

An Effective Risk Minimization Strategy Applied to an Outdoor Music Festival: A Multi-Agency Approach

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Abbreviations:

ACT: Australian Capital Territory
 ED: emergency department
 FAQ: frequently asked question
 MDMA: 3,4-methylenedioxy-methamphetamine

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Specific Event Identifiers:

- a. Event type: Outdoor music festival.
- b. Event onset date: December 3, 2016.
- c. Location of event: Regatta Point, Commonwealth Park.
- d. Geographical coordinates: Canberra, Australian Capital Territory (ACT), Australia (-35.289002, 149.131957, 600m).
- e. Dates and times of observation in latitude, longitude, and elevation: December 3, 2016, 11:00-23:00.
- f. Response type: Event medical support.

Abstract

Introduction: Young adult patrons are vulnerable to risk-taking behavior, including drug taking, at outdoor music festivals. Therefore, the aim of this field report is to discuss the on-site medical response during a music festival, and subsequently highlight observed strategies aimed at minimizing substance abuse harm.

Method: The observed outdoor music festival was held in Canberra (Australian Capital Territory [ACT], Australia) during the early summer of 2016, with an attendance of 23,008 patrons. First aid and on-site medical treatment data were gained from the relevant treatment area and service.

Results: The integrated first aid service provided support to 292 patients. Final analysis consisted of 286 patients' records, with 119 (41.6%) males and 167 (58.4%) females. Results from this report indicated that drug intoxication was an observed event issue, with 15 (5.1%) treated on site and 13 emergency department (ED) presentations, primarily related to trauma or medical conditions requiring further diagnostics.

Conclusion: This report details an important public health need, which could be met by providing a coordinated approach, including a robust on-site medical service, accepting intrinsic risk-taking behavior. This may include on-site drug-checking, providing reliable information on drug content with associated education.

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Introduction/Summary of Event

Internationally, outdoor music festivals are a common occurrence, offering an opportunity for patrons to socialize to a common theme. These events present a mass-gathering public health challenge. Outdoor music festivals have been described as unique in that they are bounded, ticketed, and generally provide alcohol.¹ Music festivals, including the more modern electronic dance music events, target younger demographic audiences whom associate more closely with the cultural experience offered.^{2,3} Young adult patrons are relatively more vulnerable to risk-taking behavior, especially when considering a social context in which legal and illicit drugs may be present, in conjunction with alcohol.⁴ The terms "illicit" and "party" drugs frequently conjure images of out of control revelers at rave parties, although this may not be an adequate portrayal.^{5,6}

Music festivals do not necessarily create substance (drug) users, yet certain population groups may be attracted to such music festival mass gatherings, with this group at-risk of poor health decisions and outcomes.⁷ The social complexity between risk taking and risk aversion may lead to the labelling of music festivals as drug-affected events, thus predisposing organizations and medical support planning to prejudice responsive versus proactive initiatives.⁸

While not condoning drug taking, event risk planning should encompass proactive strategies to reduce alcohol overuse and drug use, thus reducing negative patient and community effects, such as increases in hospital presentations associated with such events.

The aim of this field report is to discuss the first aid and on-site medical response during a music festival, subsequently highlighting the observed strategies aimed at minimizing substance abuse harm.

Sources

The data included in this report were gained directly from the following sources:

- Outdoor music festival event data;
- Calvary Public Hospital Bruce Emergency Department (ED; Bruce, Australian Capital Territory [ACT], Australia);
- St John Ambulance (ACT);
- ACT Ambulance Service (ACTAS); and
- Youth Health Services (ACT).

Event Observations and Health Presentation Results

The observed outdoor music festival was held in Canberra (ACT, Australia) during the early summer of 2016, with an attendance of 23,008 patrons. The event hosted multiple internationally renowned artists, on multiple stages, supported by local artist, food, and beverage vendors.

Planning for this outdoor music festival was thorough in regards to risk profiling and the integration of multiple agencies, in conjunction with the event organizers. It was noted that this multi-modal planning enabled the conceptualization of many prior unconsidered risks, and subsequently, strategies to minimize or mitigate such risks.

