Cannabis Regulation in Los Angeles County: Health Impact Assessment

Will Nicholas, Ph.D., MPH
Director, Center for Health Impact Evaluation
Los Angeles County Department of Public Health
As required by the 2019 NACS Conference

I have signed a disclosure statement and note the following conflict/s of interest:

- NONE
Outline

1. What is a Health Impact Assessment (HIA)?

2. Background on LA County Cannabis Regulation and Origins of this HIA

3. HIA Goals, Conceptual Framework, Research Questions, Methods

4. Results: Progress to Date on HIA Primary Research Questions

5. Next Steps

6. Questions
What is an HIA?

Definition

Systematic, mixed methods approach that estimates the potential impacts of a pending policy on the health of a defined population in order to inform the development and implementation of that policy.

Distinguishing Features

• Looks at health from a broad perspective that considers social, economic and environmental influences

• Considers whether certain impacts may disproportionately affect vulnerable groups (i.e., health equity impacts)

• Purposefully engages community stakeholders in the process

• Includes practical, evidence-based recommendations for decision makers to maximize health gains and minimize harms
Determinants of Population Health

Health status is determined by:

- Genetics: 20%
- Health Care: 20%
- Social, Environmental, Behavioral Factors: 60%

*Adapted from McGinnis, et. al., Health Affairs, 2002.
Contextual Chronology

• November 2016—Prop. 64 adult use cannabis voter initiative passes
• February 2017—LA County Board directs CEO to develop cannabis regulations for unincorporated areas
• November 2017—Board directs CEO and DPH to develop a health equity model for cannabis regulation in unincorporated areas
• February 2018—DPH identifies HIA as best approach for developing health equity model
• June 2018—Board hears options for cannabis regulation but no action taken; DPH presents draft HIA scope to advisory group
• February 2019—DPH to present preliminary HIA findings to Advisory Group
Why this Matters: Cannabis and Health Equity

LA County Cannabis Regulations

FAIR DISTRIBUTION OF:
Business Locations
Business Profits
Tax Revenues
Health risks/benefits

Health Equity
HIA Goals, Conceptual Framework, Research Question and Methods
HIA Goals

1) Estimate the health and health equity impacts of potential cannabis regulations in Los Angeles County

2) Provide guidance to a proposed *Cannabis Commission* so its regulatory decisions and policy recommendations reflect a careful consideration of health and health equity

3) Advance evidence-based, health-protecting cannabis business and regulatory practices in LA County and other California jurisdictions

4) Lay the groundwork for ongoing monitoring of health impacts to inform continuous improvement of cannabis policies and regulations in LA County
Figure 1: Cannabis Regulation in Los Angeles County

**Health Impact Assessment Conceptual Framework**

**Cannabis Commission Duties and Functions**
- Licensing
  - Approve/deny cannabis business applications
- Monitoring
  - Monitor cannabis business compliance with regulations
  - Renew/revoke cannabis business permits
- Effectiveness
  - Review the effectiveness of cannabis regulations

**Policy and Regulatory Effects**
- Siting
  - Density and location of cannabis businesses
- Business Practices
  - Ownership
  - Pricing and promotion
  - Product and placement
  - Retail premises
- Compliance
  - Frequency of compliance visits
  - Frequency and types of violations
  - Types of penalties for violations
- Revenue Streams
  - Community benefit agreements
  - Grants for youth and community development
  - Other tax revenue allocations

**Social Determinants of Health**
- Cannabis Use
  - Youth use mode/frequency
  - Adult use mode/frequency
  - Medicinal use mode/frequency
- Alcohol and other Drug Use
  - Youth use mode/frequency
  - Adult use mode/frequency
- Safety
  - Product safety and potency
  - Context and content of medicinal cannabis advice
  - Cannabis-related crimes and arrests
- Social Norms
  - Media and social network messaging
  - Perceptions of cannabis risks and benefits
- Economic Conditions
  - Cannabis industry employment and income
  - Cannabis market conditions (legal vs. illegal)
  - Community economic development

**Health Outcomes**
- Mental Health and Substance Use Disorders
  - Cannabis use disorders
  - Other substance use disorders
  - Psychoses, depression, anxiety
- Adverse Health Events
  - Hospitalizations/Emergency Department visits
- Child/Youth Development
  - Low birth weight
  - Problems in school
  - Positive youth development
- Injuries
  - Road traffic injury/death
  - Violent injury/death
- Therapeutic and Clinical Outcomes
  - Antiemesis
  - Pain reduction
  - Seizure/spasticity control
- Other Health Outcomes Related to Changes in SDOH

Δ: Indicates a potential change (positive or negative)
SDOH: Social Determinants of Health
HIA Research Questions

1. How would cannabis *business locations and density* impact equity in the distribution of social determinants of health (SDOH) and health outcomes in LA County?

2. How would cannabis *business practices* impact equity in the distribution of SDOH and health outcomes in LA County?

3. How would *monitoring/enforcing compliance* with business regulations impact equity in the distribution of SDOH and health outcomes in LA County?

