Reducing the burden of disease attributable to opioid dependence

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How GBD measures health loss

\[ \text{DALYs} = \text{YLLs} + \text{YLDs} \]

- DALYs: disability-adjusted life years
- YLLs: years of life lost
- YLDs: years of life lived with disability

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- Overall health loss
- Health loss due to premature mortality
- Health loss due to living with disability
Major components of GBD

• Reviewed epidemiology:
  • incidence, prevalence, mortality, duration, remission
• Modelled data to describe drug dependence epidemiology
• Burden for each drug disorder:
  • in YLDs, YLLs and DALYs
• Attributable burden from illicit drug use estimated:
  • Opioid, cocaine and amphetamine dependence as risks for suicide
  • Cannabis use as a risk factor for schizophrenia
  • Injecting drug use as a risk for hepatitis B and C (HBV and HCV), HIV
• Made and compared estimates using 1990 and 2010 data
The approach used in GBD 2010

- Full systematic reviews of:
  - Incidence, prevalence, duration/remission, mortality
  - Sensitivity analyses around parameters in modelling
- New disease modelling tool – DisMod MR
- Revised Comparative Risk Assessments
- Revised Social Preferences
  - Disability Weights – for estimating disability
  - Estimated effects of uncertainty around disability weights
  - Age weighting and discounting NOT used
- Used expert groups to comment on findings for all diseases and injuries
Availability of data
N estimated to be drug dependent globally, 2010

<table>
<thead>
<tr>
<th>Drug</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis</td>
<td>8,377,000</td>
<td>4,696,000</td>
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<tr>
<td>Amphetamines</td>
<td>10,928,000</td>
<td>6,256,000</td>
</tr>
<tr>
<td>Cocaine</td>
<td>4,801,000</td>
<td>2,090,000</td>
</tr>
<tr>
<td>Opioids</td>
<td>10,781,000</td>
<td>4,698,000</td>
</tr>
</tbody>
</table>
Comparison with other diseases and risk factors

- Illicit drugs caused 0.8% of global disease burden
  - 8th largest contributor to disability (YLDs) among males
- 1/4 of alcohol (3.9%) and 1/6th of tobacco (6.3%)
  - Despite lower prevalence than alcohol and tobacco
- > than maternal and neonatal conditions combined
DALYs due to drug dependence, 2010

<table>
<thead>
<tr>
<th>Drug</th>
<th>YLLs</th>
<th>YLDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis</td>
<td>0</td>
<td>2,057,000</td>
</tr>
<tr>
<td>Amphetamines</td>
<td>21,000</td>
<td>2,596,000</td>
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<tr>
<td>Cocaine</td>
<td>25,000</td>
<td>1,085,000</td>
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<tr>
<td>Opioids</td>
<td>1,981,000</td>
<td>7,170,000</td>
</tr>
<tr>
<td>Other drugs</td>
<td>1,555,000</td>
<td>3,503,000</td>
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</tbody>
</table>
Opioid dependence

DALYs per 100,000 people, age-standardised, 2010
DALYs attributable to each type of drug dependence by age, 2010 (thousands)
Contributors to Opioid BoD

• Heterogeneity between countries varying with:
  • Prevalence of injection and access to OST and NSP
  • Drug use ecology: social policies; drugs used etc

• Overdose a major cause of burden in most places
  • Nonfatal overdoses even more common

• Other causes of premature death included:
  • Suicides and violence
  • HIV infection, HCV liver disease, liver and other cancers
Reducing Opioid BoD

• Improving access to effective interventions
• Treatment for opioid dependence
  • e.g. opioid substitution treatment (OST)
• Interventions to prevent HIV and HCV transmission
  • e.g. Needle and Syringe Programs and OST
• HIV and HCV treatment to
  • reduce burden of prevalent disability and
  • prevent new cases of infection
Risk Factors for Opioid OD

• Use by injection
  • much higher than chasing

• Reduced opioid tolerance
  • After time in goal or detox or time out from opioid use

• Polydrug use
  • especially alcohol and other CNS depressants

• Social context
  • Injecting alone:
  • bystanders failing to respond effectively to ODs
Reducing Opioid Overdose Deaths

• Opioid substitution treatment
  • Substantially reduces fatal overdose while in treatment

• Peer education about
  • risk factors for and prevention of overdoses
  • Improving responses to witnessed overdoses
    – e.g. calling ambulance; using naltrexone

• Distribute naloxone to opioid users
  • Post-prison, detox and rehab a priority setting
  • NSP for injectors
  • Pharmacies for users of pharmaceutical opioids