

Multnomah County Vital Signs

A data report on emerging public health policy issues



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Legalization of Marijuana: Potential Policy Directions for Public Health

In November 2014, Oregon voters passed [Measure 91](#) to legalize a non-medical retail marijuana market in the state. As a result, adult possession of limited amounts of marijuana became legal in Oregon as of July 1, 2015. Possession and use of non-medical marijuana by youth (under age 21) and driving under the influence of marijuana remain illegal.

Only two states, Washington and Colorado, legalized a non-medical marijuana retail market before Oregon, both in 2012. Prior to this, no place including the Netherlands, had ever done so. Since then, Alaska, Washington, D.C.^a, and the country of Uruguay have followed suit, and other states are considering similar policies.

Debate continues about the value of marijuana legalization. Potential benefits of the new policy include reduced incarceration rates, increased racial equity, and reduced opiate overdoses

if opiate users switch from opiates to marijuana. Potential negative effects include increased youth use, dependence among users, and people driving under the influence.

Because marijuana has been deemed an illegal drug by the Federal government, research on the health and social effects of marijuana use has been limited. Despite the gaps in knowledge, state and local government leaders have a critical role in addressing ongoing questions and public concerns about the new law.

This report describes what is known about marijuana use in Multnomah County and Oregon, the potential health and social effects of marijuana legalization, and possible policy directions that could

be considered to minimize youth use, mitigate risks to users, and assure public safety.



Marijuana Use Rates in Multnomah County, Oregon, and the United States

This section summarizes what is known about marijuana use, based on data from established public health surveys. All data were collected prior to marijuana legalization in Oregon.

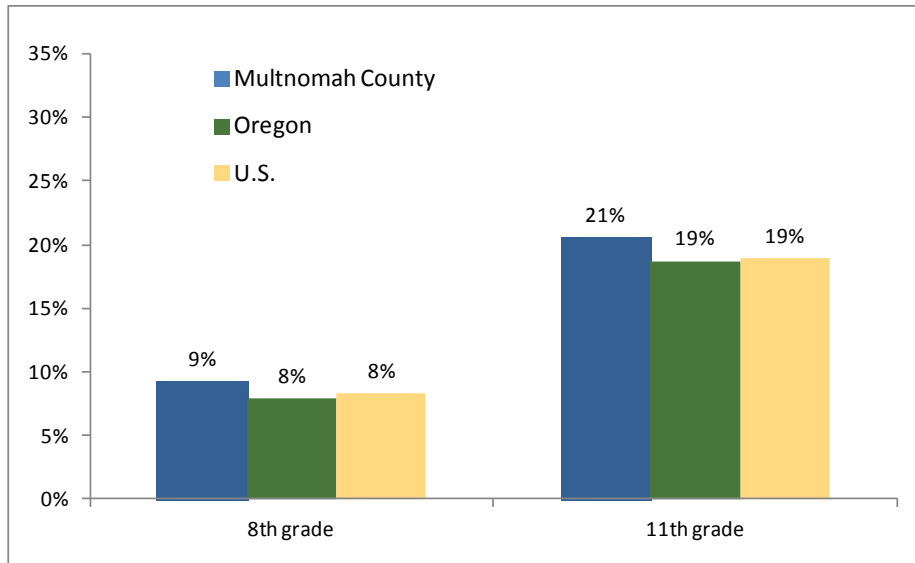
Marijuana use is common among Multnomah County youth^b

- In Multnomah County, 9% of 8th graders and 21% of 11th graders reported using marijuana in the past month. This is slightly higher than for youth in the state of Oregon and in the nation overall (see Figure 1).

^a Washington, D.C., Initiative 71 was passed to legalize marijuana in Fall 2014; however, congressional action blocked establishment of a retail market. Possession and use of limited amounts by people 21 and older, home cultivation, and use on private property remain legal.

^b Based on a 2014 survey of Oregon youth (Student Wellness Survey).

Figure 1: Current Marijuana Use among Youth in Multnomah County, the State of Oregon, and the U.S., 2014



Source:
U.S. data from the Monitoring the Future survey, Oregon and Multnomah County data from the 2014 Student Wellness Survey (SWS).