A unique approach to event management, as well as on-site health care provision, was applied to the Canberra 2016 outdoor music festival. It was recognized and accepted that such events may cohort persons within the community whom utilize illicit substances. While not promoting, supporting, or condoning such illicit activity, the event organizers and supporting agencies accepted this reality and proceeded to apply systems to uphold patron safety. The health application of this approach was the directive (from the event health clinical commander) that health care providers on site were to focus management on abnormal symptomatology presentation, hemodynamic compromise, or individuals at-risk. This directive allowed patrons choosing to partake in the utilization of illicit substances, who demonstrated normal responses, to remain engaged in the event rather than be managed by the on-site health services, or taken to the hospital.

This directive was supported by the presence of Youth Health Services, a free primary health care service for people aged 12 to 25 years, living within the ACT and surrounds. The Youth Health Services were ideally placed to help other agencies in the support of hemodynamically stable illicit substance and alcohol users at the event, with 131 patrons (male = 58, female = 73) utilizing the

Youth Health Services “Chill Out Zone.” The youth workers provided opportunistic health promotion and education to those visiting their on-site service, including (though not limited to) messaging supporting health literacy per illicit substances, safe sex, mental health, and healthy choices. The presence of the Cancer Council also supported this positive health choices perspective via the distribution of messaging and free sunscreen.

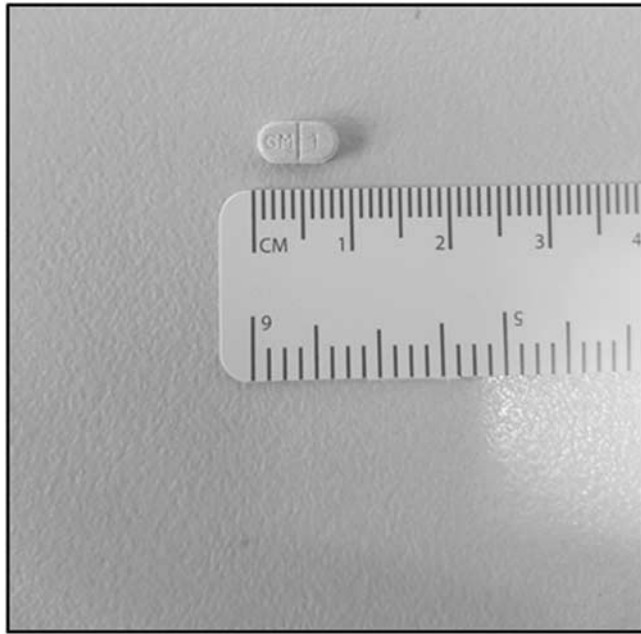
As an outdoor event, the provision of health care support for patrons took into account acute and chronic health issues. In the context of health care provision at mass gatherings, outdoor music festivals have been reported to demonstrate higher patient presentations when compared to other mass gatherings.⁹ While this was observed in the context of the Canberra 2016 outdoor music festival event ($n = 292$ raw presentations to first aid), the severity/urgency of presenting complaint types was noted to be minor in nature.

The concept of on-site pill testing (the spectral analysis of chemical constituents of a potentially illicit substance) during this outdoor music festival was proposed in the early phases of planning, though ultimately was not established. Regardless of the ethical stance on whether “pill testing” encourages or discourages illicit substance utilization, the premise of patron safety should remain paramount. Of interest, many of those patrons whom discussed their 3,4-methylenedioxy-methamphetamine (MDMA) use with the on-site youth workers would have tested their illicit substances ($n = 50$) had they been presented with such an on-site opportunity/service.

While illicit drugs were present at the event, their impact was minimal. This is believed to be in part due to the extensive and effective planning prior to the launch of the event. While MDMA was the predominant illicit substance present, with the majority being of a singular presentation, crystal form in a cellulose capsule, there was also a small proportion of ketamine, lysergic acid diethylamide (LSD), and cocaine. As experienced with the majority of mass gatherings where alcohol is permitted or available, the greatest proportion of health-related presentations were directly related to intoxication. Again, a non-medicalization approach was applied to this intoxicated group of patrons: allowing “drunken” patrons “to vomit,” only intervening should the affected individual be hemodynamic compromised or an individual at-risk was identified.

