

High THC Products: Public Health Outcomes in Washington's Legal Market

**University of Washington Alcohol & Drug Abuse Institute (ADAI)
Cannabis Symposium
September 16, 2022**

Julia Dilley - Affiliate Instructor, University of Washington
Senior Research Scientist/Epidemiologist, Oregon Health Authority & Multnomah County Health

Acknowledgements

This study was supported by the National Institute on Drug Abuse of the National Institutes of Health (award 1R01DA039293, PI: Dilley). The content is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health or Oregon Health Authority/Multnomah County Health Department.

Co-authors and collaborators:

Washington State University ADARP: Janessa Graves, Tracy Klein, Erica Liebelt (U of Arkansas for Medical Sciences)

Washington State DSHS RDA: Grace Hong

Washington State LCB: Mary Segawa

University of Washington: Katarina Guttmannova, Caislin Firth

Oregon Health Authority: Erik Everson, Susan Richardson, Julie Maher, Clyde Dent

Oregon Poison Center OHSU: Rob Hendrickson

RAND: Beau Kilmer

Colorado Division of Public Health and Environment: Elyse Contreras, DeLayna Goulding

Public Health research questions

How does a legal cannabis market affect consumption of high THC products in populations and health/safety outcomes?

What can we do to protect public health and mitigate harms?

Methods

Public Health Surveillance or related systems that include detail about types of cannabis products used (higher THC products)

- Administrative data: cannabis retail licensing and sales
- Ongoing surveys that measure health behaviors among adults and youth
- Cannabis-related adverse health events reported to US Poison Control Centers

