



Health Equity Implications of Retail Cannabis Regulation in Los Angeles County: **Health Impact Assessment**

Will Nicholas, PhD, MPH
Director, Center for Health Impact Evaluation
Los Angeles County Department of Public Health

UCLA/Kaiser Permanente Health Equity Symposium
October 29th, 2019





What is an HIA?

Definition

Systematic assessment of potential impacts of pending policies on population health and health equity that engages affected stakeholders and includes recommendations to inform policy formulation and/or implementation.

Part of a **Health in All Policies** approach

Determinants of Population Health



Health status is determined by:*

Genetics: 20%

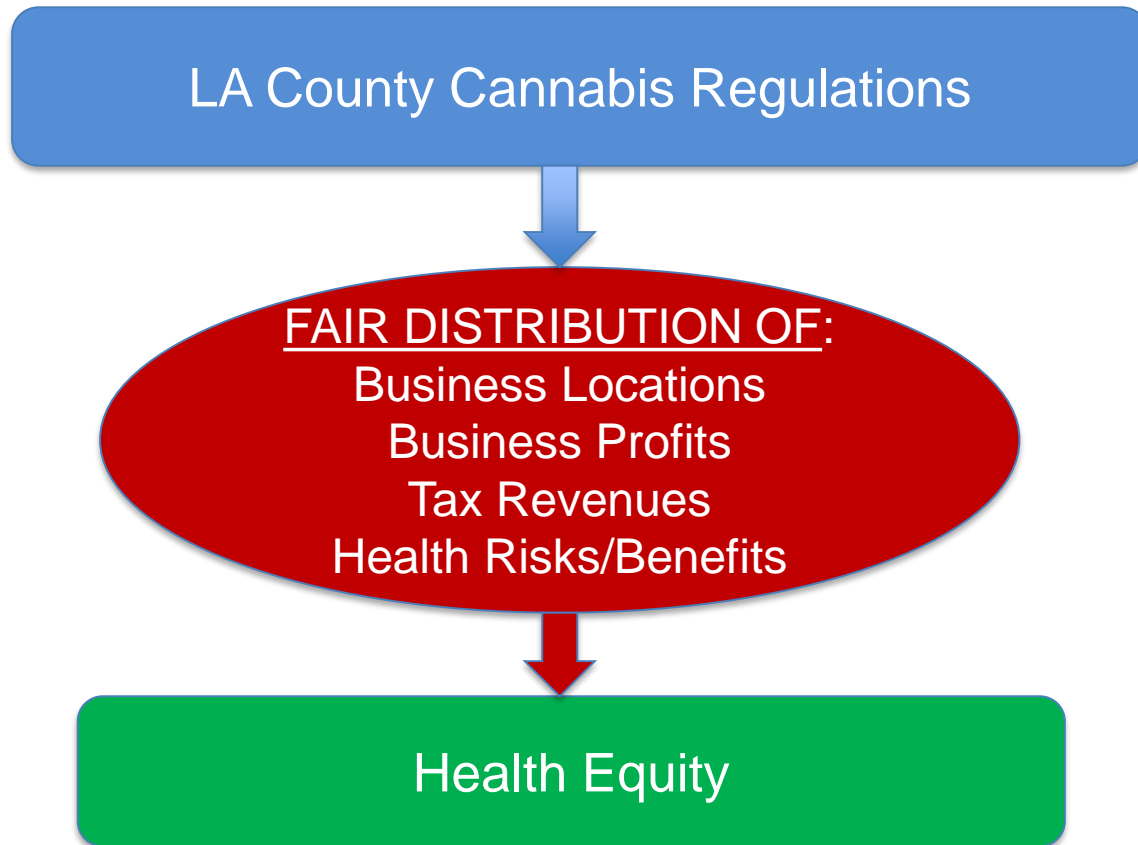
Health Care: 20%

Social, Environmental,

Behavioral Factors: 60%

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

Why this Matters: Cannabis and Health Equity





HIA Research Questions

1. How could cannabis **business locations and density** impact equity in the distribution of social determinants of health (SDOH) and health outcomes in LA County?
2. How could cannabis **business practices** impact equity in the distribution of SDOH and health outcomes in LA County?
3. How could **enforcement of compliance** with cannabis regulations impact equity in the distribution of SDOH and health outcomes in LA County?
4. How could **cannabis taxation** impact equity in the distribution of cannabis-related SDOH and health outcomes in LA County?

