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ACT Pill Testing Trial 2019: Program evaluation

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Abbreviation and notation table

Abbreviation or notation	Meaning
M	Mean
SD	Standard deviation
n	Subsample size
<i>t</i>	<i>t</i> -value of <i>t</i> -test for mean difference of single group or two related groups
<i>p</i>	<i>p</i> -value: the probability of finding the observed, or more extreme, results when the null hypothesis (H_0) of a study question is true
OR	Odds ratio: a measure of association between an exposure and an outcome. The OR represents the odds that an outcome will occur given a particular exposure (e.g. self-identified as female), compared to the odds of the outcome occurring in the absence of that exposure.
χ^2	Chi-square value of the chi-squared test that measures how expectations compare to actual observed data (or model results).
CI	Confidence interval that gives an estimated range of values which is likely to include an unknown population parameter.
EPIC	Exhibition Park in Canberra
FTIR	Fourier-transform infrared spectroscopy
GTM	Groovin the Moo
ILU	Initial likeliness to use
PTA	Pill Testing Australia

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Executive summary

In summary, our evaluation found that the ACT Pill Testing Trial was implemented as planned, that the service was well received by patrons and stakeholders, and that the service impacted positively on patron knowledge, attitudes and behaviours. The 2019 Groovin the Moo festival Pill Testing Trial, implemented by Pill Testing Australia, was the second government-sanctioned trial of its type in Australia. It was designed and implemented collaboratively between the key stakeholders, primarily Pill Testing Australia, Cattleyard Promotions, and key ACT Government agencies ACT Health and ACT Policing. Enough lead time was available to develop the trial carefully, with the result that it was implemented as planned and produced the types of outputs that the key stakeholders expected to see. The service provided harm reduction information to 234 patrons and identified seven substances containing a potentially dangerous substance, *N*-ethyl pentylone. The experience of testing and the accompanying harm reduction brief interventions produced a number of positive results in terms of participants' self-reported drug harm reduction knowledge, their trust of health providers and other written sources of harm reduction information, and stated behavioural intentions regarding drug use.

Overall, the evaluation produced no strong arguments against the development of further services that provide pill testing and harm reduction information for people who use illicit drugs. The findings are supportive of such initiatives.

Evaluation framework

The evaluation applied Patton's Utilisation-focused Evaluation model. Seven data sources were used: pre- and post-testing interviews with the service participants, observational data, service data, follow-up interviews with participants, follow-up interviews with other stakeholders, and indicators derived from routinely collected administrative data.

Key findings against the evaluation questions:

The evaluation set out to answer six specific questions, producing the following findings:

1. The pill testing service was implemented as planned. The service was successful, particularly given limitations of context (including no official funding source and restrictions around signage). Over 200 patrons used the service and most personally received pill testing information and a brief intervention. Seven samples of a potentially highly harmful substance, *N*-ethyl pentylone, were identified. The pill testing information and brief interventions were valued by patrons. Results indicate that careful consideration should be made in developing standardised explanatory language used to deliver the drug testing results, as misinterpretation was common. Notably, this misinterpretation did not lead to any negative consequences, and positive behavioural change was still evident. Co-location of the pill testing service with the festival medical services facilitated information exchange in providing care for festival patrons. Furthermore, expected lines of communication between the pill testing service, the ACT Ambulance Service, ACT Health, ACT Policing, and the festival promoters were achieved both prior to and during the event.
2. The service was received positively by patrons and key stakeholders. Patrons enrolled in the evaluation rated the service highly. Most rated the clarity of the information provided by the service as good or very good and reported that they would use a pill testing service again were it available. Most also indicated that they would tell others about the service. Follow-up data indicates that patrons valued the opportunity to discuss their drug use in a non-judgmental environment, and found the information provided to be useful. Stakeholders reported that the service was implemented as intended and ran well. No stakeholder reported concerns about the trial service. There was general support for continuing to operate pill testing services in the ACT, with stakeholders also indicating support from within their respective organisations. All stakeholders were supportive of the trial model used, particularly the importance of the harm reduction information provided, although many expressed desires to also consider other models.
3. In terms of attitudinal change, participants were more willing to use healthcare providers, brief intervention providers/peer counsellors, home pill testing kits, and written harm reduction materials

after attending the service. In terms of behavioural change, service data shows that all those who had a very dangerous substance detected disposed of that drug in the amnesty bin. Patrons felt more knowledgeable about how to prevent the potential harms of drugs after accessing the service. Patrons' self-reported changes in intention to use drugs were mixed. When a patron was told that their drug was not what they expected it to be, they were less likely to take that drug. When a patron was told that their drug was what they expected it to be, they were more likely to take that drug. Importantly, follow-up data suggests that most of those whose drug was identified to be what they expected still took the drug, but reported using harm reduction knowledge to reduce their risks of harm. These follow-up qualitative data provide novel information about patron behaviour, although the number of interviews was small and we encourage further research in this area.

4. In the context of the trial, the program produced valuable information about illicit drug availability in Canberra, including the identification of a substance previously unidentified in the ACT. The authorities used this information as planned, which included notifying patrons in the service, adjoining festival medical services and ACT Health when *N*-ethyl pentylone was discovered. The proportion of tested drugs identified as MDMA was considerably higher in the 2019 trial than in the 2018 one. This was considered by a range of key stakeholders to be a particularly important finding, consistent with other sources of information about high purity MDMA in the Canberra drug market at the time.
5. Stakeholders reported that the pill testing service was delivered as expected, and that all parties were supportive of the trial and of developing a pill testing program in the ACT. While stakeholders and patrons reported on elements of the service that could be improved, none reported adverse, unintended consequences of the trial.
6. The Canberra Pill Testing Trial was implemented as planned. We find support for the development of further services that provide pill testing and harm reduction information for people who use illicit drugs at festivals. We have identified a number of strengths of the programs that should be retained as well as potential program improvements to consider in future pill testing service design and delivery.

These findings support the development of further pill testing trials in Australia, using diverse implementation models, with a focus on designing and implementing the services in a manner that is responsive to their unique contexts, rather than applying any single implementation approach. The findings also highlight the importance of independent, external evaluations to assist building the evidence base around pill testing in this nation and internationally.

1 INTRODUCTION

This is the final report of the external, independent evaluation of the 2019 Canberra Groovin the Moo (GTM) Pill Testing Trial service which was conducted at Exhibition Park in Canberra (EPIC) on 28 April 2019.

1.1 EVALUATION PROGRAM THEORY

Here we document the program theory underpinning the pill testing trial. Program theory has been defined as:

an explicit theory or model of how an intervention, such as a project, a program, a strategy, an initiative, or a policy, contributes to a chain of intermediate results and finally to the intended or observed outcomes. A program theory ideally has two components: a theory of change and a theory of action. The theory of change is about the central processes or drivers by which change comes about. ... The theory of action explains how programs or other interventions are constructed to activate these theories of change. (Funnell and Rogers 2011: xix)

The following program theory has been drafted by the evaluation team.

1.1.1 The theory of change

A significant (albeit unknown) proportion of people attending the 2019 Canberra GTM would have intended to consume drugs at the festival. They are motivated to protect their health and that of their friends at the festival. They have varying degrees of awareness of the potential harms of drug use, as well as of the potential enjoyment of the drug use experience. Media publicity and word-of-mouth communications about the adverse health consequences of drug use (including deaths) at music festivals, linked to their awareness that they do not know what chemicals are in the drugs they have available for consumption, motivate them to learn about the drugs in their possession. Having access to pill testing on-site and learning about their drugs (including contaminants), combined with advice provided there by expert chemists, doctors and peer educators about the dangerousness of their drugs and how to minimise the harms associated with their use, motivates them to make better-informed decisions about their drug use. In addition, being aware that there will be no risk of apprehension by police or other security personnel through using the pill testing service means that barriers to using the service are not significant. The combination of the perceived dangers of drug use, expectations of benefits from the pill testing service, and receiving information that they see as credible (since it comes from expert chemical analysts, physicians and peer educators) enhances people's ability to take effective action to protect their health and well-being—their self-efficacy—related to drug use.

1.1.2 The theory of action

Pill Testing Australia (PTA) designing a pill testing model well-suited to the contemporary Canberra context, specifically the 2018 and 2019 GTM Canberra music festivals, and engaging in mutually respectful negotiations with the ACT Government authorities, the GTM promoter and other stakeholders, would lead the ACT Government to approve a trial of pill testing within its jurisdiction. The design of the trial would meet a set of criteria specified by the ACT Government, including: 'The limitations of pill testing must be communicated to all patrons using the pill testing service, including that testing cannot guarantee the identification of all substances in a substance'; and 'Regardless of the pill testing result, each patron must be advised that drug taking is inherently unsafe and safe disposal is the best way to avoid risks to health'. The arrangements for the testing and counselling put in place by the collaborating entities (especially PTA, Cattleyard, DanceWize, ACT Policing and the ACT Ambulance Service) would result in pill testing patrons building their self-efficacy to engage in health-enhancing behaviours relating to drug use, including deciding not to use drugs, or to use them in a less harmful manner than otherwise. Patrons would share their knowledge, derived from the pill testing and peer counselling services, with their peers, diffusing the benefits of the service to a wider group of potentially at-risk people who use drugs. Health and law enforcement agencies would obtain otherwise unavailable information from the testing about the psychoactive substances circulating at the music festival and, if warranted, would use that information to issue warnings

to the public and to health services about potentially dangerous substances. The information could also be used to enhance strategic information systems about trends in drug availability and use in the Canberra community.

2 UNDERPINNING EVIDENCE

In recent years, there has been significant public debate in Australia on the merits of introducing pill testing. Advocates argue that pill testing can reduce drug-related harm, connect hard-to-reach populations with health services, monitor drug markets for new or particularly dangerous substances, provide assistance to emergency services for treating drug-related presentations, and contribute to an early warning system for dangerous substances (Ritter 2014; Willis 2019). Opponents argue that 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 to patrons by implying that some drugs are safe to consume (Trask and Burgess 2018; Winstock, Wolff, and Ramsey 2001).

In response to several recent drug-related fatalities at music festivals, pill testing is being more seriously considered as a harm reduction service at music festivals. While there are many contexts in which people commonly take drugs, people who attend music festivals are more likely to use illicit drugs than the general population (Barratt et al. 2019; Day et al. 2018). The most common substances reported used in the past 12 months by Australian festivalgoers are alcohol, cannabis, MDMA and cocaine (Day et al. 2018; Barratt et al. 2019).

Pill testing services (also known as drug checking or drug safety testing) have existed for over 50 years and now operate in more than 20 countries across Europe, the Americas and New Zealand (Barratt, Kowalski, et al. 2018; Benschop, Rabes, and Korf 2002; Brunt et al. 2017; Kriener et al. 2001; Measham 2018). Pill testing is a public health intervention that allows the general public to submit substances for chemical analysis. Services use a range of delivery models (e.g. on-site or fixed-site services), methods of chemical analysis and approaches to communicating analysed results (Barratt, Bruno, et al. 2018; Measham 2018). A key part of many pill testing services is to use a harm reduction approach with people who use drugs, and provide health information to accompany test results (Benschop, Rabes, and Korf 2002; Hungerbuehler, Buecheli, and Schaub 2011).

The program theory documented above is underpinned by four assumptions, discussed below:

- (a) The need for action to reduce harms associated with drug use at festivals;
- (b) The effectiveness of pill testing services;
- (c) Pill testing services do not cause increased levels of drug use, nor of drug-related harms; and
- (d) Patrons of festivals care about their health and that of their peers and welcome services that assist them to minimise risks and enhance wellbeing.

2.1 ASSUMPTION 1: THERE IS A NEED FOR ACTION TO REDUCE HARMS ASSOCIATED WITH DRUG USE AT FESTIVALS

People who attend music festivals are more likely to report illicit drug use than the general population and there is significant concern about the illicit drug-related harms affecting patrons of festivals (Day et al. 2018; Lim et al. 2008). There has been increased attention to the issue after the deaths of several young festival attendees over the summer period of 2018 to 2019. NSW Health data presented to the 'Inquest into the death of six patrons of NSW music festivals' suggests a substantial increase in drug-related deaths and associated harms at festivals (State Coroner's Court of New South Wales 2019). Over the last decade in Australia, around 12 deaths were associated with music festivals, including four festival-related deaths across Australia over the summer of 2015. From September 2018 to January 2019, five young people lost their lives after consuming drugs at music festivals. The number of deaths over the last summer demonstrates a marked increase within a short period. In addition to this spike in drug-related deaths at festivals, research also shows that a small but not insignificant number of festival patrons feel that they require medical assistance and/or seek medical assistance at festivals following their use of illicit drugs (Gibbs et al. 2019; Barratt et al. 2019).

Of course, pill testing is just one of a range of interventions that have the potential to reduce drug-related harms at festivals. The NSW Deputy Coroner, in her 8 November 2019 findings relating to the deaths of six young NSW festival patrons, highlighted the importance of improving emergency health care responses:

Due to the predictability of drug-related presentations at electronic dance music events, dedicated onsite medical care is essential, with an increasing recognition that basic first aid should be supplemented with multidisciplinary critical care teams capable of providing a higher level of care.

Distance to a tertiary health facility of more than one hour by road may increase risk of drug-related harm at a music festival. (State Coroner's Court of New South Wales 2019: 83)

It is therefore argued that festivals represent a unique setting to engage people who may not usually access health-related information about their drug use.

2.2 ASSUMPTION 2: THERE IS EVIDENCE FOR THE EFFECTIVENESS OF PILL TESTING SERVICES; HOWEVER, MORE IS NEEDED

Despite a range of pill testing services operating globally, the evidence base for pill testing is still developing and few independent evaluations have been published. From Europe, it appears that the introduction of pill testing has not increased drug use, uptake or drug-related deaths (Benschop, Rabes, and Korf 2002; Hungerbuehler, Buecheli, and Schaub 2011). Evidence suggests that pill testing can be useful for monitoring drug markets and identifying particularly dangerous or new psychoactive substances, and this information has been used to issue public alerts and bring about changes in drug markets (Brunt et al. 2017; Ontario Agency for Health Protection and Promotion and Leece 2017; Spruit 2001; Vidal Giné et al. 2017). Pill testing can also effectively engage with people who take drugs for the purposes of harm minimisation (Benschop, Rabes, and Korf 2002; Hungerbuehler, Buecheli, and Schaub 2011).

Studies have, however, tended to focus on service processes rather than behavioural or health outcomes of using a pill testing service. One outcome that has been studied is people's intention to discard the substance they had tested after receiving the result; however, the findings of these studies vary widely, as do the methods used to determine disposal rates (Ontario Agency for Health Protection and Promotion and Leece 2017; Measham 2018). There is a need for further research into the extent to which, and how, pill testing changes people's drug taking behaviour in the short and longer term, if it changes it at all. Given that few pill testing trials have been conducted in Australia, there is a need for further evidence of the effectiveness and feasibility of different pill testing models in the Australian context.

2.3 ASSUMPTION 3: PILL TESTING SERVICES DO NOT CAUSE INCREASED LEVELS OF DRUG USE, NOR OF DRUG-RELATED HARMS

It is possible that pill testing produces adverse consequences. As pointed out above, it has been argued that such interventions may encourage or normalise drug use, or give a false sense that some drugs are safe to consume (Trask and Burgess 2018; Winstock, Wolff, and Ramsey 2001). These claims are not borne out by the evidence available to date. A background paper commissioned by the European Monitoring Centre for Drugs and Drug Addiction for its authoritative publication *Health and social responses to drug problems: a European guide* (Brunt 2017: 12) points out that:

Another common criticism is that drug testing encourages young people to take drugs, or to take more drugs than they would if such services were not available. This criticism appears to be unfounded, and, in fact, it has been shown that drug use does not increase following the introduction of a drug-testing service in a country (Buecheli et al., 2010). In addition, the prevalence of drug use does not seem to be higher in countries that have drug-checking systems in place (EMCDDA, 2016). In addition, previous research has shown that drug users who use testing services do not use more drugs than drug users who do not do so (Benschop

et al., 2002). In fact, the same study also found that the presence of drug-checking services did not encourage those who do not use drugs to begin drug use.

2.4 ASSUMPTION 4: PATRONS OF FESTIVALS CARE ABOUT THEIR HEALTH AND THAT OF THEIR PEERS AND WELCOME SERVICES THAT ASSIST THEM TO MINIMISE RISKS AND ENHANCE WELLBEING

Australian research shows that people who use illicit drugs at festivals perceive risks associated with their drug use (White et al. 2006) and want information about the contents of the substances they intend to use (Peacock et al. 2019; Johnston et al. 2006; Barratt, Bruno, et al. 2018; Krieger et al. 2018; Day et al. 2018). While we do not know what proportion of European festival-goers who use drugs access pill testing services when available, research on acceptability of pill testing shows a high interest in using testing services at festivals and elsewhere. For example, a survey of Australians who use psychostimulants found that a 94% would use a festival-based pill testing service and that most (80%) were willing to wait an hour for their result (Barratt, Bruno, et al. 2018).

Research suggests that festival-goers and young people who take drugs currently attempt to find out information about their drugs through unreliable sources such as friends who have used the drug previously, dealers and websites (Day et al. 2018). Pill testing services likely provide a more reliable source of health information about illicit drugs than the networks currently used by young people seeking information about their drug use.

