

DRUG & ALCOHOL FINDINGS *Research analysis*

This entry is our analysis of a study considered particularly relevant to improving outcomes from drug or alcohol interventions in the UK. The original study was not published by Findings; click [Title](#) to order a copy. Free reprints may be available from the authors – click [prepared e-mail](#). The summary conveys the findings and views expressed in the study. Below is a commentary from Drug and Alcohol Findings.

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▶ ACT pill testing trial 2019: program evaluation.

**Olsen A., Wong G., McDonald D.
Australian National University, 2019**

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Independent evaluation suggests reasons to have confidence in the harm reduction benefits of 'pill testing'. However, the narrow scope of the drug testing service adopted at this Australian festival may not have been adequately understood by stakeholders.

SUMMARY Pill testing (also known as 'drug checking' and 'drug safety testing') is a public health intervention allowing the general public to submit illicit substances for chemical analysis – the aim being to reduce drug-related harm by giving them the opportunity to learn about the content of their drugs before deciding whether to dispose of them or take them, and if so, how much.

The featured paper evaluated the roll-out of pill testing at the Groovin the Moo music festival in Canberra, the capital of Australia. This was the site of the first government-approved trial of pill testing in Australia, but took place a year later in April 2019.

Run by volunteer medical staff, analytical chemists, and peer harm reduction workers, the pill testing service was implemented by the Pill Testing Australia consortium, which included Harm Reduction Australia, the Australian Drug Observatory at the Australian National University, DanceWize, and Students for Sensible Drug Policy Australia. It was established as a stand-alone service in close proximity to the medical area at the event. This helped ensure that service staff could maintain regular communication with medical and ambulance personnel, briefing them on the results of pill testing and helping to inform medical procedures in the event of an overdose or other drug-related emergency.

Research indicates that people attending music festivals are more likely to use illicit drugs than the general population, and among Australian festival-goers, the most commonly used substances are alcohol, cannabis, ecstasy/MDMA (in either pill or powder form), and cocaine (1 2).

In settings such as festivals, pill testing can help to connect hard-to-reach populations with health services, monitor drug markets for new or particularly dangerous substances, provide assistance to emergency services when there are drug-related emergencies, and contribute to an early warning system for dangerous substances (1 2). However, it is a highly contested intervention. Opponents argue there is limited evidence that pill testing reduces harm or deaths, that testing outside a laboratory setting may not accurately identify all substances present in a sample, and that the intervention may encourage or normalise drug use or give a false sense of security by implying that some drugs are 'safe' to consume (1 2).

The latter point – the fear about conveying the message that drugs are 'safe' – was addressed in the design of the service at the Groovin the Moo music festival. Staff agreed to advise each patron that drugtaking is inherently unsafe and disposal of the drugs is the best way to avoid risks to health. They also agreed to communicate the limitations of pill testing, including that testing cannot be guaranteed to identify all substances.

Other service model specifications included ensuring that staff were trained appropriately in the use of drug testing equipment and drug counselling, that an amnesty bin was provided for safe disposal of drugs, and that data collected would be shared with key stakeholders to inform future uses of pill testing and to meet operational and safety needs (eg, sharing information about contaminated drugs, novel psychoactive substances, and high-purity substances circulating in the drug market).

How the service worked

Service users were asked to provide a scraping of the substance for testing. After the sample was tested, chemists and medical staff provided patrons with the results and reiterated that no level of drug use is 'safe'. Patrons then received a brief personalised harm reduction intervention from a peer harm reduction worker to discuss the risks involved in consuming the substance and how to minimise these. Referrals to health or alcohol and drug services were provided where necessary. A card with their sample number was provided to service users which could aid emergency services in the event of a drug-related incident.

