Community Evaluation Study of the Tobacco Retail Environment:

Final Results

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Introduction

In May 2021, the Florida legislature passed Senate Bill (SB) 1080, which the executive branch then signed into law. The bill brought sales and distribution of tobacco products under state law, preempting both existing and future local policies. SB 1080 is a tobacco retail license (TRL) law that raises the age of sale for tobacco products to people 21 and over (excluding military populations, which is in opposition to federal law). The bill also established a non-fee retail licensing requirement for non-tobacco nicotine products, which brings electronic vape products (EVPs) and other nicotine products under the regulatory authority of the state. Combustible tobacco products are already under the regulatory authority of the state; retailers must buy a tobacco retail license to sell those products. The preemption portion of this new law affects approximately 180 current local policies, many of which have been enacted with support from the Bureau of Tobacco Free Florida (BTFF). These policies are no longer enforceable under local authority, weakening tobacco control in the state.

Primary Evaluation Questions

1. To what extent does SB 1080 affect the tobacco retail environment, particularly in 104 jurisdictions where existing policies will become void?
2. To what extent does SB 1080 influence BTFF provider's ability to carry out CDC's Best Practices for Comprehensive Tobacco Control Programs?

As a result of the new policy and preemption status for TRL policies, BTFF providers must shift their strategy for educating the public and policy makers about the benefits of tobacco control policy at the point of sale (POS). To understand the consequences of the bill on BTFF provider activities and outcomes related to the tobacco retail environment, we studied the community-level impact of SB 1080.

In the following report, we will describe changes to the tobacco retail and policy environment after adoption of SB 1080 on October 1, 2021. Policy data in this report provides insight into the variation in policy adoption throughout the state of Florida prior to the adoption of SB 1080, spotlighting the areas where we might expect to see the most changes as the effects of SB 1080 are realized across the state. We assess information in the nicotine product retail licensing system to better understand the landscape of retailers and enforcement. We examine tobacco and nicotine product sales data to gain an understanding of consumer tobacco behavior in the years leading up to SB 1080. Finally, we describe the findings from focus groups with adults who smoke or use EVPs, which we conducted to assess awareness of this policy change and the extent of its impact on consumers.

Data and Methods Overview

We used local policy information, nicotine and tobacco product retail licensing data, retail sales data, and results from focus groups with adults who smoke or use EVPs to gain an understanding of the tobacco and nicotine product retail environment after SB 1080 was enacted in October 2021. In the preliminary report, our team reviewed current county- and city-level tobacco and nicotine policies to determine which geographic and policy areas were likely to be most affected by preemption. For this analysis, we focused on the 11 different policy types affected by SB 1080. These policies included advertising restrictions, retail policies, self-service or display restrictions, and age-related policies (Appendices 1 and 2). BTFF determined that policies affecting zoning and retailer density would not be impacted by the new law and smoke-free air laws are already preempted by the Florida Clean Indoor Air Act.

To understand the geographic distribution of tobacco and/or nicotine retail licenses and the extent to which SB 1080 may impact those licenses, we mapped policy and tobacco and/or nicotine retail license data. To understand the extent to which tobacco and nicotine sales changed over time, we used NielsenIQ scanner data to observe trends across the nation, state, and region. Our team notes that a limitation of these data is that we do not have scanner data from specialty tobacco stores, vape shops, or online retailers. Many EVPs are bought from specialty tobacco and vape shops, so the data provides an incomplete picture of trends for EVPs.

To understand community member perspectives, RTI conducted a total of six 60-minute virtual focus groups. We recruited focus group participants who either smoked tobacco or used EVPs, lived in Miami-Dade, Hillsborough, or Orange counties, and were over 21 years old. We separated focus groups by county and product use. A total of 40 individuals participated across all three counties (Appendix 1). During the recruitment process, interested participants signed a consent form; they also provided verbal consent at the beginning of every focus group. Interested and qualifying participants were offered an incentive as compensation for their time.

The focus group interview guides included key topic areas (Appendices 2 and 3): tobacco/nicotine use behaviors, access to products, store characteristics,

awareness of SB 1080, and interviewee understanding of state preemption. To analyze focus group data, RTI used rapid thematic analysis (RTA) (Appendix 4).

Impacts on the Tobacco Retail Environment

To better understand the impacts of SB 1080 on the tobacco and nicotine product retail environment, we assessed the retail policies preempted by the law, changes in tobacco and nicotine product sales, and consumer perceptions of changes to the retail environment.

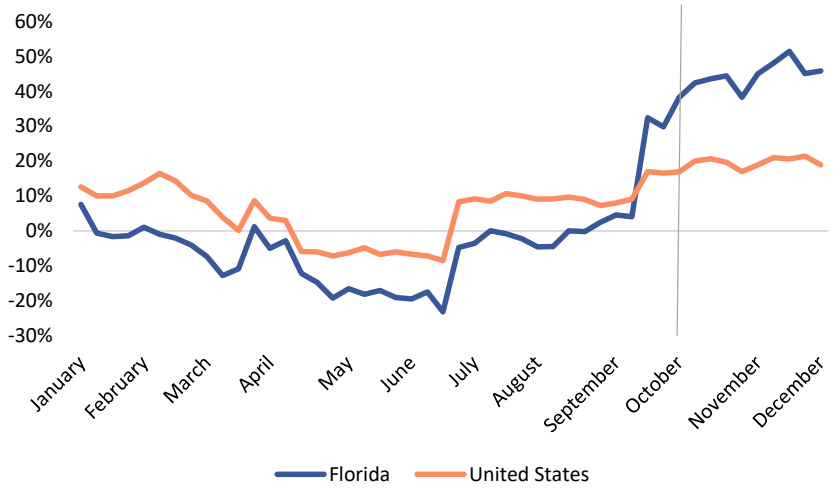
Impacts on Tobacco and Nicotine Retail Policies

Our preliminary report results showed a wide variation in the type and reach of local TRL policies in Florida before SB 1080 was implemented. We identified 181 local tobacco and nicotine policies across 104 localities (counties or municipalities) that were preempted by SB 1080 (see Appendices 5 and 6). Most localities only had one type of tobacco or nicotine policy (RTI International, 2021). Fifty-two percent of Florida's counties (35) had TRL policies in place, and self-services or display limits were the most common type of policy. These policies limited how and where tobacco and nicotine products could be displayed. These policies restrained access to EVP, hookah, and cigars. Cigarettes and smokeless tobacco are regulated under the 2009 Tobacco Control Act.

Impacts on Tobacco and Nicotine Purchasing Behavior

Our updated scanner data results show the total dollar sales year-over-year in Florida, as well as percent change sorted by major product type from January to December for 2020 and 2021 (Appendix 7). This allows us to look closely at the impact SB 1080 implementation had on sales across Florida and compared to the rest of the United States. In our baseline scanner data results, we saw a clear impact of the COVID-19 pandemic on tobacco product sales, with cigarettes (and most other products) seeing a slight increase and then a steep drop in sales in March 2020. We then hypothesized that we would see increased product sales in our updated scanner data as many COVID-19 related issues resolved and SB 1080 went into effect.