3 THE EVALUATION FRAMEWORK AND METHODS

Given the need for further evidence of the feasibility of providing pill testing in Australia and its effectiveness for changing drug use behaviour, and producing policy-relevant information on the availability and use of drugs in the Canberra community, an external, independent evaluation of the 2019 ACT Pill Testing Trial was conducted by researchers from the Australian National University. Financial support for the evaluation was provided by ACT Health.

The purpose of the evaluation is to inform policymaking in the ACT and to contribute to evidence on pill testing in the Australian context. A further aim is to develop a strong evaluation framework for future evaluations of pill testing services in Australia. This research is the first independent analysis of the impacts of pill testing in Australia.

3.1 THE EVALUATION MODEL

This evaluation applies the Utilisation-focused Evaluation model. Utilisation-focused Evaluation is defined as follows:

Program evaluation is the systematic collection of information about the activities, characteristics, and results of programs to make judgements about the program, improve or further develop program effectiveness, inform decisions about future programming, and/or increase understanding. Utilization-focused program evaluation is evaluation done for and with specific intended primary users for specific, intended uses. (Patton 2008)

The Utilisation-focused Evaluation model has been assessed as being one of the nine 'Best approaches for twenty-first-century evaluations' (Stufflebeam and Coryn 2014) using the international program evaluation standards (Yarbrough et al. 2011) as the assessment criteria.

3.2 THE EVALUATION QUESTIONS

The evaluation has assessed the quality, value and importance of the pill testing trial, that is, its implementation and outcomes within its unique, real-world context. Six evaluation questions have informed the design and implementation of the evaluation. (The term 'program' in the following questions refers to the 2019 Canberra GTM Pill Testing Trial.)

1. How successfully was the program implemented, given its specific context?
2. To what extent was the program received positively by participants and by other key stakeholders?
3. To what extent did the program result in participants' attitudinal and/or behavioural change related to illicit drug use?
4. To what extent did the program produce valuable information about illicit drug availability in Canberra, and how did the authorities use that information?
5. Did the program have any unintended consequences, either positive or negative? If so, what were they?
6. Should the program continue and, if so, what changes in the program and its contexts are desirable?

Although a key underlying rationale of pill testing programs generally is that the availability of pill testing is expected to reduce the incidence of drug-related mortality and morbidity at music festivals, this is not included explicitly within the evaluation questions. The reason for this is the small number of adverse drug-related incidents at festivals in the ACT each year, meaning that there is insufficient power to detect statistically significant changes in incidence. If pill testing is scaled-up to other locations in the ACT, and to other jurisdictions, it may be feasible to track its impacts on morbidity and mortality incidence in a larger population of festival participants.

3.3 THE EVALUATION METHODS AND INSTRUMENTS

Seven data sources were used in the evaluation: pre- and post-testing surveys with the service participants, observational data, service data, follow-up interviews with participants, follow-up interviews with other stakeholders, and indicators derived from routinely collected administrative data. Details follow.

Pre-testing survey: On entering the service, pill testing patrons were screened by the evaluation team members for eligibility for participating in the evaluation (including being aged 18 years or older, and not intoxicated). Those identified as eligible completed a brief survey before presenting their substances for testing or accompanying a friend who was presenting the substance for testing. A total of 234 pill testing patrons entered the service. Of these, 22 declined to enrol in the evaluation and 53 were under the age of 18 years of age (and hence were excluded from the evaluation), resulting in 159 people participating in the evaluation. One of these was subsequently excluded from the analysis as they knowingly presented a sample of candy for testing, leaving a total of 158 valid evaluation participants. All participants completed the pre-test survey. The data were analysed using quantitative methods.

Post-testing survey: Once they had received their testing results and completed the brief intervention delivered by the DanceWize Key Peer Educators, evaluation participants completed a second survey. 147 of the 158 pre-test participants also completed the post-test survey. The survey data were analysed using quantitative methods.

Observational data: During the day of the 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, any incidents that occurred, and incidental observations.

Service data: Pill Testing Australia published data on the services they provided at the festival, and the results of the testing, in a report released on 25 August 2019 (Vumbaca et al. 2019). Between July 2018 and August 2019 the evaluation team were also involved in informal discussions with Pill Testing Australia about the progress of the service, facilitators and barriers to implementation, and logistical issues. This information was used to inform the suggestions and conclusions presented in this report.

Follow-up interviews with participants: Eleven in-depth, semi-structured interviews were conducted in August/September 2019 with people who had participated in the pill testing service. The topics covered included basic demographics, participants' accessing the service, their expectations about their drugs prior to testing, their attitudes and drug-related behaviours prior to the festival, their experiences of the pill testing service, their attitudes and behaviour soon after they left the pill testing service and in the following months, etc. The interview data were analysed using qualitative methods. These follow-up data provide novel information about patron behaviour, although the number of interviews was small and we encourage further research in this area.

Follow-up interviews with other stakeholders: Participants were invited to provide contact details for a follow-up interview after they completed the post-testing survey. Key stakeholders for the trial and evaluation, including those involved in the implementation of the trial and others whom the evaluators believed were likely to be users of the evaluation findings, were interviewed in August/September 2019. These stakeholders were purposively sampled. In-depth, semi-structured interviews were conducted with 11 stakeholders. They include representatives of ACT Health, the ACT Ambulance Service, ACT Policing, Pill Testing Australia, and DanceWize. Unfortunately, representatives of the GTM promoter, Cattleyard Promotions, were not available for interview. Topics covered included the professional backgrounds of the interviewees and their involvement in the 2019 pill testing service, their 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, other pill testing service delivery models, etc. The interview data were analysed using qualitative methods.

Indicators derived from routinely collected administrative data: These data were collected with the assistance of the data custodians, and covered the domains of policing and health services at the GTM festival.

3.4 ETHICS AND CONFIDENTIALITY

The ethical aspects of this evaluation, including the measures taken to preserve evaluation participants' confidentiality, have been approved by the ANU Human Research Ethics Committee (Protocol 2018/648). The evaluation is also a Prescribed Study under the *Epidemiological Studies (Confidentiality) Act 1992* (ACT) by virtue of the provisions of the *Epidemiological Studies (Confidentiality) Amendment Regulation 2019* (No 1), Subordinate Law SL2019-6, dated 26 April 2019. The evaluation team acknowledges with thanks the work undertaken by officers of ACT Health and the Justice & Community Safety Directorate in having the ethical and confidentiality elements of the evaluation strengthening through having it declared a Prescribed Study under the Act.

3.5 INTENDED OUTCOMES

Consistent with the application of the Utilisation-focused Evaluation model, the first and most prominent intended outcome from the evaluation is providing evaluative information to the ACT Government, Pill Testing Australia, Cattleyard Promotions, and other stakeholders, to assist them in future decision-making about pill testing interventions in Australia.

Two additional intended outcomes are worthy of note:

1. Development of new data collection instruments for use in this evaluation, to be made available for use by evaluators of future pill testing services in Australia or internationally.
2. Establishment of baseline data for ongoing evaluation of pill testing in Australia including, but not limited to:
 - a. The production of new knowledge about how to implement an event-based pill testing service within the specific ACT context;
 - b. The production of new knowledge about how participants experience pill testing as a harm reduction intervention;
 - c. The production of new knowledge on the degree to which participants' experience of pill testing contributes to less harmful drug use behaviour, if at all, and if so, how that occurs; and
 - d. The production of new knowledge about pill testing in an Australian context that can be generalised to other settings and parts of the nation to add to the evidence base informing decisions on whether and how to implement similar programs elsewhere.

3.6 PROGRESS REPORT

In July 2019, the evaluation team prepared a Progress Report on the evaluation for ACT Health, who subsequently published it online (Olsen et al. 2019).

4 ANALYSIS

This study employed a convergent mixed methods design: quantitative and qualitative methods were considered complementary during study design, data collection, and data analysis. The findings of this study come from an integration of the concurrent analysis of both datasets. Our mixed methods approach was exploratory, in that we aimed to describe and assess micro- and meso-level processes embedded within the design and enacted through the implementation of the service, as well as describe and assess outcomes of the service relating to values, beliefs, and norms.

4.1 QUANTITATIVE

Survey data were digitised, cleaned and organised for analysis via Excel, Stata and SPSS. Descriptive statistics were recorded to capture: (1) participants' expectation of the drug content and resulting concordance between the expected and actual results; (2) participants' overall impression of the service; and (3) participants' response/reaction to the service (e.g. changing sources of information about drugs, willingness to promote the service, whether information provided was found to be useful). A series of paired *t*-tests were also conducted to examine changes in intended drug use and knowledge on harm reduction (answering research question three). Differences between survey responses pre- and post-test were expected to reflect the immediate impact of the pill testing service. Since participants were not exposed to other confounding conditions between the collection of pre- and post-test data, changes in participants' intended behaviours and knowledge can be attributed to exposure to the pill testing service.

4.2 QUALITATIVE

4.2.1 Interviews

Interviews were digitally recorded and professionally transcribed verbatim. Thematic analysis was used to identify and analyse themes within the data (Braun and Clarke 2006). Transcripts were re-read and re-coded, systematically comparing interviews for themes related to the evaluation questions and topics from the research literature, as well as for emergent themes related to drug use and pill testing more generally. All identifying information, aside from sex and age, has been removed.

Similarly, analysis of interviews with stakeholders was guided by the evaluation questions. In particular, data were analysed for views about the service, the ACT context and attitudes to pill testing more generally. All identifying information, aside from occupational identity, was removed.

4.2.2 Observational data

Handwritten observational notes were typed and read for information related to the evaluation questions.

4.3 TRIANGULATION

The different data sets were collected and analysed concurrently. Triangulation enabled the interweaving of findings from these overlapping datasets via comparison and contrasting. In particular, findings from the qualitative datasets were used to frame and interpret findings from the statistical analyses of the survey data.

4.4 REVIEW OF METHODS AND INSTRUMENTS FOR FUTURE USE

Our review of the data captured in the pre- and post-test surveys has identified some minor amendments to the survey instrument that could usefully be made for future evaluations of pill testing services. These are detailed in the appendices. Overall, we found that the instruments used were short enough to be feasibly deployed in a busy health service, and comprehensive enough to capture key demographic, attitudinal, and behavioural data.

5 2019 ACT PILL TESTING TRIAL DESCRIPTION

The first government-approved pill testing trial to be implemented in Australia was conducted on 29 April 2018 at the Groovin the Moo festival in Canberra by Pill Testing Australia (previously STA-SAFE) (Makkai et al. 2018). The trial was supported by ACT Health and ACT Policing, as well as by Cattleyard Promotions (the promoters of the Groovin the Moo music festivals) and DanceWize (a program of Harm Reduction Victoria: HRVic).

A second trial—the subject of this evaluation—was approved to run at the GTM festival a year later, on 28 April 2019. It was also implemented by the Pill Testing Australia consortium which comprises Harm Reduction Australia, the Australian Drug Observatory at the Australian National University, DanceWize, and Students for Sensible Drug Policy Australia. The front-of-house, on-site pill testing model¹ used was informed by a harm reduction approach that seeks to advise patrons about the contents of the substances they are considering taking and deliver credible harm reduction information, while also providing important data on the drugs in circulation to health and law enforcement agencies.

Following negotiations between the key stakeholders, the ACT Government's inter-directorate Working Group on pill testing developed and promulgated a set of criteria—'Ten key components of a pill testing service'—for the 2019 trial, as follows:

- The service should be established as a stand-alone service with close proximity to the medical area at the event.
- Technical staff who are undertaking the testing must be appropriately trained in the use of the pill testing equipment.
- Staff who are delivering advice and brief intervention about drug use must be trained in drug counselling.
- The pill testing equipment utilised must be able to reliably identify the major drug present in an unknown tablet or powder and potentially detect adulterants and/or substances that are unknown within an acceptable time period.
- The service should maintain regular communication with medical and ambulance personnel in the medical area and the event organiser to brief them on the results of pill testing; this may help inform medical procedures in the event of an overdose or other adverse event.
- The limitations of pill testing must be communicated to all patrons using the pill testing service, including that testing cannot guarantee the identification of all substances in a substance.
- Regardless of the pill testing result, each patron must be advised that drug taking is inherently unsafe and safe disposal is the best way to avoid risks to health.
- The service must provide an amnesty bin for safe disposal of drugs. These drugs must be destroyed onsite such that they cannot be reconstituted and safely disposed of after the event by the service.
- The service must collect evaluative data, including but not limited to:
 - Number of patrons attending the service
 - Number of tests and brief interventions delivered
 - Number of patrons who discarded their drug at the service
 - Chemical content of each sample tested

¹ Front-of-house testing refers to testing services at events or point-of-care environments (e.g. music festival) which offer real-time, as-you-wait results to patrons. As opposed to front-of-house testing, back-of-house testing refers to services that are indirectly provided to users via analyses of drug samples. Drugs samples may be collected as they are confiscated by police or event security or disposed into drug amnesty bins. Results of back-of-house testing tend not to be available to patrons at an event (Wikipedia contributors. (2019, August 26). Drug checking. In *Wikipedia, The Free Encyclopedia*. Retrieved 08:30, September 29, 2019, from https://en.wikipedia.org/w/index.php?title=Drug_checking&oldid=912588306.)

- Evaluative data must be shared with key stakeholders to inform possible future application of pill testing and for operational and safety needs e.g. to inform police and public health of circulating illicit drugs; notably, contaminated drugs, novel psychoactive substances or substances of high purity.

The second pill testing service was conducted at GTM 2019 by volunteer medical staff, analytical chemists and peer-based harm reduction workers. Patrons were assessed for eligibility, asked to sign a waiver and then asked to provide a scraping of the substance for testing. After the substance was tested, chemists and medical staff provided patrons with the result and reiterated that no level of drug use is 'safe'. Patrons then received a brief personalised harm reduction intervention from a DanceWize Key Peer Educator to discuss the risks involved in consuming the substance and how to minimise these risks. Referrals to health or alcohol and drug services were provided where necessary. A card with their sample number was provided to patrons to be given to emergency services in the event of a drug-related presentation to allow emergency services to identify the substance taken through the pill testing service.

In August 2019, Pill Testing Australia released an operational report on the pilot. It contains, among other things, a comprehensive description of the intervention, including details of the patrons' journey through the service (Vumbaca et al. 2019).

5.1 ACT AMBULANCE SERVICE

The ACT Ambulance Service, a component of the ACT Emergency Services Agency, staffed both the medical tent which abutted the pill testing service site, and deployed first aiders and ambulance paramedics elsewhere at the venue. They report that 140 patients were seen by the first aiders. Of them, 39 were assessed and treated by ACT Ambulance Service paramedics. Four of those patients were transported to hospital, two owing to intoxication (probably though not definitely alcohol intoxication) and two for unrelated medical conditions.

These figures contrast markedly to the 2018 GTM festival where only 85 people were assessed, with three transported to hospital.

5.2 ACT POLICING

ACT Policing (Australian Federal Police – AFP) provided a range of services at the festival venue. They provided the following information about apprehensions and drug seizures:

- Two young people were apprehended and put before the Act Drug Diversion Program.
- Three persons were taken to the ACT Watchhouse for intoxication and disorderly behaviour.
- One report was received of sexual assault at the festival.
- One seizure consisted of a single drug item. The ACT Government Analytic Laboratory (ACTGAL) issued a certificate for the exhibit confirming that MDMA was in the substance. The offender undertook Drug Diversion.
- One seizure consisted of seven drug exhibits. The items in this seizure were grouped for processing as they had 'no owner' established, and each had been found by AFP officers on the event grounds or given to AFP officers by event staff. During lodgment, the items were presumptively tested, with the TruNarc analytic instrument using Raman spectroscopy, as MDMA.
- One seizure consisted of three drug items. No ACTGAL analysis was available at the time when ACT Policing provided these data.
- One seizure consisted of three drug items. ACTGAL issued a certificate for the exhibit confirming that the substance was cannabis. The offender was subject to Drug Diversion.

