



# Health Policy Brief

Tobacco, alcohol and health series

## Health impacts of tobacco use in Ohio

Advancing evidence-informed policies to reduce tobacco use is one of the most powerful things public and private leaders can do to improve health across Ohio communities. If proven tobacco prevention strategies are bolstered, Ohioans can live longer and healthier lives. For example, strong enforcement of Ohio's Tobacco 21 law can prevent young people from becoming addicted to nicotine, which will lead to less tobacco use among adults in the future. That generational change can, in turn, lead to fewer families losing loved ones to cancer or other tobacco-related diseases.

HPIO's *2021 Health Value Dashboard™* reported that Ohio has higher rates of adult and youth tobacco use than most other states. *Dashboard* analysis also found a strong correlation between adult smoking and health value, indicating that tobacco use is a leading driver of poor health and higher healthcare spending.<sup>1</sup>

### 3 key findings for policymakers

- **Reducing tobacco use and nicotine dependence** is a powerful way to improve health, advance health equity and reduce healthcare spending.
- **Systemic barriers to health**, including poverty, discrimination and targeted marketing of tobacco products, drive trends and disparities in tobacco use.
- **Public and private partners** can implement proven strategies to protect communities from the harms of tobacco use and keep young people from becoming addicted to nicotine.

## How do tobacco and nicotine affect health and healthcare spending?

### How does tobacco use impact health outcomes?

Use of tobacco products and secondhand smoke exposure contribute to significant negative health consequences across all ages. Over 20,000 Ohioans die as a result of smoking each year.<sup>2</sup>

#### Cigarettes

Smoking and secondhand smoke exposure contribute to leading causes of infant mortality, including low birth weight, preterm delivery and Sudden Infant Death Syndrome (SIDS). Exposure to secondhand smoke in childhood and adolescence can lead to respiratory and ear infections. Beginning tobacco use in childhood or adolescence may also result in lifelong nicotine addiction and additional related harms. Smoking in adulthood contributes to a multitude of health conditions including cancer, stroke, heart disease, lung disease, reproductive problems, diabetes and more (see figure 1).<sup>3</sup>

#### E-cigarettes




While less is known about the long-term consequences of e-cigarette use compared to combustible cigarette use, there is evidence that completely substituting e-cigarettes for combustible cigarettes reduces exposure to many harmful substances and carcinogens.<sup>4</sup> However, current research also indicates that e-cigarette use can result in acute health effects, such as elevated heart rate and blood pressure, as well as biological changes that could contribute to long-term health consequences, such as cancer and adverse reproductive outcomes.<sup>5</sup> Research is ongoing to determine the extent to which e-cigarettes are an effective harm reduction alternative to smoking for adults.

## Terms used in this brief

The term “tobacco” in this brief refers to **commercial tobacco**, not traditional tobacco, which is harvested and used by Native Americans and Alaska Natives for ceremonial and medicinal purposes.<sup>6</sup> Additional terms include:

- **Tobacco products:** A broad range of commercial products that contain nicotine, including combustible cigarettes, cigars, cigarillos, hookah, little cigars, smokeless tobacco (dip, chew) and e-cigarettes.
- **Combustible tobacco products:** Products that require burning tobacco, such as cigarettes, cigars and cigarillos. Smokeless tobacco is non-combustible.
- **E-cigarettes:** Battery-operated devices that produce aerosols that are inhaled. Also referred to as Electronic Nicotine Delivery Systems (ENDS), e-cigs, e-hookahs, mods, vape pens, vapes and tank systems.<sup>7</sup>

