categories other than NPS opioids, while the number of fentanyl analogues on the market decreased slightly in 2021	▪ Control systems have succeeded in containing the spread of NPS in high-income countries but the geographical reach of NPS trafficking continues to expand ▪ In some subregions, such as Eastern Europe and Central Asia, NPS have become a major problem ▪ The use of ketamine, which is still among the most used drugs in East and South-East Asia, may be spreading in several subregions; the drug is used both on its own or as part of drug mixtures, the content of which is largely unknown to users

Region-By-Region Developments in Brief

	Demand	Supply	Key Issues
AFRICA	▪ Use of cannabis is particularly high in West and Central Africa, with a past-year prevalence of use in 2021 of nearly 10 per cent (30 million people), largely reflecting the prevalence of cannabis use in Nigeria ▪ The 2021 estimated prevalence of use of opioids (1.2 per cent) is also high in the subregion. Non-medical use of tramadol remains a threat, in particular in North, West and Central Africa ▪ The majority of opioid users in other parts of Africa are opiate users, mostly of heroin and, in a few countries, of codeine and opium ▪ Cocaine use appears to be generally increasing across the continent, in particular in West and Southern Africa, as shown by the number of people in drug treatment, although related data are scarce ▪ Whereas the use of khat, a plant-based NPS, is widespread in East Africa, the use of synthetic NPS is most commonly reported in Southern Africa but data regarding both instances are scarce ▪ Of the 980,000 persons who inject drugs in Africa, over 100,000 (11.3 per cent) are living with HIV. Within the region, Southern Africa has the highest prevalence of persons who inject drugs among the population (0.18 per cent) and the highest prevalence of HIV among persons who inject drugs (21.9 per cent)	▪ North Africa is a hub for interregional cannabis resin trafficking to Western Europe ▪ Africa accounted for half of the quantities of pharmaceutical opioids seized worldwide between 2017 and 2021, largely due to the non-medical use of tramadol ▪ Most cocaine in Africa is seized near the coast. The region, in particular West Africa, is used as a trans-shipment area for cocaine from South America destined for Europe ▪ Heroin from South-West Asia is trafficked through all of Africa's subregions, often through East Africa as an entry point, onward to other markets in Africa and consumer markets in Western and Central Europe	▪ Africa has a large gender gap in the use of drugs, with one woman for every nine men using cannabis ▪ The majority of people treated for drug use disorders in Africa are under the age of 35 ▪ Cannabis and opioids are the drugs for which most people with drug use disorders seek treatment in Africa ▪ Africa remains a key trafficking region for cocaine in West Africa, heroin in East Africa and cannabis, mostly produced within the region ▪ The opioid epidemic related to the non-medical use of tramadol continues to pose significant health risks, with treatment demand for tramadol use disorders increasing in some countries in Africa ▪ With an average of eight standard daily doses per million of the population in 2021, West and Central Africa remains the subregion with the lowest access to internationally controlled medicines for pain management and palliative care, compared with 28,868 standard daily doses per million of the population in North America ▪ The prevalence of persons who inject drugs living with HIV is of particular concern in Southern Africa
EUROPE	▪ Western and Central Europe remains the second largest cocaine market worldwide ▪ Amphetamine is the second most used stimulant in Western and Central Europe after cocaine ▪ Recent trends point to an increase in methamphetamine use in the region ▪ Europe remains a major consumer market for "ecstasy" ▪ Opioids remain the main drug type for which people are in drug treatment in Europe but cannabis follows closely and is more common among those being treated for the first time ▪ Use of NPS, which appears to remain contained in Western and Central Europe, seems to be increasing in Eastern Europe, where it has become a major concern ▪ Eastern Europe has the highest prevalence of persons who inject drugs (1.3 per cent in 2021) as well as of persons who inject drugs living with HIV (25.4 per cent) and hepatitis C worldwide	▪ Trafficking in cannabis herb remains mostly an intraregional issue in Western and Central Europe; there are substantial imports of cannabis resin into the subregion from North Africa ▪ Western and Central Europe remains a hub for the manufacture of synthetic drugs, in particular "ecstasy" and amphetamine, although there are signs of an expansion in methamphetamine manufacture in the subregion ▪ Darknet drug markets continued to expand in 2021, largely due to Hydra Market, the world's largest Russian -language darknet market until it was dismantled in April 2022.	▪ The long-term trend of increasing cocaine use came to a halt in 2020 during the initial stages of the COVID-19 pandemic but appears to have rebounded in 2021 and 2022 in Western and Central Europe ▪ There has been an increase in the number of people in treatment for cannabis use disorders in Western and Central Europe; almost half of people accessing drug treatment services for the first time in 2020 were being treated for cannabis use ▪ In Eastern Europe, the NPS market expanded in 2021, likely owing to the expansion of online supply, in particular of cathinones ▪ The prevalence of persons who inject drugs living with HIV and hepatitis C are a key concern in Eastern Europe

	Demand	Supply	Key Issues
AMERICAS	▪ Opioid use in North America remains high, with 3.3 per cent of the adult population reporting past-year use (10.9 million users) in 2021 ▪ South and Central America and the Caribbean are the subregions with the highest proportion of people in drug treatment owing to the use of cocaine products worldwide ▪ Non-medical use of pharmaceutical stimulants is higher in the Americas than in other regions ▪ There has been a significant increase in the number of people in treatment for methamphetamine disorders in North America in recent years, in particular in Mexico ▪ The prevalence of persons who inject drugs in North America is high, with 1.0 per cent of the population (3.4 million people) estimated to inject drugs in 2021; however, the estimated prevalence of HIV among persons who inject drugs (7 per cent) is well below the global average	▪ Interceptions of cannabis are declining substantially in North America despite a rapidly growing cannabis market, as cannabis interdiction has become less of a priority ▪ The manufacture of cocaine in South America reached a record high in 2021 of 2,304 tons (pure cocaine) ▪ Cocaine seizures have shifted closer to production sites in South America, where total quantities seized are now more than three times larger than those in North America ▪ Most of the methamphetamine manufactured in North America is for consumption within that subregion. Seizure data suggest that laboratories may be becoming larger and their output increasing, although the number of laboratories is likely decreasing ▪ Seizures of methamphetamine in North America reached a record high in 2021, despite the short-term disruptions of the market at the onset of the COVID-19 pandemic	▪ The opioid epidemic related to illicitly produced fentanyls in North America has been driving the number of overdose deaths to record highs, with an acceleration during the COVID-19 pandemic ▪ The gender gap in cannabis use is closing in North America, where the level of use of the drug is particularly high ▪ The Americas are affected by increasing cocaine trafficking, with record levels of manufacture of the drug in South America ▪ Illicit drug economies, converging crimes, population displacement and conflict are accelerating environmental devastation and degrading human rights, in particular in vulnerable groups in parts of the Amazon Basin ▪ The methamphetamine market is expanding in North America alongside an increase in methamphetamine-related harms, reflected in hospitalisations, drug treatment and overdose deaths
OCEANIA	▪ Past-year use of cocaine in the subregion of Australia and New Zealand remains the highest worldwide ▪ Consumption of cocaine (based on wastewater analysis) is lower than in other parts of the world, suggesting that most users of cocaine are occasional users ▪ Past-year use of “ecstasy” in the subregion of Australia and New Zealand remains by far the highest worldwide; this is consistent with MDMA levels found in wastewater analysis ▪ Cannabis use is significantly higher than the global average, with prevalence of use exceeding 10 per cent in the subregion of Australia and New Zealand	▪ Seizures of heroin, morphine and cocaine increased in Oceania in 2021 ▪ Overall methamphetamine seizures declined in 2021 but remained at a high level ▪ Methamphetamine is both produced within Oceania and imported to the region from East and South-East Asia and North America. Data up to 2020 suggest that seizure quantities of methamphetamine manufactured from P-2-P precursors increased, suggesting an increase in the importance of imports of the drug from North America	▪ Methamphetamine has become the main drug of concern in Oceania, as over 40 per cent of those in drug-related treatment in Australia and New Zealand are being treated for methamphetamine use disorders ▪ The annual prevalence of methamphetamine use in the general population of Australia has fallen but among users consumption has become more intensive and is causing greater harm to health ▪ Wastewater analysis data show an increase in methamphetamine consumption in Australia up until April 2020, followed by a decline over the period 2020–2022, possibly linked to the COVID-19 pandemic ▪ People in drug-related treatment in the subregion of Australia and New Zealand are relatively young, in particular in Australia, where almost two-thirds are under the age of 35 and a relatively high proportion, about 17 per cent, are aged 19 or younger ▪ The prevalence of cannabis uses among school students aged 15–16 is also relatively high in Oceania, at 17 per cent, compared with the global average of 5.3 per cent

	Demand	Supply	Key Issues
ASIA	▪ Over half the estimated number of people who use opioids globally are in Asia (1.1 per cent of the region's population), with the prevalence of opioid use in 2021 in South-West Asia being one of the highest worldwide (3.2 per cent) ▪ Methamphetamine is the main drug of concern in East and South-East Asia, whereas opiates, in particular opium and heroin, predominate in South-West Asia and in South Asia, and "captagon" in the Near and Middle East ▪ Methamphetamine use has risen in Afghanistan in recent years and accounts suggest that use of methamphetamine and "captagon" tablets is rising in South-West Asia and countries in the Gulf, although no recent estimates are available ▪ East and South-East Asia has a long-established market for the non-medical use of ketamine ▪ The gender gap in drug use is the largest in Asia, where 91 in every 100 people who used cannabis in the past year are men ▪ Asia accounts for the largest number of people who inject drugs worldwide (5.2 million in 2021) and, within that group, of those living with hepatitis C (2.8 million); the highest prevalence of HIV among people who inject drugs is in South-West Asia (29.3 per cent)	▪ The production of opiates declined slightly in 2022 in South-West Asia but increased in South-East Asia, with these two subregions accounting for roughly 90 per cent of global opiate production ▪ There are indications that methamphetamine manufacture has increased in Afghanistan in recent years ▪ The market for "captagon" in the Near and Middle East continues to flourish, with seizures reaching a record high in 2021 ▪ There is substantial manufacture of methamphetamine in South-East Asia. Methamphetamine seizures in South-East Asia continued to rise rapidly in 2021 but continued to decrease in East Asia ▪ Cocaine seizures suggest a geographical expansion in the trafficking of cocaine to Asia, with large seizures made in the region during the period 2019–2021	▪ The 2022 opium production in Afghanistan was at a high level but the effects of the drug ban, announced in Afghanistan in April 2022, including its application and enforcement, remain to be seen for the 2023 opium harvest. Changes in opium production in Afghanistan will have implications for opiate markets in virtually all regions of the world ▪ The market for methamphetamine manufactured in Afghanistan is expanding to South-West Asia and beyond ▪ The methamphetamine market continues to expand in South-East Asia ▪ NPS use in Central Asia and Transcaucasia appears to be increasing ▪ "Captagon" tablets manufactured in the Levant continue to supply large consumer markets in countries in the Gulf ▪ The opioid crisis related to the non-medical use of tramadol in North and West Africa also extends to the Near and Middle East ▪ South-West Asia has one of the highest levels of prevalence of opioid use and of people who inject drugs living with HIV

KEY FINDINGS AND POSSIBLE RESPONSES

SYNTHETICS AND INNOVATIONS IN THE SUPPLY OF PLANT-BASED DRUGS

Synthetics and innovations in illegal drug manufacturing and trafficking challenge justice responses

(a) Illegal drug markets are transforming rapidly and, in some regions, radically, with synthetic drugs becoming increasingly dominant. Synthetic drug manufacture is cheap, easy and fast. As synthetic drugs are not tied to geographically fixed crops, using instead a wide array of precursors, supply can be relocated closer to consumer markets, and seized products can be quickly replaced, defeating drug law enforcement efforts:

- Methamphetamine is the world's dominant illegally manufactured synthetic drug, and criminals are employing novel synthesis techniques, establishing new bases of operation and using non-controlled precursors to circumvent law enforcement and regulatory responses;
- Fentanyl, a powerful synthetic opioid, is transforming drug markets in North America, contributing to high levels of drug overdose among those who use drugs. In 2021, there were almost 90,000 opioid-involved overdose deaths in North America, with the majority of those involving illegally manufactured fentanyls.

(b) After several years of relative stability, an increase in the number of seizures and amounts seized involving new psychoactive substances (NPS) of synthetic origin was reported in 2021, increasing by 40 per cent over the previous year to 19 tons. According to preliminary data, 1,184 NPS have now been identified and are being monitored by authorities.

(c) The availability of precursor chemicals and the use of online communication platforms reduce barriers to entry for criminals, making illegal drug manufacture more agile, modular and technologically focused. Online information on ways to synthesize synthetic drugs is easily available, enabling more widespread manufacture:

(d) Analysis of transactions on the darknet suggests a shift toward wholesale distribution, and retail transactions appear to be growing on social media platforms. An examination of blockchain transactions on darknet

marketplaces suggests that the average transaction has increased in value from about $100 in 2018 to $500 in 2021 and, at the same time, there has been a notable decline in the number of active buyers and transactions overall.

- Self-reported data from those who use drugs suggest a recent shift towards social media platforms for purchasing drugs, especially for cannabis, cocaine and "ecstasy", but new psychoactive substances are still bought and sold to a greater degree on darknet forums.

(e) Fragmenting supply chains and loosely connected criminal groups are driving the expansion of drug supply, notably cocaine, with new hubs and markets, as well as increasing use in traditional markets. Trafficking groups are less rigid and hierarchical, and more innovative and adaptable. Transformations in the ways that criminal groups are organised or operate may make them less susceptible to traditional law enforcement interventions, as parts of the supply chain or product can be replaced.

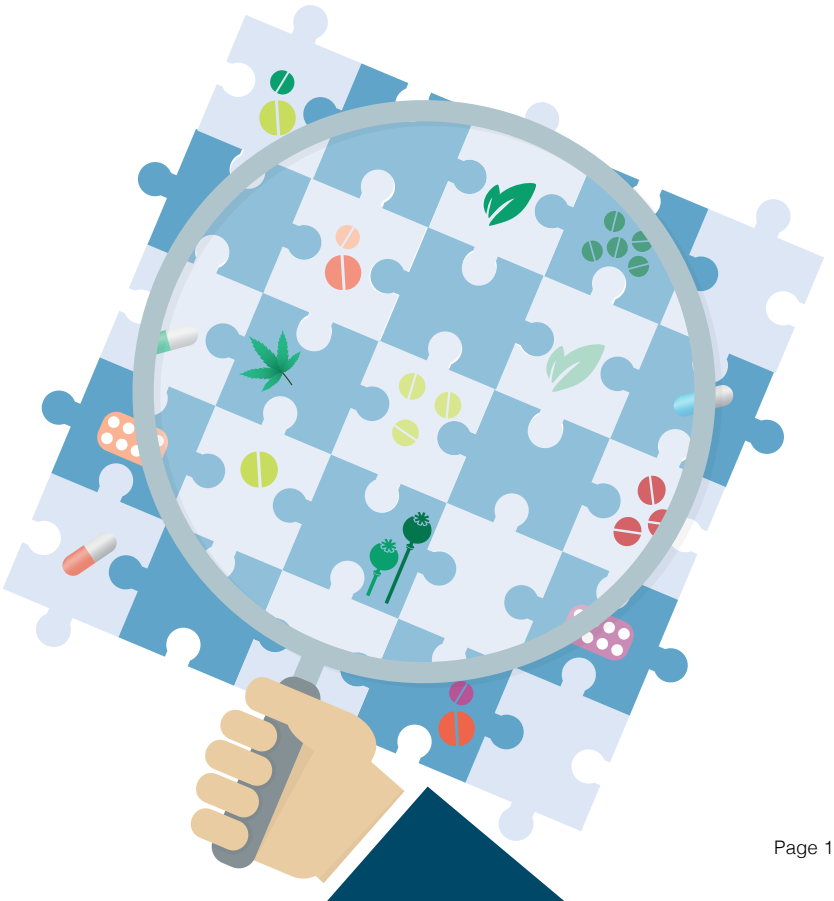
(f) The latest data indicate near-record levels of illicit coca and opium cultivation but the drug ban in Afghanistan may have an impact on the 2023 opium harvest there, increasing the need for alternative development efforts. Global opium production remained high at 7,800 tons in 2022, mainly driven by high levels of production in Afghanistan. A combination of market dynamics in Western Europe, the second largest cocaine market in the world, and higher efficiency in the production of cocaine at the source has triggered subsequent increases in cocaine manufacturing, which reached a record high of 2,300 tons in 2021.

POSSIBLE RESPONSES

The continuously shifting strategies and tactics used by criminal groups and traffickers, away from traditional production methods and modes, require law enforcement strategies that are more targeted and strategic.

- Drug trafficking groups are increasingly fragmented, managing only parts of the drug supply chain, and law enforcement operations can be effective only if they target the wider ecosystem of illicit markets rather than single cells or single shipments. This requires sophisticated operational analysis and trust-building within and between national law enforcement agencies in order to share intelligence and ensure smooth and prompt national and international cooperation when required.
- Given the increase in levels of drug trafficking through water-ways and maritime routes in containerised shipments, ports continue to be important nodes where drugs are smuggled across borders, warranting more effective control targeting potential choke points.
- Continued expansion of synthetic drug manufacture within new regions using new methods demands redoubled efforts to monitor changes in drug markets and to respond with more targeted policies aimed at reducing access to precursor chemicals and online sourcing.
- Drug interdiction may have less and less impact on supply, as criminal groups can replace the seized drugs easily and cheaply. The role of law enforcement authorities in assessing the quality and type of drugs sold in markets therefore becomes increasingly important to better understand the ways in which suppliers are shifting their strategies and the risks faced by those who use drugs.
- Greater focus on access to chemicals, including improving oversight of large industries and efforts to curb corruption, is critical to reducing the supply of the inputs required for the manufacture of synthetic drugs.
- Alternative development remains a critical pillar of supply reduction policies for farmers in Afghanistan, Bolivia (Plurinational State of), Colombia, the Lao People's Democratic Republic, Myanmar, Peru and other countries where drugs are illicitly cultivated, to enable sustainable livelihoods outside the drug economy.
- The benefits of a possible drastic reduction in illicit opium cultivation in Afghanistan in 2023 will be global but will be at the expense of many farmers in the country who do not have alternative means of income generation. Shared responsibility calls for donors, in particular those that will benefit most from reduced trafficking of Afghan heroin, to urgently provide support for the people in rural areas of Afghanistan to develop livelihoods away from illicit opium cultivation.

continued on page 14



FRAMEWORKS FOR MEDICAL USE OF CONTROLLED DRUGS

New research on the use of controlled drugs in treating mental health conditions shows that such treatments have potential but regulators run the risk of increasing harm if public health is not prioritised over commercial interests

(a) Clinical trials involving psychedelics for the treatment of mental health and substance use disorders are proceeding in some jurisdictions at an unprecedented pace, giving some hope that these compounds could be effective in addressing certain treatment-resistant psychological conditions. However, the rapid pace of developments increases the risk that people, in particular young people, will perceive such substances as being "safe" or not harmful, regardless of the context, which in turn could encourage unsupervised, non-medical use.

(b) Prioritising public health concerns remains a challenge in the face of growing commercial interest in developing and profiting from new, legal drug markets. If frameworks for medical use are not well designed and adequately resourced, ensuring access and availability of the drugs for medical purposes, approaches could contribute to the creation of illicit markets through limited supply or diversion of therapies for non-medical use.

(c) Diverse approaches are being taken to regulate the medical use of cannabis. The choices that regulators make when defining a medical market determine the porosity of the market. The types of products allowed in the medical market, who gets to produce for the market and who has access to use cannabis under which medical conditions are important considerations and can shape the size and scope of a medical cannabis regime.

(d) Regulatory approaches can be designed to ensure sufficient availability of products with proven safety and efficacy, while at the same time restricting access to legitimate medical needs. Such approaches may also limit potential spill-over into a non-medical or recreational use market.

POSSIBLE RESPONSES

Thoughtful regulations can help shape the drug landscape to limit diversion, shrink illicit markets, and reduce public health harms when jurisdictions are considering expanding access to psychoactive substances for a growing range of therapies.

- A growing body of evidence points to varied outcomes associated with the nature of regulating the access to cannabis for medical purposes.
- Policies aimed at controlling the type of product sold for specific conditions appear to limit non-medical or recreational access more successfully than those that take into consideration commercial interests.
- As the research involving psychedelics advances, regulations and policies guiding the appropriate use of novel therapies will be important in preventing unintended consequences of unsupervised use or diversion.