6 EVALUATION FINDINGS

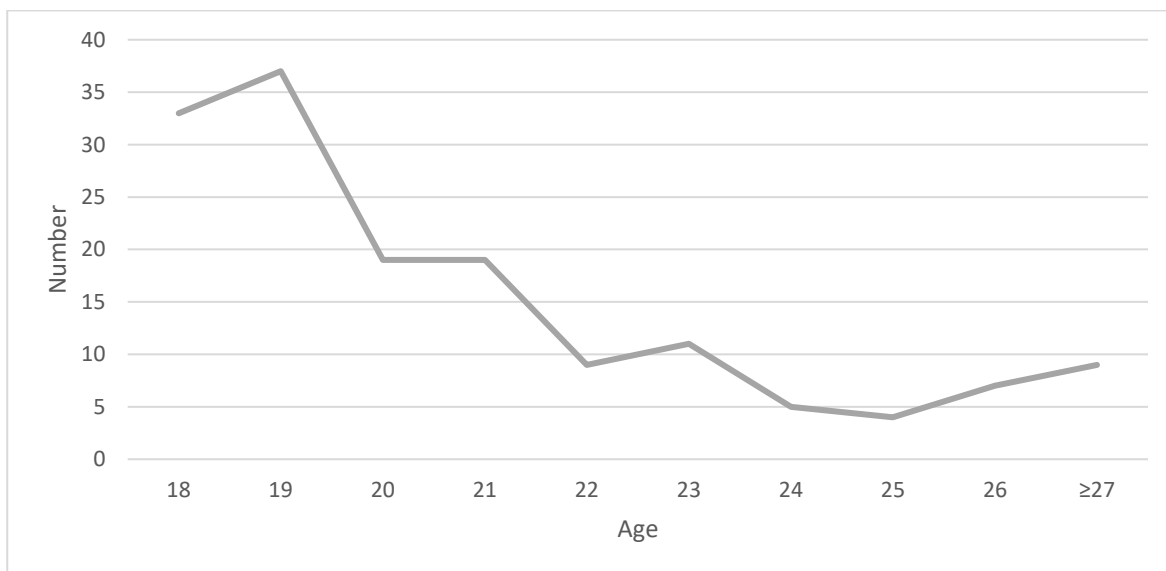
6.1 PARTICIPANTS

Participants in the evaluation were over the age of 18; this limitation was a requirement of the ANU Human Research Ethics Committee.

A total of 234 pill testing patrons entered the service. Of these, 22 declined to enrol in the evaluation and 53 were under 18 years of age (and thus excluded from the evaluation), resulting in 159 people participating in the evaluation. One of these was subsequently excluded from the analysis as they knowingly presented a sample of candy for testing, leaving a total of 158 valid evaluation participants. All participants completed the pre-test survey and most of those ($n=147$) also completed the post-test survey.

In terms of gender, slightly fewer than half of the evaluation participants self-identified as female ($n=76$, 48%), slightly over half of the participants self-identified as male ($n=81$, 51%), and one participant self-identified as another gender (1%). The age range was 18 to 51 years old; the average (mean) age was 21 years and the median 20 years, with almost half of the evaluation participants (46%) being 18 or 19 years of age. The age distribution is shown in Figure 1, below. Most ($n=139$, 88%) reported prior experience of consumption of an illegal drug (other than cannabis).

Figure 1: Age distribution of the evaluation participants



Among the participants of the evaluation, 106 participants at the pre-test (67%) were there to present a drug for testing while the remaining participants were there to accompany other patron(s). According to the post-test results, most of the participants (141 out of 147 participants, 96%) personally received the test result from staff or were present when the result was given. Most of the participants who provided post-test survey data also received the brief intervention (123 out of 147 participants, 84%).

The final sheet of paper on the evaluation survey completed at the festival invited participants to participate in a follow-up interview. Thirty participants agreed to be re-contacted and provided either a phone number or email address. Four months after the festival, eleven participants were able to be recontacted and agreed to the follow-up interview. Of the eleven participants, five were female and six were male. All participants were aged between 19 and 29. Six participants resided in New South Wales (NSW) and five in the Australian Capital Territory (ACT). Ten of the eleven had used an illegal drug other than cannabis before the festival, and three had ever spoken to a healthcare provider about drug use before. Three participants had also used the 2018 GTM Pill Testing Service. Most participants presented a single substance for testing, though two presented two samples. Three participants presented substances they had found at the festival.

Eleven stakeholders were also interviewed four months after the festival. Stakeholder participants included: three PTA personnel; three people associated with DanceWize; one senior ACT Ambulance Service officer; one senior ACT Health officer; one senior ACT Policing member; and two PTA volunteer chemists.

In addition to these evaluation data, PTA collected service data on the total population of patrons entering the service and this will be referenced throughout the report.

6.2 EVALUATION QUESTION 1: HOW SUCCESSFULLY WAS THE PROGRAM IMPLEMENTED, GIVEN ITS SPECIFIC CONTEXT?

The program was implemented as planned. The service was successful, particularly given limitations of context (no official funding source and restrictions around signage). Over 200 patrons used the service and most personally received pill testing information and a brief intervention. Seven samples of a potentially harmful substance, *N*-ethyl pentylone, were identified. The pill testing information and brief interventions were valued by patrons. Results indicate that careful consideration should be made in developing standardised explanatory language used to deliver the drug testing results as misinterpretation was common. Notably, this misinterpretation did not lead to any negative consequences and positive behavioural change was still evident. Co-location of the pill testing service with festival medical services facilitated information exchange in providing care for festival patrons. Furthermore, expected lines of communication between the pill testing service, the ACT Ambulance Service, ACT Policing, ACT Health, and festival promoters were achieved both prior to and during the event.

To explore how successfully the trial was executed we review survey, interview and observational data to assess how the service was implemented, as well as patrons' and stakeholders' opinions on the provision of the service.

6.2.1 Service usage

A total of 234 patrons entered the service, twice the number of patrons who used the service in 2018 (Makkai et al. 2018). The testing service operated between 11:00am and 9:30pm on the day of the event. According to service data collected by PTA, most patrons entered the service between 1:00pm and 6:00pm, during which time 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 instruments staffed by four qualified chemists.

According to follow-up interviews with stakeholders, 23,660 people attended the festival. Approximately 80% of attendees were residents from interstate. Given that the pill testing service was a small, volunteer-run trial with no signage allowed, it is not appropriate to evaluate impact or effectiveness based on population proportions. It is also important to note that capacity to obtain information about the ACT drug market at these events is limited by the large number of interstate attendees who may not source their illicit drugs in the ACT.

Among the participants of the evaluation, 106 participants at the pre-test (67%) were there to present a drug for testing while the remaining participants were there to accompany other patron(s). Follow-up interviews with patrons suggests that while most people attended the service to test the contents of substances in their possession, other reasons for attending the service included interest in finding out more about the service, especially the drug testing equipment; and political motivations.

The things that I got tested, the MDMA that I got tested, I had taken that before and I felt pretty confident as to what was in it. That wasn't a primary reason I went, I went because I think I value what you guys do and I think to get it more widespread, you need to get people using it and showing the authorities that it works and it's important ... I think it's very frustrating for young people, like, the political situation in states like New South Wales and anything we can do to push the movement along is important to me. Male, 23

... I just like supporting things like this because I think they're really important, like, be advocates for, like, harm minimisation, especially when it comes to drug use, I'm really passionate about it. I just want to support it, like, even if I knew what was in my drugs, I would still probably test them just to support the service. And to keep myself and others safe.
Female, 20

Observational data suggests that for almost the full period the queue to enter the service was short, quiet and friendly. The longest queues recorded were 18 people at 3:30pm, 4pm and 7pm. During ten of the 21 observations throughout the day and evening, nobody was waiting in queue. This included the full period from 6:30pm to closing time at 9:30pm. The mean number of people queueing was 4.7.

Based on observation data we believe that some of the patrons returned to have drugs tested more than once throughout the course of the festival. On occasion, some of the patrons appear to have spent more than 30 minutes in the tent. Their time was occupied with the formal testing and the brief intervention, plus chatting with friends.

... some people want to stay a long time because they're talking about drugs for the first time. They have a lot of built-up questions ... So I think our strength is our model. Pill Testing Australia

Owing to the stipulations of the ANU Human Research Ethics Committee, patrons under the age of 18 years were not permitted to participate in the evaluation. As such, we are not able to provide evidence on the impact of the service on younger patrons. However, some stakeholders noted that one benefit of the service was that there was no age limitation. Particular value was placed on providing information to young, novice drug users.

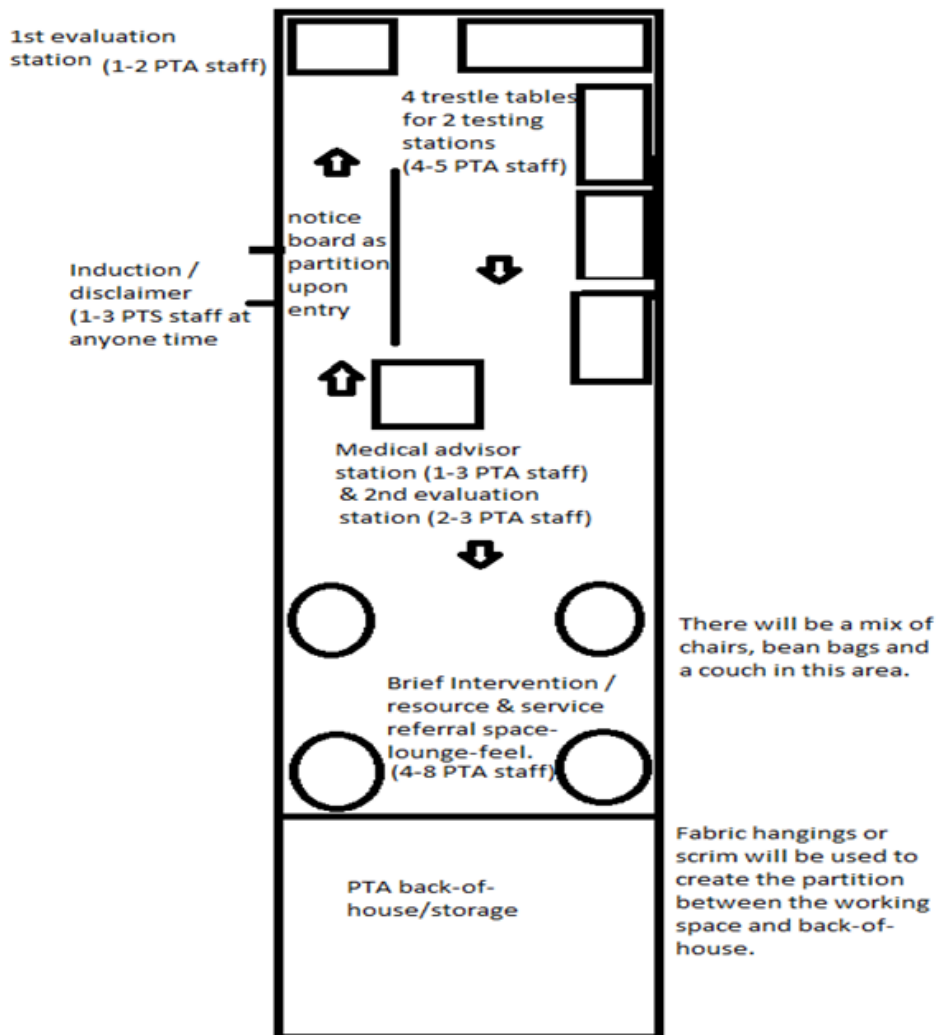
Because it means that people are getting the message early, it's not, say, your festival veterans, it might be people who just might be either first or second festival, so they are really looking at improving their health outcomes ... they're getting the message, and they're taking their own initiative, you know. DanceWize

6.2.2 Venue

The pill testing service was co-located with medical services and another harm reduction service, Red Frogs, on the south side of the festival grounds. Red Frogs, a church-based harm reduction service for young people, was situated in a standalone tent. The pill testing and festival medical services were set up in an existing shed at the festival grounds. The shed was divided into two by fencing and opaque cloth to separate the pill testing and the medical services.

The pill testing area layout was designed to move patrons through each stage of the service delivery (see Figure 2). This included induction and disclaimer signing at entry, pre-testing evaluation survey completion, drug testing, provision of testing results, medical advice, brief intervention, post-testing and harm reduction advice, evaluation survey, and exit. The evaluation team was provided space at the entry before the drug testing and at the exit after the brief intervention.

Figure 2: Pill Testing Service Diagram



The space and layout was reported to have worked well by patrons and stakeholders. In particular, compared with the 2018 trial, which was held in a small tent, the 2019 venue was sufficiently spaced for accommodating an easy flow of people. As it was one open space, however, there was no capacity for private conversations.

The atmosphere inside the shed was mostly quiet, friendly and welcoming. At times it was congested, particularly with a build-up of patrons between the first evaluation station and where they provided a sample for testing, and at other times between testing and receiving the results. Sometimes there were a number of patrons waiting for test results, but none receiving brief interventions. People did not seem to mind the delays, based on their demeanour and comments. Data collected in the follow-up interviews with patrons also suggest that patrons found the venue to be welcoming and safe.

It's good to know that we can test if it's safe and we're not going to get in trouble for using it. Male, 19

I was looking out for police but generally the ACT, the policing at Groovin the Moo was a lot less intense than it would be in New South Wales as a result of that. Even coming into the festival, there were no sniffer dogs that I saw, there were no lines of police. It was a safe and relaxed environment. Even before getting to the tent, I felt as though, okay, this is a safe environment. Walking over to the tent, there were no police hanging around, there was no security, it was just a nondescript tent and you could line up away from everyone looking. Yeah, I felt it was very safe and there was nothing to really make me feel unsafe at all. Male, 23

The pill testing and medical services each had separate entrances, however only the medical services had signage. One condition of the trial, set by festival promoters, was that the pill testing service should not display signage. Follow-up interviews with patrons suggest that the pill testing service was difficult to find at the festival grounds. Many reported that it took considerable time to find the service, and some asked security officers for directions.

... perhaps make it easier to find. I had to ask, I'm pretty sure, three people before I found it and ask them where the pill testing venue at the festival is. I didn't feel super comfortable doing it, to be honest. Yeah, I know it needs to strike a happy balance between making it discreet and making it available but, yeah, making it a little easier would be great. Male, 23

I literally asked a security guard when I was in there [to locate the pill testing service] and he was like, "That way." And I was like, "Cool, thank you." Male, 20

Both patrons and stakeholders commented that they felt that the primary role of security and police at the festival was to manage uncivil behaviour. ACT Policing reported that drug-related arrests were made, however their focus was protection of participants.

I mean, there's obviously a number of models that can be used. I mean, some jurisdictions take a very proactive approach to drug use, and similarly we sort of enforce the law in terms of possession of drugs, and particularly the supply of drugs, and particularly looking after juveniles and that sort of thing. But we don't really put in the high concentration of resources that some of the other jurisdictions put into it ... So it's probably our focus is probably more on that harm minimisation aspect, and making sure everyone just has a good time, and no one gets hurt ... ACT Police

6.2.3 Drug testing facilities

In total 170 substances were submitted for testing. This comprised 159 festival patron samples and 11 samples presented by festival medical staff for analysis (Vumbaca et al. 2019).

In the pre-test survey, participants were asked, 'What do you think the drug being tested is?' As shown in Table 1, next page, most ($n=136$, 89%) believed that the drug was MDMA, with just four expecting MDMA mixed with methamphetamine, two cocaine and one ketamine. In nine cases the participants did not know what the substance was or the response was unclear.

When asked, 'What makes you think that?', the majority ($n=102$, 66%) stated that was what they had been told by the person who supplied the drug. Fifty-six participants (36%) had already tried the drug, and just three had tested it using a home testing kit.

A range of sources of the drugs presented for testing were reported. The largest source was friends (50%), followed by dealer (19%) and dealer and friend (11%), with far smaller proportions reporting acquaintance, online, both friend and relative, and relative. Eleven participants (7%) stated that they did not know where the drug came from.

Most participants reported that the drug was purchased outside of the festival venue ($n=120$, 77%), with just ten reporting acquiring it inside the venue, nineteen reporting 'don't know', and six stating that they would 'rather not answer'.

Table 1: Participant expectations of drug type and sources of drugs

	Number	Percent
Expectation of drug type (n=152)		
MDMA	136	89.5
Cocaine	2	1.3
Ketamine	1	.7
Mixed MDMA and methamphetamine	4	2.6
Unidentified	9	6
Reasons for the expectation (n=155)		
Already tried it		
Yes	56	36.1
No	99	63.9
That is what I was told by the person supplying the drug		
Yes	102	65.8
No	53	34.2
I have tested it using a home drug testing kit		
Yes	3	1.9
No	152	98.1
Other		
Yes	13	8.4
No	142	91.6
Source of the tested drug (n=156)		
Dealer (face-to-face)	29	18.6
Friend	78	50.0
Relative	1	.6
Acquaintance	3	1.9
Online	3	1.9
Don't know	11	7.1
Rather not answer	5	3.2
Other	6	3.8
Dealer and friend	18	11.5
Friend and relative	2	1.3
Location of drug purchase (n=155)		
Inside the venue	10	6.5
Outside the venue	120	77.4
Don't know	19	12.3
Rather not answer	6	3.9

Via the follow-up interviews, participants informed us that they were testing substances that they: purchased as an individual; purchased as a group; were given; or had found. For some, they had taken the substance previously, others had not yet tried the substance. One participant in the follow-up interview had used a home reagent test kit to assess the substance. The home testing kit was unable to identify the compounds, leading them to present the substance at the pill testing service for identification. The participant reported that the service identified the substance as *N*-ethyl pentylone.

According to the service data recorded by PTA, MDMA was the predominant substance identified, and to a much lesser extent cocaine, ketamine and methamphetamine (Vumbaca et al. 2019). The cathinone drug *N*-ethyl pentylone was tentatively identified in two samples provided by festival medical personnel and five samples presented by patrons. This drug has been associated with deaths and mass casualty events in the USA and New Zealand (Atherton et al. 2019; New Zealand Police 2018).

Both patrons and stakeholders discussed the high level of interest among patrons of the testing process and equipment.

