# Tobacco 21 in Michigan:
# New Evidence and Policy Considerations

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## Overview

In this white paper, the team of authors seeks to accomplish three primary goals. In Sections 1 and 2 they communicate what a Tobacco 21 policy is and illustrate the environment in which a Tobacco 21 policy is trying to be introduced in the state of Michigan. In Sections 3 through 5 they share the findings of the UM IHPI Tobacco 21 Policy Sprint, which introduces fresh research and ideas into the Tobacco 21 policy debate to help educate and inform all of those who want to learn more about the potential consequences and requirements of Tobacco 21 policy in Michigan. For those interested in learning more about the methods behind the 3 research projects, please see Appendix 1 in this paper. Finally, in Section 6 the authors provide recommendations to the audience of readers in the state of Michigan and beyond regarding how they believe an effective, equitable, and just Tobacco 21 policy should be constructed, implemented and enforced.

## Acknowledgements

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— **For more on the Tobacco 21 Policy Sprint visit: http://ihpi.umich.edu/tobacco21** —

The research in this report was developed as part of a Policy Sprint sponsored by the University of Michigan's Institute for Healthcare Policy and Innovation (IHPI). More information about IHPI and its Policy Sprint Program can be found at ihpi.umich.edu.

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# 1. Tobacco 21 Policies

## Why do young people start to use tobacco products?

Most tobacco use starts during adolescence, and the vast majority of those who become regular smokers during adolescence become addicted to nicotine. The younger a person is when they start to use nicotine, the more likely they are to become addicted to it (US Surgeon General 2012, 2014).

There are a variety of reasons why young people begin to smoke. Some young people want to try smoking because they think it is fun or glamorous, or because they want to take risks. Many are influenced by the habits of those they are close to -having parents, siblings or friends who smoke makes it more likely that you will also smoke. Exposure to tobacco advertising, which is often targeted at young people, also plays a role as demonstrated by the fact that the most advertised cigarette brands are those most often used by young people (CDC 2018a). Poor mental health, for example experiencing stress, depression or having low self-esteem, can also increase the risk that someone becomes a smoker. In particular, experiencing adverse events during childhood such as abuse or parental separation is associated with a greater risk of becoming a smoker (ACS 2015, CDC 2018b).

The use of tobacco products by young people is a significant problem in Michigan. In 2017, 10.5% of high schoolers in Michigan smoked cigarettes, a rate that is higher than the national average of 7.6%. Each year, 4,400 under-18 year olds in Michigan become new daily smokers (CTFK 2018). Because smoking is the leading cause of preventable disease and death in the United States, we know that a significant proportion of these kids and teens will ultimately live shorter, less healthy lives as a result of their smoking.

The use of e-cigarettes among young people in Michigan is also a cause for concern. In 2017, 14.8% of high schoolers in Michigan used e-cigarettes, again higher than the national average rate of 11.7% (CTFK 2018). While the risks to health from using e-cigarettes are not equivalent to those from smoking, using e-cigarettes can expose young people to addictive nicotine as well as other harmful substances (US Surgeon General 2016). By December 2018, the e-cigarette usage rate rose so precipitously, that the Surgeon General declared that vaping had become an epidemic among the nation's youth (HHS 2018).

## What is a Tobacco 21 policy and why is it important?

Tobacco 21 (T21) policies aim to reduce youth access to tobacco products (including cigarettes, e-cigarettes and other tobacco products) by restricting sales to people aged 21 or over.

Although federal law sets the age of sale for tobacco products at 18, state and local governments have the flexibility to go beyond this and increase the age of sale further.

In 2009, a key piece of federal legislation, the Tobacco Control Act, re-emphasized and extended the ability for state and local governments to adopt tobacco control measures that are more stringent than federal policies. This legal context, combined with strong advocacy from tobacco control groups and concerns about youth use of newer tobacco products such as e-cigarettes, has led to a new wave of local tobacco control policies that include T21 laws. In the past few years, hundreds of communities throughout the US have considered T21 laws. As of January 2019, over 425 cities and counties and 6 states had adopted T21 laws, with many more considering the policy (Preventing Tobacco Addiction Foundation 2019).

Supporters of T21 laws argue that raising the legal age of sale for tobacco products to 21 can both restrict young people's ability to buy products in retail establishments, but also address the ways in which young people obtain tobacco from friends and family members close to their own age but over 18. Although most young people get their first cigarette through a social connection, those who do buy tobacco products act as a significant source of supply for their peers. From this perspective, the main goal of T21 laws is to restrict young people's ability to obtain tobacco products and thereby reduce the number of people who start to use these products at an age when they are most likely to become addicted. Survey data to date shows that a substantial majority of adults and young people support T21 policies (King et. al. 2015, Winickoff et. al. 2016, Morain, Winickoff and Mello 2016, Lee et. al. 2016, Morain, Garson and Raphael 2018).

Some opponents of T21 policies argue that T21 laws are paternalistic given that 18 year olds can vote, drive, serve in the military and buy guns. Our survey data shows that this view is shared by a significant minority of young people aged 14-24 (MyVoice Survey). In Michigan, discussions about the appropriate age to access tobacco products might be informed by the results of the 2018 elections, where voters expressed majority support for a ballot initiative to legalize recreational marijuana that set the legal age of sale for those products at 21. Additionally, other activities like purchasing alcohol, renting a car, or holding public office often have age limits set beyond 18.

## Existing studies assessing the likely impact of Tobacco 21 laws

T21 policies are still very new. Evidence on the impact of T21 policies to date is largely based on national-level simulation modelling, national level policy analysis, and a small number of empirical studies. The 2009 Family Smoking Prevention and Tobacco Control Act directed the U.S. Food and Drug Administration (FDA) to convene a group of experts to study the public health implications of raising the minimum age of purchase for tobacco products to 21. The FDA requested that the Institute of Medicine -- since renamed the National Academy of Medicine -- convene such a group. The group's report was published in 2015 (IOM 2015). The report conducted systematic reviews of the existing literature on T21 and of the health effects of tobacco use on youth and adults, and a mathematical modeling exercise of the effects of T21

on adolescent and young adult smoking initiation and the downstream health effects to estimate the public health impact of T21 and the policy implications of such a change. The models used only addressed cigarette smoking, but the committee determined that its results would likely apply across all tobacco products.

The committee came to several key conclusions that are important for Michigan. The group agreed that 'overall, increasing the MLA for tobacco products will likely prevent or delay initiation of tobacco use by adolescents and young adults', with the largest likely impact on initiation among those aged 15 to 17 years. Furthermore, as 'the majority of underage people using tobacco products obtain them from social sources' the committee determined that raising the legal age of sale to 21 would reduce the likelihood that those who can legally buy tobacco products are 'in the same social networks as high school students'. (IOM 2015)

The committee concluded that any reductions in initiation rates would likely decrease the prevalence of tobacco users in the population and lead to 'substantial reductions in smoking-related mortality'. But the committee's models also suggest that 'these results will not be observed for at least 30 years, assuming that the MLA increase occurs now'. The modelling results suggest that given that T21 laws would primarily affect smoking initiation in youth, these will have a modest short-term impact on population-level smoking prevalence and tobacco-related mortality, but a significant impact in the longer term, with smoking rates declining by 12 per cent and smoking-related mortality declining by 10%. A positive impact on maternal and child health outcomes would be observed more quickly. More immediate positive effects on other less extreme health and biological outcomes such as physical capacity are also likely (IOM 2015). Earlier models have found similar results (Ahmad and Billimek 2007).

In addition to the Institute of Medicine report, a small number of empirical studies have examined the impact of T21 laws. In 2005, the town of Needham, Massachusetts was the first town in the US to raise the age of sale for tobacco products to 21. In 2016, a study of the impact of T21 in Needham found that 30-day smoking prevalence among high school students declined at a significantly greater rate in Needham than in other local communities (Schneider et. al. 2016). While this study adds support for T21 policies, we should nevertheless be careful when seeking to generalize findings from a case study of a small, white and wealthy suburban population to other contexts (Lantz 2018).

California enacted T21 legislation in 2016 and this law has been the subject of a recent evaluation. California's law applies to a wide range of tobacco products, including e-cigarettes. In the context of implementing the law, the state launched a campaign to raise awareness about the changes among retailers and the public. An evaluation of California's T21 law was conducted in 2017 and included a poll of tobacco retailers, an online survey of adults, and analysis of purchase data. The study found high awareness of the law (98.6%) and majority support for the law (60.6%) among retailers. 63.6% of young people ages 18-24 surveyed were aware of the law. The study also found a significant decline in sales to young people aged 15-16 and widespread retailer compliance, although the interpretation of these findings is complicated by a tobacco tax increase implemented in 2017 (Zhang et. al. 2018).

In terms of assessing the impact of T21 laws on retailers, Winickoff and colleagues used national survey data to unpack T21's impact on both smokers and retailers. They found that

'raising the tobacco sales minimum age to 21 years across the United States would decrease tobacco retailer and industry sales by approximately 2% but could contribute to a substantial reduction in the prevalence of youths' tobacco use and dependency by limiting access' (Winickoff et. al. 2014).

Enacting T21 is not a guarantee that retailers will comply with the new law. New York City passed a T21 law in 2014, but did not appropriate any additional funds for enforcing the new law. Undercover investigations of retailer compliance in New York City conducted by Silver and colleagues before and after the passage of T21 found that the compliance rate declined from 71% to 61.4%. Both of these rates are well below the 80% compliance required of states by the federal government as a condition for receiving funding under the substance abuse block grant. Only 45.6% of retailers inspected complied with all four of the new requirements for displaying updated legal age and tax signage, selling packs at or above a minimum price and checking ID (Silver et. al. 2016). These results indicate the importance of paying attention and dedicating resources to retailer compliance in the wake of changes in tobacco laws.

# Tobacco 21 in Michigan

T21 policies have recently been considered in Michigan. Two localities, the City of Ann Arbor and Genesee County, have enacted local laws raising the age of sale for tobacco products to 21. The Genesee regulation was subsequently challenged in court and found to be in conflict with state law (with an appeal in the case still pending). The Ann Arbor ordinance has not been challenged and remains in effect. At the state level, the state legislature has shown interest in discussing T21, with a bill proposing its adoption introduced in the House by Representative Tommy Brann (R-Wyoming). That bill never received a legislative hearing during the 99th legislative session. T21 also briefly appeared in Michigan's 2018 gubernatorial race, with eventual victor, Gretchen Whitmer (D) expressing her support for the policy (Whitmer 2018).

In the context of current discussions in Michigan, the research conducted in the production of this report aimed to assess the likely impact of T21 on the health and well-being of people in Michigan and on state tax revenues from the sale of tobacco products. The research in this document was produced as part of a 'policy sprint' sponsored by the University of Michigan's Institute for Healthcare Policy and Innovation (IHPI). IHPI's policy sprint program brings together groups of non-partisan experts from across the University of Michigan to seek evidence-based solutions to contemporary problems. Findings from policy sprint projects aim to inform decision-making on policies at state, local and federal levels.

The following sections describe current youth access to tobacco products in Michigan, before discussing the findings of our modelling, case studies and youth survey and setting out recommendations that arise from our research.

# 2. Tobacco Use and Laws in Michigan in Context

## Cigarette Smoking in Michigan

In 2016, 1 in 5 adults in Michigan reported that they smoked cigarettes on a regular basis. At 20.4%, the prevalence of current smoking among Michigan adults is higher than the national median (17.1%)(MDHHS 2018a). Though current cigarette smoking has been decreasing in recent years, tobacco use remains the largest and most preventable contributor to chronic disease and related death and disability in the state (MDHHS 2018b).

Within Michigan, smoking is not evenly distributed across the population. The current smoking rate is much higher for adults with low household incomes (35.7% for households earning under $20,000 per year, 26.5% for households earning between $20,000 and $35,000 per year), adults with disabilities (32.3%), adults with lower educational attainment (39.7% for less than high school, 25.8% for high school graduate), and adults without health insurance (32.3%). In 2016, 24.9% of Michigan adults identifying as Black and non-hispanic were current smokers compared to 19.4% of White, non-hispanics and 19.8% of Hispanics. The smoking rates were highest among Michiganders who identify as American Indian or Alaskan Native with nearly half (48.6%) reporting current smoking between 2014 and 2016. In those same years respondents who identified as “Other/Multi-Racial” also had a higher rate of 30.9% (MDHHS 2017). Additionally, more males (22.3%) than females (18.7%) are current smokers (MDHHS 2018a).

These statistics confirm what tobacco control researchers observe elsewhere --smoking, poverty and low educational attainment are highly correlated (CDC 2018b). Furthermore, poorer adults and those with less education try to quit smoking at about the same rate as richer, more educated adults, but have less success (CDC 2018b). People in Michigan with lower socioeconomic status are also more likely to be exposed to secondhand smoke. 43.5% of individuals in households earning under $20,000 per year are exposed to secondhand smoke compared to 25.5% for all Michigan adults (MDHHS 2018a).

These statistics are important because youth are not using tobacco products in isolation. Rather, youth tobacco use is more likely in environments where tobacco products are affordable and ubiquitous, where family and friends frequently use tobacco products, and where tobacco advertising is prominent. Environmental stressors that contribute to poor mental health also contribute to youth use of tobacco products. For these reasons, youth use of tobacco products is a public health issue that affects families and communities throughout the state of Michigan.

## Use of Tobacco Products Among Michigan Youth

The CDC conducts regular surveys examining risky behavior among young people, including the use of tobacco products. On the whole, Michigan is not performing well when it comes to

protecting youth from exposure to nicotine and the health consequences of using tobacco products from an early age.

Overall, in 2017, Michigan high school students were more likely to use tobacco products than the national average, with 22.8% of students using one or more of cigarettes, cigars, e-cigarettes, or smokeless tobacco in the previous 30 days compared to the national rate of 19.5% (YBRSS 2017). In 2017, 10.5% of high school students in Michigan smoked cigarettes, a rate that exceeded the national average of 8.8% (YBRSS 2017). Each year, 4,400 under-18 year olds in Michigan become new daily smokers (CTFK 2018a). Also, 6.3% of Michigan high school students reported using smokeless tobacco products in the previous 30 days, roughly the same as the national average of 5.5% (YRBSS 2017). At the same time, 9.2% of Michigan high school students reported smoking a cigar in the previous 30 days, a rate that exceeded the national average of 8.0% (YRBSS 2017). No statistics on student use of hookah (also called waterpipe or shisha) were found, but current use of hookah among Michigan adults of 3.7% in 2013 was similar to the national average of 3.9% (Park et. al. 2017).

While the risks to health from using e-cigarettes are not equivalent to those from smoking, using e-cigarettes can expose young people to high levels of addictive nicotine as well as other harmful substances. It is therefore important to understand current trends in use of these products, particularly among young people. 14.8% of high schoolers in Michigan use e-cigarettes, again higher than the national average rate of 11.7% (CTFK 2018a) and higher than the number of under-eighteens who smoke.