Post-mortem Toxicology (Higher Concentrations) and a Place for Cocaine

October 10, 2023

ANTONIO CASTAÑERA

National Institute of Medicine and Forensic Sciences - Portugal

Source: Instituto Nacional de Medicina Legal e Ciências Forenses, I. P. / Serviço de Intervenção nos Comportamentos Aditivos e nas Dependências

Post-mortem toxicology in Portugal

- The number of autopsies requested by authorities has been increased over the last few years. In 2023, probably, there will be performed the highest number of autopsies ever.
- In 2022, 66% of the autopsies were requested toxicological exams, a proportion has been increasing over the last few year.
- In 2022 there were 501 cases with positive toxicological results for illicit substances, representing the highest figure in the decade.
- In 436 cases with information of cause of death, 69 (16%) were considered overdoses based on the direct cause of death and medical forensic etiology.
- The figures for the last two years were the highest since 2009.
- In the last five-year period, more overdoses were registered than in the previous corresponding period, with the figures for the last five years being the highest since 2011.

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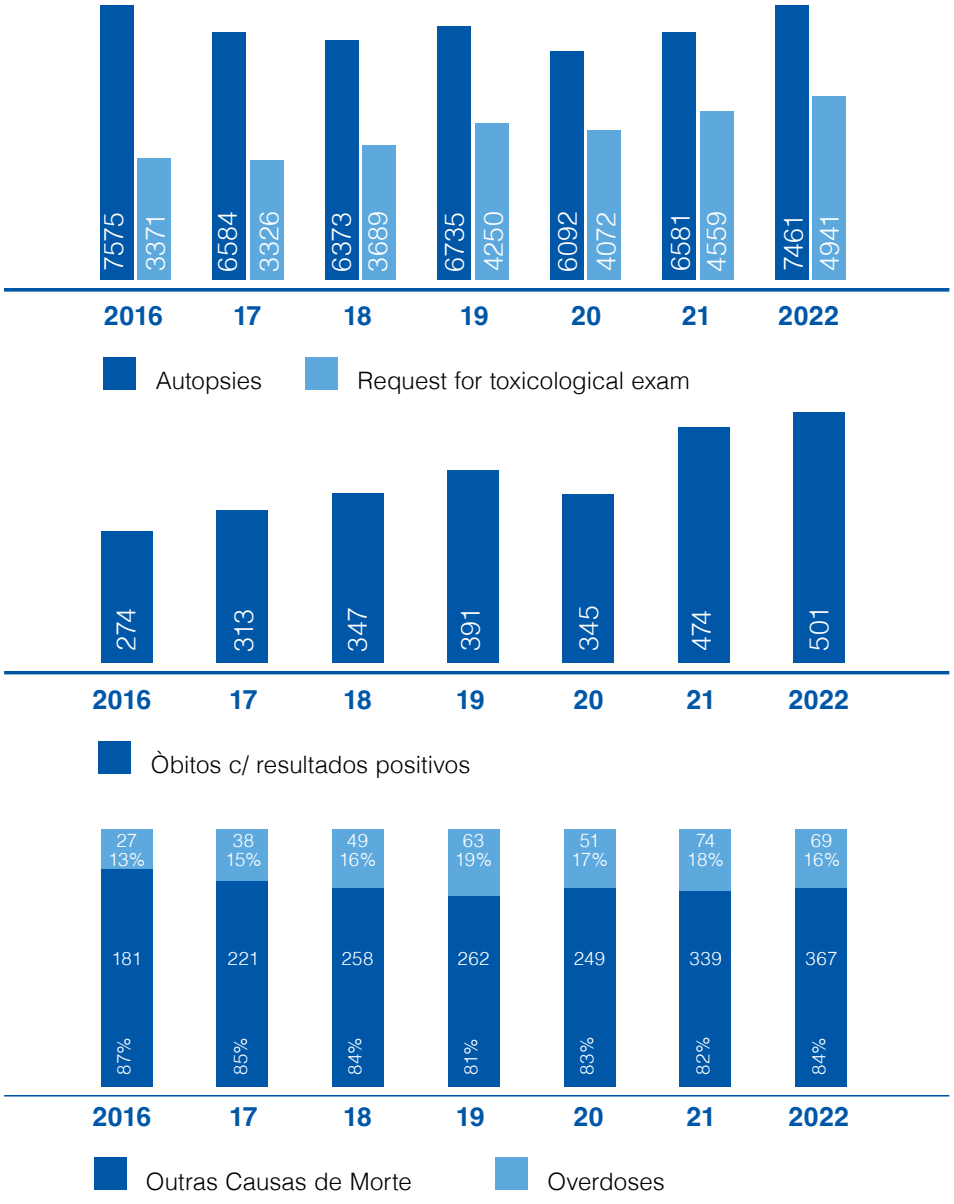
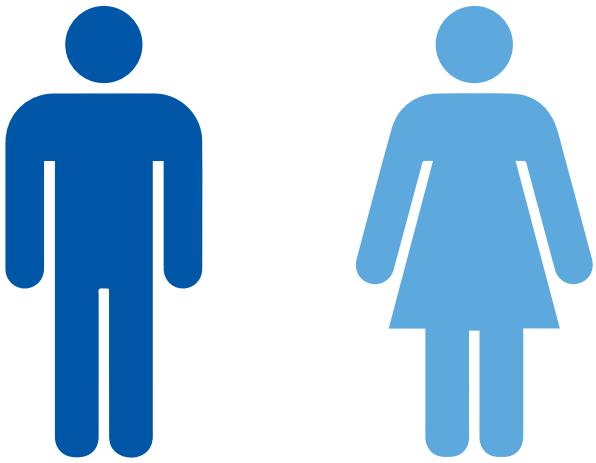


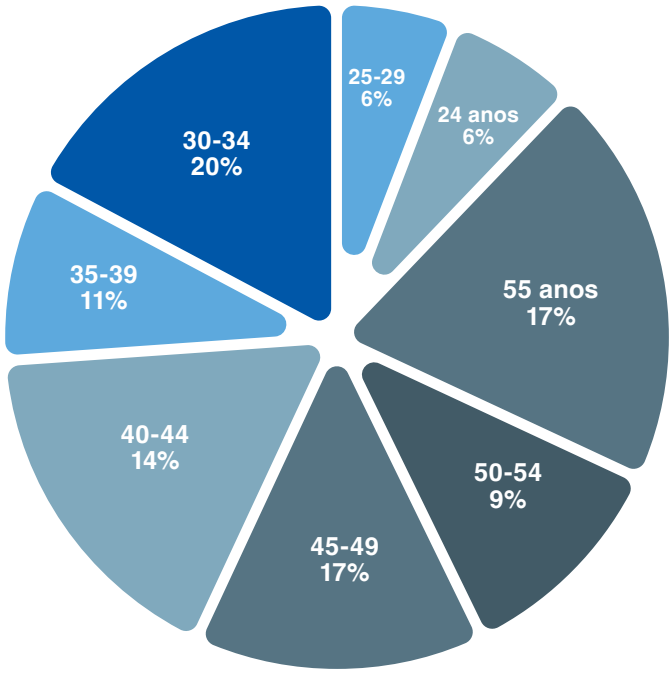
Overdose by gender (2022)



N-53 (77%)

N-16 (23%)

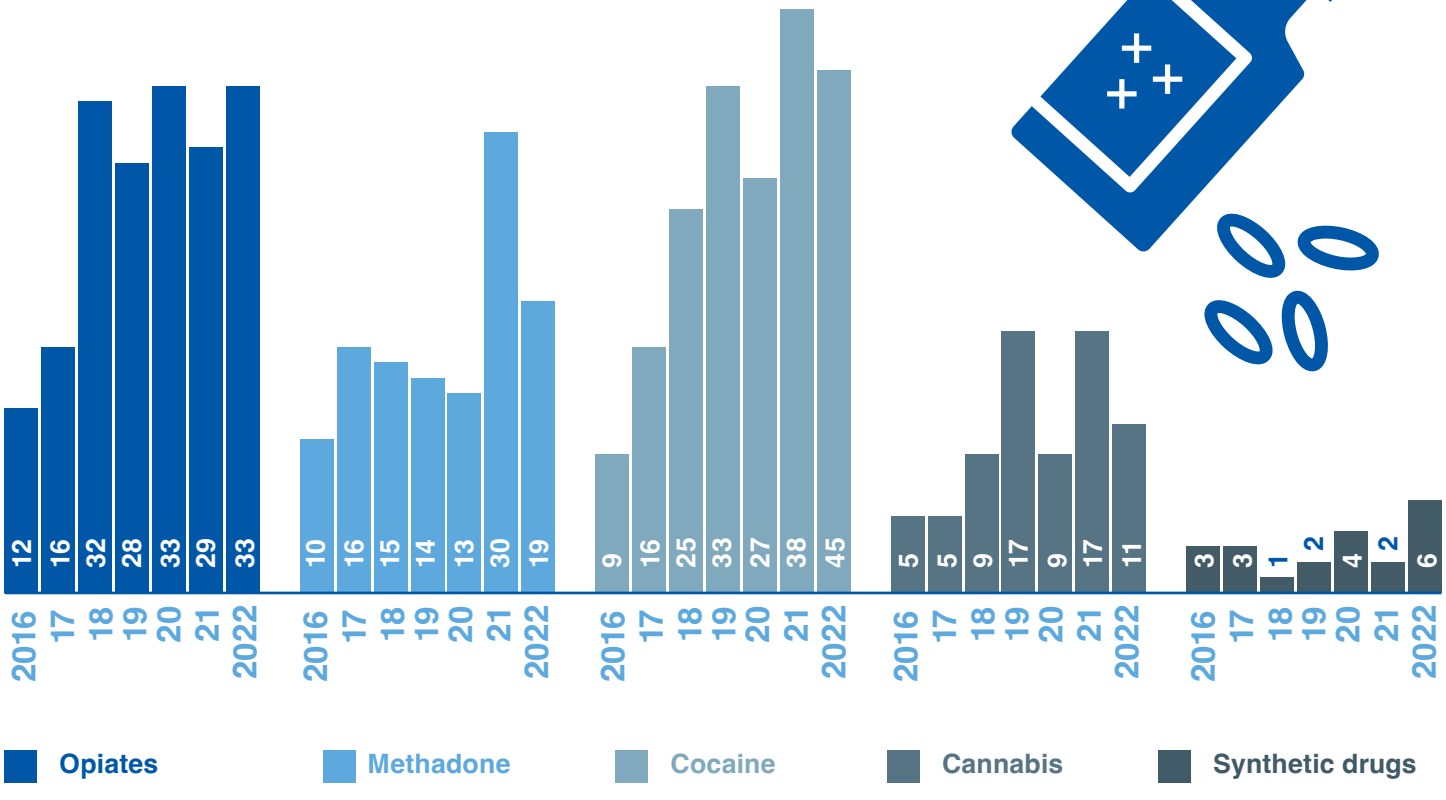
Overdose by age (2022)



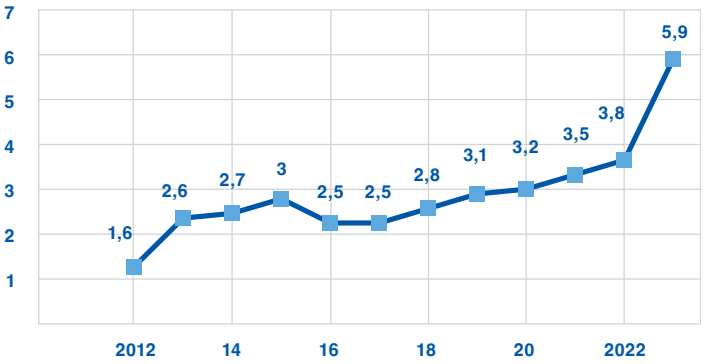
Idade média - 43 anos

Mediana - 41 anos

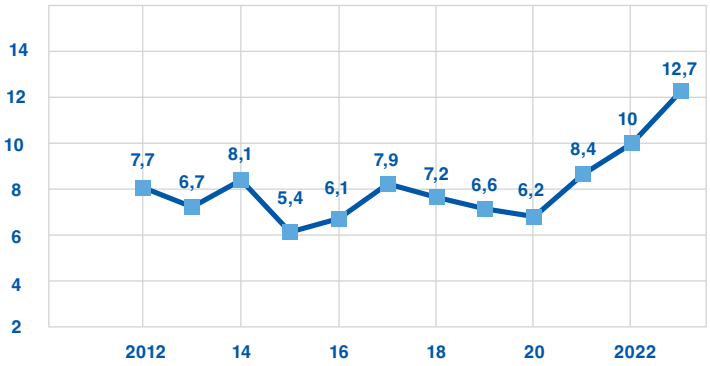
Overdose Deaths by year and substance (2016-2022)



Road Side Survey samples - D9-THC mean concentration (ng/mL) -(2012-2023)



Post-mortem cases D9- THC mean concentration (ng/mL) - (2012-2023)



Opiates

- Situation more or less “stable” in the last five years
- The figures recorded in the last five years were the highest since 2011.
- The vast majority of opiates DRD cases correspond to heroin metabolites (morphine, and 6-MAM)..

Methadone

- Significant increase in methadone DRD cases in 2021.
- Methadone DRD figures in 2021 and 2022 are the highest in the decade.
- The figures of overdoses with the presence of methadone in 2021 and 2022 represents the highest values since 2008.

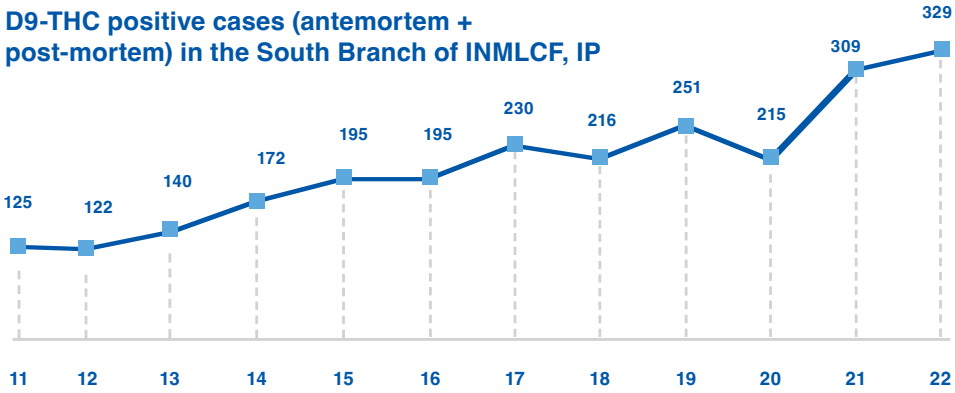
Cocaine

- Cocaine figures represents one of the main concerns in overdoses cases. Cocaine is the second most popular drug in Portugal.
- Compare to 2021, thee was an increase in overdoses with the presence of cocaine(+ 21%).
- The figures of overdoses with the presence of cocaine in 2022 represents the highest value since 2009.

Cannabis

- Cannabis is the most popular drug in Portugal.
- Compared to 2021 there was a decrease in overdoses with the presence of cannabis (-35 %).
- In recent years, a clear increasing trend has been observed related to D9-THC concentration detected in positive samples.

D9-THC positive cases (antemortem + post-mortem) in the South Branch of INMLCF, IP



Outras causas de morte	16	%	17	%	18	%	19	%	20	%	21	%	22	%
Total	181	100	221	100	258	100	262	100	249	100	339	100	367	100
Acidente	71	39.2	72	32,6	99	38,4	94	35,9	81	32,5	121	35,7	96	26,2
Homicidio	8	4,4	7	3,2	8	3,1	6	2,4	11	4,4	11	3,2	22	6,0
Natural	64	35,4	83	37,6	108	41,9	108	41,2	94	37,8	141	41,6	152	41,4
Suicidio	28	15,5	51	23,1	35	13,6	37	14,1	44	17,7	44	12,0	55	15,0
Causa Indeterminada	10	5,5	8	3,6	8	3,1	17	6,5	19	7,6	22	6,5	42	11,4

Synthetic drugs

- Although with residual values, the number of overdoses with the presence of synthetic drugs also increased in 2022.
- The majority of synthetic drugs DRD cases correspond to MDMA cases.
- Cluster of a-PHP in Madeira and Azores islands (2022)
- Cluster of synthetic cathinones (a-PHP and a-PiHP) in Madeira and Azores islands (2022)
- As in previous years, in most of these overdoses (91%) more than one substance was detected.
- Compared to 2021, DRD cases with the presence of benzodiazepines decrease from 58% to 42%.
- Compared to 2021, DRD cases with the presence of ethanol increase from 22% to 25%.
- In 2022, excluding overdoses, the causes of death with the presence of at least one illicit substance were attributed to natural death (42 %), accident (36%), suicide (13%), homicide (3%) and undetermined (6%).

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Decriminalising Drug use is Different to Legalising Drug use, but is this Halfway Policy Working?

In April 2001, Portugal decriminalised the possession of narcotics for 10 days of personal use, when it was decided to exchange, in the law, prison sentences for fines, in the cases of possession of drugs for personal consumption.

ARMANDO FERREIRA

President of the National Police Union - SINAPOL (Portugal)

It was decided that the quantity of drugs considered for personal consumption is the amount usually used for 10 days of consumption, making what was until April 2001 a crime, to become an administrative offense, which means something like "**it is prohibited, but it can be done**".

After 22 years, the Portuguese case continues to serve as an international example (don't know if good or bad), not so much because of the change in legal order, which is similar to that carried out in other countries, but because of the fact that it was accompanied by public support programs and the creation of amenities* for drug addicts.

It remains illegal to consume drugs in Portugal, but instead of being taken to jail, a person who is caught using drugs for personal consumption can "voluntarily" enters a drug addiction treatment program, unless they prefer to pay a fine. The use of an economic sanction was a Portuguese novelty, that is not defined by a judge, but by a Government Agency named Service in Addiction and Dependency Behaviours (SICAD), that "cracks" to persuade drug addicts to abandon the use of drugs.

The specificity of the path chosen by Portugal, according to SICAD, is not the decriminalisation of consumption, but "*harm reduction and social reintegration policies*", however it is important to clarify that the crime of "drug trafficking" continues to exist when a person possesses prohibited substances that exceed the quantity necessary for an average individual consumption during 10 days, as well personal cultivation or production of any drugs remains a crime and leads to imprisonment.

In statistical terms, consumption did not vary much between 2001 and 2023. What changed were its side effects, such as HIV infection and overdose deaths. The profile of the most consumed drugs has not changed either, with the exception of the emergence of ecstasy and other synthetic drug over these years, this also demonstrate that besides the gains achieved of reducing the side effects mentioned before and the courthouses stopped being clogged with thousands of criminal cases due to personal consumption of drugs (making a big difference in the courthouses annual budget and not delaying other criminal cases in course), the ultimate objective, to diminish the number of person that use drugs, was not achieve.

Thanks to prevention/information programs, the number of overdose deaths fell significantly: 22 in Portugal, compared to 2,000 in the United Kingdom, 1,000 in Germany and 383 in Spain, also in the case of the population under 34 years of age, heroin consumption fell by 70%, though the use of other drugs increased.

The evidence that everything is not positive in the decriminalisation of drugs in Portugal, is that the Portuguese society developed a "social complacency" towards the use of drugs, making its use banal, which has generated more visits to Emergency Rooms with cases of acute psychosis and schizophrenia. For example, Marijuana has become an accepted substance for intergenerational consumption, with grandfather, son and grandson happily consuming their joints together, many times due to the support of some political parties.

In some cases, even the Police officers are forced to adhere to the "social complacency" of drug use, due to the high bureaucracy related to the preparation of police documentations needed every time a police officer finds someone consuming drugs in public, because all the process takes hours of paperwork, sometimes more hours than when someone is arrested for a crime, such as "drug trafficking", homicide, etc…

Armando Ferreira

Therefore, I must say in a legal point of view, the international conception created that drugs are legal in Portugal is wrong, but in a daily basis reality it is right to say drugs are not illegal, because no one is, or feels, intimidated not to use drugs, many times not even when police officers are nearby, since everyone knows they will not be arrested an even if they have to pay a fine it is "fine" for them.

** Generally speaking, rooms of drug-assisted consumption, that provides "users" with equipment, sterilised injection (needles and syringes), counselling services before, during and after consumption, emergency care in overdose case, as well as primary health care and referral to appropriate care services drug addiction or treatment, all for free.*

CCSA Canadian Drug Summary

Opioids

Canadian Centre on Substance Use and Addiction

Evidence. Engagement. Impact.

FULL ARTICLE

November, 2022

CANADIAN CENTRE ON SUBSTANCE USE AND ADDICTION

ccsa.ca

Key Points

- Opioid-related deaths continue to climb across the country. There were at least 30,843 opioid toxicity deaths in Canada between January 2016 and March 2022, with the highest number of deaths occurring in the first third of 2021 (n = 5,368). A large concentration (>88%) occurred in British Columbia, Ontario and Alberta.
- Most opioid-related deaths involve opioids that were non-pharmaceutical in origin and often involve other substances (e.g., non-medical benzodiazepines or stimulants).
- The rate of deaths due to apparent opioid toxicity increased by 91% during the first two years of the COVID-19 pandemic (from April 2020 to March 2022; n = 15,134 deaths).
- The unpredictability and toxicity of the illegal drug supply have increased since the start of COVID-19, and new synthetic opioids have recently been detected (e.g., nitazenes), which have the potential to increase opioid-related harms among people who use drugs.
- The rate of hospitalisations and emergency department visits due to opioid poisoning has increased since the start of COVID-19, with an average of 15 hospitalisations occurring per day in Canada so far in 2022, up from 12 and 14 in 2019 and 2017, respectively.
- In 2019, opioid pain relievers prescribed or not prescribed for medical or non-medical purposes were used by an estimated 14.2% of people living in Canada, an increase from 12% in 2017.
- Among people living in Canada who used opioid pain relievers in 2019, about 6% reported using them for non-medical purposes, an increase from 3% in 2017.