... most people who came through were very interested in how it worked ... people were pretty switched on and wanted to know what was happening. They were really interested in that, and asked a lot of questions about how does it work ... Chemist

6.2.4 Harm reduction information provided to patrons

According to the post-test data, among the participants of the evaluation, most of the patrons (141 out of 147 participants, 96%) personally received the test result from staff or were present when the result was given. Around one-fifth of the participants ($n=25$, 18%) reported being told by staff that the test revealed a substance known to be associated with significant harm/overdose/death. Twelve percent of participants were not sure if they had been so advised ($n=16$), and 70% reported that they had not been advised that their tested drug was associated with significant harm/overdose/death ($n=97$). Also, nearly half of the participants ($n=65$, 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. Forty-one percent reported that they did not receive this warning associated with strength/purity ($n=57$) and one tenth of the participants were not sure ($n=17$, 12%).

Most of the patrons who provided post-test survey data reported receiving the brief intervention (123 out of 147 participants, 84%). Data collected by PTA during the brief interventions showed the average duration of the brief interventions was nine minutes (range: 2–26 minutes) (Vumbaca et al. 2019).

Interviews with stakeholders showed the value placed on providing quality information for patrons.

... you get to engage with people, and it's really communicating science in the field almost in the most direct way you can ... being able to talk to people about what they've brought in and what we think is going on with it. Chemist

... the peer groups ... They're the ones that sit down and chat often times for 20, 30, 40, even 40 minutes. They would arrive at information that might say that the individual has got a psychiatric history, or a pertinent medical history or is taking some medication, and they would come back to us and say, "Look, can I just get you to chat a little bit about how this drug might interact with this illicit". Pill Testing Australia

... all of our DanceWize volunteers have the lived experience ... and people really respond to that, because it's peer-based outreach. DanceWize

And certainly a lot of the people, I could see that they were hearing stuff from me that they hadn't heard before, and I could talk about being a festivalgoer, and share those experiences with them as well. So I definitely think that's a really important dimension of it. And I think there's more trust there because people know that you understand what they're going through maybe, and you understand why they're taking substances at a festival, and what

the desired effects are. Rather than ... I think there's always a fear with these kind of things that people think you're just going to be, like, don't do drugs, drugs are bad. So when you're not like that, they may be relaxed, and once you've proved that you understand where they're at then, yeah, you can start to have quite constructive conversations. DanceWize

Given the confidential nature of the pill testing service and the consequent inability to independently collect data on information provided to patrons, the evaluation does not include an assessment of the type and quality of information provided to participants. However, in the follow-up interviews with patrons, they were asked about their experiences of, and attitudes to, the harm reduction information provided. Overall, participants reported that their interactions with the staff were received well and the information provided was valued.

A doctor spoke to me briefly about the result and then I sat down for probably about 10 to 15 minutes with one of the ... I think it was with one of the counsellors or one of the peer group people there away from the testing module. And, yeah, they spoke to me about how to stay safe, what I'll expect, my drug use more broadly, yeah, just a wide range of issues, discussion about how they could assist me in being safe. Male, 23

... we could ask questions and I thought just the fact that we were just having the conversation about sort of the things that can go wrong and, you know, signs to look out for when things aren't going well, and also just like being aware like, the drugs are stronger than expected, so don't take as much, like be a bit more cautious. Female, 29

So they sat us down on the beanbags and they just ran us through some general safety stuff and then asked if we had any questions about the drugs, or drug taking in general, just general health stuff ... Yeah, it was really nice. Yeah, they were really helpful. We had a few questions for them and they just helped us out. It was good... Yeah, it was helpful. It was stuff I already sort of knew, but it was good to just hear it again sort of thing, like, stuff about just drinking a good, reasonable amount of water, and taking breaks and stuff like that. Female, 20

I think we initially talked about the actual substance that we got, so ecstasy, and ran over the effects of it. And then after we talked about if there was any other drugs that I was taking daily that ecstasy could affect and so that was really helpful, yeah. Female, 25

Australian research shows that people who use illicit drugs want information about the contents of the substances they intend to use (Peacock et al. 2019; Johnston et al. 2006; Barratt, Bruno, et al. 2018; Krieger et al. 2018) and that this information should focus on harm reduction, not abstinence (Vincent et al. 2010; Lancaster, Ritter, and Matthew-Simmons 2013). Many patrons in the follow-up interviews reported receiving harm reduction information that was new to them; others reported that the education consolidated the harm reduction information they already possessed.

It was definitely interesting, I think it made us aware of, well, I think we've always been quite conscious about it, like we both know, don't take too much, drink water. We know that there are negative consequences to taking MDMA like, you know, raised body temperature, increased heart rate, and so we know like if that happens, to seek medical attention, drink water, keep cool. So, we know all that, but I guess it was good to have that conversation with someone and reinforce that. And just like a reminder of those things that can go wrong and if something does, and like know what to look out for and stuff like that. Female, 29

It was great. There's always things that you forget about how you can be safe ... And having that advice there, pretty much in the hour before you're probably going to take it is, I think, really helpful. Male, 23

One interviewee recounted her experience receiving information about the substance she brought in for testing, which was identified as *N*-ethyl pentylone, a potentially dangerous substance.

I just came in and they sort of said, "What do you think this is?" and I said, "I don't know, definitely not MDMA, I don't know what it is," but it didn't come up with anything else on the [home] test. You know how they have other substances when you test it with the reagent, it didn't come up with any of that, so I just told them that and they were super interested, so they were like, "Let's find out what this was." And then we tested it and it was, like, N-ethyl pentylone, and he was ... they took me to several other interviews after that, and asked me I was comfortable with talking to someone about this stuff. And I was like, "Yeah," and they educated me a bit more about reagent testing at home, and also about what the drug that we had could have done to us, and what would have happened if we had taken that, and how dangerous it is. And it was very thorough, and I kind of enjoyed just talking to the people as well because I find this stuff interesting. So it was a good experience. Female, 20

Interviews with stakeholders also provided some information about the content of the conversations with patrons. In addition to the pill testing results, patrons were provided with information on reducing the quantity of drugs taken at one time, caution with mixing substances, hydration, and where to seek further medical advice if needed.

...if you're going to take something, really just basic harm reduction strategies. Start off with a little bit, wait a couple of hours, drink water, watch if you're mixing two types of drugs. We just try to give them your standard harm reduction strategies. DanceWize

... that brief intervention is really, really crucial, because that's where you're kind of giving sense and context to the drug-testing results. And what we do is we're giving tailored information to each person, so we're potentially talking to them about what they've taken in the past, how many times they've taken it, what they're taking at the event, what they're taking with the substance that they've just got checked, how they're feeling, who they're with, what they're intending to do after the event, how are they going to look after themselves, how are they going to deal with any adverse effects from post-drug use. All of that stuff you're able to sit and evaluate, and then really tailor the information that you're giving to suit that person. DanceWize

One potential limitation of current information provided to patrons relates to the interpretation of the pill testing results. Infrared spectroscopy allows for the identification of most substances based on compounds pre-recorded in internal databases (Harper, Powell, and Pijl 2017). This process provides identification of constituents of a substance and a semi-quantitative analysis (i.e. constituents rank-ordered most to least in a mixture). However, quantification, or purity, is not possible, as described in the PTA 2019 Pill Testing Service report (Vumbaca et al. 2019). In interviews with patrons, however, the terms 'purity' and 'strength' are regularly used to describe the substances that were tested, and subsequently to make inferences about relative safety.

Yeah, because they were quite strong, they said, "It can be harmful because of the strength that it is." ... Just to not take as much as I initially planned to, like, only take half a dose, just to be safe. ... Yeah. So I only took half during the day, and then half during the night. ... Yeah, it was helpful. It was stuff I already sort of knew, but it was good to just hear it again sort of thing, like, stuff about just drinking a good, reasonable amount of water, and taking breaks and stuff like that. Female, 20

Yeah, it was pretty interesting how they did it. 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

Not really. It wasn't, like, sort of high quality or anything. One of the guys who had some ... who had his MDMA tested was really happy because his was quite pure. But mine wasn't, it wasn't that pure ... I think because it was a very small amount that was tested, so they also

said that it wasn't a conclusive test, I think, but it was kind of, like, indicative rather than conclusive, if that makes sense? Male, 27

Interviews with stakeholders also suggest confusion about the term 'purity' and its meaning in the context of available testing equipment. Many stakeholders used the term purity to refer to the testing results provided at the service, or drew our attention to the need to clarify the scope of the testing results and terminology used at the service.

... [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

But I think there's the potential there to do a little bit more work to have an understanding about what is the purpose of the testing, and linking that to what the requirements are for the machines. ACT Health

So we have little time, so we have to try and be as concise as possible, and try and convey those uncertainties in the analysis. And I think that's probably one of the bigger questions really is how well that information is conveyed. Chemist

Based on this misunderstanding or misinterpretation of the testing scores we suggest that the information provided to patrons about the contents of their drugs should be reviewed. It should also be noted, however, that in terms of impact on the pill testing service, the misunderstanding or misinterpretation of the testing scores does not appear to have created any adverse consequences. In the follow-up interviews we found that those who understood their tested substance to be higher strength or higher purity MDMA commonly reported altering their behaviours to reduce the potential harms of this drug. More detail on this finding is provided in Section 7 below.

In terms of the technical aspects of the pill testing service, the drug testing was performed using Fourier-transform infrared spectroscopy (FTIR). FTIR has been identified as the most robust technology for point-of-care drug testing (Harper, Powell, and Pijl 2017). A variety of different drug testing technologies are currently available, each having been assessed for suitability as a point-of-care harm reduction intervention (Kerr and Tupper 2017; Tupper et al. 2018). 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) (Tupper et al. 2018). 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.

One commonly cited issue of FTIR technology is that it is only able to identify substances that have been previously documented in a spectra library. As new synthetic drugs are constantly being produced, one limitation of FTIR is that these substances will not be able to be identified. However, links between point-of-care rapid testing and laboratory sites can facilitate the discovery of new compounds so that they can be added to the spectra libraries.

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.

6.2.5 Staff roles and responsibilities

It was noted by stakeholders involved in the delivery of the trial service that there was room for improvement in the delineation of roles and the consistency of information provided within these roles. In particular, while stakeholders felt that the delivery of information across the three different points of contact (testing, medical practitioner and brief intervention) was relatively consistent, there may have been duplication of information, meaning the service could be made faster for patrons with clearer allocation of roles.

So I think it would have been better to have clearer job descriptions for both the medical practitioners and the harm reduction workers ... so sometimes I felt like we might have been repeating a bit, which isn't necessarily a bad thing, but equally, when you've got people who are maybe just keen to kind of do it all and go, you want to have a few kind of points of usefulness to them. DanceWize

6.2.6 Cross service collaboration and communication

Prior to the festival a number of arrangements were made to facilitate coordination of service provision and flow of information during the festival. These included:

- Agreements between the ACT Government and PTA to allow the trial of the pill testing service on ACT land;
- Agreements between PTA and ACT Policing to minimise police presence near the service and that police would not enter the medical zone unless requested by the staff there, or to respond to a critical incident that required their presence;
- Agreements between festival promoters, medical services and PTA to co-located services at the festival;
- Agreement between medical services and PTA to coordinate flow of information about dangerous substances and medical care related to illicit drug consumption; and
- Agreement between the ACT Government and PTA for the pill testing service to provide notification of dangerous substances identified.

Evaluation data (interviews and observation) as well as service data from the PTA report shows that these lines of communication were achieved well.

... the positive was certainly the collaboration across the directorates ... it assisted in our ongoing relationship with ACTAS [ACT Ambulance Service] and gained some cross-understanding of how things happen. And equally with the police. ACT Health

Prior to the event, there were numerous contact and meetings between medical provisions for the festival and the pill testing team, and we were able to liaise very closely with them, by being co-located in the same medical facility. I think the other importance of being co-located in that medical facility, is that it emphasises our belief that the problems of drugs at music festivals is a medical problem, and that includes the issues of preventing drug overdoses as well. Pill Testing Australia

At 4pm a person collapsed in the medical tent and a sample of their drug was brought in for testing. Observational data

It [positioning pill testing in the medical area] allowed for a better exchange of information, in particular from the pill testing area back into the medical area wherein ... we could use the expertise of some of the folk in the pill testing area to provide some guidance in that space for us. ACT Ambulance Service

Stakeholders also noted areas where collaboration and communication could be improved, in particular the need to establish protocols around an early warning system for dangerous and high purity substances.

... [the lead physician] rang [the Chief Health Officer] when there was an interesting finding. There had been never anything written down around what that would correlate to, or what would trigger a notification, and then what would happen to that information. ACT Health

6.3 EVALUATION QUESTION 2: TO WHAT EXTENT WAS THE PROGRAM RECEIVED POSITIVELY BY PATRONS AND BY OTHER KEY STAKEHOLDERS?

The service was received positively by patrons and 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 that they would use a pill testing service again were it available. Follow-up interview data indicates that patrons value the opportunity to discuss their drug use in a non-judgmental environment and found the information provided to be useful. Stakeholders reported that the service was implemented as intended and ran well. No stakeholders reported concerns about the trial service. There was general support for developing a pill testing service in the ACT, with many also indicating support from within their respective organisations. All stakeholders were supportive of the trial model used, particularly the importance of the harm reduction information provided, although many expressed desires to also consider other models.

To assess the acceptability of the service for patrons and key stakeholders we review the data on attitudes towards the service among these two groups.

6.3.1 Patron attitudes to the service

Most of the participants reported a positive experience with the service and were confident that the drug testing equipment used identified the substances in their drugs (See Table 2). None of them gave a poor rating to the service overall. In addition, almost all respondents rated highly the information provided by pill testing staff and brief intervention staff.

Specifically, as detailed in Table 2, next page, all but two participants rated the service overall as 'good' or 'very good'. All but 11 stated that they were 'fairly' or 'very' confident with regard to the drug testing equipment. All but two rated the quality of the information provided by pill testing staff to be 'good' or 'very good', as did all but four with regard to the information provided by the brief intervention staff. In addition, when asked, 'How clearly did the team at the pill testing service communicate information?', all but four rated the clarity as 'good' or 'very good'.

In the follow-up interviews, all patrons talked favourably about the service and staff. In particular, they were positive about the opportunity to discuss their drug use in a non-judgmental environment and found the information provided useful.

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

I was also happy with the feedback and the advice I got from the doctors there ... I thought it was really well done in efficiently getting in there and the combination of speaking to a doctor and then the counsellor, slash peer supporter, is really good, I think, and it didn't feel rushed or feel like the people all just read from a script of what she needs to say or he needs to say to you, it was tailored advice relevant to me and delivered in a manner which made me feel comfortable. Male, 23

Table 2: Perceptions of service quality

Overall rating of service (n=128)	Number	Percent
Very Poor	0	0
Poor	0	0
Average	2	1.6
Good	14	10.9
Very Good	112	87.5
Confidence with regard to the drug testing equipment (n=140)	Number	Percent
Not at all confident	0	0
Only slightly confident	0	0
Somewhat confident	11	7.9
Fairly confident	36	25.7
Very confident	93	66.4
Rating of information provided by Pill Testing staff (n=129)	Number	Percent
Very Poor	0	0
Poor	1	.8
Average	1	.8
Good	19	14.7
Very Good	108	83.7
Rating of information provided by brief intervention staff (n=128)	Number	Percent
Very Poor	0	0
Poor	0	0
Average	4	3.1
Good	16	12.5
Very Good	108	84.4
Overall clarity of information provided (by both pill testing and brief intervention) (n=128)	Number	Percent
Very Poor	1	.8
Poor	0	0
Average	3	2.3
Good	14	10.9
Very Good	111	86.0

Most of the patrons reported that they would use a pill testing service again ($n=120$, 95%) were it available, and would promote the pill testing service by telling others about the service ($n=123$, 98%).

In the follow-up interviews patrons were also asked about their general attitudes to the provision of pill testing services in the community. All agreed that pill testing services provide valuable information for people who use illicit drugs. While a couple of patrons felt that it was possible that pill testing could facilitate more people taking drugs, most felt that pill testing services neither encouraged nor discouraged drug use. Most interviewees focused on the provision of information about safer use of illicit substances.

I'd say it discourages risky use, it doesn't encourage use overall. Male, 21

It doesn't encourage it, it makes it safer. I think one of the misconceptions is that pill testing says, "Okay, this pill is safe, eat it," ... they never said that to me. It just makes you aware of the risks surrounding drug use, so I think it's indifferent, it doesn't encourage and it doesn't discourage, it just improves the safety. Male, 23

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

Well, I guess I think it could possibly change behaviours and I guess discourage people from taking drugs if something bad was to be found, or not just something bad but, you know, if they found something that was just not going to do anything, like if they found salt or milk powder in pills, I guess it would discourage people from taking drugs. Female, 29

I think that you're not going to stop people from taking drugs; if that's what they want to do then you're not going to stop that. So, I think pill testing is just a way to make that as safe as it can be. Female, 22

Finally, patrons in the follow-up interviews were also asked about their thoughts on different models of pill testing services, particularly event-based versus fixed-site models. There was no clear preference for one or the other and many advocated for both. Many saw the positives of providing pill testing services at events where people are likely to take drugs, yet also suggested that time taken out of a festival to attend a health service would be perceived negatively by some. Many saw the positives of providing fixed-site models in order to deliver services to others besides festival-goers, noting that people use drugs in many environments other than festivals. However, it was also noted that, depending on where the service was located, the need to travel to attend such sites could present a barrier.