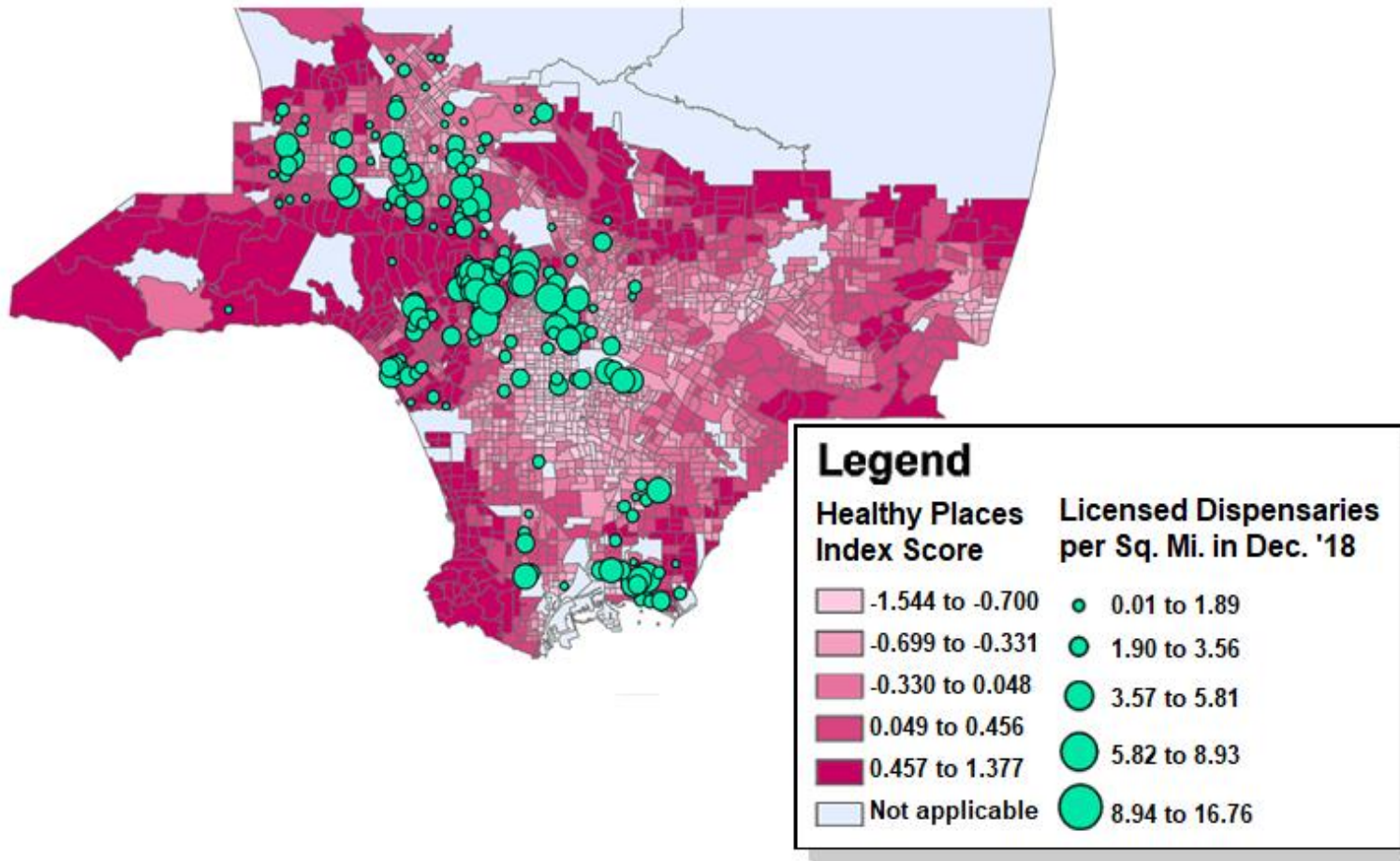


Results

Research Question #1: Dispensary Location and Density

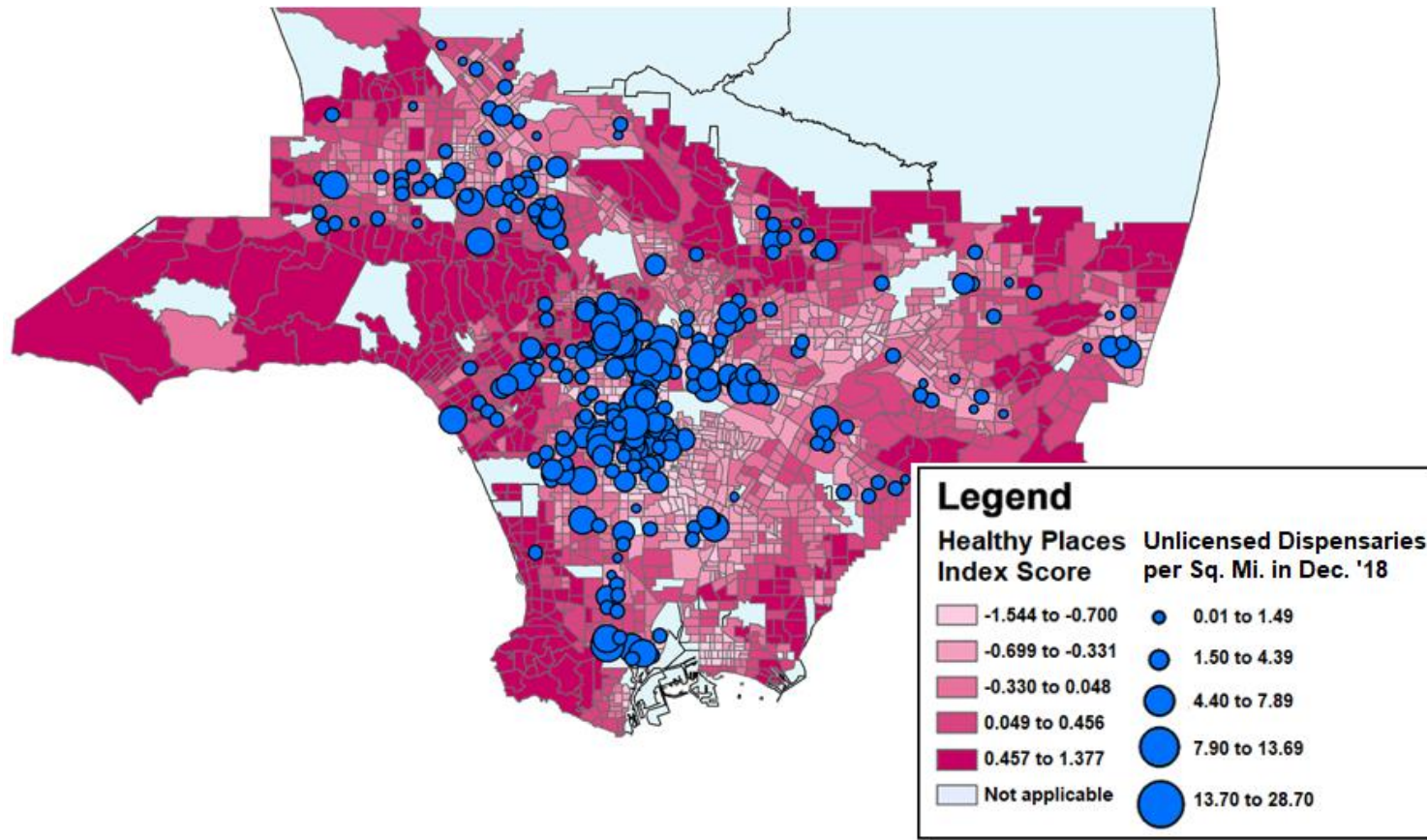
How could cannabis *business locations and density* impact equity in the distribution of social determinants of health (SDOH) and health outcomes in LA County?

Figure 2: Licensed Dispensary Density & Healthy Places Index (HPI) Score, Southern LA County, 2018



Sources: Healthy Places Index (HPI), Weedmaps, California Bureau of Cannabis Control (BCC)

Figure 3: Unlicensed Dispensary Density & Healthy Places Index (HPI) Score, Southern LA County, 2018



Sources: Healthy Places Index (HPI), Weedmaps, California Bureau of Cannabis Control (BCC)



Statistical Analysis of HPI Scores and Other Neighborhood Characteristics in Relation to Density of Licensed and Unlicensed Dispensaries

- Census tracts with lower health advantage more likely to have unlicensed dispensaries, but not licensed dispensaries
- Unlicensed dispensaries were more concentrated in tracts with higher percentages of Latinx and African American residents, but licensed dispensaries were not
- Tracts with higher percentages of African American residents were less likely to have licensed dispensaries
- Tracts with higher concentrations of liquor stores were more likely to have unlicensed dispensaries, but not

Sources: Healthy Places Index, CA Department of Alcoholic Beverage Control, Los Angeles County eGIS, US Census
Model: Zero-Inflated Negative Binomial Regression Model predicting licensed and unlicensed dispensary presence and density