Introduction

Opioids are a large class of drugs that bind to opioid receptors. They include natural, synthetic and semi-synthetic substances that exist in both legal and illegal forms. These include heroin, synthetic opioids (such as fentanyl) and pain relievers primarily used for medical purposes (such as oxycodone, hydrocodone, codeine and morphine). Opioid medications are used to treat acute pain* and sometimes chronic pain,† but can also be used to control persistent cough or diarrhoea. Additionally, some opioids are prescribed for the treatment of opioid use disorder, using methadone or buprenorphine-naloxone, under the supervision of a trained healthcare practitioner.

Opioids have the potential for problematic use because they can produce a feeling of well-being or euphoria - a high. Most of the harms being experienced are due to fentanyl and other synthetic opioids that are manufactured illegally and are available on the unregulated market. The presence of fentanyl in other substances on the unregulated market dramatically increases the risk of overdose as it is an extremely potent drug that can cause death even in small amounts. Understanding the health and social impacts of opioid use is critical for reducing risks and harms as well as for controlling access for therapeutic applications.

Legal Status of Opioids in Canada

Most prescription opioids are classified as Schedule I drugs under the Controlled Drugs and Substances Act. Their use is legal when they are prescribed by licensed practitioners and used by the person for whom they are prescribed. Illegal non-pharmaceutical opioids (e.g., heroin), including other synthetic opioids that were never approved for human use (e.g., nitazenes, carfentanil) are also classified as Schedule I drugs. Illegal possession of opioids and double doctoring can result in seven years imprisonment. Trafficking, importing, exporting or producing opioids, including synthetic opioids (e.g., fentanyl), can result in life imprisonment.

An amendment to the Controlled Drugs and Substances Act was passed in 2017, also known as the Good Samaritan Drug Overdose Act (Bill C-224). The amendment exempts an individual from charges for simple possession (and some other charges) of a controlled substance if they call 911 for a suspected drug poisoning, either for themselves or another person. The bill was passed to encourage the involvement of emergency medical services to save peoples' lives in the event of an overdose, without fear of criminal charges being laid.

More recently, in May 2022, the Government of British Columbia was granted an exemption by Health Canada to decriminalise the possession of small amounts of some illegal substances among those 18 years and older, including opioids, cocaine, methamphetamine and MDMA. Under this legislative change, which takes effect in January 2023, individuals will no longer be arrested, charged or have their drugs seized for possession of amounts of up to 2.5 grams, if it is for personal use. Trafficking and related offences remain illegal.

continued on page 22

Non-medical Use of Prescription Opioids

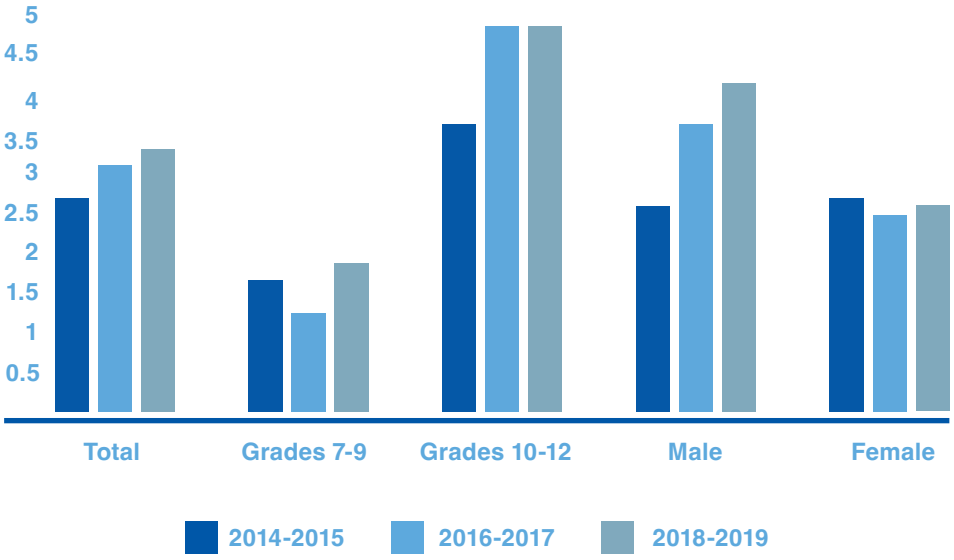
Self-Reported Use in the Past Year

- **General population (aged 15 years and older):** Data from the 2019 CADS revealed that 1% of people living in Canada used opioid pain relievers for non-medical purposes in the past year, with no differences between males (1%) and females (1%). Among those who used opioid pain relievers in the past year, 6% (or about 269,000 people living in Canada) reported using them for non-medical purposes, a significant increase from 3% (or about 100,000 people) in 2017.
- **Students (grades 7 to 9 and 10 to 12#):** The 2018–2019 Canadian Student Tobacco, Alcohol and Drug Survey (CSTADS) found that 1.8% of students in grades 7 to 9 in Canada (up from 1.2%in 2016–2017) and 4.7% of students in grades 10 to 12 (unchanged from 2016–2017) reported past-year use of pain relievers to get high, and not for medical purposes (Figure 1). A greater proportion of males (4.0%) than females (2.5%) in grades 7 to 12 reported past-year use of pain relievers to get high. The proportion of males reporting non-medical use of pain relievers has remained stable since 2017 (3.5%), as has the proportion of females reporting such use (2.4%), as shown in Figure 1.
- **Postsecondary students (age 17 to 25 years):** Data from the 2019-2020 Canadian Postsecondary Alcohol and Drug Use Survey shows that 22.5% of students surveyed reported using pain relievers nonmedically. No significant differences were found between males (20.4%) and females (24.1%), nor between those in their first or second year (23.3%) compared with those in their third year or higher (20.9%).

Past-Year Non-medical Use Internationally

- **United States:** In 2020**, the past-year prevalence of non-medical use of prescription pain relievers was 3.3% among those aged 12 years and older, with the highest prevalence (4.1%) reported among those aged 18 to 25 years.
- **Australia:** Data from 2019 show that 2.7% of those aged 14 years and older reported non-medical use of any type of opioid in the previous 12 months,

Figure 1. Prevalence of self-reported past year opioid pain reliever use among students in Canada by grade and sex



a decrease from 3.6% observed in 2016. This decrease appeared to be driven by a decline in the use of codeine for non-medical purposes, which was down from 3.0% in 2016 to 1.5% in 2019. This decline aligned with codeine becoming available only by prescription in 2018.

Wastewater-based Estimates for Opioids

Measuring opioid levels in wastewater samples is challenging as many degrade quickly, and different opioids transform into the same end product (e.g., morphine), making it difficult to identify which opioid the measured morphine was derived from. Despite these challenges, a study by Statistics Canada collected wastewater in five major Canadian cities from March to December 2019 and March to December 2020 (Figure 2). Per-capita loads of morphine in Montreal and Toronto were the lowest (with average levels of 34 and 44 grams per million people per day, respectively, in 2020). Vancouver and Edmonton were the highest (at 188 and 118 g per million people per day, respectively, in 2020).

Per-capita loads of fentanyl in Montreal and Halifax wastewater were estimated to be zero in 2019 and 2020. Vancouver had the highest estimates of fentanyl from March to December of 2019 at 15 g per million people per day and increased by 34.8% (to 23 g per million people per day) from March to December 2020. Toronto observed the highest increase from 2019 to 2020, with an 80% increase in estimates followed by Edmonton, which saw a 60% increase in the same period (see Figure 3).

Prevalence Among Individuals Accessing Treatment and Harm Reduction Services

While all federal, provincial and territorial agencies collect data on their treatment systems, there are no national-level data available for prescription drug-related treatment in Canada. According to the 2018 National Treatment Indicators report, opioids were the second-most reported substance for which treatment was sought in Nova Scotia. The Atlantic provinces have a higher proportion of people reporting opioids as problem substances than in other jurisdictions. Across Canada, the number of individuals reporting opioids as a problem substance remained relatively constant between 2016 and 2018.
This report underestimates the number of individuals accessing specialised, publicly funded treatment for opioids as estimates largely exclude opioid agonist treatment.

The Community Urinalysis and Self-Report Project (CUSP) was developed to provide standardised information about the use of drugs from the unregulated supply. CUSP surveys people accessing harm reduction services about their recent drug use (reported) and compares that data with urine toxicology results (detected) in seven jurisdictions across Canada. Standardised data from spring 2019 to spring 2021 at 49 harm reduction sites showed that half of the participants reported using at least one opioid and at least one stimulant in the previous three days, suggesting that the use of both types of substances close in time is common. The extent to which individuals were using opioids (e.g., fentanyl) expectedly (that is, reported and detected)

Figure 2. Wastewater-based estimates of morphine use in Canada (2019 and 2020)

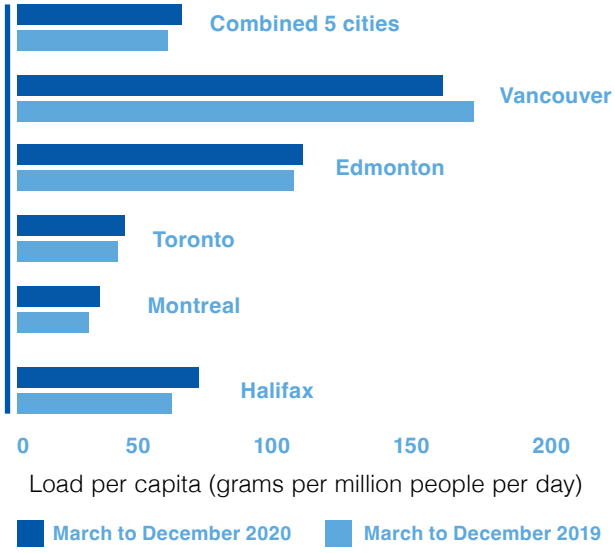
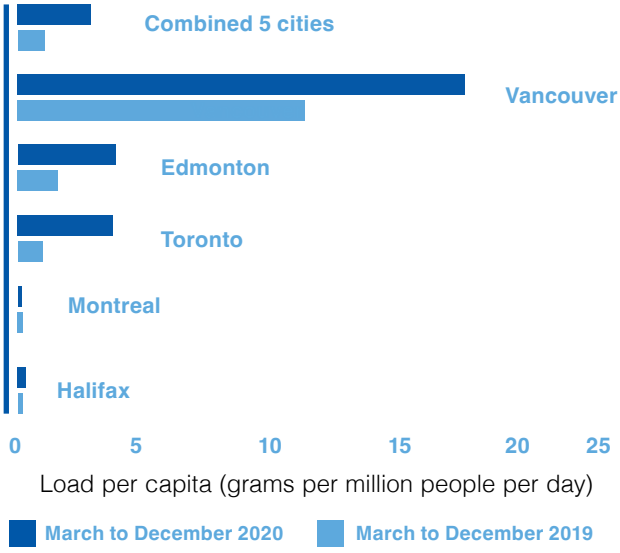


Figure 3. Wastewater-based estimates of fentanyl use in Canada (2019 and 2020)



or unexpectedly (that is, not reported but detected) varied across Canada. The use of opioids was more expected in western regions and unexpected use was more commonly seen in eastern regions.

Opioids in the Unregulated Drug Supply

Many of the national surveys that provide estimates on the prevalence of opioid use gather data mainly on prescription and over-the-counter medications containing opioids and differentiate between their use for medical or non-medical purposes. While valuable, these data are generally unable to generate prevalence estimates on the use of other opioids obtained from the unregulated market. In recent years, the Public Health Agency of Canada has begun to differentiate between opioids with pharmaceutical and non-pharmaceutical origin in all apparent opioid-related apparent deaths in Canada, though details on where the substances were obtained are not always available. Such data are sometimes available in periodically released jurisdictional reports or regular updates from health authorities or public health units in which rates of drug toxicity deaths are high (e.g., British Columbia, Ontario and Alberta). Most opioid-related harms, including deaths, do not involve individuals who are taking a prescription opioid as prescribed for pain or other medical reasons. Where available, these data are described in the section on harms below.

The risks associated with substance use are significantly increased for drugs obtained from the illegal market as there are no quality control measures and no information is provided about their contents. This unpredictability places people who use drugs at increased risk of poisoning (overdose) and death. Since the onset of the COVID-19 pandemic, substances from the unregulated supply have become even more unpredictable in terms of contents, strength and quality. For example, psychoactive substances that people are unaccustomed to using or that have never been approved for human use are being detected at drug checking sites or in seizure data. Some of these include:

- Nitazenes are synthetic opioids that can be several times more potent than fentanyl. Nitazenes can appear unexpectedly in drugs expected to contain other, more common opioids (e.g., fentanyl or "down") and can increase the risk of accidental poisoning deaths.
- Non-medical benzodiazepines are sedatives that can have a calming effect or act as a sleep aid but have never been approved as medicines in the pharmaceutical industry because of safety concerns. Non-medical benzodiazepines have been found more frequently in the unregulated supply of opioids and are a concern as they may complicate the overdose response efficacy because benzodiazepines do not respond to naloxone.
- Xylazine is a tranquiliser used in veterinary medicine that has analgesic and muscle relaxant effects. It has recently emerged as a common cutting agent and is sometimes added to opioids, particularly fentanyl, which can exacerbate lowered blood pressure, heart rate and breathing, increasing the risk of an accidental drug poisoning death.

Seizures in Canada

Drug seizure data provide a supply-related indicator of the availability of drugs in the illegal market.

National: The United Nations Office on Drugs and Crime reported that in 2019, about 98 kilograms of heroin, 571 kg of opium and 295 kg of pharmaceutical opioids were seized in Canada. That was an increase of about 12% for heroin, 49.6% for opium and 75.6% for pharmaceutical opioids from 2018.

Drug Analysis Service: The service analyses suspected illegal drugs seized by Canadian law enforcement agencies. The drugs analysed do not represent all of the substances seized and should not be used to estimate the number or types of drugs available on the market. A single sample can contain more than one substance. Results indicate that the number of samples containing opioids increased by 15% from 2020 to 2021 (from 20,549 samples to 24,173). The proportion of samples containing fentanyl during the same period increased by three percentage points from 69% in 2020 to 72% in 2021.34 Fentanyl is the most detected opioid across samples. Nitazenes and brorphine were first seized and analysed in Canada in 2019. Since then, several substances belonging to this group have

continued on page 24

been analysed. Several opioids continue to emerge, and the group may become an important part of the illegal market in the coming years. Further, on a national level, the number of heroin samples analysed over the last decade has steadily decreased. The number of heroin samples that contain fentanyl has also steadily declined since 2020 when 62% of heroin samples also contained fentanyl. From January to March 2022, 25% of heroin-containing samples also contained fentanyl. From April to June 2022, 20% of heroin samples contained fentanyl.

Provincial and territorial differences: The detection of opioids in seized samples was not consistent across the country. Results from the Drug Analysis Service indicated that more opioid samples were identified in 2021 from Ontario (12,305 samples), British Columbia (6,007 samples) and Alberta (3,512 samples), whereas fewer samples were found in the territories (20 samples). Further, the percentage of opioid samples containing fentanyl or fentanyl analogues was highest in the territories (95%), followed by British Columbia (85%) and Alberta (84%). The percentage generally declined moving from west to east. Fentanyl was the most-commonly detected opioid in many regions; however, hydromorphone was the most-commonly detected opioid in Quebec, New Brunswick, Nova Scotia and Prince Edward Island, and oxycodone was most-commonly detected in Newfoundland and Labrador.

Harms Associated with Use

Hospitalisation and Emergency Department Visits

There are numerous harms from opioids that can result in hospitalisation, including opioid poisoning, opioid use disorder and neonatal withdrawal. Between January 2016 and March 2022, there were 32,319 opioid-related poisoning hospitalisations in Canada (not including Quebec). In the first two years of the COVID-19 pandemic, there was a 24% increase in hospitalisations compared with the previous two years (11,760 from April 2020 to March 2022, compared with 9,470 from April 2018 to March 2020). Between January and March 2022, 1,350 opioid-related poisoning hospitalisations occurred, about 15 hospitalisations per day. That was up from about 12 per day in 2019 and 14 per day in 2017.

Across Canada, the age-adjusted rate of hospitalisations*** in 2021 ranged from 3.3 (Nova Scotia) to 26.0 (British Columbia) per 100,000. In 2021, most hospitalisations for opioid poisoning occurred in British Columbia, Alberta and Ontario (88%), and among individuals aged 20 to 49 years of age (58%).

In the first three months of 2022, 68% of those being hospitalised for opioid-related poisoning were male and 32% were female. Hospitalisations were highest among those aged 20 to 49 years (54%) between January and March 2022.

In 2021, the Canadian Institute for Health Information (CIHI) released a report examining the impact on harms caused by substance use during the early stages of the pandemic (March to September 2020). The report found that both hospitalisations and emergency department (ED) visits involving opioids increased, compared with the same period in 2019. Hospitalisations involving opioid harms during those seven months rose by 7%, whereas ED visits rose by 8%.39 CIHI's follow-up report revealed that from October 2020 to June 2021 (nine months), ED visits for opioid-related harms rose by 36% and hospitalisations by 30%. Further, men experienced a greater increase in harms due to opioids, experiencing 33% more hospitalisations compared with 5% more among women.

Between 2010 and 2020, 16,920 hospitalisations related to neonatal withdrawal occurred, an increase of 73% from 2010 to 2020 and a 5% increase from 2019 to 2020.

Mortality

There are no national-level data on opioid-related deaths before 2016. Between January 2016 and March 2022, 30,843 apparent opioid-related deaths occurred in Canada. There was a 91% increase in apparent opioid toxicity deaths in the first two years of the pandemic compared with the two years prior. As in 2021, in the first three months of 2022 there have been about 21 deaths per day, compared with 8 and 11 deaths per day in 2016 and 2018, respectively.

Most deaths were accidental (94%) and involved opioids that were non-pharmaceutical in origin (81%). Eighty-five per cent of deaths in January to March 2022 involved fentanyl. From January to March 2022, just less than half of the apparent opioid-related deaths also involved a stimulant (e.g., cocaine [61%], methamphetamines [52%]). In addition, about two-thirds of deaths caused by opioids involved at least one other substance in 2017, compared with only half in 2014.

Seventy-six per cent of accidental deaths between January and March 2022 occurred among males. The highest proportion of deaths for both males and females were among those aged 20 to 59 years. Estimated province-specific crude rates of opioid or illicit drug-related deaths ranged from 6.6 (Northwest Territories) to 53.5 per 100,000 (Yukon) in 2021. Continuing the trend from 2021, during the first three months of 2022, 90% of all accidental apparent opioid toxicity deaths occurred in British Columbia, Alberta and Ontario, and increasing rates were observed in both Yukon and Saskatchewan.

- **Ontario:** An average of 34 deaths per week occurred in the 15 weeks before the pandemic, most of which continued to be accidental. During the first 15 weeks of the pandemic, this number increased by 38% to an average of 46 deaths per week. Between March and December 2020, there were 1,808 opioid-related deaths in Ontario. An increasing proportion of these deaths involved only non-pharmaceutical opioids from the unregulated drug supply (from 65% pre-pandemic to 79% during the pandemic), of which 99% involved fentanyl or its analogues.
- **Alberta:** In 2019, 626 opioid-related deaths occurred, climbing to 1,180 in 2020, 1,623 in 2021 and 562 in the first four months of 2022.45 In 2021, an average of four individuals died each day in Alberta due to an accidental opioid poisoning.
- **British Columbia:** Deaths related to drug toxicity in British Columbia includes all unintentional illicit drug toxicity deaths, including confirmed and suspected drug toxicity deaths. The most recent estimate for 2021 shows that the number of illicit drug toxicity deaths averages about 6 deaths per day (2,236), compared with 2.7 deaths per day (981) in 2019. As has been the case since the declaration of the overdose crisis in 2016, males have accounted for most deaths in 2022 (76%). Similar to recent years, 72% of the deaths in 2022 (January to April) were among those aged 30 to 59 years. Fentanyl and its analogues were detected in 85% of illicit drug toxicity deaths between August 2017 and July 2021. With the

emergence of COVID-19 restrictions, an increase in the concentration of fentanyl was also observed, with 13% of deaths having extreme fentanyl concentrations (> 50 ug/l) in March 2020, compared with 8% in January 2019.