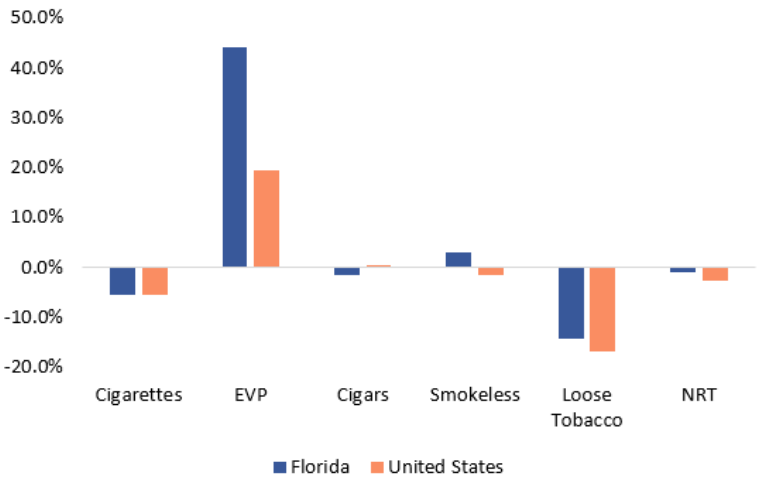
Figure 1. Percent Change in EVP Sales, Florida and U.S.



Most product sales after adoption of SB 1080 have stayed consistent (Appendix 7). It appears as though the policy has had little impact across most products, which is consistent with what we heard in focus groups (see Consumer Perception of Retail Environment Changes section). However, the sales of EVPs show a dramatic change just before and during the time of SB 1080 adoption in both the state and across the United States (Figure 1). The average change in sales pre- (October–December 2020) and post-policy (October–December 2021) were 44.3% and 19.5% in Florida and the United States, respectively (Figure 2). About 73% of the change in EVP sales in Florida happened in the two weeks leading up to policy implementation. There continued to be increasing sales in the months post-policy, but it is important to note that much of the increase occurred just before policy implementation. The difference in EVP sales is worth further exploration and tracking over time.

It is also important to note that flavored vaping product sales showed the most growth during fall 2021. This trend was further confirmed by our qualitative analysis of the focus groups, where participants noted a drastic increase in the number of EVPs, brands, and flavors that became available in retail stores over the past year. Figure 3 breaks down EVP sales by flavor in Florida, showing the largest percent change in flavored, non-menthol products (noting the different y-axis scaling for flavored non-menthol [NM]). Due to FDA regulation of

Figure 2. Percent Change in Average Weekly Sales



flavored cartridge-based EVPs, most products that fall in this category would be disposable EVPs. We see this same trend in flavored non-menthol products in the United States, but—as with vaping product sales—the percent change is much more substantial in Florida (Figure 4). Around the time of SB 1080 policy implementation, the United States saw between 100 and 150% change year-over-year, while Florida saw between 150 and 272% change year-over-year with flavored vaping products.[1] As noted in Appendix 7, the metropolitan cities of Miami, Orlando, and Tampa saw similar trends to those in the state overall in the type of EVPs that saw the most percent change.

Figure 3. Total Sales for EVP in Florida

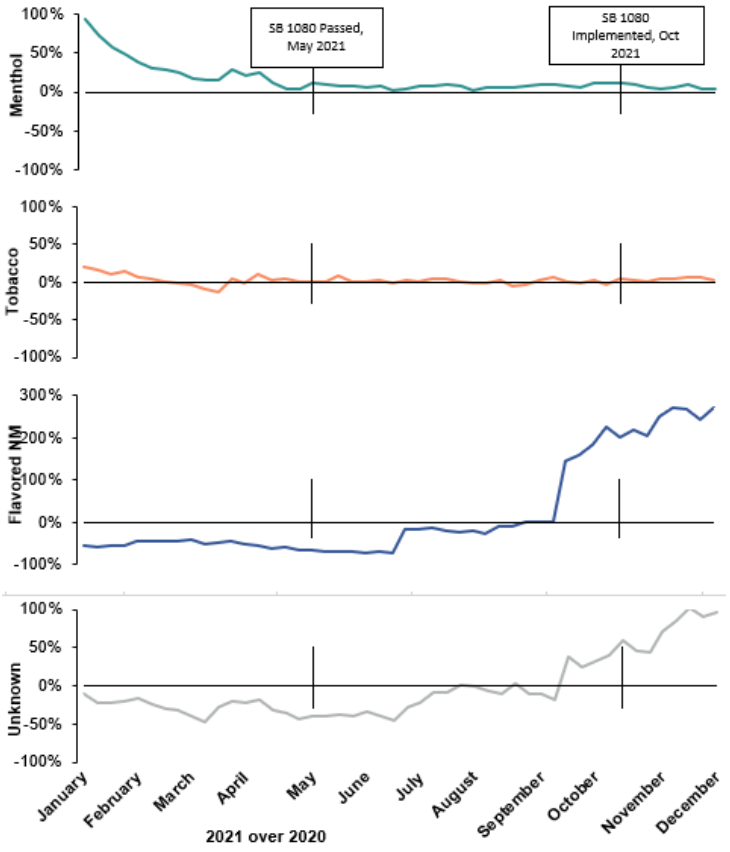
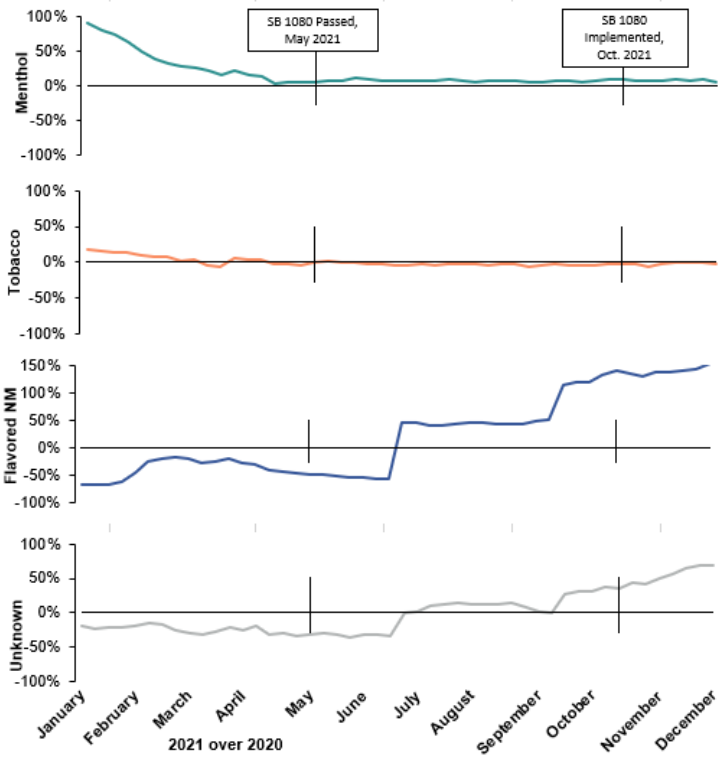


Figure 4. Total Sales for EVP in the United States



[1] Figures 3 and 4 show change in EVP sales in Florida and the United States as the sales in 2021 as a percentage of sales in 2020.