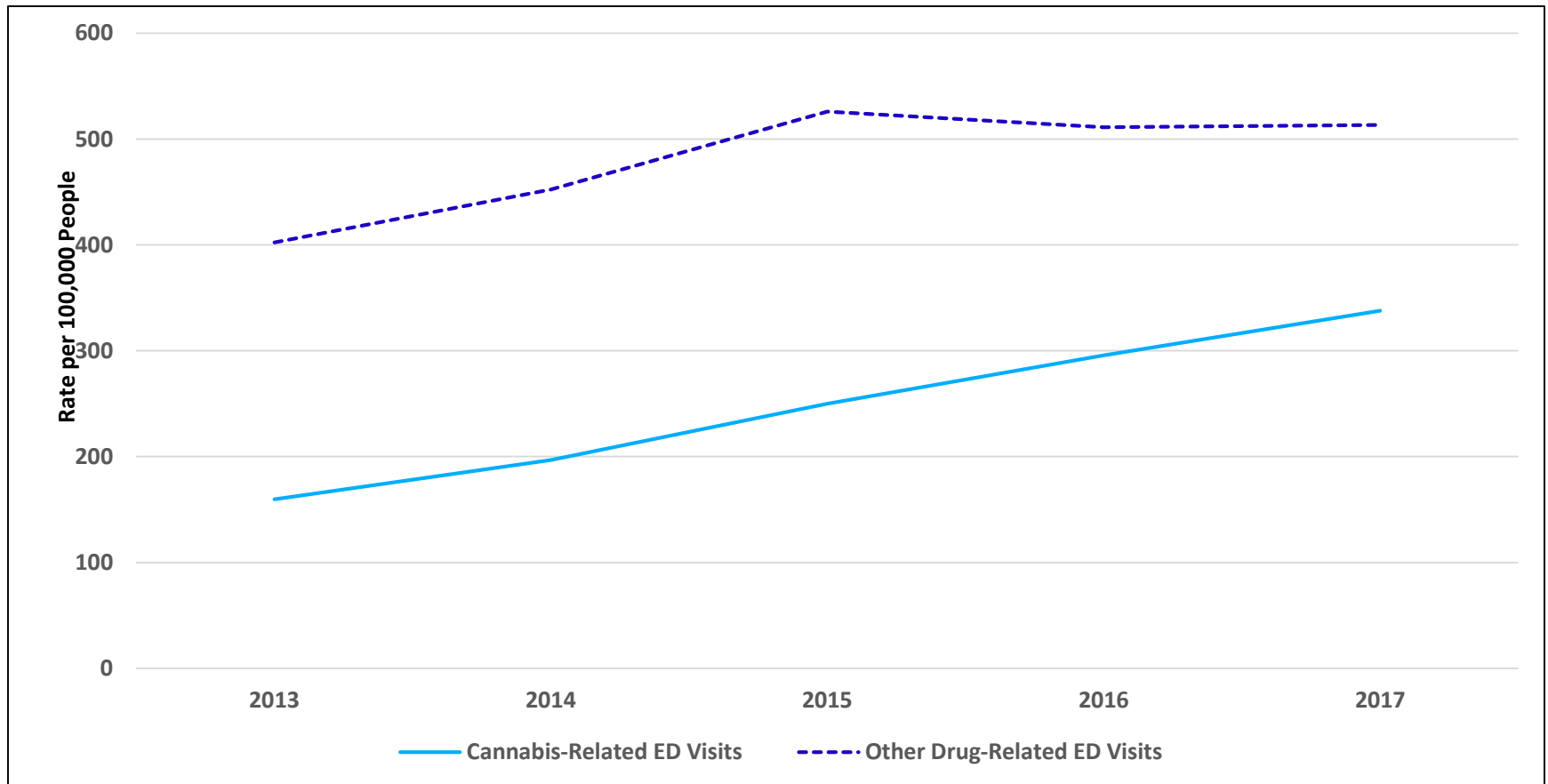


Statistical Analysis of Neighborhood Factors Associated with Cannabis-related ED visits

- An additional one dispensary per zip code was associated with a 7.1% increase in the number of cannabis related ED visits.
- Other zip code characteristics associated with cannabis-related ED visits included:
 - % of Residents below 100% of Poverty Level
 - % of Latinx Residents
 - % of African American Residents
 - % of Multi-Racial Residents

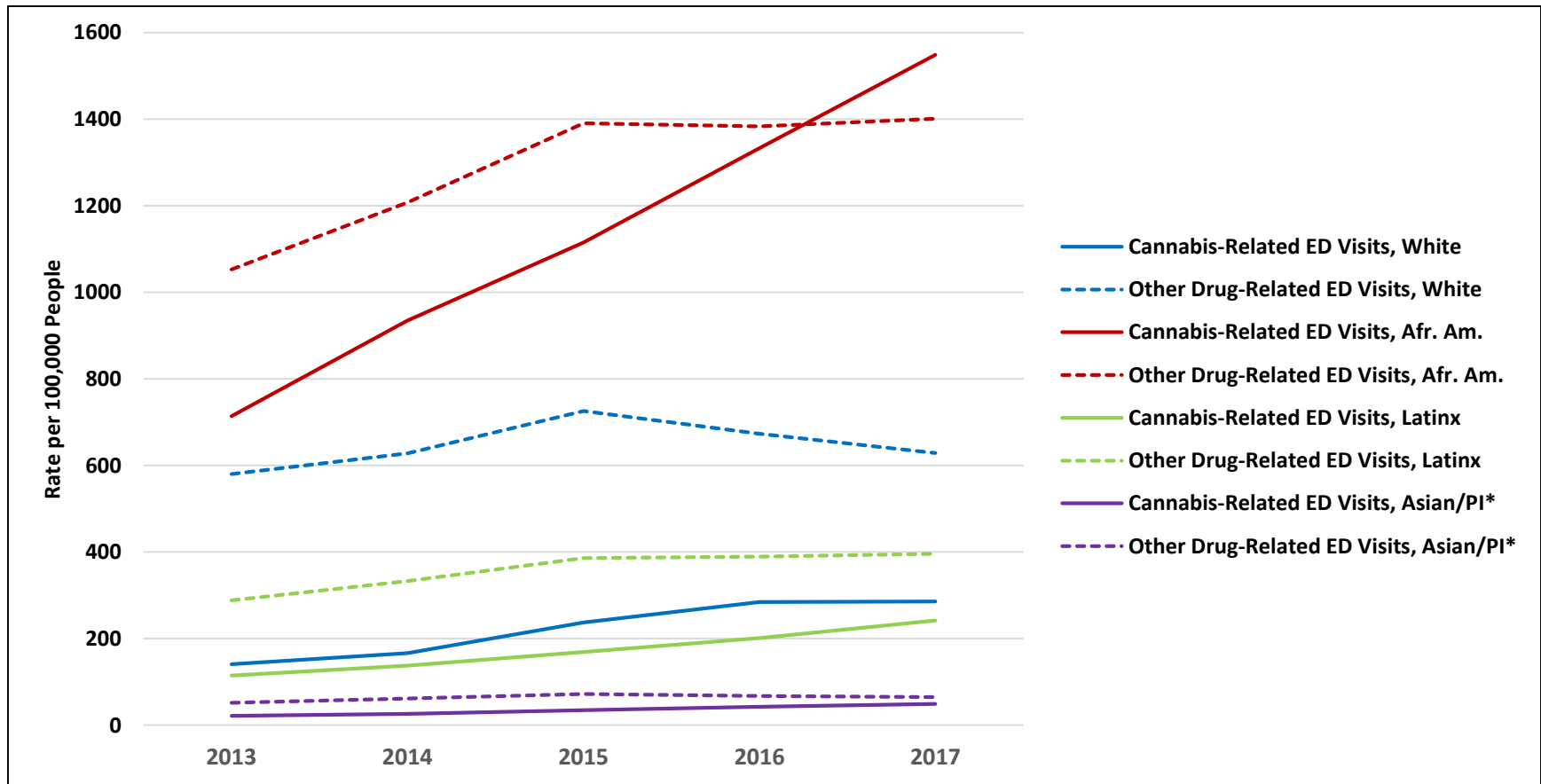
*Sources: Healthy Places Index, CA Department of Alcoholic Beverage Control, Los Angeles County eGIS, US Census
Model: Zero Inflated Negative Binomial Regression Model predicting licensed and unlicensed dispensary presence and density*

Figure 4: Cannabis-Related and Other Drug-Related Emergency Department (ED) Visits Los Angeles County, 2013-2017



Source: California Office of Statewide Health Planning and Development (OSHPD)

Figure 5: Cannabis-Related and Other Drug-Related Emergency Department (ED) Visits by Race/Ethnicity Los Angeles County, 2013-2017



*PI – Pacific Islander. Source: California Office of Statewide Health Planning and Development (OSHPD)



Qualitative Findings: Dispensary Location and Density

- Most cities have adopted guidelines allowing 1 dispensary per 10-15K residents.
- Smaller cities are reaching their caps but City of LA cap is “soft” and is not yet close to being reached.
- First wave of licenses in City of LA were for existing businesses that had already sought out “desirable” locations, which may explain HPI findings.
- Next wave will consist largely of social equity license applicants seeking locations in less affluent areas with even stiffer competition from unlicensed operators.



Summary

- As of the end of 2018, the equity concern about overconcentration of cannabis dispensaries in disadvantaged areas was supported by the data but was primarily due to unlicensed dispensaries.
- This overconcentration is also associated with greater rates of cannabis-related ED visits and with greater incidents of violent crime.
- It remains to be seen if this dynamic will change as licensed dispensaries—particularly social equity businesses—begin to open in more disadvantaged areas.