- **Nova Scotia:** In 2021, there were 229 opioid-related deaths, compared with 298 in 2020 and 334 in 2019. From January to May 2022, there were 34 opioid-related deaths. The rate of opioid-related deaths involving pharmaceutical opioids has decreased steadily between 2019 and 2021, from 68.9 per 100,000 to 36 per 100,000, respectively. For non-pharmaceutical opioid-related deaths, the rate was 4.6 per 100,000 in 2019, 11.5 per 100,000 in 2020 and 9.9 per 100,000 in 2021.48 To date, there are no estimates about pharmaceutical and non-pharmaceutical opioid-related deaths in 2022.

Impaired Driving

There is evidence that opioid use can increase the risk of driving impairment when used in combination with other drugs or alcohol, when used non-medically or when used therapeutically by individuals who are unaccustomed to using opioids. Opioids are one of the most common classes of prescription drugs found among drivers during roadside impaired driving surveys, along with benzodiazepines. Recent findings from the National Drug Driving Study (which collected data from 2018 to 2021 from 4,976 injured drivers treated in one of 15 trauma centres across Canada) show that opiates were detected in 1 in 9 injured drivers (11.1%), and were detected more frequently in males than in females.

Costs Associated with Use

Healthcare costs include inpatient hospitalisations, day surgeries, ED visits, substance use treatment, visits to family physicians and the use of prescription drugs. Between 2015 and 2017, the per-person overall healthcare costs associated with opioids increased by 20.9%, the second largest increase after central nervous system stimulants (excluding cocaine), which increased by 22.1%.65 In 2017, opioids were responsible for the third largest proportion of costs attributable to substance use across Canada. In the same year, $438.6 million in healthcare costs were attributable to opioids, representing about 3.4% of all healthcare costs associated with substances.

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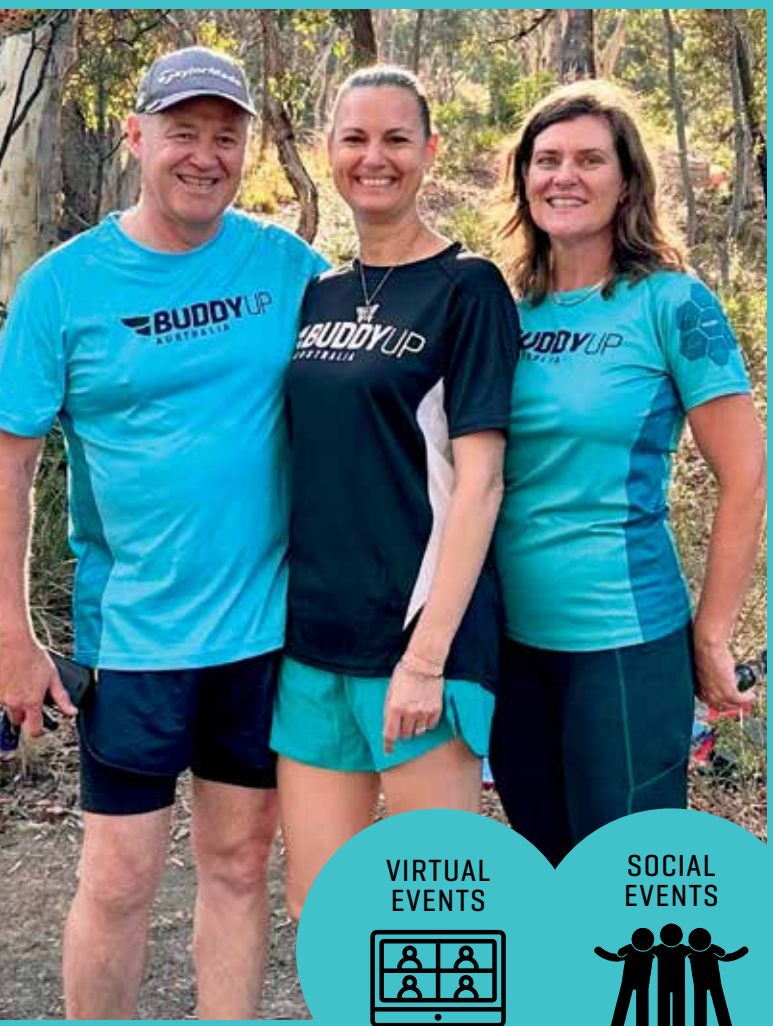

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Estimates of Drug Overdose Deaths Involving Fentanyl, Methamphetamine, Cocaine, Heroin, and Oxycodone: United States, 2021

FULL ARTICLE

May, 2023

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cdc.gov

Abstract

Objectives: Using literal text from the National Vital Statistics System, this report provides national drug overdose death rates involving fentanyl, methamphetamine, cocaine, heroin, and oxycodone by sex, age, race and Hispanic origin, and public health region.

Methods: The study analysed literal text from the National Vital Statistics System mortality data for deaths occurring in the United States among U.S. residents. Drug overdose deaths were limited to those with *International Classification of Diseases*, 10th Revision (ICD–10) underlying cause-of-death codes X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), or Y10–Y14 (undetermined intent). Specific drugs were identified using enhanced methods for searching literal text from death certificates. Trends from 2016 through 2021 were examined, as well as sex, age, race and Hispanic origin, and region-specific estimates for 2021.

Results: From 2016 through 2021, age-adjusted drug overdose death rates involving fentanyl, methamphetamine, and cocaine increased, while drug overdose death rates involving oxycodone decreased. In 2021, the age-adjusted death rates for males were higher than the rates for females for all drugs analysed. Among those aged 25–64, the highest rate of drug overdose deaths involved fentanyl; although a similar pattern was observed among those aged 0–24 years and 65 and over, no significant differences were observed between the rates ($p < 0.05$). Fentanyl was also the most frequent opioid or stimulant drug involved in drug overdose deaths for the race and Hispanic-origin groups analysed. Age-adjusted rates of drug overdose deaths varied by region. In 2021, for all regions except Regions 8 and 10, drug overdose deaths involving fentanyl were highest, while drug overdose deaths involving both fentanyl and methamphetamine were highest for Regions 8 and 10.

Introduction

Drug overdose deaths continue to be a significant public health burden in the United States, given the rise in rates over the past 2 decades. From 2001 through 2021, age-adjusted rates increased from 6.1 per 100,000 standard population to 32.4, with a 14% increase from 2020 to 2021.

Fentanyl, methamphetamine, cocaine, heroin, and oxycodone are frequently involved in drug overdose deaths. Typically, deaths in the United States are coded to the *International Classification of Diseases*, 10th Revision (ICD–10) to classify underlying and multiple causes of death in the National Vital Statistics System (NVSS). However, one limitation of the ICD–10 classification system is that, with a few exceptions, ICD–10 codes do not reflect specific drugs, but rather, broader categories. For example, the ICD–10 code for drug overdose deaths involving synthetic opioids (T40.4) includes deaths involving fentanyl, tramadol, and nitazenes. Analysing data solely based on ICD–10 categorisations can make it difficult to monitor trends of specific drugs, such as drug overdose deaths involving fentanyl.

To address the limitations of ICD–10-coded mortality data, the National Center for Health Statistics has developed a method that searches the literal text of death certificates to identify mentions of specific drugs and other substances involved in the death. Death certificate literal text is the written information provided by the medical certifier, usually a medical examiner or coroner for drug overdose deaths, that describes the causes, manner, and circumstances contributing to the death. Using literal text from the NVSS mortality data, this report describes patterns in drug overdose deaths involving five opioid or stimulant drugs frequently involved in deaths, by year (2016–2021) and by age, sex, race and Hispanic origin, and public health region for 2021.

Data Source and Methods

Data source and study population

NVSS death certificate records are held in a dynamic database and considered provisional until the data have been processed, reviewed, verified, and released by the National Center for Health Statistics as a final data set. For this analysis, a file containing literal

continued on page 28

text and other mortality information from 2016 through 2021 was retrieved from the dynamic database on March 29, 2023. Because the dynamic database may continue to receive updates to death certificate data after the close out of data, death counts may differ from other published sources.

Population estimates used for computing rates are postcensal estimates based on the 2010 decennial census. The study population included descendants who resided and died in the United States and had an underlying cause of death of drug overdose as identified by the following ICD–10 codes: X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined intent). Among drug overdose deaths between 2016 and 2021, 86.1%–92.2% were unintentional, 4.0%–8.0% were suicides, 3.6%–5.7% were of undetermined intent, and less than 1.0% were homicides.

Drugs involved in deaths were extracted from the literal text fields in NVSS: the causes of death from Part I, significant conditions contributing to the death from Part II, and a description of how the injury occurred. To be consistent in the methodology for identifying specific drugs involved in deaths, any deaths involving fentanyl, methamphetamine, cocaine, heroin, and oxycodone were identified using the established methods for searching literal text from death certificates (2–4). The specific drugs involved in drug overdose deaths were identified from these text fields in the method described below.

Identifying drug mentions and involvement of the drug in the death

Specific drugs are identified as being involved in a drug overdose death when the drug or substance- or terms that provide context about the involvement of the drug in the death (that is, whether the drug contributed to the death)-are mentioned in the literal text of the death certificate. The drugs or substances mentioned in literal text fields are assumed to be involved in the death unless contextual information indicates otherwise. The methodology for searching literal text information to characterise drugs involved in deaths is briefly described below, as well as detailed in previous reports (2–4, 7).

Principal variants

This study used the Drugs Mentioned with Involvement (DMI) methodology to identify mentions of drugs and other substances using search terms, which include generic names, brand names, common usage or street names, abbreviations, metabolites, misspellings, and other variations. Each search term is mapped to a principal variant, the label assigned to a drug, a drug class, or exposure not otherwise specified. Principal variants are linked to a unique ingredient identifier, which describes the substance's molecular structure or descriptive information as generated by the Global Substance Registration System, maintained by the U.S. Food and Drug Administration. For example, terms such as COCAINE, COCAINE CRACK, COCAINE HYDROCHLORIDE, and COCAINE TOXICITY are all mapped to the principal variant COCAINE. Principal variants also are categorised according to whether they referred to a specific drug or substance (for example, oxycodone), class of drug or substances (for example, opioid), or non-specific references (for example, words such as DRUG, MULTI-DRUG, or POLY-PHARMACY).

Referent drug groups

Referent drug groups serve as the unit of analysis for reporting drug overdose deaths of specific drugs. A referent drug group may include two or more principal variants reflecting a drug category. For example, the referent drug group fentanyl includes principal variants of fentanyl, which includes fentanyl analogs (CARFENTANIL), precursors (DEPROPIONYLFENTANYL), and metabolites (NORFENTANYL) of fentanyl. Findings in this report reflect referent group categories that are provided in an accompanying file, available from: **https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Publications/VSRR/VSRR-27-Online-Table-nmc.xlsx.** More than one drug can be reported on a death certificate; consequently, the resulting death counts do not form discrete, mutually exclusive categories.

Data analysis

Age-adjusted death rates were calculated using the direct method, adjusted to the 2000 standard population, and include all ages, using R statistical software, version 4.0.3. Any differences between rates presented in this report are statistically significant (p values less than 0.05). Trends in age-adjusted death rates from 2016 through 2021 were evaluated using z tests (between years) as well as from the National Cancer Institute's Join-point Regression Program (Version 4.9.0.0).

The period from 2016 through 2021 was selected based on the availability and quality of the literal text in NVSS and consistency in reporting of specific drugs during the time period. Join-point software fitted weighted least-squares regression models to the rates on the log transformed scale. Allowing one observed time point at each end and two for the middle line segments, the grid search algorithm searched for a maximum of two join-points at an overall alpha level of $p < 0.05$. Pairwise comparisons of rates to detect differences within demographic groups and regions were conducted using a z test statistic at the 0.05 level of significance.

Age-adjusted rates of drug overdose deaths by race and Hispanic origin for 2021 were reported using categories based on the Office of Management and Budget's 1997 standards for federal statistical and administrative reporting. All race categories are single race, meaning that only one race was reported on the death certificate. Only race and Hispanic-origin groups with statistically reliable estimates were reported. Data shown for the Hispanic population include people of any race. Non-Hispanic American Indian or Alaska Native (subsequently, American Indian or Alaska Native) and Hispanic people have been shown to be affected by misclassification of race and Hispanic origin on death certificates. This misclassification results in underestimation of death rates for these groups, by about 3% for non-Hispanic Asian (subsequently, Asian) and Hispanic people, and by an estimated 34% for American Indian or Alaska Native people. At this time, the extent of this misclassification has not been evaluated for all causes of death (as in drug overdose deaths); as a result, rates are not adjusted for misclassification. Geographic patterns in overdose deaths involving specific drugs are presented by the 10 U.S. Department of Health and Human Services (HHS) public health regions. These regions are used for public health prevention, preparedness, and agency-wide coordination of HHS programs and policies. The regions, excluding U.S. territories, are:

- **Region 1:** Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
- **Region 2:** New Jersey and New York
- **Region 3:** Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia
- **Region 4:** Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee
- **Region 5:** Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin
- **Region 6:** Arkansas, Louisiana, New Mexico, Oklahoma, and Texas
- **Region 7**: Iowa, Kansas, Missouri, and Nebraska
- **Region 8:** Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming
- **Region 9:** Arizona, California, Hawaii, and Nevada
- **Region 10:** Alaska, Idaho, Oregon, and Washington

Results

Trends in age-adjusted death rates of drug overdose deaths from 2016 through 2021, by specific drug

The age-adjusted rate of drug overdose deaths involving fentanyl more than tripled over the study period, from 5.7 per 100,000 standard population in 2016 to 21.6 in 2021, with a 55.0% increase from 2019 (11.2) to 2020 (17.4), and a 24.1% increase from 2020 to 2021 (21.6) (Table 1, Figure 1). The rate of drug overdose deaths involving methamphetamine more than quadrupled, from 2.1 in 2016 to 9.6 in 2021. The rate of drug overdose deaths involving cocaine more than doubled, from 3.5 in 2016 to 7.9 per 100,000 in 2021. The rate of drug overdose deaths involving heroin decreased by 40.8%, from 4.9 in 2016 to 2.9 in 2021, although this decrease was not statistically significant. The rate of drug overdose deaths involving oxycodone decreased 21.0%, from 1.9 in 2016 to 1.5 in 2021.

Age-adjusted death rates of drug overdose deaths in 2021, by selected drugs and sex

In 2021, the age-adjusted rate of drug overdose deaths was highest for deaths involving fentanyl (21.6 per 100,000 standard population), followed by methamphetamine (9.6), cocaine (7.9), heroin (2.9), and oxycodone (1.5). Patterns were similar when stratified by sex (Table 2, Figure 2).

Figure 1. Age-adjusted rates of drug overdose deaths, by selected drugs: United States, 2016–2021

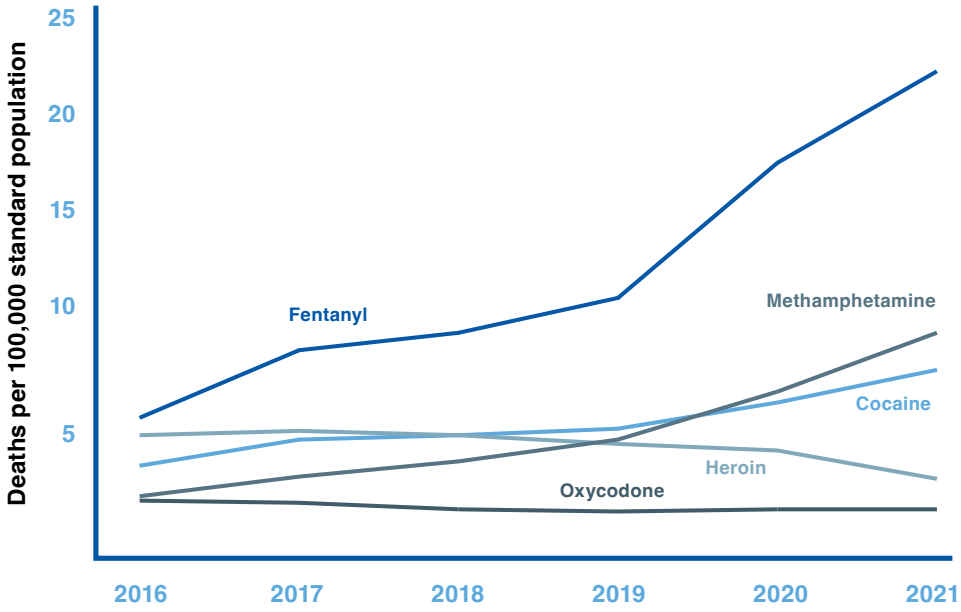
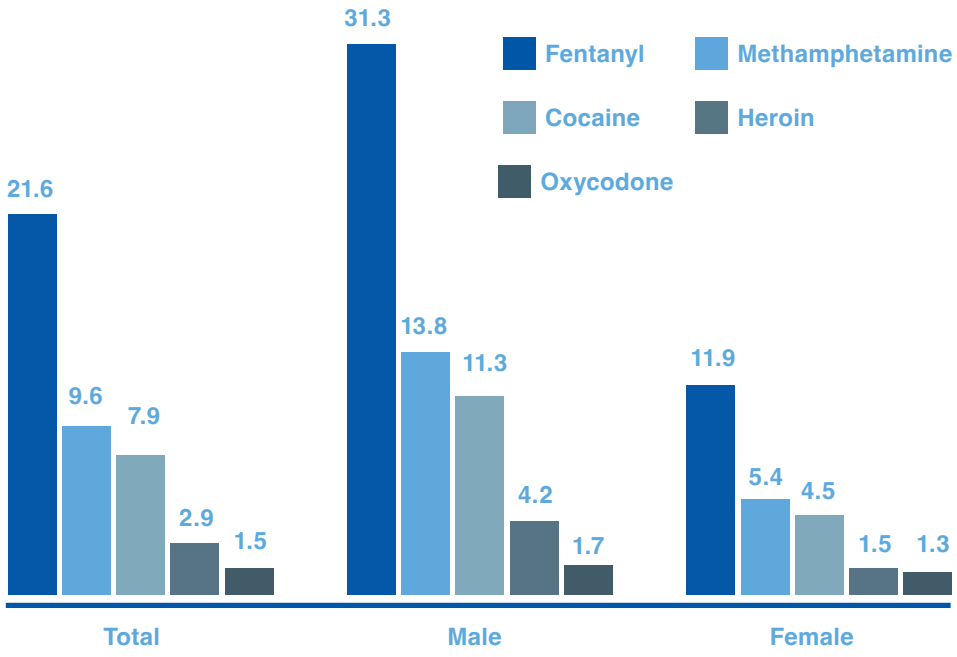


Figure 2. Age-adjusted rates of drug overdose deaths, by selected drugs and sex: United States, 2021



Males had higher rates of drug overdose deaths for all drugs analysed. For drug overdose deaths involving fentanyl, the rate for males was 2.6 times the rate for females (31.3 compared with 11.9); for deaths involving methamphetamine, the rate for males was 2.6 times the rate for females (13.8 compared with 5.4); for deaths involving cocaine, the rate for males was 2.5 times the rate for females (11.3 compared with 4.5); for deaths involving heroin, the rate for males was 2.8 times the rate for females (4.2 compared with 1.5); and for deaths involving oxycodone, the rate for males was 1.3 times the rate for females (1.7 compared with 1.3).

Age-specific rates of drug overdose deaths in 2021, by selected drugs and age group

In 2021, among those aged 25–34 and 35–44, the drug overdose death rates were highest for fentanyl (40.8 and 43.5,

continued on page 30

respectively), followed by methamphetamine (15.4 and 20.3) and cocaine (11.5 and 14.9) (Table 2, Figure 3). While the drug overdose death rates were highest for fentanyl among those aged 45–54 and 55–64, at 32.7 and 24.8, respectively, the rate of drug overdose deaths was similar for deaths involving cocaine and methamphetamine. Among those aged 0–24 years and 65 and over, although the drug overdose death rate involving fentanyl was higher compared with other drug types, it was not significantly different; drug overdose death rates for all other drugs analysed (methamphetamine, cocaine, heroin, and oxycodone) were similar.

Age-adjusted death rates of drug overdose deaths in 2021, by selected drugs and race and Hispanic origin

In 2021, among non-Hispanic Black people, the highest age-adjusted rate of drug overdose deaths involved fentanyl (31.3), followed by cocaine (20.6) and methamphetamine (7.0) (Table 2, Figure 4). Among American Indian or Alaska Native people, the highest drug overdose death rate involved fentanyl (33.1), followed by methamphetamine (27.4) and cocaine (7.4). Among non-Hispanic White people, the highest drug overdose death rates involved fentanyl (24.6), methamphetamine (12.0), and cocaine (6.8). Among Hispanic people, the rate of drug overdose deaths was highest involving fentanyl (14.1), followed by methamphetamine (6.2) and cocaine (5.8). Among Asian people, the rate of drug overdose deaths involving fentanyl (2.3) was higher compared with other drug types, followed by methamphetamine (1.4) and cocaine (1.0).