Note: we are generally focusing on pre-pandemic data periods for this discussion

Market data

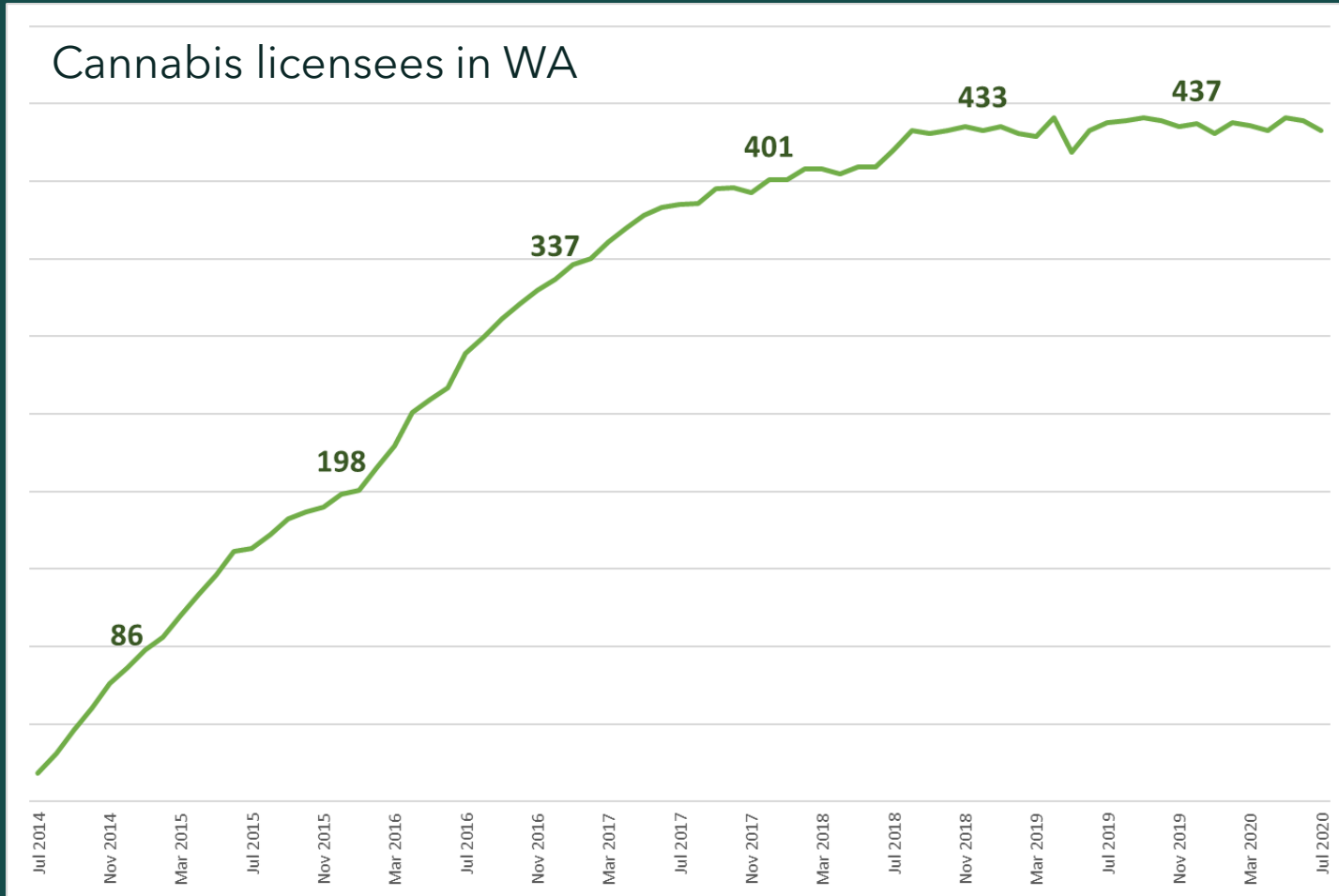
Regulatory Agency data



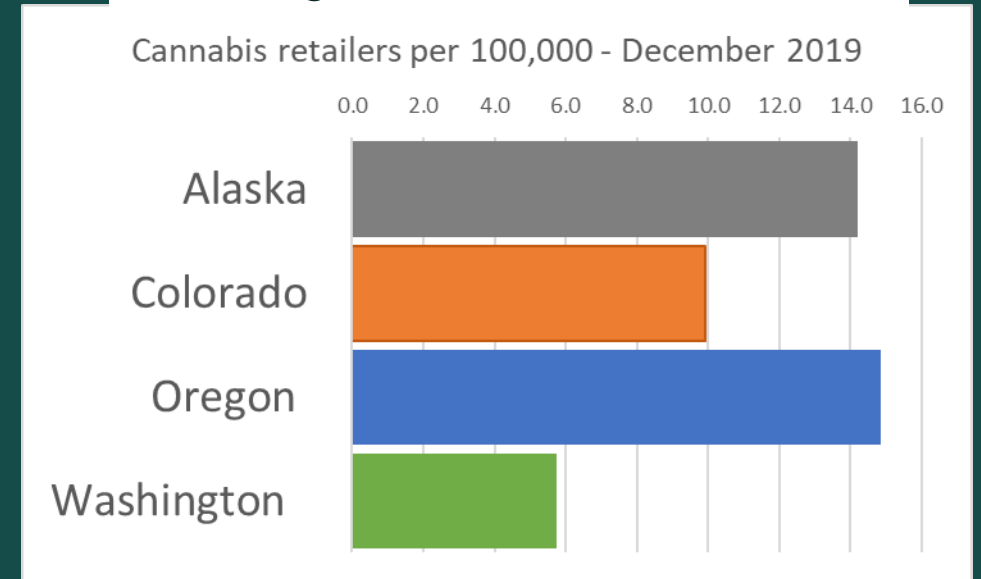
Portland, OR, October 2021. S. Fiala

Active Cannabis Retail Sales Outlets, WA

Cannabis licensees in WA



Per-capita cannabis licensees in first 4 legalized states, 2019

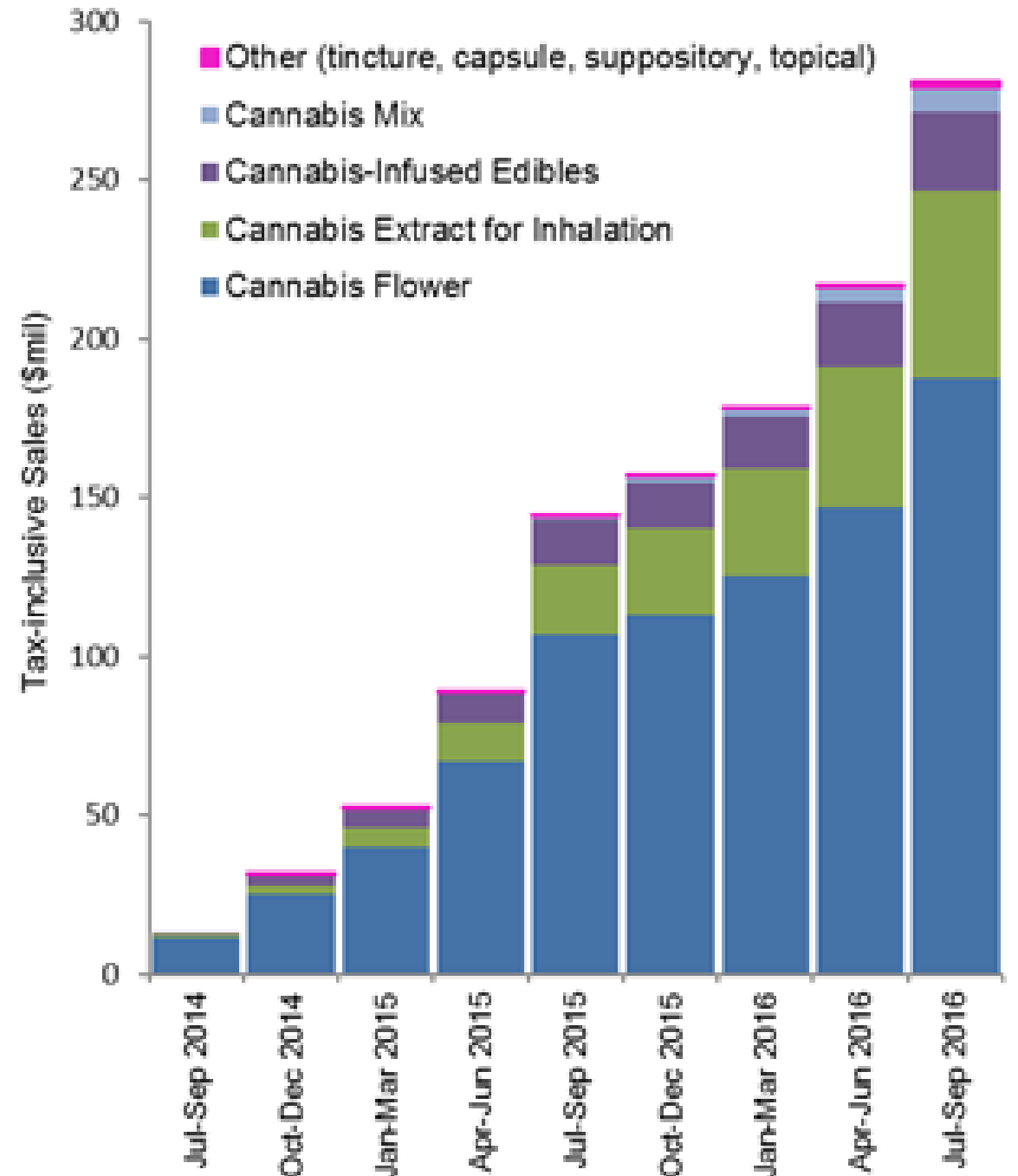


Cannabis retailers licensed by WA LCB and reporting sales per month. Labeled values for December each year.
Per capita retailers per 100,000 based on licensing data from regulatory agencies in each state.

Total cannabis sales and product-specific sales, per quarter, Washington State

Smart R, Caulkins JP, Kilmer B, Davenport S, Midgette G. (2017) Variation in cannabis potency and prices in a newly-legal market: Evidence from 30 million cannabis sales in Washington State. *Addiction*.

