Co-occurring Conditions in the Setting of Opioid Use Disorder and Pain

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Inter-related comorbidities of PAIN

Medical Conditions
- Fatigue/ Cognitive
- Injury
- Inactivity
- Obesity
- Sedentary life-style
- Sleep Disorder
- Anxiety
- Depression
- Medication Overuse
- Alcohol Abuse

Chronic PAIN
Alcohol Misuse Increases Pain, Pain Increases Alcohol Misuse

16-25% of chronic pain patients drink heavily or have AUD, 43%-73% of individuals with AUD have moderate to severe pain
Witkiewitz K & Vowles KE, 2018

A history of alcohol use necessitates higher opioid doses in managing post-operative pain, possibly due to mu-opioid-receptor mediated cross-tolerance

Acute alcohol use at binge levels is analgesic but chronic alcohol and withdrawal result in increased pain sensitivity
Thompson T et al., 2017; Edwards S et al., 2012

Pain predicts relapse to heavy drinking
Witkiewitz et al., 2015

Increased Pain Sensitivity in Alcohol Withdrawal

# Prevalence and Profile of High-Impact Chronic Pain in the US


## 2011 National Health Interview Survey Sample Questionnaire N=15,670

<table>
<thead>
<tr>
<th>Chronic pain-</th>
<th>pain experience on most days in last 3 months</th>
<th>Population Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic pain without limitation (CPWL)</td>
<td>no activity limitations/participation restrictions.</td>
<td>29.9 m, 13.6%</td>
</tr>
<tr>
<td>High intensity chronic pain (HICP)</td>
<td>as above with addition of ( \geq 1 ) activity limitation</td>
<td>10.6 m, 4.8%</td>
</tr>
</tbody>
</table>

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## Comparison with the Adult US Population

<table>
<thead>
<tr>
<th></th>
<th>Total adult</th>
<th>CPWL</th>
<th>HICP</th>
<th>OR (95% CI) for CPWL/HICP vs. No Pain</th>
<th>OR (95% CI) for HICP vs. CPWL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prevalence %</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>51.6</td>
<td>54.3</td>
<td>56.7</td>
<td>1.16 (1.03-1.3)</td>
<td>0.98 (0.8-1.22)</td>
</tr>
<tr>
<td>Black</td>
<td>11.6</td>
<td>8.3</td>
<td>15.6</td>
<td>0.68 (0.58-0.81)</td>
<td>1.76 (1.29-2.39)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>14.3</td>
<td>9</td>
<td>9.5</td>
<td>0.5 (0.42-0.58)</td>
<td>1.2 (0.91-1.78)</td>
</tr>
<tr>
<td>&gt; Grad 12 no diploma</td>
<td>14.1</td>
<td>15.1</td>
<td>28.2</td>
<td>2.25 (1.85-2.73)</td>
<td>2.5 (1.75-3.56)</td>
</tr>
<tr>
<td>Divorced/ Separated</td>
<td>12.7</td>
<td>16</td>
<td>24.1</td>
<td>1.34 (1.17-1.54)</td>
<td>1.63 (1.23-2.17)</td>
</tr>
<tr>
<td>Obese BMI &gt;30</td>
<td>33</td>
<td>42</td>
<td>47.5</td>
<td>1.67 (1.45-1.92)</td>
<td>1.14 (0.87-1.51)</td>
</tr>
<tr>
<td>45-64 y.o.*</td>
<td>34.6</td>
<td>42.6</td>
<td>55.8</td>
<td>4.21 (3.03-5.85)</td>
<td>7.29 (3.56-14.95)</td>
</tr>
<tr>
<td>&gt;65 y.o.*</td>
<td>16.7</td>
<td>22.8</td>
<td>27.1</td>
<td>4.22 (3.01-5.92)</td>
<td>6.04 (2.9-12.58)</td>
</tr>
<tr>
<td>* Compared to 18-24 y.o.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Likelihood of chronic pain co-occurring with other conditions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Prevalence in Adults</th>
<th>CPWL % in pop</th>
<th>HICP % in pop</th>
<th>Odds Ratio (95% CI) for Health Condition if HICP vs. CPWL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic pain (pain most/every day)</td>
<td>18.4</td>
<td>N/A</td>
<td>N/A</td>
<td>NA</td>
</tr>
<tr>
<td>Weak/failing kidneys</td>
<td>2</td>
<td>3.6</td>
<td>10.5</td>
<td>1.66 (1.05–2.61)</td>
</tr>
<tr>
<td>Stroke</td>
<td>2.7</td>
<td>3.9</td>
<td>12.7</td>
<td>2.17 (1.40–3.36)</td>
</tr>
<tr>
<td>Arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia</td>
<td>22.5</td>
<td>50.8</td>
<td>68.3</td>
<td>1.54 (1.20–1.98)</td>
</tr>
<tr>
<td>Emphysema</td>
<td>1.8</td>
<td>3.3</td>
<td>11.3</td>
<td>1.71 (1.04–2.81)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>9.1</td>
<td>13.7</td>
<td>27.7</td>
<td>1.49 (1.12–1.98)</td>
</tr>
<tr>
<td>Chronic bronchitis</td>
<td>4.2</td>
<td>7.5</td>
<td>15.7</td>
<td>1.57 (1.11–2.21)</td>
</tr>
<tr>
<td>Heart condition/disease</td>
<td>7.4</td>
<td>12.7</td>
<td>20.3</td>
<td>1.20 (0.85–1.69)</td>
</tr>
<tr>
<td>Asthma</td>
<td>12.5</td>
<td>16.2</td>
<td>25</td>
<td>1.39 (1.04–1.86)</td>
</tr>
<tr>
<td>Liver condition</td>
<td>1.3</td>
<td>2.5</td>
<td>6.1</td>
<td>1.70 (1.03–2.83)</td>
</tr>
<tr>
<td>Cancer/other malignancy</td>
<td>8.2</td>
<td>12.9</td>
<td>18.1</td>
<td>1.23 (0.91–1.66)</td>
</tr>
<tr>
<td>Obese (BMI ≥ 30)</td>
<td>33.1</td>
<td>42</td>
<td>47.5</td>
<td>1.06 (0.84–1.32)</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>4.5</td>
<td>8.2</td>
<td>14.1</td>
<td>0.97 (0.63–1.50)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>29.1</td>
<td>45.1</td>
<td>60.6</td>
<td>1.09 (0.86–1.37)</td>
</tr>
<tr>
<td>Heart attack</td>
<td>3.3</td>
<td>5.6</td>
<td>9.9</td>
<td>0.94 (0.61–1.44)</td>
</tr>
<tr>
<td>Angina</td>
<td>4.5</td>
<td>3.8</td>
<td>7.2</td>
<td>0.99 (0.57–1.72)</td>
</tr>
</tbody>
</table>
Co-Morbidities of Fatigue & Cognitive Difficulties