Figure 1. Health consequences of cigarette and e-cigarette use

	Cigarette smoking <sup>8</sup>	E-cigarettes use <sup>9</sup>
<b>Perinatal period</b> 	<ul style="list-style-type: none"> <li>• Low birth weight, preterm delivery and stillbirth</li> <li>• Sudden Infant Death Syndrome (SIDS)</li> <li>• Cleft palate and cleft lip</li> <li>• Long-term impacts on brain and lung development</li> </ul>	<ul style="list-style-type: none"> <li>• There is currently insufficient evidence on whether maternal e-cigarette use affects fetal development</li> </ul>
<b>Infants, children and adolescents</b> 	<p><b>Secondhand smoke exposure:</b></p> <ul style="list-style-type: none"> <li>• SIDS</li> <li>• Middle ear disease</li> <li>• Lower respiratory infection in infants and children</li> <li>• Cough, wheezing and decreased lung function</li> </ul> <p><b>Use:</b></p> <ul style="list-style-type: none"> <li>• Wheezing and asthma</li> <li>• Hardening of the arteries in young adults</li> <li>• Nicotine dependence and addiction</li> </ul>	<ul style="list-style-type: none"> <li>• Asthma exacerbation</li> <li>• Cough, wheezing in adolescents</li> </ul>
<b>Adults and all ages</b> 	<p><b>Secondhand smoke exposure:</b></p> <ul style="list-style-type: none"> <li>• Lung cancer</li> <li>• Stroke</li> <li>• Coronary heart disease</li> </ul> <p><b>Use:</b></p> <ul style="list-style-type: none"> <li>• Cancer (bladder, cervical, colorectal, esophageal, renal cell and renal pelvis, larynx, acute myeloid leukemia, hepatocellular carcinoma, lung, oral cavity and pharynx, pancreatic, gastric)</li> <li>• Stroke</li> <li>• Coronary heart disease</li> <li>• Respiratory problems (exacerbation of asthma, chronic obstructive pulmonary disease (COPD), acute respiratory illnesses, tuberculosis)</li> <li>• Reproductive problems for men and women</li> <li>• Diabetes</li> <li>• Bone alterations, including hip fractures</li> <li>• Risk of adverse surgical outcomes</li> <li>• Macular degeneration</li> <li>• Absenteeism from work</li> <li>• Increased use of medical services</li> <li>• Nicotine dependence and addiction</li> </ul>	<p><b>Acute:</b></p> <ul style="list-style-type: none"> <li>• Increased heart rate and diastolic blood pressure after use</li> <li>• Device-related injury (i.e., burns and projectile injury)</li> <li>• Injury or toxicity from exposure to liquid (i.e., seizures, brain injury, vomiting and lactic acidosis)</li> <li>• Fatality from drinking or injecting e-liquids</li> </ul> <p><b>Chronic:</b></p> <ul style="list-style-type: none"> <li>• Promote formation of reactive oxygen species/oxidative stress that can lead to long-term health consequences</li> <li>• Changes to DNA that could increase the risk of cancer and adverse reproductive outcomes</li> <li>• E-cigarette dependence</li> </ul>

**Note:** Health effects related to cigarette smoking include those found to have “sufficient evidence.” Health effects related to e-cigarette use include those found to have “conclusive”, “substantial” or “moderate” evidence.



## How does tobacco use affect COVID-19 infection?

Health problems associated with tobacco use (see figure 1) contribute to increased risk of SARS-CoV-2 infection and severe COVID-19 illness.<sup>10</sup> For example, impaired lung function caused by tobacco use increases susceptibility to acute respiratory infections such as COVID-19.<sup>11</sup> Individuals who use tobacco are at increased risk of hospitalization, acute respiratory distress syndrome (ARDS), pneumonia and death associated with COVID-19 compared to those without any substance use disorders.<sup>12</sup>

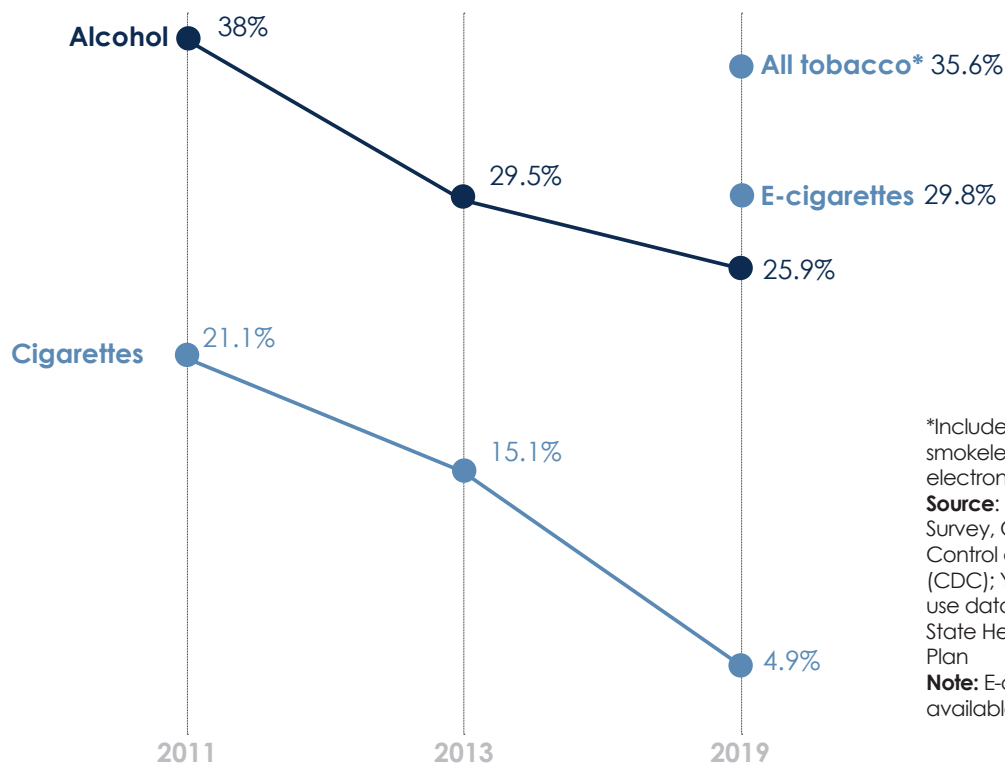
## How does tobacco use impact healthcare spending?