Drug testing was performed using fourier-transform infrared spectroscopy (FTIR) – a [robust](#) technology for drug testing at the point of care (ie, at the time and place of seeing the patient or client). FTIR carries a [range of advantages](#) in the festival setting, including its ability to accurately identify a wide range of substances, its compact size, relatively quick runtime (five minutes or less), and ease of operation (including minimal sample preparation). While a technique called mass spectrometry remains the 'gold standard' in forensic drug testing, the cost and technical skills needed, along with the extended time period for completing the analysis, make it more challenging to implement in a setting like a festival. Despite the limitations of FTIR, it met the criteria of the service in being able to reliably identify the major drug present in an unknown tablet or powder, provided this was a previously discovered



Key points From summary and commentary

A pill-testing service was trialled at an Australian music festival in 2019, providing information on the content of illicit drugs to service users, the police and healthcare providers.

The service was found to be well-executed and associated with changes in attitudes and behaviour. In line with previous research, people who had drugs that tested different to what they expected had a lower likelihood of taking the drugs, whereas the reverse was associated with a higher likelihood of taking the drugs.

Unlike many other pill-testing services abroad, information about drugs was not conveyed to other festival-goers in real-time, which could be considered in future iterations.

substance on the database.

How the evaluation was conducted

A total of 234 people entered the service and 158 were included in the evaluation; 53 people were not permitted to participate under university ethics committee rules as they were under 18 years of age, 22 people declined to enrol in the evaluation, and one participant who agreed to participate was subsequently excluded from the analysis as they knowingly presented a sample of candy for testing.

Participants ranged in age from 18–51 years old, though almost half (46%) were 18 or 19 years of age, and the average age was 21 years. There was roughly equal representation of men (51%) and women (48%).

All participants answered questions before their drugs were submitted for analysis (the 'pre-test' survey) and most (147) also completed a survey afterwards (the 'post-test' survey). A further 11 service users agreed to a follow-up interview four months after the festival. Eleven workers and volunteers were also interviewed four months after the festival, including three Pill Testing Australia personnel, two Pill Testing Australia volunteer chemists, three people associated with DanceWize, one senior ambulance service officer, one senior health officer, and one senior police officer.

Seven data sources were used in the evaluation:

1. A brief pre-test survey prior to presenting a substance for testing or accompanying a friend who was presenting a substance for testing.
2. A brief post-test survey: Once they had received their testing results and completed the brief intervention delivered by peer harm reduction workers, participants completed a second survey.
3. Observational data: During the one-day trial, evaluators observed and recorded what was happening in and around the pill testing venue. They documented the flow of pill testing patrons in the queuing area and through the service, and any incidents that occurred.
4. Service data: Information and insights from Pill Testing Australia about the progress of the service, facilitators and barriers to implementation, and logistical issues – such as those detailed in a [2019 report](#) – were used to inform the suggestions and conclusions presented in the featured report.
5. Follow-up interviews with participants: Topics included basic demographics, expectations about drugs prior to testing, attitudes and drug-related behaviours prior to the festival, experiences of the pill testing service, and attitudes and behaviour soon after they left the pill testing service and in the following months.
6. Follow-up interviews with other stakeholders: Topics included the professional backgrounds of the interviewees and their involvement in the 2019 pill testing service, views about pill testing in general and the implementation of the trial in particular, the management of relationships between stakeholders, the use of information produced through the testing, unintended outcomes of the trial, and other pill testing service delivery models.
7. Routinely collected administrative data, including information about policing and health services at the Groovin the Moo festival.

Main findings

Implementing the pill-testing service

Expected lines of communication between the pill-testing service, the police, ambulance service, other health representatives, and festival promoters were maintained prior to and during the event, and co-location of the pill-testing service with festival medical services facilitated information sharing and care for festival patrons.

Of the 158 patrons included in the evaluation, most (106) were there for pill testing; the remaining attendees were accompanying someone using the service. Most participants using the pill-testing service (96%) personally received the test result from staff or were present when the result was given, and most (84%) also received a brief harm reduction intervention.

Around one-fifth of participants (18%) reported being told by staff that the test revealed a substance known to be associated with significant harm/overdose/death and 12% of participants were not sure if they had been so advised, but the vast majority (70%) reported that they had not been advised that their tested drug was associated with significant harm/overdose/death. Nearly half of the participants (47%) reported being told by staff that the drug tested may have been of higher strength/purity than average or than what they may be used to using; 41% reported that they did not receive this warning associated with strength/purity and one tenth of the participants were not sure (12%).

