Recommendations for Regulating High Potency Cannabis in Recreational Markets and Why

Rosalie Liccardo Pacula, Ph.D.

Summarizes information from:
The current regulatory environment in U.S. states leading to

- Large increases in average potency of the cannabis plant
- Large declines in purity adjusted price
- Rapid proliferation of new products
  - new higher potency derivatives from the plant
  - growing number of products that are attractive to youth
Our focus on for-profit commercial markets has led to significantly higher potencies, even in the illicit market

Average THC of flower sold in legal stores in WA state between 2014-2018 is higher, above 20%

Average THC of oils and concentrates sold in legal stores in WA is even higher, above 70%.

Even products with “balanced” amounts of THC and CBD have THC above 40%

Potency adjusted average prices of all products are falling, now below $2.00 per dose of THC

Potency adjusted average prices per 10 mg of THC in Washington is even lower than Colorado

Industry is developing a variety of new products.
Is our current regulatory scheme working?

- Enormous reduction in criminal justice costs
- New jobs, great source of tax revenue
- In WA, legalization appears to impose relatively low risk of use/ harm among many youth

BUT:

Our current regulation schemes have not stopped illicit markets
Industry claims the only way to stop illicit markets is to take away restrictions and/or taxes (race to the bottom)
There is growing evidence of health risks associated with high-potency products the industry keeps developing

Why not focus on delivering a safe, known product that can be enjoyed by consumers without potential risk of harm?
My Recommendations:

Legalization can be designed to generate overall net benefits in the long run if policymakers carefully consider potential public health effects of allowing a market for an intoxicating substance:

1. **Cap the amount of THC** and its psychoactive analogs that can be contained in legal products.
Washington states is far less restrictive than other countries also concerned about illicit market

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Flower: THC ≤ 9%</td>
<td>Edibles: 10 mg of THC/package</td>
<td>Edibles: 100 mg THC/package</td>
<td></td>
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<tr>
<td>Edibles, concentrates, oils are prohibited</td>
<td>Extract: 1000 mg of THC/unit</td>
<td>No other caps</td>
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<tr>
<td>Oil: 1000 mg of THC/mL</td>
<td>Oil: 1000 mg of THC/mL</td>
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VT and CT are the only states with a potency cap on both flower (30% THC) and solid concentrates (60% THC).
Imposing a cap on THC substantially reduces the public health risk from naïve or unintended exposures.

Source: Myran et al, “Edible Cannabis Legalization and Unintentional Poisonings in Children” NEJM 387(8), Aug 25, 2022
THC Caps would not harm patients or limit their access

Columbia Care Products Purchased in NY State (Jan 1 2016 – Aug 15, 2019)

<table>
<thead>
<tr>
<th>Product</th>
<th>Formulation Ratio of THC: CBD</th>
<th>Freq N (%)</th>
<th>THC per dose (mg)</th>
<th>THC/ product (mg)</th>
<th>CBD per dose (mg)</th>
<th>CBD/ product (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tablets</strong></td>
<td></td>
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<tr>
<td>Equal THC:CBD</td>
<td>9,006 (5.92)</td>
<td>5</td>
<td>75</td>
<td>5</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Low THC: High CBD</td>
<td>12,458 (8.19)</td>
<td>0.5</td>
<td>7.5</td>
<td>10</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>High THC: Low CBD</td>
<td>15,130 (10.12)</td>
<td>10</td>
<td>150</td>
<td>0.5</td>
<td>7.5</td>
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<tr>
<td><strong>Tinctures</strong></td>
<td></td>
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<tr>
<td>Equal THC:CBD</td>
<td>16,938 (11.13)</td>
<td>5</td>
<td>35</td>
<td>5</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Low THC: High CBD</td>
<td>16,148 (10.62)</td>
<td>0.6</td>
<td>4.2</td>
<td>12.6</td>
<td>88.2</td>
<td></td>
</tr>
<tr>
<td>High THC: Low CBD</td>
<td>24,546 (16.13)</td>
<td>10</td>
<td>70</td>
<td>0.5</td>
<td>3.5</td>
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<tr>
<td><strong>Vaporizer</strong></td>
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</tr>
<tr>
<td>Equal THC:CBD</td>
<td>12,054 (7.92)</td>
<td>1</td>
<td>90</td>
<td>1</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>Low THC: High CBD</td>
<td>5,394 (3.55)</td>
<td>0.1</td>
<td>9</td>
<td>2</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>High THC: Low CBD</td>
<td>39,539 (25.99)</td>
<td>2</td>
<td>180</td>
<td>0.1</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

Source: Kritikos and Pacula (2022) “Medical Haze: Describing Medical Cannabis Dosing from Purchase Behavior in New York State.” Draft paper
My Policy Recommendations:

Legalization can be designed to generate overall net benefits in the long run if policymakers carefully consider potential public health effects of allowing a market for an intoxicating substance:

1. **Cap the amount of THC** and its psychoactive analogs that can be contained in legal products.
2. **Limit the types of products** that can have cannabis/THC infused in them.
3. Consider instituting a **potency-based sales limits**
Implied ranges of 10 milligram THC doses associated with state sales limits in Jan 2020

Point of comparison:
A keg of beer holds 165 12-oz servings of alcohol

Relative to other legalizing countries, U.S. states including WA are far less restrictive

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<td><strong>Commercial Distribution</strong></td>
<td>Only licensed pharmacies regulated federally by IRCCA. 40 gram cap per month / 10 gram per week.</td>
<td>Varies by province but mostly private or government retail stores and online sales regulated provincially. 30 gram cap of dried cannabis or equivalent per sale</td>
<td>Allows sale from private licensed establishments, maximum amounts per transactions: 1 oz flower + 7 grams concentrate + 16 oz edibles + 72 fl oz (liquids)</td>
</tr>
</tbody>
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3. Consider instituting a **potency-based sales limits**
4. **Dedicate serious resources toward regulation** of the industry and the illicit market. Impose large penalties / fines on those who violate licensing, sales, and/or marketing rules.
Thank you!