"Current use" among youth includes any use in the past 30 days.

- Past-month marijuana use among Multnomah County 11th graders (21%) is more than twice as common as cigarette smoking (9%), but less common than alcohol use (31%).

Youth use varies by age, gender and race/ethnicity.^c

- In Multnomah County, marijuana use among 8th graders is significantly higher among girls (13%) than boys (9%), but is not significantly different among 11th grade girls (23%) and boys (26%).
- Although there are insufficient data to report on marijuana use by race/ethnicity for Multnomah County alone, statewide marijuana use is significantly higher among 11th grade American Indian/Alaska Native (29%), Black/African American (25%), and Latino (26%) youth than among non-Latino White youth (21%).

Many youth in Multnomah County say marijuana is easy to get.^d

- Currently, two-thirds of 11th grade youth in Multnomah County say it would be easy to get marijuana if they wanted some.

- A similar proportion of Multnomah County 11th grade youth say it would be easy to get marijuana as compared to alcohol (68% vs. 67%); a lower proportion of the youth say it would be easy to get cigarettes (56%).

Marijuana use among Multnomah County young adults is very common.^e

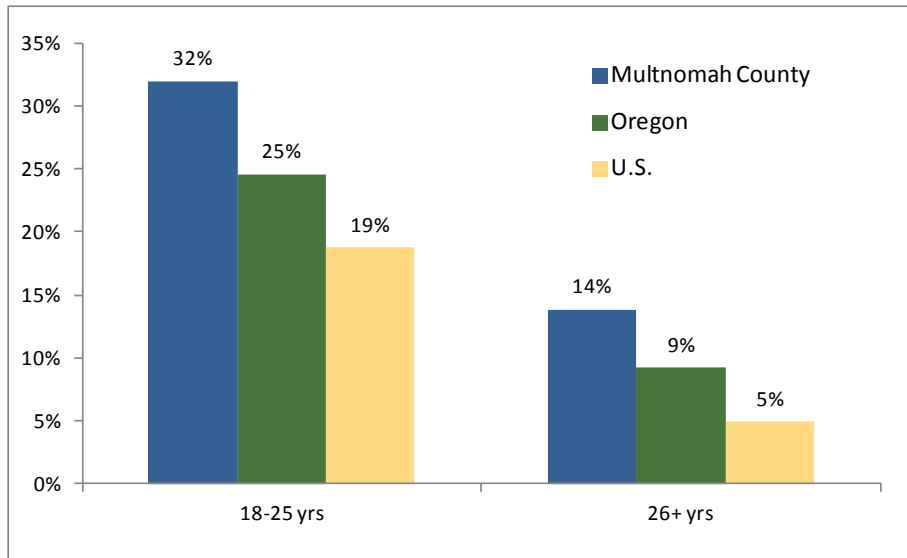
- In Multnomah County, one in three, or 32% of young adults (18-25 years old) used marijuana in the past month, compared to 14% of adults over 25 years old (Figure 2).
- Use appeared to increase among Multnomah County young adults during recent years, rising from 25% in 2002-2004 to 32% in 2010-12.
- Marijuana use among young adults is significantly higher for Multnomah County than for the state of Oregon and the U.S. (Figure 2).

^c Based on a 2013 survey of Oregon youth (Oregon Healthy Teens survey). Differences reported in this section are statistically significant ($p < .05$).

^d Based on 2014 survey of Oregon youth (Student Wellness Survey).

^e Data from the National Survey on Drug Use and Health (NSDUH). Although not enough data are collected to report single-year estimates within Oregon, this data source does provide a longer-term view and national comparison.

Figure 2: Current Marijuana Use Among Adults in Multnomah County, Oregon, and the U.S., 2010-2012



Source:
National Survey on Drug Use and Health (NSDUH) 2010-2012 combined.

"Current use" among adults includes any use in the past 30 days.