Seven samples of a potentially harmful substance (N-ethyl pentylone) were identified, and all seven patrons subsequently opted to dispose of their drugs in the amnesty bin.

There was some misunderstanding about what could be determined from testing about the purity of tested substances. FTIR allowed for components of drugs to be identified, and those components to be ranked in order from most to least in terms of their relative quantity in a mixture. Although it was not possible to measure the purity of the drugs tested, terms such as 'purity' and 'strength' were regularly used by people delivering the drug testing service to describe the substances that were tested, and subsequently to make inferences about relative safety.

This misunderstanding was reflected in the language of patrons and stakeholders:

"The one thing that I found interesting was that they said that they couldn't give us, like when we first entered in, they were like, 'This is what we can tell you, this is what we can't tell you,' and one of the things that they said they couldn't tell us was the purity. But then when we got it analysed, they said, 'Oh, it's about 80% pure.'" Female, 29

"...[They] were coming to me and reading the actual sample results, it was reported in different ways. So one person might say, it's a high strength MDMA, another person might tell me, oh, it's 0.87, so I found that the results were reported inconsistently, and I didn't know if that would make a difference in terms of how you're trying to interpret it." DanceWize worker

"So the year before, about half of all pills tested were inert or non-illicit whereas this year they were predominantly MDMA of high purity. So from that perspective, that's really good intel and good knowledge." Ambulance service worker

"I think for the first time ... I had a decent understanding of the relative purities of drugs that were floating around." Chemist

Fortunately, these misunderstandings did not appear to have had any adverse consequences in terms of drug consumption or safety.

How the programme was received by participants and other key stakeholders

Patrons rated the service highly and considered the clarity of the information provided by the service to be good or very good. Most reported that they would tell others about the service and would use a pill-testing service again if it were available. Patrons reported that the information provided in the pill-testing service increased their knowledge about illicit drugs and harm reduction and valued the opportunity to discuss their drug use in a non-judgmental environment.

"It was good, it wasn't judgmental, it was insightful." Female, 22

"...It was a really positive experience. Everyone was really approachable and I guess you kind of forget that when in the media it's always so negative. And, again, like I said before, being an anxious person, I was worried that there might be judgement behind their words but it was a safe space in there which was really nice." Female, 25

In the follow-up interviews a couple of patrons felt that it was possible that pill testing could encourage more people to take drugs. However, most felt that pill-testing services neither encouraged nor discouraged drug use, and focused on the provision of information about the safer use of illicit substances.

"People are going to take drugs anyway. And I think it was, like, six drugs or something that were discovered at Groovin the Moo Canberra were found to be dangerous, so those drugs would have been consumed ... like, there's obviously got to be education with it, because if I was really happy about mine being quite pure, and decided to take all of it, then that would have been horrible. So obviously it's not just a number and an ingredient ... I think it encourages safer drug use ... I personally think the majority of people who have been taking MDMA for a little bit will continue to take it, so if they can test their pills and the substances obviously it will be a lot ... the activity being a lot more safer." Male, 20

All stakeholders supported the pill-testing service model trialled, especially the opportunity to deliver harm reduction information. However, many also expressed a desire to see other methods of delivering pill testing in the community, such as back-of-house approaches at festivals, fixed sites separate from festivals, either with or without the provision of additional harm reduction services, and mobile services that attend parties, nightclubs, and locations of public drug use.

Workers and volunteers reported that the pill-testing service was delivered as expected and that all parties were supportive of the trial and development of a pill testing programme in the Australian Capital Territory (an area surrounding the city of Canberra). Patrons and wider stakeholders identified elements of the service that could be improved, but none reported unintended consequences or outcomes outside of the consideration of the trial. This reflected, to a large extent, the fact that those responsible for designing and implementing the service had the experience of the 2018 trial, plus sufficient lead time to plan the 2019 service.