From 2010-2014, an estimated 16.4% of inpatient healthcare spending and 6% of non-inpatient healthcare spending in the U.S. was attributed to current or former cigarette smoking.<sup>13</sup> HPIO analysis finds that, after adjusting for inflation, the total annual healthcare cost of cigarette smoking to Ohio is approximately \$6.8 billion (in 2020 dollars).<sup>14</sup> Looking specifically at Medicaid spending, researchers estimate that 20.3% of Medicaid spending in the U.S. between 2010 and 2014 was attributable to cigarette smoking.<sup>15</sup> Given Ohio's high rate of adult smoking, it is likely that an even higher share of Ohio Medicaid expenditures is due to tobacco use.<sup>16</sup>

## What are recent trends in tobacco use in Ohio?

Overall, cigarette smoking among Ohio adults has remained steady over the past decade.<sup>17</sup> The most notable change in tobacco use in recent years has been the shift away from combustible cigarettes and toward e-cigarettes among teens and young adults. By 2019, only 4.9% of Ohio high school students reported that they had smoked a cigarette in the past 30 days, while e-cigarettes surpassed alcohol and became the most commonly used drug among teens (see figure 2). Similarly, the percent of 18-24-year-olds reporting e-cigarette use jumped 77% from 2016 to 2020, making this the group of adults with the highest rate of e-cigarette use in 2020 (19%).<sup>18</sup>



Figure 2. Percent of Ohio high school students who used tobacco products\* or alcohol in the past 30 days, 2011-2019



## Ohioans most at risk

Due to factors such as trauma, discrimination and marketing strategies (described below), some groups of Ohioans are at higher risk of tobacco use and associated harms. Figure 3 lists groups with rates of cigarette smoking and e-cigarette use that are at least 30% higher than Ohio's overall rate.

Figure 3. Ohioans most at risk for tobacco harms

	Cigarette smoking	E-cigarette use
<b>Youth</b> 	<ul style="list-style-type: none"> <li>• Male youth*</li> <li>• 9<sup>th</sup> grade youth*</li> <li>• Youth who are gay, lesbian or bisexual*</li> </ul>	<ul style="list-style-type: none"> <li>• Youth who are gay or lesbian*</li> </ul>
<b>Adult</b> 	<ul style="list-style-type: none"> <li>• People who have experienced two or more adverse childhood experiences (ACEs)***</li> <li>• People with 14 or more poor mental health days in the past month**</li> <li>• People with low incomes (0-138% of the federal poverty level)</li> <li>• People with disabilities</li> <li>• Medicaid enrollees and people without health insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Young adults (ages 19-34)</li> <li>• People with low incomes (75%-138% of the federal poverty level)</li> <li>• Medicaid enrollees and people without health insurance</li> <li>• Adults who are gay, lesbian, bisexual or a sexual orientation other than straight****</li> <li>• People with 14 or more poor mental health days in the past month**</li> </ul>

\*2019 Youth Risk Behavior Survey (YRBS)

\*\*2020 Behavioral Risk Factor Surveillance System (BRFSS)