<http://dx.doi.org/10.1111/add.13886>

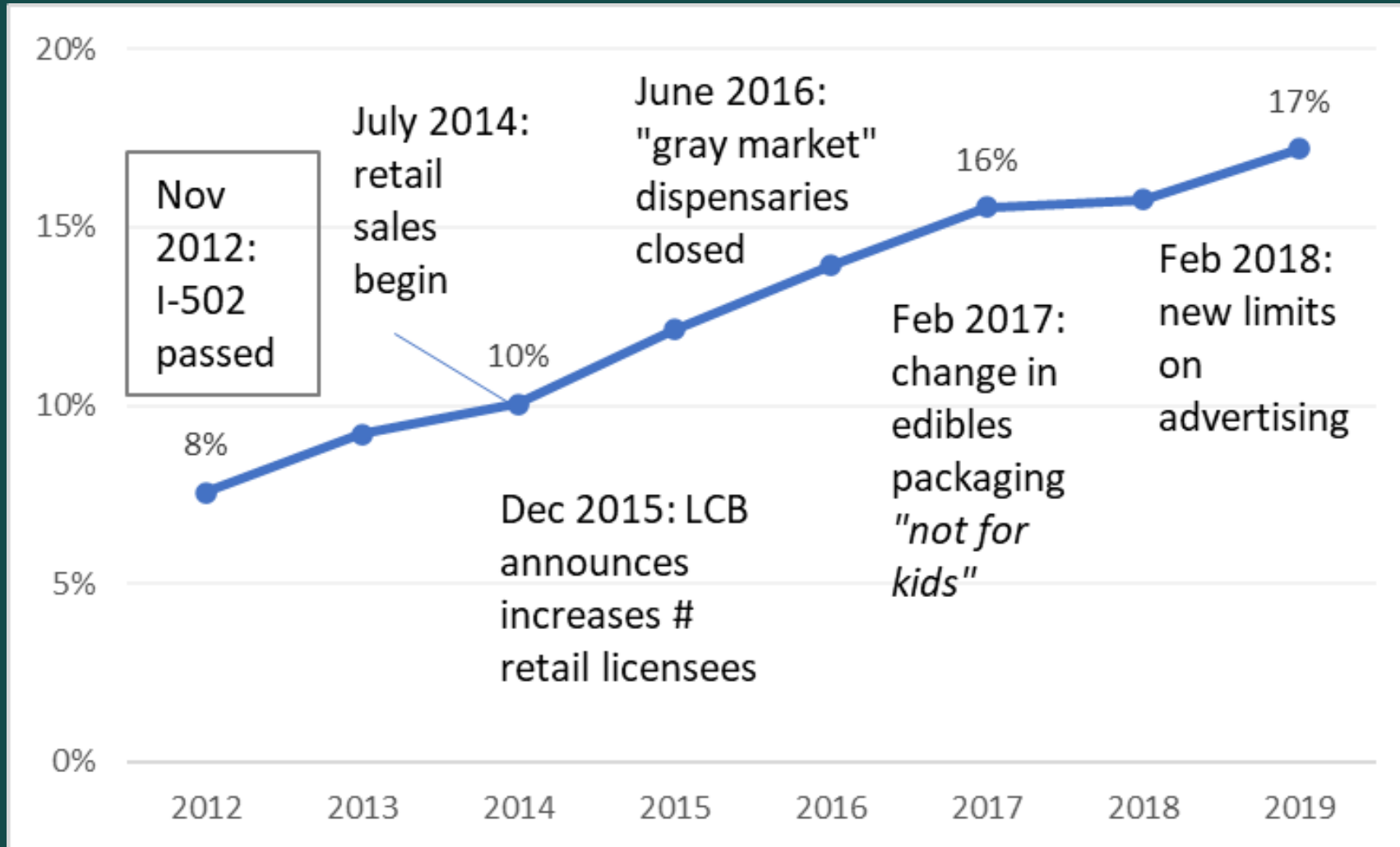


Trends in cannabis product use patterns

Behavioral Risk Factor Surveillance System (BRFSS)