Changes in attitudes and behaviours

There was a significant increase in patrons' self-rated knowledge of how to prevent the potential harms associated with the type of drug they had brought in for testing after accessing the service (from 38% to 44% 'good' knowledge, and from 23% to 44% 'very good' knowledge). Those who had never taken any illicit drugs reported a greater increase in knowledge.

Most of the patrons had a generally accurate perception of the contents of their drugs (88% rate of overlap). About one in eight patrons (12%) had drugs confirmed to be different from their expectations. All 17 of these patrons found the lack of concordance to be 'somewhat' or 'very' surprising. Approximately half of the patrons who reported overlap between their expectation and the actual content of tested drugs also reported being 'somewhat' or 'very' surprised.

When there was a difference between the expected versus actual content of drugs, patrons showed a statistically significant reduction in the strength of their intention to consume the tested drugs. The reverse was observed among patrons who found confirmation of their drug content – they reported being more likely to consume the tested drug (again to a statistically significant degree). However, patrons whose drugs were what they expected them to be and who later took them reported using harm reduction knowledge to reduce their risks.

After attending the service, participants were more willing to access healthcare providers, brief intervention providers, peer counsellors, home pill testing kits, and written harm reduction materials. Furthermore, all those who discovered that had a particularly dangerous substance disposed of it in the amnesty bin.

Gathering intelligence about the drug market

The service was perceived to produce valuable information about the availability of illicit drugs, including drugs new to the market in the Australian Capital Territory. The authorities used this information as planned, notifying service users, adjoining festival medical services, and health officials.

The proportion of drugs identified as MDMA was considerably higher than when the service was trialled in 2018. A range of key stakeholders considered this a particularly important finding, confirming other sources of information about high-purity MDMA in the Canberra drug market at the time.

Part of the agreement with the Australian Capital Territory Government before the service was implemented was that Pill Testing Australia would not provide any public information about drugs identified through the testing during the course of the festival. While there was a noticeboard with drug alerts inside the service, this information was not communicated publicly.

Information provided by the pill testing trial was valued by people in the health and law enforcement sectors. Pill testing provided "far more granular data" than, for example, border seizures and controlled purchases of illicit drugs by police, reflecting the fact that pill testing occurs close to the point of consumption.

Unlike the European markets, most Australian drugs are not identifiable by sight (ie, most consist of unmarked pills, capsules, powders and crystals). Stakeholders were in favour of an early warning system – a formalised system of sharing information – which could help to circumvent the challenges of physically identifying substances.

The future of pill testing

The service model was perceived to function well in the festival setting:

- Overall, waiting times for patrons were brief, and the testing and brief intervention were well paced.
- Everyone who had drugs identified as being particularly dangerous disposed of them in the amnesty bin.
- Co-location of the pill-testing service and the medical service aided information-sharing and improved patient care.

The lead chemist held a licence permitting him to possess illicit substances for the purposes of scientific chemical analyses. This contributed positively to the trial, as he was able to take some substances for further investigation.

A particular strength of the pill-testing service was its collaboration with medical services at the festival. Another was the agreed protocol regarding policing at the festival site; police undertook their work at a distance from the service site, while still being available to support the service if an incident occurred there.

While the evaluation showed that the trial service was adequately staffed and the space provided was sufficient, during peak periods the service operated at full capacity. In planning future services, efforts should be made to estimate the likely level of demand for pill testing so as to ensure that sufficient resources are available, keeping patron wait times to a minimum. Future planning should also consider how to best deliver testing results to patrons. The testing equipment used in this trial provided information on the contents of the substance, but not the purity or dose. This appeared to have been misunderstood by some patrons and stakeholders.

The authors' conclusions

The evaluation assessed the implementation and outcomes of a pill-testing service in a real-world context, finding that it was well-executed and associated with positive attitudinal and behavioural changes, even given constraints stemming from the lack of an official funding source and restrictions around pill testing signage at the festival.

Festival patrons valued discussing their drug use after the tests, and took harm reduction advice on board. However, in the transfer of information between the drug testing service and its users, it was "common" for results to be misinterpreted, emphasising the importance of developing a standardised language for conveying the scope and results of drug testing.