Additional data from the University of Michigan's Monitoring the Future study shows that vaping among US students accelerated rapidly in 2018, with 26.7% of 12th graders reporting vaping any substance in the past month, up from 16.6% in 2017. In particular, past month nicotine vaping among 12th graders rose from 11.0% in 2017 to 20.9% in 2018. Past month cigarette use fell from 9.7% to 7.6% in the same group over the same period of time (UM-ISR 2018).

## Current laws governing youth access to tobacco products

Youth access to tobacco in Michigan is shaped by federal, state and local laws. Both compliance and enforcement activities are important for implementing these laws. Compliance activities focus on tobacco retailers in Michigan, seeking to bring them into compliance with laws governing age verification and signage requirements. A series of undercover inspections are conducted each year to determine the level of retailer compliance across the state. Public health agencies engage in public and retailer outreach and provide education and training for retailers and clerks to raise the level of compliance.

Enforcement activities in Michigan focus on both individuals who sell tobacco to underage youth and underage people who purchase, use or possess tobacco products. Enforcement of Michigan's Youth Tobacco Law results in penalties for those found in violation of the law, which can include fines, mandatory education and community service.

## Federal

At the federal level, the legal age to purchase tobacco products is governed by two key laws: the 1992 Alcohol, Drug Abuse and Mental Health Administration (ADAMHA) Reorganization Act and the 2009 Family Smoking Prevention and Tobacco Control Act. In 1992, the ADAMHA Reorganization Act established a new agency, the Substance Abuse and Mental Health Services Administration (SAMHSA). An amendment to the law named for its chief sponsor, Congressman Mike Synar of Oklahoma (section 1926), requires states to take action to restrict youth access to tobacco products.

Specifically, in order to receive their Substance Abuse Prevention and Treatment Block Grants from SAMHSA, states are required to enact laws preventing the sale or distribution of tobacco products to people under 18 years of age and take actions to enforce these laws. Under the law, states must organize annual undercover inspections at a statistically valid sample of retail outlets selling tobacco products and reach a specific target of no more than 20% non-compliance. States then report annually to SAMHSA on their progress in a process known as Synar reporting. Meeting the 20% non-compliance target is important, as the funds from the block grant support vital public health efforts and can be withheld if non-compliance rates are too high. Michigan consistently meets this target and in FY 2017 received a Substance Abuse Prevention and Treatment Block Grant of $56 million (SAMHSA 2018).

In 2009, the Family Smoking Prevention and Tobacco Control Act gave broad authority to the FDA to regulate tobacco products. Specifically, this authority allows the FDA to take actions to reduce the use of tobacco products among young people under the age of 18. Although the FDA cannot set the minimum legal age of sale higher than 18, the law does not prohibit state or local governments from doing so.

The FDA acts to enforce the minimum age of sale at 18 by overseeing its own set of tobacco retailer inspections. In contrast to Synar inspections, compliance checks conducted under the FDA regime are not required to correspond to a statistical sample of retailers. In Michigan, the FDA contracts with the Michigan Department of Health and Human Services (MDHHS) to conduct compliance inspections (FDA 2018a). In 2017, 25510 inspections of tobacco retailers in Michigan were conducted under FDA rules, resulting in 1469 civil money penalties and 3365 warning letters being issued (FDA 2018b).

## State

In Michigan, the FDA contracts with the state government to conduct these inspections. The MDHHS is, therefore, responsible for conducting compliance checks under both the FDA's regime and through SAMHSA's Synar process. The two procedures are somewhat separate and Michigan does not use data from the FDA inspections for its Synar reporting. Within MDHHS, the Office of Recovery Oriented Systems of Care (OROSC) is responsible for conducting Synar inspections, while the MDHHS Tobacco Section is responsible for tobacco control prevention activities. OROSC, the Tobacco Section and Prevention Michigan, Inc. collaborate to implement inspections under FDA rules. (State of Michigan 2018)

Michigan does not have a statewide licensing regime for tobacco retailers. Tobacco manufacturers and wholesalers, unclassified acquirers, secondhand wholesalers, vending machine operators and transportation companies must obtain an annual license from the state treasury, involving an annual fee and an initial police background check. These requirements do not cover retailers, however, who do not need to obtain a licence. Retailers are subject to administrative inspections that examine invoices, other paperwork and required signage, but this process is separate from the public health compliance activities described above (Michigan Department of Treasury 2018).

Michigan's Youth Tobacco Act of 1915 (last amended in 2006) is the main state law governing restrictions on youth access to tobacco products and associated penalties. As well as setting the minimum legal age of sale for tobacco products at 18, the Youth Tobacco Act is also a Purchase Use and Possession or 'PUP' law. 44 US states and DC have at least one PUP law that governs the purchase, use and possession of tobacco products (IOM 2015, Tworek et. al. 2011). Michigan's Youth Tobacco Act prohibits selling, giving or furnishing tobacco products to minors.[1] Minors are prohibited from purchasing, attempting to purchase, possessing or attempting to possess tobacco products, from using a tobacco product in a public place and from providing false or fraudulent proof of age in the context of possessing or purchasing a tobacco product. The Act also defines criminal penalties for violating the law. Minors violating the law are guilty of a misdemeanor, must pay a fine and may be required to participate in a health promotion and risk reduction program or complete community service.[2] A person selling, giving or furnishing a tobacco product to a minor is guilty of a misdemeanor and must pay a fine.[3] The Michigan penal code also prohibits the use of tobacco products, including tobacco products that are inhaled, on school property.[4]

Michigan state police and local law enforcement agencies are responsible for enforcing the state's youth tobacco access laws. Since 2003, Michigan has used vertical identification cards to help law enforcement officers and retailers to verify age. The cards explicitly state the dates on which the person will turn 18 and 21.

## Local

One of the important potential checks on the adoption of local T21 ordinances across the country is state preemption of local action. A recent survey of state laws found that 19 states have 'express preemption', an explicit statement in state law that denies local governments the authority to adopt T21 laws. 8 states expressly allow local governments to adopt laws that are more stringent than state law. Michigan falls in between those two categories, with no statement about pre-emption in the Michigan state code (Berman 2016).

[1] Section 722.641.

[2] Section 722.642.

[3] Section 722.641.

[4] Michigan Penal Code, Act 328 of 1931, Section 750.473. This policy is not comprehensive, however, as it makes exceptions for the use of tobacco products for after school hours and on days when school is not in session.

Two localities in Michigan have adopted T21 laws. In 2016, Ann Arbor became the first place in Michigan to adopt a T21 policy when the Ann Arbor City Council voted 9-1 to raise the age of sale for tobacco products. The Ann Arbor ordinance covers a wide range of tobacco products, including e-cigarettes. The law removes penalties for individuals and instead focuses on fines for retailers and clerks.[5]

In 2017, Genesee County became the second local jurisdiction in Michigan to adopt a T21 law after an affirmative vote by the Genesee County Board of Commissioners. Genesee County's law covers all tobacco products as well as paraphernalia, including e-cigarettes. Violating the law by selling, giving or furnishing a tobacco product to an underage person is defined as misdemeanor. The law also sets up a system of civil penalties in the form of escalating fines. The law states that a local health officer may seek action in court 'against any person to restrain or prevent a violation' of the regulation.[6] Unlike Ann Arbor, Genesee County has required tobacco retailers to obtain annual licenses since 1994 and conducts regular compliance checks.[7] In 1994, voters approved Proposal A, a ballot measure that increased Michigan's sales and tobacco taxes to fund schools. Tobacco companies provided significant funds to the campaign to oppose Proposal A, but also pushed for the inclusion of a preemption clause that prevents localities from setting up their own tobacco licensing regimes. Preemption is also an important factor constraining local licensing of tobacco retailers. Existing local licensing regimes in Ingham, Genesee, and Marquette counties were grandfathered into the law[8]. Other localities have been preempted from adopting their own licensing regimes. Therefore, localities like Ann Arbor cannot adopt policies to license their own tobacco retailers.

In February 2017, at the request of State Senator Rick Jones (R-24), Attorney General Schuette issued an advisory opinion on Ann Arbor's T21 law. In his opinion, the attorney general found that Michigan's Age of Majority Act of 1972, which sets the age of majority in Michigan at 18, preempts a city ordinance that provides that "a person shall not sell, give or furnish a tobacco product in any form to a person under 21 years of age."(Schuette 2017)

In May 2017, RFP Oil Company, a southern Michigan-based gasoline distributor, initiated a legal challenge against Genesee County's T21 law in a local circuit court, arguing that the law conflicts with the state's Age of Majority Act. This case was the first legal challenge to any local T21 law in the U.S. In June 2018, Judge Judith Fullerton granted a preliminary injunction and a temporary restraining order against Genesee County's T21 law. At the time of this writing, that decision is currently on appeal before the Michigan Court of Appeals.

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[5] Section 9:328b of Chapter 118 of Title IX of the Code of the City of Ann Arbor.

[6] Genesee County. Regulation to Prohibit the Sale of Tobacco Products to Individuals Under 21 Years of Age. Effective May 15, 2017. Section 1012.

[7] Genesee County. Regulation to require license for retail sale of tobacco and to prohibit the sale of tobacco to minors. Effective February 14, 1994.

[8] Tobacco Products Tax Act. Act 327 of 1993. Section 205-434.

## Marijuana 21

In 2018, Michigan voters supported a ballot proposal to legalize marijuana for recreational use by a margin of 56 to 44%. The law went into effect on December 6, 2018, 10 days after the certification of the election results (Gray 2018). While recreational use of marijuana is now legal, it will take some time for the state to build the regulatory mechanisms necessary to regulate the new market in marijuana products.

The legalization of recreational marijuana in Michigan has important implications for any future T21 law in the state. First, the legal age of sale for marijuana products will be set at 21 (Marijuana 21). The purchase, public use (but not public smoking), and possession of a limited amount of marijuana or concentrate will be legal for those at least 21 years of age. Without a statewide T21 law, young people in Michigan will be able to buy tobacco products at 18 but will not be able to purchase alcohol or marijuana until they are 21.

Second, criminal penalties for some violations of the law on marijuana purchase, use and possession have been removed and replaced with civil infractions. Misdemeanors remain for possessing more than twice the allowed amount of marijuana, and a jail term will result when the violation is 'habitual, willful, and for a commercial purpose or the violation involved violence'. In contrast, criminal penalties for tobacco purchase, use and possession by an underage person remain in effect under current law.

Third, from a public health perspective, youth use of tobacco, marijuana and other drugs are related in complex ways. In particular, there is some evidence of a bidirectional gateway effect between tobacco and marijuana. Some studies have found that youth use of tobacco products is likely to lead to use of marijuana, while other studies have found that using marijuana can increase a young person's likelihood of using tobacco products (Fairman, Furr-Holden and Johnson 2018). The recent upward trend in use of e-cigarettes among young people further complicates this issue, as both tobacco products and marijuana can be vaped using e-cigarettes. Survey have shown that a significant proportion of young people are using e-cigarettes with non-tobacco substances (Trivers et. al. 2018). More data is needed on these relationships as patterns of substance use among young people are changing rapidly.

It makes sense, therefore, to monitor young people's use of tobacco, marijuana, alcohol, and engagement in risky behaviors such as driving, in a holistic way. However, the state agency best equipped to do so, MDHHS, has not been granted powers to regulate the marijuana market in Michigan. Instead, the Michigan Department of Licensing and Regulatory Affairs (LARA) has broad powers to license and regulate marijuana retailers. LARA is responsible under the law for some areas which relate directly to key public health functions, including product testing, setting safety standards and regulating the content of product advertising. These are all areas in which expert guidance from public health officials could be important to protect and promote public health in Michigan and coordinate efforts to regulate marijuana retail and tobacco retail environments.

In addition, Marijuana 21 constitutes a partially unfunded mandate for public health. The implementation of Marijuana 21 has cost implications for public health agencies, who will want to monitor marijuana usage, deliver public health education around the new law and play a key

role in coordinating the regulation of marijuana, tobacco and similar substances. The ballot initiative, as written, does not specify how these public health activities will be paid for. A dedicated fund governed by LARA, the Marihuana Regulation Fund, will be established for money from marijuana licensing and excise taxes. Money from the fund will be used to fund the licensing regime, to fund localities with at least one marijuana retailer, to support research on the application of medical marijuana to Veterans' health problems, to support K-12 schools and for bridge and road repair.

Michigan does not have an equivalent statewide licensing regime for tobacco retailers. Although tobacco manufacturers and wholesalers must obtain an annual license from the treasury this requirement does not cover retailers, nor was it created with a public health intent in mind. The passage of Marijuana 21 represents an opportunity to develop a robust and a potentially coordinated retail licensing system for both tobacco and marijuana retailers that is connected to the state's public health promotion and prevention goals.

## Health Equity and Youth Access to Tobacco Products

As discussed above, tobacco use is not uniform across Michigan, inflicting a higher burden on some demographic groups than others and affecting communities in distinct ways. The implementation of public health policies, access to health services and the enforcement of public health laws also varies depending on local resources and priorities. While the whole state gains from effective implementation of tobacco control policies, effective and thoughtful implementation is particularly important in places with a high concentration of existing smokers, in poorer communities, and in communities of color.

Across our research, respondents agreed that T21 should be implemented incrementally and in the context of engagement with key stakeholders. Where possible, the process should be community-driven. Criminal penalties for the purchase, use and possession of tobacco products should be removed. And to be successful, T21 should form part of a comprehensive tobacco control strategy that adequately funds and supports prevention activities and access to cessation services.

PUP laws like Michigan's Youth Tobacco Act are difficult to effectively enforce, and evidence for their effectiveness as a means of deterring youth use of tobacco products is mixed. Across the US, enforcement of PUP laws tends to occur at local level and frequently constitutes an unfunded mandate for law enforcement agencies. Variation in local enforcement capacity and local priorities means that enforcement works very differently and unevenly from place to place (Tworek et. al. 2011). The state of Hawaii funds overtime payments for local law enforcement officers carrying out undercover tobacco buys through funds appropriated by the legislature (State of Hawaii 2017). In California, many localities with strong local licensing regimes use revenue from licenses to fund enforcement efforts. This type of funding support is not typical across the US, however (Center for Tobacco Policy and Organizing 2018).

While it is often assumed that strong enforcement of PUP laws is effective in preventing youth access to tobacco products, this assumption is controversial. Published evidence points in different directions and highlights the complex nature of cause and effect in terms of how the

enforcement of PUP laws impacts tobacco use among young people (IOM 2015). Some studies have found evidence that strong enforcement of PUP laws is effective in that it creates a deterrent effect among youth (see, for example, Jason et. al. 2003, Jason et. al. 2008, Pokorny et. al. 2008, Jason et. al. 2009, Gottlieb et. al. 2004). Other studies have questioned the effectiveness of PUP laws, particularly with regard to their likely differential effects on communities (e.g., Ross and Chaloupka 2003, Tworek et. al. 2010, 2011, etc.).