6.3.2 Stakeholder attitudes to the service

Interviewed stakeholders reported that the service was implemented as intended and ran well. None reported any major concerns about the trial and all were supportive of the model used, particularly the importance of harm reduction information.

I think the key sort of message we took out of it was we were one part of the whole process, and while we're [chemical analysts are] sort of marketed as the most important part, I don't think we are. I think it's the discussions that follow, the discussions around the testing, both with us and the medicos, and the following team that was the most worthwhile part of the whole experience. Chemist

In terms of the impact, stakeholders felt that the service was successful in improving health information for patrons. However, it was noted that the service cannot prevent all mortality and morbidity resulting from

illicit drug use and that its implementation should fit within a range of health and legislative approaches to reducing harms from drugs.

In this particular case, it is not a panacea for overdose or the effects of overdose. As we all know, it's very individual on how agents affect people. So it is quite subjective and, in fact, whilst it gives a client an understanding of what may be contained within the pill and some advice in that regard, that's where that finishes... a number of other factors that can come to play to make these events a safe event. ACT Ambulance Service

Stakeholders reported supporting the development of pill testing service/s in the ACT, with many also indicating support from within their respective organisations.

I think that from a government perspective we have a supportive environment for the model that was agreed on ... that would have to be completely re-looked at from a policy position in any model that changed those ten acceptable criteria. So for example, I think offsite testing, fixed-site testing is a very different policy proposal, it has different risks, and therefore different requirements around how that would be addressed ... So I guess just within the context that there is certainly general support and information on how best to focus, to focus that in two ways. One is about making a better and more useful service, but also I think as we've talked about, focusing it in a way that it is used in the best way, under the best circumstances, in the most cost-effective or value-based way. ACT Health

We, being the ACT Ambulance Service and myself personally, and I know all of the staff that very pro the pill testing, regard it as just one strong to the bow of the overall management of these issues in these high-risk environments. I think the ACT Government and, in fact, the event organisers should be acknowledged and commended for their forward thinking in this space. ACT Ambulance Service

... we sort of work towards, work with the government and other agencies to provide a suitable harm minimisation ... I think the working group, it was a really good principle. So you got all the people to the table, and you got all of that information coming in to you, which gives you a much broader perspective and knowledge on things as well. And all the parties can thrash out whatever issues that may or may not come up from time to time. So to me, the working group was a very good way of doing it. ACT Policing

... I just want to say that I'm actually really impressed with the bravery of all the people involved, you know, including the Canberra police and the festival stakeholders, the directors, you know. I recognise that this was a hard thing for them to do, and I think we need to give them kudos for allowing it to happen. I think they've shown courage in a really difficult space. You know, we know that in Australia at the moment this, it's really quite loaded, intense, and for that I think it's really important for us all to recognise all the people that made it happen, and to risk, that's really important. And I think that pill testing is an integral part of public health, I think that it needs to happen, as I said, both fixed-site and event-specific, and I think it needs to be accepted as a tactic just as, for example, needle syringe programs which have been functioning extremely well and successfully for years and years and years. I think that we need to take a leap in Australia and not be bogged down by political games and actually recognise it for what it is, which is a measure to engage with people who go to events, and to try and educate them, and make them aware of what they're doing, and the risks involved ... DanceWize

Finally, stakeholders were also asked their opinions about different models of pill testing services. Much like the patrons, they saw positives and negatives for the different models. One positive of the festival-based model for many stakeholders was the capacity to attract new, as well as more experienced, drug users who have never been to a health service before to talk about their drug use. The particular setting of the festival was seen as a way to extend the reach of the health service. Perceived positives of fixed-site services included the ability to provide services to a wider range of people who use drugs. Fixed-site services would also allow

for the use of testing technology not suitable for the festival environment that is able to provide more specific details about substances.

I guess, more comprehensive analysis using things like gas chromatography. And one way to do that might be, for example, to have a fixed-site service where patrons can drop off samples, have them analysed and retrieve the result at a later date. So that sort of service could probably work with a few days turnaround. It could even work on the spot, I guess, with a wait of 20 or 30 minutes, but it's harder to set up in that kind of way. I mean, maybe a fixed-site service where patrons, in the lead up to the festival, could come in and have their substances tested in a more comprehensive way, and find out the results before the festival date. That would be one possible way to sort of improve things. Chemist

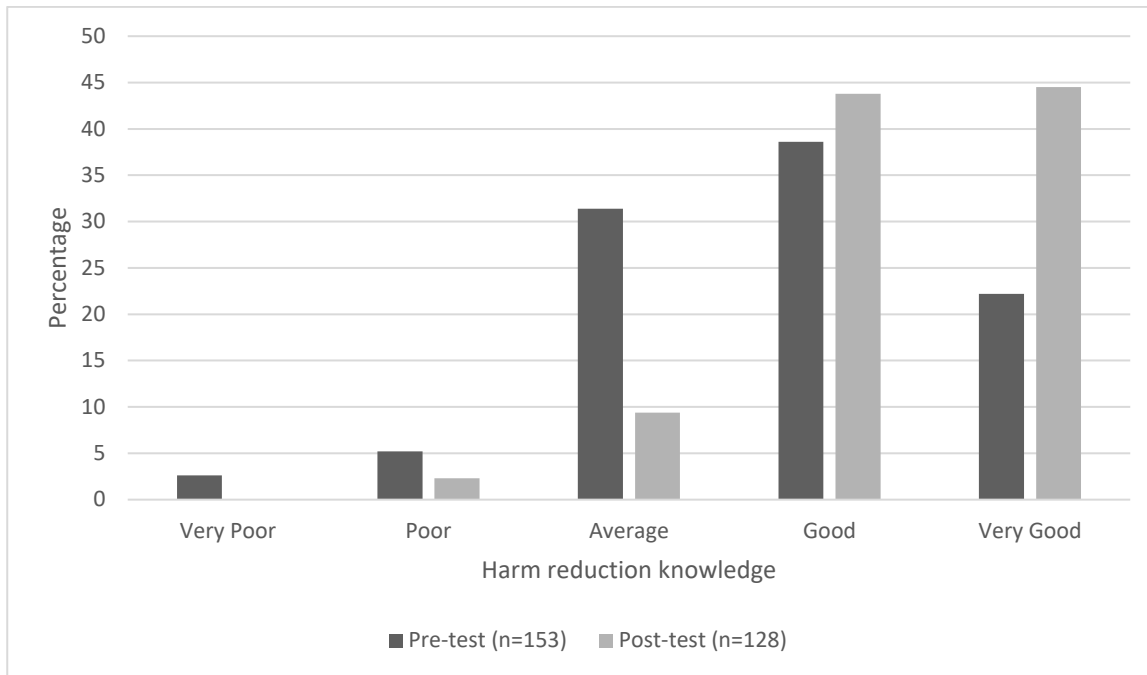
6.4 EVALUATION QUESTION 3: TO WHAT EXTENT DID THE PROGRAM RESULT IN PATRONS' ATTITUDINAL AND/OR BEHAVIOURAL CHANGE RELATED TO ILLICIT DRUG USE?

In terms of attitudinal change, participants were more willing to use healthcare providers, brief intervention providers/peer counsellors, home pill testing kits, and written harm reduction materials after attending the service. In terms of behavioural change, service data shows that all those who had a very dangerous substance detected disposed of that drug in the amnesty bin. Evaluation data shows a significant increase in patrons' self-reported knowledge of how to prevent the potential harms of drugs after accessing the service. Patrons' self-reported changes in intention to use drugs were mixed. Overall, most did not report a change in intention to use their drug after accessing the service. This unvarying intention to use appears to be related to concordance between what patrons expected the drug to be and what it was identified as in the service. When a patron was told that their drug was not what they expected it to be, they were less likely to take that drug. When a patron was told that their drug was what they expected it to be, they were more likely to take that drug. Importantly, follow-up data suggests that among those whose drug was identified to be what they expected, they still took the drug but reported using harm reduction knowledge to reduce their risks of harm. These results should be interpreted in the context of the evaluation sample and the environment at the time of the trial.

To evaluate the impact of the service on patrons we review pre- and post-survey data on attitudes to harm reduction information as well as self-reported intentions to use the drugs presented for testing.

6.4.1 Impact on patron harm reduction knowledge

One of the intended primary outcomes of the pill testing service was to improve patrons' knowledge of how to prevent potential harms associated with drug consumption (especially consumption of the type of drug that had been tested). There was a significant difference in patrons' self-reported knowledge of how to prevent the potential harms between pre-test ($M=3.73$, $SD=.97$) and post-test ($M=4.30$, $SD=.74$) data collection ($t(124)=6.82$, $p<.000$). Figure 3, below, illustrates the much higher proportion of patrons who reported having 'good' (44%) or 'very good' knowledge (44%) of harm reduction during post-test when compared to that during the pre-test (with 38% of 'good' and 23% of 'very good' knowledge). This finding is consistent with existing literature from Europe (Brunt 2017).

Figure 3. Self-reported knowledge on harm reduction before and after the service

When participants are divided according to their prior experience with illicit drug use, the service has a greater self-reported impact on novice users. Those who had never taken any illicit drugs report a greater increase of knowledge from an average of 3.22 (SD=1.17) to 4.17 (SD=.99) before and after the service ($t(17)=3.61, p=.002$) when compared to more experienced users who had taken an illicit drug, from 3.8 (SD=.92) to 4.32 (SD=.70) ($t(106)=5.88, p<.001$).

6.4.2 Concordance between patron expectation and actual drug content

Evaluation of patrons' expectations of the contents of their substance and what was found through testing were compared. Overall, most of the patrons had a generally accurate perception of the contents. Readers should note that this finding is not directly comparable to the test result reported in the PTA Consortium report, as those figures include the total number of patrons who entered the service (including those under the age of 18 and those who did not respond to the evaluation survey). Evaluation participants' self-reported concordance (88%) appears to be higher than that measured by PTA (66%). This may be attributed to younger patrons who are not captured in the evaluation data being less certain about the drug content and/or some other factors of which we are not aware.

As shown in Table 3, below, slightly more than one tenth of patrons ($n=17, 12%$) had drugs confirmed to be different from their expectations. Table 4, below, shows that all of these 17 patrons found the lack of concordance to be 'somewhat' or 'very' surprising. Approximately half of the patrons who reported concordance between their expectation and the actual content of tested drugs also reported being 'somewhat' or 'very' surprised.

Table 3. Self-reported concordance between expectation and testing (n=139)

Drug type	Concordance			
	Yes		No	
	Number	Percent	Number	Percent
MDMA	113	91.1	11	8.9
Other	2	100	0	0
Unknown	3	33.33	6	66.67
Mixed MDMA and Speed	4	100	0	0

Table 4. Response to results of testing, by concordance (n=124)

	Concordance			
	Yes		No	
	Number	Percent	Number	Percent
Not at all surprised	65	52.8	0	0
Somewhat surprised	50	40.7	9	52.9
Very Surprised	8	6.5	8	47.1

6.4.3 Impact on patrons' intended consumption of the tested drugs, and of other drugs, at the festival

One indication of service impact is disposal of substances after receiving information. Service data collected by PTA shows that upon learning about the potential harms of *N*-ethyl pentylone, all seven patrons in possession of a drug containing that substance discarded the drugs (Vumbaca et al. 2019). While the evaluation data collected for this report does not connect patron testing results with their survey answers, nine patrons reported in the post-testing survey that they would discard their drugs in the amnesty bin, two that they would discard their drugs somewhere else and 16 that they were unsure whether they would discard their drugs. That is, 8% of the evaluation sample reported that they would discard the drugs they had tested. This is a lower disposal rate than reported in some other studies (e.g. (Measham 2018)). The lower rate of disposal in this study compared with some other research is likely related to the high level of concordance between what patrons expected the drug to be and what the drug was identified as. International research shows that low concordance between expected drug and identified drug is associated with high rates of non-use and disposal (Hollett and Gately 2019; Martins et al. 2017).

The other indication of service impact is behavioural change, in particular, change in patrons' reported intention to consume drugs after attending the pill testing service. Data collected in surveys and follow-up interviews provide evidence for the impact of the service on those who did not discard their drugs. Table 5, below, demonstrates that, as a result of the drug testing, the majority of patrons reported that they were not going to use more drugs (in amount or quantity) during the festival than they had intended prior to accessing the service. Many respondents reported intention to adopt less risky drug consumption on the day. This included using no drugs (7%), only alcohol (6%), or a lower amount or quantity of the drug (28%). Only 19% ($n=26$) stated that they planned to use the same amount as they intended prior to testing, and just 8% ($n=11$) stated that they would use more of the drug than originally planned. Notably, one fourth of the patrons (26%) were not sure about their drug using intentions.

Table 5: Drug using intentions following receipt of testing results

Quantity change (n=139)	Number	Percent
Use less of this drug than I had planned	39	28.1
Not sure	36	25.9
Use the same amount or quantity	26	18.7
Use no drugs/only alcohol	18	13
Use more of this drug than I had planned	11	7.9
Other	6	4.3
Use a different drug	3	2.2

Analyses of survey data comparing patrons' stated intention before and after testing show that intention to use changed across the sample. While, in general, those not inclined to use remained uninclined and those determined to use remained determined before and after receiving the testing service, those who reported moderate levels of intention to use increased their intention.

Results indicate a small but significant overall rise in patrons' intention to use the tested drug between pre-test ($M=6.64$, $SD=3.08$) and post-test ($M=7.06$, $SD=3.44$) data collection ($t(139)=2.30$, $p=.023$). In order to examine the pattern of change, further analyses were conducted by disaggregating patrons into groups according to their self-reported initial likeliness to use (ILU) the tested drug: 0-30% (low ILU), 40-60% (medium ILU), and 70-100% (high ILU). Results indicate that the pill testing service did not significantly affect the self-reported likeliness of patrons using their drug among the low ILU ($t(22)=-.94$, $p=.357$) and the high ILU ($t(88)=-.42$, $p=.676$) groups. That is, those who entered the service with low intention to use and those who entered the service with high intention to use generally reported the same intention upon exiting the service. However, focusing on the most determined user group (i.e. those with an initial ILU of 100%), patrons showed a significant decrease in likelihood of drug use from before ($M=10$, $SD=.0$) to after ($M=9.14$, $SD=2.25$) receiving the service ($t(28)=2.07$, $p=.048$). There were a small number of individuals in the high ILU group who reported that they would not use the drug upon exiting the service (i.e. an extreme shift of intention).

While there was not a single case where an individual changed their self-reported intention to use from low or medium to fully determined, there was a consistent and significant rise in intention to use the tested drug among the medium ILU group ($t(27)=4.37$, $p<.001$). That is, those who entered the service reporting a medium-level intention to use reported a higher inclination to use the tested drug upon leaving the service.

When separated into novice users and those who had used illicit drugs before, results indicate a non-significant reduction of self-reported likelihood of drug use among novice users before ($M=3.06$, $SD=2.94$) and after ($M=2.83$, $SD=3.26$) the service ($t(17)=.44$, $p=.66$). A small but significant increase was found in the intention to use the tested drug among participants who had taken an illicit drug (other than cannabis) in the past, before ($M=7.16$, $SD=2.73$) and after ($M=7.68$, $SD=3.01$) they received the test results ($t(121)=2.63$, $p=.01$).

Gender was a consistent predictor of changes in intended consumption in logistic regressions: females were more likely than males to report intention to use less drugs. Being told that the tested drug might be of higher strength was also associated with an increased likelihood of reporting to use less drugs. This finding was derived from a logistic regression test to ascertain the effects of multiple variables on the likelihood that patrons report an intention to use less drugs. Explanatory variables included: gender (male vs. female); age (<20 vs. ≥ 20); whether or not patrons were surprised about the testing result (not at all vs. somewhat surprised or very surprised); whether or not patrons were told that the tested drug might be of higher strength (no vs. yes); and whether or not patrons were told that the tested drug was known to be associated

with significant harm (no vs. yes). The logistic regression model was statistically significant, $\chi^2(6)=24.383$, $p<.001$. The model explained 28.1% (Nagelkerke R^2) of the variance in the inclination to use less drugs and correctly classified 76.1% of cases. Females were 5.25 (95% CI: 1.93, 14.29) times more likely to report using less drugs than males ($p=.001$). Being told that the tested drug might be of higher strength was also associated with an increased likelihood of reporting to use less drugs (OR = 4.71, 95% CI: 1.63, 13.65, $p=.004$).

Further exploring patrons' reported change in intention after accessing the service, the relationship between expected drug content, actual drug content, and self-reported change in intention to use was examined. When there was a non-concordance between the expected and actual drug content, patrons reported a statistically significant reduction of intention to consume the tested drugs (from 5.76 to 3.94; $t(16)=2.15$, $p<.05$). The reverse was observed among patrons who found confirmation of their drug content (i.e. a concordance between the expected and actual drug content): an increased likeliness to consume the tested drug from 6.75 before the test to 7.49 after ($t(118)=4.61$, $p<.001$). This result appears to be consistent with prior research demonstrating an association between users' behavioural intentions and drug-checking results, where non-concordance is associated with a lower likelihood of taking the drug and concordance is associated with a higher likelihood of taking the drug (Valente et al. 2019; Measham 2018).