"Results indicate that careful consideration should be made in developing standardised explanatory language used to deliver the drug testing results, as misinterpretation was common."

When there was a difference between the expected versus actual content of drugs, patrons showed a statistically significant reduction in the strength of their intention to consume the tested drug, and when patrons found confirmation of their drug content, they reported being more likely to consume the tested drug. These results were consistent with prior research demonstrating an association between users' beliefs about the nature of the substances and drug-checking results, where divergence between the two was associated with a lower likelihood of taking the drug and convergence associated with a higher likelihood of taking the drug (1 2).

Unlike many other pill-testing services abroad, information about the samples of drugs analysed was not conveyed to other festival patrons in real-time, for example through noticeboards showing the drugs detected, or announcements on the stages of the festival describing particularly dangerous drugs found in circulation. Having gained experience in providing information to the people whose drugs were being tested, those planning pill testing at future Australian music festivals could consider strategies for broader dissemination of information.

Although a key rationale for pill testing is to reduce drug-related harm and drug-related deaths at music festivals, due to the small number of adverse drug-related incidents at festivals in the local area each year it would not have been possible to say whether any changes were statistically significant. However, if pill testing was scaled-up to other locations in the Australian Capital Territory, and to other regions of Australia, it may be feasible to track its impacts on morbidity and mortality in a larger population of festival attendees.

Overall, the evaluation provided support for the development of further trials of pill testing in Australia, and highlighted the importance of independent, external evaluations to assist in building the evidence base around pill testing.

FINDINGS COMMENTARY Drug safety testing services have the potential to directly reduce harm by preventing use of dangerous substances or substances whose effects the user is not expecting and is not prepared for, and to indirectly reduce harm through information and education for event attendees and providing intelligence to other services. The featured paper evaluated a pill testing intervention at an Australian music festival, concluding that it was successfully rolled out, valued by service users and stakeholders, and generated information that would support the development of further pill testing programmes in the region (including other models of pill testing). While this is positive news for a type of intervention still in relative infancy, additional aspects of the service need unpacking in order to understand the potential limitations of this service, and how these correspond to the limitations of drug safety checking in general.

Inability of the service to assess purity

One of the more consequential points in the evaluation was the inability of the service to assess the purity of substances, combined with the expectation or misunderstanding by some patrons, staff, and other stakeholders that it *could*.

- In interviews with patrons, the terms 'purity' and 'strength' were "regularly used" to describe the substances that were tested, and "subsequently to make inferences about relative safety".
- In interviews with stakeholders, "many ... used the term purity to refer to the testing results".

The authors described this as a "misunderstanding or misinterpretation of the testing scores". They did not explain what a precise representation of the results would have been, or what stakeholders 'meant' by purity, advising only that "careful consideration should be made in developing standardised explanatory language used to deliver the drug testing results".

"Results indicate that careful consideration should be made in developing standardised explanatory language used to deliver the drug testing results as misinterpretation was common."

Precise language is indeed important, but it is unclear why the evaluation did not go further, for example:

- interrogating why and where the misunderstanding occurred, or, if beyond the scope of the evaluation, stating clearly that further iterations of pill testing would benefit from an answer to why and where the misunderstanding occurred;
- asking why this service did not or could not test for strength/purity when other point-of-care drug testing services were already doing it (see [▶ section below](#)).

Confusion about what could be determined from testing may have also extended beyond the service. As indicated in the appendices to the independent evaluation report, *researchers* asked about strength/purity in the follow-up interviews with patrons and in the post-test survey:

"Were you told by staff that the drug tested may be of higher strength/purity than average or than what you may be used to using?"

It is unclear to what extent the authors were aware of the limitations of the scientific methods for pill testing at the time they collected the data, which could be why the misunderstanding or misinterpretation was not further interrogated.

It is also unclear whether the introduction of this language in the evaluation instruments could have contaminated the language of some stakeholders. For example, a question about purity could have elicited a response using the same terminology.