Consumer Perception of Retail Environment Changes

Focus group participants purchased products from locations prioritized by convenience and by price**.** All participants reported that comfort, familiarity, and routine dictated where they typically purchased tobacco products, such as locations close to home or work. They also noted that price was important and tended to purchase products at the location with the lowest prices. Participants reported few to no changes in where they purchased products over the last year. Over the past year, most participants saw an increased amount and types of available vaping products. They noted a drastic increase in the number of EVPs, brands, and flavors that became available in retail stores over the past year, especially disposable EVPs in different flavors. Participants thought this change was likely due to growing popularity of disposable EVPs. **Some participants noted a slight increase in coupons offered for both tobacco and vaping products**. Participants who smoke mentioned receiving coupons in the mail, inside cigarette packs, on store receipts, or accessing them on product company websites.

INCREASED EVP PRODUCTS

"I mean the biggest thing I've noticed is just the amount of vaping stuff that people have now. It's pretty massive compared to even a year ago."

Most participants said that they did not use coupons and the availability of coupons did not impact their access to products. **Most participants reported advertisements for smoking and vaping products were mostly inside the retail stores. A few participants noted increased in signage and enforcement of underage purchasing laws.**

When asked about what advertisements they observed, many participants noted advertisements tended to be on the windows or front doors of local convenience stores and that vaping product advertisements seemed to be more common, which they suspected was a result of increased popularity compared to tobacco products. However, many participants noted a decrease in tobacco and EVP advertising over the years, but not more so in the last year. Some participants speculated that negative public perception of smoking or government regulations might be decreasing product demand and therefore causing tobacco companies to spend less on advertisements.

DECREASED ADVERTISING

"I don't think it's that cool anymore. So if it ain't a cool product...perhaps you don't really want to advertise it. I don't think it's really a cool thing nowadays to smoke."

MINIMUM AGE ENFORCEMENT

"Especially because in Florida, what I heard stories of, there were undercovers in the stores, people coming in had to make sure that they're doing their job and if not, then the store gets shut down."

A few participants noted more signage about the minimum purchase age law on store doors and counters where the products are located. They also noted an increase in checking of IDs when buying tobacco products and EVPs in more heavily trafficked retail stores, but that they were less likely to be IDed in their local stores when the employees recognize them. Several participants stated that they believed IDing had increased due to rumors of "undercover" people who check that retail stores are enforcing the minimum purchase age law.

Overall, focus group participants did not notice a change in the placement of tobacco products in stores, while they reported slight changes to vaping product placement. One participant did note that their local Walmart had moved tobacco products to the alcohol section, possibly because of the minimum age of purchase being raised to 21. On the other hand, many participants noticed that some private vape stores had moved products from behind the cashier to glass cases in front, making them more convenient to view. At other retailers, such as corner stores and gas stations, participants reported EVPs had become less visible and tucked away behind the counter with cigarettes.

Impacts on Ability of BTFF Providers to Carry Out CDC Best Practices

To better understand the impact of SB 1080 on the ability of BTFF providers to implement CDC's Best Practices for Comprehensive Tobacco Control Programs, such as providing education on evidence-based policy change, monitoring pro-tobacco influences, and developing partnerships, RTI spoke with consumers about their awareness and attitudes about the policy change. We also analyzed nicotine product retail licenses, required under SB 1080, to assess opportunities for oversight of the EVP retail market.

AWARENESS OF LAW CHANGES

"I don't know the exact name of the law, but now when you're out in public, there's certain places that don't allow you to vape. When you're, for example, like at a restaurant in my office building where I work, you can't smoke anything within 25 feet of the building."

Consumer Awareness of SB 1080 and Law Changes

RTI asked focus group participants about their general awareness of laws related to tobacco use and vaping that

have changed in the last year and specifically about what they knew about changes in Florida. **Most participants were not aware that the SB 1080 law passed in Florida, although several knew the minimum purchasing age had recently increased from 18 to 21 in the state.** Overall, participants were either not aware or were uncertain of recent law changes related to smoking and vaping in Florida. In all focus groups, participants had different levels of understanding of recent laws; many spoke generally about laws they thought might have been passed, such as restrictions on where smoking and vaping is allowed and restrictions on flavored EVPs or tobacco products.

> ATTITUDES ABOUT YOUTH ACCESS
> "I have a teenager so I don't mind that it's you know that the age keeps going up...I know a lot of his friends are vaping so if it makes it a little bit harder for him to be able to get access to these products that's fine with me."

When asked about changes to Florida laws regarding tobacco use and vaping products, the only specific law mentioned by both groups was the one that changed the minimum purchase age from 18 to 21; none were aware of SB 1080 in particular. Some reported thinking the minimum age for purchase had been changed to 21 in Florida before this past year.

Consumer Attitudes about SB 1080 and Law Changes

When the policies implemented by SB 1080 were discussed generally, many participants supported the concepts because they prevent youth from purchasing tobacco products and EVPs. However, some were doubtful that the law would effectively reduce youth tobacco and EVP use. Although participants considered the SB 1080 law to have little to no impact on their own behavior (all were over 21 years of age), participants did agree that there should be restrictions on the sale and access of tobacco and vaping products for youth and expressed concern with increased vaping among youth. Participants— especially those with children or younger siblings—acknowledged the harmful effects of tobacco use (e.g., cancer, secondhand smoke) and supported protecting youth.

Despite general participant support of SB 1080, some indicated that youth would find a way to use EVPs or smoke regardless of age restrictions (e.g., by finding others to purchase products for them). Some participants voiced the opinion that more education about the dangers of smoking and parental control of children's behavior would be more effective than increased regulation. **Although many participants were not aware of the military exemption in SB 1080, many voiced their desire that military be exempt from the minimum age increase.**

Participants who voiced support for military exemption stated that the minimum age for military enlistment (18) should be the same age that they can purchase substances like tobacco and alcohol. Of note, two participants (one a military veteran) did not support the military exemption, stating that the law should apply to all under 21 so that "we can all be on the same page."

