Prevalence Estimates of Problem and Injecting Drug Use in Wales 2010 to 2021

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Public Health Wales  
And in collaboration with Dr Ruth King, Edinburgh University and Dr Anthony Overstall, Southampton University
Why?

- Burden of disease:
  - Blood borne viruses esp. HCV
  - Bacterial infections
  - Disability-adjusted life years (2016):
    - drug use disorders twice that of cirrhosis/liver disease due to alcohol 15312 /7164 (PHW Observatory)
- Premature deaths
- Economic costs inc. criminal justice
- Informing policy
define /dɪˈfeɪn/ v.tr. 1 give the exact meaning of (a word etc.). 2 describe or explain the scope of (define one’s position). 3 make clear, esp. in outline (well-defined image). 4 mark out the boundary or limits of. 5 (of properties) make up the total character of.

definable adj. definer n. [ME f. OF definer ult. f. L definire (as DE-, finire finish, f. finis end)]

definite /ˈdɛfɪnɪt/ adj. 1 having exact and discernible limits. 2 clear and distinct; not vague. *See the note
Issues of definition

• ‘Problem drug use’ is defined by the EMCDDA as ‘injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines’ (2004)
  
  - includes regular or long-term use of prescribed opioids e.g. Methadone
  
  - does not include their rare or irregular use
  
  - does not include use of ecstasy or cannabis

• ‘High risk drug use’ is defined by the EMCDDA as ‘recurrent drug use that is causing actual harms (negative consequences) to the person (including dependence, but also other health, psychological or social problems) or is placing the person at a high probability/risk of suffering such harms’
  
  - includes wider range of drugs including cannabis and ecstasy
  
  - Operationally challenging e.g. ‘recurrent vs duration and frequency’,
PDU estimate for Wales

• Adapted to incorporate changing drugs markets observed around 2010

• “Injecting drug use or long duration/regular use of opioids, cocaine/crack cocaine, amphetamines and/or amphetamine-type stimulants”

• Issues of comparability across UK countries
Comparison of regional prevalence of reported use by drug type

16-59 year olds reporting use in the past year

Drugs most used more than E & W average in that particular region.

http://www.russellwebster.com/regional-drug-preferences/
Research questions

• How many individuals are estimated to be using opioids, cocaine and amphetamines/ATS in Wales?
• What are the basic demographics of these individuals (e.g. gender, age range, area of residence)?
• What subgroups can be identified in terms of trajectories of problem drug use over time and in what ways do they differ?
• What is the relationship between criminal justice interventions and treatment in hospital and substance misuse services (e.g. are such interventions protective?)
The Capture-Recapture Method

...so I said, "Fool me once, shame on you, fool me. Ew-- Hey, what have we got here...!"
Capture-recapture methodology

- methodology first developed in ecology studies – useful for hidden populations including problematic and injecting drug users

- Key assumptions:
  - Population is **closed** (no birth/death/immigration/emigration) within study period
  - Data sets should be to some degree **independent** of each other (i.e. inclusion in one data set does not imply inclusion in another)
  - Data sets should be **free from bias** (e.g. not exclusively male or female) – age 15-64
  - Analyses must also be carried out on data collected **within a stated and specific time period** – one year

- A Bayesian model averaged approach is adopted to obtain estimates of population sizes of different drug user populations
Capture-recapture methodology

• Three different analyses for Welsh estimate:
  – opioid only, stimulants only, stimulant and opioid users
    • stimulant users broken down to cocaine/crack and amphetamine/ATS

• Datasets:
  – Police
  – Probation
  – Hospital admissions (PEDW)
  – Specialist Drug Treatment (WNDSM)
  – Regular access to Needle & Syringe Programme (HRD)
Problematic drug use: $\approx 1\%$ of population (aged 15-64)
Injecting drug use: $\approx 0.4\%$ of population (aged 15-64)

Wales

Wood et al (2000)\(^2\) focused on serious drug use in adults aged 15-55 years in Wales in 1994:

Estimate of 8,384 (95% C.I. 5307 – 11407)
Rate of 5.34 per thousand (95% C.I. 3.4 – 7.3)

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1 EMCCDA 2002 | Data sheet: United Kingdom
### 2015-16