The follow-up interviews with patrons provide useful information regarding intention to use and actual behaviours on the day, contextualising the above survey data. Many interviewees reported that the quantity of drugs that they intended to use did not change after testing, as the drug was identified to be what they expected. However, patrons reported behaviour change resulting from their use of the service which was not captured by the surveys. Interview data suggests that this group were looking for confirmation of the contents of the presented drug, and information about how to reduce potential harms. Many interview patrons indicated that their intention to use did not change, but their intention to engage in harm reduction behaviors did increase. These reported behaviours included not taking all of the substance/s at one time, increasing the amount of time between consumption of substances, and being aware of overexertion and hydration in order to reduce the potential harms of these drugs. This finding indicates more informed drug consumption and is well-supported by the aforementioned significant self-reported improvement in patrons' knowledge relating to harm reduction.

I was still planning to take it, which I did. But I figured I'd have to be less active since in addition to the amphetamine I had earlier that day, I wouldn't want to put too much stress on my heart ... Less time dancing. Male, 21

Yeah, I think I got a water, a few waters, throughout the day because obviously that's good to do and, yeah, it just made me, I guess, conscious about the fact of what I'm doing and looking out for my friends, and it didn't have a massive impact because fundamentally the pill, in my opinion, was as safe as it can be. But in terms of all the other things surrounding that, like, checking on your friends, having water, it certainly jogged my memory and made that front of mind. Male, 23

One important question about the impact of harm reduction information on drug taking behaviour is the role of pill testing, rather than harm reduction information alone, in behavioural change. As discussed above, those who received a test result confirming the substance to be what they thought it was were likely to take as much or more than originally intended. In-depth data collected from the follow-up interviews with patrons suggests that for many in this circumstance, they understood that their tested substance was higher strength than what they are used to taking. This understanding of the pill testing information appears to be directly related to their decision to alter their behaviours to reduce the potential harms of this drug.

Yeah, I was really surprised [laughs]. Like, the fact that it was so clean, because I'd been drinking and that actually turned me off taking it that night. Male, 20

Yeah, because they were quite strong, they said, "It can be harmful because of the strength that it is" ... Just to not take as much as I initially planned to, like, only take half a dose, just to be safe.... So I only took half during the day, and then half during the night. Female, 20

... So I probably used less than I may have. As in I didn't really have a clear idea of how much I would take ... But because I had it tested and knew it was really strong so it would do something, I had a set amount I was going to take. Female, 25

As discussed in Section 6 above, the testing service at this festival was not able to provide assessment of purity. This misunderstanding or misinterpretation of the testing scores appears to be linked to static or increased intention to consume the drugs tested, but also to uptake of behaviours that can reduce the potential harms of drugs.

An important contextual factor that should be considered in the interpretation of these results is the drug market at the time of the trial service. Due to the small sample size and mix of patrons from other jurisdictions (primarily NSW), it is not possible to use pill testing results obtained at the festival to assess the ACT drug market.

In addition to the limitations of the trial pill testing service providing information on the ACT drug market, it is also important to note the ways in which market variation may impact on the results of this evaluation and research on pill testing the future. Firstly, common behavioural change measures used to assess the impact of pill testing services on patron drug taking should be interpreted within the context of the drug market. As found in this evaluation and others, non-concordance between patrons' expectation of what a substance is and what a substance is identified to be commonly leads to reduced intention to take that substance. Conversely, concordance between expectation and identification is associated with stable or increased intention to take a substance. These behavioural measures are then acutely impacted on by the market at the time, and modification of drug consumption cannot be measured in isolation. Furthermore, the type of festival will impact on the types and proportions of substances used by patrons and brought in for testing. Stakeholders commented on the different range of drugs that would be found at a multi-day festival as opposed to a single-day, largely daytime festival such as Groovin the Moo. Future evaluation and other research should consider these contextual factors in designing studies and interpreting results.

6.4.4 Impact on patrons' consumption of drugs after the festival

Internationally, limited evidence is available on the long-term impacts of attending a pill testing service. This is largely due to the difficulty of following patrons longitudinally. We were able to follow up 11 patrons after the festival. When asked about whether their drug use had changed after attending the pill testing service, most patrons reported some ongoing impact on drug use, limited by the availability of pill testing services more widely. Most reported that they continued to use illicit drugs but remain concerned, or were more concerned, about the contents of their drugs and those drugs' potential impacts.

... I've had drugs after the festival without pill testing and I still worry about what sort of stuff I'm taking, if it is what I'm thinking it is, but if there was more services to that, I would use it. Female, 25

... After, I felt more confident taking the pills from the batch that I had tested. And since that batch finished, and I had purchased a new batch, I haven't been as confident, so I haven't actually consumed as much. Been a bit more cautious, I suppose. Female, 25

... I've tried other caps since then ... people tell me that they've had them before and that they're safe, but I haven't changed in light of pill testing, but I'm definitely more aware and conscious of the fact where pills are coming from and what their purity is and the dangers of ... issues of purity and other things creeping in, for sure. Male, 23

Previous research shows that recreational drug users, such as those who attend festivals and take drugs, employ a number of behaviour strategies aimed at protecting themselves from potentially negative impacts (Fernandez-Calderon et al. 2014; Jacinto et al. 2008; Panagopoulos and Ricciardelli 2005). Future research could assess change in harm reduction behaviour pre- and post-service use.

6.4.5 Impact on patrons’ trusted sources of drug information

Data from the in-depth interviews suggest that without pill testing, many people rely on taking drugs (either themselves or personal networks) to assess the quality and safety.

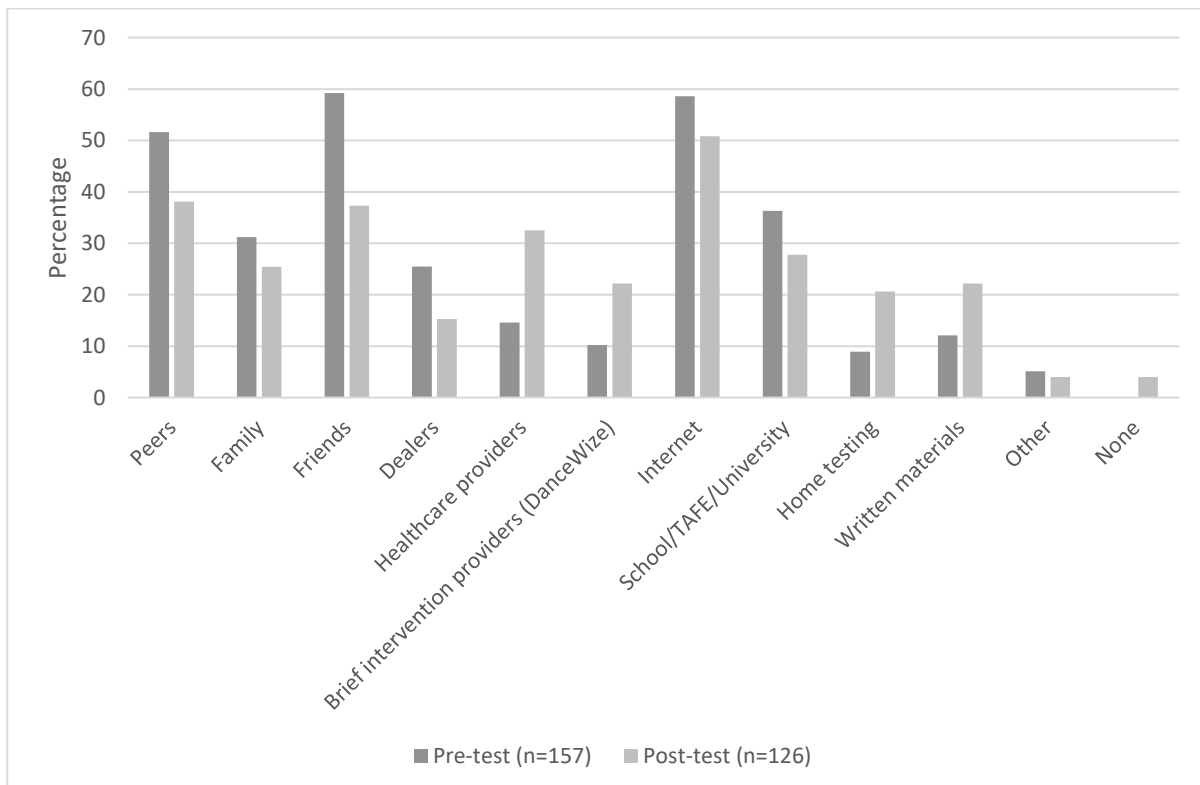
Initially I would ask either my friends or my partner about it first because they usually know a bit more than I do. And then, after, I would usually go on to the internet ... Female, 25

Well, I got my pills the day before, so I had no idea how they were, and none of my mates had done them yet. So, I was a bit unsure ... I was a bit wary of how they would affect me. Male, 20

... I know the source of this particular MDMA. It’s hard to know the exact root source but the person he got it off is someone that ... they’re quite good friends, so he would have ... it’s probably the same way that I’ve been told, told that, hey, man, this is good and it’s safe and he’s tried it before and it was good. Male, 23

In the pre-test survey, patrons were asked to identify the sources of information that they use to find out about drugs, and the question was repeated in the post-test survey to identify any changes. Figure 4, below, highlights a dramatic increase in the proportion of respondents who reported that they would, as a result of the pill testing service, be willing to use healthcare providers (up from 14.6% in pre-test to 32.5% in post-test), brief intervention providers/peer counsellors (from 10.2% to 22.2%), home pill testing (from 8.9% to 20.6%) and written materials (from 12.2% to 22.2%) as their sources of information on drugs. (Note that written materials were made available to patrons inside the pill testing shed.) There was also a tendency for respondents to report giving up on sources that appeared to be popular during the pre-test data collection. The most obvious declines were observed in the use of information from peers (down from 52% to 38%), friends (from 59% to 37%), and dealers (from 25% to 14%). While experiencing a drop in intended future use (from 59% to 51%), the internet remained one of the most popular sources of information on drugs.

Figure 4. Respondents’ selection of sources of information on drugs, pre- and post-testing



These quantitative findings are echoed in the follow-up interviews, where many patrons talked about how their experience in the pill testing service impacted on their attitudes towards particular sources of information. Overall, people discussed trusting the information from friends and dealers less, and information from health services and institutions more.

... I probably wouldn't trust ... my dealer as much, because he had no idea that the pills were that strong ... I actually talked to him about it, and he presumed they were good, but he didn't realise they were that pure. So I suppose I wouldn't trust him as much on his recommendations. Male, 21

... the government reports, the ACT, seem more trustworthy now that they have actually field tests to back it up. Male, 21

Just sort of the education that I guess the government gives you. And sort of more trust in sites that sort of preach harm minimisation, because they don't tell you that the drug is good and that you should do it, they just tell you, they realise that people are going to take drugs, no matter what, and this is how to do it safely. So they tell you how to do it safely, while still be telling you about the very real risks of drug use in general. Female, 20

Stakeholders also commented on the intention of the service to facilitate drug user communication with and use of health services, and in particular, use of medical services in festival settings.

But if they're accessing that type of service they are more likely going to be comfortable accessing medical or other types of chill space stuff. You know, if you're comfortable going into a pill testing tent you're probably going to be pretty comfortable asking for help. DanceWize

6.4.6 Patrons sharing information with peers

Among patrons who knew others using the same drug ($n=118$, 85%), 97% reported that they were going to share the test results with other people who use drugs ($n=108$). This was echoed in the follow-up interviews with patrons.

Well I guess, you know, like my friends and stuff are curious about it and the process, so I was just kind of like explaining to them, telling them what went on. And yeah, I think just because we'd had friends that had bought from, I guess, like the same batch, so we were just like telling them, it's like a high purity... Yeah, I think so, just made me aware that stuff is higher purity and just to not take as much. Female, 29

It made me pretty stressed out, because the person who I bought it off had already taken them that morning, so ... And the first thing I did was to try and contact him and make sure he was okay. But, like, it was a pretty stressful kind of thing, knowing that that sort of stuff is around, and if I don't test my drugs I could have ... well, if I didn't test it or if I didn't bother going to the testing, I could have been in a really bad situation like that. Female, 20

It was observed by the evaluation team that one patron became aware that their drug was identified with significant harm. They phoned their friends urging them to bring their substances in for testing and/or disposal. They then left the pill testing service with the stated intention of bringing their friends, and the drugs, back to the tent for testing/disposal. At 3:35pm PTA staff advised that the person who had been called came into the service, as requested by his friend. He stated that he was feeling different from what he expected and how he had felt earlier, when he had taken a different substance. Dr Caldicott took him to the medical service. Observational data

6.5 EVALUATION QUESTION 4: TO WHAT EXTENT DID THE PROGRAM PRODUCE VALUABLE INFORMATION ABOUT ILLICIT DRUG AVAILABILITY IN CANBERRA, AND HOW DID THE AUTHORITIES USE THAT INFORMATION?

In the context of the trial, the program produced valuable information about illicit drug availability in Canberra, including the identification of a substance previously unidentified in the ACT. The authorities used this information as planned, which included notifying patrons in the service, adjoining festival medical services, and ACT Health when *N*-ethyl pentylone was discovered. The proportion of tested drugs identified as MDMA was considerably higher in 2019 than in 2018. This was considered by a range of key stakeholders to be a particularly important finding, confirming other sources of information about high purity MDMA in the Canberra drug market at the time.

To explore the extent to which the trial produced valuable information about illicit drug availability in Canberra, and about how the authorities used the information produced, we reviewed separately the production of the information, its delivery, and its use.

6.5.1 The production of information

The information produced by the pill testing trial was found to be valuable by people in both the health and law enforcement sectors. The fact that there were no drug-related deaths or other serious outcomes at the festival, and that all of the dangerous cathinones detected were discarded by the pill testing patrons in the amnesty bin provided, meant that those responsible formed the view that there was little need for real-time public communications about the findings.

PTA's operational report summarises the information produced on drugs through the testing:

MDMA was the predominant substance identified and to a much lesser extent cocaine, ketamine and methamphetamine ... Seven dangerous substances containing *N*-ethyl pentylone were also identified, with patrons being alerted to the dangers of the substance. On learning about the potential harms from the substances they possessed, all patrons used the amnesty bin to discard them. (Vumbaca et al. 2019: 7)

Importantly, as mentioned above, the proportion of drugs tested that were identified as MDMA in the service was considerably higher in 2019 than in 2018. This was considered by a range of key stakeholders to be a particularly important finding, confirming other sources of information about high purity MDMA in the Canberra drug market at the time.

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. ACT Ambulance Service

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

6.5.2 The delivery of information on the drugs identified through the pill testing service

Information delivered to the public

Part of the agreement between the ACT Government and PTA was that PTA would not provide any *public* information about drugs identified through the testing during the course of the festival. While PTA provided a noticeboard with drug alerts inside the service, communication of this information was not made public by PTA. This contrasts with the approach taken in many other pill testing services abroad where the delivery of findings, to patrons at the festival and potentially beyond, is made in virtually real-time. This is sometimes

done with noticeboards showing the drugs detected, and/or through announcements on the stages of the festivals describing particularly dangerous drugs that have been found to be in circulation. Another option is to use a festival-specific app for communicating to festival patrons.

Having gained experience in the Australian context of providing information to the people whose drugs were being tested, but not to festival patrons generally, those planning pill testing at future Australian music festivals may care to consider strategies for broader information dissemination.

Information delivered to stakeholders

Information derived from the testing was delivered to a number of stakeholders, as well as to the people whose drugs were being tested. The most immediate stakeholders were the senior paramedics providing the healthcare services in the adjacent festival medical service. They were advised about the high proportion of MDMA and the detection of the cathinone *N*-ethyl pentylone, its dangers and how to manage people affected by it. A similar arrangement ensured that the ACT Ambulance Service personnel at the festival kept the ACT Chief Health Officer (CHO) informed about presentations that might have been drug-related and the potential risks and outcomes of that.

ACT Health was, of course, a key recipient of the information. A protocol had been put in place for the PTA senior medical professional present in the pill testing shed to telephone the CHO with any significant events. This happened when *N*-ethyl pentylone was detected:

... we are in a position where in this sanctioned environment, we are morally obliged to report what's going on immediately, so as these, for example, examples of N-ethyl pentylone started to turn up, we were able to inform the Chief Health Officer of the ACT, by phone, you know, within two to three minutes of the analysis, that N-ethyl pentylone was onsite and that, you know, that may have an impact. There was no other indicator in Canberra, at that point, that there was this particular drug within the jurisdiction, and so she, in turn, was able to discuss that with her health team, and we are able discuss that with our paramedic team and our offside is in the other side of the tent. So there was an immediate opportunity [to discuss] that with broader healthcare providers. Pill Testing Australia

Information was also delivered to the ACT Government Analytical Laboratory (ACTGAL) after the festival.

6.5.3 The use of information on the drugs identified through the pill testing service

We have discussed, above, how information on the drugs identified through the pill testing service was communicated by the chemists, by the medical officers, and by the key peer educators to the people who had presented them for testing, and how the patrons responded to the information that they received. Here we discuss how the information was used by other stakeholders.