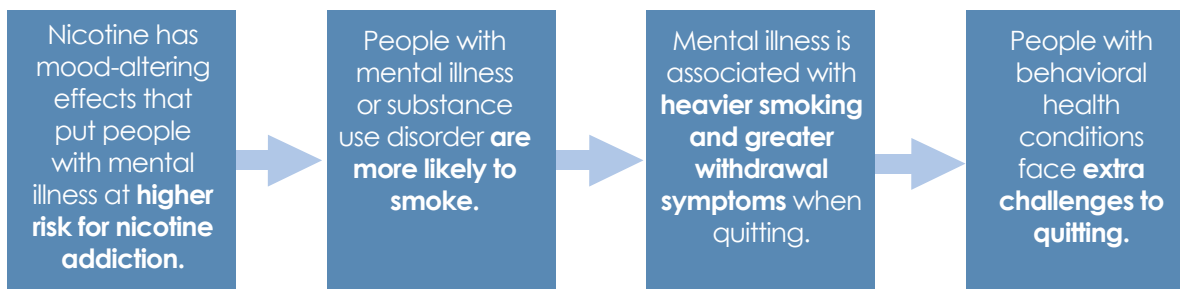
\*\*\*2015 Behavioral Risk Factor Surveillance System (BRFSS)

\*\*\*\*HPIO analysis of 2018-2020 Behavioral Risk Factor Surveillance System (BRFSS) data (pooled years)

Source: Data is from the 2019 Ohio Medicaid Assessment Survey (OMAS), unless otherwise identified.

Notes: "Most at risk" is defined as groups with prevalence at least 30% higher than Ohio overall for adults (OMAS and BRFSS) or youth (YRBS). Gay, lesbian and bisexual response options are different in the BRFSS and the YRBS and are not included in OMAS. Gender identity is not included in the YRBS, and the BRFSS transgender sample size is too small for many analyses.

## Tobacco use and behavioral health



### Tailored cessation help can improve outcomes and save lives

- Growing evidence shows that quitting smoking can improve mental health and reduce substance use disorder relapse. Although tobacco use may be viewed as "self-medication," smoking is actually associated with worse behavioral health symptoms.
- Quitting smoking also dramatically reduces the risk of heart disease, stroke and cancer—major causes of early death among people with mental illness and substance use disorder. People with behavioral health conditions die about five years earlier on average than people without these conditions. Tobacco-related chronic diseases explain about half of this difference.
- Improved access to nicotine replacement therapy and high-quality cessation counseling that is tailored to meet the needs of people with mental health and substance use conditions can help.
- Stronger integration of medical and behavioral health can increase access to cessation services.

Source: What We Know: Tobacco Use and Quitting Among Individuals with Behavioral Health Conditions, CDC, 2021

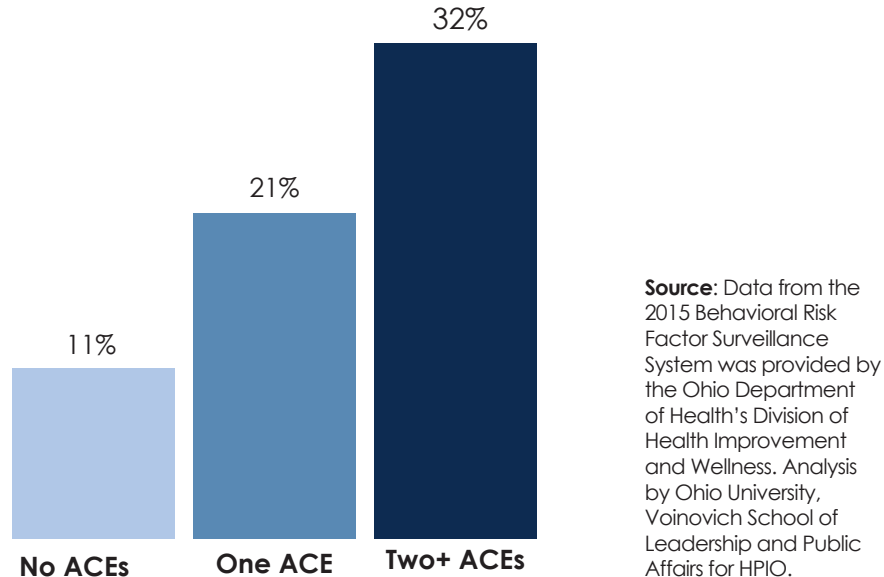
## What drives trends and disparities in tobacco use?