Overall, there are some important shortcomings in this literature that urge caution when considering future policy options. To date, very few studies of PUP enforcement adopt a health equity lens, leading to the exclusion of viewpoints from those in communities who might suffer the brunt of law enforcement activity while gaining less of its benefits. Additionally, few published works engage with findings in the adjacent field of criminology that shed light on the effects of strategies such as 'broken windows' policing[9]. Academic reviews of the topic also do not engage with grey literature that takes a more community-centric approach to youth access. While data on race, ethnicity, income and education has been collected in many of the academic public health studies of PUP laws, racial or class disparities are not generally the main focus of these works. Few studies differentiate between the impact of a potential T21 law on white youth and youth of color or between richer and poorer communities. Arguably, the effects of T21 policies on low-income, lower-educational attainment populations could be quite different and certainly deserve further study.

The very few grey literature studies which adopt a health equity lens and actively seek the opinions of community members do raise serious concerns about the potential impact of PUP laws in the context of T21. For example, a very thorough health equity impact assessment conducted by the Oregon Health Equity Alliance in 2017 concludes that young people of color 'may not benefit as extensively from a T21 policy if further [cessation and prevention] supports are not implemented' (Naya Family Center 2017). Tobacco companies have historically targeted African Americans and Native Americans through heavy advertising and reduced product prices. Community members contributing to the report emphasized that policies aimed at reducing youth access are important for low income communities and communities of color. But they also thought such policies should be embedded within comprehensive approaches to tobacco control that address prevention and cessation, consider different political and legal contexts within these communities, and respect cultural practices among Native Americans. The report emphasizes that clear and regular communication with local retailers is key and recommends phasing in implementation to ensure that local community members, businesses and other stakeholder groups are engaged in the process.

Most state PUP laws treat tobacco purchase, use and possession as a misdemeanor crime punishable by a fine, sometimes with other consequences that can include suspension of the individual's driving license, community service or mandatory education. The vast majority of crimes committed in the US are misdemeanors. While much legal scholarship treats penalties for misdemeanors as relatively unimportant or even lenient, in recent years concerns about the

[9] The theory that imposition of order in a community by focusing on minor infractions (broken windows, graffiti, and petty crime) might over time lead to a reduction in overall violent crime rates. See Childress, 2016 for more.

social and economic consequences of misdemeanors have grown (Kohler-Hausmann 2016, Napatoff 2018).

Our own research indicates that views about the enforcement of PUP laws among tobacco control advocates and public health officials may have shifted in recent years. In Section 4 of this white paper, we note that many of the people we interviewed expressed concerns that PUP laws are likely to be enforced with bias, forming part of a larger pattern of unequal treatment or injustice. Their concern is that if youth tobacco access laws are being enforced unequally across the population, they likely contribute to health and economic disparities and could undermine trust between communities and government agencies. The heart of this discussion was not the question of whether or not there should be a consequence for individuals breaking the law. All of our interviewees were in agreement that for T21 to be successful, public health officials must send a clear message to young people that using tobacco products is undesirable. Rather, interviewees emphasized their support for civil consequences over criminal penalties, in particular to avoid interactions between law enforcement, the criminal justice system and low income individuals and people of color.

## Summary

T21 policies are not enacted in a vacuum. Youth use of tobacco products is governed in several different ways, including via state, local and federal laws and policies aimed at curbing youth access to tobacco products, statewide and local tobacco control laws and policies, and via the funding and availability of cessation and behavioral health services. The implementation and enforcement of these tobacco control policies varies by location and among different communities and demographic groups, raising important health equity considerations for T21. For those of our readers wishing to learn more about the entire tobacco control policy and smoking cessation support context in the state of Michigan, please read more in Appendix 2 below. With all of this context in mind, the next section goes on to examine the specific health and revenue effects of implementing T21 in Michigan.

# 3. Health and revenue effects of implementing Tobacco 21 in Michigan

We simulated the likely public health and economic impacts of implementing T21 in Michigan. We adapted the Mendez-Warner model of US smoking prevalence and health effects (Mendez, Warner and Courant 1998) using Michigan-specific parameters to first, evaluate a status quo scenario in which initiation and cessation rates remain at current levels over the 2019 to 2100 period but the age of initiation is simply pushed back three years. Since smoking is by far the largest contributor to tobacco-related morbidity and mortality, we restrict our analysis to cigarette smoking behaviors only[10]. We then looked at five possible scenarios in which a T21 policy is implemented in 2019 that reduces smoking initiation rates by:

1) 0%;
2) 10%,
3) 20%;
4) 10%, combined with a 25% increase in cigarette taxes; and
5) 10%, combined with a 50% increase in cigarette taxes.

Each model assumes that no one below the legal age of purchase of 21 initiates smoking, so the first model simply examines the effect of shifting initiation from 18 to 21, while the other policy change models also the change the rate at which smoking uptake occurs.

The Institute of Medicine Report on the impact of raising the minimum age to purchase tobacco products estimated that if T21 were enacted nationwide, smoking initiation rates would likely drop by 10% (IOM 2015). We selected our potential scenarios to reflect this conclusion and also tested an optimistic case of a 20% drop in the initiation rate to evaluate the potential maximum benefits of implementing the T21 policy in Michigan. Across each of the scenarios, we focused on three outcomes; cumulative smoking-related premature deaths averted, cumulative prevented smoking initiation, and cumulative cigarette tax revenue gain/loss.

## Findings

If T21 decreases initiation rates by 10%, the policy would avert 17,302 smoking-related deaths by 2100 relative to the status quo. If T21 decreases the initiation rate by 20%, the policy would avert 34,605 smoking-related deaths by 2100. Because it takes decades after someone starts smoking for a smoking-related death to occur, the potential impact of a T21 policy in both of these scenarios does not become significant until 2050. If the state were to increase the unit price of cigarettes and implement T21 simultaneously, the health benefits would be observed as early as 2020, as price interventions increase smoking cessation among both older and younger adults. A 10% decrease in initiation with a 25% tax increase would avert 2,681 deaths

[10] Including usage patterns of others tobacco products (cigars, pipes, hookah, smokeless tobacco, and e-cigarettes) would undoubtedly further increase the public health gains from a T21 policy by a small amount.

by 2050 and 47,949 by 2100. A 10% decrease in initiation with a 50% tax increase would avert 5,163 deaths by 2050 and 78,566 deaths by 2100.

**Table 3.1: Cumulative Smoking-related Deaths Averted by Year in Michigan Under T21**

| Scenario | 2020 | 2025 | 2050 | 2075 | 2100 |
|---|---|---|---|---|---|
| 100% Initiation | 0 | 0 | 0 | 0 | 0 |
| 90% Initiation | 0 | 0 | 180 | 3,610 | 17,302 |
| 80% Initiation | 0 | 0 | 359 | 7,220 | 34,605 |
| 90% Initiation & 25% Tax Inc. | 9 | 168 | 2,681 | 12,576 | 47,949 |
| 90% Initiation & 50% Tax Inc. | 17 | 334 | 5,163 | 21,514 | 78,566 |

We also estimated the number of individuals who would be prevented from becoming smokers due to the T21 policy. With this outcome measure, the policy effects are immediate. In the most conservative scenario, with a 10% decrease in initiation, 3,793 young people would be prevented from starting to smoke by 2020. This number increases to 8,678 with a 20% decrease in initiation. Taking action to also increase the unit price of cigarettes results in a larger number of prevented initiations, 11,488 by 2020 under a 10% decrease in initiation and a 25% tax increase. This number increases to 19,183 with a 50% tax increase.

**Table 3.2: Cumulative Prevented Initiation by Year in Michigan Under T21**

| Scenario | 2020 | 2025 | 2050 | 2075 | 2100 |
|---|---|---|---|---|---|
| 100% Initiation | 0 | 0 | 0 | 0 | 0 |
| 90% Initiation | 3,793 | 11,081 | 76,201 | 137,211 | 198,221 |
| 80% Initiation | 8,678 | 27,754 | 152,286 | 272,654 | 393,021 |
| 90% Initiation & 25% Tax Inc. | 11,488 | 37,342 | 196,036 | 350,533 | 505,031 |
| 90% Initiation & 50% Tax Inc. | 19,183 | 63,603 | 315,870 | 563,855 | 811,840 |

A T21 policy also has a fiscal impact of T21 on the state because reducing smoking leads to less revenue from cigarette taxes. However, the population of smokers is also shrinking over time under the status quo, which decreases some of the projected revenue losses to the state. For example, under the scenario where initiation drops by 10% and no tax rates are changed, the state would forgo an average of $41 million in revenue per year (equal to less than 0.1% of the FY 2019 budget) through 2050 (Snyder and Walsh 2018).

**Table 3.3: Cumulative Tax Revenue Gain / Loss (in millions) In Michigan Under T21, by Year**

| Scenario | 2020 | 2025 | 2050 | 2075 | 2100 |
|---|---|---|---|---|---|
| 100% Initiation | ($75) | ($221) | ($667) | ($858) | ($1,012) |
| 90% Initiation | ($80) | ($268) | ($1,282) | ($2,316) | ($3,365) |
| 80% Initiation | ($85) | ($314) | ($1,897) | ($3,773) | ($5,717) |
| 90% Initiation & 25% TaxInc. | $183 | $542 | $796 | $138 | ($656) |
| 90% Initiation & 50% Tax Inc. | $407 | $1,208 | $2,134 | $1,168 | ($75) |

To offset this revenue loss, Michigan could increase tobacco taxes. Under a T21 policy that decreased initiation by 10%, if Michigan increased the tax rate by 50 cents per pack of cigarettes (a 25% increase), this would be enough to recoup the lost revenue and result in revenue gain for the state between 2020 and 2080. A larger price increase would translate into larger health benefits and revenue gains.

It is important to note that Michigan has not increased its cigarette tax in the last 10 years (CTFK 2018b). Since the tax was last raised in 2004, it has lost 25% of its value to inflation. The average state cigarette tax in the US is currently $1.78 a pack (median is $1.66 per pack), while Michigan's current cigarette tax is $2 per pack. In 2018, Michigan's state tax was tied for 16th in the country with Alaska, Arizona, Maine, and Maryland. As of 2016, the cost of a pack of cigarettes in Michigan was $6.60. Michigan's tax per pack was $2, Master Settlement Agreement payments accounted for 57 cents, and another $1 was federal tax. In 2016, Tobacco product collections, which include other tobacco products and Master Settlement Agreement Payments totaled $1.18B in 2016 or about 5% of the state's total revenue. The cigarette tax by itself makes up about 3.8% of revenue.

# Conclusions

Legislators should understand the following key points when considering a T21 policy:

1) The public health benefits of a T21 policy grows over time as future generations of Michigan's children age into adulthood tobacco-free.
2) To avoid forgone excise tax revenue due to a T21 policy, legislators can increase the state tobacco excise tax rate, which has remained unchanged since 2004.
3) The magnitude of the benefits of a T21 policy depends on the effects of the policy on youth smoking initiation rates. If legislative steps are taken to ensure retailer compliance with T21 policies is sufficiently comprehensive, we anticipate realizing even greater public health benefits than those projected here.

Now that we better understand the projected effects of a T21 policy, the next section seeks to inform how a T21 moves from an idea on paper to a realized program that achieves its associated benefits.

# 4. Lessons from licensing, compliance and enforcement in Ohio

Here, we consider the regulatory conditions under which T21 laws are most likely to result in reduced initiation. What does good implementation of a T21 law look like? What does poor implementation look like? And what is the likely impact of either?

Implementation in this sense refers to the translation of a T21 law into policy practice, e.g., through the creation of funding streams, regulations, and procedures, collaboration with stakeholders and public education campaigns. Furthermore, a good deal of T21 implementation rests on ensuring retailer compliance with the law's requirements. Policies aimed at ensuring compliance include 'carrots' such as retailer education programs, offering training for store clerks or awards for high compliance, as well as 'sticks' -undercover purchase attempts, removal of license to sell tobacco products. The 'sticks' used in compliance also have to be enforced by issuing warning notices, fines, or starting legal action resulting from an observed violation.

This section sets out to observe and report on the progress being made in an ongoing policy experiment taking place around the state of Ohio. Localities there are trying to come up with the right mix of statue, carrot and stick to achieve the desired outcomes of a T21 policy. Our work here describes and draws lessons from these local experiences that we believe should inform anyone else seeking to create an effective T21 policy.

## Why Ohio?

While 6 states have passed T21 laws (Hawaii, New Jersey, Oregon, California, Maine and Massachusetts), no state in the Midwest has passed a statewide T21 law. While we considered conducting a state-based case study, our team came to the conclusion that the states with existing T21 laws were too different to Michigan in some important ways. For example, Hawaii, the state with the longest history of T21, is only made up of four counties, has state funding for police overtime to facilitate undercover buys, and has many fewer people without health insurance.

In order to facilitate the application of our findings to Michigan, therefore, we looked for localities that better resembled the situation in Michigan. Ohio is comparable to Michigan in some key ways, including similar population size, level of education and poverty rates and rate of adult smoking (see Table 4.1).

Similar to Michigan's youth access laws, the Ohio state code sets criminal penalties for people under the age of 18 who purchase, use or possess tobacco products. Courts may require those violating the law to attend a mandatory education program, pay a fine, and, if the person does not comply, perform community service or suspend their driver's license. The code expressly states that 'a child' alleged or found to have violated these provisions shall not be detained.[11]

[11] Ohio Revised Code. Chapter 2151.87.

Across the cases, criminal penalties for sellers remain, usually set as fourth degree misdemeanors. The penalties for different kinds of misdemeanor in Ohio are proscribed in state law. A fourth-degree misdemeanor can result in a jail sentence of up to 30 days, a fine of up to $250 and a criminal record. Minor misdemeanors, the least significant category of misdemeanor, cannot result in jail time and do not result in a criminal record, but can result in a fine of up to $150.

**Table 4.1: Ohio versus Michigan (US Census Bureau 2018)**

| | **Michigan** | **Ohio** |
|---|---|---|
| **Population** | 9,962,311 | 11,658,609 |
| **Bachelor's Degree or Higher (25 or over)** | 27.4% | 26.7% |
| **Median Household Income, 2012-2016** | $50,803 | $50,674 |

We conducted case studies in Cleveland, Euclid, Columbus and Dublin, places selected for their variation on certain key factors including income and race. Euclid is a suburb in the Cleveland metropolitan area, while Dublin is a suburb of Columbus. Cleveland and Euclid are wholly situated within Cuyahoga County. Columbus is the County Seat of Franklin County, but smaller parts of the city fall within neighboring Delaware, Fairfield and Pickaway counties. Dublin lies wholly within Franklin County. In Table 4.2, we highlight some of the important demographic and socioeconomic characteristics of our four case study cities. The cities represent a diverse mix of types of cities that vary in size, diversity, and wealth. We expect the lessons learned across the cases to inform decisions around T21 policy implementation in other jurisdictions.