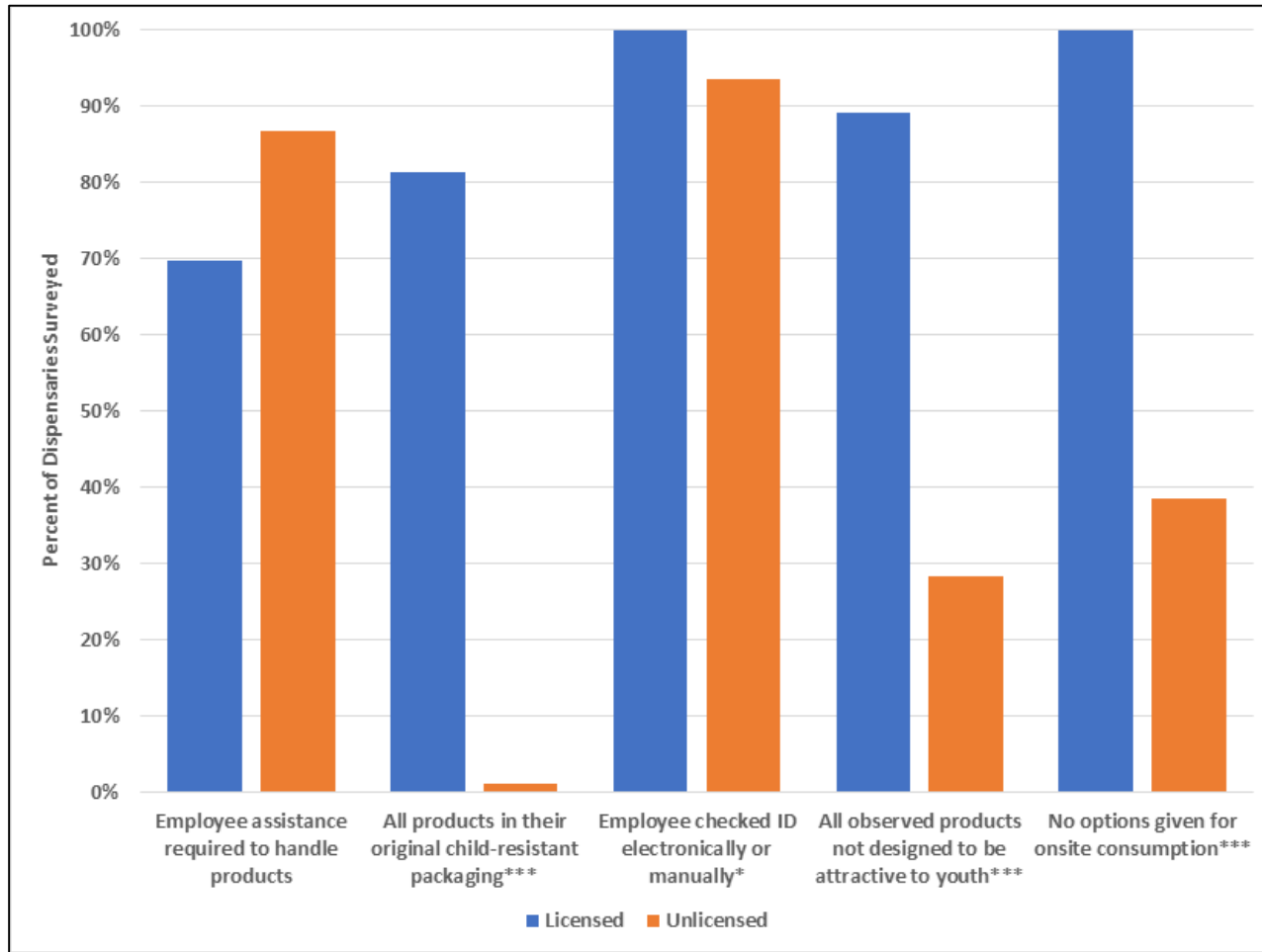


Results

Research Question #2: Cannabis Business Practices

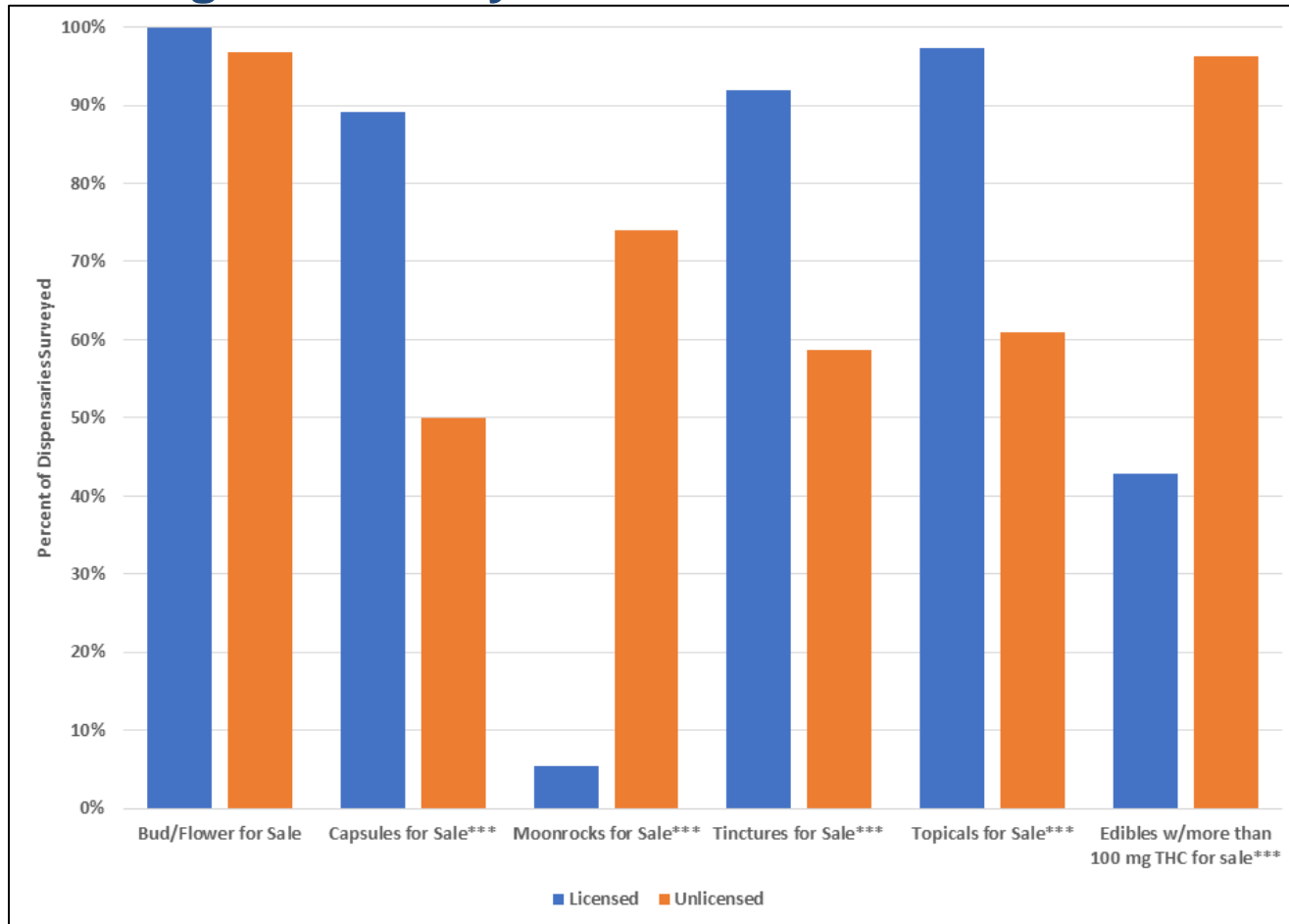
How could cannabis business practices impact equity in the distribution of SDOH and health outcomes in LA County?

Figure 10: Dispensaries' Youth Cannabis Access Restrictions by Licensure Status, Los Angeles County



* $p < .05$; ** $p < .01$; *** $p < .001$; Source: Los Angeles County Cannabis Dispensary Premise Survey (2018/2019)

Figure 11: Dispensaries with Various Product Types by Licensure Status, Los Angeles County



*p<.05; **p<.01; ***p<.001; Source: Los Angeles County Cannabis Dispensary Premise Survey (2018/2019)



Summary

- In addition to being more concentrated in areas of health disadvantage, unlicensed dispensaries are also more likely to engage in potentially health harming business practices.
- These practices are thus more likely to impact low-income communities of color and heavier cannabis users who are more price sensitive.