Consumer Attitudes and Awareness about State Preemption

Focus group participants were also asked about their opinions about state preemption compared to local control, especially in relation to tobacco and EVP laws. **Participants generally want laws at the state level to supersede local laws, mostly for consistency.** Several participants pointed out that different local laws on a topic cause confusion for citizens when traveling between municipalities or counties. Others mentioned that inconsistent laws between counties creates opportunities for people to bypass regulations for products such as alcohol or tobacco by simply traveling to another county, which negates the purpose of the law. **The content of the law itself influenced many participants' opinions about preemption, especially related to youth access.**

> LOCAL LAWS AND YOUTH ACCESS
>
> "Yeah, I'd say follow the state. If every county is different, I definitely see kids going to whatever county they can get away with doing whatever they want to do in, they're going to...if one county says you can get it and one county says you can't, the kids are stubborn. They're going to go and get it wherever they could get it, whether they should or shouldn't."

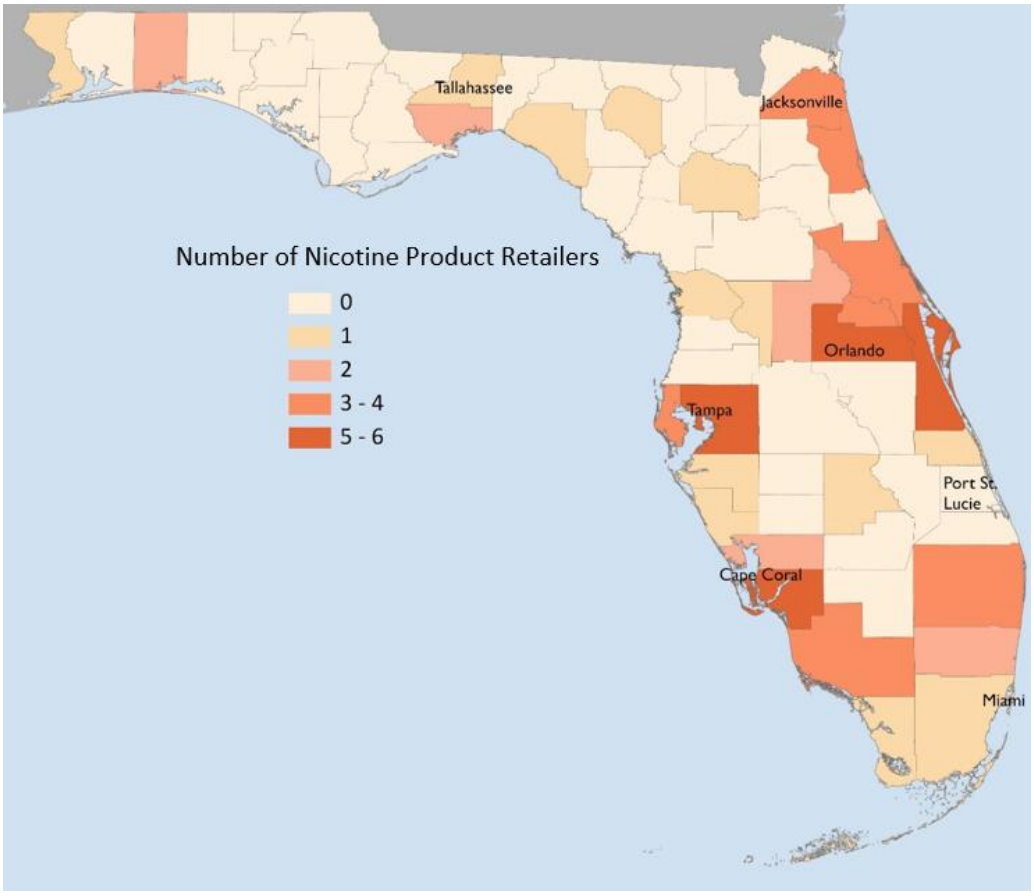
Some participants discussed that health-related regulations that receive guidance from federal bodies (e.g., FDA and CDC) should be consistent throughout the state. For example, participants discussed that inconsistent local laws restricting youth access to harmful substances, such as tobacco and alcohol, created opportunity for youth to still access these products, and therefore state control would be more effective. **However, participants thought that minor regulations regarding tobacco product marketing or product placement should be under the purview of municipalities to address community needs or concerns.**

Impacts on Nicotine Product Retail Oversight

In addition to raising the state age of tobacco and nicotine sales to 21 and preempting local TRL, SB 1080 also established a non-fee retail licensing requirement for non-tobacco nicotine products. This brought EVPs under the regulatory authority of the state. The law made the license simple to apply for, with no additional licensing requirement for nicotine product retailers that are already licensed to sell tobacco products and no fee associated with the EVP license. By February 2022, only 67 nicotine product retailers had licenses listed in

the Division of Alcoholic Beverages and Tobacco licensing database. Although we do not currently have an accurate estimate of the number of nicotine product retailers in Florida, Yelp.com lists 90 "vape shops" in Miami alone (Yelp, n.d.).[2] Of Florida's 67 counties, including some of the counties with the highest EVP use (Florida Department of Health, 2019, 2020), 38 (57%) had no licensed nicotine product retailers (Figure 5). See Appendix 8 for table comparing nicotine product retail licenses, adult EVP use, and youth EVP use by Florida county. Although there is no fee associated with obtaining a nicotine product license, operating without a license can incur a fine (Tobacco Free Florida, 2021, Oct 2).

Figure 5. Licensed Nicotine Product Retailers in Florida



[2] Previous RTI analysis found that only 32.5% of vape shops found through internet searches were listed in Florida's tobacco licensure list (Kim et al., 2016). These retailers most likely sold tobacco products in addition to EVPs.

Conclusions

The findings in this report present opportunities and challenges posed by the passage and implementation of SB 1080. The outcomes suggest that many of the retailers in the state of Florida were covered by at least one policy preempted by SB 1080. These preemptions leave a hole in the tobacco and nicotine regulatory system, of which tobacco and nicotine companies may attempt to take advantage. Our analysis found some changes in Tobacco 21 signage and access to coupons for tobacco and nicotine products in the months immediately following implementation of SB 1080. Most product sales have stayed consistent after SB 1080 was implemented. However, the sales of EVPs show a substantial increase in fall 2021, driven primarily by growth in flavored EVP sales. Participants noticed very little change in tobacco or nicotine product retail advertisement, but saw an increase in coupons, EVPs, and signage stating the minimum age of purchase as 21.

Although SB 1080 preempts approximately 180 TRL policies put into place with the support of BTFF providers, it also presents an opportunity to substantially improve oversight of non-tobacco nicotine products (such as EVPs), strengthening the ability of BTFF providers to actively enforce retail sales laws. Since implementation of SB 1080 retailers acquired few nicotine product retail licenses. Focus group participants were generally supportive of youth access restrictions, such as those in SB 1080. Providers can build on this support to continue carrying out CDC best practices through community mobilization, education, and retailer education.

