On-site drug checking can provide quantitative analysis: Response to Scott & Scott

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Drug checking services, or pill testing services, "invite members of the public to anonymously submit psychoactive drug samples for forensic analysis and then provide individualised feedback of results and counselling as appropriate" [1]. These services test tablets, powders, crystals, blotters and liquids. Communicating analysis results along with harm reduction advice is key. We agree with Scott and Scott's suggestion [2] that 'pill testing' at festivals should be subjected to rigorous research trials. However, we argue that there certainly is enough evidence to implement drug checking services in Australia with an embedded research and evaluation design. We make three responses to Scott and Scott: (i) drug checking *can* provide quantitative analysis, (ii) existing police seizure data *cannot* replace drug checking service data, and (iii) selective citation practices may misinform IMJ readers.

Firstly, on-site drug checking *can* provide quantitative analysis. In our catalogue of drug checking services, almost half of the services reported capacity to quantify via a range of analytical processes [1]. Austrian and Swiss drug checking services have been quantifying in the field for decades [1]. In the UK, The Loop's large teams of chemists deploy and triangulate the results of multiple analytical processes, including ultraviolet–visible spectrophotometry (UV-Vis) and gravimetric analysis to quantify MDMA [3]. Meanwhile, new techniques (e.g. paper spray mass spectrometry [4]) that detect and quantify substances at threshold levels continue to evolve. In January 2020, The Loop Australia (a sister organisation to its UK counterpart) purchased UV-Vis and equipment for gravimetric analysis, and now has the capability to accurately estimate quantity in the field. This capability is essential in Australia, given the contribution of high strength MDMA to deaths at festivals. These methods are used in conjunction with analytic methods that detect adulterants.

Secondly, while market surveillance through police seizure analysis is worthwhile, it *cannot* replace the value of drug checking service data for public health purposes. Analysis of police seizures may detect the emergence of atypical drug types and trends in strength/dosage. This could happen rapidly if police seizures were analysed on site, but in current practice analysis typically takes place weeks or months after seizure, making the results less relevant. Drug checking services also provide

key market information not available through police seizures, including the nature and size of the discrepancy between expected and actual content of drugs [5].

Finally, the selective use of references is concerning. For example, the authors describe the Victorian Inquiry into Drug Law Reform as 'rejecting on-site pill testing' without mentioning the recommendation to establish fixed-site drug checking services. Despite referencing our review of 31 global drug checking services [1], only to say that no formal evaluations existed [but see 6], Scott & Scott make claims (such as the lack of suitable methods for quantifying on-site) that are false and not supported by the evidence in our review [1]. We hope our response assists IMJ readers to develop a more balanced view of drug checking as a public health intervention that also contributes valuable data to early warning systems.

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