Many factors drive trends and disparities in tobacco use, including the COVID-19 pandemic, toxic stress, trauma, poor mental health and predatory marketing. This section explores key findings from analysis of Ohio data, as well as a brief summary of research describing the relevant policy factors that contribute to changes over time and differences between groups.

### Trauma and poverty

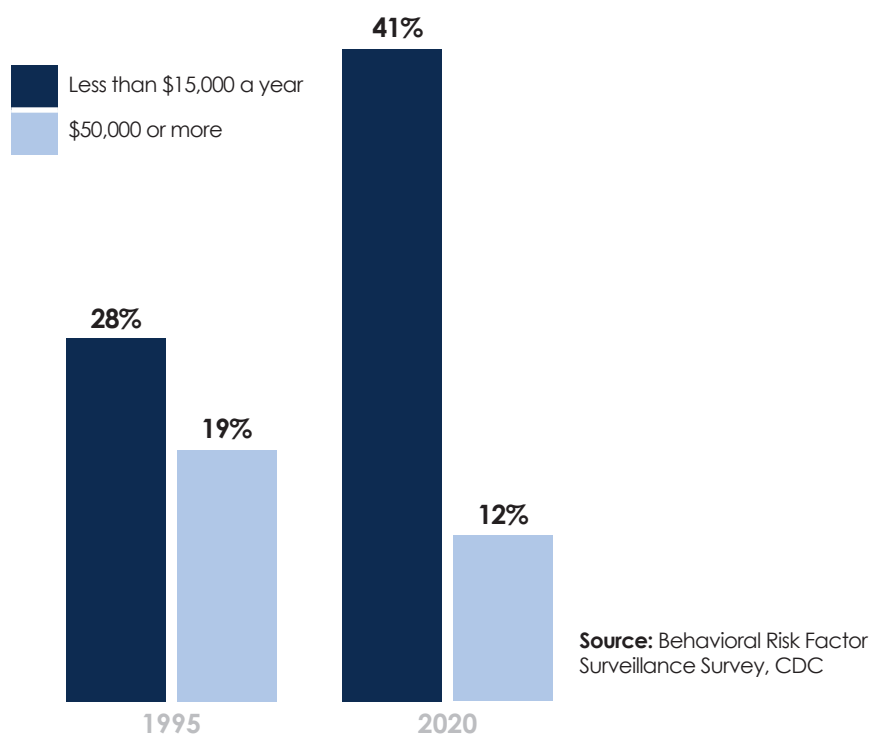
**Trauma and toxic stress.** Several factors contribute to tobacco dependence. For example, repeated exposure to traumatic events can result in toxic stress that can cause lasting poor physical and mental health outcomes.<sup>19</sup> Adverse childhood experiences (ACEs), including abuse, neglect and household challenges, such as substance use by a parent, are a key measure of early trauma that can contribute to later tobacco use. HPIO analysis estimates that, in 2015, adult Ohioans who experienced two or more ACEs were almost three times more likely to smoke than adults who reported no ACEs (see figure 4).<sup>20</sup>

Figure 4. **Percent of adults who currently smoke cigarettes (age adjusted), by number of ACEs, Ohio, 2015**



**Poverty.** Ohioans with low incomes were also more likely to report experiencing multiple ACEs and were more likely to smoke,<sup>21</sup> illustrating the cumulative impact of trauma and poverty. While overall smoking rates have declined over the past three decades, this has not been the case for people with low incomes. As a result, low-income communities experience a much greater impact of tobacco use than communities with higher incomes. In 1995, Ohioans with very low incomes (less than \$15,000 a year) were 36% more likely than those with higher incomes (\$50,000 or more a year) to smoke cigarettes. By 2020, this gap had increased to 107% (see figure 5). Stress, anxiety and irregular routines caused by the COVID-19 pandemic likely contributed to this growing disparity.<sup>22</sup>

Figure 5. **Percent of adults who currently smoke, by household income, Ohio, 1995 and 2020**



### Poor mental health and discrimination

**Mental health and stress.** The research connecting poor mental health and tobacco use is strong.<sup>23</sup> People with a mental health condition, including major depressive disorder and schizophrenia, are at an increased risk of using tobacco.<sup>24</sup> Use of tobacco also worsens mental health disorder symptoms, such as feelings of depression.<sup>25</sup> People with mental illness are also more likely to experience other stressors, such as poverty and inadequate health care, that can increase risk of continued tobacco use.<sup>26</sup>