Recommendations

- **Educate tobacco and nicotine product retailers on the harms of youth EVP use and secondhand smoke by working with community and Students Working Against Tobacco (SWAT) partnerships**
    - Most focus group participants described unease with youth access to EVPs and felt it beneficial to have regulation that reduced youth access to tobacco product. BTFF community providers can build upon this public support to promote voluntary retail policies.
- **Educate nicotine product retailers on the new licensing requirement and use regulatory authority over nicotine products to improve oversight of the EVP market**
    - As of February 2022, only 67 retailers acquired TRLs and most counties in Florida did not have any retailers acquire licenses. An increase in TRL will increase the regulatory oversight of EVP retailers.
- **To equip BTFF community providers with local-level data, consider additional surveillance of youth access to and use of tobacco and nicotine products**
    - Focus group participants noticed a sharp increase in the display of EVPs and our scanner data also described a sharp increase in EVP sales, suggesting increased risk to youth.

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Appendix 1: Focus Group Participant Characteristics

Demographic Characteristics		Smoking Group (N = 16)	Vaping Group (N = 24)	Total (N =40)
Gender	Male	9 (56%)	12 (50%)	21 (52%)
	Female	7 (44%)	12 (50%)	19 (48%)
Age	Mean (Range)	48.0 (27-56)	40.3 (21 - 62)	43.4 (21-62)
Race/Ethnicity	Black/African American	7 (44%)	4 (17%)	11 (28%)
	White	6 (38%)	12 (50%)	18 (45%)
	Hispanic	2 (13%)	8 (33%)	10 (25%)
	Asian	1 (6%)	0	1 (3%)
	Bi-racial	0	0	0
Past 30 day cigarette use	Every day	15 (94%)	14 (58%)	29 (73%)
	Some days	1 (6%)	6 (25%)	7 (18%)
	Not at all	0	4 (17%)	4 (10%)
Past 30 day vape product use	Every day	*NA*	13 (54%)	*NA*
	Some days	*NA*	11 (46%)	*NA*
	Not at all	*NA*	0	*NA*
Other product use (at least once in past 30 days)	Cigars or cigarillos	5 (32%)	8 (33%)	13 (33%)
	Chewing tobacco	0	4 (17%)	4 (10%)
	Water pipe or hookah	0	7 (29%)	8 (20%)
County Representation	Miami-Dade	5 (32%)	8 (33%)	13 (33%)
	Hillsborough	8 (50%)	8 (33%)	16 (40%)
	Orange	3 (19%)	6 (25%)	9 (23%)

Appendix 2: Focus Group Moderator Guide (Smoking)

Introduction and Ground Rules (5 minutes)

MODERATOR: Welcome and thank you for participating in this discussion. My name is _____. I work at RTI International, a non-profit research company based in North Carolina and this focus group is for a project with the Florida Department of Health. Today, I am interested in hearing your opinions about tobacco use and tobacco policy in Florida. You were invited to this focus group because you have said that you smoke tobacco.

I want to make sure I give you my full attention today, so I've asked a few colleagues to listen in to our conversation to take notes. They won't be participating in our conversation, so I've asked them to turn their videos off.

Before we begin, I want to go over a few key points about today's discussion.

You are here as a volunteer. You have the right to not answer any question or leave the focus group at any time.

- We would like your candid views and we will try to conduct the focus group as efficiently as possible to make the most valuable use of your time. The interview is expected to last 60 minutes. You will receive $75 for your time.
- There are no right or wrong answers. I want to know your opinions. If you hear someone say something that you agree with, please feel free to share with the group. Also, please share if you don't agree with something that has been said. We want to learn about your experiences and opinions.
- Everything we discuss today will be kept private to the extent allowable by law. Your name and contact information will not be given to anyone outside of the study staff, and no one at the Health Department will contact you again about this focus group.
- We ask that you turn on your videos during the discussion. Having your video on helps make this virtual experience as close to an in-person group as possible.
- We want to make sure that we hear from everyone. Please let one person speak at a time. If it's not already there, please type in your name – the name you'd like to be called – so we can all see it. [Note: give instructions on how to do this for the platform used.]
- We will be covering a lot of information. To keep our conversation going, there may be times that I may need to change the subject or move ahead with the

discussion. But please feel free to stop me if you have anything to add or if you have any questions.

- Please know that I'm not a medical doctor or an expert on policy or tobacco use, so I can't answer specific questions about these topics.
- Please silence your cell phones. If you're in place with noise in the background, please feel free to go on mute when you're not talking.
- So that I can give you my full attention, this discussion will be recorded. The recordings will help our team write a summary report for the Health Department about our discussion. All recordings will be kept locked up until we finish writing, then will be destroyed. No names will be used in the final report, and nothing you say will be identifiable.

Do we have your permission to record?

- Yes If there is any point during the discussion that anyone would like for us to pause the recording, please just let us know.
- No

Do you have any questions before we begin?

Warm-up (3 minutes)

1. Let's go around and have everyone tell us their first name. Also tell us If you could live anywhere in the world for one year, where would it be?

I will start. [MODERATOR INTRODUCES SELF]

Who would like to go next? [MODERATOR: call upon participants as needed.]

Domain A: Tobacco Use Behaviors (10 minutes)

2. Where and when do you smoke cigarettes?
    i. Probe: home, work, social settings – why do you smoke in certain places/times more than others?
    ii. Probe: For those of you who use more than one type of product, in what situations do you use one product type vs. the others?

3. Think about a year ago. What, if anything, has changed about your tobacco use in the past year?
    i. Probe, if different: What are the main reasons for these changes (e.g., COVID-19 pandemic, changes in health status, desire to quit/modify

habit). I am interested in anything that has impacted your smoking, which could be changes to your school or work, your social life, where you buy things, your health, and things like that.

Domain B: Access to Products (15 Minutes)

4. Where do you get the tobacco products you usually use?
    i. What type of stores do you buy them from? Do you get them from friends? other sources?
    ii. Do you get them from the same source every time? Why or why not?

5. Has the location or type of store where you get your tobacco changed in the last year? Why or why not?

6. In the last year, has getting tobacco gotten easier, harder, or stayed the same?
    i. [If easier/harder] Why do you think it has gotten easier or harder?

7. In the past year, have you noticed anything different about the stores that sell tobacco in the neighborhood where you live? If so, what?
    i. Probes: For instance, have there been changes in what products are available? If yes, do you know why that might be?
    ii. Probe: Do more stores sell tobacco products? If yes, do you know why that might be?
    iii. Probe: Do fewer stores or stores no longer sell tobacco products. If yes, do you know why that might be?

8. In the past year, have you noticed anything different about signage and advertising for tobacco products in the neighborhood where you live? If so, what?
    i. Probe: What about placement of tobacco products in the store (e.g., self-service, display bans)?
    ii. Probe: What about the availability of coupons and sampling products?