In a section in the featured report on suggested changes to evaluation instruments, the researchers specifically said that the question in the post-test survey referring to strength/purity "should be modified [in future trials] based on the equipment used/information able to be provided". Given the wider context described above, this would seem to be an acknowledgement that the misunderstanding about the limitations of the drug testing on trial had filtered through to the evaluation itself. However, this was not explicit and can only be inferred from the text.

Understanding the limitations of drug safety testing

Point-of-care testing is different to testing in a fixed laboratory setting. Services offering the former tend to have additional requirements around delivering quickly, having portable equipment, and having a smaller space from which to work.

The featured paper outlined the pros and cons of two options for drug testing – fourier-transform infrared spectroscopy (FTIR) and mass spectroscopy:

*"FTIR has been identified as the **most robust** technology for point-of-care drug testing. A variety of different drug testing technologies are currently available, each having been assessed for suitability as a point-of-care harm reduction intervention (1 2). The FTIR spectrometer is regularly chosen for a variety of perceived advantages in the festival setting, **including** its ability to accurately identify a wide range of substances, its compact size, relatively quick runtime (approximately five minutes or less), and ease of operation (requiring minimal sample preparation). In contrast, mass spectrometry is the current 'gold standard' in forensic drug analysis, however the cost and technical skills needed, along with the extended time period needed to complete an analysis, make it more challenging to implement in a point-of-care environment like a music festival health service."*

In this head-to-head, only fourier-transform infrared spectroscopy was described as being realistic for testing in a festival environment. This, combined with the inability of fourier-transform infrared spectroscopy to test for purity, created the impression that – within current resource and technology constraints – testing for purity at festivals was not possible:

"As testing equipment advances and becomes more affordable it will be possible to test for purity as well as contents, and the information provided to patrons about these results will need continued review."

"Current testing equipment provides information on the contents of the substance, but not the purity or dose. This appears to be

misunderstood by patrons and stakeholders. Future planning should consider how to best deliver testing results to patrons."

This was (we should assume *unintentionally*) misleading. Fourier-transform infrared spectroscopy is the same method that has been used in UK festivals and other situations necessitating a quick turnaround time. However, it is not the *only* method that has been used.

An inquest into the death of six patrons of music festivals in New South Wales (a neighbouring state on the east coast of Australia) heard [extensive evidence](#) about the range and efficacy of testing methods currently available. With the input of Dr David Caldicott, emergency medicine specialist who also works for Pill Testing Australia, the inquest heard that there is a common misunderstanding that drug safety checking services cannot test for purity:

"One of the oft repeated criticisms of drug checking at music festivals is that purity cannot be tested for. Clearly this is incorrect. There are methods for testing for purity. Usually this is done in a fixed laboratory setting using a form of spectrometry. However, the court heard that there has been testing for purity in a music festival setting in parts of Europe for many years. It requires some commitment to set up, as expensive equipment must be transported carefully and efficiently."

Dr Caldicott's point is significant because it illustrates that a limitation of one particular service or method can be used to criticise drug safety testing in general. In the case of the featured trial, a lack of transparency or understanding about the methods used (and the methods not used) implied that at present festival or other point-of-care drug safety testing could not provide information on strength/purity, which is not the case.

In a [paper](#) published in 2020 on pilot drug testing in three UK settings (a drugs service, community centre, and a church), the methods of analysis were described in the following way:

*"Samples were deposited in locked metal boxes, service users received a unique sample ID number and were asked to return approximately an hour later. Samples were transported to a mobile lab, catalogued and **up to 6 different analyses were conducted to assess the composition and strength of samples as accurately as possible within the specified time period.** These included Fourier-transform infrared spectroscopy, colorimetric tests, fentanyl strips, ultra violet spectroscopy, mass loss analysis and, additionally, the last 2 dates trialled atmospheric solid analysis probe-mass spectrometry in partnership with a university chemistry department. Developments in mass spectrometry – including miniaturisation, mobilisation and ruggedisation of equipment – allow for easier transportation, reduced costs, and simplified maintenance and use, which all increase its potential application to drug safety testing. **All results were triangulated and tests repeated if necessary, with quantification provided by UV spectroscopy and mass loss analysis.**"*

The [methods used](#) at the UK's first onsite drug safety checking service at a festival in 2016 included up to three analytical techniques, with results triangulated where appropriate.

