Changing patterns of new and emerging psychoactive substances in Australia

Prepared by Rachel Sutherland, on behalf of the Drug Trends team

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What are new and emerging psychoactive substances?

- Designer drugs, research chemicals, synthetic drugs, analogues, legal highs.
- Substances not controlled by international legislation, but which may pose a public health threat.
- Psychoactive drugs that are relatively new to recreational markets.
Number of new NPS reported each year

Australia is facing a new wave of dangerous synthetic drugs that may rival the ice epidemic, Victoria's Chief Commissioner, Graham Ashton has warned.

"We all know it is coming. It is a turbocharged version of ice," he told Fairfax Media.

How the terrifying 'zombie' drug 'flakka' has already flooded into Australia - and it's WORSE than ice at just $7.50 a hit

Designer death: new killer drugs to flood local market

'It just kills people': Spice headed for Australian streets

Rise in dark web drugs sparks fears in Australia of an likely epidemic
NPS use in Australian general population

- National Drug Strategy Household Survey
- Conducted every 3 years; 2013 survey first to include data on NPS
95.5% of people that used synthetic cannabis had used other drugs in the past year

Monitoring NPS through Drug Trends

**Drug Trends**

- Illicit Drug Reporting System
  1. Interviews with people who inject drugs
  2. Interviews with Key experts
  3. Indicator data

**NIDIP (2002)**
- National Illicit Drugs Indicator Project
  Analysis data from other sources eg.:
  * Overdose
  * Seizures
  * Treatment

**EDRS (2003)**
- Ecstasy and Related Drugs Reporting System
  1. Interview with regular psychostimulant users
  2. Interviews with key experts
  3. Indicator data

**DNeT (2012)**
- Drugs and New Technologies
  Investigates:
  * Drug marketplaces online; and
  * New technologies

*NDARC*
National Drug & Alcohol Research Centre

The Difference is Research
### Which NPS are being monitored? (EDRS)

<table>
<thead>
<tr>
<th>Phenethylamines</th>
<th>Piperazines</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2C-x, Benzo Fury, PMMA, DOI, NBOMe, 4-FA)</td>
<td>(BZP)</td>
</tr>
<tr>
<td><strong>Tryptamines</strong></td>
<td>Plants &amp; Extracts</td>
</tr>
<tr>
<td>(DMT, 5-Meo-DMT, 4-AcO-DMT)</td>
<td>(LSA, Mescaline, Salvia Divinorum, Datura, Ayahuasca)</td>
</tr>
<tr>
<td><strong>Synthetic Cathinones</strong></td>
<td>Aminoindanes</td>
</tr>
<tr>
<td>(Mephedrone, Methylone, 4-MEC, Alpha-PVP, MDPV, Other substituted cathinone)</td>
<td>(MDAI, 5-IAI)</td>
</tr>
<tr>
<td><strong>Synthetic Cannabinoids</strong></td>
<td>Arylcy clohexylamines</td>
</tr>
<tr>
<td>(K2/Spice, Kronic, Other)</td>
<td>(Methoxetamine)</td>
</tr>
</tbody>
</table>
Past six month use of ‘any’ NPS, 2010-2017 (n=5,703)
NPS Classes: What’s increasing?

- Phenethylamines (e.g. 2C-x, NBOMe)
- Tryptamines (e.g. DMT, 5-Meo-DMT)
- Plant based NPS (e.g. Salvia, Ayahuasca, Datura)

% of EDRS sample

<table>
<thead>
<tr>
<th>Year</th>
<th>Phenethylamines</th>
<th>Tryptamines</th>
<th>Plant based NPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>8</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>2011</td>
<td>18</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>2012</td>
<td>20</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>2013</td>
<td>25</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>2014</td>
<td>20</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>2015</td>
<td>18</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>2016</td>
<td>14</td>
<td>18</td>
<td>5</td>
</tr>
<tr>
<td>2017</td>
<td>14</td>
<td>18</td>
<td>5</td>
</tr>
</tbody>
</table>
NPS Classes: What’s decreasing?

- Cathinones (e.g. methylone, mephedrone)
- Piperazines (e.g. BZP)

% of EDRS sample

- Cathinones: 19 to 5
- Piperazines: 5 to 0

Graph shows a decrease in the percentage of EDRS sample during the years 2010-2017.
NPS Classes: Other patterns

% of EDRS sample

- Cannabinoids
- Aminoindanes (MDAI, 5-IAI)
- Arylcylohexylamines (MXE)
- Benzodiazepines

Synthetic opioids, 2017 (n=3)
What might be driving these changes?

- Legislative changes
- Consumer preference

Matthews et al., 2017. I like the old stuff better than the new stuff? Subjective experiences of new psychoactive substances. International Journal of Drug Policy, 40, 44-49


Cairns et al., 2017. The impact of Australian legislative changes on synthetic cannabinoid exposures reported to the NSW Poisons Information Centre, International Journal of Drug Policy, 43, 74-82
Degree of overlap between use of classes (2010-2017)

- Tryptamines: 23%
- Cathinones: 13%
- Phenethylamines: 30%

Overlap:
- Tryptamines and Cathinones: 6%
- Tryptamines and Phenethylamines: 12%
- Cathinones and Phenethylamines: 2%

Note: Does not include synthetic cannabinoids. Repeat participants excluded.
How else do we monitor the NPS market in Australia?
What’s being sold online? (July-Dec 2016)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Alphabay</th>
<th>Dream Market</th>
<th>Hansa</th>
<th>Valhalla</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%(^\wedge)</td>
<td>n</td>
<td>%(^\wedge)</td>
</tr>
<tr>
<td>2C-x</td>
<td>89</td>
<td>2</td>
<td>107</td>
<td>4</td>
</tr>
<tr>
<td>U-47700</td>
<td>48</td>
<td>2</td>
<td>41</td>
<td>2</td>
</tr>
<tr>
<td>DMT</td>
<td>64</td>
<td>1</td>
<td>61</td>
<td>1</td>
</tr>
<tr>
<td>MDA</td>
<td>27</td>
<td>1</td>
<td>21</td>
<td>1</td>
</tr>
<tr>
<td>Mephedrone</td>
<td>44</td>
<td>1</td>
<td>64</td>
<td>2</td>
</tr>
<tr>
<td>α-PVP</td>
<td>27</td>
<td>1</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>NBOMe</td>
<td>53</td>
<td>1</td>
<td>39</td>
<td>1</td>
</tr>
<tr>
<td>FuranylFentanyl</td>
<td>40</td>
<td>1</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>Synthetic Cannabinoids</td>
<td>42</td>
<td>1</td>
<td>38</td>
<td>1</td>
</tr>
<tr>
<td>DOx</td>
<td>41</td>
<td>1</td>
<td>33</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>517</td>
<td>13</td>
<td>450</td>
<td>15</td>
</tr>
</tbody>
</table>

Summary

- NPS use low among general population
- Rates of use elevated among people who use illicit drugs
- Remains a highly dynamic marketplace, highlighting the importance of drug monitoring systems
- Appear to seek out NPS that have similar properties to the ‘traditional’ illicit drugs they are already using
- Riskier patterns associated with poly NPS use
- Synthetic opioids starting to appear on crypto markets, although use remains low among sentinel samples
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http://www.drugtrends.org.au/