

Pill-testing as a harm reduction strategy: time to have the conversation

Despite harm reduction being a pillar of the Australian National Drug Strategy, current governments are shying away from pill-testing as a viable strategy

The recent deaths of five young Australians at music festivals has once again placed pill-testing at the forefront of media discussion.

Rates of drug use are significantly higher among certain subpopulations, with dance music nightclubs and music festivals being examples of places with elevated levels of drug use.^{1,2} Of 642 surveyed attendees at an Australian music festival, 73.4% reported drug taking compared with 28.2% of the general young adult population, and for 3,4-methylenedioxymethamphetamine (MDMA; commonly known as ecstasy) use, this was as high as 59.8% compared with 7.0%.² MDMA is increasingly available in powder and crystal forms with street names of molly, mandy and crystal, meaning some users do not associate the drug with ecstasy.

Concerningly, the 2019 Global Drug Survey identified Australia as the country with the highest number of MDMA pills consumed on a single occasion (average, 2.0 pills *v* global average, 1.0 pills).³ Supporting this, a survey of Australian music festival attendees found that almost half (48%) of 777 respondents taking ecstasy pills reported simultaneous consumption of two ecstasy pills.⁴ Evidence of the dangers associated with this behaviour can be seen in the global statistics, with 2.3% of Australian users seeking medical attention following MDMA use compared with a global average of 1.0%.³

The toxicology of MDMA overdose involves hyperthermia, seizures, hyponatraemia, rhabdomyolysis and multi-organ failure causing death.² Hyperthermia is of particular concern in a music festival setting; users often dance outdoors for hours during the hot Australian summer, with overheating, overcrowding and dehydration complicating the toxic outcomes.⁵ Adulteration of ecstasy is an additional risk factor, as drugs such as methamphetamine or new psychoactive substances are used to cut or replace MDMA to increase profits or avoid legal implications.⁵ New psychoactive substances are designed to mimic established illicit drugs but have significantly different toxicity profiles to the drugs they are mimicking.⁵

The three pillars of the Australian National Drug Strategy are reductions in supply, demand and harm.⁶ Harm reduction interventions at festivals/nightclubs include the availability of drinking water, chill-out spots and first aid treatment.⁶ Despite harm reduction being a major focus, pill-testing, which fits clearly within the scope of the harm reduction pillar, is not currently being considered by Australian governments. Harm reduction policies involving illicit drugs are understandably complex because of legal implications;



however, the Uniting Medically Supervised Injecting Centre in Sydney⁷ is a real world example of how public health workers and law enforcement can work collaboratively to develop a positive relationship with the explicit aim of harm reduction.

One of the major difficulties when considering pill-testing programs is that there is no current gold standard system in place, with major differences between techniques, accuracy, whether results are qualitative or quantitative, and the method by which results are presented to users. For a summary of the 29 organisations across the globe offering drug-checking services in 2017, see Barrett and colleagues.⁸

Pill-checking models can be classified broadly into two categories. The first provides results directly to the patron who submitted the pill; in best practice this involves a face-to-face interaction with a health care provider, while the public is informed only of especially dangerous pills. United Kingdom pill-testing service provider, The Loop, employs this type of model; it was also used in the Australian pill-testing trials at Groovin the Moo in the Australian Capital Territory in 2018 and 2019.^{9,10} The second model involves public posting of results on notice boards or the internet with a “good/bad” or “green/orange/red” ranking applied to each pill. This model is used by DanceSafe in the United States and the Drugs Information and Monitoring System in the Netherlands.⁸ We highly encourage that only the first of these models be pursued in Australia, as the second model is unable to provide a number of the harm reduction benefits described below.

Pill-testing provides a clear benefit to information warning systems and clinicians, providing ground level data that systems based solely on drug seizures or wastewater analysis do not reflect.¹¹ While altering black market drug supplies is not a specific aim of pill-testing, there is some evidence that drugs identified as particularly dangerous cannot sell and are removed from the market.¹¹ Recreational drug

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users, who typically do not consider themselves as having a drug problem, are unlikely to be involved in traditional counselling or treatment facilities, with nine out of ten pill-testing service users in the UK never having discussed their drug use with a health care professional.¹² Thus, pill-testing provides a useful opportunity not only to identify the most dangerous drugs but also to engage with a vulnerable group to provide education and connect users to support services.^{6,11,13}

Despite the fact pill-testing has been performed in Europe for over 20 years, there is a significant lack of data on the success of these processes as randomised controlled trials are unable to be performed; therefore, self-evaluation is often all that is available.¹¹ One possible gauge of success is the number of people who indicate they would not consume the drug following pill-testing. In the UK, The Loop found that 19.5% of 230 samples at a 2016 festival had a variance from what they were described as containing (that is, the confirmed identity did not match what the pill was sold as) with an in-facility discard rate of 21.3%. This increased to 66.7% when considering only samples which significantly varied from expectation.⁹ Additionally, there was a 95% reduction in drug-related hospital admissions compared with the same festival the previous year.⁹ The second pill-testing trial in Australia, held at Groovin the Moo in April 2019, was deemed a success following the identification of seven samples containing the potentially lethal new psychoactive substance, n-ethylpentylone.¹⁰ All but one of these samples were disposed of in the amnesty bins onsite.¹⁰ Additional circumstantial evidence that pill-testing saves lives could be seen when the Netherlands and Belgium produced a mass media warning against a particular batch of pills found to contain 170 mg of paramethoxymethamphetamine via a pill-testing service on 19 December 2014. Following this warning, no deaths occurred in either the Netherlands or Belgium. In the UK, however, the same pills caused four deaths between 24 December 2014 and 7 January 2015.¹³

