

Illicit and novel drug detections in Australian emergency departments: findings from the first two years of the Emerging Drugs Network of Australia

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Introduction: Collaboration between emergency departments (EDs), forensic laboratories, and public health authorities has demonstrated clinical and public health impact through early identification of novel psychoactive substance (NPS) and informing public health alerts. We present the first two years of the Emerging Drugs Network of Australia (EDNA) clinical registry (October 2023-September 2025), stratified by NPS-positive and NPS-negative presentations, and describe drug alerts released during this period.

Methods: EDNA is a multi-state prospective toxicosurveillance system collating ED presentations with severe/unusual clinical features consistent with illicit/NPS toxicity, with results from comprehensive blood analysis. NPS-positive and NPS-negative presentations were compared. Public health alerts were collated from The Know¹ and through consultation with EDNA Investigators, and reviewed against EDNA-enrolled presentations.

Results: There were 2491 ED presentations; 1634 (65.6%) male, median age 34 years (Q1-Q3 26-43). Traditional illicit drugs were detected in 2104/2491 (84.5%) presentations, with 1257/2104 (59.5%) having >1 illicit drug detected. NPS were detected in 237/2491 (9.5%) presentations. 83/237 (35.0%) had >1 NPS detected. NPS-positive presentations were more likely to be male (75.5% versus 64.6%, $p<0.001$) and younger (median age 28 versus 35 years, $p<0.001$) than NPS-negative presentations. No differences were identified between presentation characteristics (proportion arriving by ambulance, Australasian Triage Scale) or outcomes (length of stay, requirement for intensive care).

56 NPS-related public health alerts were released. For 17 (30.4%) alerts, there was at least one enrolment positive for at least one reported NPS one month prior to the release of the alert.

Discussions and Conclusions: A robust national toxicosurveillance system centred on the ED is a responsive approach to drug-related harm. Polydrug exposure was common. Demographic differences occurred in NPS-positive presentations, but no differences in outcomes were observed.

Implications: Objective data has impacted clinical practice, enhanced collaboration between forensic laboratories and promoted public health harm reduction.

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