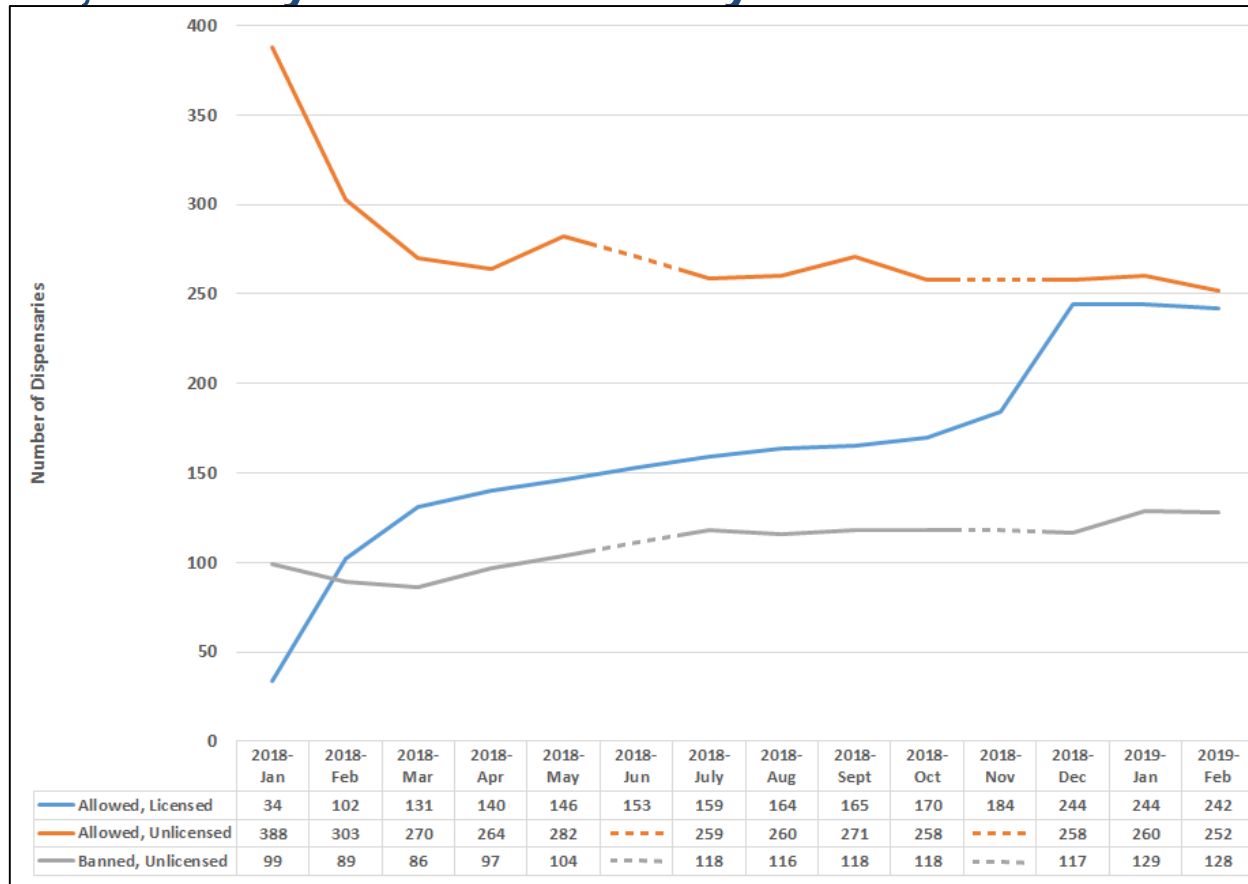
Results

Research Question #3: Regulatory Compliance and Enforcement

How could enforcing of compliance with cannabis laws and regulations impact equity in the distribution of SDOH and health outcomes in LA County?



Figure 13: Licensed and Unlicensed Dispensaries in Los Angeles County, by Whether they are in an Area Currently Banning Dispensaries, January 2018 to February 2019



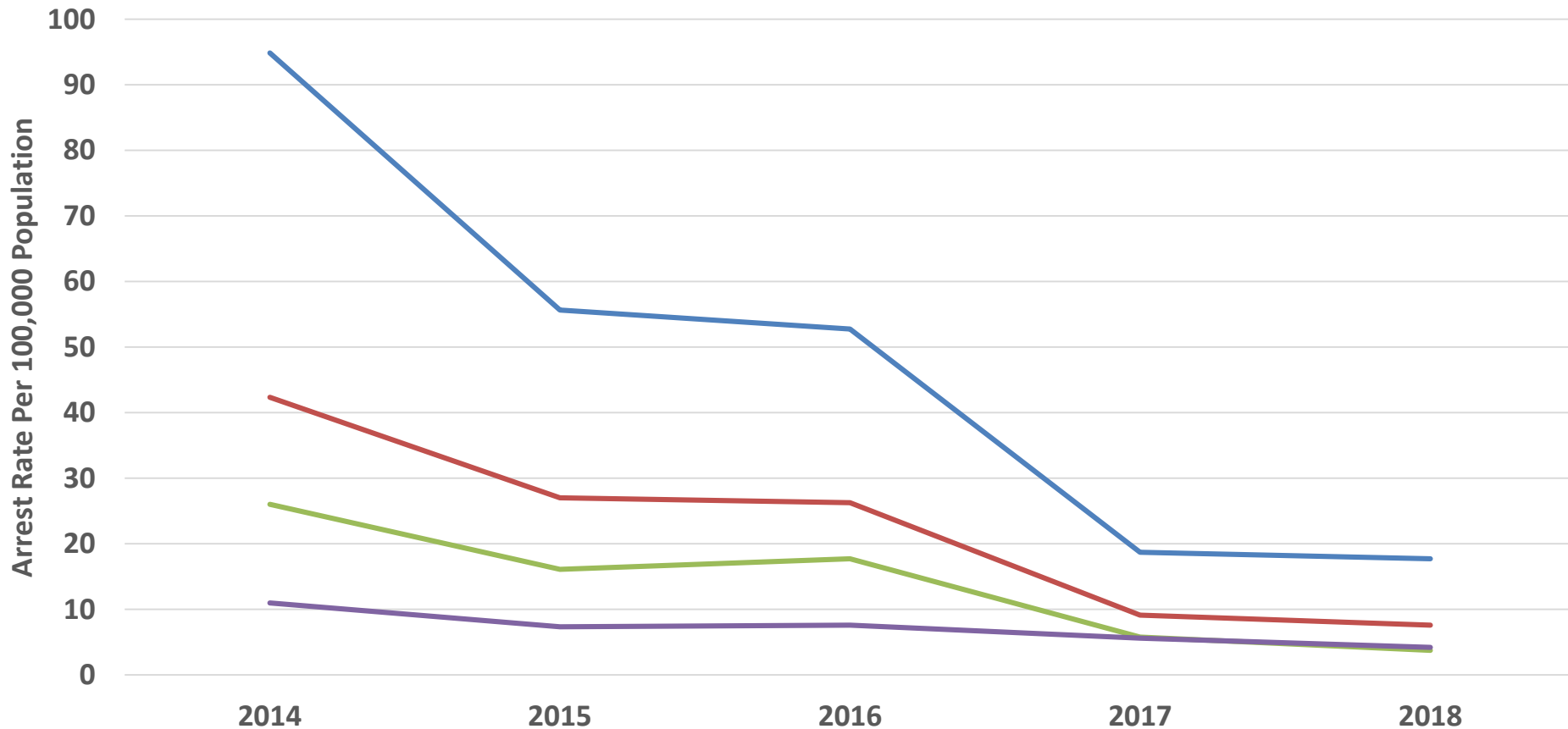
Note: Dotted lines indicate Weedmaps data was not available for June and November.

Sources: Weedmaps, California Bureau of Cannabis Control (BCC)



Cannabis Arrest Rate in LA County by Race/Ethnicity, 2014-2018*

— African-American — Hispanic/Latino — White — Asian, AI/AN**, NHOPI***



Sources: LA County Sheriff Department; U.S. Census Bureau

*Rates were calculated based on yearly population estimates and race/ethnicity distribution as of 2017

American Indian/Alaska Native *Native Hawaiian or Other Pacific Islander



Summary

- California's long history of loosely regulated medical marijuana has contributed to an entrenchment of unlicensed dispensaries in LA County.
- Comparative trends in areas allowing and banning licensed dispensaries suggest that local cannabis licensing may exert some downward pressure on unlicensed operators.
- From an equity perspective, using administrative penalties for unlicensed operators may be preferable to a criminal justice approach which could create barriers for those eligible for social equity licensing programs.