Adults use marijuana for different purposes and in different ways.^f

- About one-third of current adult (18 years and older) marijuana users in Oregon say they use marijuana for medical purposes, as recommended by a provider.
- Modes of marijuana use vary for adults (see below for more detail on modes of use); comparable data for youth are not currently available. About one in four current adult marijuana users reports having used more than one method to consume marijuana in the past month.
 - Eight out of ten current marijuana users say they smoked it.
 - One in four say they ate marijuana-infused products.
 - One in five say they vaped.
 - One in ten say they used it some other way (including marijuana-infused drinks or dabbing).

What is Marijuana and How Is It Used?

Marijuana (sometimes called cannabis, weed or pot) is derived from the plant *Cannabis sativa*. Though cannabis contains many compounds, the main psychoactive compound in marijuana is tetrahydrocannabinol (THC). Different plants and strains can have very different "potency" (meaning levels of psychoactive effect caused by use). Cannabidiol (CBD) is the compound in marijuana thought to have medicinal effects, and generally thought not to have psychoactive effects.

Typically, the flowers and leaves of the plant are dried and consumed. Common methods for using marijuana include:

- **Smoking:** Inhaling smoke from a rolled joint, pipe, blunt or bong.
- **Eating:** Consuming foods with marijuana ingredients (e.g., brownies, cakes).

- **Drinking:** Consuming marijuana-infused beverages (e.g., teas, sodas).
- **Vaping:** Inhaling vapors from an electronic-cigarette-like vaporizer or electronic device.
- **Dabbing:** Inhaling smoke from vaporized marijuana concentrate.
- **Topical:** Applying infused lotions or oils to the skin.

Synthetic marijuana (often known as spice or K2) refers to a variety of herbal or chemical mixtures that allegedly produce similar effects to marijuana, but are not made from the marijuana plant.

Marinol (dronabinol) is a synthetic form of THC that is FDA-approved as a medication for anorexia in HIV patients and vomiting in those receiving chemotherapy.

^f Based on preliminary data from a 2014 population-based survey of adults in Oregon (Oregon Behavioral Risk Factor Surveillance System (BRFSS)).

Medical Marijuana Regulations in Oregon

Some people intend to use marijuana as part of managing specific health conditions or symptoms. The federal Controlled Substances Act lists marijuana as a Schedule 1 drug, making it illegal to buy, sell, or possess. As a result, it has not been frequently approved for evaluation in clinical trials, the most accepted method for establishing medicinal benefit and understanding potential side effects. In spite of barriers to studies, some evidence of medical marijuana's effectiveness exists. (IOM 1999)

In November 1998, Oregon voters approved Ballot Measure 67 and the legislature quickly passed the measure to create the Oregon Medical Marijuana Act (OMMA). The act allows for patients with specific medical conditions, confirmed by a physician, to register with the [Oregon Health Authority](#) to use marijuana for treatment. These patients are referred to as *cardholders* and their medical marijuana suppliers are referred to as *caregivers*. Examples of qualifying medical conditions include cancer, glaucoma, and post-traumatic stress disorder (PTSD).

Medical marijuana regulation has continued to evolve in Oregon. In 2013, House Bill 3460 allowed for medical marijuana dispensaries and established a registry for medical marijuana dispensaries, cardholders, and caregivers, with the Oregon Health Authority providing oversight of the program.

In 2014, Senate Bill 1531 provided local governments the option of imposing a one-year moratorium on medical dispensaries by passing ordinances that "impose reasonable regulations" on their operations.

In Multnomah County, the cities of Fairview, Gresham, Troutdale and Wood Village, all enacted such moratoria. Prior to the expiration of the moratorium, May 1, 2015, there were approximately 100 registered medical marijuana dispensaries in Multnomah County, almost half of all dispensaries in the state. In Multnomah County, there are approximately 12,000 medical marijuana cardholders. (Source: Oregon Health Authority, 2015)

The Public Health Impact of Marijuana Legalization

To predict the impact of legalization on public health, public health leaders must address two questions:

1. What are the known public health effects of marijuana use?
2. How will legalization of retail marijuana affect marijuana use and thereby affect public health outcomes?

What are the known public health effects of marijuana use?