**Table 4.2: Ohio Case Study City Sociodemographics (US Census Bureau 2017)**

| | **Cleveland** | **Euclid** | **Columbus** | **Dublin** |
|---|---|---|---|---|
| Population | 385,525 | 47,201 | 879,170 | 47,619 |
| % Under 18 | 23 | 22 | 23 | 30 |
| % White non-Hispanic | 40 | 37 | 58 | 75 |
| % Black or African American | 50 | 60 | 28 | 2 |
| % Hispanic or Latinx | 11 | 1 | 6 | 5 |
| % With Bachelor's Degree[12] | 16 | 21 | 35 | 74 |
| % Under Poverty Line | 36 | 22 | 21 | 3 |
| Median Household Income | $26,583 | $35,949 | $47,156 | $128,916 |
| % Without Health Insurance[13] | 14 | 12 | 13 | 2 |

[12] Over Age 25, Includes those with more education than a bachelor's degree

[13] Between age 18 and 64

# Cleveland

The City of Cleveland is located in Cuyahoga County. 21% of adults in Cuyahoga County are current smokers (County Health Rankings 2016). In 2013, the Cuyahoga County Youth Risk Behavior Survey found that over 22% of high school students in the county were using tobacco products in the past month. For the City of Cleveland, rates were higher, between 23.1 and 25.1% (Cleveland Public Health 2018). The vast majority of youth use of tobacco products in Cleveland involves cigar products.

In December 2015, Cleveland became the first major city in Ohio to pass a T21 law, with 13 councillors voting in favor and 3 against.[14] Cleveland's T21 law was passed in the context of other tobacco control successes, first a city-wide smoke-free law and then the renewal of a per pack cigarette tax that was used to fund arts and culture projects throughout Cuyahoga County. Councillor Cimperman, who introduced the T21 measure, was motivated by the high historic prevalence of cancer and other smoking related diseases in the city, the impact of these diseases on families and communities in the city, and by more recent data shedding light on the extent to which young people of color in Cleveland were using tobacco products more than their white counterparts. There are at least 500 tobacco retailers within the city, with many of these stores in close proximity to elementary schools.

Cleveland's T21 Ordinance provides that 'no one can give, sell or otherwise distribute cigarettes, other tobacco products, alternative nicotine products, or papers used to roll cigarettes to anyone under the age of 21' and sets the penalty for sellers violating the law as a fourth degree misdemeanor, punishable by a fine. Tobacco retailers are required to post signage that informs customers of the minimum age of sale and ask for proof of age from all customers who look under the age of 30. The law also prohibits the sale of 'loosies', the sale of single cigarettes or other tobacco products. The sale of single cigarettes is a particular problem in low income communities (von Lampe, Kurti and Johnson 2018). As a response to tobacco price increases, the sale of loosies encourages people to keep on smoking. Although buying one cigarette is cheaper than buying a whole pack at once, the equivalent number of loosies can end up costing more.

One concern during debates around T21 in Cleveland was the potential for any law to criminalize the behavior of young people, with a particular emphasis on the potential negative consequences from interactions between young people of color and local law enforcement. These points were raised in the aftermath of the fatal shooting of Tamir Rice, a 12 year old boy with a replica gun who was shot by law enforcement officers in November 2014.

Other opposition came from retailers, who were concerned about the costs of adapting to the new law, but this opposition was moderate. Although the city Health Department opened up a special phone line to hear concerns from retailers about the new law, they received very few comments.

Retail stores can be an important resource within their communities, and disproportionately so in some poorer communities. Interviewees felt that this was not an argument against T21 by

[14] Ordinance 737-15.

itself, but that the economic importance of these businesses underscores the need to get implementation right. Countering these arguments by pointing out that retail sales elsewhere have not been significantly threatened by T21 policies, and asking retailers to consider their role as responsible businesses within the community were seen as effective strategies. Representatives from tobacco companies also paid attention to the debate, reportedly sending a significant number of lobbyists and allies to attend meetings on the proposed ordinance and arranged for several supporters to provide testimony.

The ordinance went into effect in April 2016. The city's Health Department was responsible for enforcing the new law. Additional funding for the department was authorized so that inspections could be conducted. Four public sessions were held across the city to inform retailers about the new law. Public health officials in Cleveland also received grant funding to support public education around the implementation of T21 in the city.

Enforcing the law after its passage has proven difficult, however. Cuyahoga County, rather than Cleveland's Health Department, is the licensing body for tobacco retailers within the city, and so city officials lacked some of the necessary tools for effective enforcement of the law. The T21 ordinance as written does not specify who has authority to enforce the law, other than specifying a criminal offense for those who sell to youth under 21. Nor does the law specify the fine or other penalty that should be applied to those caught breaking the law.

Cleveland's T21 law made the news for the wrong reasons in March 2017 when a local TV station's investigation found that the law was not being comprehensively enforced. A local police spokesperson contacted by Channel 5 news stated that enforcement was normally handled at the state level, while state officials responded that they had no legal authority to enforce municipal laws. Investigation by the Channel found that many shops were not displaying the required signage (Volk 2017). Local law enforcement were not well engaged during the formulation of the law, with the consequence that enforcement after the passage was poor. The city's Health Department and law enforcement agencies have since rectified this oversight and formulated procedures for issuing citations under the law, but the reputational damage to T21 in the city was significant. Other cities in the state contemplating T21 have tried to learn from this example. Despite this lack of enforcement, however, at least half of retailers within the city were found to be in compliance with the law in compliance checks conducted by researchers at Case Western University. At the time of writing, city officials were considering the possibility for adopting a city-wide tobacco retail license.

## Euclid

Euclid is a city in the Greater Cleveland area and is situated within the jurisdiction of Cuyahoga County. Taneika Hill, the Euclid City Councilperson who introduced the T21 measure and pushed it forward, was motivated by a desire to do something to reduce youth access to tobacco products within her community. Euclid has a relatively large and growing teen population, and statistics about this group's use of tobacco products raised concern within the Council and the community at large. Particularly, Hill was concerned about the impact of smoking and smoking related illness on families, as observationally, many teens were obtaining tobacco products through older siblings. Other concerns discussed included the contribution of

smoking-related illness to rising healthcare costs and to maternal and infant mortality. Opponents of the measure raised issues about the age of majority and military service. Retailers were concerned that T21 would result in lost revenue and damage their businesses.

Ultimately, the Euclid City Council passed a T21 law in November 2016 with 6 votes in favor and 3 against.[15] The law prohibits the sale of tobacco products to people under the age of 21, with violations of the law by sellers set as fourth degree misdemeanors. One key element of the law was its definition of tobacco products, which prominently includes 'alternative nicotine products'. The law also prohibits the sale of 'loosies'.

The ordinance also reclassifies the penalties against minors -note that this means specifically those under age 18 -found violating the law from first to fourth degree misdemeanors, bringing Euclid law into line with the state code. The Ohio state code prohibits minors purchasing, using or possessing tobacco products from being detained, but specifies penalties that include fines, mandatory education, community service and revocation of a driver's license.

The Euclid T21 Ordinance did not include any details about how the law was to be implemented. In mid-2018, the Council decided to revisit the ordinance, with the aim of making it more actionable, enforceable and effective. Key to this change was the partnership that had developed among county and city stakeholders. City Councillors, Cuyahoga County public health officials, including the Health commissioner and members of the board of health, Euclid Police, the Euclid law director and the County legal counsel all weighed in on the changes. The Euclid Safety Committee, a committee of the City Council, met in public session to discuss the matter and hear testimony from the Cuyahoga County board of Health.

In August 2018, the City of Euclid passed an ordinance to create a 'civil enforcement' chapter in the Euclid city code that would allow for the city or its agent to conduct licensing and enforcement activities focussed on tobacco retailers.[16] One key motivation behind the change in the law was making enforcement sustainable. Cuyahoga County had previously conducted its own inspections of retailers regarding alcohol and tobacco products, but funding shortfalls had forced this activity to stop. In October 2018, Euclid Council passed an ordinance allowing the city to contract with Cuyahoga County to provide various health services for 2019 and 2020 that the city itself cannot provide.[17] The intent going forward is for the County to conduct undercover buys in retail establishments and manage a new system of permits that allow the purchaser to sell tobacco products in Euclid. This new arrangement is due to be implemented starting in January 2019.

Another motivation was to refocus penalties on retail owners and away from youth. Interviewees felt that penalizing young people for using tobacco products underage was unlikely to be effective without further action against retailers and, in the worst cases, could result in poor long-term outcomes for both buyers and store clerks who obtain criminal records as a result of underage tobacco sales. The civil enforcement ordinance was passed unanimously. In December 2018, the Council also passed an ordinance that reduced the penalty

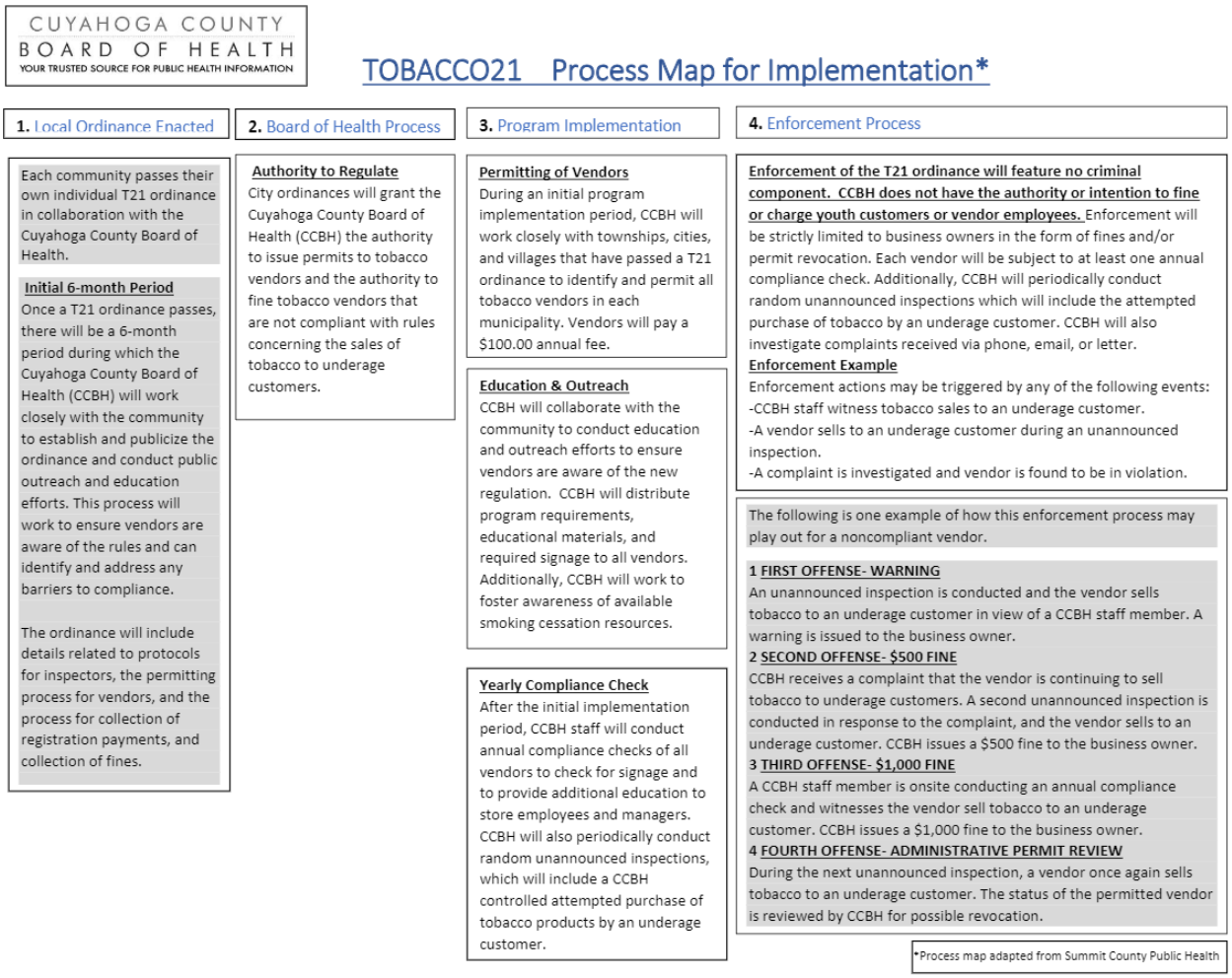
[15] Ordnance 134-2016.

[16] Ordinance 109-2018.

[17] Ordinance 140-2018

for possessing small amounts of marijuana to a minor misdemeanor involving a small fine but no jail time or criminal record.[18]

**Figure 4.1: Civil Model for T21 Enforcement and Compliance, Cuyahoga County**




Public health officials and stakeholders in several Ohio counties have developed a model for civil enforcement of T21 that focuses on retailers (see figure 4.1). Cuyahoga County Health Department is providing these services for Euclid and Cleveland Heights, while Summit County Health Department covers the City of Akron (City of Akron 2018).

At the time of writing, interviewees thought it likely that Euclid will be a model for other local municipalities going forward, particularly with regard to managing and strengthening collaboration between county and city officials. Officials in Euclid and within Cuyahoga County discussed implementation with their counterparts in Akron and Summit County before Akron's decision to pass T21 in April 2018. The ability of Cuyahoga County to assist in implementing the

[18] Ordinance 158-2018.

law, particularly in handling enforcement, compliance and licensing was certainly a factor that influenced the decision in Cleveland Heights to pass a T21 Ordinance in October 2018.

## Columbus

The City of Columbus passed a T21 Ordinance in December 2016. The law prohibits the sale of all tobacco products including hookah, e-cigarettes, pipes, and rolling papers, to anyone under 21. As Cleveland does, Columbus requires retailers to display minimum age signage and obtain proof of age from customers who look to be under 30 years of age. The law also prohibits the sale of tobacco products and paraphernalia through vending machines.

Significantly, authority was given to the city's public health department to create a system of civil tobacco retail licenses. Tobacco retailers in the city are now required to obtain and retain an annual Retail Tobacco Sales License. Violations of the licensing law can result in the suspension or revocation of the license. Related fines are deposited into a Tobacco Enforcement and Education Fund. Local police retain the authority to enforce criminal offenses relating to tobacco sales.

After revisions to the city's health code were passed in February 2017, the law entered into force in October of that year. In the weeks after the passage of the law, the city's department of health, Columbus Public Health, wrote to retailers to inform them about the change in the law. Retailers were asked to apply for a license to sell tobacco products at a cost of $150. Department officials distributed signage displaying the new age of sale and required retailers to display it.

While these actions sound simple, they required significant preparation. Officials knew that in order to implement T21 they would have to compile an accurate database of all retailers in the Columbus area. Interviewees emphasized the variety of retail environments selling tobacco products in a city like Columbus and the efforts it took to reach all of these different vendors. In compiling the database, officials had to consider not just convenience stores and gas stations but some less mainstream tobacco retail environments, including vape stores, hotels, bars, stores selling cell phones, stores selling paraphernalia that could be used with tobacco products, and sales at temporary events.