Informants emphasised the fact that the information obtained through the pill testing service on the drugs presented for testing provides direct evidence of what drugs were in circulation at the festival on that day. As noted elsewhere, however, we have been advised (but cannot confirm) that some 80% of the 2019 Canberra GTM festivalgoers were actually from interstate. Insofar as that is correct, it means that it is unsafe to generalise to the Canberra community as a whole the information derived from the people who presented drugs for testing at the festival. This limits the usefulness of the service for providing information that can underpin harm reduction in Canberra beyond the geographical and temporal limits of the festival.

It was pointed out that pill testing provides 'far more granular data' than, for example, border seizures and controlled purchases of illicit drugs by police. This reflects the fact that pill testing occurs close to the point of consumption.

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

Both health and law enforcement stakeholders confirmed that the information derived from the pill testing service was of value to them in their work. For law enforcement, it provided information on drug markets that can be used for both short-term (tactical) and longer term (strategic) purposes (Wardlaw 2008). For public health practitioners, it provided information on drug availability that was potentially linked to an increased incidence of drug-related morbidity and/or mortality, both at the festival site and elsewhere in the ACT. Although we do not have details, it is likely that public health professionals interstate also used the information derived from the festival pill testing service once it became publicly available.

In acknowledging that the trial was, at its core, exploring the feasibility and outcomes of conducting the pill testing and providing harm reduction information to the pill testing patrons, we are also aware of the usefulness of having in place, prior to any future pill testing events, clear protocols about the ownership and use of information by key stakeholders. This could cover issues such as the following:

- How information derived from the testing is to be communicated in real-time and subsequently, and to whom.
- Ownership of the information. In this case it is unclear to what extent the information was the property of PTA, the ANU chemists, the CHO, the ACT Ambulance Service, the hospitals' emergency departments, ACTGAL, etc. The importance of the ownership question is its link to clarity about who is responsible for engaging in what type of information dissemination activities, and how and when that should be done.
- Clear protocols about immediate responses to particularly serious drug-related consequences such as a death or a cluster of serious drug-related morbidity cases.
- Placing appropriate emphasis on the full range of potentially harmful substances detected through pill testing, rather than focusing primarily or entirely on one or two substances that are of particularly high risk. This reflects the public health 'risk paradox': 'a large number of people exposed to a small risk may generate many more cases than a small number exposed to high risk' (Rose 1992: 59).
- Protocols for integrating the information derived from the pill testing with that from other sources, as part of a comprehensive early warning system. This accords with the ACT 2018-2021 Drug Strategy Action Plan's commitment to 'Refer to learnings from national pilots and explore the implementation of a local early warning system to ensure timely use of data to monitor and respond to emerging drug trends and harms'. The current development of the Emerging Drug Network of Australia (EDNA) Project could provide an impetus for establishing an ACT drug availability and harms early warning system.

Stakeholders were in favour of an early warning system, however they also pointed to the need to consider the development of appropriate protocols in the context of the Australian health system and drug markets. In particular, the issue of physically identifying substances was raised. Unlike the European markets, most Australian drugs are not identifiable by sight (i.e. most consist of unmarked pills, capsules, powders and crystals).

But even something more simple like posters and things might not be a bad idea. But again, when you have, you know, just under a couple hundred samples come through, it's ... and also when the stuff, like, it used to be, oh, the purple supermans are bad, or what have you, but when it's all bags of white powder, then it's a little bit less identifiable, in terms of if you're putting something on a poster. And you might not have that information until 10 o'clock that evening, so is it really that viable? DanceWize

We don't have the coloured pills with smiley faces on them, right, we have clear capsules and powders, more or less, there were 13 percent pills, but ... so at least at that level of pinpointing particular batches or types of drugs I think that is very challenging. Chemist

Thus, while this was not a key focus of the 2019 GTM Pill Testing Trial, we draw attention to the usefulness of having in place, prior to any future pill testing events, clear protocols about the ownership and use of information. This would cover warnings at the festival about dangerous drugs detected, collation of data on drug-related morbidity, as well as longer and deeper information dissemination and utilisation as part of a drug availability and harms early warning system.

6.6 EVALUATION QUESTION 5: DID THE PROGRAM HAVE ANY UNINTENDED CONSEQUENCES, EITHER POSITIVE OR NEGATIVE? IF SO, WHAT WERE THEY?

Stakeholders 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 program in the ACT. While stakeholders and patrons reported on elements of the service that could be improved, none reported unintended consequences of the trial.

To investigate unintended consequences all data collated for this evaluation were considered against each evaluation question. Data was examined for findings that indicate outcomes outside of the program design. None were identified, leading to the conclusion that the service did not have any unintended consequences, either positive or negative. This reflected, to a large extent, the fact that those responsible for designing and implementing the service had both the experience of the 2018 trial, plus sufficient lead time in 2019, to plan it well and avoid unintended outcomes.

6.7 EVALUATION QUESTION 6: SHOULD THE PROGRAM CONTINUE AND, IF SO, WHAT CHANGES IN THE PROGRAM AND ITS CONTEXTS ARE DESIRABLE?

The ACT Pill Testing Trial was implemented as planned. We find support for the development of further services that provide pill testing and harm reduction information for people who use illicit drugs at festivals. We have identified a number of strengths of the program that should be retained, as well as potential program improvements to consider in future pill testing service delivery.

To assess whether the program should continue, strengths of the service outlined in the above analyses were considered alongside findings that indicate the need for improvement.

6.7.1 Strengths of the program that could be maintained

The establishment of an inter-sectorial working group facilitated a collaborative approach to the development of this trial. The ten-point strategy facilitated mutual respect across all parties.

The trial was well received by patrons and stakeholders. In terms of feasibility, this suggests that there is a desire to implement pill testing services in the ACT, that the festival-based model has merit, and that there is strong advocacy for the develop of a government-funded service.

The service model, and layout of the service, functioned well in the festival setting. Patron wait times to enter the service were brief and provision of testing and brief intervention were also well paced. All those whose substances were identified as being particularly dangerous disposed of that substance in the provided amnesty bin, highlighting the value of this aspect of the service model. Co-location of the pill testing service and the festival medical service facilitated the sharing of information and patient care and should be considered in future planning.

The analytical chemists who volunteered to work at the trial provided a crucial service. The fact that the lead chemist held a licence permitting him to possess otherwise illicit substances for the purposes of scientific chemical analyses contributed positively to the trial, as he was able to take some substances, presented by pill testing patrons, for further investigation. It is suggested that this resource be a component of any future pill testing interventions.

Patrons reported that the information provided in the pill testing service increased their knowledge about illicit drugs and harm reduction. Patrons' level of trust in information provided by health services increased considerably after their experience in the service. Patrons also reported appreciating the non-judgmental presentation of information about drugs and drug use. Most reported reduced or unchanged intention to use the drug presented for testing. These attitudinal and behavioural changes are likely linked to both the testing of substances and receipt of harm reduction information. Development of pill testing services in Australia should consider the provision of face-to-face delivery of pill testing and harm reduction information.

A particular strength of the ACT Pill Testing Trial was collaboration with medical services at the festival. Development of event-based pill testing services should be made in conjunction with medical services in the jurisdiction. Another strength was the agreed protocol regarding policing at the festival site. Specifically, the ACT Policing members undertook their work at a distance from the service site, while still being available to support the service if an incident occurred there.

Although pill testing services have been operating for decades, very few high quality external evaluations have been conducted and their results published. Continuing to evaluate Australian pill testing services is therefore a priority.

6.7.2 Potential program improvements

In order to increase the awareness of pill testing services at festivals, it is optimal to allow signage.

While results of this evaluation and stakeholder feedback show that the trial service was adequately staffed and the space provided was sufficient, during peak periods the service operated at full capacity. This implies that 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.

In the preparatory stage, roles and responsibilities were considered, and protocols were established for communicating critical information between agencies. While lines of communication were appropriately utilised for the purpose of this trial, there is a need to consider a number of important issues into the future, including: ownership of data, and responsibility for communicating critical information, and responding to it.

Similarly, while protocols were established regarding roles and responsibilities within the service, and procedures for delivery of information to patrons, there is a need for clarity on roles and specific information provision in future services. In terms of the testing results, clarity is needed around what is communicated to patrons, how it is communicated, and by whom. 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.

Reflecting the approaches used abroad to communicate information about any particularly dangerous substances detected to festival patrons who did not use the service, future Australian pill testing trials could include the development of protocols covering this. Options include promotions such as notice boards outside the testing facility itself; announcements on the festival stages and building service findings into established early warning system which may include festival-specific and more widely-available websites or apps. Furthermore, some or all of the tested substances could be retained for later more detailed testing.

According to stakeholders, the majority of the patrons at the 2019 Canberra Groovin the Moo festival came from interstate. This limited the potential for festival-based testing to provide specific information about the ACT drug market.

The ACT Pill Testing Service Trial did not receive funding and was delivered by volunteers. Further budgeting considerations will be required to cost delivery of this model, and other potential models.

7 FUTURE EVALUATION AND OTHER RESEARCH

In this section we look to the future, focusing on future evaluations of pill testing interventions in Australia and abroad, and on related research opportunities.

Some sections of the media, and some prominent opinion leaders, have stated that there is no, or little, evidence to support pill testing, but this is wrong. It reflects, at best, a lack of understanding of the nature of the evidence that underpins complex social interventions. Pill testing research reports, policy briefs, service descriptions and the like have been published, along with a small number of service evaluations, and many of these are listed in this report's bibliography.

The existing research on, and evaluations of, pill testing services indicate support for it as a harm reduction intervention, but this body of work has notable limitations. Generally, evaluations have focused on descriptive measures of operational outputs such as number of drugs tested, number of brief interventions delivered, and contaminants found. A small but growing body of evidence is available on health service outcomes, such as changes in patron knowledge and changes in patrons' self-reported behaviour. Still, few high-quality evaluations of pill testing services are being conducted and published. This reflects the fact that the people who have designed and conducted such services are generally based in small, inadequately funded, not-for-profits in Europe, and they have not had the capacity to engage professional researchers/evaluators to support their endeavors. It also reflects the significant methodological challenges in evaluating complex social interventions that aim to create positive behaviour change in the context of drug use. As such, much less is known about actual behavioural changes, impact on morbidity and mortality rates, utilisation by health and law enforcement agencies of information derived from testing, and drug market impacts, or process measures, such as feasibility, operational issues, program acceptability to key stakeholders, and costs.

In summary, it is important to attend to the areas in which evidence is weak or missing, including the following:

- The causal mechanisms that link pill testing interventions to changes in knowledge, attitudes, and behaviour.
- Comparisons of the outcomes of different service delivery models.
- The diffusion of information and behavioural change from pill testing, beyond those who present the substances for testing.
- Cost-effectiveness and cost-benefit.
- Impacts in different settings and population groups.
- Regulatory frameworks.
- Impacts on drug markets.
- Impacts on health and wellbeing at the population level.
- The outcomes of different models of policing at and in the vicinity of pill testing sites.
- Utilisation of pill testing data for the purpose of law enforcement.

Given the dearth of evidence about pill testing in the Australian context, reflecting the fact that only two trials of government-sanctioned pill testing services have been conducted in this nation, we stress the importance of building evaluations into the design and operation of future Australian pill testing services. Reflecting the fact that Australian governments and non-governmental organisations have little experience in conducting these interventions, and that scepticism about their efficacy and real-world effectiveness exists in some quarters, we suggest that such future evaluations be conducted by independent, external evaluators, rather than internally (the more common approach for formative evaluations). The advantages of external evaluations over internal ones include that 'The external evaluator is less likely to be affected by personal or job-benefit considerations, is often better at evaluation; has often looked closely at comparable programs, can speak more frankly because there is less risk of job loss or personal retribution/dislike, and carries some cachet from externality...' (Scriven 1991: 159-60).

The ACT Pill Testing Trial represented one delivery model of pill testing in the community. Other models include 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, public drug-using locations, etc. This report provides evidence of the feasibility and positive outcomes of a particular Australian pill testing service, but its findings have only limited generalisability to other service delivery models.

While there have been calls for a randomised controlled trial (RCT), we have a number of concerns about this methodological approach to expanding the evidence base. While it is beyond the scope of this evaluation to explore this issue in detail, significant ethical and methodological barriers exist to trial evaluation using RCTs. At this stage of building the evidence base, other evaluation designs will be more effective.

The evaluation reported upon here includes two elements that (so far as we are aware) have not been core elements of evaluations of overseas pill testing services in the past, namely conducting follow-up interviews with pill testing patrons, and with other key stakeholders. The first of these components has been found to be important in exploring changes in pill testing patrons' self-reported knowledge, behaviour changes directly after attending the service, and attitudinal and behaviour changes in the months following their experience of pill testing. Importantly, it has provided opportunities to explore how the service has affected their attitudes towards sources of, and use of, drug harm reduction information, and diffusion of what they have learned to others within their peer networks. As previously mentioned, these follow-up qualitative data provide novel information about patron behaviour, although the number of interviews was small and we encourage further research in this area. Furthermore, this evaluation has not been able to explore, in a systematic way, the utilisation of information derived from the testing in early warning systems, nor the pill testing service's impact on drug markets.

Based on our experiences in designing and conducting this evaluation, we suggest that people engaged in future evaluations seek to identify quasi-experimental, mixed method research designs that will provide increasingly strong evidence about the causal pathways that link the experience of government-sanctioned pill testing services to changes in knowledge, attitudes, and behaviours of the services' patrons, and other outcomes. That will give stronger evidence about causal pathways within the intervention and outcomes. Although methodological challenges exist in developing and implementing quasi-experimental approaches, we note that this was done some years ago in a frequently-cited evaluation of pill testing services in Amsterdam, Hanover and Vienna, which used a non-equivalent comparison groups research design (Benschop, Rabes, and Korf 2002).

Also important is the need for evaluation designs that are highly sensitive to context, reflecting the fact that pill testing is implemented using diverse delivery models, in diverse settings and with diverse population groups. Evaluation approaches such as Realist Evaluation (Pawson and Tilley 1997) and the CIPP (Context, Input, Process and Product) model (Stufflebeam and Zhang 2017) are valuable in exploring context.

We also draw attention to the value of the participation of members of drug user groups in the design and implementation of services and evaluations. In particular, we highlight the need to explore the conduct and evaluation of pill testing services beyond the festival setting to community settings, where people who inject drugs could also benefit from provision of pill testing services.

8 CONCLUSIONS

This report has presented the results of the first systematic, external evaluation of a pill testing trial conducted in Australia. Its design built upon, and went further than, most of the published evaluations of pill testing services conducted overseas.

The 2019 Groovin the Moo festival pill testing trial, implemented by Pill Testing Australia, was the second government-sanctioned trial of its type in Australia. It was designed and implemented collaboratively between the key stakeholders. The trial was developed carefully, with the result that it was implemented as planned, and produced the types of outputs that the key stakeholders expected to see.

The key findings, against each of the evaluation questions, are as follows:

1. The service was successfully implemented, particularly given limitations of context. A potentially highly harmful substance was identified and the pill testing information and brief interventions were valued by patrons. Results indicate that careful consideration should be made in developing standardised explanatory language used to deliver the drug testing results, as misinterpretation was common. Communication between the pill testing service, the ACT Ambulance Service, ACT Health, ACT Policing, and the festival promoters enabled successful implementation of the service.
2. The service was received positively by patrons and key stakeholders. No stakeholder reported concerns about the trial service and there was general support for continuing to operate pill testing services in the ACT.
3. The experience of testing and the accompanying harm reduction brief interventions produced a number of positive results in terms of participants' self-reported drug harm reduction knowledge, their trust of health providers and other written sources of harm reduction information, and stated behavioural intentions regarding drug use.
4. The program produced valuable information about illicit drug availability in Canberra, including the identification of a substance previously unidentified in the ACT. The authorities used this information as planned.
5. While stakeholders and patrons reported on elements of the service that could be improved, none reported adverse, unintended consequences of the trial.
6. We find support for the development of further services that provide pill testing and harm reduction information for people who use illicit drugs at festivals. We have identified a number of strengths of the program that should be retained, as well as potential program improvements to consider in future pill testing service design and delivery.

These findings of the evaluation support the development of further pill testing trials in Australia, using diverse implementation models, with a focus on designing and implementing the services in a manner that is responsive to their unique contexts, rather than applying any single implementation approach. The findings also highlight the importance of independent, external evaluations to assist building the evidence base around pill testing in this nation and internationally.