The requirement of some patrons to need prescription medications while in attendance at a prolonged mass-gathering event may be seen as complicating a “pill” risk minimization model, when attempting to reduce the number of potentially illicit pills being brought into an event. Significant discussion and planning went into ensuring that patrons with legitimate prescription medication requirements were not disadvantaged by this risk minimization strategy. This included a plan to have health care providers at the gate with access to pill identification references (to aid security-related decision making), as well as pre-event communication related to this component of the conditions of entry. This included signage and digital dissemination of the messaging, answering frequently asked questions (FAQs), such as:

FAQ - I NEED TO BRING MY OWN MEDICATION WITH ME, HOW DO I DO THIS? If you need to bring in prescription medication, you will need to make sure it is clearly labelled (with dispensing label), in its original packaging. Please be aware security may ask the festival's medical team to check your medication upon



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Figure 1. First Example of a Bag Voluntary Surrendered.

arrival. If you require over-the-counter medication while at the event, first-aid services on-site will have a limited, though sufficient, supply available.

Many patrons may not have read this information and presented with medications, without dispensing labelling or original packaging, resulting in a significant workload cross-referencing medications. Though laborious, the positive impact of this initiative was realized. One such example included a young male patron presenting to the admission gate with a bag of mixed tablets (approximately 30) claiming that he was epileptic. On positively identifying many of the tablets in the bag as “glimepiride” (Figure 1), a type-2 diabetes mellitus medication (there was no reported diabetic condition), the patron rapidly stated that he did not need the medications, disposed of the bag in a bin, and proceeded into the event. While effective in preventing at least one potential introduction of illicit substances to the event, it was also identified that clear communication of risk minimization strategies, to all participating agencies, is required for efficient application. For example, while the prescription medication risk minimization strategy was directly supported by senior police officers, some general duties officers on the perimeter of the event were not supportive in practice, potentially due to a lack of understanding behind the initiative and pharmacology.

Further confirming the illicit drug introduction threat to such events, and the link to potentially legitimate medications, a patron surrendered a sealed foil strip of capsules to on-site ambulance officers. On examination, the capsules were consistent with the predominant MDMA being consumed by patrons (crystal form) in a cellulose capsule (Figure 2).

On-site first aid and medical services included an integration of trained first aid volunteers (including health care professionals), Ambulance Officers, and Youth Health Workers. The integrated service provided first aid support to 292 patients, from 10:30AM on December 3, 2016 to 12:30AM on December 4, 2016. The files of five ($n=5$) presentations were not able to be located on review of



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Figure 2. Second Example of a Bag Voluntary Surrendered.

the first aid data, with an additional case having incomplete documentation. These cases were not included in the analysis. Final analysis consisted of 286 patients records, with 119 (41.6%) males and 167 (58.4%) females (one case didn't define gender). Presentation diagnosis is detailed in Table 1.

The ambulance service transported five patients to hospital following initial assessment by the on-site first aid service. These patients included: seizure, dislocated shoulder, alcohol intoxication, drug intoxication, and a head injury with loss of consciousness and altered responses. All other presentations were managed on site, either being returned to the event or recommended to go home. While additional resources were scheduled for the event, the ambulance service did not experience any impact to normal operations as a result of this event.

The Calvary Public Hospital ED was the closest ED to the event (there are two EDs in the ACT). It was noted that two patrons were transferred to the second ED in Canberra, though most utilized the services of the nearest facility, the Calvary Public Hospital. Thirteen ($n=13$) persons presented to the Calvary Public Hospital ED during the period of the outdoor music festival, stating that they had been patrons of the event (this includes the three ambulance transfers to the hospital, directly from the event). Twelve ($n=12$) of the 13 (92.3%) patients treated at the Calvary Public Hospital ED were treated for alcohol and substance abuse. The combination of these results indicate that 28 festival attendees were adversely affected by drugs, thus indicating a public health issue.

