Comparing rates and characteristics of harms across different pharmaceutical opioids: Australian ambulance attendances 2013-2018

Suzanne Nielsen, Rose Crossin, Melissa Middleton, Tina Lam, James Wilson, Debbie Scott, Cathy Martin, Karen Smith & Dan Lubman

November 12, 2019
APSAD Conference, Hobart.
Acknowledgements and declarations

Declarations, funding and thanks!

Funding

This project was funded by an untied educational grant from Seqirus Pty Ltd.

SN is the recipient of an National Health & Medical Research Council (NHMRC) Career Development Fellowship (1163961). The Ambo Project and National Ambo Project are funded by the Victorian Department of Health and Human Services, and the Commonwealth Department of Health. Funders had no role in the study design, conduct, analysis, or interpretation.

Disclosures

SN is a named investigator on research grants from Indivior (unrelated to this work), and has delivered presentations on codeine dependence for Indivior for which her institution received payment. DL has received speaking honoraria from the following: AstraZeneca, Camurus AB, Indivior, Janssen-Cilag, Lundbeck, Servier and Shire, and has participated on Advisory Boards for Indivior and Lundbeck.

Acknowledgements

Thanks to Sharon Matthews, manager of the Population Health Research team at Turning Point, and all of the staff that work to careful code the data!!
Overview

Why this study?

• Most opioid-related mortality (70%) involves pharmaceutical opioids
• Pharmaceutical opioids often grouped together as a category – important to understand differences

Why ambulance attendance data?

Population-level, rapid reporting, more cases than coronial data, more detail than ED records

Aim to examine variation by opioid type in:

1) Supply-adjusted rates of ambulance attendances
2) Presentation characteristics
# Methods

<table>
<thead>
<tr>
<th>Data</th>
<th>“Ambo project”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding</td>
<td>Electronic patient care records coded by trained research team</td>
</tr>
<tr>
<td></td>
<td>Free text → Substances, MH, care coding</td>
</tr>
<tr>
<td>Case selection</td>
<td>Aged 12+, cases where ‘extramedical pharmaceutical opioid use ‘significantly contributed to the attendance’</td>
</tr>
<tr>
<td>Trends over time analysis</td>
<td>Poisson Regression, adjusted for supply in 100000mg OME.</td>
</tr>
<tr>
<td>Comparing groups</td>
<td>Multinomial logistic regression using morphine as a reference category</td>
</tr>
</tbody>
</table>
1) Supply-adjusted attendance rates varied by opioid

Mean ambulance attendance rate per 100 000mg OME 2013-18

1) 50 codeine presentations for each tapentadol presentation (comparable supply volume)
2) Three oxycodone presentations for each oxycodone-naloxone presentation

<5 pethidine & buprenorphine patch cases
2) Comparing presentation characteristics

Variables
- Demographics
- Presentation Severity
  - Presenting total Glasgow Coma Scale \((\text{GCS})\)
  - Presenting \textbf{respiratory rate}
  - Naloxone dose and response
- Alcohol and other drug involvement
- Co-morbid \textbf{mental health} symptoms and co-occurring \textbf{suicidal ideation} and behaviour

\textbf{Cases:} > 14000 presentations related to extramedical use of pharmaceutical opioids
Key findings: large differences by opioid type

**Codeine:** predominantly younger (12-34yo), two-thirds females, self-harm and suicidal intent common, usually mild-moderate impairment.

**Fentanyl:** Middle aged (35-54), mostly male, more likely to be accidental and most severe in terms of presenting characteristics (e.g. GCS = 3, non-responsive).

Most opioids (excluding fentanyl) involved extramedical use of other pharmaceutical drugs (e.g. benzodiazepines, antipsychotics etc); few cases (6%) involved other illicit drugs.

Across all opioids, 50% had co-morbid suicidal thoughts or behaviours. Cases rarely (6%) coded as ‘accidental’.
Conclusions

Pharmaceutical opioids are not a homogenous group
  • Rates of harm and severity differ markedly by opioid
    → would population level differences result from changes in prescribing different opioid-types?

Self-harm and extramedical opioid use warrants attention
  • Suicide and self-harm in opioid-related harm vs current policy focus on accidental overdose
Thank you!

Hot off the press!!


DrSuziNielsen

Suzanne.Nielsen@monash.edu