Stress pushes people to find ways to cope, which can include using tobacco products. People often cite stress as the reason they continue to smoke or relapse after quitting.<sup>27</sup> This helps to explain the high rate of tobacco use among people who, in the last month, had a high number of days (14 or more) when their mental health was “not good” compared to people who experienced 0-13 days of “not good” mental health (see figure 6).<sup>28</sup>

Figure 6. **Mental health and smoking, Ohio, 2020**

**Percent of adults who currently smoke, by number of days with poor mental health in the past 30 days**



Source: Behavioral Risk Factor Surveillance Survey, CDC

**Discrimination.** Lesbian, gay and bisexual youth in Ohio and Ohioans with disabilities are more likely to experience poor mental health and to use tobacco products.<sup>29</sup> Discrimination, such as homophobia and ableism, is a primary driver of tobacco use for these populations.<sup>30</sup> Experiencing discrimination can negatively affect mental health and contribute to the use of tobacco by Ohioans with disabilities and those who are lesbian, gay and bisexual to cope.<sup>31</sup>

In 2019, lesbian, gay and bisexual youth in Ohio were over two times more likely to report feeling sad or hopeless almost every day for two or more weeks compared to Ohio youth overall. They were also over two times more likely to smoke than Ohio youth overall.<sup>32</sup> In the same year, Ohio adults with disabilities were over 2.5 times more likely to report that their mental health was “not good” for 14 or more days, and 1.4 times more likely to report current smoking compared to Ohio overall.<sup>33</sup>

While state-level Ohio data on transgender youth is not available, national data suggests that the prevalence of tobacco use among transgender people is higher than the general population.<sup>34</sup> Analysis of results from the Population Assessment of Health Study found that transgender youth were 1.7 times more likely to use e-cigarettes, 2.4 times more likely to smoke cigarettes and 3.6 times more likely to use smokeless tobacco compared to non-transgender youth.<sup>35</sup>

### Nicotine and stress

Nicotine causes a release of dopamine in the brain, leading to temporary feelings of calmness and reward. Dopamine levels then drop during nicotine withdrawal, leading to nicotine dependence. Effective cessation support, including counseling, medication and alternative ways to cope with stress can help. Systemic changes that address root causes of stress—such as poverty, trauma and discrimination—can also reduce pressures that drive nicotine dependence.



**Source:** Action on Smoking and Health Wales, United Kingdom and the U.S. National Cancer Institute, *A Sociological Approach to Addressing Tobacco-related Health Disparities*, 2017

## Tobacco marketing

**Menthol cigarette marketing and Black Ohioans.** Tobacco companies frequently focus advertisements for menthol cigarettes on the Black community by placing ads in neighborhoods, magazines and at events targeting Black audiences.<sup>36</sup> While all cigarettes lead to negative health outcomes, the presence of menthol in cigarettes creates unique challenges. Because menthol has a cooling effect that can negate the typical burning sensation associated with inhaling tobacco smoke, menthol cigarettes are easier to smoke and harder to quit.<sup>37</sup> Despite these harms, menthol cigarettes have not been included in previous FDA bans on flavored cigarettes, and the FDA has delayed ruling on a menthol ban as recently as 2021.<sup>38</sup>

These aggressive marketing tactics and the lack of regulatory action have led to high rates of menthol cigarette use among Black Americans and greater difficulty quitting. U.S. data indicate that 76.8% of non-Hispanic Black adults who smoke usually use menthol cigarettes, compared to 24.6% of white adults (in 2014-2015).<sup>39</sup> In addition, smokers who are Black report more quit attempts and higher interest in quitting compared to white smokers.<sup>40</sup> Among Black Ohioans, higher menthol use, lower access to cessation services and higher rates of childhood trauma contribute to persistent tobacco use in older adulthood. Black Ohioans ages 55-64 are twice as likely to smoke cigarettes than white Ohioans in that age group, despite a smaller disparity at younger ages.<sup>41</sup>

**E-cigarette marketing, youth and young adults.** E-cigarette companies, including JUUL, contributed to increased vaping among youth and young adults, largely through targeted marketing.<sup>42</sup> Advertisements for e-cigarettes have frequently included youth-appealing content such as flavors, fruity imagery and positive sensations (i.e., good taste or satisfying).<sup>43</sup> From 2011 to 2014, e-cigarette companies also increased spending on advertising, correlating with the increase in e-cigarette use among youth.<sup>44</sup> Exposure to e-cigarette advertisements increases e-cigarette experimentation among youth and young adults who have previously not used tobacco products.<sup>45</sup>