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10 APPENDICES

10.1 INSTRUMENTS

10.1.1 Pre-testing survey

1 Who will be presenting the drug for testing?

Me Someone else I'm here with

2 What do you think the drug being tested is? *Please write in space below*

3 What makes you think that? *Tick the most appropriate box*

Already tried it
 That is what I was told by the person supplying the drug
 I have tested it using a home drug testing kit
 Other _____

4 How likely is it that you will use the drug being tested today? *Circle one number on the scale below*

0	1	2	3	4	5	6	7	8	9	10
Definitely will not										Definitely will

5 Have you taken an illegal drug (other than cannabis) before? *Tick box*

Yes No

6 Who did this drug come from? *Tick the most appropriate box*

Dealer Workmate Online
 Friend Acquaintance Don't know
 Relative Gift Rather not answer
 Other _____

7 Where was this drug purchased? *Tick the most appropriate box*

Inside the venue Don't know
 Outside the venue Rather not answer

8 Please rate your knowledge of how to prevent the potential harms associated with this type of drug? *Circle one number on the scale below*

1	2	3	4	5
Very Poor	Poor	Average	Good	Very Good

9 Which of these sources have you used to find out information about drugs?

Peers Dealer School/TAFE/University
 Family Healthcare provider Written material (brochures etc)
 Friends Home drug testing kit None
 DanceWize The internet Other _____

10 What is your gender?

Male Female Other

11 What is your age? _____ **Q12** What is your postcode? _____

10.1.2 Post-testing survey

Please do not fill in this form until you are leaving the pill testing area

1 Did you personally receive the test result from staff, or were you present when the result was given?
 Yes No *(Skip to Question 7)*

2 Was the drug tested what you thought it might be?
 Yes No

3 Were you surprised by the test results? *Tick the most appropriate box*
 Very Surprised Somewhat Not at all

4 Were you told by staff that ...

	Yes	No	Not sure
5 ... the test revealed a substance known to be associated with significant harm/overdose/death?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... the drug tested may be of higher strength/purity than average or than what you may be used to using?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6a Do you know others using the same drug?
 Yes
 No
 Not sure } *(Skip to Question 7)*

6b If yes, will you tell them the results?
 Yes
 No
 Not sure

7 How likely is it that you will use the drug that was tested today? *Circle one number on the scale below (0=0%; 10=100%)*

0	1	2	3	4	5	6	7	8	9	10
Definitely will not										Definitely will

8 As a result of using this service, today I will:
 Use more of this drug than I had planned Use only alcohol
 Use less of this drug than I had planned Use no drugs
 Use a different drug Not sure
 Other _____

9 Will you discard your drugs?
 Yes, in the amnesty bin No
 Yes, somewhere else Not sure
 I don't have any drugs to discard

10 To what extent do you feel confident that the drug testing equipment used here identifies the substances in your drugs? *Circle one number on the scale below.*

1	2	3	4	5
Not at all confident	Only slightly confident	Somewhat confident	Fairly confident	Very confident

11 After receiving the test result, did you receive information from another staff member?

Yes No

12 Please rate your knowledge of how to prevent the potential harms associated with the type of drug you had tested? *Circle one number on the scale below.*

1	2	3	4	5
Very Poor	Poor	Average	Good	Very Good

13 Which of these sources will you use **in the future** to find out information about drugs?

<input type="radio"/> Peers	<input type="radio"/> Dealer	<input type="radio"/> School/TAFE/University
<input type="radio"/> Family	<input type="radio"/> Healthcare provider	<input type="radio"/> Written material (brochures etc)
<input type="radio"/> Friends	<input type="radio"/> Home drug testing kit	<input type="radio"/> None
<input type="radio"/> DanceWize	<input type="radio"/> The internet	<input type="radio"/> Other _____

14 Would you use a pill testing service again?

Yes No Not sure

15 Would you tell others about the pill testing service?

Yes No Not sure

16 How would you rate the information you received today:

a From staff at the pill testing table

1	2	3	4	5
Very Poor	Poor	Average	Good	Very Good

b From other staff

1	2	3	4	5
Very Poor	Poor	Average	Good	Very Good

17 How would you rate the service overall? *Circle one number on the scale below.*

1	2	3	4	5
Very Poor	Poor	Average	Good	Very Good

18 How clearly did the team at the pill testing service communicate information? *Circle one number on the scale below.*

1	2	3	4	5
Very Poor	Poor	Average	Good	Very Good

19 Do you agree with the following statements?

	Yes	No	Not sure
The team at the pill testing service answered my questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The team at the pill testing service were respectful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20 How could the service be changed or improved?

10.1.3 Observational data record sheet

Half-hourly observation schedule

Time	Write the exact time here
Weather	Go outside and note the weather conditions (e.g. approx. temperature, rain, hot sun, etc.). Weather conditions can affect patron attendance – last year a storm slowed patron numbers to the pill testing tent.
Conditions at site entrance	Is there a queue? Are police/security visible? Any obvious deterrents to entry?
Conditions in tent	Is it hot/cold, loud/quiet, crowded/not, are there a lot of people waiting around? Record conditions here.

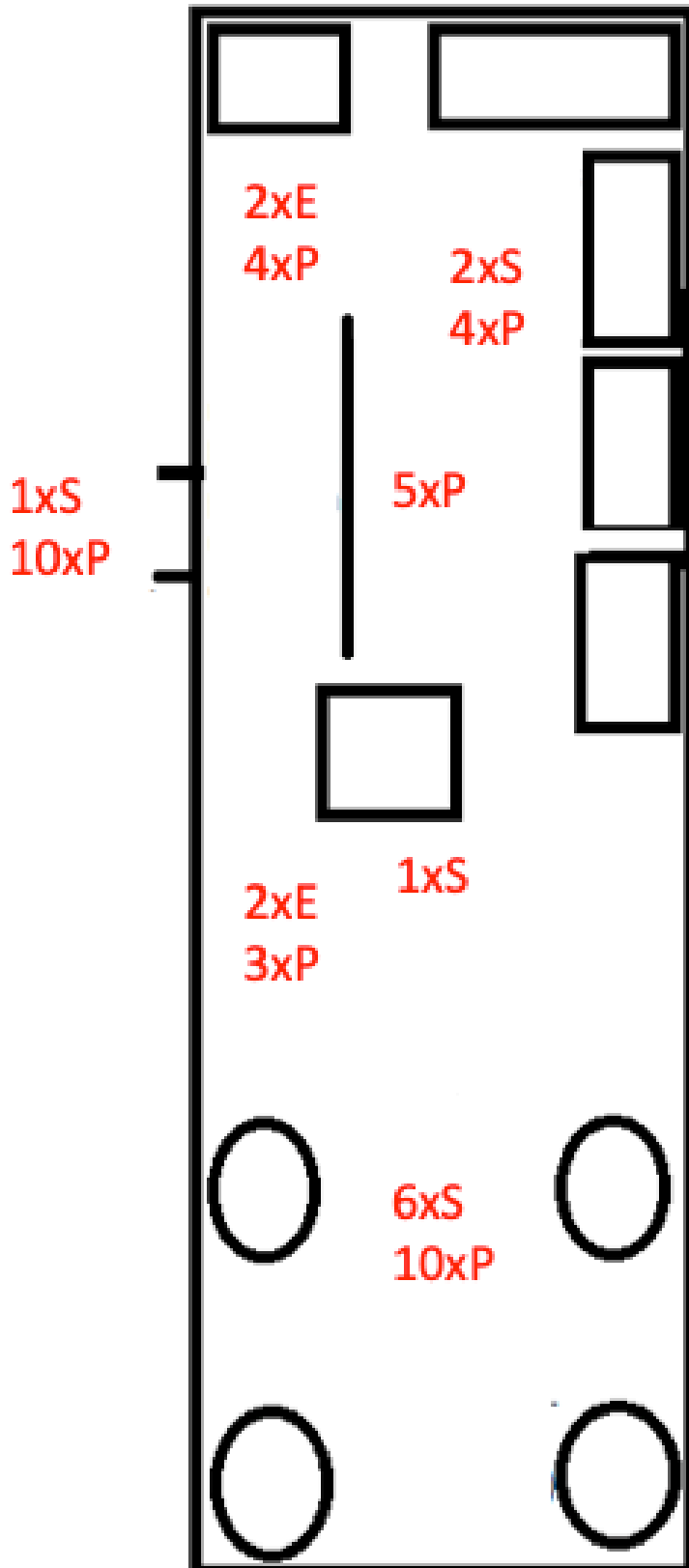
Notes (delays, disruptions, other notes)	Have their been any disruptions in service? Are there delays - why? Anything else relevant to the service functioning to note?
--	--

Fill in map on next page.

Basic map of tent layout, including number and location of people

On the map of the pill testing area provided, write the number of people in each area of the space. See example below.

[symbols: S = PTA staff, P = patron, E = evaluation team, O = other]



Hourly observation of time spent at each pill testing stage

Every hour, pick a person in the queue who you can easily identify (e.g. from clothes, hair, etc.). Write down the time.

With a stopwatch, or stopwatch on phone (TBC), take a split time for the duration spent at each stage of the pill testing process. Be careful to pay attention to the movements of the person, but without obviously following them or making them feel like they're being watched.

Repeat every hour.

Current time	Queue at entry	Assessment and waiver	Evaluation 1	Providing drug sample	Waiting for result	Receiving test result	Receiving brief intv'n	Evaluation 2
Write time you began obs. E.g. 4:00pm	7:00 Time at stage (in mins and secs)	1:45	5:00	2:00	5:00	2:15	7:00	2:30

10.1.4 Follow-up interview – Patrons

I'll start by asking you a few demographic questions then move onto questions about your thoughts on pill testing and experience at the pill testing service at GTM, and any impact using the service had on your drug use behaviour.

1. What is your gender? _____
2. What is your age (in years)? _____
3. What is your postcode? _____

Accessing the service

4. How did you hear about the pill testing service at GTM?
5. Why did you decide to use the service?
 - a. Did you have any reservations or doubts about going to the service? If so, what?
 - b. Did police or security presence have any impact on your desire to use the pill testing service? (If so, how?)

Prior to the festival

6. Before you went to the festival, what were your plans for using alcohol and drugs at the festival? (prompt for types, amounts, timing)
7. Would your plans for using alcohol and drugs have been different if there was no pill testing service at the festival?
8. Had you taken an illegal drug other than cannabis before?
 - a. Yes – ask 9
 - b. No – skip to question 10
9. If yes: You don't need to give me too much detail, but can you give me an indication of the types of drugs you'd used in the past and how often you would use them?
10. Without pill testing, how would you usually get information about drugs? (who/where from and why)
 - a. Can you tell me why you use these sources?
 - b. Are there particular sources of information you avoid? Why?
11. Have you ever spoken to a healthcare provider (e.g. GP) about drug use?
 - a. Yes
 - b. No
- 11(a). Why, why not?

Before testing

12. At the GTM pill testing service, did you present the drug for testing or another person?

(If participant presented a drug, use below questions, if attending with a friend use language in red)

- a. Before you went to the pill testing tent, what did you (**your friend**) think the drug being tested was?
- b. What made you (**them**) think that?
- c. Where had the drug come from (where was it sourced and who from, inside or outside venue)?
- d. Were you planning to take the drug you (**your friend**) had tested? Was anyone else planning to use it? (e.g. others in group/was it part of larger batch)

Pill testing process

13. Did you personally receive the test result from staff, or were you present when the result was given?

- a. Yes
- b. No – If no, did you talk to the person who received the test result about what the pill testing found? Can you tell me about what they said? (then skip to Q18)

14. Was the drug tested what you thought it might be?

- a. Yes
- b. No

15. What were you told was in the sample you provided?

- a. Were you surprised by the test results?

16. Were you told by staff that the test revealed a substance known to be associated with significant harm/overdose/death?

- a. Yes
- b. No
- c. Not sure

What were your thoughts when you heard that? Did that change anything for you?

17. 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?

- a. Yes
- b. No
- c. Not sure

What were your thoughts when you heard that? Did that change anything for you?

18. After receiving the test result, did you receive information from another staff member? (the people on the bean bags down the end of the tent)?
- Yes
 - No
 - Not sure

Can you tell me about that? (prompt for: what did you talk about? What kind of information did they provide? Was it personalised to you? Were you told about the risks associated with taking the drug you provided for testing? Or other drugs in general? How did you find the conversation overall?)

19. Did you discard your drugs?
- Yes, in the amnesty bin at the pill testing service
 - Yes, somewhere else
 - No
 - Not sure
 - I didn't have any drugs to discard

Why or why not? (prompt for: What would stop you from discarding drugs in the amnesty bin inside the service?)

20. Do you have any OTHER comments about the information that was provided at the pill testing service?

Behavioural effects at GTM

Now I'd like to ask you a few questions about what happened after you left the pill testing service.

21. As a result of using the pill testing service, on the day at GTM did you [please choose one of the following options]:
- Use the same amount of the tested drug as planned
 - Use more of this drug than you had planned
 - Use less of this drug than you had planned
 - Use a different drug
 - Use only alcohol
 - Use no drugs
 - Not sure

Can you tell me more about how using the service impacted on your drug use at GTM (if at all)? (prompt for: did the pill testing result or the information you received have any impact on how confident you felt about taking the drug you had tested?)

22. Did you tell anyone else at the festival about the information you'd received in the pill testing tent? (who, what did you say, what was their reaction?)
23. Did you receive any medical care at the festival? (If yes, did you tell them about your pill testing result?)

Effects after GTM

Now I'd like to ask you a few questions about your experiences since visiting the pill testing service at GTM

24. Since GTM, have you told others about pill testing?
- a. Yes
 - b. No
 - c. Not sure

Why, why not? What was their reaction?

25. Has your experience of pill testing at GTM had any impact on your drug use since the festival? (If so, how? If not, why not?)
26. Do you feel going to pill testing changed your knowledge about illicit drugs? (If so, how?)
27. Has using the pill testing service made you trust any particular sources of information about drugs more? ... or less?
28. Has using the pill testing service changed how you feel about talking to healthcare services about drug use? (How or why not? Which services would you feel comfortable talking to in the future?)

Pill testing attitudes

These are the last few questions. They are about your thoughts on whether pill testing services should continue and if so, how

29. Would you use a pill testing service again?
- a. Yes
 - b. No
 - c. Not sure

Why or why not?

30. What do you think could be done to improve the pill testing service?
31. Do you think pill testing should be rolled out more widely? (If so, how? If not, why not?)

32. Pill testing can be conducted either at a festival, or at another site where you can get drugs tested before events. Would you prefer to test your illicit drugs...?
- a. At the event
 - b. Before the event
 - c. Not sure

33. What impact do you think the availability of pill testing services has on drug use?
- a. Encourages drug use
 - b. Discourages drug use
 - c. No effect
 - d. Other

Why do you say that?

34. Is there anything else you'd like to share?

Thank you for your time and contribution🙏

10.1.5 Follow-up interview – Stakeholders

1. What is your professional background?
2. How were you involved in the event (pill testing at GTM in April 2019)?
3. What is your opinion of pill testing in general (i.e. not just at GTM or in the ACT)?
 - a. What are the positives of pill testing?
 - b. Can you see any potential downsides?
4. Pill testing in the ACT is in an initial trial phase, do you have any thoughts on how it was implemented at GTM in 2019?
 - a. Would you make any changes if it were to be implemented again (what and why)?
 - b. Were there any particular strengths that you would like to see stay the same if it was implemented again in future?
5. Were you involved in the first pill testing trial at GTM in 2018?
 - a. If so, have your opinions about pill testing shifted since the first trial?
 - b. How do you think it ran in 2019 compared to 2018?
6. How effectively were relationships between stakeholders managed (e.g. promoter, police, pill testing service, other event service providers, security, ACT Health) before, during and following the event?
 - a. How well do you feel information was shared or communicated between parties prior to and on the day?
7. Do you feel that policing at the festival had any impact on how the trial was implemented on the day? If so, how?
8. Has the implementation of pill testing had any impact on your work? If so, how?
9. Did the program produce any previously unavailable information about illicit drug availability in Canberra? If so, how will that information be used?
10. Do you feel that the program had any unintended outcomes, either positive or negative? If so, what?
11. Are you aware of any other pill testing service delivery models, different from that used at GTM, that could be used in Canberra? If so, what are they and what do you think about them?

Prompts: What do you think about the option of:

- a. conducting pill testing at future festival events?
 - b. making pill testing a permanent feature of festival events in the ACT?
 - c. including an off-site service a week before festivals?
 - d. making a permanent pill testing site in the ACT?
 - e. establishing an early warning system for particularly dangerous substances identified through pill testing?
12. What are your views on how the service worked for users?

Prompts: Behaviour change; inexperienced/first time/early career drug users and pill testing
 12. Are there any other thoughts on pill testing you'd like to share?

10.1.6 Suggested changes to evaluation instruments

Pre-test survey

Q6. Who did this drug come from?

- Remove 'Gift' as an option
- Change 'dealer' to 'dealer (face-to-face)'
- Change 'Online' to 'dealer (online)'

Q9. Which of these sources have you used to find out information about drugs?

- Change from 'DanceWize' to 'peer-based drugs harm reduction program (e.g DanceWize, RedFrogs)'

Post-test survey

Q5. The drug tested may be of higher strength/purity than average or than what you may be used to using?

- This question should be modified based on the equipment used/information able to be provided.

Q8. As a result of using this service, today I will:

- This question should also include other behavioural options such as:
 - Not taking all of the drug/s at one time;
 - Increasing the amount of time between consumption of drugs;
 - Being aware of overexertion and hydration in order reduce the potential harms of these drugs;
 - Etc.

Q13. Which of these sources will you use in the future to find out information about drugs?

- Change from 'DanceWize' to 'peer-based drugs harm reduction program (e.g DanceWize, RedFrogs)'

Q15. Would you tell others about the pill testing service?

- Changing to 'Would you recommend this service to others?'