Domain C: Awareness and Attitudes about Statewide Tobacco Control Policies (25 minutes)

9. You may have heard about different laws that state, federal, and local governments have put in place when it comes to tobacco or vaping products.

    Thinking about the past year, can you tell me about what, if any, new laws you have heard about?

i. Probe, if needed: What about in your town or county, in Florida, federal laws?
ii. What do you think about this law or these laws? What do you think is the reason for them?
iii. Do you agree this is a good change? Why or why not?
iv. Does this law impact your smoking behavior or your access to tobacco products?

Now I want to walk through parts of a state law for the sales and distribution of tobacco products that were recently passed and get your opinions about them.

10. A few months ago, Florida passed a law changing the minimum age to purchase tobacco products from 18 to people who are 21 years old or older. Are you aware of this law? How did you hear about it?
    i. Probe: Why do you think Florida raised the age limit to 21? (The federal government already raised the age)
    ii. Probe: Have you noticed any changes in the number of signs about the minimum age of purchase? Any changes in the number of people being asked for an ID?
    iii. Probe: Have you noticed any changes in your community because of this law? (e.g., changes to retailer marketing)
    iv. Probe: How has the law changed your use of or access to tobacco?

11. In your opinion, should a state be able to prevent counties or cities from passing tobacco-related laws that are different from state law?
    i. Probe: For example, how would you feel if your county wanted to restrict something like marketing of tobacco products near candy but the state law prevented passage of that local law?
    ii. Probe: Who do you feel should have the final say in laws regarding tobacco use? The state government or more local policies based on specific community needs? Why do you feel that way?

Debrief/Closing (5 minutes)

12. What other comments or thoughts do you have about anything we have discussed?

Thank you for participating in this discussion. I appreciate your time and effort. Add incentive information

Appendix 3: Focus Group Moderator Guide (Vaping)

Introduction and Ground Rules (5 minutes)

MODERATOR: Welcome and thank you for participating in this discussion. My name is _____. I work at RTI International, a non-profit research company based in North Carolina and this focus group is for a project with the Florida Department of Health. Today, I am interested in hearing your opinions about tobacco and vaping policy in Florida. You were invited to this focus group because you have said that you vape.

I want to make sure I give you my full attention today, so I've asked a few colleagues to listen in to our conversation to take notes. They won't be participating in our conversation, so I've asked them to turn their videos off.

Before we begin, I want to go over a few key points about today's discussion.

You are here as a volunteer. You have the right to not answer any question or leave the focus group at any time.

- We would like your candid views and we will try to conduct the focus group as efficiently as possible to make the most valuable use of your time. The interview is expected to last 60 minutes. You will receive $75 for your time.
- There are no right or wrong answers. I want to know your opinions. If you hear someone say something that you agree with, please feel free to share with the group. Also, please share if you don't agree with something that has been said. We want to learn about your experiences and opinions.
- Everything we discuss today will be kept private to the extent allowable by law. Your name and contact information will not be given to anyone outside of the study staff, and no one at the Health Department will contact you again about this focus group.
- We ask that you turn on your videos during the discussion. Having your video on helps make this virtual experience as close to an in-person group as possible.
- We want to make sure that we hear from everyone. Please let one person speak at a time. If it's not already there, please type in your name – the name you'd like to be called – so we can all see it. *[Note: give instructions on how to do this for the platform used.]*
- We will be covering a lot of information. To keep our conversation going, there may be times that I may need to change the subject or move ahead with the discussion. But please feel free to stop me if you have anything to add or if you have any questions.

- Please know that I'm not a medical doctor or an expert on policy or tobacco use, so I can't answer specific questions about these topics.
- Please silence your cell phones. If you're in place with noise in the background, please feel free to go on mute when you're not talking.
- So that I can give you my full attention, this discussion will be recorded. The recordings will help our team write a summary report for the Health Department about our discussion. All recordings will be kept locked up until we finish writing, then will be destroyed. No names will be used in the final report, and nothing you say will be identifiable.

Do we have your permission to record?

- Yes If there is any point during the discussion that anyone would like for us to pause the recording, please just let us know.

- No

Do you have any questions before we begin?

Warm-up (3 minutes)

1. Let's go around and have everyone tell us their first name. Also tell us If you could live anywhere in the world for one year, where would it be?

I will start. [MODERATOR INTRODUCES SELF]

Who would like to go next? [MODERATOR: call upon participants as needed.]

Domain A: Tobacco Use Behaviors (10 minutes)

2. Where and when do you vape?
   i. Probe: home, work, social settings – why do you vape in certain places/times more than others?
   ii. Probe: For those of you who use more than one type of product, in what situations do you use one product type vs. the others?
   iii. Probe: Do you use any flavored products?

3. Think about a year ago. What, if anything, has changed about your vaping practices in the past year?
   i. Probe, if different: What are the main reasons for these changes (e.g., COVID-19 pandemic, changes in health status, desire to quit/modify habit). I am interested in anything that has impacted your vaping practices, which

could be changes to your school or work, your social life, where you buy things, your health, and things like that.

Domain B: Access to Products (15 Minutes)

4. Where do you get the vaping products you usually use?
   i. What type of stores do you buy them from? Do you get them from friends? other sources?
   ii. Do you get them from the same source every time? Why or why not?

5. Has the location or type of store where you get your vaping products changed in the last year? Why or why not?

6. In the last year, has getting vaping products gotten easier, harder, or stayed the same?
   i. [If easier/harder] Why do you think it has gotten easier or harder?

7. In the past year, have you noticed anything different about the stores that sell vaping products in the neighborhood where you live? If so, what?
   i. Probes: For instance, have there been changes in what products are available? If yes, do you know why that might be?
   ii. Probe: Do more stores sell vaping products? if yes, do you know why that might be?
   iii. Probe: Do fewer stores or stores no longer sell vaping products. If yes, do you know why that might be?

8. In the past year, have you noticed anything different about signage and advertising for vaping products in the neighborhood where you live? If so, what?
   i. Probe: What about placement of vaping products in the store (e.g., self-service, display bans)?
   ii. Probe: What about the availability of coupons and sampling products?

Domain C: Awareness and Attitudes about Statewide Tobacco Control Policies (25 minutes)

9. You may have heard about different laws that state, federal, and local governments have put in place when it comes to vaping products.

   Thinking about the past year, can you tell me about what, if any, new laws you have heard about?

i. Probe, if needed: What about in your town or county, in Florida, federal laws?
ii. What do you think about this law or these laws? What do you think is the reason for them?
iii. Do you agree this is a good change? Why or why not?
iv. Does this law impact your vaping behavior or your access to vaping products?

Now I want to walk through parts of a state law for the sales and distribution of tobacco and vaping products that were recently passed and get your opinions about them.