## Data gaps and limitations

There are gaps in available tobacco use data in Ohio that limit information about trends and disparities. Public health surveillance systems have faced barriers to collecting and reporting timely information about emerging tobacco product use. For example:

- Too few schools participated in the 2015 and 2017 Youth Behavior Risk Survey (YRBS), an important source of state-level youth tobacco use data. As a result, Ohio did not have reliable state-level trend data on youth e-cigarette use until 2019. In addition, many communities lack local-level data on youth use of various tobacco products.
- E-cigarettes were not added to the National Survey on Drug Use and Health until 2020.
- Local communities often lack reliable county-level data on tobacco use.

In addition, data on tobacco use among some ethnic groups is limited by small sample sizes (Asian, Native American, etc.). Finally, while questions about sexual orientation have been added to the YRBS and BRFSS in recent years, small sample sizes and lack of data on transgender Ohioans remain a challenge to adequately describe tobacco use trends among sexual and gender minorities.

## What works to reduce tobacco-related harms?








Decades of research have led to a strong understanding of what works to prevent youth tobacco use, reduce tobacco consumption, increase access to cessation services, reduce secondhand smoke exposure and decrease tobacco-related disparities. See the [What Works to Reduce Tobacco Use matrix](#) for a comprehensive list of effective strategies. Ohio has made some progress in advancing these strategies. See figure 7 for examples of how public and private partners are implementing these approaches in Ohio.

Ohio can do more to strengthen tobacco prevention and cessation policies. The [American Lung Association](#) and [Preventing Tobacco Addiction Foundation](#) state scorecards, for example, identify areas where Ohio's policies do not align with evidence for what works<sup>46</sup>:

- Minimal Tobacco 21 enforcement and tobacco retail licensing
- No restrictions on flavored tobacco products
- Low tobacco taxes
- Low investment in quitline services
- Low tobacco prevention and cessation funding



Figure 7. **Examples of effective strategy implementation across sectors**

<p><b>Local government</b></p> 	<p><b>Tobacco retail licensing: City of Cincinnati</b>          As part of efforts to enforce limits on sales of tobacco products to people under age 21, Cincinnati began a <b>tobacco retail licensing and inspection program</b> in 2019. The Cincinnati Health Department oversees the licensing system and conducts compliance checks and underage buy attempts to ensure compliance with the policy and that tobacco products are not being sold to individuals under the age of 21.</p>
<p><b>State government</b></p> 	<p><b>Tailored cessation services: Ohio Department of Health (ODH)</b>          The <b>Ohio Tobacco Quit Line</b> was part of a multi-state pilot project to develop enhanced Quit Line services for people with behavioral health disorders, including increased number of coaching sessions, mood self-management skill building and communication with community mental health providers. Initial evaluation results indicate that this approach has increased the quit rate for people with behavioral health conditions. In addition, ODH's tobacco program evaluator conducted key informant interviews with Black Quit Line clients to identify opportunities to improve the cultural competence of Quit Line services.</p>
<p><b>Employers</b></p> 	<p><b>Smoke-free workplace: John Glenn International Airport</b>          After employees expressed concerns about secondhand smoke exposure and the burden of frequent smoking breaks on nonsmoking workers, John Glenn International Airport implemented a series of changes, including a reduction in outdoor smoking locations and a cessation incentive program for employees. In addition, concessionaires no longer sell tobacco products in terminals, and nicotine replacement products are widely available throughout the airport.</p>
<p><b>Businesses: Pharmacies</b></p> 	<p><b>Tobacco retail density: CVS</b>          In 2014, CVS Pharmacy voluntarily stopped selling tobacco products at all CVS stores.</p>
<p><b>Businesses: Other retailers</b></p> 	<p><b>Tobacco and alcohol marketing: Montgomery County Alcohol, Drug and Mental Health Services (ADAMHS) Board</b>          The <b>Conscious Retailer Program</b> builds a public/private partnership between the ADAMHS Board, tobacco and alcohol retailers and prevention providers to reduce advertisements for tobacco and alcohol products at retail stores. Retailers are incentivized by the ADAMHS Board with advertising and social media campaigns recognizing them as a community partner if they reduce tobacco and alcohol marketing through methods such as:</p> <ul style="list-style-type: none"> <li>• Tobacco and alcohol signage covering 20% or less of store windows</li> <li>• Posting age-restriction signs for purchasing products</li> <li>• Reducing point-of-sale advertising</li> </ul>
<p><b>Public health</b></p> 	<p><b>Media campaigns: Columbus Public Health</b>          Columbus Public Health created a series of videos in English and Spanish featuring residents talking about their experiences quitting tobacco use.</p>
<p><b>Health care</b></p> 	<p><b>Tobacco cessation access: Family Health Services of Darke County</b>          With support from the Ohio Association of Community Health Centers, Ohio Department of Medicaid and other partners, the federally-qualified health center in Darke County implemented a process to integrate medical and dental health screening for tobacco/nicotine use. Dental providers now have the skills and information needed to talk with patients about quitting and to connect with cessation counseling and medication.</p>

