UK places generic ban on mephedrone drug family

Debate over how to reduce the harms caused by recreational drugs has been ignited by the UK Government’s decision to ban mephedrone and related cathinones. Kelly Morris investigates.

The exceptionally rapid rise in use of mephedrone and related cathinone derivatives in the UK has caused the Home Secretary Alan Johnson to ban the substances, within the same class as amphetamines (class B), on the recommendation of the Advisory Council on the Misuse of Drugs (ACMD). The ban, expected to be implemented on April 16, is thought to be the world’s first generic ban of a group of cathinones based on chemical structure. Experts say that they will be watching the effect of the ban on the drug family that includes mephedrone—suspected to be involved in up to 25 deaths in the UK, most awaiting inquest.

However, the recommendation about cathinones has spurred controversy over how to reduce drug harms. Eric Carlin, who is researching young people, social disadvantage, and resilience at Birkbeck College, University of London, UK, resigned from the ACMD on April 1, stating that his “substantial experience of managing drug prevention and treatment services” had not helped influence the committee, and thereby the government, “to think about drugs as more of a public health issue rather than focusing narrowly on the criminal justice aspects”. In regard to mephedrone, Carlin stated that the ACMD “had little or no discussion about how our recommendation to classify this drug would be likely to impact on young people’s behaviour”. Carlin is concerned about the potential criminalisation of young people by the ban.

Cathinone derivatives are synthesised by modifications to cathinone—an illicit molecule found in the khat plant, which is structurally very similar to amphetamine. The derivative methcathinone is chemically analogous to methamphetamine, and methylone to MDMA (ecstasy). Mephedrone (4-methylmethcathinone), which has no amphetamine analogue, is the most commonly seized derivative. Effects are reportedly similar to those of cocaine, amphetamine, and MDMA. According to a survey in the dance magazine MixMag, done by Adam Winstock from the National Addiction Centre, London, UK, and colleagues, mephedrone was the fourth most commonly used drug in the past month by respondents. 41.7% of more than 2000 respondents indicated they had ever used mephedrone, with 10.8% reporting use of methylone. Further findings from mephedrone users are expected to be published soon.

Mephedrone was first highlighted by the UN Office on Drugs and Crime after the death of an 18-year-old Swedish woman, reported in December, 2008, in which mephedrone was the only substance detected post mortem. David Gustavsson, now at University Hospital of Malmö, Sweden, who was involved in the patient’s emergency care, told The Lancet: “When I first started to look into mephedrone, I was struck by the fact that no reliable information was available at all.” Some cathinone derivatives are known to inhibit reuptake of monoamine transmitters, but such research has not been done on mephedrone. Acute toxicity reports include CNS hyperstimulation, cardiovascular compromise, and serotonin syndrome, the latter usually with concomitant prescribed selective serotonin reuptake inhibitors. Mephedrone also has been implicated in causing hallucinations, anxiety, paranoia, seizures, and delusions. Gustavsson notes that without research “one can hardly say anything for sure about anything, specifically regarding the long-term effect of mephedrone”.

The experience of mephedrone in Sweden shows that many users regard mephedrone “as a fully acceptable substitute for ecstasy and amphetamine/cocaine”, Gustavsson explains. “Some experienced patients had even stopped using these drugs when they discovered mephedrone.”

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For the ACMD report on cathinones see: http://drugs.homeoffice.gov.uk/publication-search/acmd/ACMD-cathinones-report.html

The printed journal includes an image merely for illustration

Mephedrone is a cathinone derivative, synthesised from the cathinone molecule found in the khat plant
People who use mephedrone have reported an effect similar to dance drug ecstasy and its appreciated effect.” But others have been concerned about dependency, he says. From clinical experience at Maria Ungdom in Stockholm, Sweden, a publicly funded clinic for people younger than 20 years in Stockholm county, users describe an effect in between amphetamine and ecstasy. Gustavsson explains: the peak effect, after about 20–30 min, “is followed by a strong urge to administer a new dose, an urge so strong that it surprised many experienced drug users.”

Gustavsson questions whether experimentation with unstudied substances, especially by inexperienced young people, is because of the misconception that legality implies safety. Winstock also points to the large market of users who are dissatisfied with illicit stimulants and interested in substances with a desired profile of effects, availability, and perceived value for money. Users and community workers suggest that the unavailability or low purity of cocaine and MDMA—related to international control measures—“have contributed to the increase in mephedrone use”, the ACMD cites. Additionally, cathinone derivatives are so-called legal highs and widely available from internet websites, sold as bath salts or plant food, not for human consumption.

Sweden is among several countries that have now banned or controlled mephedrone. Gustavsson recalls that mephedrone use was more frequently reported at Maria Ungdom from mid-2008, including several users who had encountered “unusual” difficulty stopping mephedrone compared with other drugs. By autumn, 2008, “mephedrone was by far the most popular legal drug sold on the internet in Sweden”, he recalls. Mephedrone was classified as hazardous in Sweden in December, 2008, which restricted internet sale. Subsequently, anecdotal evidence suggests that mephedrone began to be sold person-to-person rather than on the internet, he says.

Stefan Sparring, senior consultant at Maria Ungdom, describes what happened after mephedrone was classified as hazardous: “the drug quickly moved to the illicit trade in the streets, and we still saw new cases every week. In the spring of 2009 it was classed as a narcotic and after that we thought we could see a trend of it disappearing.” However, Sparring still sees new cases related to mephedrone use every week. “What we now also see is the true emergence of ‘designer drugs’, he notes. After mephedrone became illegal, methedrone flooded the market, he says. Methedrone has since been implicated in two deaths and banned in Sweden. Now, says Sparring, “we have flephedrone instead, and it just continues”.

Experience with several former legal highs shows that legislation against one legal high can result in the rebranding or development of an unsanctioned alternative, Winstock notes in an online editorial with John Ramsay from St George’s University, London, UK, in the journal Addiction. Substances have been produced and marketed with the explicit aim of circumventing legislative restrictions for several decades, they note. “What has changed is an increase in their range, potency, profile and availability. The development of global web-based marketing and distribution networks, as distinct from illegal street markets, has emerged concurrently, challenging further the utility of existing supply reduction strategies.” The ACMD now plans to review the naphthyl analogue of pyrovalerone, which is advertised on the internet and retailed as NRG-1.

Experts will be following the adoption of the generic law with interest, says Winstock, assessing its effect on use, harms, and the illicit and licit marketplace. “The lesson we need to learn is, in the case of such drugs, what is the impact of different interventions in harm and use?” he told The Lancet. When a drug is made illegal, controls are limited to supply reduction and keeping harm to a minimum, Winstock and Ramsay write. “While in no way does ‘legal’ confer relative safety, it does mean that a broader repertoire of responses is available”, they note.

In his resignation letter, Carlin describes his concern about the effect of the UK legislative framework on the work of the ACMD. A further concern of Carlin’s is the lack of attention to the ACMD Pathways to Problems follow-up report, which contains wide-ranging recommendations for tackling young people’s problems with drugs, including alcohol and tobacco. The report was released on the same day as the ACMD review about cathinones but was not covered in Home Office media statements. In the report’s recommendations, the ACMD calls for a review of the Misuse of Drugs Act 1971.

The ACMD will soon report on the possible control of legal highs. However, one unintended consequence of present medicines legislation is to leave distributors unable to disclose the true purpose of their product, Winstock and Ramsay note. “General common sense precautions that apply to any psychoactive drug cannot be given without risking prosecution”, they write. “The dilemma is what to do between the appearance of a problem, risk assessment, and the inevitable but uncertain legislative response.”

Kelly Morris