Columbus has around 800 tobacco retailers. In the first year of implementing the law, officials decided that they would try to reach all of the retailers in the city. In order to accomplish this, they took advantage of a big overlap between the population of retailers selling food and those selling tobacco products. Sanitarians, who normally conduct health and safety inspections for food retailers, were tasked with reaching out to retailers to issue tobacco retail licenses, largely because of their existing relationships with local businesses. Subsequently, public health officials in Columbus conducted undercover buys at all of these retailer locations during the implementation phase for T21. The inspections were piloted in the months leading up to the enforcement date. In addition to these outreach efforts, officials provided free educational materials and training sessions for sales clerks on the new requirements. This proved particularly helpful in bringing onboard large chain stores, many of whom have relatively high turnover in sales staff.

Officials and advocates we spoke to favored a gradual approach to implementation with adequate warnings for retailers and time for staff and customers to adapt. After written notifications and outreach by sanitarians, around one third of the retailers still sold to the underage person during the undercover buy. Retailers found not to be in compliance with the law then received a warning notice. A second offence results in a $500 fine, and a further offense carries a $1000 fine and the risk of a suspended license. The warning letters and the threat of fines and potential license suspension proved to be effective, with the level of retailer compliance increasing significantly. The department has had to issue very few fines. Overall, officials were satisfied with the current level of retailer compliance and felt that the licensing system constituted a 'gold standard' for other municipalities considering T21 implementation.

Researchers at Ohio State University (OSU) conducted interviews with a random sample of retail staff from tobacco-licensed outlets in Columbus in order to assess how well retailers were transitioning to T21. These researchers conducted 150 interviews during the summer and fall of 2018, with interviewees that ranged from checkout clerks to store owners. Findings indicated that general awareness of T21 was high, with 97% of staff reporting "21" as the legal age for purchasing tobacco at their store. Such findings suggest that the outreach and education efforts directed by Columbus Public Health were successful. A lower prevalence (79%) correctly indicated that ID checks need to be conducted for anyone who looked under age 30. Support for T21 was reasonably strong, with 26% disagreeing or strongly disagreeing that the legal age to buy tobacco products should be 21, 65% agreeing or strongly agreeing that it should be 21, and 9% reporting no opinion either way.

The retail staff interviewed by OSU researchers were more diverse than the Columbus as a whole (Table 4.2), 45% were non-Hispanic White and 35% reported being born in a country outside the United States. When asked which language they first learned to speak, staff provided 17 unique responses (after English, the most common first languages spoken were Arabic, Spanish, Urdu, and Hindi). For 56% of the sample, a high school degree or GED was the highest degree completed. These diverse demographic characteristics underscore the importance of organizing outreach, education, and enforcement in a manner that ensures equity—both for the staff working at the retailers, as well as the communities they serve.

The OSU research into the response of retailers to T21 implementation does highlight some additional concerns. The current law in Columbus retains criminal penalties for the individuals selling tobacco products to underage youth. Their work highlights store clerks in Columbus (the majority of whom are racial/ethnic minorities, non-native English speakers, and/or with low education) are often in vulnerable positions themselves. These factors have implications for how retailer education, training, and enforcement should be conducted. For example, it may be important for individuals conducting outreach, education, or enforcement have training or experience with diverse cultures. When written materials are prepared, they should be understandable to individuals with low literacy levels, and they should be available in multiple languages. Failure to address literacy, language, or cultural barriers could produce systematic differences in the type of people (or the type of retailers and their neighborhoods) who are most equipped to be compliant with T21.

Ultimately, there are some considerations for Columbus going forward. The current level of license fee being charged by Columbus Public Health is unlikely to prove a sustainable funding source that covers the entire cost of the licensing regime going forward. The health department will have to decide whether to continue to inspect all retailers each year, or, more likely, decide on a strategy (such as statistical sampling) to rationalize its undercover inspections and updates to its retailer database.

## Dublin

Dublin is a city in the Greater Columbus area within the jurisdiction of Franklin County. Franklin County is collaborating with local communities to push forward T21, providing a model ordinance that localities can adapt. In addition to Dublin, Bexley, Grandview Heights, New Albany and Upper Arlington have all passed local T21 laws. However, none of these communities are engaged in civil enforcement efforts (Readler 2017a). One reason for this is the number of retailers in these areas. There are about 15 retailers in Dublin that sell tobacco products, primarily gas stations and grocery stores (Sole 2017). This is typical of smaller communities in the Columbus suburbs. New Albany, for example, only has one tobacco retailer (Readler 2017a). Another concern is the lack of enforcement capacity within cities like Dublin, which does not have its own health department (Readler 2017a).

Stakeholders, including public health advocates and the Dublin Chief of Police, agreed from an early stage that civil enforcement against retailers was preferable to enforcing criminal penalties against individual purchasers or sales clerks. The original ordinance, which received its first reading in April 2017, was tabled in May to allow officials more time to consider how any new T21 law would be enforced (Readler 2017b).

A revised ordinance was introduced in November 2017. The revised law included provisions establishing a licensing regime within the city. Discussions around the potential for such a system included making sure that the regime rested sufficiently on the city's home rule authority. Concerns about how a licensing regime might be implemented were assuaged when Franklin County agreed to administer the licensing regime on Dublin's behalf. This model is fairly new. Of the suburbs within Franklin County that have adopted T21 to date, only Dublin requires tobacco retailers to purchase a license.

Dublin City Council unanimously passed the revised T21 law in November 2017.[19] The ordinance makes it illegal for anyone to give, sell or otherwise distribute tobacco products, including alternative tobacco products such as e-cigarettes, to someone under the age of 21. The penalty for violating the law is set as a fourth degree misdemeanor, punishable by a fine. But the law also specifically states that its intent is to 'impose organizational liability' over that of the individual seller, and that 'it shall be the policy of the City of Dublin to prefer citation on the organization selling, distributing or otherwise giving' tobacco products to someone under the

[19] City of Dublin. Ordinance 24-17(Amended).

age of 21[20]. In this way, the city retains the right to hold individual sellers to account but states in law that organizational liability will be a priority.

Dublin's ordinance is also notable in that it prohibits the sale of tobacco products remotely or via the Internet without age verification through a third-party service[21]. This mirrors Franklin County's model Ordinance, which requires retailers to perform 'an age verification through an independent, third-party age verification service that compares information available from public records to the personal information entered or provided by the person during the ordering process, that establishes that the person is twenty-one (21)years of age or older'.(Franklin County 2018)

The City of Dublin is collaborating with Franklin County Health Department to implement the law, which came into effect in May 2018. Following the model established in Cuyahoga and Summit counties, Dublin delegated authority to Franklin County to manage its licensing regime and conduct compliance checks. As of late 2018, no undercover inspections focused on T21 had yet been conducted in Dublin or in the other Columbus suburbs governed by Franklin County. This is likely to change in 2019, however, with Franklin County Health Department publicly stating its intention to begin inspections in the new year. The county plans to conduct compliance checks with a quarter of retailers each year (Viviano 2018).

**Box 4.1. The Michigan Context: Ingham County**

Despite legal restrictions on local licensing regimes, Michigan does have three well-established cases of local licensure: Ingham County, Genesee County and Marquette. Ingham County, for example, has required tobacco retailers to obtain annual licenses since 1993. The County Health Officer has authority to implement and enforce the regulation. The Health Officer or designated representatives have the right to conduct inspections of premises under the Section 2446 of the Michigan Public Health Code, 1978 P.A. 368, as amended, and can request assistance from local law enforcement when required.[22]

A study commissioned by the Ingham County Commissioners in 1992 found that under-18s were able to purchase tobacco from stores in the county in 74% of the undercover buys conducted. This finding spurred the county to pass a regulation requiring tobacco retailers to obtain annual licenses. After the regulation was implemented, the non-compliance rate fell to 47%. From 1994 to 2009, the rate stayed below 19% and from 2010 non-compliance stayed below 10%. In 2017, the latest year for which data is available, the non-compliance rate was 7.9% (Ingham County 2017a).

[20] Section (A)(7)(d)

[21] Section (A)(2)(f)

[22] Ingham County. Regulation to require a license for retail sale of tobacco, prohibit sale of tobacco to minors, and to restrict location of tobacco vending machines. Effective January 1, 1993 as amended September 23, 2008.

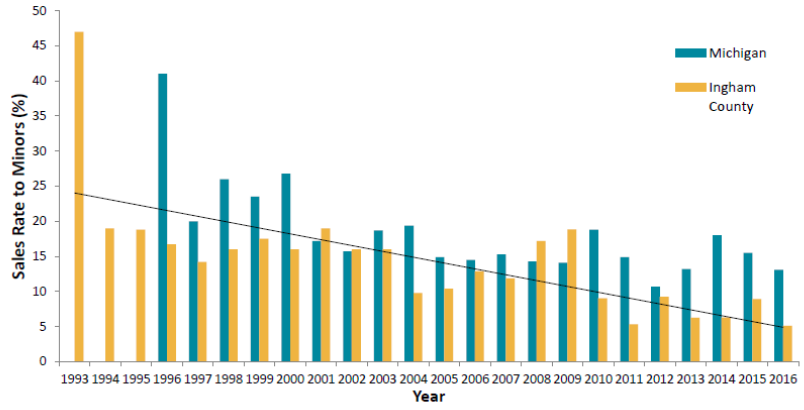



*Figure:* ***Sales Rate to Minors in Michigan and Ingham County (1993-2016)***

From January 2016, Ingham County extended its licensing policy to electronic smoking devices and related paraphernalia.[23] In 2017, the county conducted 79 compliance checks among these vendors and none resulted in the sale of an electronic smoking device to a minor (Ingham County 2017b).

The current annual license fee for tobacco retailers in Ingham County is $307 in East Lansing and $345 other parts of the county. Retailers selling both traditional tobacco products and electronic smoking devices only need to obtain one license. Licenses are non-transferable and new owners have to pay a change of ownership fee to obtain a new license. Applying late for a renewal of failing to report a change of ownership carries a fine of $200. Vending machines and sales at temporary events must also be licensed (Ingham County 2018). Free training sessions are offered for retailers and clerks by the county. Clerks may attend these sessions in lieu of paying the fine for a first violation of the law.

# Conclusions from the Case Studies

Implementing T21 is about much more than just crossing out 18 in existing law and replacing it with 21. In order for T21 laws to be implemented in such a way that they support reductions in youth initiation, state and local authorities need to be prepared for and engaged in implementation. In particular, the case studies discussed here suggest that agencies need to consider four areas when designing an efficacious T21 policy: authority and guidance, data collection requirements, community engagement and empowerment and sustainable funding.

***Authority and guidance****:* Areas of authority that relate to T21 need to be clearly defined in law. It should be clear from the outset who is responsible for tasks such as public education and outreach, conducting compliance checks, issuing penalties and collecting license fees. Law enforcement agents, regulators, sanitarians and inspectors require clear procedures for acting under the new law, and their relative roles should be clearly defined. In clarifying these roles, it is vital to understand the structure of public health agencies within a state or locality (e.g., Michigan's devolved, localized public health governance model) as well as the relationships between the Synar implementing agency, FDA inspection implementing agency and T21

[23] Ingham County. Regulation to require a license for the retail sale of electronic smoking devices to minors, and to restrict location of electronic smoking devices vending machines. Effective January 2016, as amended November 2015.

implementing agency. Creating clear channels of communication between these different actors and coordinating their activities is key to successfully implementing T21.

***Data collection requirements**:* Implementing T21 effectively requires collecting and maintaining accurate data on retailers. Assuming that the T21 law adopts a comprehensive definition of tobacco products that includes e-cigarettes, other novel products and paraphernalia, public health agencies may need to invest resources in creating, updating and/or improving their master retailer list. In addition, states or localities may need to make changes to their sampling strategy for selecting retailers in the context of compliance checks.

Furthermore, evaluating the impact of T21, both through compiling yearly statistics on retailer compliance and licensing costs and via other external means of evaluation, is likely to be very important. Such evaluations are necessary in order to ensure that the policy is sustainable in the longer term. Public health agencies may wish to consider how best to integrate T21 into their existing data collection and evaluation activities or partner with other stakeholders to conduct external evaluations under the new law.

***Community engagement and empowerment**:* For T21 policies to result in real change, strong relationships need to be built among key stakeholders. Interviewees in all of the cases emphasized the importance of coordinated action among enacting bodies, implementing agencies, enforcing agencies, retailers, community partners and researchers. Many talked about the need to form strong partnerships among these actors in order to make T21 work. To the greatest extent possible, officials in these localities were attempting to create a sense of shared goals and responsibilities among these actors for protecting and promoting the health of local young people. In particular, interviewees emphasized outreach, information and training for retailers as an important factor in determining success.

Communication with the public around the new policy was seen as a key part of this strategy. Interviewees believed public education and messaging around the need for T21 and consequences of youth access to tobacco products be an essential part of T21 implementation, both during the launch of the initiative and in the long-term. In addition, a key activity for public health officials going forward will be to investigate complaints from members of the public against retailers suspected to be selling to underage youth. Public and community engagement is therefore an essential part of T21 compliance.

Finally, the extent to which young people can access health services, including behavioral health services as well as cessation support, was viewed by participants as a key factor that influences youth use of tobacco products. This context was acknowledged as a constraint by many of our interviewees, with T21 policies seen as a means to address youth access to tobacco products despite barriers to healthcare access.

***Sustainable funding**:* Taken together, the three factors discussed above have cost and revenue implications. In terms of costs, effective implementation requires a sustainable funding source for public education, retailer outreach and training, administrative tasks including collecting license fees and fines, data collection and record maintenance, and, potentially, the legal costs of taking action against retailers that repeatedly break the law. One challenge in this regard,

particularly in local settings, is the degree of staff time involved in setting up and operating a licensing regime, which could be significant.

On the revenue side, officials in these cases looked to a combination of licensing fees, existing departmental funds and grant funding to cover costs and ensure policy effectiveness. The extent to which license fees cover operational costs will vary depending on the level of fee that local retailers and political actors are able and willing to bear. From this perspective, it is likely that the overall relative wealth of a population, local tax revenues and the level of spending on public health will make a difference to a locality's ability to fully implement T21. The current annual licensing fee for tobacco retailers in Columbus is $150. In Ingham County, Michigan, the fee is a minimum of $307 and in Genesee County it is $360. In Needham, Massachusetts, where the median annual household income is over $100,000, the current fee is $700. In Ohio communities, any shortfall in the operating costs will likely be met from County Health Department budgets. Another option for supplementing licensing fees would be to cover shortfalls from tobacco taxes or Master Settlement Agreement payments.

The experience of localities in California, which has a statewide T21 law, is relevant here. The Center for Tobacco Policy and Organizing, part of the American Lung Association in California, regularly assesses whether local tobacco licensing regimes in the state are 'strong' or 'weak'. Strong licensing regimes require that all retailers selling tobacco products must obtain an annual license. Strong regimes should set a fee high enough to fund an effective program that includes administration costs and the costs of enforcement. An enforcement plan that includes compliance checks should be clearly laid out. Strong licensing regimes require coordination among tobacco regulations so that violating existing local, state or federal tobacco regulations also violates the license. Finally, strong regimes should include penalties that are outlined in the ordinance, including fines and suspension and revocation of the license. Currently, 144 localities in California have 'strong' licensing regimes by these criteria (Center for Tobacco Policy and Organizing 2018). Of greater consequence, initial studies are finding that strong licensing regimes are associated with lower usage rates of tobacco products among young people in that state (Astor et. al. 2019).