Age-adjusted death rates of drug overdose deaths in 2021, by selected drugs and public health region

In 2021, for all regions except Regions 8 and 10, the drug overdose death rates were highest involving fentanyl compared with methamphetamine, cocaine, heroin, and oxycodone (Table 2, Figure 5). For Regions 8 and 10, drug overdose death rates involving fentanyl and methamphetamine were similar. For all regions except Regions 1 and 7, rates were lowest for drug overdose deaths involving oxycodone. For Regions 1 and 7, drug overdose rates for oxycodone and heroin were similar, but oxycodone deaths were lower than other drug types.

The drug overdose death rate involving fentanyl was highest in Regions 1 (32.2) and 3 (32.0), while the death rate involving methamphetamine was highest in Region 9 (14.1). The drug overdose death rate involving cocaine was highest in Region 1 (15.9), and the rate for deaths involving heroin was highest in Region 2 (5.0).

Discussion

This report presents the trend in drug overdose deaths for the five most frequent opioids and stimulant drugs involved in deaths in the United States from 2016 through 2021, and then focuses on differences by sex, age group, race and Hispanic origin, and public health region in 2021.

The rate of drug overdose deaths increased by 279% for drug overdoses involving fentanyl during the study period, from 5.7 per 100,000 standard population in 2016 to 21.6 in 2021.

The rate of drug overdose deaths increased by 279% for drug overdoses involving fentanyl during the study period, from 5.7 per 100,000 standard population in 2016 to 21.6 in 2021. The rate of drug overdose deaths involving methamphetamine and cocaine also increased over the study period. Conversely, the rate of drug overdose deaths involving heroin decreased by 40.8% (non-significant), and the rate involving oxycodone decreased by 21.0%. Findings on these trends may differ from earlier reports examining different time periods because statistical results using the Join-point software may vary according to the number of data points. Drug overdose death rates vary by sex. In 2021, rates for males were higher than the rates for females among the specific drugs analysed, including fentanyl, methamphetamine, cocaine, heroin, and oxycodone. Variations were observed in the distribution by age group. Among those aged 25–34 and 35–44, the highest drug overdose death rates involved fentanyl and methamphetamine, while among those aged 45–54 and 55–64, after fentanyl (the most frequently involved drug), the highest drug overdose death rates involved both cocaine and methamphetamine. Moreover, geographic differences were observed, where rates of drug overdose deaths involving fentanyl were highest in Regions 1–7 and 9 compared with other drugs in this analysis. Methods based on the literal text are dependent on the quality and completeness of the information provided, which may vary from jurisdiction to jurisdiction due to differences in reporting practices in systems that conduct death investigations and certify the cause and manner of unnatural and unexplained deaths

(medicolegal death investigation systems) across the United States (15–17); interpretations of these findings should consider these limitations. Additionally, regional differences in the quality and completeness of death investigation and reporting must be considered when reviewing these findings.

Variations in the way drug overdose deaths are reported on death certificates, including the level of detail on specific drugs involved, can impact comparability. During 2016–2021, the reporting of at least one specific drug among drug overdose deaths improved from 85% in 2016 to 95% in 2021. These improvements in specificity could affect the magnitude and distribution of deaths due to specific drugs. However, earlier research that adjusted for improved reporting practices found similar patterns between the observed and adjusted rates and, consequently, reported solely the observed rates (4). Similarly, this report provides only the observed rates. Trends in rates of drug overdose deaths should also be interpreted considering improvements in quality of the data over the study period.

Oregon Officials Declare State of Emergency to Address Fentanyl Crisis

Oregon government officials have declared a 90-day state of emergency to address Portland's growing fentanyl crisis.

February 1, 2024

MARY KEKATOS

abcnews.go.com

Gov. Tina Kotek, Multnomah County Chair Jessica Vega Pederson and Portland Mayor Ted Wheeler each issued an emergency declaration on Tuesday following a recommendation from the Portland Central City Task Force.

Overdose deaths from synthetic opioids, mainly fentanyl, have increased by 533% between 2018 and 2022 in Multnomah County, where Portland is located, according to the county's health department.

"Our country and our state have never seen a drug this deadly and addictive, and all are grappling with how to respond," Kotek said in the announcement. "The Chair, the Mayor and I recognise the need to act with urgency and unity across our public health and community safety systems to make a dent in this crisis."

The state of emergency order allows officials to dedicate resources to responding to the crisis and to establish a command center in Portland, which will offer access to day services and "improve connection to care," according to the announcement.

The command center will also share and publicly report data on the impact of fentanyl in the city, as well as identify what gaps in service exist, respond to them and allocate resources to do so, the announcement further states.

Additionally, the Multnomah County Health Department will launch education campaigns promoting youth drug prevention, according to the announcement, including how effective recovery is and reducing stigma when it comes to treatment. The department will publicise the messages on platforms including digital media, billboards, and streaming audio.

According to the announcement, there will also be "continued missions between the Portland Police Bureau and Oregon State Police to hold individuals selling the drug accountable."

"If you or a loved one is struggling with a fentanyl addiction, we hear you, we see you and we are taking this crisis seriously," Chair Jessica Vega Pederson said in the announcement. "We are acting with shared leadership to take urgent action today to respond to the very human toll fentanyl takes in our community, including overdoses, fatalities and day-to-day suffering, and the fear so many families are experiencing as a result."

Fentanyl is up to 50 times stronger than heroin and about 100 times stronger than morphine as a pain reliever, according to the U.S. Drug Enforcement Administration.

Even in relatively small doses, fentanyl can be deadly. Because of its potency, it is often added to other drugs and yet is "nearly impossible" to detect without testing those drugs, according to the Centers for Disease Control and Prevention (CDC).

The increasing role of fentanyl in overdose deaths is a trend seen nationwide. A CDC report last year showed more than 107,000 people died of drug overdoses from January 2019 to June 2022. Of those, more than two-thirds were linked to synthetic opioids, mainly illicitly manufactured fentanyl.

The CDC says more than 150 people die every day from overdoses related to synthetic opioids, including fentanyl.

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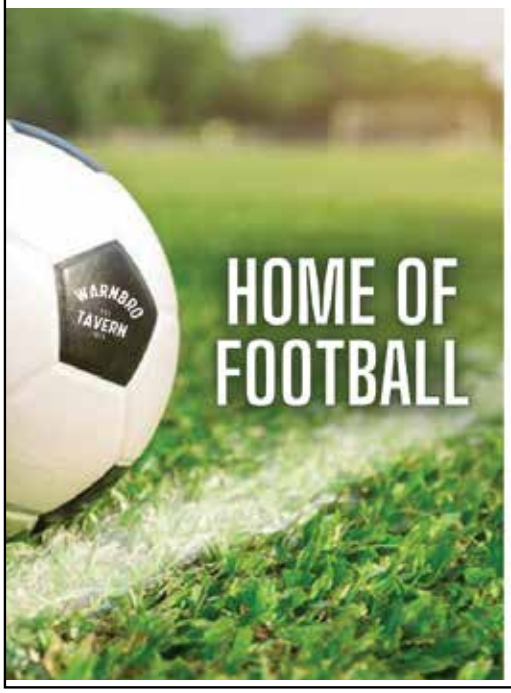

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Portland Decrees 90-day State of Emergency to Tackle Fentanyl Crisis

Oregon authorities have tabled a plan to address the synthetic opioid epidemic, which has caused a 533% increase in overdoses in the last four years

February 1, 2024

LUIS PABLO BEAUREGARD

english.elpais.com

Oregon state authorities this week declared a 90-day emergency to rid Portland of fentanyl, the potent opioid that has sparked a health crisis across the United States. In Multnomah County, where Portland is located, a 533% increase in fatal overdoses has been registered over the past four years. "Our country and our state have never seen a drug this deadly and addictive, and all are grappling with how to respond," Governor Tina Kotek acknowledged. The measure is yet another experiment in a city that has explored various new routes in its drug policy without the achieving the desired results.

The emergency declaration allows state, county, and city authorities to establish a ground zero in downtown Portland, where the fentanyl emergency has also caused an economic crisis: dozens of businesses have abandoned the core of Oregon's most populous city of 600,000 inhabitants.

The decree provides for the setting up of a command center in Portland, which aims to unify the response to the epidemic and remove bureaucratic hurdles between all levels of government. Fentanyl addicts will be able to find the care they need in one building, regardless of whether this is the need for a bed in a rehab center, an appointment with a doctor, or to access social and food aid programs.

"Individuals who are struggling with fentanyl addiction are worth investing in, fighting for and providing a clear path to recovery," Kotek said at a press conference. The details of the measure will be released in the coming weeks, but for the time being the local press has reported that the declaration will not require new economic resources.

The measure has been met with some scepticism. "We should all hold our applause until we see what actually happens," Sharon Meieran, one of the Multnomah County commissioners, told local newspaper The Oregonian. The official asked for the adoption of emergency measures last year to tackle an epidemic that caused 210 deaths between 2018 and 2022 (the most recent year for which statistics are available) and has sparked an increase in crime. " It's taken far too long to decide we have an emergency on our hands, and it certainly won't be over in 90 days," she added.

At the heart of the debate in Oregon is what the state should do regarding Measure 110, which decriminalised possession of small amounts of hard drugs, including fentanyl, heroin, and methamphetamines. The measure was approved in 2020 by 56% of voters in the state, one of the most liberal in terms of drugs policy.

The initiative, the first of its kind in the U.S., sought to change decades of a punitive approach to the battle against drugs, which has led to prison overcrowding and especially targeted low-income Blacks and Latinos. Similar rules have been approved and implemented in several cities in the American West, such as Seattle, Los Angeles and San Francisco. Authorities in these cities have limited, if not reversed, such proposals.

This appears to be the fate of Measure 110. Democrats, who have governed Oregon since 1987, recently unveiled a legislative proposal that would modify the spirit of the initiative. If passed, the State Congress would again make possession of small amounts a non-felony offense. The new rule would also allow authorities to confiscate substances and prevent street use. It would also make it easier for prosecutors to pursue traffickers and force addicts into rehab, a show of force that is also under debate in San Francisco. Sixty-three percent of Oregonians support the new law.

Oregon ranks below the national average in fatal illicit drug overdoses with 30 deaths per 100,000 population, while Washington D.C. tops the list at 94.2, followed by Tennessee (55.4), Delaware (55.1), and Maine (51.6). The national average is 35. Officials in Oregon reported that in 2022, three people died every day from accidental overdoses. Fentanyl, a substance that is 80 to 100 times stronger than morphine and 50 times deadlier than heroin, has exacerbated the crisis.

Politicians appear to have made up their minds about the future of Measure 110. The experiment, however, has been defended by scientists and academics. Last fall, a study by the Grossman School of Medicine at New York University concluded that the legislation did not lead to an increase in overdoses or substance abuse deaths.

The team of physicians investigated 13 states with a similar level of substance use as Oregon. After three years of analysis, the period during which the Measure 110 has been in effect, there is no strong evidence that the initiative has caused more deaths. Corey Davis, the head of the research, said that accidental overdoses spiked "basically everywhere."

Principles and Metrics for Evaluating Oregon's Innovative Drug Decriminalisation Measure

FULL ARTICLE

February 1, 2022 marks one year since the enactment of a historic measure in Oregon to decriminalise possession of small amounts of drugs and substantially invest in healthcare, substance use disorder (SUD) treatment, harm reduction, and social services for people who use drugs (PWUD).

February 2, 2022

JULES NETHERLAND · ALEX H. KRAL · DANIELLE C. OMPAD · COREY S. DAVIS · RICKY N. BLUTHENTHAL · NABARUN DASGUPTA · MICHAEL GILBERT ·RIONA MORGAN · HAVEN WHEELOCK

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A departure from decades of punitive approaches, Measure 110 (M110; also known as the Drug Addiction Treatment and Recovery Act of 2020) is being carefully followed by policymakers and advocates across the USA and around the world.

The success or failure of M110 has the potential to shape drug policy in the USA for decades to come, but "success" or "failure" is entirely dependent on what outcomes are being measured, how the data are gathered, and whether the findings are understood within the broader context of what is happening on the ground in Oregon. Evaluations of novel drug policies like M110 are critical for informing future policy, yet often lack engagement with the people who are the most directly impacted, despite their having valuable insight into what should be measured and how. As a working group of researchers and service providers, we came together to interview people who use drugs in Oregon to get their input into principles for how to evaluate M110 as well as the most important outcomes to measure. In doing so, we learned critical information about the approach needed for a robust evaluation, generated a broad array of relevant metrics, and garnered important information about the context of M110 implementation that will help researchers and policymakers interpret findings.

M110 decriminalised personal possession of small amounts of drugs while expanding access to addiction recovery and harm reduction services through new investments of US $302 million over 2 years. The maximum punishment for people possessing small amounts of drugs is a citation and US $100 fine, which is waived if they choose to participate in a social services screening through which they can be linked to services such as SUD treatment, harm reduction, and housing assistance. These are unprecedented and sweeping changes to drug policy.

While the impact of this novel drug policy measure could not possibly be meaningfully evaluated less than a year after its enactment, in October of 2021, media outlets such as Oregon Public Broadcasting began reporting on the low numbers of citations being issued and calling into question the success of the measure. This kind of rush to judgment is pre-mature, rests on faulty assumptions about what kinds of measures matter, and reinforces the outdated and non-evidence-based belief that police involvement and coercion are what will make M110 successful. In focusing on law enforcement involvement, ignoring the context, and failing to take into account the much broader array of forces at work, these early reports evoke many of the failures of drug policy research in general.

Too often, drug policy research focuses on narrow measures, such as cost, criminal legal involvement, or abstinence; fails to take into account the complexities of policy implementation and potential confounders; and neglects to involve those directly impacted by the policies in determining the measures of success in the first place. These methodological problems are not unique to drug policy research. Public health researchers often fail to consult with people who are directly impacted by policy changes when they craft their evaluations, and this failure can lead to evaluations that are too narrowly focused, do not answer questions of interest to the community, or fail to take into account significant confounding variables and complexities that can affect outcomes.

To avoid these problems, we interviewed PWUD in Oregon to ascertain important principles and metrics that researchers should use when evaluating M110. Interview candidates were identified by reviewing a list of people who had submitted testimony about M110's implementation, talking to leaders of organisations that work with PWUD, and following

continued on page 36

up on leads from initial interviewees. We selected individuals from across Oregon to ensure that both urban and rural perspectives were represented. Participants were paid US $50 each for their time and expertise, and the qualitative interviews, which took place via video conferencing and phone (due to COVID-19), lasted between 45 and 60 minutes. A total of eleven interviews were conducted, after which we reached data saturation. Forty-five percent of the sample was cis-women; 55% were cis-men. Interview recordings and notes were reviewed and analysed by two members of the working group from which a draft set of principles and metrics were derived. The draft was edited by the working group and then sent back to all the original participants for their review to make sure that the document accurately reflected what they had told us. All participants communicated that the document reflected their input. A full copy of the principles and metrics is available online.

The value of engaging with people most likely to be directly impacted by M110, albeit in a limited way given our lack of funding, time constraints, and COVID-19-limited interactions, was readily apparent. Overall, participants wanted PWUD to be more deeply involved throughout the research process and called for comprehensive, rigorous, and nuanced evaluations that include an array of methods and outcome measures. Interviewees had strong opinions about principles that should guide evaluations of M110 based on their experience of and knowledge about prior research projects studying drug use in Oregon. First and foremost, they noted that people who use drugs, their families, and communities that are directly impacted by M110 are the most important resource for evaluations and need to be consulted about their experiences throughout every stage of the process - from research design conceptualisation through data collection and analysis and ultimately dissemination of findings. Second, they called for researchers who were experienced, understood their issues, used updated non-judgemental terminology, and were knowledgeable about the issues surrounding local and national drug policy. For example, one participant noted: "The racial justice component is huge: researchers should know and understand the history of racism in drug policing and the past and presence stance of racism in policing."

Interviewees also had important insights about evaluation methods, including the desire to see both qualitative and quantitative strategies to ensure appropriate context and optimise explanatory power. They called for evaluations that include primary data collection as well secondary analyses of extant data. This was premised in part on their knowledge of the deficiencies in the available data sources, particularly criminal legal and SUD treatment data. Citing the limitations of relying solely on quantitative data, one participant commented:

Quant data can be used in a vacuum, which can be misleading to the public if context isn't provided or something is omitted. Like the percent-age of people who went to treatment: although important, this doesn't give us the full picture, because we don't get the context of the treatment, its quality, what the other options were, etc.

Participants also urged researchers to account for confounding variables, particularly calling out the rise of fentanyl in the drug supply and its impact on over-dose rates; potential net widening by law enforcement (e.g., increases in arrests for non-drug related "vagrancy laws"); the impact of COVID-19 on rates of service usage, health and mental outcomes, and drug use; and other concomitant changes in the policy environment.

In a sharp repudiation of narrowly focused research studies, such as those looking exclusively on cost, abstinence from drug use, or crime, interviewees generated more than seventy-five metrics spanning seven domains (criminal legal, law enforcement interactions and culture, social service environment and collateral consequences, healthcare, stigma, and cost and cost savings) by which they thought the success and failure of M110 should be evaluated. The sheer number and array of metrics speaks to the complexity involved in evaluating a policy shift as far-reaching as M110 and the importance of interpreting and contextualising findings within that complexity.

It is worth noting a few key recurring concerns. First, interviewees were sceptical that Black, Indigenous, and people of colour would experience reductions in law enforcement interactions at the same rate as whites and noted that pregnant and parenting individuals who use drugs might continue to be among those most stigmatised. They urged that evaluations of M110 incorporate analyses that assess disparities across these important demographic groups for all key outcomes. Second, they stressed the importance of assessing the outcomes in the context of how policies are actually implemented, noting that, too often, policy evaluations focus on policies as written, ignoring how they actually unfold on the ground, which can profoundly impact their effectiveness. For instance, one participant commented that evaluations should "be transparent about dollars spent versus what the community wanted it spent on" referring to the gap between policymakers' commitments and "real life" implementation.

Our hope in creating this document was to center the voices of people directly impacted by M110 in evaluations of the policy in order to avoid some of the pitfalls of prior drug policy evaluations. We believe this approach of quickly and efficiently involving people directly impacted by policy change can be more broadly applied to public health research in general. While there has been some attention to community-based and community-driven participatory research, these efforts can be challenging and are seldom sufficiently funded to meet the goals. We were able to quickly gather valuable perspectives from people who use drugs in Oregon in ways that will enhance the ability of researchers to conduct thoughtful, comprehensive evaluations of this historic measure, taking into account metrics that matter to impacted communities, while interpreting their findings within the context of conditions on the ground. Consistent with findings of a review of Patient-Centered Outcomes Research Institute studies, this kind of approach will improve the rigor of evaluations and their relevance and usefulness as jurisdictions across the country seek to replicate drug decriminalisation policies. Importantly, two key takeaways from this work were that people directly impacted (1) need to be meaningfully involved throughout the research process and (2) have invaluable insight and ideas about research questions, research methodologies, and context. This means that researchers who plan to evaluate M110 should engage with people who use drugs throughout their projects while using the developed principles and metrics.

Conducting responsible and ethically grounded research from afar may require coordination to balance benefits and burdens. Out-of-state researchers often have access to large national datasets that could be repurposed to evaluate M110. While we welcome bringing additional data sources to bear on the evaluation, we also caution that analyses conducted in a vacuum may miss key metrics that matter on the ground. In tandem, we also have concerns about the burden to be placed on PWUD and advocates in Oregon who may be tapped to assist remote researchers in evaluating M110 from out-of-state. We hope that researchers will be respectful of these concerns when proposing evaluations.

In 2021, there were over 100,000 overdose deaths in the USA - a record number and 28.5% increase over 2020. In her recent Health Affairs blog, Dr. Nora Volkow, director of the National Institute on Drug Abuse, argued that SUD treatment should be more realistic and pragmatic. She states, "The magnitude of this [overdose] crisis demands out-of-the-box thinking and willingness to jettison old, unhelpful, and unsupported assumptions about what treatment and recovery need to look like." M110 and the metrics and methods outlined by the community and this working group are the drug policy and evaluation research answers to this entreaty. We hope this document will be a guide for those seeking to evaluate M110, agencies funding evaluations of the measure, and journal editors and peer reviewers evaluating manuscripts about M110. In addition, we hope that this work serves as one model for how to centre the voices of those directly impacted in research efforts more broadly prior to evaluating a new policy.

Acknowledgements

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A Call for an Evidence-Based Strategy Against the Overdose Crisis

FULL ARTICLE

January, 2024

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Introduction

The current overdose crisis is one of the most devastating public health challenges in the field of mental health and substance use disorder care in history. Globally, about 1 in 5 deaths is attributable to substance use, with more than 70% attributable to opioids. The dramatic increase in mortality in Canada and the USA since 2015 is primarily due to changing drug markets and related patterns of substance use, and an ill-prepared system of care. In the USA, the economic cost of drug abuse is estimated to be $193 billion dollars annually, which includes healthcare costs, loss of productivity and criminal justice costs.