4. What uses of *cannabis tax revenues* would have the greatest impact on equity in the distribution of cannabis-related SDOH and health outcomes in LA County?
Methods and Data Sources

• Literature Reviews
  – For each research question

• Analysis of Secondary Data Sources
  – Variety of administrative and survey datasets

• Focus Groups
  – Community residents in areas currently banning dispensaries

• Key Informant Interviews
  – Cannabis regulators; Cannabis Business Owners; Medical Cannabis Users

• Observational Survey of Cannabis Dispensaries
  – 3 comparison groups; Legal and illegal dispensaries; Inside/outside unincorporated areas
Results
Research Question #1: Dispensary Location and Density
Literature Review: Dispensary Location and Density

• Studies in Colorado and Los Angeles (pre prop 64) have found higher concentrations of dispensaries in lower income areas and areas with larger ethnic minority populations.

• Studies examining the relationship between dispensary concentrations and negative health-related outcomes show mixed results:
  – Cannabis-related hospital stays and ED visits (+)
  – Youth cannabis use (-)
  – Crime (+/-)
Cannabis Regulator KIs: Dispensary Locations

- Cities generally deferred to state required sensitive use buffers and limited dispensaries to commercial/industrial zones due to stated concerns about youth access
  - Some cities added additional sensitive use buffers (libraries, parks, place of worship, permanent supportive housing); confusion over definition of day care and youth centers
  - In smaller cities, buffers have led to rapidly rising real estate costs in limited areas zoned for dispensaries
  - Zoning rules alone can lead to concentration near poorer neighborhoods and complaints from residents in those areas
Cannabis Regulator KIs: Dispensary Numbers

- Many cities guided (explicitly or implicitly) by dispensary per population ratios ranging from 1 per 10k to 1 per 15k.
  - This has kept density relatively low in smaller cities with exception of West Hollywood.
  - Los Angeles has not yet reached 1 per 10k but anticipates this ratio could be exceeded at discretion of local lawmakers; if this happens, overconcentration in low-income areas is a concern; targeted reinvestment of tax dollars is potential remedy.
  - LA and West Hollywood consider tourists in expanded definition of population served by their dispensaries.
Marijuana Use:
Percentage of Students Who Used Marijuana in the Past 30 Days, by School Year and Quintile of a School’s Percentage of Students Eligible for Free or Reduced Price Meals

Source: California Healthy Kids Survey/WestEd
Perception of Harm:

Percentage of Students Believing that Occasional Marijuana Use Does Great or Moderate Harm, by School Year and Quintile of a School's Percentage of Students Eligible for Free or Reduced Price Meals

Source: California Healthy Kids Survey/WestEd
Rate per 100,000 People of Cannabis-Related ED Visits and Hospital Admissions by Year, Los Angeles County

Source: In-house tabulations of the Office of Statewide Health Planning and Development (OSHPD) data
Poverty Level and Number of Cannabis-Related Emergency Department Visits in 2017 by Zip Code, Los Angeles County

Source: In-house tabulations of the Office of Statewide Health Planning and Development (OSHPD) data
Source: Weedmaps; Bureau of Cannabis Control
*2016 data only includes January – April. 2017 data not available. 2018 data includes all state-licensed storefronts, even if not listed on Weedmaps.
Dispensary Concentrations by Healthy Places Index

- Dispensary concentrations – April 2016 vs. December 2018
- Concentration of legal vs. illegal dispensaries for 2018
Dispensary Location and Density: Additional Analyses in Progress

• Spatial regression analyses of relation between dispensaries and crime, cannabis-related ED visits
  – Pre- and post- Prop. 64 (2016 vs. 2018)
  – Legal vs. illegal dispensaries (2018)
Dispensaries Within 600 Feet of a Public or Private School*
Los Angeles County, January to December 2018**

Source: Weedmaps; Bureau of Cannabis Control; California Department of Education

*Included schools recorded by the CA Department of Education as active. Excluded 324 private schools with fewer than 50 students enrolled. Distance is measured from a school’s geocoded address to a dispensary’s geocoded address as the crow flies; this may introduce some variability in measurement (+/-100 feet).

**June 2018 is excluded, as Weedmaps data was not pulled during that month.
Results
Research Question #3: Regulatory Compliance and Enforcement
Literature Review: Regulatory Enforcement

- Sparse literature mostly based on field observations from Colorado and Washington

- Several areas of concern stand out: 1) illicit market diversion, 2) product safety and testing, 3) cannabis impaired driving

- Product testing relegated to private labs, shielding state from liability but leading to anecdotal reports of cheating
Literature Review: Regulatory Enforcement

• Allowance of storefront dispensaries at discretion of cities/counties. No data yet on effects of these allowances on illicit market

• No cannabis impairment test available yet, but per se laws recommended in the meantime

• Criminal cannabis violations reduced substantially, but disproportionate enforcement on racial/ethnic minorities continues
Cannabis Regulator KIIs: Regulatory Compliance

• Given new and changing regulatory landscape, continuous education and training and careful planning are key to implementing and maintaining a successful local regulatory framework

• Lack of enforcement against illicit market inhibits legal market

• Smaller cities appear to have more successfully contained illicit market

• LA cannabis department only regulate legal dispensaries; City recently authorized shut off of water and power for illegal operators
Cannabis Regulator KII: Regulatory Compliance

• Politics play a role in local cannabis regulation; industry representatives and elected officials play a balancing game as they seek financial and political advantages.