# 5. Views of young people towards tobacco use and Tobacco 21

While some prior public opinion research has examined support for T21 policies among adults (CDC, 2015; Texas Medical Center, 2018), no prior surveys have exclusively asked young people what they thought about T21 policies . While these surveys found that over 75% of adults favored T21, there is ample reason to think that young people would be less supportive. The researchers learned in the course of the aforementioned case studies that adults often invoke the rights of young people to choose to purchase tobacco products in their enumerated reasons for opposing T21. Therefore, it stood to reason that the researchers should find out what T21's target policy audience thought about tobacco use, sources of tobacco products and what they thought about age restrictions on sales. The people directly affected by this policy are likely to have something to say about it.

A survey of 5 questions was fielded from August 17 to September 5, 2018 over SMS to young people ages 14 to 24. Some response was received from 824 participants[24]. When they enrolled in the MyVoice sample[25], 54.2% were between 14 and 17 years old, 21.0% were between the ages of 18 to 20 years old, and 24.8% were between 21 and 24 years old. Respondents lived in every US state except for Montana, South Dakota and Wyoming and an oversample of 43.4% (358 respondents) lived in the state of Michigan. 54.6% of the sample identified their gender as female while 38.7% identified as male. 61.4% of the sample identified their race and ethnicity as White Non-Hispanic. 11.4% as Asian Non-Hispanic, 9.3% as White Hispanic, 7.5% as Black Non-Hispanic, and 10.0% as some other group of combination of racial and ethnic groups. The parents of the respondents were well educated as 69.1% had obtained their bachelor's degree or more[26]. This sample was significantly more likely to have a parent with a bachelor's degree or more than the average young person (40%). Therefore, methods to compensate for this oversample were employed in the quantitative analysis.

**Box 5.1: MyVoice Survey Questions**

Participants received the following prompts by text message:
1. Hi! We want to know what you think about tobacco products like cigarettes, e-cigarettes, Juul, and hookah. Why do you think people your age use these products?
2. Do you think people your age should have the choice to use tobacco products? Why or why not?
3. Where do people your age get tobacco products?
4. At what age do you think people should be able to buy these products? Why?

[24] Researchers were not provided with data allowing them to examine non-response rates.

[25] Less than 12 months prior to the administration of the present survey round.

[26] 14.7% had concluded their educations as a high school graduate or less. 31.6% reported receiving free or reduced-price school lunches when they were in high school or middle school.

5. Would you support a law that limits the sale of tobacco products to people age 21 and up? Why or why not?

Quantitative data was summarized using descriptive statistics (proportion, means; questions 2 and 5). Qualitative data was analyzed using thematic analysis (all questions) with attention paid to differences in responses between those who supported T21 in Question 5 versus those who did not. In the end, 765 out of 823 respondents provided either a yes, no or don't know response to Question 5. The top-line result of greatest interest to the researchers was the level of support that the sample indicated for T21 policies. Of the 765 respondents whose answer to Question 5 could be understood, 481 respondents, or 62.6% of the original sample indicated they would support a T21 policy.

To compensate for the oversampling of young people with highly educated parents we decided to down weight the sample of more numerous young people with highly educated parents. We thus randomly selected a subsample of youth with better educated parents to better represent the actual distribution of parental educational attainment. When accounting for the oversampling of young people we find that on average 59.1% of respondents to the survey were in favor of T21 compared to 28.5% voicing their opposition. In Michigan, 58.5% of respondents indicated their support for T21 compared to 28.9% against[27]. Support for T21 was notably higher among female respondents than among males. In the weighted sample of females 64.7% supported T21 compared to 25.6% opposed. In the weighted sample of males 52.9% supported T21 compared to 31.9% opposed[28].

When we delved into the reasons underlying the answers gathered from respondents, we focused primarily on three areas: the reasons they believed young people used tobacco products, the sources of those products, and the reasons shaping their attitudes towards age-based restrictions on tobacco use.

## Reported Reasons Young People Use Tobacco Products

**Table 5.1: Reasons Young People Use Tobacco Products, Thematic Answers to Q1**

| | **Supporting T21** | **Not Supporting T21** |
|---|---|---|
| Way it made users feel[29] | 48.0% | 55.4% |
| | "To solve their problems, but it's really making it worse" - 19, Male, Multiracial Hispanic | |

[27] About 70% of Michiganders aged 15 to 24 years are of White Non-Hispanic ethnicity. That figure is significantly higher than the roughly 55% figure for the same age group nationally (Statistical Atlas 2018). The Michigan sample ended up being 63.7% White Non-Hispanic, while the national sample ended up being 55.8% White Non-Hispanic.

[28] In an unweighted sample, 67.5% of female respondents supported for T21 compared to 57.8% of male respondents. 27.4% of female and 36.6% of male respondents voiced their opposition to T21.

[29] Includes addiction/drug effects (223 respondents), stress (106 respondents), feeling good/having fun (106 respondents), and weight loss (2 respondents).

| | | |
|---|---|---|
| How it made users look[30] | 68.4% | 58.3% |
| | "It's mainly an image thing. Everyone wants to fit in that's why everyone does it"<br>-15, Female, White Non-Hispanic | |
| **Total** | **481** | **240** |

We organized responses to Q1 into two broad categories for comparison. First, those who stated that tobacco products were used because of the way they made the user feel indicated that Addiction/Drug Effects (29.8% of respondents), Stress (14.3%), and Feel Good/Have Fun (13.6%) mattered. Second those who indicated tobacco products were used because they affected how the user looked indicated that a cool factor (49.4% of respondents), peer pressure/socialization (23.6%), and rebellion (4.4%) factored into their response. Notably, more T21 supporters placed more emphasis on how tobacco use makes one look rather than how it makes someone feel, while T21 opponents placed equal weight on each theme.

Differences between groups of respondents who later indicated their support for or lack thereof for T21 were not large for individual sub themes on this question. The largest relative difference was that T21 opposers were more likely than supporters to say tobacco products were used because they made people feel good or have fun (17.5% vs 11.6%, respectively). Male respondents were more likely than female respondents to say that addiction/drug effects explained use (32.4% vs 25.8%) while females were more likely to say stress played a role in use (15.6% vs 10.1%).

A few other interesting responses included using tobacco products to lose weight, stay awake, or appeal to a romantic interest who uses the products (2 respondents for each). 22 respondents targeted tobacco companies as bad actors and blamed "capitalism" as well as corporate greed for misinformation and targeted marketing toward young people as explanations for youth tobacco use. 20 respondents attributed tobacco use to boredom while another 17 attributed it to curiosity. Many considered use of these products to not be appealing, with 18 respondents calling the products or users either "gross", "disgusting" or "dangerous". Smoking cigarettes is seen as particularly undesirable, but many respondents did not exhibit the same response to other products. In fact, hookah was one product which 9 respondents thought should be more available or more acceptable to use due to the perceived cultural importance of this specific form of tobacco. 23 respondents mention "dumb" or "not smart" around smoking decisions; some making assertions about those who use tobacco products as being less intelligent and others characterizing the products or their usage in that manner. At least 46 respondents called for more education on tobacco products, with the expectation that greater availability of good information would allow young people to make their own informed decisions about smoking and tobacco/nicotine use.

[30] Includes cool factor (375 respondents), peer pressure/socialization (177 respondents), and rebellion (35 respondents).

# Reported Sources of Tobacco Products

**Table 5.2: Sources of tobacco, Answers to Q3**

| | Age at enrollment < 18 | Age at enrollment ≥ 18 | Total |
|---|---|---|---|
| Brick and Mortar Retailers[31] | 23.5% | 75.9% | 47.5% |
| Social[32] | 52.9% | 15.6% | 35.8% |
| Illicit[33] | 19.5% | 2.9% | 11.9% |
| Online | 9.6% | 6.1% | 8.0% |
| **Total** | **446** | **377** | **823** |

Respondents who were less than 18 years of age claimed tobacco products came from very different sources than respondents who were older than 18 at enrollment. Brick and Mortar retailers were the source of three quarters of respondents over age 21, with gas stations serving as the most popular response (35.5% of respondents). The single largest source of tobacco products identified by those under 18 at enrollment was their friends (32.1% of respondents).

Comparisons between the groups show that every social and illicit source was more commonly identified by those under 18 than those 18 and over and every kind of brick and mortar retailer was identified more among those over 18 than under. Curiously, 9.6% of respondents who were under 18 at the time of enrollments identified online retailers as a source of tobacco products compared to just 6.1% of those over 18. As online retailer age-verification for e-cigarette purchases has been found to be lax in the past, this discrepancy could signify the ongoing importance of resolving some of these related issues (Williams et. al. 2018).

Among those respondents who were less than 18 years old at the time of enrollment, the largest difference in responses we could find was that when asked how people obtained tobacco products, 75.9% of respondents over 18 years old at enrollment said that the products came from some kind of brick and mortar store while only 23.1% of those who were younger than 18 at enrollment said the same thing. Instead, 32.1% of the younger group cited friends as sources of tobacco products compared to 12.2% of the elder group. 17.0% cited family members as sources of tobacco versus 4% of older respondents. 13.2% of the younger group cited “dealers” as the source of tobacco products compared to 1.9% of the elder group. 6.3% of

[31] Includes gas stations (155 respondents), tobacconists (63), convenience stores (61), liquor stores (39), supermarkets (24), vape shops (24), and pharmacies (15).

[32] Includes friends (187 respondents), family (91), and older people (80).

[33] Includes dealers (65 respondents), people with fake IDs or places not checking ID (31), and generally illegal sources (9).

the younger group cited using a fake ID or going to a store that didn't check ID compared to just 0.5% of the elder group.

## Attitudes Towards Age Based Restrictions on Tobacco Use

Reasons underlying opinion about laws around tobacco access from questions 2, 4 and 5 are summarized in the table below under 5 key thematic areas. On average, respondents provided 2.75 reasons among all the themes and subthemes that were included in coding.

**Table 5.3: Reasons shaping attitudes towards age based restrictions on tobacco use, Themes Invoked Answering Q2, Q4 and Q5**

| | Supporting T21 | Not Supporting T21 | DK | Total |
|---|---|---|---|---|
| Responsibility[34] | 46.6% | 66.3% | 61.4% | 53.6% |
| | "We should have the freedom to make our mistakes" -22, Female, White Non-Hispanic | | | |
| Health[35] | 57.4% | 26.3% | 29.5% | 46.0% |
| | "I personally am not into tobacco but college students could end up getting addicted really young and it's not very healthy" -18, Male, White Hispanic | | | |
| Civic[36] | 32.2% | 51.7% | 45.5% | 39.1% |
| | "[I]f you're old enough to vote, or go in the military, then you should also have the decision to kill yourself slowly" -20, Female, Middle Eastern Non-Hispanic | | | |
| Efficacy[37] | 27.7% | 32.5% | 40.9% | 29.9% |
| | "[T]hat would at least make things harder for 16 year olds to use a juul with an entire pack's worth of nicotine" | | | |

[34] Includes personal choice (221 respondents), decision making capacity (143), autonomy (29), only affecting themselves (67), freedom (67) and maturity (56).

[35] Includes general health (299 respondents), brain/mind development (83), and physical health concerns (23).

[36] Includes general civic appeal (134 respondents), alcohol laws/use (163), economy (12), military (35), voting (24), and driving a vehicle (14).

[37] Includes skepticism (117 respondents), confidence (115), and uncertainty (16).

| | | | | |
|---|---|---|---|---|
| | -15, Female, White Hispanic | | | |
| Intellect[38] | 23.7% | 21.7% | 11.4% | 22.4% |
| | "21 because at least then people can think about the consequences of their choice a little more"<br>-14, Genderflux, White Non-Hispanic | | | |
| **Total** | **481** | **240** | **44** | **765** |

Among those persons who supported T21, only the theme of health was invoked substantially more often among supporters of T21 than among its opposition. Themes around responsibility, choice, and freedom as well as civic values were more often employed by T21 opposers than others. Those who could not form an opinion on T21 invoked concerns around the efficacy of a potential policy more than other groups. Within these broader thematic areas that under key differences in the invocation of sub themes appeared to define differences in opinion between the larger groups. All proportions are based on the total number of people who shared a position on T21.

Within the theme of responsibility, 52.1% of respondents who opposed T21 specifically invoked the importance of personal choice in their answers compared to 32.6% of respondents who favored T21. Among the other sub themes within responsibility including autonomy (17.9% among opposition and 8.1% among supporters) and freedom (13.3% among opposition and 2.5% among supporters), only the concept of maturity was invoked more often by T21 supporters (11.0%) than opposition (1.3%). 15.8% of respondents who favored T21 invoked arguments about brain development compared to just 2.9% of T21 opponents.

The main arguments against T21 centered around current legal definitions of adulthood and skepticism about the law being able to change youth smoking behaviors.

Many stated the minimum legal age of access should be 18 because it is the legal age of adulthood and because individuals this age and older have typically left high school, are able to join the military, vote, drive, and can make decisions about loans, college, and other age-restricted activities. Such civic themes (along with the consideration of legal alcohol use) were reasonably common across respondents. T21 supporters were a bit more likely to invoke alcohol when explaining their reasoning than the opposition (23.5% vs 17.5%, respectively). The ability to serve in the military featured in 11.7% of T21 opposition responses compared to just 0.8% of T21 supporters.

As for the concern the law will not have the desired effect, the policy's efficacy, many reasons were given. Among those who cited the efficacy of T21, there was an understandable split between those who supported and opposed the policy. 29.6% of opposers, and an equal number of those who didn't have a firm opinion on T21 were skeptical of the policy's efficacy, compared to just 6.9% of T21 supporters who were skeptical of its effects. 22.0% of T21

[38] Includes general comments on intellect of young people (68 respondents) and need for more knowledge (143).

supporters cited their confidence in the policy's efficacy compared to just 3.3% of the opposition. 2.1% of all respondents voiced some uncertainty in the efficacy of the policy, with no substantial differences between groups based on their stance towards T21. The most common skeptical argument made was the "You can't stop them" type of response with strong assertions that underage individuals will obtain the products anyway. A few respondents noted that despite current laws tobacco products are currently perceived as relatively easy to get, which contributes to this skepticism. Their experience with alcohol being available to underage persons often informed this view. A smaller set of respondents were concerned that raising the age would only increase the "taboo appeal" of tobacco products or that T21 would lead to a slippery slope where restricting tobacco then extends to other products. There were also individuals in the sample who felt that laws do not change anything, that only changing social norms will have an impact. Lastly, there was concern over the criminalization aspects which could come with T21, including "getting a record" as one respondent stated, "Restricting the age to 21 is only going to make them find different ways to get the products which can lead to getting into trouble, when it shouldn't even be a problem."