Fentanyl now dominates the pattern of use in most regions of North America and has become the drug of choice among many people who use drug (PWUD). This shift towards high-potent synthetic opioids has not stopped at fentanyl, with ultra-potent synthetic fentanyl derivatives such as carfentanil as well as non-fentanyl-derived ultra-potent synthetic opioids such as Nitazene now becoming readily available. The latter, from a drug class known as benzimidazole opioids, is several times more potent than fentanyl and is undetectable using currently available fentanyl test strips.

As a result, the climb in overdose deaths in North America have been dramatic, and one that is seemingly impervious to previous response measures developed by public health agencies. For instance in BC, there were 2,306 and 2,272 overdose deaths in 2021 and 2022, respectively, almost 25% more than the previous record set only in 2020 (1,774). These numbers have set off alarms among health-care leaders in the province, leading to the adoption of initiatives intended to mitigate the harms associated with the illicit toxic drug supply. The most recent has been the provision of a 'safe supply'– the prescription of high-potent psychotropic substances outside of a therapeutic context in the hope of reducing overdose risk due to increased toxicity of the illicit drug supply. While the logic of providing 'clean' drugs to protect PWUD from exposure to a 'tainted' illicit drug supply is irrefutable, the 'devil' is very much in the details. Should this approach be viewed simply as a short-term intervention or as a strategy that over the long-term will curb mortality significantly? In the latter case, how will safe supply be integrated into a long-term therapeutic context in contrast to defaulting into a stand-alone option? A vigorous debate over these questions, along with concerted and well-supported research efforts to secure much needed objective data, remains the only evidence-based approach to develop a clear path forward devoid of wishful thinking borne out of desperation.

The Current State of Care for Substance Use Disorders

While these changes in drug supply are of critical importance, other factors are also to blame. Significant gaps in the Canadian and American healthcare system, such as lack of access to proven clinical treatment options, also contribute significantly to the current unsuccessful response to the overdose crisis. For instance, long waiting lists for opioid agonist treatment (OAT), low retention rates due to the quality of care, and insufficient access to mental healthcare and psychosocial interventions, which are evidence based and can significantly increase retention in OAT programmes, are concerning realities.

When compared to Europe, treatment access and coverage in North America is significantly worse, and is far below the World Health Organisation OAT coverage target of 40%. Only a very small proportion of individuals with opioid use disorder (OUD) are receiving OAT, and access remains a challenge in many parts of Canada, particularly in rural and remote areas. This is devastating given that evidence has shown that OAT can decrease the risk of overdose death by 50% to 80%. Similarly, across 6 healthcare systems in the USA, the prevalence of receiving medication for OUD among patients with documented OUD varied between 3% and 36%.

In addition to access and capacity, the quality of care and diversity of treatment options is sub-standard. The rise in OAT coverage largely reflects an increase in the number of clients dispensed buprenorphine/naloxone, while methadone prescriptions remain stable relative to 2015. Access to other treatment options, particularly slow-release oral morphine, hydromorphone and diacetylmorphine remain very low. The disappointing slow uptake is difficult to reconcile with findings obtained from naturalistic and liberal OAT settings that fail to confirm reliance on single medication categories, encouraging instead choice of preferred opioid agonist from a range of options. It is noteworthy that although in 2019 Health Canada approved injectable hydromorphone and diacetylmorphine as treatment for severe OUD in adults, the number of patients receiving injectable OAT (iOAT) is low. Indeed, in an open-label phase 3 randomised controlled trial in Canada (NAOMI study), the rate of retention among individuals receiving diacetylmorphine was 87.8%, as compared with 54.1% among those receiving oral methadone. In Europe, although methadone is the main medication prescribed, significant regional differences exist with slow-release oral morphine, codeine, dihydrocodeine, buprenorphine and diacetylmorphine also widely used.

In North America, careful consideration should be given to expanding access to a diverse range of medications for OUD, while also urgently improving treatment quality and integrating addiction and mental health counselling in primary care. Retention in OAT, as well as withdrawal management, are also matters of great concern, especially in an era in which fentanyl is broadly available. To date, only few attempts are being made to adapt treatment options to the challenges posed by the high potency of fentanyl relative to heroin. This is due in part to legal restrictions and a perennial lack of resources, despite a prolonged public health crisis.

The Concept of 'Safe Supply'

The current situation thus constitutes a high-potent opioid problem in conjunction with a system of care problem. In response, a concept popularly known as 'safe supply' has been implemented in BC. The aim of this public health intervention is to protect individuals from a toxic illicit drug supply, while also preventing overdose and other harms. Though the current provincial guidance on the treatment of OUD still recommends buprenorphine/naloxone and methadone as first-line treatment options, the Risk Mitigation interim clinical guidance recommends the prescription of oral hydromorphone or slow-release oral morphine to reduce an individual's reliance on the illicit drug supply and associated harms. Using similar logic, dextroamphetamine or methylphenidate have been added as potential practice options for patients with stimulant use disorder. Moreover, a novel programme (Safer Alternatives for Emergency Response; SAFER) also provides fentanyl as a direct substitute to the primary opioid in the local unregulated drug supply. Various formulations are available, including injectable, sublingual, oral and transdermal formulations.

However, this approach is not based on large-scale effectiveness studies which rely on the gold standards of clinical research, as was conducted for the introduction of heroin-assisted treatments (HAT) in Canada. Indeed, the evaluation and implementation of HAT in Canada followed a stringent scientific agenda. The Canadian Health Research Institute (CIHR) funded an randomised controlled trial (RCT) for HAT called the NAOMI study. A few years later, the CIHR and the provincial government of BC then supported another RCT to test the efficacy and safety of heroin and hydromorphone supported treatment in the SALOME trial. These studies published in NEJM and JAMA Psychiatry proved objectively that HAT could be implemented successfully, with no severe adverse events. In addition, the trials found high retention rates and patient satisfaction. These HAT protocols remain in use but the capacity for such high-quality care remains very limited. Overall, what was originally deemed to be a risky controversial approach gained legitimacy due to the high standard of clinical research, which is now widely recognised as being amongst the best evaluated intervention in the treatment of severe opioid dependence.

On the other hand, growing political support for safe supply seems to be towards the less complicated approach of simply making pharmaceutical grade opioids available more widely outside of clinical settings. However, there has been no published systematic review of safe supply and a 2022 rapid review of 19 studies found no evidence of benefits from the provision of pharmaceutical opioids, heroin, crystal methamphetamine, cocaine or other substances to people who are dependent on these substances. Finally, leading experts across the USA and Canada seem to

continued on page 40

express caution in their recommendations from the Stanford-Lancet Commission on the North American Opioid Crisis, when stating that 'the evidence clearly shows the folly of assuming that population health inherently improves when healthcare systems provide as many opioids as possible with as few possible regulatory constraints as possible. Policies that should attract scepticism include the dispensing of hydromorphone from vending machines and prescribing a range of potent opioids and other drugs (e.g., benzodiazepines, stimulants) to individuals with OUD, in hopes of creating a safe addictive-drug supply'. Moreover, an approach akin to safe supply has not been implemented internationally leaving the current policy with no international benchmarks or comparator. The Stanford-Lancet Commission warns against policies that ignore the therapeutic and overall medical needs of people using drugs, particularly given that the overdose crisis, especially in the USA, has been attributed to expanded access to and over-prescription of opioids.

The safe supply model largely advocates for the provision of take-home psychoactive substances. This bears a close resemblance to the drastic increase in access to addictive prescription drugs at the turn of the century, which led to increased harms through diversion, misuse, overuse, and thousands of overdose deaths. Historically, North America has routinely failed to guard against misuse, diversion, addiction and death when providing increased access to addictive prescription drugs.

Integration of Pharmacotherapy and Psychosocial Care

Crucially, it is imperative that health and social care systems make an enduring commitment to provide services for PWUD that are fully integrated with mainstream care, accessible to all and target a range of outcomes. Portugal and Switzerland both successfully addressed their historic public health crises of the 1990s and 2000s, respectively, without resorting to the use of safe supply. Portugal decriminalised personal substance use and made it an administrative offence allowing in-person assessment, housing support, medical care, substance treatment, and vocational rehabilitation. Since then, rates of drug-related deaths and diseases have plummeted. Switzerland decreed a new national drug policy in the 1990s which introduced harm reduction as a 4th pillar besides prevention, treatment and law enforcement. The medical prescription of diacetylmorphine to individuals with OUD in a regulated and controlled environment was the most controversial element of the new Swiss drug policy. Combined with other innovations such as overdose prevention sites (safe injection rooms), integrated basic healthcare, infection screening and social services, the over-dose deaths in the country decreased by 50%, HIV infections decreased by 65%, and new heroin users decreased by 80%. Both countries showed convincingly, that any successful model must also consider important medical and social issues (e.g., mental health, homelessness, incarceration, debt, etc.) that cannot be solved by use of medications alone. This is in contrast to BC which has focused largely on harm reduction only, at the detriment of the other pillars. Supervised injection sites, safe snorting sites and kits, and now safe supply were 'firsts' in North America but the current numbers of overdose deaths in BC clearly shows the impracticality of harm reduction as the primary strategy without also focusing on the other dimensions.

The Lessons From COVID-19

The COVID-19 pandemic has proven the important role that clinical research and high-quality evidence can play in prevention and treatment during a public health crisis. Armed with clinical and epidemiological research from the beginning, the pandemic has shown that when all aspects of care are combined in a complementary manner, mortality is reduced and severe suffering diminished. The COVID-19 vaccine is a prime example, estimated to have prevented 14.4 million deaths from COVID-19 in the first year of vaccination. This strategy was even more effective when combined with complementary public health policies like mask wearing, social distancing, public hygiene, adaptation of hospitals for the infected, etc. These assessments were based on science, and allowed for ongoing adaptations.

With the overdose crisis, decision-makers seemingly chose a different way. After criticising the over-prescription of opioids in pain treatment as the main reason for initiating the crisis, which was and is being followed by lawsuits against the pharmaceutical industry, similar drugs are now being distributed as 'safe supply' without the supporting evidence from clinical studies. The need for an evidence-based approach advocated here, must be based on scientific principles. Simple beliefs are insufficient to justify the risk of adverse events, cost and structural decisions in healthcare. Clinical practice is trying to cope with these challenges but that is not a replacement for a systematic evidence-based, study-driven approach that informs decision making.

The development of effective treatments that is based on evidence (e.g., HAT) along with better prevention strategies and increased safety in a comprehensive system of care must be a priority. Despite the obvious appeal of ensuring access to uncontaminated sources of opioids from regulated suppliers, coupled with the removal of unsafe products from the open market, it would be a grave mistake to lose sight of the many harms that would accompany unsupervised access to powerful synthetic opioids. As the old saying goes, if something sounds too good to be true, then it probably is.

Declaration of Conflicting Interests

MV has received consultation and speaker fees from Camurus. AP holds a US patent entitled "Tetrahydroprotoberbine Compounds and Uses Thereof " in the Treatment of Neurological, Psychiatric and Neurodegenerative Diseases (United States, US20150306092) and holds shares in Resilience Biosciences Inc., Canada, focused on tetrahydroprotoberberine drug development. MI declares receiving honoraria for presenting (BCCSU, WCAF, Indivior), receiving VCHRI Team Grant (Fentanyl Cohort Study), receiving CSAM grant (Development of Stigma Series), being awarded the UBC/VGH Foundation BMO Capital Markets Innovators Challenge (Clinical Application of a Compact, Quantitative, and Inexpensive Opioid Detector), receiving research stipend (BCCfE The Hope to Health Research & Innovation Centre) and participating in a regional consult meeting for Otsuka and Lundbeck. The other authors declare no conflict of interest.

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Modelling as Visioning:

Exploring the Impact of Criminal Justice Reform on Health of Populations with Substance Use Disorders

FULL ARTICLE

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Abstract

In the context of historic reckoning with the role of the criminal-legal system as a structural driver of health harms, there is mounting evidence that punitive drug policies have failed to prevent problematic drug use while fuelling societal harms. In this explainer article, we discuss how simulation modelling provides a methodological framework to explore the potential outcomes (beneficial and harmful) of various drug policy alternatives, from incremental to radical. We discuss potential simulation modelling opportunities while calling for a more active role of simulation modelling in visioning and operationalising transformative change.

Highlights

- This article discusses opportunities for simulation modelling in projecting health and economic impacts (beneficial and harmful) of drug-related criminal justice reforms.
- We call on modellers to explore radical interventions to reduce drug-related harm and model grand alternative futures in addition to more probable scenarios, with a goal of opening up policy discourse to these options.

The overdose crisis has unfolded over the past 2 decades and surged during the COVID-19 pandemic in the United States. In the face of this crisis, many evidence-informed policy and clinical responses (e.g., overdose prevention centers, drug-checking services, safer opioid supply prescribing, reclassification of naloxone to permit over-the-counter sales in the United States, telemedicine solutions to prescribing medications for opioid use disorder) have demonstrated efficacy yet remain underutilised.

At the same time, criminal-legal responses to illicit drug use remain heavily resourced and disproportionately affect people of colour-despite mounting evidence that the war on drugs has failed to prevent problematic drug use while fuelling societal harms including disruption of community and familial bonds and exclusion from the formal labour market. While incarceration is associated with poor health outcomes generally, punitive drug policies and incarceration of people who use drugs are also associated with an elevated risk of drug over-dose, HIV, hepatitis C virus, and tuberculosis.

Frustrated by the failure of incrementalist reforms, social movements focused on racism, police violence, the carceral state, and drug policy are calling for a re-envisioning of how societies tackle these core challenges. Such re-envisaged drug policies include diversion and deflection interventions (programs that divert people with low-level criminal offenses away from the criminal justice system and into substance use disorder treatment and other community services but where drug possession remains illegal), discretionary policing (such as elective non-enforcement of certain criminal provisions to reduce the harm of drug markets), depenalisation (dramatically reduced penalties or criminal-legal system attention on legal infractions related to personal drug use), decriminalisation (removal of criminal penalties for possession of drugs for personal use, but where there is no structure to provide legal, regulated supply), outright legalisation of particular substances (where the substance is permitted by law, generally implying a legal supply),

continued on page 42

prison abolition (reducing or eliminating the prison system and replacing it with rehabilitation systems and social welfare programs to reduce poverty and reshape structural determinants of health), and more. In practice, each of these policy changes could be written and enacted in different ways and therefore vary in both structure and impact.

A recent Lancet Commission on ''Responding to the Opioid Crisis in North America and Beyond'' recommended that ''policies of incarcerating individuals for illicit possession of opioids or drug-related equipment intended for personal use should be abandoned because they present significant public health risks without off-setting public health or public safety gains.''1 Currently, more than 50 US counties and tribes are implementing diversion or deflection programs. Calls for decriminalisation of drug use have led to policy change in some jurisdictions. The Netherlands, Czech Republic, Portugal, and Mexico, among other countries, have implemented various types of decriminalisation reforms. In Canada, the province of British Columbia has begun a 3-y trial of decriminalisation of personal possession of opioids, crack and powder cocaine, methamphetamine, and MDMA. In 2021, Oregon became the first US state to decriminalise drug use and expand access to addiction treatment and harm reduction services, More narrowly, non-medical use of cannabis is legal in 23 US states and decriminalised in 8 states as of 2023.

Public safety challenges and their perception drive investments in policing and other carceral systems. Residents of low-income communities and communities of colour report increasing concerns regarding crime and public safety. In many cases, such concerns are framed in terms that assume a link between policing and other security elements on the one hand and safety on the other. Proponents of strict sentences for drug-related crimes argue that the benefits offset the harms and that these policies deter drug use and associated crime. Although an effective police presence can deter crimes against persons, claims that public safety is enhanced though harsh criminal-legal sanctions focusing on drug use and sales are seldom confirmed. A complex debate about public safety policy is ongoing with special focus on benefits versus harms of continued investment in policing, prisons, and other elements of the carceral system.

Simulation modelling provides a methodological framework to explore the potential outcomes (beneficial and harmful) of various drug policy alternatives, from incremental to radical. However, the role of simulation modelling in operationalising the health and health economic outcomes of this vision remains under-examined. The following commentary arose from a panel discussion presented November 10, 2021, at the Opioid Overdose Modelling for Policy Change Webinar that sought to explore these questions.

The Role of Simulation Modelling

Epidemic and economic simulation modelling can aid policy makers in forecasting the population impact (both benefits and harms) and cost-effectiveness of different policy options. This is particularly useful when randomised trials are infeasible or difficult (e.g., decriminalisation of drug use) or when trials are feasible but limited in their ability to track long-term outcomes (e.g., long-term impact on HIV or hepatitis C [HCV] transmission and mortality) and multiple outcomes (e.g., cost, crime, and health). Simulation models can provide a synthetic ''test lab'' to integrate data from multiple studies and estimate the complex and often interacting long-term health and economic impacts of policy changes. These simulation models can range in complexity from the relatively simple (decision tree or Markov models) to more sophisticated (compartmental, microsimulation, or individual-based network disease transmission models), depending on the question and data availability.

Modelling can be useful both before an intervention or policy change occurs (to assess theoretical potential impact) or after an intervention (to assess observed impact and project future long-term population impacts). Although there is currently only sparse and inconsistent data in select settings on effectiveness of more radical criminal justice reform policies (e.g., drug decriminalisation or legalisation) on justice involvement and health outcomes among substance using populations, there remains utility in using scenario modelling to explore potential policies and outcomes even prior to more wide-spread policy changes. As effectiveness data accumulate in settings exploring various types of drug decriminalisation and diversion, modelling can be a critical tool in evaluating the current and future impact of these programs.

Modelling Health Interventions in Criminal Justice Settings

To date, most models assessing the health impact of interventions in carceral settings for people who use drugs have studied incremental reforms and focused narrowly on impacts in one health domain, such as opioid overdose. For example, a modelling study in Rhode Island showed that medications for opioid use disorder (MOUD; i.e., methadone, buprenorphine, and extended-release naltrex-one) at release from prison or jail would avert 5.8% of overdose deaths from 2017 to 2024. A follow-on study found that if MOUD was prescribed to all persons for whom it was clinically indicated in 2016, 1,840 deaths would have been prevented in the United States, with an additional 440 prevented if MOUD had been provided while they were incarcerated and post-release. A modelling analysis in Australia showed that opiate agonist therapy (OAT, methadone and buprenorphine) provision reduced overdose and other-cause mortality among people who received it by 53% from 2001 to 2020 and that post-incarceration OAT linkage accounted for 12% of the deaths prevented. Cost-effectiveness models of post-incarceration MOUD have generally focused on economic implications of reducing recidivism, but one evaluation of OAT upon prison release in Australia found it cost-effective in reducing mortality. In addition, a recent economic evaluation in Massachusetts found that providing all 3 MOUDs to incarcerated individuals and on release would prevent overdose and is more cost-effective compared with a naltrexone-only strategy. Importantly, community interventions can also have criminal justice impacts; one US study found that MOUD in the community reduces both health and criminal justice costs (through the impact of MOUD on reducing recidivism).

Other models have focused on corrections-based treatment programs for infectious diseases associated with substance use disorder, such as HIV and HCV. These models examined the impact of HCV testing and treatment

programs in prison in the United Kingdom, Canada, Australia, Ireland, and the United States, showing initiatives are cost-effective and can reduce HCV incidence in the community. Similarly, models have shown HIV testing and treatment in prison, jails, or on release is cost-effective in preventing HIV transmission the United States.

Modelling Foundational Criminal Justice Reforms

Numerous modelling studies have explored the potential impact of a highly localised form of drug decriminalisation, enacted through overdose prevention centres (OPCs; also termed supervised consumption sites). OPCs are places where individuals can consume pre-obtained drugs monitored by staff who can intervene if an over-dose occurs. Modelling studies based on Canadian data indicate OPCs are effective in preventing HIV, HCV, and overdose and are cost-effective in Canada. Theoretical modelling studies indicate OPCs could be effective and cost-effective in reducing HIV, HCV, over-dose, skin and soft-tissue infections, and bacterial infections among people who use drugs in US settings.

A handful of simulation modelling studies have examined the impact of drug diversion programs and depenalisation/decriminalisation policy changes on health among substance using populations.5 Using observational data on a jail diversion program for low-level drug offenders in King County, Washington, modelling indicated this program could reduce HIV and HCV incidence by 3% over 10 y, reduce overdose deaths by 10% over 10 y, and was cost-effective. A theoretical analysis in Perry County, Kentucky, showed that a potential decriminalisation reform, if resulting in halved incarceration/re-incarceration rates and diversion to MOUD, could prevent more than half of new HCV infections among people who inject drugs (PWID) over 10 y. A study of Mexico's 2012 public health–oriented drug law reforms, which depenalised drug possession and expanded diversion to drug treatment, used a modelling analysis based on longitudinal cohort data among PWID in Tijuana and found that a lack of implementation meant the reforms had little impact on HIV among PWID as of 2018. If fully implemented, however, these measures could prevent 21% of new HIV infections among PWID between 2018 and 2030.