Even without an in-depth understanding of the science behind drug testing, these processes stand in stark contrast to the pared-down process seen at the Groovin the Moo festival in 2019, summarised in the featured paper:

"According to service data collected ... 126 samples were analysed at an average rate of one sample every 2–3 minutes. This rate of testing was close to capacity for two [FTIR] instruments staffed by four qualified chemists."

However, [according to](#) the New South Wales inquest, it seems that FTIR was not supposed to be the only method of analysis at the Groovin the Moo festival in 2019, which the featured evaluation neglected to state. An additional machine (analysing substances using gas chromatography mass spectrometry) was [planned to be](#) used onsite, but had to be set up offsite as it was not functioning properly. This information seems important if we are to get a full picture of the intervention:

"Purity testing was to be trialled this year at the Groovin' in the Moo (GTM) festival. In 2018, only FTIR technology was available, however in 2019, a Gas Chromatography Mass Spectrometry (GCMS) was added. Unfortunately, the machine, which is delicate and had been recently brought from the United States of America, did not function throughout the event. Nevertheless, there is a clear goal to incorporate purity testing in future trials."

Although this turn of events was omitted from the independent evaluation, it was briefly mentioned in the [report](#) from Pill Testing Australia on the same service:

"A gas chromatograph/mass spectrometer provided by Perkin Elmer, including two technicians to operate the equipment, was also made available for use on the day of the pill testing service. Unfortunately, the equipment was not field deployable following damage when being transported from the USA and could not be used in real time. Instead, it was deployed for urgent offsite substance validation."

The featured evaluation referred to a small number of substances that were taken offsite for further testing, but exactly what was taken away or why was not clear. From the comment of a chemist it seems that there may have been cases of an unidentified synthetic substance being brought in by patrons for testing – 'unidentified' meaning that it could not be matched onsite to a substance already in the FTIR spectra library:

"A small number of substances were taken from the pill testing site by Australian National University (ANU) chemists who hold licences permitting them to possess and study such substances for further testing. So I think this particular drug had been detected before, by the Government Analytical Labs, they were not sure what it was, completely sure what it was. They hadn't gone to the stage of confirming the identity of the drug against a reference material that they would purchase from a vendor. So they weren't entirely sure about the identity of the drug ... So we did two things, I guess, in the festival environment, we saw that this compound was in the community, and presumably being used by the unaware, and also we were able to identify that drug, and to do that we used some different techniques ... So I think we provided some idea of the community availability of the substance, but also actually what this substance is. So I think both those things are positives." Chemist

It is unclear from the independent evaluation whether this included or referred to the dangerous substance N-ethyl pentylone. Fortunately, the [report](#) from Pill Testing Australia provides the missing detail. Pill Testing Australia [said that](#) seven samples were only "tentatively identified" as N-ethyl pentylone using FTIR, and therefore we can presume were subsequently sent offsite for further testing.



The Loop @WeAreTheLoopUK · Aug 12, 2018
 N-ethylpentylone in pill and crystal form found at #Boardmasters2018. These are potentially lethal. Looks and smells similar to MDMA. V long-lasting stimulant that can last for days and cause psychosis. Seek medical attention immediately if unwell.



N-ethylpentylone in crystal and pill form

1 78 60

Example of a social media alert raising awareness of potentially dangerous substances in circulation

Towards the end of April 2019, media outlets were reporting that the pill-testing service at the Groovin the Moo festival potentially saved seven lives ([1](#) [2](#) [3](#)) – referring to the seven patrons who had been mis-sold N-ethyl pentylone, and subsequently chose to dispose of the drugs in an amnesty bin. However, underneath this headline was two key points:

- As indicated above, workers were probably not able to immediately confirm to patrons that they were in possession of N-ethyl pentylone using the onsite testing service.
- Other people inadvertently in possession of N-ethyl pentylone would have remained unaware and at risk due to an agreement with the Australian Capital Territory Government that the pill-testing service would not share information about potentially dangerous substances in real time with other

festival patrons.