Results

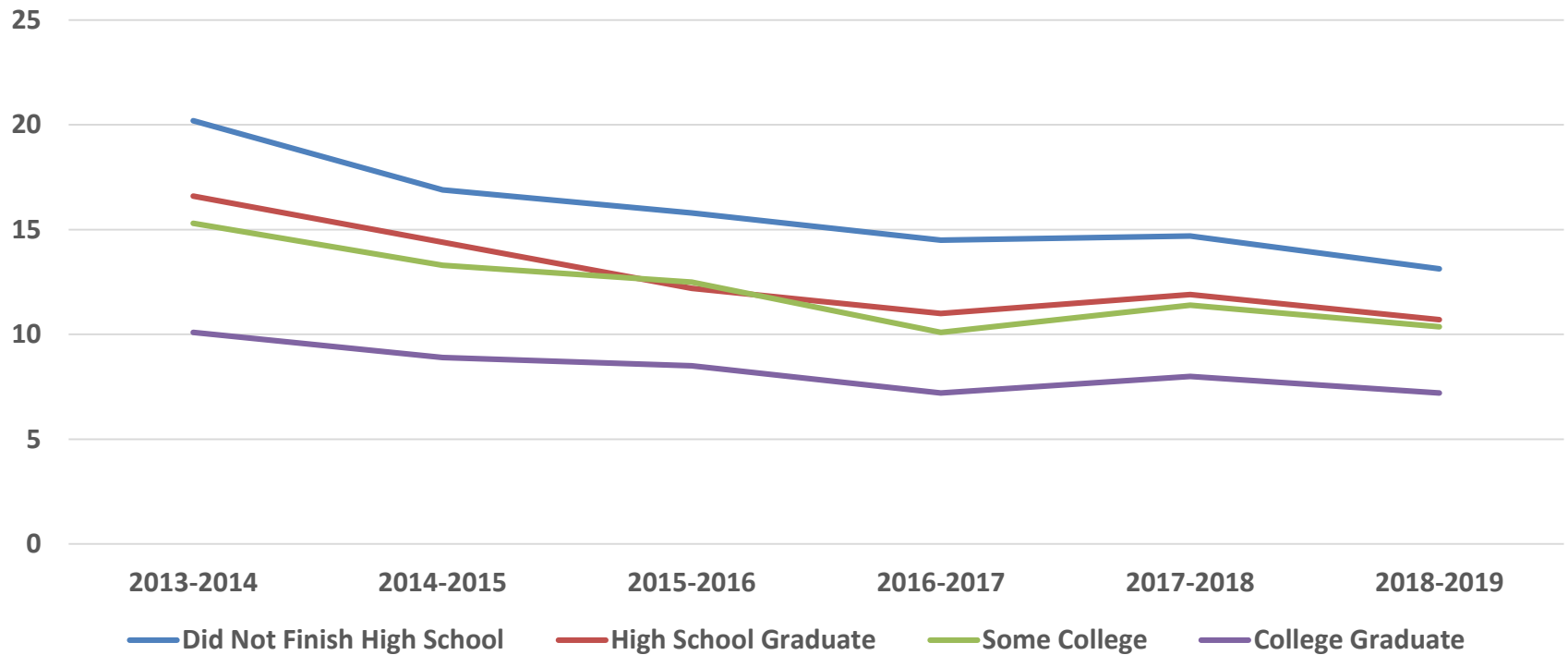
Research Question #4: Cannabis Tax Revenue

How could cannabis taxation impact equity in the distribution of cannabis-related SDOH and health outcomes in LA County?





Percent of Students Who Reported Using Marijuana in the Past 30 Days, by Parents' Education, 2013-2014 to 2018-2019, California Healthy kids Survey





Multilevel Analysis of Student and School-Level Factors Associated with Student Cannabis Use (2017/18)

Student Level

- Higher parental education associated with lower odds of cannabis use
- Asians and females had lower odds of cannabis use
- Students identifying as non-heterosexual, non-gender conforming or Native American had higher odds of cannabis use

School Level

- Positive school environment (caring adults in school; motivating adults in school; meaningful participation in school) associated with lower odds of cannabis use; Environment had mitigating effect on % of students on free and reduced price lunch program



Multilevel Analysis of Student and School-Level Factors Associated with Student Vaping

(2017/18)

Student Level

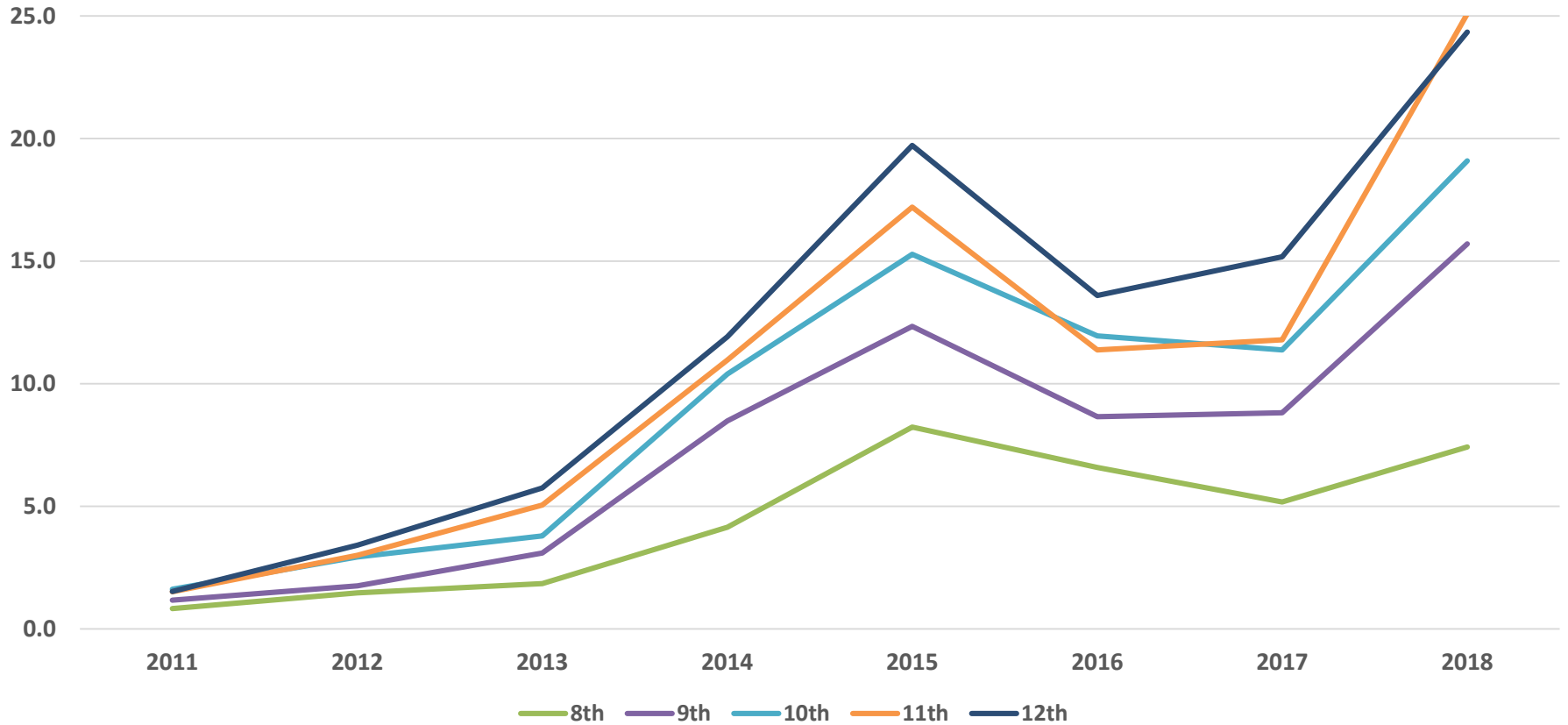
- Higher parental education associated with lower odds of vaping
- African Americans and Asians had lower odds of vaping
- Students identifying as non-heterosexual, non-gender conforming or Pacific Islander had higher odds of vaping