Few studies examine the economic implications of potential decriminalisation coupled with reinvestment in public health approaches. A recent theoretical study showed that decriminalisation in Belarus, Kazakhstan, Kyrgyzstan, and St Petersburg could be cost-saving (saving 38–773 million euros). Reinvestment of these savings into public health (HIV antiretroviral treatment and OAT) could prevent 59% to 84% of HIV infections among PWID over 20 y.

Importantly, these analyses have explored a relatively narrow set of conceptualisations of ''decriminalisation'' and associated benefits and harms. Further, as decriminalisation includes multiple sectors (police, courts, carceral systems, health systems, social systems), so a systems-level approach to modelling is required to fully capture the implications across different sectors.

A movement for prison abolition has gained momentum, seeking to decarcerate (i.e., release currently incarcerated persons through review and reassessment of convictions and sentences), excarcerate (i.e., prevent incarceration through decriminalisation of certain offences and strengthening social welfare and mental health systems), and develop alternatives to incarceration that focus on rehabilitation and restorative justice rather than punishment. To our knowledge, there has been no concerted effort to explore an abolitionist framework with simulation modelling. While a few modelling studies have examined the contribution of incarceration to health harms, where the hypothetical alternative is no incarceration, these studies do not explicitly explore abolition futures or frame these as policy options per se.

An Opportunity for Modelling Imagination

The above models demonstrate the potential benefits of incremental reform or narrowly envisioned depenalisation and decriminalisation. These models are appealing because, like much drug policy research, they take a recognisable and current reality and build in change that may be viewed as politically and

continued on page 44

administratively realistic or actionable. One advantage of simulation modelling, however, is that we need not limit analyses to what is likely or even-in the moment-practical or feasible. Instead, models can facilitate speculation on alternative futures, producing results that serve to provoke discussion of a broad range of policy alternatives, even those that may seem unlikely or utopian. In doing so, models need not just enumerate outcomes of different scenarios; they can create and shape discourse around which scenarios are even possible, bringing alternative futures that may be seen as unrealistic into the realm of the achievable. Recognising incarceration as just one policy option among many opens up opportunities to model futures that do not include carceral settings or radically re-imagine their focus and remit and, in the process, create the potential for those futures to become reality.

What might such exploratory, speculative models look like? In the context of the overdose crisis, models exploring radical decarceration, excarceration, expungement, pardoning, reparations payments, resource shifting from law enforcement to mental health and substance use treatment systems, drug legalisation, overdose prevention centres (which require exemption from federal drugs laws), and safer opioid supply prescribing may all be warranted. Different effects may be observed for decriminalisation policies (thus affecting those who could potentially be incarcerated) compared with excarceration (thus affecting those who are currently incarcerated), and models can be used to examine these different populations. Outcomes could include health (overdose, HIV, HCV, skin and soft-tissue infections, mental health), drug use, crime, housing, criminal justice costs, economic productivity, considerations of health disparities and social equity, among others. Such models could compare outcomes to the status quo, providing both realistic enumerations of benefits and harms of alternatives and an explicit assessment of outcomes associated with current law enforcement–based responses to drug use.

Another advantage of simulation models is that they can facilitate the discussion of trade-offs and potential unintended consequences. For example, abolition provokes understandable anxiety around the potential for crime to increase in response to specific interventions. Simulation models allow us to simultaneously examine health and crime implications of policy alternatives-and to examine contextual and program factors that may magnify or undermine a program's intended social impact. Doing so is important, as policy makers likely will not take seriously an analysis that is unaware of such concerns. Data on drug offenses for the periods before and after decarceration efforts in response to the COVID-19 pandemic may be useful to this end.

The potential impact of this type of visionary modelling could be profound. We note historical and contemporary examples of academic researchers and other individuals afforded ''authority'' in policy making (e.g., physicians) in supporting grass roots harm reduction movements, including acts of civil disobedience such as the establishment of unsanctioned overdose prevention centres in the face of escalating overdose deaths and inaction from official channels. Simulation models provide a platform for generating the ''what if'' data that activists can use when speaking to policy makers and advocating for change. Furthermore, they can make explicit the hidden toll of status quo policies that goes unacknowledged in policy discussions because there is no counter-factual world to which to compare outcomes.

Together, incremental and more radical vision-changing models can complement each other in supporting policy making much in the same way that harm reduction policies have benefited from movements on each end of the spectrum. We therefore call on modellers to explore radical interventions to reduce drug-related harm and model grand alternative futures in addition to more probable scenarios, with a goal of opening up policy discourse to these options.

Understanding Successful Policy Innovation: The case of Portuguese drug policy

FULL ARTICLE

November 11, 2022

CATHERINE MOURY, MAFALDA ESCADA

Aims and design
After discussing the limitations of the existing literature, we present a new theoretical framework: the 'six-stars' framework. We argue that successful policy innovation in democracies will only occur and persist when six institutional and individual 'stars' are aligned: attention, motivation to innovate, a new solution, political strategies, quality and legitimacy of the decision-making process and guarantees for full implementation. We then apply this framework to the Portuguese Drug Policy Case through theory-testing/process-tracing. Relying upon a qualitative analysis of three different types of data-primary and secondary sources, official documents emitted by key actors and interviews-we identify the presence of the six aligned 'stars'.

Conclusions
The proposed 'six-stars' framework of successful drug policy innovation shows the importance of electoral mandates, communication, inclusion, transparency, deliberation and evaluation when designing innovative drug policies. It also illustrates the importance of ensuring the support of implementing agents and quickly creating visible, positive policy feedback.

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Abstract
Introduction: In 2000, the Portuguese minority socialist government decriminalised the possession and consumption of drugs. This law made Portugal unique in having a formal system that directs the person using drugs to a panel under the purview of the Ministry of Health, as opposed to the Ministry of Justice, and hence constitutes an 'original innovation'. In this article, we ask under which conditions such kinds of reforms are introduced and successfully implemented.

Introduction

In 2000, the minority Socialist government led by Antonio Guterres decriminalised the possession and consumption of all drugs. Indicative* limit quantities were fixed by law, distinguishing possession for personal use from traffic. What had been a crime became a misdemeanour, subject to an administrative sanction without imprisonment, regardless of the substance being used. Portugal was not the first country to decriminalise drug use and possession. For example, in Italy minor drug possession has been decriminalised-with interruptions-since 1975.

The law, however, makes Portugal unique in having a formal system that directs the person using drugs to a panel under the purview of the Ministry of Health, as opposed to the Ministry of Justice (interview with B. Hughes by Catherine Moury, 2021). The fundamental innovation of Law no. 30/2000 was that it created a new system in which people using drugs identified by the police are referred to a 'Commission for the Dissuasion of Drug Addiction'. Each commission is composed of three members appointed by the government. One member must be a lawyer, and the other two are professionals with experience with people using drugs (e.g. psychologists or social workers). The commissions, alongside the referred people using drugs, are in charge of distinguishing whether or not the use is endangering, classifying the type of drug use into three risk levels and deciding what sanctions or therapies are best for each person. Proceedings are suspended when the individual (1) does not have a 'problematic drug use' and has no prior record or (2) has a 'problematic drug use' and agrees to undergo treatment, such as counselling or specialised treatment services. Whether or not the use is 'problematic' is defined by people using drugs themselves (interview with a Member of the Commission for the Dissuasion of Drug Addiction, interviewed by Catherine Moury, 2022). In other cases, the Commission can either issue a warning or impose a monetary or non-monetary sanction. For people with a hazardous use who refuse to undergo treatment, only non-monetary sanctions are imposed.

A ground-breaking aspect of the Commissions for Dissuasion of Drug Addiction is their case-by-case and preventive approach. By focusing upon each individual case and relying upon multi-disciplinary teams, the commissions assess social and family contexts, livelihood and other conditions that may trigger or aggravate drug addiction. People in active use with potential addiction triggers may thus have their case proceedings suspended but still be directed to institutions that can prevent triggers through psychological support, health-care, professional training programmes or public employment services. This in-depth professional assessment of drug use allows the commissions to intervene in a targeted manner at an early stage, preventing

continued on page 46

future problems-an assessment that professionals made based on their scientific knowledge and experience (interview with a Member of the Commission for the Dissuasion of Drug Addiction, interviewed by Catherine Moury, 2022). Prevention, then, is an important principle of this policy device.

The Portuguese drug policy also includes well-funded positive discrimination and harm-reduction measures. In 2001, when the law was implemented, several pilot programmes were set up, and the 2001 Action plan entailed a funding of €160 million for 4 years Since then, the harm-reduction policy has grown gradually and encompassed new measures, such as street teams and mobile units that raise awareness and screen for infectious diseases, provide sterile material (e.g. syringes), free vaccination, shelter or medication for addiction treatment. Most of these programmes are implemented on the ground by non-governmental organisations (NGOs).

This well-resourced combination of decriminalisation, drug addiction treatment, prevention and strategies to minimise risk and reduce harm is an 'original innovation', i.e. the development and application of something entirely new in the world. It is also a paradigmatic example of a great policy success: generally speaking, the Portuguese drug policy is internationally recognised for its humanistic and pragmatic character.

To be sure, the Portuguese model is not perfect. It has been criticised, for example, on the ground that there is a contradiction between the ideas of consent to treatment and the obligation to go to Commissions which, in turn, can apply sanctions (to people who do not have a substance use disorder). That is especially relevant today, as 90% of people using drugs are classified as not having a disorder (a vast majority of them using cannabis). Moreover, some efficient harm-reduction measures are still very limited in scope (e.g. drug-checking services or supervised drug consumption facilities) or in-existent (e.g. provision of syringes in prisons or outpatient naloxone prescription). Additionally, the framing of Portuguese drug addiction as a 'disease' is somehow pathologising and might undermine the right to agency and self-determination of people using drugs, who still experience stigma, discrimination and sometimes violence from police, service and healthcare providers and the community at large. Finally, the 2008 decision of the Supreme Court (discussed below) led to an increase in criminal sentences related to drug use.

Nevertheless, it is undeniable that the system brought positive results. Hughes & Stevens, for example, have compared Portugal to neighbouring countries that did not introduce significant reforms in the period 2001–11 and showed that Portugal is the only country that exhibited a decline in hazardous drug use. More recent data show that hazardous drug use in Portugal has continued to fall since 2010 and that the country has the lowest drug-related death rates in Europe today. Since the reform, moreover, Portuguese police officers have been able to shift resources from people using drugs to drug traffickers. Consequently, the amount of drugs seized has increased for all categories, and the number of people incarcerated on the account of drug use decreased-thus reducing justice overload. The reform was also a profitable investment for the state, as the economic benefits (e.g. decrease in health-related and legal system expenditures) were higher than its costs. Finally, the success is recognised internationally: despite strong initial opposition, the Portuguese approach has been described as a 'model of best practices' by the President of the International Narcotics Control Board (INCB)

Under what circumstances did such successful original policy innovation occur? Theoretically, which are the determinants of policy innovation and its success? These are crucial questions for public policy scholars, reform-orientated policy makers and activists. In this article, we go beyond the existing literature by focusing upon a specific type of change that is more difficult to introduce 'original innovation' and by considering the determinants of its resilience and success as well. Doing so, we present an original theoretical framework-the 'six-stars' framework-which claims that successful original innovation, although rare, occurs when a series of variables are present at the same time. We then show how our framework applies to the Portuguese case.

EXISTING THEORIES AND THEIR SHORTCOMINGS

Existing research offers only partial answers to our research questions. In her study on Portuguese drug policy, Hughes (2006) stressed the role of the HIV/AIDS epidemics, the availability of data, the preferences of policymakers and the engagement of policy advocates in bringing change. Other researchers have shown the importance of those variables in other illicit drug policy changes. Research on this topic has also stressed the role of the media and activists in putting an issue on the agenda; of interest groups, police officers and civil society influencing the content of the change or maintaining the status quo; of deliberative institutional configurations to allow more progressive policies choices of international commitments to limit countries' margin of manoeuvre; and, finally, how culture and the initial understanding of an issue impacts the choices which are eventually made. While this literature has convincingly demonstrated the role of each of these variables, they look at policy change in general and not at policy innovation. Moreover, they often consider variables in isolation and hence are not concerned with describing exhaustively all the variables that need to be present for explaining change.

Other authors applied the theoretical frameworks developed by public policy researchers. Notably, John Kingdon's theory of 'Multiple Streams' has proved useful to explain changes in illicit drug policy, such as the creation of supervised drug consumption facilities, or softening or hardening of illicit drug legislation. Kingdon's premise is that there are three 'streams' of policy that operate relatively independently: problems (which often become visible after a 'crisis'), policies (the availability of a solution to the problem) and politics (receptive leaders and supporting public opinion). Fundamental policy change occurs when the three streams coincide, thanks to 'policy entrepreneurs' who 'chase the problem' to push for their policy.

Another widely used theoretical tool is the Advocacy Coalition Framework (ACF) of Jenkins-Smith & Sabatier, who claim that policy is a function of the balance of power between so-called 'advocacy coalitions' (coalitions of actors with shared values and beliefs). Major change happens when this balance shifts, following either an election or a major socioeconomic change. As shown by Kübler, the AIDS/HIV crisis in Switzerland indeed enabled the predominance of the harm-reduction coalition.

While those theories have proved useful, they also have some weaknesses. Mainly, Kingdon's theory does not theorize the interactions between the three streams, and case studies have shown that the existence of already available policy proposals and distinct policy entrepreneurs are not necessary conditions for change to happen. Regarding the ACF, crises such as the

continued on page 48

AIDS/HIV epidemics have not always led to fundamental changes, the latter also occurring in the absence of a crisis or elections. More generally those studies focus upon the agenda-setting stage, but largely ignore the remaining steps such as policy formulation, decision and implementation. They are also little concerned with the success and resilience of the policy. Finally, as applied to our research question, those studies do not distinguish original innovation from other policies. We argue that the former policies are more difficult to pass and implement. In light of the limitations of the existing theories, we present a new theoretical framework.

ORIGINAL THEORETICAL FRAMEWORK

Obstacles to successful original policy innovation

Elaborating on Jordan & Huitema's work, we define original policy innovation as the development and implementation of a policy that is entirely new-i.e. not previously used anywhere else in the world-and bears a substantial long-lasting change. Such policy innovations are 'successful' when they create 'widely valued social outcomes', through design, decision-making and delivery processes that enhance both its problem-solving capacity and its political legitimacy.

Successful policy innovation is relatively rare. This is hardly surprising, given the many obstacles policy makers face when considering what actions to take. A first obstacle is that original policy innovation implies a great deal of uncertainty. Given their novelty, there is little existing evidence for original innovations, but in some areas-notably in public health-policy makers and experts alike are reluctant to pass measures that are not based on systematic evidence, such as randomly controlled trials.

However, we know from social psychologists that people-regular citizens and policy makers alike-are averse to risk. This implies that policy makers will be reluctant to innovate with new policies that might 'fail' and for which they might be held responsible. Similarly, research has shown that people blame governments for policy failure more than they credit them for their successes. Hence, in democracies, the risk aversion of politicians is reinforced by the lack of electoral incentives to innovate.

Another obstacle is the fact that innovative policies are often needed to solve problems that are complex and/or ethically difficult ('wicked problems'), yet policymakers do not always have the knowledge and computational capacity to understand how to solve those problems. Moreover, their perceptions of the world are framed by ideas; that is, beliefs about what is right and what causes what, leading them to ignore evidence or scientists' prescriptions that contrast with those ideas. Additionally, civil servants or ministerial staff are sometimes unable to help their ministers innovate for a variety of reasons, such as the lack of technical competence or the lack of time and human resources-all constituting what is commonly called a lack of bureaucratic capacity**.

Another problem is the scarcity of financial resources for innovation at the disposal of governments: many innovations cost money and involve financial risks. Of course, the wealth of nations vary from one political system to another and, as the hypothesis goes, richer countries will be better able to innovate. However, governments are generally pressured by international actors, such as the European Union (EU) and investors, to keep their accounts balanced.

Finally, international cooperation is sometimes needed for effective policy innovation (in climate change, for example), but every state has an interest in free-riding.

The 'six-stars' theoretical framework

Considering the obstacles described above, our premise is that the accumulation of a series of facilitating variables is necessary for an original policy innovation to be implemented and successful. Basing ourselves on existing theories and our empirical knowledge, we argue that successful policy innovation in democracies will only occur when the following six institutional and individual 'stars' are aligned:

1. Attention shifts towards an issue, which can be triggered by the issue's severity and/or visibility; and the media and powerful groups (such as health professionals in public health) playing a central role in selecting and framing issues and evidence. When the media or the decision-makers' direct experience alerts them, a policy window opens.
2. Policy makers' motivation to innovate, which is conditional upon their perception of the ineffectiveness of the existing policies (i.e. see Rychert & Wilkins about prohibitionist policies). Intermediary factors in the motivation to innovate are the perceived opinion of the public (the 'public mood'), in particular of the party's constituency on a given matter; and/or the pressure by powerful groups or international organisations for action or inaction (e.g. the alcohol or cannabis industry). We believe that governments will not innovate unless the necessary condition (the perceived ineffectiveness of the status quo) and at least one of those intermediary conditions are present.
3. The existence of a new solution that is aligned with policymakers' values and that seems feasible financially, practically and politically. The different alternatives are shaped by how policymakers understand a given issue or how they purposely choose to frame it-those understandings and choices themselves depending on policymakers' previous beliefs and interests, their direct experience and the associated learning and sometimes the opinion of those 'who speak authoritatively'.
4. Effective political strategies to ensure political support for the policy and its resilience. We know that if a policy is to be politically feasible, politicians should compensate or divide the losers, hide, postpone or gradually introduce the costs of their policies or exploit economic booms to fund new policies without having to raise taxes or cut existing expenditures. Various studies also suggest that creating an independent commission, engaging public debate or presenting innovative reforms during the electoral campaign is also a successful strategy. In addition, delegating competences to the EU level may help policymakers to tackle difficult (innovative) policies. Successful innovation also depends crucially upon whether policy makers include strategies for their resilience over time; for example, by ensuring that the policy creates 'positive feedback', and hence specific support groups that will mobilise to defend the policy change.

Of course, governments do not need to use all these strategies. We argue that governments that would not use any of them would fail to introduce successful and resilient innovative policies and that the more of these strategies they use, the greater the odds that the policy is successfully implemented.

5. High quality and legitimacy of the decision-making process during the whole policy cycle, which are crucial for successfully planning and managing complex and uncertain

continued on page 50

policies such as original innovations. Decision-making quality occurs when policymakers rely upon solid and independent research; when the process is transparent and entails deliberation and collaboration, involving all stakeholders, including those who are usually marginalised both during policy design and implementation. Lastly, it is based on well-designed evaluation and accountability mechanisms.

6. Guarantees for full implementation, which results from adequate funding, support by stakeholders and from the actors implementing the legislation ('street-level bureaucrats') and flexibility to adapt to changing and local circumstances.

Therefore, we expect that original innovations will be successfully introduced and maintained when those variables-attention, motivation, solution, strategies, quality decision-making and guarantees for implementation-are present. This is the 'six-stars' framework.

METHOD

To demonstrate our arguments, we rely upon the congruence method to explore whether these variables were present in the Portuguese case. In the congruence method, the researcher examines whether or not the predictions of the theory are consistent with the outcomes. Regarding our empirical sources, validity was ensured by triangulating different types of data. First, we drew upon the primary and secondary sources that reported the policy making processes during the period under study (academic research, press reports, investigative books by journalists and memoirs). Secondly, we relied upon a qualitative analysis of official documents emitted by key actors during this time (e.g. electoral programmes, parliamentary debates). Thirdly, we conducted four face-to-face interviews between 2019 and 2022: three semi-structured interviews with two major actors during the period of implementation and an unstructured interview with a member of a Commission for the Dissuasion of Drug Addiction. The average duration of the interviews was 45 minutes. They were recorded with the authorisation of the respondent and transcribed verbatim. The analysis was carried out by theory-testing process tracing, a method that consists of the study of causal mechanisms leading to a given event in a single-case research design. Ethical considerations were approved according to the procedure of the Nova Faculty (a report addressing ethical questions was submitted and approved by the ethics committee).

THE PORTUGUESE DRUG POLICY

Portugal's location means that it is a transit country, notably with the traffic of hash from Morocco, cocaine from Brazil and heroin from Spain. Before the 1990s the use and trafficking of drugs were both criminalised, with its policy falling under the scope of the Ministry of Justice. This criminalisation was first questioned by the Minister of Justice (Almeida Santos, Socialist Party) in the Legislative

Package on Drugs (1976), which stated that the 'enslavement of will' associated with addiction made it difficult to apportion blame and put in place measures for prevention and treatment of substance use dis-orders. However, the overall approach remained largely dependent upon punitive means.