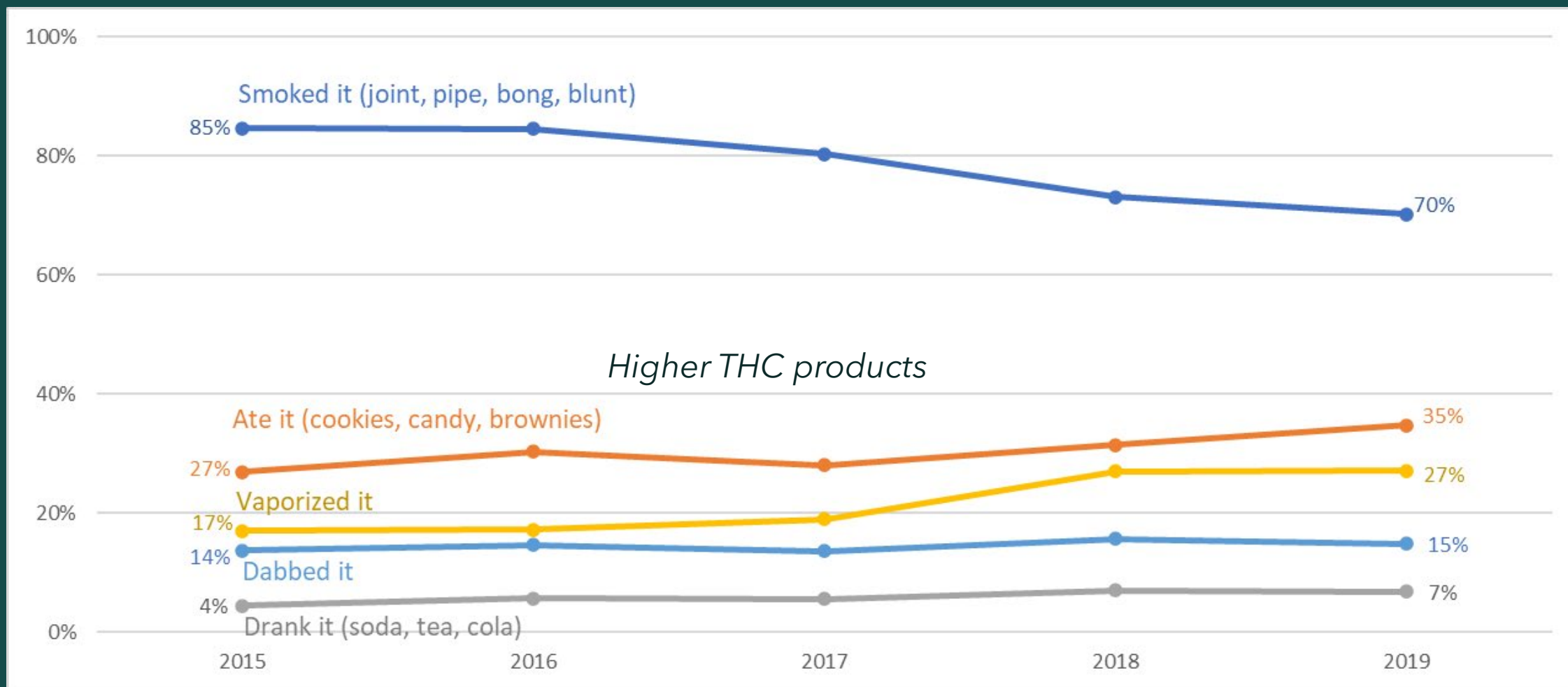
School-based Health Behavior Surveys

Cannabis use in the past 30 days among Washington State adults, and key cannabis policy dates, 2014-2019



Source: Washington State Behavioral Risk Factor Surveillance System (BRFSS)

Cannabis product types used (multi-select), among adults currently using cannabis, Washington, 2015-2019



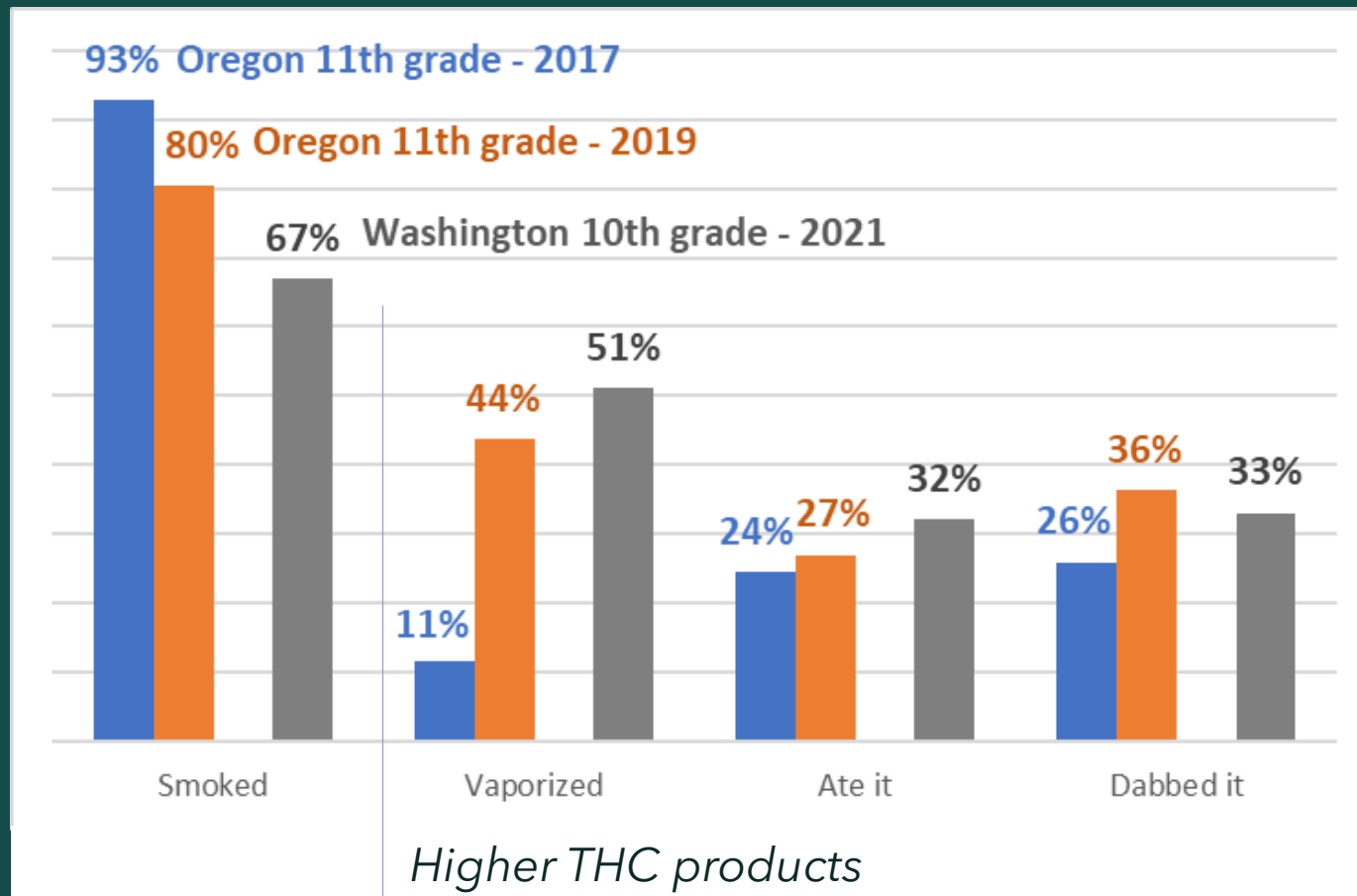
Source: Washington State Behavioral Risk Factor Surveillance System (BRFSS)