To summarize the evidence, the Multnomah County Health Department relied primarily on previously published comprehensive research review articles that examined negative individual and public health effects associated with marijuana use (1-4). These reports were supplemented with information from the peer-reviewed literature specifically on marijuana use during pregnancy and breastfeeding (5-6). In addition, information was included from preliminary reports about the effects of legalization in Colorado (7-9), where retail marijuana stores opened in January 2014. Some outcomes examined are social in nature because they

can have a strong influence on health and safety (e.g., criminal activity, educational achievement).

Hundreds of studies have been published on the potential health and social effects of marijuana use, but almost all have important limitations. Some studies report associations between marijuana use and various poor outcomes, but it is not clear that marijuana is the cause. For example, people with a health problem might seek out marijuana (e.g., to self-medicate), so the health problem is the leading problem and marijuana use is an attempted treatment. More often, some other factor may be associated both with a health problem and marijuana use. For example, marijuana use is strongly associated with dropping out of high school, but both marijuana use and dropping out are associated with multiple other conditions, such as family-related risk factors. Thus, shared risk factors may explain all or part of some reported associations.

This review used very conservative criteria to determine whether there was sufficient evidence to support a valid association between marijuana use

and specific problems. Strength of evidence was determined by reviewing study design and related limitations, consistency of results across studies, and the number of studies. Table 1 summarizes the evidence from the reviews mentioned above, after applying these criteria. Notably, only health outcomes with at least one published research study describing

an association with marijuana exposure are included in this table.

Although the evidence is not conclusive for some health outcomes, public health action may still be advisable if the possibility of serious risk exists, particularly in the case of vulnerable populations like developing infants and children.

Table 1: Summary of Evidence for Relationships Between Public Health Effects and Marijuana Use

Health Topic	Strong Evidence <i>Significant effects shown in multiple or very strong studies with few limitations</i>	Areas of Concern <i>Mixed evidence*; further research is needed to confirm</i>
Risk to Users Acute Effects (may include new users)	<ul style="list-style-type: none"> • Short-term anxiety/panic attack (especially among inexperienced users) • Short-term impairment of cognitive and motor skills 	
Chronic Effects (affecting longtime users)	<ul style="list-style-type: none"> • Dependence 	<ul style="list-style-type: none"> • Brain development • Long-term cognitive impairment • Mental illness, depression, suicide • Some cancers • Respiratory disease • Cardiovascular disease (heart attack)
Adolescent and Youth Users	<ul style="list-style-type: none"> • Dependence risk increased among users who start during youth 	<ul style="list-style-type: none"> • Lower educational attainment • Progression to other illicit drug use (gateway drug) • Brain development and long-term cognitive impairment
Public Safety	<ul style="list-style-type: none"> • Injuries and damage from car crashes involving impaired drivers • Injuries and damage from hash oil production explosions 	<ul style="list-style-type: none"> • Marijuana-related crime and crime-related harms
Secondary Exposure of Infants and Youth	<ul style="list-style-type: none"> • Poisoning from accidental ingestion 	<ul style="list-style-type: none"> • Infant and child outcomes from maternal use in pregnancy • Infant outcomes from THC in breast milk

* Mixed evidence means that there were few studies available, or the existing studies had serious limitations, or that there were multiple studies with mixed evidence of harm (e.g., some showing no harm). Public health action may still be advisable if the possibility of serious risk exists, particularly in the case of vulnerable populations like developing infants and children.

How will legalization of retail marijuana affect marijuana use—and thereby affect public health outcomes?

The short answer is that no one knows for sure how legalization will affect marijuana-related health and social outcomes. Outcomes shown in the previous table may increase or could decrease, depending on different factors.

Public health leaders can provide answers by monitoring the environments where legalization has occurred. Some areas that will be necessary to monitor include:

- Cases of accidental poisonings of children from edible products.
- Emergency department visits from the acute effects of marijuana intoxication.
- Prevalence of marijuana use.
- Demographics of users (e.g., youth vs. adults).
- Methods of use (e.g., edible vs. smoked).
- Frequency of use (especially heavy use) and changes in use over time.