## Policy recommendations

Stronger implementation of evidence-based strategies would improve the health of Ohioans, advance equity and reduce healthcare spending, including:

- **Tobacco 21 and tobacco retail licensing:** Local governments can maximize the effectiveness of the state Tobacco 21 policy by enacting **model policies** that include stronger enforcement mechanisms and tobacco retail licensing programs, such as the one implemented by **Cincinnati** in 2019.
- **Marketing and flavor restrictions:** Local governments can implement **marketing restrictions** on tobacco products, including limits on promotions and point-of-sale placement of advertising for menthol and other flavored products.
- **Price:** State policymakers can increase the price of tobacco products by equalizing the tax on other tobacco products to match the cigarette tax, increasing the cigarette tax or revising Ohio's minimum price law to prohibit the use of price-discounting tactics.
- **Medicaid:** The Ohio Department of Medicaid can use contract provisions and quality reporting to do more to hold managed care organizations accountable for increasing the use of cessation services. Managed care organizations can implement systemic changes to incentivize providers and members to increase use of cessation counseling and medications. See **Ohio Medicaid Basics: A Closer Look at Health Behaviors** for specific strategies.
- **Tailored cessation:** The Ohio Department of Health can continue to strengthen the cultural competence of Ohio Tobacco Quit Line services. Healthcare providers can develop cessation services tailored to meet the needs of Ohioans with disabilities, those with behavioral health conditions, LGBTQ+ Ohioans, people with low incomes, older Black Ohioans and others most at risk for tobacco-related harms.
- **Funding:** State policymakers can increase funding for tobacco prevention and cessation to allow for more robust investments in media campaigns, Ohio Tobacco Quit Line services and youth prevention policies and programs. A portion of cigarette tax revenue could be allocated to these activities.

In addition, tobacco prevention advocates can partner with other sectors to address drivers of disparities in tobacco use. For example, public and private organizations can implement recommendations identified in these reports:

- **Prevent childhood trauma and adversity:** **A Strategic Approach to Prevent ACEs in Ohio** identifies 12 cost-effective strategies
- **Reduce poverty:** Ohio's **2020-2022 State Health Improvement Plan** identifies strategies to reduce child and adult poverty
- **Reduce discrimination:** The **COVID-19 Ohio Minority Health Strike Force Blueprint** makes recommendations to advance equity, improve access to care and improve conditions in the social, economic and physical environments

# Notes

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11. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, 2014.
12. Wang, Lindsey, QuanQiu Wang, Pamela B. Davis, Nora D. Volkow, and Rong Xu. "Increased risk for COVID-19 breakthrough infection in fully vaccinated patients with substance use disorders in the United States between December 2020 and August 2021." *World Psychiatry* (2021). See also: "Alcohol and Substance Use." Centers for Disease Control and Prevention. National Center for Immunization and Respiratory Diseases (NCIRD), Division of Viral Diseases, March 19, 2021. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/stress-coping/alcohol-use.html>. See also: Wang, Quan Qiu, et al. "COVID-19 risk and outcomes in patients with substance use disorders: analyses from electronic health records in the United States." *Molecular Psychiatry* 26, no. 1 (2021): 30-39.
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Lessons learned from tobacco control can inform future drug policy in Ohio, including potential legalization of recreational cannabis. See **Tobacco, Alcohol and Health: Implications for Future Cannabis Policy** to learn more about policy options to develop an equitable and effective approach to cannabis.