<table>
<thead>
<tr>
<th>Region</th>
<th>Total</th>
<th>Stimulant</th>
<th>Opioid</th>
<th>Both</th>
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</thead>
<tbody>
<tr>
<td>ABMU</td>
<td>8450</td>
<td>5250</td>
<td>2620</td>
<td>580</td>
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<tr>
<td></td>
<td>(6680, 11010)</td>
<td>(3640, 7520)</td>
<td>(2230, 3180)</td>
<td>(510, 670)</td>
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<tr>
<td>Aneurin Bevan</td>
<td>8960</td>
<td>5360</td>
<td>3100</td>
<td>500</td>
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<tr>
<td></td>
<td>(7200, 11350)</td>
<td>(3920, 7350)</td>
<td>(2500, 3880)</td>
<td>(440, 580)</td>
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<tr>
<td>BCU</td>
<td>10800</td>
<td>6690</td>
<td>3390</td>
<td>720</td>
</tr>
<tr>
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<td>(8000, 14720)</td>
<td>(4500, 9830)</td>
<td>(2560, 4490)</td>
<td>(620, 870)</td>
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<tr>
<td>Cardiff and Vale</td>
<td>6930</td>
<td>3760</td>
<td>2480</td>
<td>680</td>
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<td>(5380, 9160)</td>
<td>(2410, 5830)</td>
<td>(2000, 3090)</td>
<td>(610, 760)</td>
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<tr>
<td>Cwm Taf</td>
<td>3810</td>
<td>2080</td>
<td>1380</td>
<td>350</td>
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<tr>
<td></td>
<td>(2970, 4920)</td>
<td>(1430, 2960)</td>
<td>(1000, 1940)</td>
<td>(300, 410)</td>
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<tr>
<td>Hywel Dda</td>
<td>9770</td>
<td>7890</td>
<td>1550</td>
<td>330</td>
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<tr>
<td></td>
<td>(5010, 18000)</td>
<td>(3450, 15830)</td>
<td>(1040, 2380)</td>
<td>(210, 550)</td>
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<tr>
<td>Powys</td>
<td>660</td>
<td>410</td>
<td>210</td>
<td>40</td>
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<tr>
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<td>(380, 1230)</td>
<td>(170, 900)</td>
<td>(130, 390)</td>
<td>(30, 70)</td>
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<tr>
<td>Wales</td>
<td>49370</td>
<td>31440</td>
<td>14740</td>
<td>3190</td>
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<tr>
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<td>(42230, 58540)</td>
<td>(25070, 39980)</td>
<td>(13260, 16540)</td>
<td>(2970, 3480)</td>
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</table>
## BCU

### 2015-16

<table>
<thead>
<tr>
<th></th>
<th>Age: 15-29</th>
<th></th>
<th>Age: 30-64</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Stimulant</td>
<td>3640</td>
<td>760</td>
<td>1940</td>
<td>360</td>
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<td>(2420, 5410)</td>
<td>(450, 1210)</td>
<td>(1260, 2910)</td>
<td>(220, 570)</td>
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<tr>
<td>Opioid</td>
<td>500</td>
<td>300</td>
<td>1830</td>
<td>760</td>
</tr>
<tr>
<td></td>
<td>(340, 730)</td>
<td>(210, 410)</td>
<td>(1350, 2510)</td>
<td>(550, 1020)</td>
</tr>
<tr>
<td>Both</td>
<td>120</td>
<td>40</td>
<td>430</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>(100, 160)</td>
<td>(30, 60)</td>
<td>(370, 520)</td>
<td>(100, 150)</td>
</tr>
</tbody>
</table>
Comparison with other UK countries

Table 1.1: Estimated number of problem drug users in Great Britain, and rate per 1,000 population aged 15 to 64, by country

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Number of problem drug users</th>
<th>Rate per 1,000 population</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Estimate</td>
<td>95% Confidence Interval</td>
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<tr>
<td>England</td>
<td>2014/15</td>
<td>300,783</td>
<td>297,986 - 311,128</td>
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<tr>
<td>Scotland</td>
<td>2012/13</td>
<td>61,500</td>
<td>59,900 - 63,300</td>
</tr>
<tr>
<td>Wales</td>
<td>2015/16</td>
<td>49,370</td>
<td>42,230 - 58,540</td>
</tr>
</tbody>
</table>
Prevalence of injecting drug use

- Harm Reduction Database Wales
- Web-based, demographic and interaction level data
- HRD live in:
  - 42 specialist sites
  - 13 mobile units
  - 215 pharmacy sites across Wales
<table>
<thead>
<tr>
<th>Year</th>
<th>All Clients</th>
<th>Regular Clients</th>
<th>IPEDs</th>
<th>Opioids</th>
<th>Stimulants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-15</td>
<td>25815</td>
<td>13721</td>
<td>47.8%</td>
<td>42.5%</td>
<td>15.4%</td>
</tr>
<tr>
<td>2015-16</td>
<td>25636</td>
<td>15157</td>
<td>54.3%</td>
<td>42.2%</td>
<td>14.5%</td>
</tr>
<tr>
<td>2016-17</td>
<td>25298</td>
<td>14306</td>
<td>55.1%</td>
<td>45.8%</td>
<td>14.4%</td>
</tr>
<tr>
<td>2017-18</td>
<td>25190</td>
<td>14000</td>
<td>54.6%</td>
<td>48.0%</td>
<td>15.2%</td>
</tr>
</tbody>
</table>

Number of unique individuals and proportion by type of drugs injected 2014-15 to 2017-18.
• Can model both those injecting but not accessing NSP services – evidence indicates around 20% but highly dependent on types of drugs injected

• Need modelling as data on injecting drug use very poorly collected – hence separate analysis of PWID
Conclusions

• Prevalence estimation of PDU for Wales valuable
• Methodology robust over time
• Challenges remain in comparison with different countries – ongoing
• Estimates contradict data indicating downward trajectory evident in substance misuse treatment and offences/seizures data
• Achieving research aims 1 (how many) and 2 (demographics), further work and resources required to achieve 3 (subgroup trajectories) & 4 (protective interventions)
• Shortly to publish PDU estimates for 2016-17 and 2017-18
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