- Types of products in use and the potency of different product types.
- Presence of product contaminants (e.g., molds, pesticides).

Additionally, changing laws related to marijuana may influence patterns of use of alcohol and other drugs, and their associated health impacts. The results of those changes may be even more important for public health than changes in marijuana use patterns themselves. Currently, however, there is not sufficient evidence to predict the direction or magnitude of those influences, so this will be another important area for monitoring.

Last, there may be positive effects of legalization of a substance that is already widely used on an unregulated basis. Positive effects could include improved marijuana product safety and reductions in associated health risks, reduced arrests, and increased tax revenue to provide public benefits. Improved regulation could offset negative effects. Monitoring positive effects is also important for understanding the sum of effects on public health.

Marijuana Policies and Policy Development

Federal Context

States' legalization of non-medical marijuana is at odds with the federal law that makes the possession, sale, or cultivation of marijuana a criminal offense. In response to states' decriminalization of marijuana, the United States Attorney General released a memo in 2013, commonly referred to as the [Cole Memo](#). The memo lays out a rationale for federal tolerance with limits.

In order for states to avoid federal interference, states must strictly regulate the marijuana market in a manner that: prevents marijuana distribution to youth, curbs illegal sales, prevents drugged driving, and prevents marijuana products from crossing state lines, among other things. Effectively, this means that the federal government will not stop the states from opening their marijuana markets.

State Policy

During the 2015 Oregon legislative session, four bills were passed related to medical and recreational marijuana that modified or expanded Measure 91. As of August 2015, the Governor had signed two of the

bills: House Bill 3400, an omnibus bill (with multiple measures), and Senate Bill 460, which allows the early sale of non-medical marijuana through medical dispensaries. The Senate also issued Joint Memorial 12, which asked Congress to declassify marijuana, allowing for research about the impacts of marijuana and legal banking for the marijuana industry.

Most of the authority to regulate the recreational marijuana market lies with the Oregon Liquor Control Commission (OLCC). OLCC has the authority to license and regulate retail marijuana. OLCC responsibilities include:

- Regulating production, processing, sales, and testing of retail marijuana.
- Regulating issues that will likely impact youth access to marijuana, such as advertising, labeling, and packaging.
- Appointing a Rules and Advisory Committee (RAC) to inform the rule making.
- Developing a public education campaign to deliver information about the new law.

The Oregon Health Authority (OHA) retains oversight for the medical marijuana program (OMMP) and has additional authority over some aspects of the recreational market. OHA has the authority to establish standards for marijuana testing laboratories that conduct both medical and recreational marijuana products testing. The Oregon Public Health Division within OHA formed a Retail Marijuana Scientific Advisory Committee (RMSAC) that will advise the OLCC rule-making process on issues like product standards (e.g., serving sizes), laboratory testing requirements, health impacts on youth, and advice for pregnant and breastfeeding mothers and their children.

Timeline for Oregon Statewide Policy Making

- **November 2014:** Measure 91 passed by Oregon voters.
- **March-October 2015:** OLCC conducts rule-making process.
- **July 1, 2015:** Personal possession and home growing becomes legal.
- **October 1, 2015:** Medical marijuana dispensaries may sell a limited selection of products to recreational users.
- **November 2015:** Rules from rule-making process are enacted.
- **January 4, 2016:** OLCC begins accepting applications for non-medical retail marijuana licenses.
- **Late 2016 (specific date to be announced):** OLCC-licensed retail sales begin.

Local Policies

The ability of local governments to regulate the marijuana market was not clearly specified in Measure 91, and significant clarifications were made during the 2015 Oregon legislative session. Local municipalities now have control over:

- Opting out of all or some aspects of the marijuana business.
- Setting time, place, and manner restrictions.
- Designating appropriate land use.
- Implementing local taxes.