- General adult population
- Chronic pain (no lim)
- High Impact Chronic Pain

Fatigue and cognitive function

% experiencing

- Frequency ("daily")
- Intensity ("a lot")

Fatigue

- Difficulty remembering/concentrating

Pitcher et al. 2019

Co-occurring Conditions in the Setting of Opioid Use Disorder and Pain
Psychosocial burden of High Impact Chronic Pain

Pain properties
- More pain
- Greater mental health impact
- Poorer health status
- Greater health care usage

Pitcher et al. 2019

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NIH HEAL INITIATIVE
Take-home point: Chronic pain is part of a complicated set of health disorders!

- Chronic pain is often set in a web of disorders contributing to disability
  - Chronic pain is associated with mental health disorders
  - Patients with chronic pain frequently have multiple co-morbid medical conditions
  - Patients with high intensity chronic pain are some of the least well in our population

- Comorbidities will likely complicate moving a treatment from a clinical trial in a “pure” pain condition to the general population
To transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure.

www.nimh.nih.gov

Research = Hope
Agenda

- Opioid Misuse and Mental Health
- Opioid Use Disorder and Suicide
- HEAL and Other Current Efforts
Opioid Misuse and Mental Health

- 11.7M adults misuse opioids
- 43% of adults who misuse opioids have a mental illness
- 51% of opioid prescriptions go to people with mental illness
- 80% of people with OUD receive no treatment
- >47,000 people died from opioid overdoses in 2017

Rosenblatt et al., *Annals of Family Medicine*, 2019
Opioid Use Disorder and Suicide

Age-Adjusted Suicide Rates in the United States (1999-2017)

Data courtesy of CDC
• NIH will be funding clinical trials of collaborative care models to treat people with opioid use disorder and co-occurring mental illnesses, which aim to:
  ■ demonstrate the definitive efficacy of collaborative care for the treatment of substance use disorders and co-occurring mental illnesses
  ■ show how collaborative care can be implemented in community health centers in the areas hardest hit by the twin epidemics of opioid overdose and suicide deaths
Collaborative Care Models for Mental Illnesses

- 80+ RCTs demonstrate comparative effectiveness
- Treatment access, continuity, and quality all improve with collaborative care
- Services are “high value” and reimbursable by many public and commercial payors

RFA-MH-19-525 NIH HEAL Initiative
*Effectiveness Trials to Optimize, Implement, Scale, and Sustain the Collaborative Care Model for Individuals with OUD and Mental Health Conditions*
Medication Assisted Treatment for OUD within Collaborative Care Models for Mental Illnesses

- 4 multi-site pragmatic RCTs
- Rural, urban, and suburban locations of high need
- Diverse patient populations, to include racial and ethnic minorities, pregnant women, and participants <18 YO
- Clinics vary regarding implementation readiness and existing site resources
- Common measures will permit “mega-analyses” of pooled data
Discussion