School Level

- Positive school environment (caring adults in school; motivating adults in school; meaningful participation in school) associated with lower odds of cannabis use;
- Higher % of students on free and reduced price lunch associated with lower odds of vaping
- Dispensary density in school census tract not associated

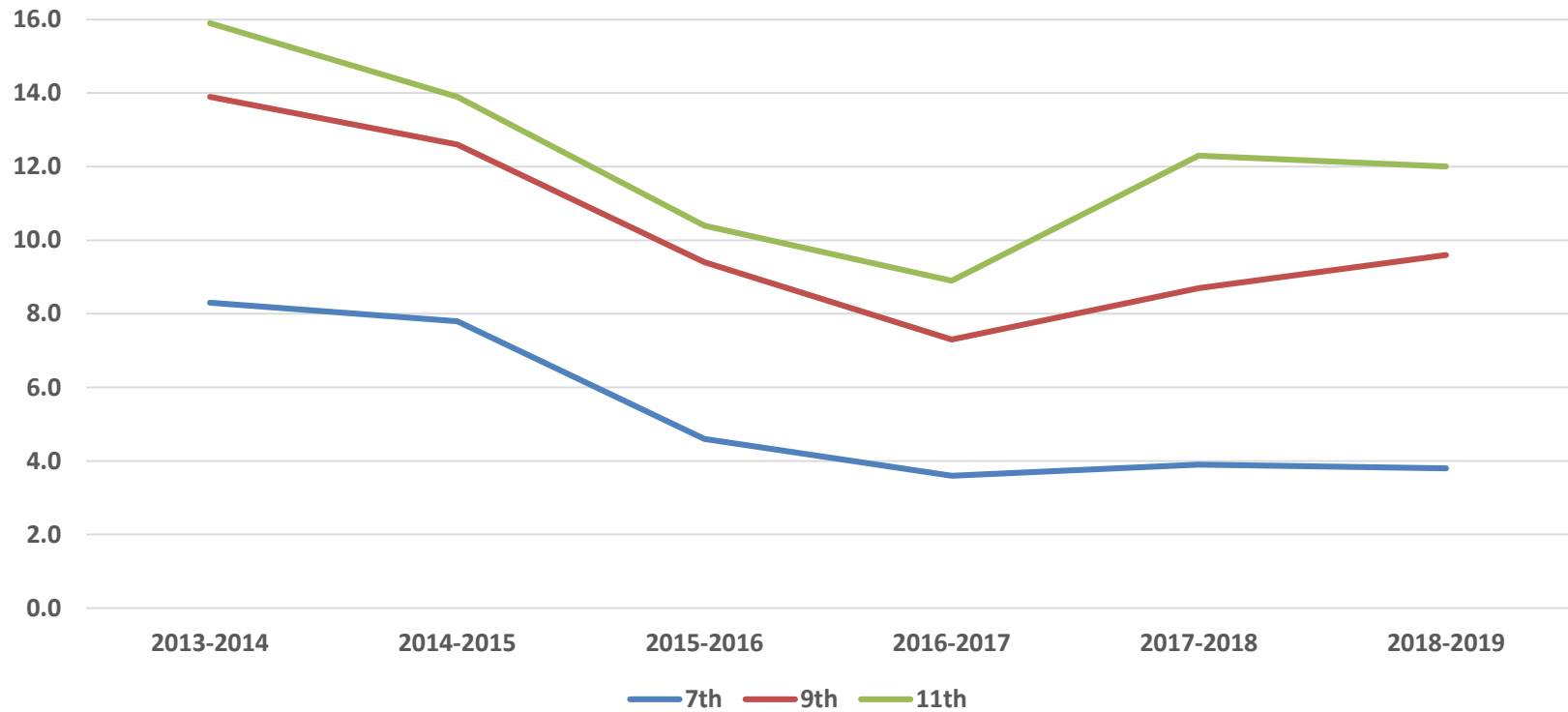


National Trend in 30-Day Prevalence of Any Vaping, by Grade and Year, 2011 to 2018,
National Youth Tobacco Survey



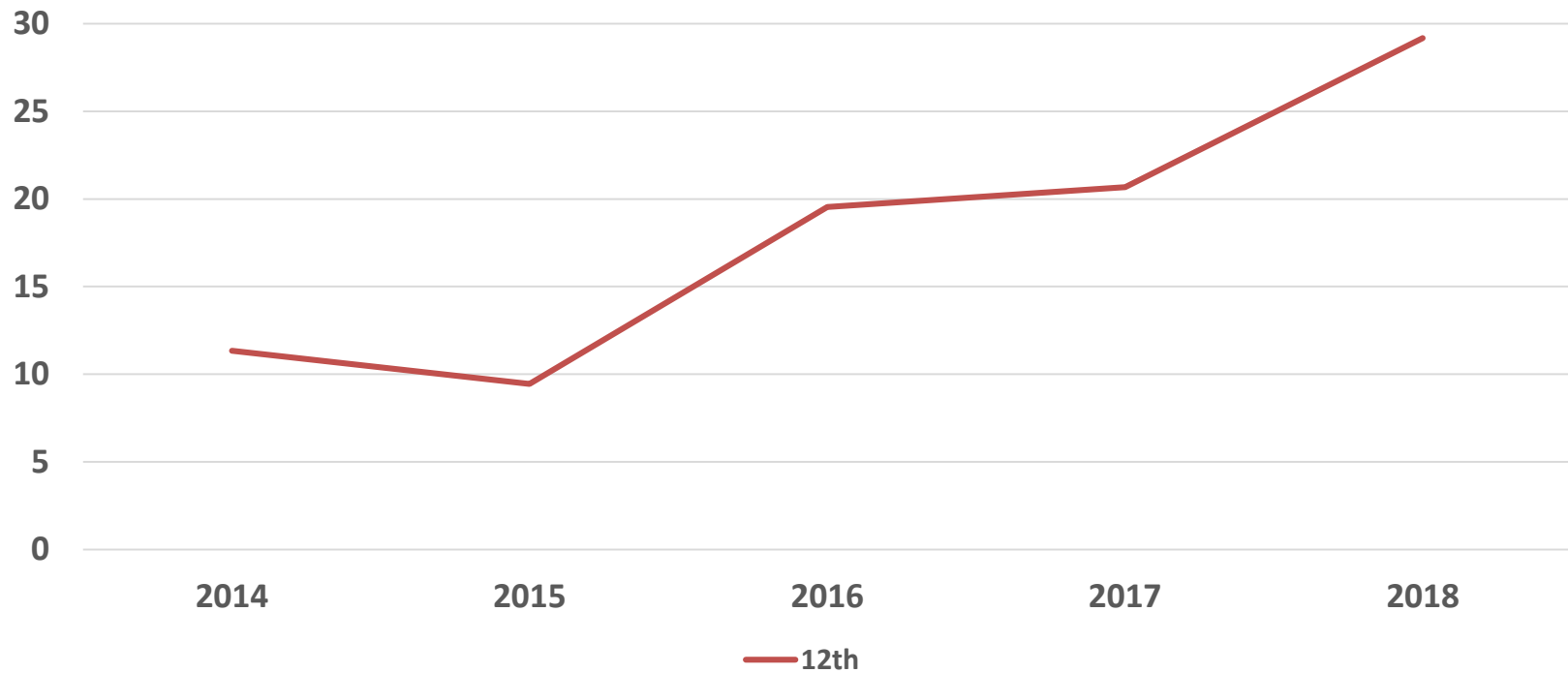


LA County Trend in 30-Day Prevalence of Any Vaping, by Grade and Year, 2013-2014 to 2018-2019, California Healthy Kids Survey