Opting Out

Cities and counties have the ability to opt out of some or all of six types of marijuana business categories.⁹ In cities or counties where 55% or more of its electors voted against Measure 91, a partial or full ban can be passed by ordinance. This could include up to 15 of Oregon's 36 counties, all located in the state's Eastern region. For counties that passed Measure 91, a full or partial ban can be enacted, as stated in Measure 91, through a vote in a general election. Multnomah County passed Measure 91 with a vote of 71%. It is important to note that cities or counties that opt out of any of the six marijuana business categories cannot enact a local tax and are disqualified from receiving shared state tax revenue (described below).

Time, Place, and Manner

House Bill 3400 provided cities and counties with clear local time, place, and manner regulatory authority over the six types of marijuana businesses. Local governments can impose limits on marijuana businesses such as specifying hours and days of operation, requiring licensure, and issuing public nuisance guidelines.^h

Land Use (Zoning and Density Restrictions)

Though Measure 91 already restricts the location of marijuana facilities within 1,000 feet of schools, local governments may add further restrictions, per HB 3400 passed during the 2015 legislative session. (See sidebar for specific examples.) In some cases, local governments have passed ordinances that limit the places where marijuana businesses can locate (e.g., in light industrial zoned areas, not in downtown district zoned areas). Others have instituted restricted buffers so that new marijuana businesses cannot locate around places like child care centers, parks, or another marijuana facility.

These ordinances may have inequitable impacts on bordering communities by shifting the density of marijuana facilities into neighboring communities or into unincorporated areas that did not adopt such ordinances. Some communities are concerned that the clustering of marijuana facilities may cause neighborhood decline. Other concerns are that it may be difficult for medical marijuana patients in some

⁹ There are four retail marijuana business categories: producer, processor, wholesaler, and retailer. There are two medical marijuana business categories: processor and dispensary.

^h For examples of time, place, and manner restrictions see Appendix A in the [League of Oregon Cities' Local Government Regulation of Medical Marijuana in Oregon document](#).

communities to have easy access to dispensaries due to the numerous siting restrictions.

Establishing a new retail marijuana business may be difficult. Because the siting of medical marijuana dispensaries was initially unregulated, medical dispensaries have become ubiquitous in some neighborhoods. Some of these existing marijuana dispensaries may convert to selling to the retail market, making it difficult for new retail marijuana businesses to locate and establish viable enterprises.

HB 3400 also required prospective new marijuana businesses to obtain a Land Use Compatibility Statement (LUCS) from their local government prior to receiving an OLCC license. A LUCS provides OLCC with the assurance that the establishment of the proposed marijuana business is compatible with the local land-use plan. This gives local government entities more ability to regulate innovative business practices that may emerge as part of the retail marijuana market.

Taxation

Measure 91 prohibited local governments from taxation of marijuana. However, House Bill 3400 allows cities and counties to implement up to a 3% local tax on retail sales of marijuana if approved by voters during a general election. This is in addition to the 17% state tax. Multnomah County would be

eligible to apply such a tax, but could only collect it in the unincorporated areas of the county, and only if the county does not opt out of any of the six marijuana business categories described above.

Recent Local Government Efforts to Regulate Marijuana

Multiple local government entities in Oregon are taking steps to increase regulations on marijuana. The following are two specific examples:

- The City of Hillsboro Planning Commission (Washington County) approved zoning regulations for medical marijuana dispensaries. The proposed new zoning code allows for dispensaries to be located within 1,000 feet of residential-zoned areas, but they cannot locate in downtown Hillsboro, near city parks and plazas, or within 2,000 feet of each other.
- The Cornelius City Council (Washington County) passed an ordinance that would restrict medical marijuana dispensaries from locating within 1,000 feet of daycare centers. This essentially restricts medical dispensaries to two commercial zones on the edges of the city, near highways.

Potential Policy Recommendations and Issues to Consider for Protecting Public Health

Available evidence about the impacts of marijuana use is incomplete, but can still be used to inform policies and regulatory systems. Even when the evidence on marijuana's harm is inconclusive, if the risk is serious or affects a vulnerable population such as infants and children, a cautious approach is recommended.

Consequently, the Multnomah County Health Department recommends that:

- Based on compelling evidence, policies should be developed to prevent impaired driving, dependence, overdose, and youth use.
- Based on potential for risk to a vulnerable population, the public should be informed about possible risks related to use during pregnancy and breastfeeding.