Lastly, the conception of age and adulthood as themes throughout the responses was illuminating. Older respondents often thought back on the age of 18 to 21 as "being a kid" whereas those younger than 18 often saw those ages as clearly being an adult. Some argued the age for purchasing tobacco should be lower, stating that if you can drive and consent to sexual activity you should be able to smoke or vape. Additionally, some respondents wanted the drinking age to be lowered to age 18. Many argued made for T21 by pointing to health impacts, specifically those on brain development in adolescents. This argument was given often and consistently, potentially as a result of education on the products targeted toward youth through the Truth Campaign and similar initiatives (Healey, Zimmerman, and Healton, 2010).

## Additional Observations

The researchers did notice that some respondents exhibited an understanding of the survey questions that was a bit off from the intent of the survey team. Less than 10 respondents seemed to think marijuana was included in the survey. This may be a result of young people not differentiating between the products or misreading the question. Similarly, some respondents thought the survey was only about e-cigarettes and focused on their opinions on that product alone rather than tobacco products as a whole. Again, different products seemed to elicit different responses.

At least 28 respondents provided answers that the researchers determined to be in conflict with one another. Often, this came in the form of a person suggesting that 21 years of age was an acceptable lower limit for tobacco sales, but when asked about their support of T21, the voiced their opposition. Similarly, there were respondents who provided an age less than 21 as the acceptable lower limit for tobacco sales, but also voiced their support for T21. Several additional respondents provided additional conflicting answers by identifying someone their age as not being old enough to purchase tobacco products when they stated opposition to T21 while being clearly older than 21 themselves (several more committed to the mirror opposite position). These conflicting responses were not eliminated from the analysis.

Additionally, at least 62 respondents stated they would prefer that tobacco products be outlawed entirely, even if some of them expressed their doubts in the efficacy of this policy. This point of view was expressed by 53 T21 supporters or 11.0% of that group. Of 7 respondents who expressed sympathy for outlawing tobacco products while not being supporters of T21, 2 respondents expressed skepticism towards the effectiveness of the policy while the rest took the stance that T21 almost enables the sale of tobacco products for everyone else, which they opposed.

While much more rich detail will be extracted from the picture painted by these responses in the future, the researchers are confident that these data already have opened a new window on the views of young people on this important matter.

# 6. Recommendations

**Michigan should approach Tobacco 21 in ways that protect and support all young people, helping them to stop using tobacco products and preventing them from starting.**

T21 has the potential to decrease the rate at which young people in Michigan start smoking, and thus reduce the number of people in the state who die prematurely from smoking-related illness or experience a poorer quality of life due to smoking.

Any decrease in initiation rates will lead to greater health gains over time. The benefits from fewer young people taking up smoking in 2019 will be felt over their life course rather than immediately. From this perspective, T21 policies are an investment in a generation of young people. For health benefits to be observed immediately, T21 policies can be combined with increasing the price of cigarettes which would lead to more smokers of all ages quitting smoking.

A T21 policy must be well-implemented to be effective.

*Crossing out 18 in existing law and replacing it with 21 is not enough to ensure success.*

**Any move towards T21 should be part of a comprehensive approach to tobacco control that includes increases in the price of cigarettes, cessation services and prevention activities.**

We know that comprehensive approaches to tobacco control are more effective than isolated policies. States that act to increase the price of tobacco products, fund prevention activities such as public health education and promote broad access to cessation services have more success in controlling the tobacco epidemic within their borders. T21 should not be viewed as a substitute for other tobacco control measures. If Michigan passes T21, it should be part of a comprehensive plan to address smoking in our state.

**Any move towards T21 should consider the implementation of the policy from an early stage.**

Understanding how tobacco retailers and purchasers are currently regulated in Michigan is key to avoiding the implementation problems experienced by other US states and localities that have passed T21. Any plan to pass T21 in the state should consider how the policy will be implemented from the outset and take steps to improve current implementation and enforcement practices.

**The purchase, use and possession of tobacco products under the legal age of sale should be decriminalized. Michigan should refocus its enforcement and compliance efforts on retail premises rather than individuals, based on a system of civil penalties.**

If tobacco control laws are enforced with bias, the results can be highly damaging to individuals and communities. The collateral damage from even a minor interaction with law enforcement officials or the court system can significantly impact an individual and their family.

Ultimately, the passage of any T21 law could be an opportunity to improve relationships between public health officials, law enforcement officers, retailers and communities in Michigan.

**Any Tobacco 21 and Marijuana 21 policies implemented in Michigan should be properly evaluated.**

Despite the rapid diffusion of T21 laws across the country since 2013, there have been few systematic evaluations of how the policies are working in practice. The introduction of Marijuana 21 in the state represents an opportunity to achieve some synergy between evaluations. Any evaluation should include a health equity impact assessment.

# Appendix 1: Research Design and Methodology

Our study employs a convergent mixed methods design that utilized microsimulation modelling for the main quantitative component and nested case studies for the main qualitative component (see Guetterman and Fetters 2018). Quantitative and qualitative data were collected and analyzed simultaneously, with findings from each component of the study used to provide context and direction for the other components. Subsequently, results from both the modelling and qualitative case studies were used to inform the design of survey questions that generated both quantitative and qualitative data. Data were integrated through discussions among the team members, in designing each stage of the research, and in this report.

## Modelling

To perform the simulation analysis in the present study, we employed the Mendez-Warner model, a well-known population dynamic model of smoking prevalence and health effects. We parameterized the model with data specific to the State of Michigan, obtained from the Cancer Intervention and Surveillance Modeling Network (CISNET), the US Census Bureau and the Michigan Department of Health and Human Services. Following are a description of the model and the analysis process.

***Model:*** The Mendez-Warner model tracks individuals in the population from age 0 to a maximum age of 110, additionally differentiated by gender and smoking status. The number of people of age *a* in year *t* is computed by multiplying the number of people of age *a-1* in year *t-1* by the appropriate survival rate (1 - death rate). Birth cohort sizes are supplied exogenously to the model. Death rates are differentiated by year, gender, age, and smoking status. The model tracks the adult population smoking status. At age 18, individuals are characterized as current, former or never smokers. The definition of an adult current smoker is the same as the National Health Interview Survey (NHIS) – those who have smoked at least 100 cigarettes in their lifetime and are smoking now every day or some days. In this model, adult initiation is measured by the proportion of the population who are current smokers at age 18. Youth smoking history before age 18 is subsumed in the adult initiation measure. Subsequently, current smokers in any given year are estimated as the number of current smokers in the previous year who survived to the current year and did not quit smoking. Former smokers are those who were former smokers the previous year and did not die, plus those who were current smokers the previous year and did not die but quit. The model differentiates former smokers up to 30-years quit, and years-since-quit specific death rates are applied accordingly to those individuals.

Smoking prevalence for any specific age group in a specific year is computed by taking the ratio of current smokers to the total number of people within the group that year. The model uses age, gender, and smoking-status specific death rates, derived from data from the Cancer Prevention Study II. The model assumes that no smoking-related deaths occur before age 35.

***Analysis Approach:*** The model tracked the Michigan population over 2018-2100 under different scenarios that reflected a decrease in the smoking initiation rate because of the implementation of T21 in 2018, or the combined effects of T21 with a simultaneous cigarette price increase in 2018. First, we constructed a status-quo scenario by projecting the Michigan population size by year, assuming that the 2018 Michigan-specific smoking initiation and cessation rates would remain constant during the analysis period. Second, we repeated the same calculations varying the cigarette smoking initiation rate, as affected by the implementation of T21 or, imposing a sudden decline in prevalence coupled with a drop in the initiation rate, reflecting the combination of T21 with a price increase. For the latter setting, we assumed that T21 and a price hike would have an independent effect on the initiation rate. Finally, we compared the Michigan population by year (differentiated by smoking status) under the T21 and price increase scenarios to the status-quo population, to calculate the life-years saved, number of deaths delayed and tax revenue gain or loss under different scenarios reflecting potential T21 effects on the smoking initiation rate as well as potential price increases.

***Description of Scenarios:*** Consistent with the IOM report on the Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products, we assumed that the implementation of T21 in the State of Michigan would delay smoking initiation and reduce the initiation rate. Consistent also with the IOM report, we considered a reduction in the initiation rate of 10% as the most likely scenario, but also evaluated plausible optimistic and pessimistic situations (20% and 0% reduction in initiation rates respectively).

For price effects, we investigated the impact of a price increase imposed in 2018 and maintained during the entire period of analysis. Specifically, we considered raising the tax of combustible cigarettes by 25% and 50%. We assumed that a tax increase reduces smoking prevalence in the short run and decreases the smoking initiation rate in the short and long run. Consistent with the literature, we took the price elasticity of smoking prevalence and the price elasticity of the smoking initiation rate to be -0.2 and -0.7 respectively.

# Case Studies

The research team conducted four qualitative case studies, assessing the impact of T21 policies adopted in four Ohio localities: Cleveland, Columbus, Euclid and Dublin. Cases were selected on the basis of quantitative and qualitative data describing tobacco use and health and economic status of the population as well as existing tobacco control policies in each place, with the goal of making findings as generalizable as possible. While states like Hawaii and California have longer histories of T21 implementation, our team considered the policy environment in these cases to be very different than Michigan and were not selected. Laws and policies impacting each of these cases, from the federal to the local level, were analyzed as part of this process.

A total of 23 semi-structured interviews were conducted across the cases with government officials and tobacco control advocates representing relevant organizations. After identifying initial interviewees that could inform each case, further interviewees were recruited using a snowball sampling technique. Interviewees were asked about their organization's stance on T21, with an emphasis on the expected impacts of the policy and opportunities and challenges

in both passing the law and then in implementing and enforcing it. In addition to the interviews, we collected and analyzed local survey data, laws and policy materials across the cases. Qualitative data from the interviews were imported into MaxQDA for analysis, first using line by line open coding then subsequently more focussed coding to bring out connections between key concepts and themes. Coders met frequently to compare and discuss codes with the end goal of ensuring high inter-coder reliability.

## My Voice Survey

Findings from the case studies and modelling were used to create a series of survey questions to be asked to a panel of young people. These questions were then piloted and fielded as part of the MyVoice Project, a longitudinal mixed methods study designed to engage young people who are not usually engaged by researchers. Through this process questions were shaped so as to pose minimal risk to participants (DeJonckheere et. al. 2017). This results in the necessary limitation that we did not ask participants (many of whom were under 18 and/or 21 and may have broken laws on tobacco possession, use, or purchase) directly about their own behavior.

MyVoice recruits participants aged 14 to 24 through targeted adverts on social media. Although not a nationally representative sample, My Voice recruits participants against national benchmarks based on a weighted sample from the 2016 American Community Survey to ensure a 'diverse and meaningful' sample (Van Sparrentak, Chang and Miller et. al. 2018). Respondents to our survey answered 5 questions via text message in September 2018 (See Box 5.1). Researchers analyzed the resulting quantitative data to generate descriptive statistics. The qualitative data were coded via an iterative process using MaxQDA, first using line by line open coding and then more structured coding for both discourse and sentiment. Coders met to compare and discuss codes with the end goal of ensuring high inter-coder reliability.

In order to compensate for the oversampling of young people with highly educated parents we downweighted the sample of more numerous young people with highly educated parents in the analysis of T21 support. We thus randomly selected a subsample of youth with better educated parents to better represent the actual distribution of parental educational attainment. Using R, we randomly sampled a subset of the young people with more educated parents in 1000 simulations at both the national level and within the state of Michigan. We report the sample mean support of T21 over that set of simulations[39]. On the whole, the weighting process increased the proportion of responses made up of those who neither supported or opposed T21, while decreasing the proportion of those who took a position. When discussing patterns of responses to other questions or the themes within those responses, we did not employ this sampling strategy.

[39] The interquartile range of T21 support among the national simulations was 58.4% to 59.8%. The interquartile range of T21 opposition among the national simulations was 28.0% to 29.4%. The interquartile range of T21 support among the Michigan simulations was 57.0% to 60.0%. The interquartile range of T21 opposition among the Michigan simulations was 27.4% to 30.4%.

# Appendix 2: Tobacco Control and Smoking Cessation Support Context in Michigan

## Tobacco 21 in the Context of a Comprehensive Statewide Tobacco Control Program

Any decision to adopt a T21 law across Michigan would need to be considered in the context of existing tobacco control policies within the state. The CDC defines a comprehensive statewide tobacco control program as a coordinated effort to 'establish smokefree policies and social norms', 'promote cessation and assist tobacco users to quit' and 'prevent initiation of tobacco use'. Existing evidence shows that state spending on 'comprehensive, sustained and accountable' statewide tobacco control programs is associated with reduced smoking rates (CDC 2014), including decreases in smoking among young people (Farrelly et. al. 2013, 2014).

**Table 2.1: American Lung Association State Scorecard for Michigan, 2017**

| Domain | Score |
|---|---|
| Tobacco Prevention and Cessation Funding | F |
| Smokefree Air | B |
| Tobacco Taxes | F |
| Access to Cessation Services | D |
| Tobacco 21 | F |

Tobacco control advocates we interviewed emphasized that, to be successful, T21 needs to rest on a stable 'three-legged stool' of existing policies. The American Cancer Society uses this analogy to refer to its three key policy priorities: increasing the price of tobacco products by raising tobacco taxes, implementing comprehensive smoke-free and tobacco-free policies, and providing sustainable funding for evidence-based prevention and cessation programs. While Michigan is doing well in terms of its smokefree air laws, the state received poor grades in other areas (see Table 2.1). The following sections consider the policy context for any statewide T21 law in terms of Michigan's existing tobacco prevention and cessation funding, tobacco taxes, and access to cessation services, including youth access to behavioral health services.

### Tobacco Prevention and Cessation Funding

Current funding for many kinds of public health policies across the US is inadequate, and funding for tobacco cessation and prevention programs is no exception. Michigan's 'three-legged stool' is not particularly stable. In 2018, Michigan received a failing grade in almost all tobacco control policy areas surveyed by the American Lung Association, with the exception of smokefree air laws (see Figure 2.1). Factored into this grade was funding for tobacco prevention and cessation activities in FY2018, which totalled $4,973,205. Only $1,600,000 of this sum came from the state, which funds these activities at only 4.5% of the CDC's recommended level. In

the same year, the state's tobacco-related revenue totalled $1,240,500,000 (American Lung Association 2017).

## Tobacco Taxes

As part of a comprehensive statewide approach to tobacco control, tobacco taxes are considered both an effective deterrent to smoking and an important source of state revenue. Measures like tax increases that raise the prices of tobacco products have been shown to prevent initiation particularly among young people, promote cessation and reduce the prevalence and intensity of tobacco use in the US (US Surgeon General 2014).