Common arguments against pill-testing include: the testing technique is not accurate enough to identify all components; the techniques available onsite cannot provide a quantitative analysis required to prevent overdose; complaints from policy makers about lack of proven efficacy of harm reduction from pill-testing; an overall feeling that pill-testing condones drug use; and the fear that dealers will use pill-testing results to promote their brand. All of these arguments can be addressed by a well designed system that focuses on incorporating accurate pill-testing as a single component in a larger harm reduction strategy. The inherent risk that drug dealers may use the testing to give a check of approval to their drugs¹ can be minimised by requiring that all patrons receive a one-on-one intervention with a health care provider and by ensuring that pill-testing results are provided verbally

only, with no hard copy evidence that dealers could use to support their claim. Additionally, the idea that “bad” drugs may be on-sold to other users shows the importance of providing amnesty bins for drug disposal within the pill-testing facility which can be emptied in an agreement with law enforcement personnel.

It is important to remember that in order to participate in pill-testing, the individual must have already purchased the drug, assumedly with the intent of consumption. Therefore, any information regarding dosage or adulterants provided to that patron is with the explicit intent of harm reduction. In any best practice system there will never be a circumstance where health care providers tell patrons that their drug is safe to take. In fact, as Dr David Caldicott, who was involved in Australia’s pill-testing trials in 2018 and 2019, has explained, the exact opposite is true, with all patrons informed at every step of the process that no amount of illicit drug consumption is safe.¹⁰ Additionally, while some pill-testing programs are entirely reliant on chemical spot tests or similar, which are unable to provide details of all components in a mixture or the strength of active components, there are better analytical techniques available. The common argument that gas chromatography–mass spectrometry — which is seen as the benchmark of analytical techniques as it is able to identify complex mixtures and provide dosage data in a relatively short period of time — cannot be used at onsite testing facilities is no longer true, with handheld devices now available. An investigation should be performed to determine the viability of this technique. Although advanced techniques are available, there is a clear cost barrier associated with equipment set-up.

Last year the Greens political party announced a plan for a pill-testing model in Australia which has been costed by the independent Parliamentary Budget Office.¹⁴ This model included 18 pill-testing services across the country, fully staffed with world class spectroscopic equipment at an estimated cost of \$16 million over 4 years.¹⁴ The Greens have introduced bills to allow pill-testing in both Tasmania and Victoria; however, neither of these bills have passed due to a lack of support from the major political parties. Evidence suggests that zero tolerance policies do not work⁶ and pill-testing provides a useful tool for both direct harm reduction through the identification of dangerous illicit drugs containing new psychoactive substances or unusual dosages, as well as indirect harm reduction through the increased education of a hard-to-reach group of drug users.

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References are available online.

- 1 Benschop A, Rabes M, Korf DJ. Pill testing, ecstasy and prevention. Hanover: European Commission, Directorate-General Health and Consumer Protection, 2002.
- 2 Day N, Criss J, Griffiths B, et al. Music festival attendees' illicit drug use, knowledge and practices regarding drug content and purity: a cross-sectional survey. *Harm Reduct J* 2018; 15: 1.
- 3 Winstock AR, Barratt MJ, Maier LJ, et al. Global Drug Survey 2019: key findings report. London: Global Drug Survey, 2019. <https://www.globaldrugsurvey.com/gds-2019/> (viewed Oct 2019).
- 4 Grigg J, Barratt MJ, Lenton S. Double dropping down under: correlates of simultaneous consumption of two ecstasy pills in a sample of Australian outdoor music festival attendees. *Drug Alcohol Rev* 2018; 37: 851–855.
- 5 Saleemi S, Pennybaker SJ, Wooldridge M, Johnson MW. Who is 'Molly'? MDMA adulterants by product name and the impact of harm-reduction services at raves. *J Psychopharmacol* 2017; 31: 1056–1060.
- 6 Groves A. 'Worth the test?' Pragmatism, pill testing and drug policy in Australia. *Harm Reduct J* 2018; 15: 12.
- 7 Dolan K, MacDonald M, Silins E, Topp L. Needle and syringe programs: a review of the evidence. Canberra: Australian Government Department of Health and Ageing, 2005.
- 8 Barratt MJ, Kowalski M, Maier LJ, Ritter A. Global review of drug checking services operating in 2017. Sydney: National Drug and Alcohol Research Centre, UNSW Sydney, 2018.
- 9 Measham FC. Drug safety testing, disposals and dealing in an English field: exploring the operational and behavioural outcomes of the UK's first onsite 'drug checking' service. *Int J Drug Policy* 2019; 67: 102–107.
- 10 Lowry T. Second pill-testing trial at Groovin the Moo hailed a success as partygoers dump dangerous drugs. *ABC News* 2019; 29 Apr. <https://www.abc.net.au/news/2019-04-29/pill-testing-trial-at-groovin-the-moo-for-second-time/11053350> (viewed June 2019).
- 11 Kriener H, Billeth R, Gollner C, et al. An inventory of on-site pill testing interventions in the EU. Lisbon: European Monitoring Centre for Drugs and Addiction, 2001.
- 12 Fisher H, Measham F. Night lives: reducing drug-related harm in the night time economy. London: Hanway Associates, 2018.
- 13 Brunt T. Drug checking as a harm reduction tool for recreational drug users: opportunities and challenges. Netherlands: European Monitoring Centre for Drugs and Addiction, 2017.
- 14 Hutchens G. Pill-testing: budget office finds it would cost \$16m to put services in major cities. *The Guardian* 2018; 9 Nov. <https://www.theguardian.com/society/2018/nov/09/pill-testing-budget-office-finds-it-would-cost-16m-to-put-services-in-major-cities> (viewed June 2019). ■