- Based on potential for risk to users, policies should be developed that limit product contaminants and high or unknown product potency.

Developing policies that specifically address marijuana legalization is a new frontier. With clarification of public policy authority around marijuana and careful monitoring of outcomes associated with policy approaches, the public health field will be able to develop *best practices* for preventing adverse health consequences and related costs.

In the meantime, other sources can provide possible policy direction. First, lessons from other public health efforts suggest a coordinated and comprehensive approach is important (10). Second, the equity impact of policies should be considered; that is, policy

development processes should include assessment of whether some communities would be negatively affected and how any inequities would be addressed by a given policy.ⁱ Third, consulting with other states that have legalized marijuana (especially Washington and Colorado) about lessons learned is critical.

In addition, potential actions for the public health system that have been identified by the American Public Health Association (11) and other experts (3,12) include:

- Applying policies proven successful in tobacco and alcohol prevention for youth, including:
 - Restricting places of operation, time and days of operation.
 - Restricting youth access, including age restrictions on sellers and purchasers or retail environment access.
 - Restricting advertising.
 - Restricting sales of youth-friendly products (e.g., lollipops, candy) by marijuana retailers.
 - Regulating or increasing prices to prevent youth access.
- Educating health care providers – including prenatal and WIC providers – to counsel clients about risk of marijuana use, to conduct routine marijuana use screening and referrals, and to increase awareness about overdose diagnoses and treatment (especially among young children).
- Contributing to considerations of how marijuana relates to existing public health policies (e.g., the Indoor Clean Air Act, smokefree multi-unit housing policies).
- Contributing to public education about risks of marijuana use (including product warning labels, and specific advice about absorption and recovery time from different types of products), passive smoke exposure, resources for dependency treatment, and about the law, including education for communities with limited English proficiency.

- Developing standardized procedures for product quality standards (e.g., contamination) and food safety inspections for edibles.
- Developing standardized procedures for product potency testing, labeling, and child safety packaging to prevent overdose.

Public health should also collaborate with partners in other sectors, where effects of legalization may influence public health or health equity. Examples include:

- Criminal justice:
 - Potential changes in drug-related citations and arrests, policies related to re-entry and impact on the judicial system.
 - Evolving policy and testing procedures for potentially impaired drivers.
- Employment and worker safety:
 - Employment policies in diverse work settings and for different types of employees regarding use during work hours, limits on hiring of marijuana card holders, and how to interpret pre-employment drug screens.
 - Industrial practices to protect workers in the marijuana industry, such as from exposure to pesticides and fertilizers.
- Education:
 - School policies and procedures to identify and provide supportive and culturally relevant interventions for youth users.
- Business:
 - Distribution of revenues from marijuana licensing and sales.

ⁱ For example, see Public Health – Seattle & King County “Equity Impact Review” tool for assessing the potential positive or negative impact of a policy or program on health equity. Available at <http://www.kingcounty.gov/elected/executive/equity-social-justice/tools-resources.aspx> (last accessed 4-16-15).

Data Sources

Oregon's Student Wellness Survey (SWS) and **Oregon Healthy Teens (OHT)** are anonymous, school-based surveys conducted by the Oregon Health Authority. Oregon estimates include all 11th graders who participated statewide, and Multnomah County estimates include only 11th graders attending Multnomah County schools. National data were obtained from the **Monitoring the Future Survey (MTF)**, a similar school-based survey of U.S. secondary school students. MTF results for 10th and 12th graders were averaged to provide a comparison for 11th graders.

The National Survey on Drug Use and Health (NSDUH) is an ongoing survey of alcohol, tobacco and substance abuse behaviors among people ages 12 and older in the U.S. Data are collected by face-to-face interviews in a random sample of homes.

The Oregon Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing telephone survey of health behaviors among Oregon adults. Marijuana use questions were added to the Oregon BRFSS in 2014. Preliminary, unweighted estimates from 2014 are reported here. Estimates in future reports may vary slightly from these.

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