Analysis of Observations and Results with Recommendations

A robust, multi-agency risk minimization strategy, integrating social norms commonly associated with outdoor music festivals,

Presentation Description ^a	Number	Percentage
Headache/Migraine	71	24.0
Asthma	28	9.5
Pain - Lower Limb	21	7.1
Hay Fever	19	6.4
<i>Intoxication - Alcohol</i>	<i>18</i>	<i>6.1</i>
<i>Intoxication - Drugs</i>	<i>15</i>	<i>5.1</i>
Breathing Difficulty	14	4.7
Foreign Body - Eye	8	2.7
Concussion/Dizzy	7	2.4
Dehydration	6	2.0
Laceration - Head/Face	6	2.0
Nausea/Vomiting	6	2.0
Pain - Back	6	2.0
Allergic Reaction	5	1.7
Anxiety	5	1.7
Eczema/Rash	5	1.7
Epistaxis	5	1.7
Pain - Upper Limb	5	1.7
Abdominal Pain	4	1.4
Laceration - Upper Limb	4	1.4
Menstrual Pain	4	1.4
Pain - Chest	4	1.4
Unwell	4	1.4
Laceration - Lower Limb	3	1.0
Coryzal Symptoms	2	0.7
Dislocation - Patella	2	0.7
Head Injury – Loss of Consciousness	2	0.7
Hypoglycemia	2	0.7
Abrasion	1	0.3
Bite - Spider	1	0.3
Blood Glucose Check	1	0.3
Conjunctivitis	1	0.3
Contusion - Hand	1	0.3
Contusion - Head/Face	1	0.3
Contusion - Lower Limb	1	0.3

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Table 1. Event First Aid Presentation Data (*continued*)

Presentation Description ^a	Number	Percentage
Contusion - Torso	1	0.3
Dislocation - Shoulder	1	0.3
Glomerulonephritis	1	0.3
Pain - Arthritic	1	0.3
Pain - Jaw	1	0.3
Pain - Post Surgery	1	0.3
Seizure	1	0.3
Toothache	1	0.3
Total	296	100

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Table 1 (*continued*). Event First Aid Presentation Data

^a Some cases were repeat presentations for the same or developing symptomatology, while other cases presented with multiple complaints.

was found effective in promoting patron safety at the outdoor music festival. The integrated health response (first aid, medical, ambulance, and Youth Health Workers) minimized the impact of such an event on the regional EDs, while sponsoring health promotion and the non-medicalization of patrons whom chose to partake in illicit substance use or suffered from alcohol intoxication.

As discussed above, the results indicated that drug use and intoxication was a public health issue addressed, associated with the event. Furthermore, these figures are believed to be under-reported based on prior publications.⁹ The initial treatment of intoxicated patients at the event was to monitor, in a non-medicalized model. While this approach is recommended, policy makers and planners could also consider employing other proactive approaches, such as on-site pill testing. The 2015-2016 summer festival season within Australia included multiple deaths and hospital admissions, directly following illicit drug use at festivals.¹⁰ Results from this report appear to support this trend, although with a lower acuity profile.

Multiple European countries provide drug analysis services.⁹ These services involve users submitting their drugs to have their contents analyzed for purity. The results are then provided to the user, with many services then providing education and interventions aimed at reducing drug use. While the direct prevention of deaths as a result of on-site drug testing has not been documented, it should be noted that dangerous pills identified via this checking methodology, including education campaigns, have disappeared from the Dutch market.¹¹ Specific considerations need to be overcome before drug-checking can be established in Australia, as detailed by Butterfield, et al:^{9p145}

- The need to ensure drug-checking services are not complicit in aiding drug distribution; and
- The need to address the potential misconception that by having their drugs “checked,” their use is condoned or seen as safe.

As Butterfield, et al noted: “Existing drug-checking services deal with this misconception through careful engagement with service users to explain that all drug use is risky and that the only completely safe option is to avoid drug use.”

Conclusions

As mentioned by Butterfield, et al, "Providing a drug-checking service would not require a radical shift in national drug policy, though would require cooperation between health and law enforcement stakeholders." On-site opportunistic education and health promotion should be attended at every opportunity, especially in the space most occupied by specific cohorts.

While Vermeulen-Smit, et al noted that family interventions targeting parent-child dyads are likely to be effective, particularly in reducing the use or take up of marijuana, they also note

that illicit drug use appears to be more influenced by other factors.¹² Such interventions, as attended by the integrated Youth Workers and acute health care provision element, may be the factor required to influence safe youth/young adult decision making.

Recognition and acceptance of inherent risk-taking behavior, in the cohort of those attending music festivals (or in the youth/young adult cohort in general), supporting a multi-agency initiative aimed at minimizing substance abuse harm should be a mainstay of event health planning.

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