Trends in availability, use, and harms of new psychoactive substances in Australia

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Drug Trends Team:
• National Drug and Alcohol Research Centre: Daisy Gibbs, Antonia Karlsson, Anant Mathur, Rachel Sutherland, Julia Uporova, Georgia Kelly, Amanda Roxburgh, Timothy Dobbins, Louisa Degenhardt, and Michael Farrell
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• Data custodians for the timely provision of data and input on analysis and interpretation
• Stakeholders for engagement with and input on Drug Trends
NPS use in Australian general population

- National Drug Strategy Household Survey (+ Wastewater analyses)

**Lifetime use %**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic cannabis</td>
<td>1.3</td>
<td>2.8</td>
</tr>
<tr>
<td>Other NPS</td>
<td>0.4</td>
<td>1.0*</td>
</tr>
</tbody>
</table>

**Past 12 month use %**

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic cannabis</td>
<td>1.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Other NPS</td>
<td>0.4</td>
<td>0.3*</td>
</tr>
</tbody>
</table>

*p<0.05 2016 vs. 2013 estimate

Consumers of illicit drugs in the Australian population

- Six types of Australian illicit drug consumers identified in 2013 household survey:
  - Cannabis consumers (46%)
  - Pharmaceutical consumers (21%)
  - Ecstasy and cocaine consumers (19%)
  - Amphetamine and cannabis consumers (7%) – 35% synthetic cannabinoids
  - Polysubstance consumers (6%) – 31% NPS and 31% synthetic cannabinoids
  - Inhalant consumers (2%)

Source: Sutherland et al. (2018). Drug and Alcohol Dependence.
To establish, maintain, and continuously improve monitoring of trends in illicit drug use, harms, and markets across Australia

### DATA SOURCES

#### National Monitoring: Secondary Data
- **Mortality Data**: Drug-induced deaths from registry and coronial data
- **Hospitalisation Data**: Drug-induced hospitalisations
- **Other Sources**: Household survey, treatment data etc

#### Jurisdictional Monitoring: Secondary Data
- Various sources assessing drug use and harms at the population-level (e.g., emergency department presentations) and subpopulation level (e.g., NSP visits)

#### Sentinel Sample Monitoring
- **Illicit Drug Reporting System (IDRS)**: Annual interviews with people who inject drugs (IDRS) and who use stimulants (EDRS)
- **Ecstasy and Related Drug Reporting System (EDRS)**: Annual interviews with people who inject drugs (IDRS) and who use stimulants (EDRS)

#### Online Monitoring
- **Cryptomarket Data**: Scraping listings on darknet drug markets

### OUTPUT
- Input from researchers, national stakeholders, and jurisdiction stakeholders to inform priority research questions
- Analytical reports
Past six month use of ‘any’ NPS, 2010-2018

List of NPS evolves each year. Core substances include:

- 2c-x
- NBOMe
- 4-FA
- Mephedrone
- Methylone
- Alpha-PVP
- DMT
- BZP
- Methoxetamine
- Acetylfentanyl
- U-47700
- Synthetic cannabinoids

% of sample

Source: Peacock et al. (2018). IDRS and EDRS national reports
Past six month use of synthetic cannabinoids, 2011-2018

- Federal offence to possess 8 individual SCRA
- Added eight structural groups of SCRA
- Interim consumer protection ban prohibiting specific substances
- Legislation banning importation of substances with ‘psychoactive effects’ not otherwise regulated

% of sample

- People who use ecstasy/other stimulants
- People who inject drugs
Past six month use of DMT, 2010-2018

% of sample who use ecstasy/other stimulants


7 13 12 14 14 11 15 18 18

Median frequency (2018): 2 days in past 6 months

n=140; 2017

% DMT consumers

Plant Powder Crystal

36 36 31

The Difference is Research
Past six month use of hallucinogen NPS, 2010-2018

Median frequency (2018)
2C-B: 2 days past 6 months
NBOMe: 2 days past 6 months
Past six month use of stimulant NPS, 2010-2018

Median frequency (2018)
Mephedrone: 3 days
Methylone: 2.5 days
Number of weight of analysed seizures that contain NPS, 2007/08-2016/17# (Australia)