10. A few months ago, Florida passed a law changing the minimum age to purchase tobacco and vaping products from 18 to people who are 21 years old or older. Are you aware of this law? How did you hear about it?
    i. Probe: Why do you think Florida raised the age limit to 21? (The federal government already raised the age)
    ii. Probe: Have you noticed any changes in the number of signs about the minimum age of purchase? Any changes in the number of people being asked for an ID?
    iii. Probe: Have you noticed any changes in your community because of this law? (e.g., changes to retailer marketing)
    iv. Probe: How has the law changed your use of or access to vaping products?

11. In your opinion, should a state be able to prevent counties or cities from passing tobacco-related laws that are different than state law?
    i. Probe: For example, how would you feel if your county wanted to restrict something like marketing of vaping products near candy but the state law prevented passage of that local law?
    ii. Probe: Who do you feel should have the final say in laws regarding tobacco use? The state government or more local policies based on specific community needs? Why do you feel that way?

Debrief/Closing (5 minutes)

12. What other comments or thoughts do you have about anything we have discussed?

Thank you for participating in this discussion. I appreciate your time and effort. [Add incentive information].

Appendix 4: Focus Group Thematic Analysis Table

Tobacco Use Behaviors		
SUBCODES	Emerging Themes Identified *[Theme Statement. Specific descriptions and/or examples added as sub-bullets.]*	**Supporting Quotes**
Situations when tobacco use occurs	**Most participants that smoke (PTS) reported they usually smoke where and when they are allowed to do so.** • This includes home, work, in the car, or when they are out walking around. • A few PTS stated they typically restrict smoking to their home due to stigma (one was a closet smoker), as well as the convenience. **Most participants that vape (PTV) reported they used EVPs more in social situations.** • For instance, they tended to use EVPs more when they were out with friends or when drinking. • They used EVPs more at bars and casinos (and were allowed to do so, versus smoking). • A few reported that they frequented hookah bars.	"Anywhere where there's people, I generally vape. Casinos, restaurants, around my family or generally around people is when I vape. When I'm by myself, I'll smoke cigarettes."
Usage of different products for different things	**PTS mostly used cigarettes, however some mentioned they did use other products.** • The type of product that was used was based on the situation. • Cigars were used at home, box cigarettes when at work, cannabis/marijuana was used in when alone or in private, hookah was used in social situations. **PTS that used EVPs typically did so because they were able to do it in situations where smoking isn't allowed.** • It is also less smelly than smoking—no need to deal with hassle of washing up or chewing gum to mask smell. • Some saw their EVP use get worse because they are more frequently in situations where they have to use EVPs because they cannot smoke. • Individuals that smoke and use EVPs stated that they began using EVPs as a way to get away from smoking. **PTV noted that there was no major change in the types of products used besides trying new flavors.** • One participant said they use smaller/disposable EVPs while out and use a bigger EVP when they are home. • One participant said they switched to nicotine (from flavored products) when driving because of stress/aggravation of traffic.	"I don't smoke during the workday. I don't like to smell the smoke on me around other people." (Blaise FG #3) "I'll use a vape with THC if it's in a place where you can't smoke cigarettes...a vape doesn't have a smell and usually isn't disallowed."

	The majority of PTV stated that they like flavored vaping products. • Some participants tend to stick to one or a handful of flavors that are their favorites while others like to try lots of new and different flavors.	
Changes over the last year and reasons for it	**The COVID-19 pandemic has affected the frequency of smoking and vaping among participants.** • Smoking and vaping increased among participants due to being home more, which increased their opportunity for use. • Individuals who are returning to work in person are trying to cut back on smoking because they have limited opportunities to smoke. **Stress is a main trigger for PTS and PTV.** • A few participants agreed that while they were working from home they were less likely to use EVPs because they were under less stress. • Others found themselves smoking more because of stress from their jobs, stress in their families, and stress about the pandemic. • One participant noticed that they are vaping less because they were vaping out of anxiety and became aware of how much they were doing it so they stepped back. **Vaping is viewed as cleaner and more socially acceptable.** • Participants noticed that more people seem to be vaping than smoking cigarettes. • Some participants noticed that during business hours vaping is preferred because it is less time-consuming.	"Well, for me, since we've been back in the office for the last year or so, actually, I've been vaping quite a bit more and smoking quite a bit less than I was back in 2020, for instance." "My tobacco use has gone up in the past year…before the pandemic...I would smoke one pack of cigarettes every four days and now I'm smoking one pack every day." "I mean, because of the pandemic, a lot of us are staying home more often so prior to that, I was working at an elementary school, which I still do but mostly online. I would never smoke around my kids, but because of not being around them and the stress of everything with reduced hours, I guess it's gone up." "I realize that when I work from home, I don't need to vape as much or smoke as much but I have more stress when I'm in the office, of course, with the traffic and being, dealing with people again. So I end up finding myself vaping, like in the bathroom or on the patio area." "My grandkids used to tell me I always smell bad and it was kind of embarrassing. Now, it's been over two years that they don't even say that anymore. So I used to feel kind of dirty in my hands and stuff and I always have to shoot gum and stuff not anymore."
Access to Products		
SUBCODES	Emerging Themes Identified *[Theme Statement. Specific descriptions and/or examples added as sub-bullets.]*	**Supporting Quotes**
Where individuals purchase products and rationale (cost, proximity,	**Participants purchased products from locations prioritized by convenience and by price.** • This includes smoke shops, gas stations, corner stores, and occasionally online. • Respondents typically shopped at retailers close to home or work due to a sense of comfort, familiarity, and routine.	"It's a neighborhood place. It's all in my neighborhood. It's in walking distance. It's close, comfortable. It's like you're familiar with it. And plus, the place that I go has the cheapest prices around."

convenience, etc.)	• Respondents all felt they shopped at the cheapest location for their products.	
Changes in where they buy products	**There were few to no changes in where participants purchased products over the last year.** • Any changes were because of moving or if they found somewhere cheaper.	
Changes in products in products available (advertising and availability of coupons)	**Some pharmacies, such as CVS or Walgreens, are not selling tobacco products anymore.** • People who use EVPs did not mention this change. **Significantly more EVPs, brands, and flavors are available from retailers.** • Disposable EVPs have become more popular due to their range of flavors and convenience, so inventory has risen. **Coupons, especially those found in mailings or cigarette packs, were reported to be slightly more common in the last year.** • People who use EVPs only mentioned seeing coupons on receipts from the stores where they purchase products. • Some participants mentioned receiving coupons in the mail or accessing them online.	"I mean the biggest thing I've noticed is just the amount of vaping stuff that people have now. It's pretty massive compared to even a year ago." "I would say there's more, I feel there's been a huge, over the past year or two, there's a lot more disposable vapes available. There's all different brands (flavors) that have come out." "I have seen an uptick in the number of coupons that I get in the mail…I've noticed more physical coupons than I have received than before...in the last couple of years."
Store Characteristics		
SUBCODES	Emerging Themes Identified *[Theme Statement. Specific descriptions and/or examples added as sub-bullets.]*	**Supporting Quotes**
Marketing and changes observed	**Participants noticed few to no advertisements for smoking and vaping products outside of the stores where they buy their products.** • A few participants believed it could be companies are spending less money on advertising or government control. • Participants noted that there has been a decrease in advertising over many years, but not more so in the last year. • Participants noted that billboards and magazine ads for tobacco products have disappeared. **Ads at local convenience stores are usually found on the windows or front doors of the establishments.** • The signs advertising vaping products at corner stores/gas stations are becoming more common, a few participants thought this push comes from the ability of the retail seller to meet public demand. • Ads have switched over from tobacco products to vaping products in the past year.	"I don't think it's that cool anymore. So if it ain't a cool product...perhaps you don't really want to advertise it. I don't think it's really a cool thing nowadays to smoke." "I mean television, no advertising. The plane in the sky with the banner, no advertising. Going around, giving you the sample packs, no advertising." "There's more advertisements for alcohol that's enticing our youth to me then there is tobacco. And if you're going to regulate something and be really hardcore, you should be more looking at the alcohol."