During the 1980s drug use-related problems continued to worsen, and private responses began to appear. In 1984, Anonymous Families was created for the family members of people with substance use disorders, followed by the first Narcotics Anonymous group in 1986. In 1987, the Taipas Centre for treatment of drug addiction opened in Lisbon under the jurisdiction of the Ministry of Health. This centre collected data on drug use and provided professional training. Its positive experience allowed the opening of two similar centres in 1989, in Porto and Algarve. The 'Vida Programme', also created in 1987, contained 30 measures dedicated to preventing consumption- such as an open line for abstinence-based counselling and prevention initiatives for schools-but also many measures to fight drug trafficking. In 1990, Decree Law no. 83/90 created the Service for Prevention and Treatment of Drug Addiction (SPTT), responsible for coordinating public health-care responses. This was the beginning of a statist response to the problem of addiction, but a prohibitionist approach was still paramount. For example, Decree Law no. 15/93 increased penalties for people using drugs (up to 3 months' imprisonment for small quantities and up to 1 year for large quantities)-leading to an exponential number of imprisonments.

During the 1980s, drug use was still not a central issue and was seen as a priority only by the Portuguese Communist Party. The pre-dominant view among psychiatrists was that the objective should be to create a 'drug-free' society and consequently that harm reduction or opioid agonist therapy were not desirable. Moreover, contrary to countries such as France, for example, people using drugs were not organised and their voice was not heard.

It was in the 1990s that the heightening severity and visibility of heroin use attracted the attention of the public and policymakers. Regarding severity, by the mid-1990s 1% of the population was addicted to heroin (interview with Jo˜ao Goul˜ao by Mafalda Escada, 2022). In 10 years (1989–99), deaths by overdose quadrupled, reaching 400 deaths/year. This brought serious consequences not only for people using drugs but also for public health. Rates of infectious diseases, including HIV, tuberculosis, and hepatitis B and C, soared: for example, in 1999, one in every 200 people aged between 15 and 49 years was HIV-positive-the highest incidence rate in Europe. Drug use also became increasingly visible with the open-air drug markets-including Casal Ventoso in Central Lisbon, the biggest drug market in Europe with up to 5000 visitors a day and 800 temporary residents. Finally, the number of presumed drug law offenders almost doubled between 1995 and 1999, and it was estimated that in 1999 up to 75% of prisoners were consuming heroin daily. The issue of illicit drugs was also very present in the media. For example, in the period between 2000 and 2001, approximately 400 articles about illicit drugs were published in the four main newspapers. In 2000, a report from the European Council evidenced that the drug trade flourished in the Portuguese prison system.

This body of evidence, together with direct contact with people using drugs, contributed to many of the health and justice professionals appreciating the ineffectiveness of a repression or abstinence strategy, despite supporting it initially. Throughout the 1990s, lobbying groups in favour of harm-reduction and drug law reforms were created and increased in size, involving renowned figures among health professionals and politicians. Importantly, the research by the

Table 1: 'Six-stars' framework applied to the Portuguese drug policy case.

Star	Variable	Portuguese drug policy case
Attention	Issue's severity	1% of the population with addiction to heroin, 400 overdose deaths/ year, soaring rates of infectious diseases
Attention	Issue's severity	EMCDDA data; Casal Ventoso; frequent reference in the media; illicit drugs were the primary concern of the Portuguese population
Motivation to innovate	Policymakers' direct experience	Most policymakers knew someone who was struggling with drug use disorder and/or had died from overdose
Motivation to innovate	Perception of the ineffectiveness of the existing policies	Indicators of drug use, overdose and infectious disease kept rising
Motivation to innovate	Public mood/party constituency	Trans-class perception that the status quo was not sustainable and that imprisonment did not solve the problem
Motivation to innovate	Pressure by powerful groups or international organisations	In favour of actions: key policymakers, health professionals, part of the Church and most judges. In favour of the status quo: most of the police and the International Narcotics Control Board
New solution	The existence of a new feasible solution	National Strategy to Combat Drugs entailing decriminalisation: financially and practically feasible, in line with the government's ideas and with the opinion of many health professionals
Political strategies	Political strategies to ensure support	Use of new financial resources, creation of an independent commission, engagement of the public, presentation of reforms during the electoral campaign and public sessions
Political strategies	Political strategies to ensure resilience	Short-term visible benefits, establishment of supporters that would mobilise against reversals (ONGs)
Quality and legitimacy of the decision-making process	High quality and legitimacy of the decision-making process	Reliance on solid and independent research (EMCDDA, national institutions collecting data); deliberation, involvement of stakeholders, well-designed evaluation and accountability mechanisms (evaluation of drug strategies). Exception: syringe distribution in prisons
Guarantees of full implementation	Guarantee of full implementation	Delegation to NGOs for implementation. However, the distribution of syringes in prisons is not yet implemented, and there is a lack of adaptability to changing circumstances (90% of people referred to the commission do not struggle with substance use disorder)

European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), established in Lisbon in 1993, contributed to a better understanding of the Portuguese drug problem, in particular by showing the comparative prevalence of heroin use among its population. The agency's first Chair was Father Feytor Pinto, a well-known Portuguese figure from the Catholic Church who advocated that repression was the wrong strategy. Even though the agency could not publicly take policy positions, informal contacts with Portuguese professionals in the drug field provided the latter with data to support the harm-reduction paradigm (interview with Fer-nando Negr˜ao by Mafalda Escada, 2022).

Additionally, drug addiction was socially and geographically spread in the 1990s ([82] and interview with Jo˜ao Goul˜ao by Mafalda Escada, 2022). As Jo˜ao Goul˜ao put it, at this time everyone-including decision-makers-had a friend or a family member who was in active use. Consequently, polls showed that illicit drugs became the 'number one concern' of the Portuguese population (and interview with Jo˜ao Goul˜ao by Mafalda Escada, 2022). The fact that addiction intimately affected politicians' constituencies, if not directly their own families, and that powerful groups such as part of the Church, doctors and judges backed policy change, reinforced policymakers' motivation to act. Given that an increasing part of the population and powerful groups saw the existence of 'a problem', status quo was not a feasible option.

At this time, innovative solutions were discussed. In 1995, the Portuguese Parliament created the ad hoc Commission for the Monitoring of the Situation of Drug Addiction and Trafficking in Portugal. In the same year, the scientific journal Revista Toxicodependências was launched, becoming an important knowledge-sharing platform until its suspension in 2011. In June 1997 the presidency organised a public forum ('Drugs: Current and New Strategies') that was attended by representatives from 15 EU states and experts from all around the world. It was within this forum that the decriminalisation of drug consumption was first discussed.

Between 1997 and 1999, a time when the Portuguese economy was booming, the budget for drug policy doubled (interview with Jo˜ao Goul˜ao by Mafalda Escada, 2022). This is important, as it implies that increasing expenditures did not entail trade-offs (and associated loss to some citizens) to fund the new policy.

continued on page 52

In Casal Ventoso public initiatives put harm-reduction measures in place, such as mobile needle and syringe programmes in 1996, food, bathing, clothing and medical support in 1997 and low-threshold methadone maintenance therapy in 1998. These programmes demonstrated that such policies could encourage more people into treatment and social services than traditional responses.

In 1998, the Partido Socialista (PS) government created the Commission for the National Strategy to Combat Drugs, composed of experts such as physicians, psychiatrists and psychologists, including Jo˜ao Goul˜ao and Daniel Sampaio, a renowned psychiatrist and brother to Jorge Sampaio, then President of the Republic. Many of these members had been working with people using drugs and were aware of the ineffectiveness of the prohibitionist strategy. As noted above, Commissions of this sort are often effective strategies to bring legitimacy to governments for fundamental changes.

This Commission was required to propose guidelines for a new policy for drugs and drug addiction. The only condition imposed by the government on the Commission was that their recommendations should respect international commitments, in particular, the United Nations (UN) conventions on illicit drugs that require states to prohibit illicit drug cultivation, manufacturing, sale and possession.

The Commission was divided into three working groups that analysed international reports and recommendations, collected data and testimonies from people related to the social problem on its multiple fronts and conducted interviews and surveys, including with public prosecutors. The Commission's research concluded that the 'war on drugs' was a failed international strategy and that responses in the health domain were insufficient or inadequately connected with the justice system. The expert groups 'problematised' drug addiction as a 'disease', and the state was assumed to have the responsibility to uphold the 'drug addicts' constitutional right to health and the avoidance of social exclusion, without prejudice to his/her individual responsibility'. Such 'disease' could be sometimes prevented by paying attention to a series of 'risk factors' at the individual or family level (such as early school-leaving or economic instability).

With the help of legal experts, the Commission studied different legal scenarios that allowed for a social/health approach without going against the UN's principles and concluded that decriminalisation was a possible solution. During deliberations, most members of the Commission became strongly committed to this solution. Given the economic boom, the agreement of powerful actors in the Commission and the respect of international commitments, this solution was economically and politically feasible.

In October 1998, the Commission presented its National Strategy to Combat Drugs. This strategy was built upon eight structuring principles including pragmatism, prevention and humanism. It called for the decriminalisation of all drug use and the state provision of a system guaranteeing treatment, social reintegration through positive discrimination and prevention policies targeting risk groups. The fact that drug use was still illegal, and that recreational users are subject to small penalties, avoided direct confrontation with international prohibition agreements.

The strategy's decision-making process was of comparatively high quality, as it was the object of much debate and scrutiny by the general public and stakeholders. The committee's report was publicly available on the web, and several hundred copies were sent to a variety of public and private entities involved in the drug field. This resulted in dozens of written observations on the proposals under discussion. Public hearings with a large attendance were organised throughout the country and attended by the members of the committee (interview with Jo˜ao Goul˜ao by Mafalda Escada, 2022). Finally, the National Council for Drug Addiction-a consultative body including organisations representing civil society involved in the subject-was also heard.

The National Strategy to Combat Drugs was adopted by the government in 1999. In the same year, the government created the Portuguese Institute for Drugs and Drug Addiction, responsible for collecting data, providing information to the general public and fostering

professional training in the scope of drug-related issues. To fully implement the strategy, drug consumption had to be decriminalised, something which could only be performed by Parliament. As a minority government approaching the end of its mandate, the government waited for the October 1999 legislative election to move forward with decriminalisation, an important political strategy. During the electoral campaign, drug policies were brought into the spotlight and political positions became clear. While the parties on the left campaigned for the national strategy described above, the right-wing parties were divided. Whereas the smaller Popular Party (CDS-PP) did not support decriminalisation, the Social Democratic Party (PSD)-the biggest opposition party from the centre-right-supported the decriminalisation of 'light' drugs and opposed decriminalising the consumption of 'hard drugs' such as heroin, arguing that it would increase consumption. However, PSD's youth organisation, representing 21 MPs, was favourable to the national strategy and threatened to vote accordingly. Nonetheless, both CDS-PP and PSD called for a referendum on the issue. After this request was rejected by the government, both rightist parties presented a motion of censure against the minority government, which did not pass thanks to the votes of the Left.

A large advocacy coalition was built around the leftist parties; it included a former Health Minister from the right, health professionals, the President of the Bar Association, the Association of Judges and the Union of Public Ministry Magistrates, the President of the Assembly of the Republic and the President of the Supreme Court of Justice.*** Most notably, the President of the Republic, Jorge Sampaio, was an active voice in the debate, advocating for a new policy. At the time the main opposition to change came from the police, for whom people using drugs were 'useful' in investigations when threatened with prison sentences. However, they were also aware that resources could be more effectively used if they did not have to track down people using drugs.

While the discussion was taking place in Parliament, numerous public sessions were organised by the proponents of the national strategy-which attracted crowds of people from both the left and the right of the political spectrum. This, again, illustrates the quality of the process but also a strategic option for gathering public support around the proposal.

In the meantime, four bills were submitted in Parliament to the Committee on Health and Drug Addiction where a 'broad exchange of opinions' took place. This was another element of the quality of decision-making that allowed improvements to be made to the National Strategy to Combat Drugs. It was in this Committee that the Commissions for the Dissuasion of Drug Addiction were proposed and developed. The Commissions would fulfil two roles: a disciplinary role, enforcing administrative sanctions on people using drugs, thus making the law compatible with the international commitments on drugs, and a social/medical/preventive role by determining the risk of addiction when assessing the consumer's profile on multiple fronts-health, social, professional and economic.

In October 2000, decriminalisation was approved with PS and the left-wing parties voting in favour and right-wing parties voting against. Drug consumption and possession were decriminalised but not legalised. Henceforth, people using drugs identified by police authorities would have their drugs seized and be directed to a Commission for the Dissuasion of Drug Addiction, a truly innovative system.

In 2001, two harm-reduction bills were presented in Parliament by the radical left party Left Bloc, pressuring the government to act on this front. Following this, the government approved Decree Law no. 183/2001, recognising that it was the state's responsibility to provide programmes to tackle drug addiction: therapeutic responses to addiction, drug use prevention and harm-reduction measures. This decree regulated practices already in place, but also allowed for new programmes. It defined one important feature of the new drug policy: public–private partnerships in which NGOs play a crucial part. NGOs offered several major advantages: more flexibility than governmental agencies, more practical experience and a more trusting relationship between care providers and people using drugs

continued on page 54

who tend to be suspicious of public authorities and interview with Fernando Negr˜ao by Mafalda Escada, 2022). By recognising this reality, the state employed resources more efficiently and allowed for a coherent and cohesive intervention. It also funded actors that would mobilise against a reversal of the policy or a decrease of funding (as they did, for example, in July 2022, as funding was not adjusted to inflation).

These partnerships spread throughout the country and are financed by the Health Ministry to this day. Additionally, the systematic collection of data by the Portuguese Institute for Drugs and Drug Addiction, and later by its successor- the Service for Addictive Behaviours and Dependencies (SICAD)-provided and continues to provide the state with regular updates on the effectiveness of these measures. This contributes to the quality of the decision-making process throughout the implementation phase.

One year after the law was passed, the 2001 Annual Report of the INCB expressed its strong disapproval of the Portuguese Drug Policy. The Socialist government, however, counter-argued that the law respected the UN conventions as drug consumption was not legalised. That same year, Prime Minister Guterres (PS) resigned after the party's defeat in the local elections.

In 2002, the centre-right PSD won the legislative elections and was also pressured by the UN to revert drug possession and consumption decriminalisation. Although slow to implement the measure, the government did not bow to this pressure for three reasons. First, because it had no alternative policy to what was by then clearly perceived as a health problem. Secondly, the government feared the possible strong opposition from citizens and NGOs if it tried to revert the reform. Thirdly, and perhaps most importantly, the health situation had improved greatly during the 2 years following the introduction of the policy. For example, the percentage of people with drug use disorders among AIDS cases fell by 17% and deaths related to drug use declined by 59% just between 1999 and 2003. These data were collected every year by national and European drug agencies that published evaluative reports, hence providing transparent evaluation and accountability mechanisms.

The improvement in health indicators- probably resulting from previously implemented harm-reduction measures together with decriminalisation-created quick positive feedback effects which helped to legitimise the latter. In fact, some prominent members of the centre-right changed their opinion about the new policy over time; this was the case of the former director of the Criminal Police, Fernando Negr˜ao, who had been appointed in 2002 to lead the Institute for Drug and Drug Addiction. As a consequence, internal and international pressure to revert the policy decreased over time. Notably, after a mission in Portugal in 2004, the INCB recognised the policy as being finally compatible with the UN principles, although it did not fully endorse it.

In 2005, the Socialists were re-elected and continued the implementation of the strategy. Thereafter, the former opponents of the policy started to acknowledge its success. This is demonstrated at the national level by the parties' positions and also by the stability of the funding for this policy. At the international level, the policy was also widely accepted. Notably, in 2015, the President of INCB considered

Portugal as a model of best practice. In 2021, 20 years after the law allowing it, the first supervised drug consumption facility opened in Lisbon. Another one is currently under construction in Porto.

Before concluding, two important limitations must be considered. First, in 2008, the Supreme Court of Justice re-established the crime of drug use when the quantity exceeds days of average individual use. If this new rule decreases police discretion (and hence possible discrimination), it also leads to the possibility of people being imprisoned for using drugs (although, in practice, courts mainly impose fines). Secondly, the decision to provide free syringes in prisons, that was also foreseen in the 2001 harm-reduction legislation, was never implemented, despite several pilot programmes in 2007. Explanations for this failure are the combination of the prison guards' disapproval of the measures and the lack of anonymity when acquiring syringes (inmates have to ask for such a kit and fear losing their access to drugs if they do so)-a feature of the policy that was introduced against the opinion of many health professionals.

CONCLUDING REMARKS

In this article, we claim that the Portuguese drug policy adopted in 2000–01 is a good example of a successful 'original innovation'-the introduction, development and resilience of a substantial policy that is entirely new on a global scale. In this account, we asked under which circumstances it is successfully introduced and implemented. Our theoretical answer is that such change only occurs when six types of variables are present simultaneously. Such simultaneous presence depends upon the existence of both the 'right' context and on the appropriate willingness/activeness of a series of actors and is consequently relatively rare.

In Table 1, we summarise the variables identified in our 'six-stars' framework and how they apply to the case of Portuguese Drug Policy. First, the alarming increase in drug use, especially heroin, and its consequences triggered a sense of urgency that attracted the attention of citizens and policymakers alike. Hazardous drug use was visible; it was not concentrated within marginal groups, but was a socially and geographically spread problem. It therefore seriously affected political parties' constituencies (and sometimes policy makers' own families); it was discussed daily in the media and was the most important preoccupation of Portuguese citizens. Moreover, policy makers' willingness to reform was reinforced by the support of a large coalition of actors with direct experience with people using drugs which insisted that the existing paradigm was ineffective-Church representatives, health professionals and judges, including prominent figures such as the President of the Republic. This support heightened policy-makers' motivation to act, despite the initial opposition of the police and the INCB.

The large geographical and social reach of hazardous drug use paved the way to frame drug addiction as a 'disease', making the state responsible for providing prevention and treatment. Scientific knowledge was extensively produced, and solutions were discussed and sponsored by important actors. Experts were involved in the decision-making process and a solution was proposed and adopted in the

continued on page 56

last year of the government's mandate-the National Strategy to Combat Drugs. The economic boom made this solution economically feasible, avoiding cutting expenditures or raising taxes.

As can be seen from the description above, a series of strategies were adopted to make the proposal politically feasible. First, the government established a commission of experts in charge of proposing a solution to the problem. Once the National Strategy to Combat Drugs had been defined, the government waited for new elections and asked for a clear political mandate on the drug strategy, and the law was discussed at the start of its term. A large number of public sessions were organised to inform, convince and involve the public. Additionally, the economic boom made it easier to free resources to fund the policy.

Moreover, decision-making was of high quality. In addition to the electoral mandate, the debate in parliament was very inclusive, deliberative, evidence-based and a consensus was sought. These discussions led to the formulation and improvement of the proposal. Plus, the quality of decision-making was not only in the policy-design phase. Data collection, transparency and evaluation mechanisms worked well throughout the implementation of the policy.

The rapid improvement, publicity and visibility of health indicators led to broad public support ('positive policy feedback') and to the policy's resilience over time. In addition, the setting up of new institutions and partnerships with NGOs also assured the new policy of supporters who would have quickly mobilised against its reversal. The clear effort to keep the law within the boundaries of international law was another fundamental strategy for resilience.

Full implementation of the measure was ensured by delegating on the ground implementation to supportive and experienced NGOs. An important exception to full implementation is the provision of syringes in prison, which was launched in 2007-without the approval of the guards and without the involvement of health professionals in its formulation-which led to the failure of pilot programmes. Another limitation of the law implementation is its lack of flexibility: as mentioned above, the policy did not change despite the decreasing proportion of people struggling with addiction which are referred to the commissions.

Our 'six-stars' framework has proved theoretically useful to understand the Portuguese case and to identify the variables that must be present for successful original policy innovation to occur and persist. Further research should apply (and possibly nuance/improve) this framework to other types of policy innovation and to other political systems other than the parliamentary system. Our research, moreover, offers practical lessons to policymakers and activists. It shows the importance of electoral mandates, communication, inclusion of stakeholders, transparency, deliberation and evaluation when designing innovative policies. It also illustrates the usefulness of creating quickly visible, positive, policy feedback and to ensure the support of implementing agents. Finally, our research reminds us that the Portuguese model goes beyond decriminalisation. In fact, the rapid and positive effects of well-funded harm-reduction, drug addiction treatment and drug use prevention programmes delegated to NGOs were fundamental for the success and resilience of the Portuguese drug policy.

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Throughout November and December 2023, Tasmanian Chinese Buddhist Academy of Australia participated in the Hobart Christmas Pageant, Brighton Block Party, New Norfolk and Oatlands Christmas Parades. This shows the inclusiveness and tolerance of the Australian society towards different cultures and religions, as a place where all can come together to celebrate an important and joyous time of the year.