Responding to a new wave of high potency synthetic cannabinoids

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The deaths of up to 45 people linked to synthetic cannabinoids in New Zealand in the past year raise important questions about how to respond to these new synthetic drugs. The fatalities have belatedly been linked to the synthetic cannabinoids AMB-FUBINACA and AB-Pinaca, but several other synthetic cannabinoids were detected around the same time including 5F-ADB and pFPP. The St John Ambulance Service reported they attended around 20 life threatening cases related to synthetic cannabinoids each day in Auckland around this time. The development of an early warning drug system was made a priority in the National Drug Policy 2015–2020, and there now appears to be renewed political will to establish such a system.

In this editorial we propose that an early warning drug system should aim to go beyond enhanced toxicological analysis to identify new psychoactive compounds. It should also address the equally important challenges of informing a risk profile for the drugs detected and developing an engagement system to disseminate risk information about new drugs to health professionals and community workers, and indeed users themselves. Drug users are often entirely absent from discussions about the design of drug monitoring systems, which is a great shame as they ultimately share the same aim as the authorities with respect to avoiding emergency medical callouts and fatalities.

The rise of synthetic cannabinoids

Synthetic cannabinoids are just one class of a much larger group of new psychoactive substances (NPS) designed to mimic the effects of traditional illegal drugs while circumventing existing scheduling decisions and related legal penalties. Fifty-one new NPS compounds were reported in Europe for the first time in 2017, although this is down from the peak of 100 NPS notified for the first time in 2015. A core group of around 80 NPS have been reported every year since 2009, while many others appear only locally for a short period of time. There is often very little existing research on the health and social risks of these compounds to inform appropriate scheduling, medical response and harm minimisation advice.

The attraction and harm of synthetic cannabinoids

Synthetic cannabinoids are often many times more potent than natural cannabis as they contain full CB1 and CB2 brain receptor agonists as opposed to the partial receptors of THC. For example, AMB-FUBINACA has been found to be 85 times more potent than THC. The extremely high potency of some synthetic cannabinoids increases their addictive potential, acute toxicity and propensity to incite confusion and violent behaviour. Synthetic cannabinoids have been linked to seizures, loss of consciousness, vomiting, chest pains, agitation, kidney injury, hyperthermia, psychosis and death. The risks of synthetic cannabinoid products are exacerbated by poor manufacturing practices which result in large variations in active ingredient between products and product batches. The key attractions of synthetic cannabinoids appear to be their low price and high strength which make them particularly attractive to vulnerable groups with low disposable income, including youth and homeless people.
Binoids cannot be detected in routine drug testing, making them a pragmatic choice for people subject to regular drug testing including those working in high safety risk industries (eg, construction, forestry, transport and military), and vulnerable groups (eg, mental health and drug treatment patients, paroles, prisoners). The supply of synthetic cannabinoids is driven by extremely high profit margins as active compounds can be purchased in bulk and products contain very small amounts of active ingredient.

In New Zealand, the prevalence of synthetic cannabinoid use among frequent illegal drug users and police arrestees was initially very high when they were first introduced in 2010/11, reflecting their novelty, quasi-legal status, low price relative to illegal drugs, and ability to avoid positive drug tests. Use by these groups levelled out in subsequent years despite the establishment of a regulated legal market for approved NPS via the Psychoactive Substances Act (PSA) from July 2013 to May 2014. The blanket ban of all psychoactive products in May 2014 immediately reduced use and availability. However, availability recovered in subsequent years as a black market supply was established and, of even greater concern, there was a sharp increase in reported strength.

**New challenges for drug monitoring**

The large number and chemical diversity of NPS compounds, the speed with which they appear and the profitability of supply present considerable challenges to the authorities. General population surveys are conducted too infrequently to provide any meaningful warning of NPS outbreaks, and users are often not aware of the specific compounds in products, limiting their capacity to self-report use in social surveys. Use may also be concentrated in ‘hard-to-reach’ groups who are difficult to contact using traditional survey techniques (eg, the homeless).

Forensic analysis of NPS plays an important part in identifying the specific compounds in products, but this analysis is expensive and new compounds can be difficult to identify if no reference standards are available. Even when a new compound is identified there may be little or no research available on its health and wider social risks to inform an appropriate scheduling decision and agency response.

The recent response to synthetic cannabinoid deaths in New Zealand reflects many of these challenges. It took many weeks to make public the identity of the synthetic cannabinoid compound involved. The mere identification of the active compound is not sufficient to establish its role in the fatalities. Other factors may have played a part, including excessive alcohol and other drug use, existing health conditions, contamination during manufacture, other toxic ingredients, or excessive dosage.

The coroner is tasked with untangling the contributing factors related to a fatality, but these investigations take many months to complete, and thus make little contribution to any immediate effort to avoid further deaths. The police largely focus on arresting suppliers, and these investigations can take months to resolve, during which time the information gathered is often closely guarded so as not to impede any future prosecution. The police and coroner did issue public warnings in these cases (albeit some time after the first incidents were reported), but it is not clear the police are the right agency to communicate and engage with users who generally aim to avoid contact with law enforcement. There appeared to be little coordination with health agencies, with the then Associate Minister of Health complaining he had “less than a couple of hours’ notice” of the intended police and coroner’s joint public statement.

Emergency medical staff are often the first to have contact with adverse cases related to a new drug, but their primary focus is the immediate treatment of the patient, and this may or may not include the toxicological analysis required to identify a new compound, or importantly the collection of contextual information to deduce the actual role the new substance played in an incident. A lack of engagement with emergency medical staff and wider health agencies about reporting responsibilities has previously been identified as a factor.
in delays with withdrawing some licensed psychoactive products which turned out to cause harms during the PSA regime.12

Discussion

Many countries around the world are currently grappling with a response to synthetic cannabinoids and there is increasing recognition of the need for a rapid response system.3,4 Expanded toxicological analysis and increased information sharing between government agencies are often discussed as key features.3,4 However, identifying the active compound is only the first step in developing an effective health response. Assessing the risk profile of the new drug requires an understanding of the demographics of the user group, patterns of use, dependency potential, modes of administration, and availability and price.7 Indeed, demonstrating harm has traditionally been seen as the process which legitimises the imposition of prohibition. New research methodologies are now available which can provide rapid assessment of these wider health and social impacts.13 There is also a need for a nimble engagement system to rapidly collate and disseminate risk information to health professionals and other stakeholders, including users. For example, the Canadian Community Epidemiology Network on Drug Use (CCENDU) draws on local reports and statistics from a range of stakeholders on newly emerged drug threats, including those who work directly with drug users and the drug users themselves, and then rapidly disseminates this information in the form of public health alerts.14

There may be lessons to be drawn from managing outbreaks of food poisoning and natural disaster planning, including enhanced community engagement and local preparedness. Social media offers a new platform for engaging rapidly with large numbers of drug users about new high-risk drugs in circulation. Drug users themselves could potentially anonymously contribute to these forums by posting reports of adverse reactions with photos of suspect products. While information from users is clearly not as scientifically precise as toxicological analysis, it often has the credibility to influence drug users’ behaviour. There are also a raft of other pragmatic policies which could support the effort against high potency synthetic cannabinoids, including reinvigorating the regulated market for low risk psychoactive products under the PSA and liberalising cannabis laws.12 The need for a new drug monitoring system is pressing as a new range of synthetic opioids (ie, Fentanyls) that have been associated with a growing number of fatalities overseas3,4 are likely to hit these shores in the near future.

Competing interests:
Nil.

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