How else do we monitor the NPS market in Australia?
## Number of vendors selling NPS (July-Dec 2016)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Alphabay</th>
<th></th>
<th>Dream Market</th>
<th></th>
<th>Hansa</th>
<th></th>
<th>Valhalla</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%(^{^})</td>
<td>n</td>
<td>%(^{^})</td>
<td>n</td>
<td>%(^{^})</td>
<td>n</td>
<td>%(^{^})</td>
</tr>
<tr>
<td>2C-x</td>
<td>89</td>
<td>2</td>
<td>107</td>
<td>4</td>
<td>26</td>
<td>3</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>U-47700</td>
<td>48</td>
<td>2</td>
<td>41</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>DMT</td>
<td>64</td>
<td>1</td>
<td>61</td>
<td>1</td>
<td>18</td>
<td>1</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>MDA</td>
<td>27</td>
<td>1</td>
<td>21</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mephedrone</td>
<td>44</td>
<td>1</td>
<td>64</td>
<td>2</td>
<td>10</td>
<td>1</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>α-PVP</td>
<td>27</td>
<td>1</td>
<td>24</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>NBOMe</td>
<td>53</td>
<td>1</td>
<td>39</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>FuranylFentanyl</td>
<td>40</td>
<td>1</td>
<td>32</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Synthetic Cannabinoids</td>
<td>42</td>
<td>1</td>
<td>38</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>DOx</td>
<td>41</td>
<td>1</td>
<td>33</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>517</strong></td>
<td><strong>13</strong></td>
<td><strong>450</strong></td>
<td><strong>15</strong></td>
<td><strong>111</strong></td>
<td><strong>12</strong></td>
<td><strong>64</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

*Source: Roxburgh et al. (2017). Drugs and the Internet.*

The Difference is Research
Harms of NPS in Australia

- Challenges in timely identification of NPS involvement in harms
- Challenges in rapid, accurate communication to stakeholders, including consumers
- Eager to learn from other countries and other disciplines in both these respects

An acetyl fentanyl death in Western Australia

Daniel M. Moss¹, David H. Brown², and Bianca J. Douglas³

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ABSTRACT
Post-mortem case details, including toxicology, of deaths involving novel psychoactive substances (NPS) are limited due to the relatively recent emergence of NPS as a global problem. Acetyl fentanyl, an illicit fentanyl analogue, is no exception, with its prevalence being documented since 2013. This case report seeks to provide pathology and toxicology findings of a sudden death attributed to acetyl fentanyl use. Following injection of acetyl fentanyl, a 24-year-old male died suddenly. The autopsy indicated pulmonary oedema and congestion, and early aspiration pneumonia as the only notable findings.

ARTICLE HISTORY
Received 14 February 2017
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KEYWORDS
Acetyl fentanyl; Illicit fentanyl analogue; sudden death; post-mortem toxicology

An early warning system for emerging drugs of concern in the emergency department: Protocol for the Western Australian Illicit Substance Evaluation (WISE) study

David McCutcheon, Mohan Raghavan, Jessamine Soderstrom, Francois Oosthuizen, Bianca Douglas, Ellen MacDonald, Daniel Fatovich

First published: 14 October 2018 | https://doi.org/10.1111/1742-6723.13185

David McCutcheon, MBBS, FACEM, Emergency Physician; Mohan Raghavan, MBBS, MRCS, FACEM, Clinical Toxicologist; Jessamine Soderstrom, MBBS, FACEM, Clinical Toxicologist; Francois Oosthuizen, BSc (Hons), MSc, PhD, Forensic Toxicologist; Bianca Douglas, BSc (Hons), Forensic Toxicologist; Ellen MacDonald, MN, GradDipFN, RN, Clinical Nurse Manager of Research; Daniel Fatovich, MBBS, FACEM, PhD, Professor of Emergency Medicine.
Infectious disease communication networks
“Prompt Response Network”

KEY FEATURES:
1. Consumer focused
2. Multiple data sources
3. Various target users:
   - Toxicology
   - Ambulance
   - ED
   - Clinicians
   - Outreach
   - Customs/LE
4. Moderated forum emphasising public health messaging
Summary

• Low rate of self-reported NPS use in Australia population
  • Objective evaluation (wastewater analyses, urine testing of police detainees/treatment attendees/Medically Supervised Injecting Centre clients, drug checking pilot studies at music festivals)
• NPS are embedded within drug use repertoire for some consumers (noting unwitting consumption not captured)
• Progress in identifying and communicating experience of harm from emerging substances (new methods, new networks)
https://ndarc.med.unsw.edu.au/program/drug-trends

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