“Usual way cannabis used” (single answer), among youth who used cannabis in past 30 days, Washington State



Source: Washington State Healthy Youth Survey, 2014, 2016, 2018; census dataset N=

“Any way cannabis used” (multi answer),
among youth who used cannabis in past 30 days,
Oregon/Washington



Relationship between local area cannabis retail sales and use within Washington State

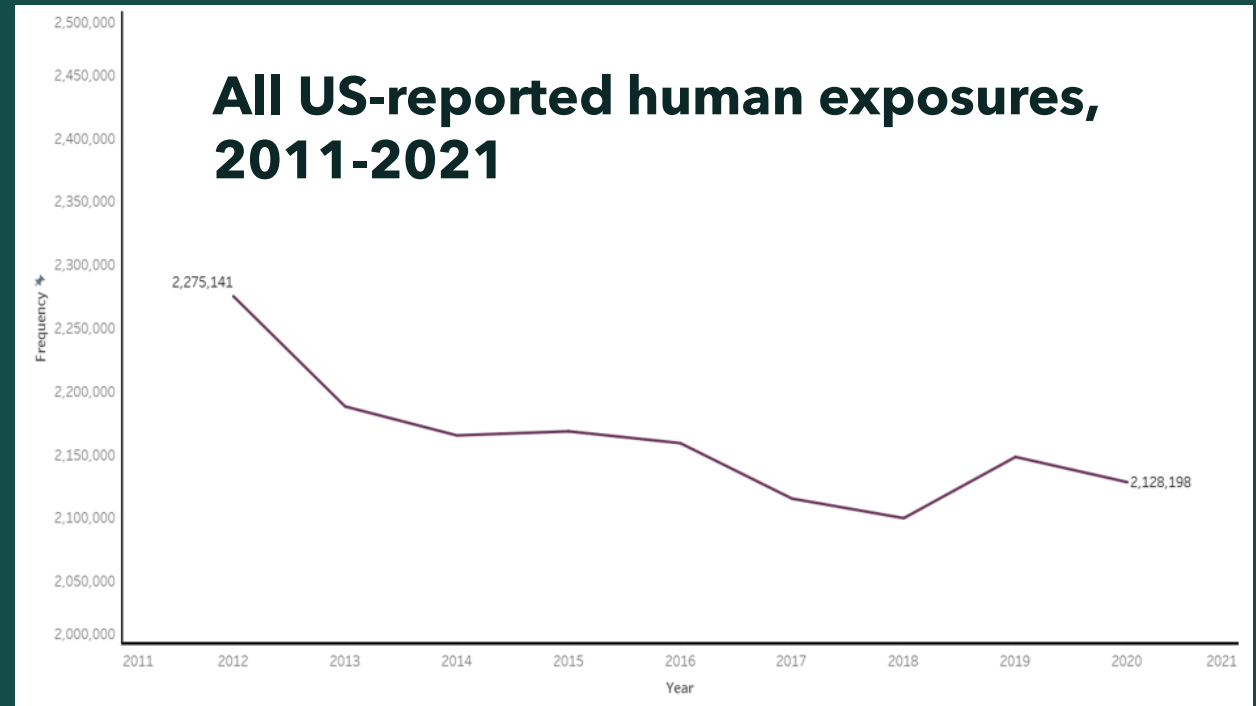
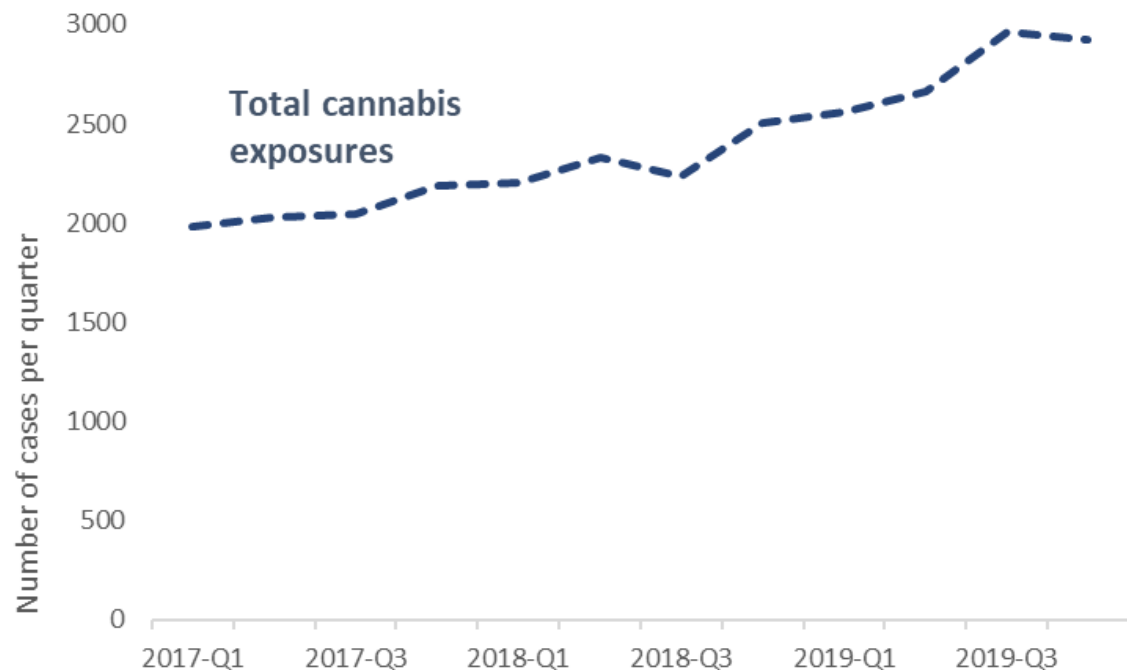
- *Caveat: associations studied so far in WA are mainly for any cannabis product use, not specific to THC/specific products*
- Adults (see Everson et al., 2019)
 - Among adults living in communities <.8 miles from nearest retailer, current use increased (OR 1.45) and use on 20+ days/month increased (OR 1.43)
 - No increase in current use among adults living in communities averaging 18+ miles from retail
- Youth (see Dilley, Guttmanova, et al., SPR 2022/in preparation)
 - 10th grade: increased current and frequent cannabis use (10+ days/mo), perceived access; decreases in prevention-related injunctive norms (personal belief, friend belief, parent belief, adult community beliefs)
 - 8th grade: decreased perception that parents believe cannabis use is wrong, perception trying cannabis is risky