Seizures of N-ethyl pentylone worldwide have [documented](#) it in powder, crystal, rock, capsule, and tablet forms, and indicate that it has been mis-sold as MDMA, which can leave users unaware of additional risks of harm [including](#) drug poisoning, or symptoms [such as](#) agitation, paranoia, and raised blood pressure.

[When](#) similar batches of mis-sold drugs have been detected at UK festivals, alerts have been posted to social media with photographs and details of the contents, and shared by the social media accounts of festival management, police and other on-site agencies (see [▶ above example](#) of a social media alert).

A politically-contentious intervention

Drug safety checking has had a politically 'rocky road' to implementation in Australia. Deputy Coroner Harriet Grahame who led the inquest into the festival deaths of six young people [recommended that](#) "drug checking should take place on-site at music festivals and also at a community-based service". However, soon after the Premier of New South Wales reiterated her opposition. As reported in the Sydney Morning Herald, [she said](#):

Pill testing would "unintentionally [give] young people the green light that it's OK to take the drug so long as you test them".

"What might be OK for one person taking a tablet could be lethal for another person. Let's not pretend that pill testing would have saved these lives".

Though festival- and club-based drug safety testing services have been run at different sites across the UK with the agreement of local law enforcement, central government has been [reluctant](#) to support this type of intervention. In 2018, Home Office minister Victoria Atkins [said](#):

"No illegal drug-taking can be assumed to be safe and there is no safe way to take them. The Government's approach remains clear: we must prevent illicit drug use in our communities and help those dependent to recover, while ensuring that our drugs laws are enforced. While operational decisions are a matter for Chief Constables, the Government and the public expect the police to enforce the law."

However, the deaths of two young people at a music festival in May of that year, bringing the total deaths in two years to 11, may have put [additional pressure](#) on the government. In 2019, the Home Office issued the [first](#) drug testing license to the charity Addaction for a service in Somerset in order for research to be undertaken. The month-long pilot offered anyone over the age of 18 the opportunity to have their drugs analysed anonymously. Speaking to government concerns, Addaction [emphasised that](#) "All partners involved in this pilot agree that they are not condoning the use of illegal drugs".

Drug safety testing was piloted at a UK festival in 2016, enabling attendees to submit their illicit drugs for forensic testing and receive harm reduction advice (see Effectiveness Bank [analysis](#)). Exploring the operational and behavioural outcomes of this onsite service, the study generated findings that could inform drug safety testing practices, as well as festival security and policing procedures, in UK festivals. For example, it revealed that substances acquired within the festival grounds were more than twice as likely to be at variance with what they were sold as compared with those bought offsite (27% vs. 12%), and as such, existing security procedures combined with onsite dealing practices could increase drug-related harm by encouraging offsite drug use. Through daily security advisory group meetings, all onsite agencies at the festival (including police, welfare, security and paramedical services) were updated on the results of drug testing, which

revealed significant mis-selling onsite. This prompted the circulation of targeted alerts with the support of festival management and police, including for chloroquine and ketamine mis-sold as cocaine, and pills with high MDMA content.

In the New South Wales [inquest](#), Professor Measham, who is co-founder and director of drug safety checking service [The Loop](#), and who ran the above UK pilot, spoke about what can be gleaned from evaluations about the effectiveness of drug safety checking. The coroner "commended" her "careful evidence", which avoided either overselling or discounting the science. Measham said:

"It's very difficult to say whether it would save a life because it's so tricky to prove a causal relationship and to know why somebody does or doesn't die. It's very difficult to unpick all of the different factors ... I think the evidence base is building in relation to drug safety testing reducing drug-related harm and we would expect that to follow through in terms of it also reducing drug-related deaths, but we don't have yet a solid evidence base. It's emerging."

Appraising the evidence, the coroner [concluded that](#):

"While it may not be possible to point to a particular person and say 'that life has been saved'. There is evidence of behavioural change, with the potential to reduce harm or death."

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