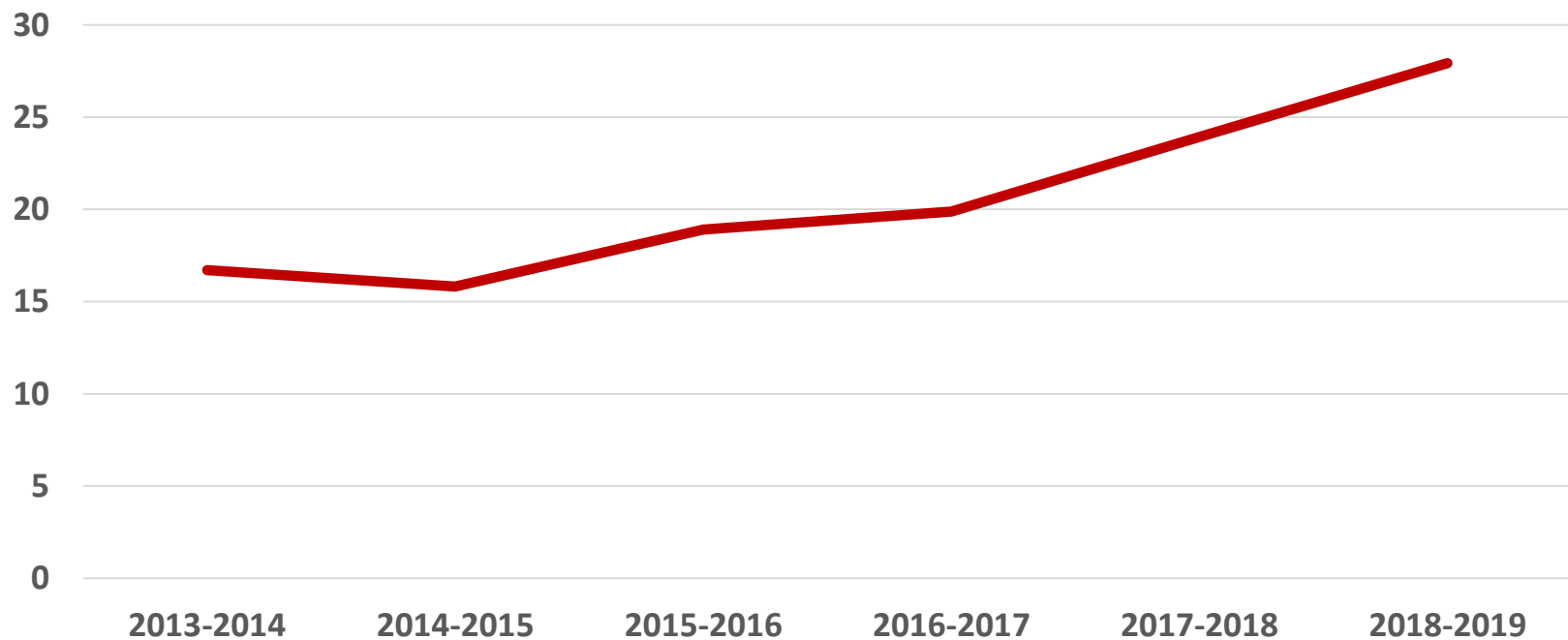


Percentage of Current 12th Grade Vapers Who Vaped Every or Almost Every Day, 2014-2018, National Youth Tobacco Survey



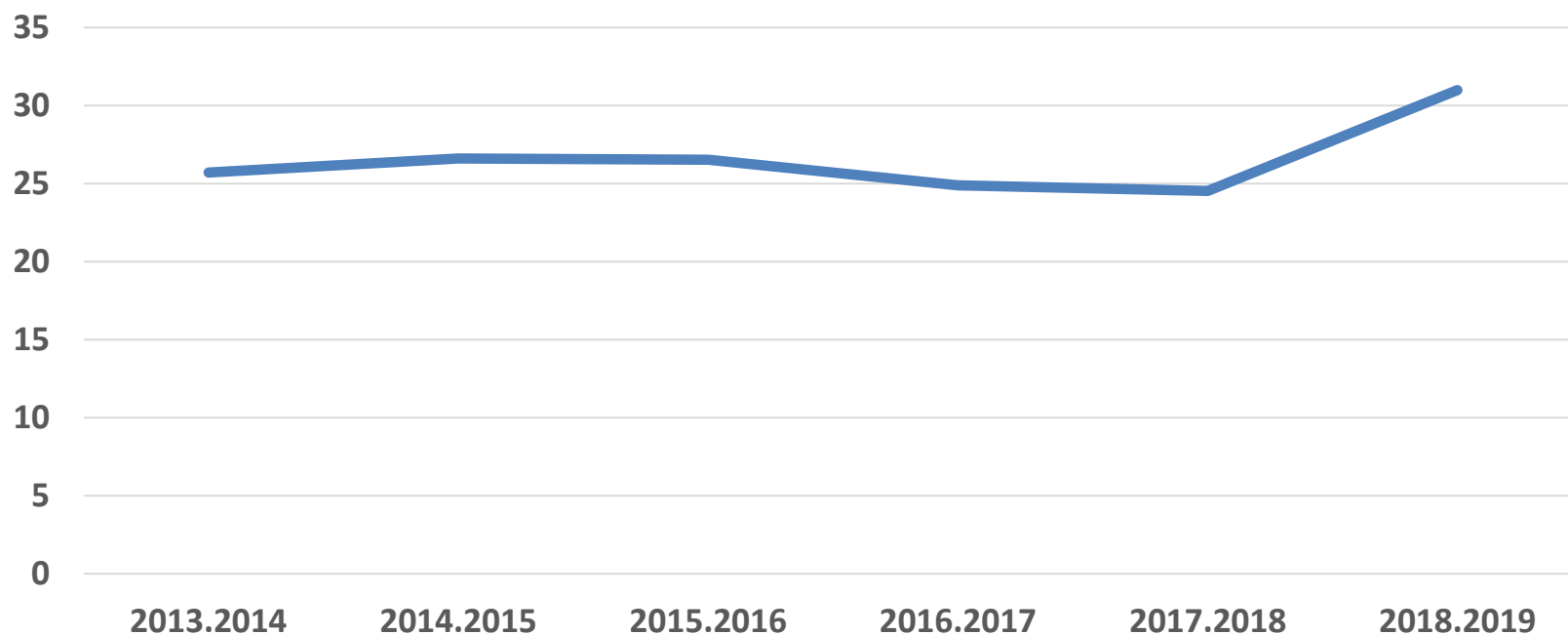


Percentage of Current 11th Grade Vapers Who Vaped Every or Almost Every Day, 2013/14 to 2018/19 California Healthy Kids Survey





Percentage of 11th Grade Students Who Currently Use Cannabis by Those Who Used Cannabis 20-30 Days in the Past Month, 2013-2014 to 2018-2019, California Healthy Kids Survey



Summary

- Data suggests cannabis use among public secondary school students in LA County was decreasing until a small uptick in 2017/18; Too soon to tell if this is the beginning of a change in the overall trend.
- Youth use significantly associated with socioeconomic status and membership in potentially marginalized groups like Native American and sexually and gender non-conforming students.
- School environment factors promoting positive youth development are significantly predictive of abstention from cannabis use among students.



Recommendations

- Consider 4-pronged strategy for initiating licensing of retail cannabis dispensaries
- Use license application scoring criteria to encourage equitable distribution of dispensary locations
- Require health inspections and explore options for including laboratory testing of products as part of the inspection process
- Further investigate racial/ethnic disparities in cannabis-related ED visits and develop strategies to address them
- Invest youth prevention dollars in schools serving lower income communities; Incorporate evidence-based practices for positive youth development
- Require licensed dispensaries to post information about the MMID program and about differential tax rates for consumers with physician recommendations and/or MMID cards.



THANK YOU!

Lisa Greenwell, PhD
MPH

Emily Caesar, MPH
Daniele Loprieno, MA
MEng

Laura Stroud, MSW

Faith Washburn,

Grace Lee, MPH, MA
Irene Vidyanti, PhD,

Michael Jan, MD



Questions?



- **For more information or additional questions please contact:**

E-Mail: CHIE@ph.lacounty.gov

Website: <http://publichealth.lacounty.gov/chie/>