Cannabis-related Adverse Health Events

Exposures reported to US Poison Control Centers

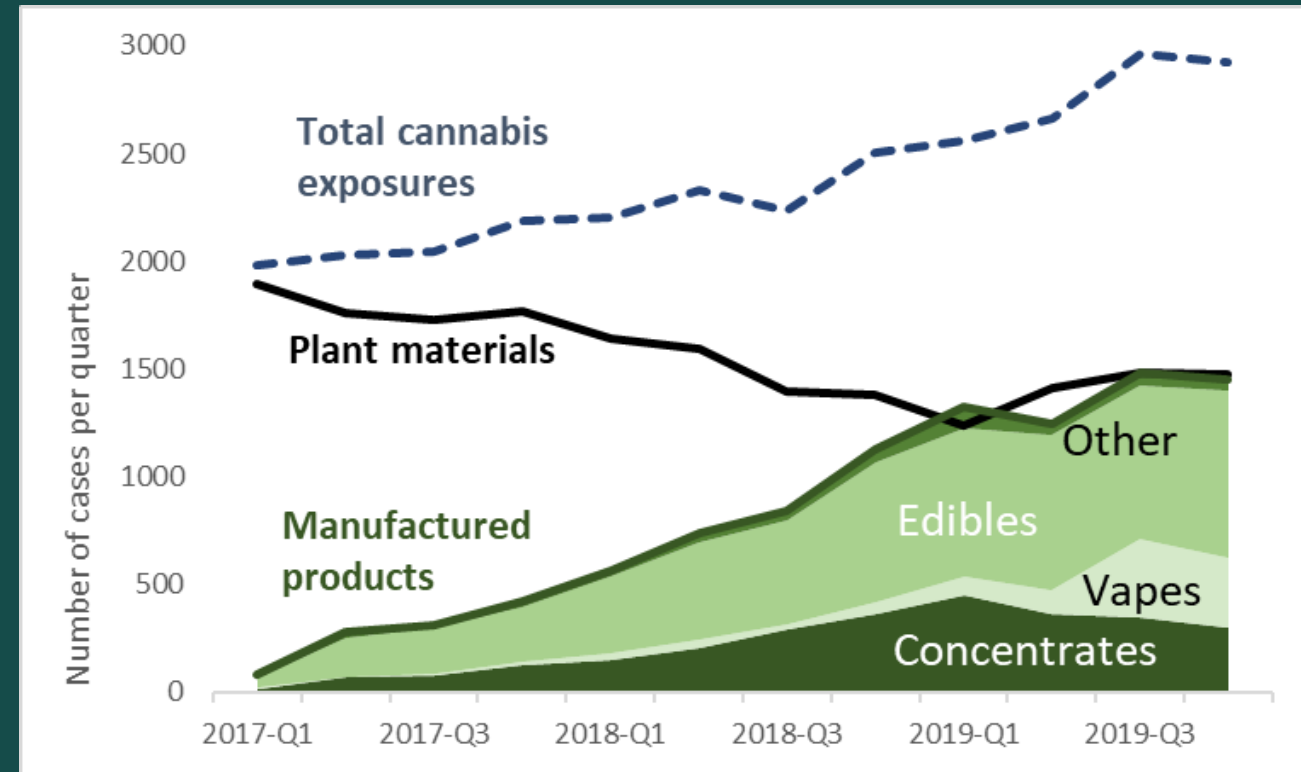
Exposures reported to US Poison Control Centers