As of 2016, the average cost of a pack of cigarettes in Michigan was $6.60. Michigan's tax per pack was $2, Master Settlement Agreement payments accounted for 57 cents, and federal taxes accounted by another $1. For comparison, the average state cigarette tax in the US is currently $1.78 a pack. The same year, tobacco product collections, which includes taxes on other tobacco products and Master Settlement Agreement Payments, totaled $1.18 billion, or ~5% of the state's total revenue. The cigarette tax by itself made up about 3.8% of Michigan's total revenue. Notably, Michigan has not increased its cigarette tax in 15 years. Since the tax was last raised in 2004, it has lost 25% of its value to inflation. In 2018, Michigan's state cigarette tax was tied for 16th in the country with Alaska, Arizona, Maine, and Maryland. These statistics suggest that while Michigan was once a leader in setting cigarette taxes, this is no longer the case.

Raising tobacco prices has differential effects across the population, however. Research has shown that those with lower incomes are more sensitive to tobacco price increases and more likely to reduce their smoking or quit in response to higher taxes. But it is important to note that most low-income smokers will not give up smoking in response to tax increases. For those who do not quit, tobacco taxation may be considered economically regressive. Regressive taxes absorb a higher proportion of income for poorer people than they do for the rich (Remler 2004, Hirono and Smith 2018). However, increases in tobacco tax are not automatically regressive in their effects. More of the people who respond to the tax increase by quitting will have lower incomes as they are more price sensitive and less likely to continue smoking, than those with larger incomes, who are less price sensitive and less likely to quit as a result (Warner 2000).

Overall, it may be more appropriate to judge whether overall taxation and spending in a society is regressive or progressive, or to weigh economic definitions of regressivity against the health benefits of quitting, which are more likely to accrue to the poor (Warner 2000, Remler 2004). One key consideration in this regard is how tobacco taxes, including any additional revenue raised from tax increases, are spent. Spending that supports access to cessation or behavioral health services for those on low incomes, as well as spending that improves inequalities in the overall social determinants of health, may be one factor that mitigates the effect of tobacco taxation on the poor. Communication with affected communities to assess priorities and the consideration of health equity in evaluating tobacco control policies will also remain important (Hirono and Smith 2018).

## Access to Cessation Services

Smoking cessation is notoriously difficult to do, and made more difficult when help is not available. Smoking cessation programs provide support to smokers who want to quit. A combination of evidence-based resources shown to help people quit may be used, including individual, group or telephone counselling, behavioral therapy, prescription medications and nicotine replacement products.

The quality and accessibility of smoking cessation programs is likely to have an effect on youth use of tobacco products both directly and indirectly. Directly, the extent to which young people can access smoking cessation support is likely to affect the numbers of young people who smoke (Harvey and Chadi 2016; Nădăşan 2015). And because of environmental factors that contribute to youth use of tobacco products, particularly social links with family and friends who smoke, the extent to which older adults can access smoking cessation services is also relevant. It is important to note that some data on youth access to smoking cessation are inadequate, such as figures on the number of adolescents enrolled in Medicaid who smoke or data on young people attempting to quit newer tobacco products such as e-cigarettes.

Basic access to smoking cessation programs varies with factors that include geography and health insurance status. Some policies attempt to limit this variation, however. The Essential Health Benefits as defined by the Affordable Care Act and the United States Preventive Services Task Force include smoking cessation services.

***Medicaid***: 12% of Medicaid enrollees in Michigan are age 19-26 (KFF 2018a). For this group, Michigan Medicaid provides access to cessation services which comply with the Essential Health Benefits and recommendations from the United States Preventive Services Task Force for tobacco cessation services, including access to all seven recommended nicotine cessation medications (MDHHS 2018).

Coverage is more variable for access to behavioral therapy for nicotine cessation under Medicaid. Group counseling is not covered. Medicaid plans also cover individual counseling for nicotine cessation as a professional service[40] and must be performed by a qualified health professional or under their delegation in the clinic (MDHHS 2018).

Youth Medicaid enrollees may face restrictions on their access to cessation services if enrollees are unable to comply with Michigan's Healthy Behavior Change requirements. Michigan's 1115 Waiver requires enrollees who have incomes above 100% of the federal poverty line and who are not medically frail to comply with Healthy Behavior Change activities to keep their Medicaid coverage (KFF 2016). These activities include taking efforts to stop smoking, lose weight, or complete annual physical examinations. If enrollees are unable to complete these activities within the first year of their enrollment in Medicaid, their enrollment is terminated, and they are transferred to a private, Marketplace plan (KFF 2016). While behavior requirements may introduce incentives to help individuals access cessation services, they may also impose further constraints on a population with already limited resources. Many low-income individuals face

[40] Medicaid pays for individual counseling using CPT codes 99406 (3-under 10 minutes) and 99407 (10 minutes and up).

transportation barriers and/or limited time-off from work, which may constrain their ability to attend and complete behavior change activities. In April of 2018, 20,000 Medicaid Enrollees were projected to lose health insurance coverage due to a failure to complete Healthy Behavior Requirements (Family Health Center 2018). A loss of health insurance coverage may further impede access to cessation services and preventive healthcare.

***Private Insurance**:* In private health insurance markets, youth can currently stay on their parents' health insurance until age 26.[41] Private health plans and plans sold on the Healthcare Exchanges are required to comply with the ACA's Essential Health Benefits (EHB), with the exception of some small group employer plans and grandfathered plans. The EHBs regulation mandates coverage of ten essential benefits, one of which is Preventive Services. In 2014, the U.S. Departments of Labor, Treasury, and Health and Human Services issued guidance on appropriate tobacco cessation coverage under Preventive Services (American Lung Association, 2018):

"**1.** Screening for tobacco use should include,
**2.** At least two quit attempts per year, consisting of:
**a.** Four sessions of telephone, individual and group cessation counseling lasting at least 10 minutes each per quit attempt; and
**b**. All medications approved by the FDA as safe and effective for smoking cessation, for 90 days per quit attempt, when prescribed by a health care provider ."

As a result, private health insurance plans and plans sold on the Health Exchanges must cover all seven forms of cessation-aid medications, and all three forms of counseling. Under the EHBs, these preventive services must also be covered without any cost-sharing including co-pays, coinsurance or deductible (CCIIO 2014). Further, plans must cover two or more quit-attempts per-year and may not restrict treatment to less than 90 days (American Lung Association, 2018). The authors found no empirical research covering whether or not insurance plans in Michigan comply with the Essential Health Tobacco Cessation or Preventive requirements. However, empirical research on plan coverage of behavioral health services has shown variation in compliance with the EHBs (Health Affairs, 2012). Enforcing plan compliance with EHBs is an important part of aiding youth access to cessation services in Michigan.

Private insurance companies, including marketplace plans, and employer plans, may charge higher premiums for individuals who use tobacco, as outlined by the ACA (KFF 2018b). This charge may be up to 50% of the monthly premium. However, not all private insurers charge the full 50% premium increase. The charge differential may vary within and between marketplace and employer plans. Research has found that this policy, the tobacco surcharge, reduces insurance enrollment among smokers and does not increase smoking cessation (Friedman et. al. 2016). Therefore, the tobacco surcharge may adversely affect smokers' access to cessation services and other health benefits, reducing cessation rates for youth or individuals facing these surcharges. 4 states and the district of Columbia adopted policy prohibiting tobacco surcharges in their marketplace plans(KFF 2018b). Such action by states may help increase insurance coverage and cessation rates among smokers. Michigan does not currently have a policy

[41] Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010).

capping tobacco surcharges below the ACA-allowed 50% additional pre-subsidy premium (American Lung Association 2017).

Finally, new short-term health insurance plans approved under the Trump Administration, are not required to cover the EHBs (O'Brien 2018). This means that these plans are not required to cover, and thus may not cover, cessation services. Such plans are marketed to young adults, and may cost less than other plans. However, short-term plans are also exempt from ACA regulations regarding pre-existing conditions and health status, allowing insurers to deny coverage or charge higher premiums to individuals based on their health status, as well as smoking status. (O'Brien 2018)

***University Health Insurance****:* Youth attending college or university in Michigan may have access to university student health insurance plans. These plans must now comply with ACA regulations, meaning that the plans must cover all ten EHBs (KFF 2018b). Therefore, students in Michigan who enroll in a university health plan will have access to cessation services covered under the EHB regulations, and may not be charged any cost-sharing for receiving these cessation services (described in detail above).

***Public Health Departments***: As a state, Michigan provides less money towards tobacco prevention and cessation than is recommended by the Centers for Disease Control and Prevention for effective tobacco control and cessation programming. Michigan tobacco revenue is more than 10 times the amount of CDC recommended funding for cessation and prevention spending. Increasing funding for cessation and prevention programming is recommended to facilitate youth smoking cessation and prevent tobacco use. (American Lung Association 2017)

The state of Michigan Tobacco QuitLine provides an important resource for youth seeking cessation services. The QuitLine provides free individual telephone counseling sessions to help individuals navigate cessation and stay tobacco free. Public Health Departments advertise the QuitLine to youth and adults, and some departments have increased outreach to youth in response to increased use of electronic nicotine products (for example, see Washtenaw County Health Department 2018). The Michigan Tobacco QuitLine is underfunded compared to most states. Michigan only spends 41 cents per smoker compared to a national median of $2.10 per smoker (American Lung Association 2018). Concerns have also been raised that funding for the Tobacco QuitLine is intermittent and inconsistent from month to month. These concerns have not been empirically validated, but present an important area of research going forward to appropriately understand access to and barriers to accessing cessation services for youth in Michigan.

## Access to Behavioral Health Services

The majority of tobacco control policies and programming target tobacco use and cessation. Research has shown that there is a strong correlation between tobacco use and adverse behavioral health outcomes (Tam, Warner, and Meza 2016). Creating a comprehensive tobacco control policy approach should recognize the relationship between smoking and behavioral health and, in such, the behavioral health challenges young people face that can cause them to start and or continue smoking. Increasing access to behavioral health services and support

(mental health and substance use disorder benefits) for at-risk youth should be an important part of a T21 initiative, and other tobacco control policies. As such, this section reviews the current state of access to behavioral health services for young adults in Michigan.

***Medicaid and Public Health**:* As mentioned, 12% of Medicaid enrollees in Michigan are between the ages of 19 and 26 (KFF 2018a). Medicaid, as required under the ACA and the Mental Health Parity and Addiction Equity Act (MHPAEA), must provide behavioral health service coverage. The MHPAEA requires health insurance plans to cover services to the same degree that general medical services are covered, preventing group insurance plans from imposing less favorable benefit limitations on behavioral health than on medical/surgical benefits (CCIIO 2019b). Behavioral health services are also now an EHB under the ACA. This means that Medicaid plans must include behavioral health services under both the MHPAEA and the ACA, at parity with medical services (CMS 2016).

Young adults enrolled in Medicaid have access to a wide-variety of services directed through County Health Departments, and funded through the Michigan Department of Health and Human Services. Medicaid coverage of behavioral health services in Michigan is generally more comprehensive than private plan offerings, especially marketplace plans. Overall, Medicaid coverage of specialty behavioral health services in Michigan is very comprehensive. For example, Michigan's Medicaid program covers 'psychiatric hospital visits, case management, day treatment, psychosocial rehabilitation, psychiatric evaluation, psychiatric testing, medication management, individual therapy, group therapy, family therapy, inpatient detoxification, and methadone maintenance.' (Cannon, Burton, and Musumeci 2015)

As stated for cessation services, youth Medicaid enrollees may face restrictions on their access to behavioral health services if enrollees are unable to comply with Michigan's Healthy Behavior Change requirements. Michigan's 1115 Waiver requires enrollees who have incomes above 100% of the federal poverty line and who are not medically frail to comply with Healthy Behavior Change activities in order to keep their Medicaid coverage (KFF 2016). These activities include taking efforts to stop smoking, lose weight, or complete annual physical examinations. If enrollees are unable to complete these activities within the first year of their enrollment in Medicaid, their enrollment is terminated and they are transferred to a private, Marketplace plan (KFF 2016). While behavior requirements may introduce incentives to help individuals access cessation services, they may also impose further constraints on a population with already limited resources. Many low-income individuals face transportation barriers, and/or limited time-off from work, which may constrain their ability to attend and complete behavior change activities. In April of 2018, 20,000 Medicaid enrollees were projected to lose health insurance coverage due to a failure to complete Healthy Behavior Requirements (Family Health Center 2018). A loss of health insurance coverage may further impede access to behavioral health services.

***Private Health Insurance:*** In private health insurance markets, youth can now stay on their parents health insurance until age 26.[42] Young adult's access to behavioral health services and treatment under private insurance plans in Michigan varies widely, depending on the type of

[42] Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010).

private health insurance. Large group plans (except some self-funded exempting employers) are required to comply with the MHPAEA, and the ACA, to ensure that behavioral health services do not cost more, and provide coverage to a similar degree that medical and surgical benefits are covered (CCIIO 2019b). However, many benefits may still be excluded, or may include the EHB requirement under the ACA extended behavioral healthcare coverage requirements (parity of coverage and cost) to small-group and individual health insurance plans, and all plans sold on the health insurance exchanges (CCIIO 2019a). The Obama Administration allowed states to design their own EHB plans for insurers to use as a minimum standard of coverage, but after meeting the requirements plans may or may not cover more services (NCSL 2018). The Trump Administration recently allowed states to now design their EHB standards based on other states. If Michigan amends its EHB plan based on a less comprehensive state plan, young adults seeking behavioral healthcare with private insurance may face more barriers to accessing services (NCSL 2018).

Currently in Michigan, many plans sold on the healthcare exchanges - also known as qualified health plans - exclude or limit important behavioral health services, including residential treatment, treatment of chronic conditions, and substance use disorder medication management. In comparison, the only services covered by *all* Michigan marketplace qualified health plans were psychiatric hospital visits and smoking and tobacco cessation services. Michigan coverage is variable for services related to severe mental illness. Only two of 28 plans surveyed by the Kaiser Family Foundation covered residential treatment *only* for 'mental health conditions that are likely to show improvement during the admission.' Five plans excluded coverage for treatment for antisocial personality disorder. Finally, two plans did not cover 'treatment for chronic substance abuse conditions'. (Cannon, Burton, and Musumeci 2015)

***University Health Insurance***: Youth attending college or universities in Michigan may have access to university student health insurance plans. These plans must now comply with ACA regulations, meaning that the plans must cover all ten EHBs (Norris 2018). Therefore, students in Michigan who enroll in a university health plan would have access to behavioral health services at a minimum as outlined under Michigan's EHB plans, which is less comprehensive than Medicaid coverage (Cannon, Burton, and Musumeci 2015). Students may still face some cost-sharing for different services, and may also face limits on the number of services they may receive per calendar year depending on their university's plan.

Youth attending colleges or universities in Michigan typically also have access to a stronger network of mental health and counseling services funded through the institutions (Healthy Minds 2013a, 2013b). The availability of these services varies between universities, but typically enhances access compared to traditional insurance coverage. However, a nationwide survey of students through the Healthy Minds study found that nearly 20% of students surveyed reported barriers to accessing behavioral health services stemming from a cost barrier or a lack of insurance coverage (Healthy Minds 2018).

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