• There is an almost universal desire for the LA County Department of Public Health to conduct health inspections of cannabis retail stores and other cannabis businesses.
**Licensed vs. Illicit Dispensaries in Los Angeles County**

January to December 2018*

<table>
<thead>
<tr>
<th>Month</th>
<th>Legal</th>
<th>Illicit</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>32</td>
<td>486</td>
<td>518</td>
</tr>
<tr>
<td>February</td>
<td>100</td>
<td>383</td>
<td>483</td>
</tr>
<tr>
<td>March</td>
<td>129</td>
<td>343</td>
<td>472</td>
</tr>
<tr>
<td>April</td>
<td>139</td>
<td>350</td>
<td>489</td>
</tr>
<tr>
<td>May</td>
<td>145</td>
<td>378</td>
<td>523</td>
</tr>
<tr>
<td>June</td>
<td>159</td>
<td>362</td>
<td>521</td>
</tr>
<tr>
<td>July</td>
<td>164</td>
<td>359</td>
<td>523</td>
</tr>
<tr>
<td>August</td>
<td>165</td>
<td>371</td>
<td>536</td>
</tr>
<tr>
<td>September</td>
<td>169</td>
<td>356</td>
<td>525</td>
</tr>
<tr>
<td>October</td>
<td>185</td>
<td>291</td>
<td>476</td>
</tr>
<tr>
<td>November</td>
<td>252</td>
<td>288</td>
<td>540</td>
</tr>
</tbody>
</table>

Source: Weedmaps; Bureau of Cannabis Control

**June 2018 is excluded, as Weedmaps data was not pulled during that month.**
Legal vs. Illicit Dispensaries in Los Angeles County, by Legality of Census Tract January to December 2018*

Source: Weedmaps; Bureau of Cannabis Control

**June 2018 is excluded, as Weedmaps data was not pulled during that month.
Tested and Failed Cannabis Batches

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Failed Batches</th>
<th>Tested Batches</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01-08/29/18</td>
<td>1,904</td>
<td>10,695</td>
</tr>
<tr>
<td>08/30-10/9/18</td>
<td>779</td>
<td>5,354</td>
</tr>
<tr>
<td>10/10-10/15/18</td>
<td>121</td>
<td>820</td>
</tr>
<tr>
<td>10/16-10/19/18</td>
<td>64</td>
<td>964</td>
</tr>
<tr>
<td>10/20-10/26/18</td>
<td>117</td>
<td>1,030</td>
</tr>
<tr>
<td>10/27-11/2/18</td>
<td>68</td>
<td>844</td>
</tr>
<tr>
<td>11/3-11/9/18</td>
<td>111</td>
<td>1,090</td>
</tr>
<tr>
<td>11/10-11/16/18</td>
<td>89</td>
<td>701</td>
</tr>
<tr>
<td>11/17-11/21/18</td>
<td>57</td>
<td>598</td>
</tr>
<tr>
<td>11/22-11/30/18</td>
<td>63</td>
<td>1,768</td>
</tr>
<tr>
<td>12/1-12/7/18</td>
<td>75</td>
<td>958</td>
</tr>
<tr>
<td>12/8-12/14/18</td>
<td>106</td>
<td>1,100</td>
</tr>
<tr>
<td>12/15-12/24/18</td>
<td>96</td>
<td>1,500</td>
</tr>
<tr>
<td>12/25/18-1/4/19</td>
<td>154</td>
<td>1,312</td>
</tr>
</tbody>
</table>

Source: Bureau of Cannabis Control
Reasons for Cannabis Batch Failure
July 1, 2018 to January 4, 2019

- Label Claims: 59%
- Pesticides: 23%
- Microbial Impurities: 9%
- Residual Solvents: 6%
- Other: 3%

Other categories:
- Homogeneity: 1%
- Foreign Material: 0%
- Moisture: 2%

Source: Bureau of Cannabis Control
Rate per 100,000 People of ED Visits and Hospitalizations Involving Both a Vehicle Driver Injury and a Cannabis-Related Diagnosis by Year, Los Angeles County

Source: In-house tabulations of OSPHD data
Cannabis-Related Arrests by Race/Ethnicity, Los Angeles County, January to May 2018
Next Steps

• Complete analyses

• Present preliminary findings at February Advisory Group meeting

• Get feedback from advisors on results and suggestions for modified or additional analyses

• Work with advisory group to develop recommendations based on findings

• Identify key audiences and dissemination strategies for report

• Do outreach to media outlets via press releases, etc.

• Release Report by May 2019
Questions?
THANK YOU!

For more information, please contact:

Center for Health Impact Evaluation
Los Angeles County Department of Public Health
(213) 288-8016
wnicholas@ph.lacounty.gov