- Poison Center data uniquely contain information about cannabis product types used
- Calls come from both individuals and healthcare facilities
- Poison Center calls are signal indicator of events (a “canary in the coal mine”)



Cannabis Legalization and Higher THC (Manufactured) Products

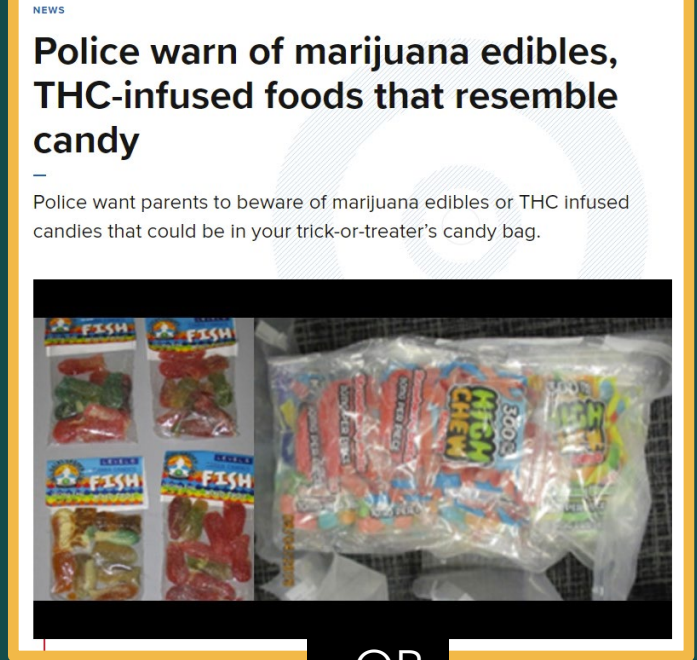
- **Methods.** Examined trends in cannabis use by product type, among all states by legal status. *Manufactured products* are edibles, vapes, and concentrates.
- **Results.** Reported exposures for cannabis plant materials alone declined, but manufactured products increased. Legalization within states was associated with more manufactured product exposures.



Source: US Poison Center Data, quarterly counts 2017-2019

Trick or Treat?

- **Background.** News stories during Halloween warn about edible exposures.
- **Methods.** Examined seasonal patterns of reported edible exposures by age group, in all states combined.
- **Results.** Using regression models, we found edible exposures increase 25% among children under 10, and 22% among youth ages 11-20, during November-December vs. other months.



- OR -



Child-resistant packaging

- **Background.** In 2017, concerns about child exposures led the WA Liquor & Cannabis Board to require “single serve” wrapping for edibles, and to have a label with the poison center phone number on edibles packaging.
- **Methods.** Difference-in-difference methods used to examine trends in cannabis poisoning with serious health outcomes for WA vs. other states, before and after the policy change.
- **Results.** Policy was associated with 25% reduction in edible poisoning reports for children <10; 51% reduction for ages 10-20, and 23% reduction for adults 55+, relative to pre-policy period and trend in other states.



So what?

Policy and practice

Potential Policy and Practice implications

Higher THC products are a key and growing part of a legal adult-use cannabis market, increasingly used by adults and youth

- Regulatory approaches relevant to THC content: products, purchasing, price, promotion
 - Regulate like spirits vs. beer/wine in alcohol industry?
- Healthcare and behavioral health system support for screening, intervention
- Specific effort – and resources – may be needed
 - Youth-centered social marketing campaigns
 - Early intervention for youth who use
 - Safe storage, seasonal emphasis



Source: Tacoma WA, March 2017; photo Tacoma News Tribune

Thank you

Julia Dilley

Senior Research Scientist/Epidemiologist

Program Design & Evaluation Services

A shared unit of Multnomah County Health Department and Oregon Health
Authority/Public Health Division

julia.dilley@multco.us or julia.dilley@dhsosha.state.or.us