Age restriction signage and IDing practices and changes observed	**A few participants saw an increase in signage about underage purchasing at their points of sale.** • Participants noticed more signage about underage purchasing in stores and at the counter where the products are. **Many participants saw an increase in cashiers checking IDs when selling tobacco and nicotine products.** • A few participants noticed that checking IDs is observed more at busier points of sale. • Participants noted that carding had increased recently but they stopped being carded once the employees of their local stores recognized them. • Several participants stated that they believed IDing had increased because of rumors that there were undercover individuals at stores ensuring that everyone was being carded before purchasing tobacco and nicotine products.	"As a new person, yes, I'll get carded, but I know who it is and it's Bob or for example, or a Sally, then it's not an issue. But again, I do see people getting carded, but I just want to say again, I don't continuously get carded" "I know Walmart really started carding because they had a couple in their stores where teenagers were coming in there buying cigarettes and vapes and they weren't carding them, and they got caught." "Especially because in Florida, what I heard stories of, there were undercovers in the stores, people coming in had to make sure that they're doing their job and if not, then the store gets shut down." "I'm aware. I think that they check, they'll do an undercover... They'll have kids that are younger than 18 try to buy it and see what, I guess, the establishment will get in trouble if they sell it."
Product placement (cigarettes, vaping products) and changes observed	**Overall, the placement of tobacco products has not changed.** • Participants overwhelmingly agreed that tobacco products have always been found behind the counter/cashier. • One participant noted that their local Walmart had moved tobacco products to the alcohol section and believed it could be a result of the tobacco age of purchase being raised to 21. **Participants noticed that the placement of vaping products has shifted recently.** • Some participants noticed that vaping products are kept in glass cases, but a few individuals noted that this was more common in private stores. • Participants saw that vaping products are not as visible as they used to be, they are tucked behind the counter along with the cigarettes. Participants believed this could be for two reasons: to keep them away from underage consumers and because of the sheer increase of products.	"There's no change [in tobacco product display]...they make them visible for you...right behind the clerk." "And now when I go in they're in the glass, in the front, the whole front of the counters, all of those shelves in the glass are all vape products. So I feel like it's more accessible to me as a consumer when I come in and they're all right in the front, I can lean down and look at each one of them on my own before even someone comes over to help me. But before where they used to be behind on the shelves."
Awareness/Attitudes of Age Change		
SUBCODES	Emerging Themes Identified	**Supporting Quotes**

	[Theme Statement. Specific descriptions and/or examples added as sub-bullets.]	
Awareness of change in law	**Most participants in both the PTS and PTV groups were not aware that the SB 1080 law passed in Florida, although several were aware that the minimum purchasing age had recently increased from 18 to 21 in the state.** • Several participants had heard about more enforcement of the minimum purchasing age in stores through "undercover" checks, leading to increased ID checks and store signage. • A few participants were aware of federal regulations that had increased the minimum age for purchase to 21, or similar laws passed in the other states (i.e., Illinois). • Some participants thought that the minimum age for purchase had been 21 in Florida or their local communities before the passing of SB 1080.	"Especially because in Florida, what I heard stories of, there were undercovers in the stores, people coming in had to make sure that they're doing their job and if not, then the store gets shut down."
Attitudes about change	**Many participants supported the SB 1080 law because it prevented youth tobacco/EVP purchasing and use.** • Participants acknowledged the harmful effects of tobacco use (i.e., cancer, secondhand smoke) and supported protecting youth from these harms. • Participants with children or younger siblings stated they wanted laws to keep their younger family members from initiating tobacco use due to its harmful effects and addictiveness. **While many participants were not aware of the military exemption in SB 1080, many voiced a desire for military to be exempt from the increase in the minimum age for tobacco purchase from 18 to 21.** • Participants who voiced support for military exemption stated that the minimum age for military enlistment (18) should be the same age that they can purchase substances like tobacco and alcohol. ○ *Interesting note: a military veteran (and one other participant) did not support the military exemption, stating that the law should apply to all under 21.*	"I mean it's something that of course is not healthy to your body, so they can keep finding ways to keep certain groups from smoking, or certain people from using those products, I think it's a good idea to raise the age [from 18 to 21]." "I have a teenager so I don't mind that it's you know that the age keeps going up...I know a lot of his friends are vaping so if it makes it a little bit harder for him to be able to get access to these products that's fine with me" I disagree with it, I am sorry. You can go to war, but you can't smoke a cigarette? What's up? You got to be 18 to get into the service, but then you can't smoke a cigarette. I don't get that." "[The military exemption] just doesn't make sense. It sounds like they're being more favorable to the military personnel and I'm a vet, but still if you're having these certain laws, I guess in one state and you're having military members here, I feel it should be a unison decision… we should try to just try to stick with the same information so we could all be on the same page."
Impact on behavior/ intention	**Participants considered the SB 1080 law to have little to no impact on their tobacco/EVP use behavior because they were over 21 years old.**	"[People under 21] are still going to [smoke and vape]. They get other people to buy them I've seen it. Maybe it cuts down on some but that's just like the

	Although participants were supportive of SB 1080, many were doubtful that the law would effectively reduce youth tobacco/EVP use behavior. • Some participants pointed out that youth would find a way to use EVPs or smoke, regardless of age restrictions. • Some participants voiced that more education about dangers of smoking and parental control of children's behavior would be more effective than increased regulation. **Some participants noticed being IDed more when purchasing tobacco and EVPs and more store signage about the new minimum age for purchase.** • A few participants avoided stores where IDing was more frequent because the ID process led to longer lines. • Some participants mentioned that once a store clerk recognized them, they were no longer IDed.	drinking age is 21. They raised that…And I just think sometimes pushing on the kids, they're just going to do it more. It's better to get it over with. And then maybe by the time they're 21, they'll be have their right mind ahead of them."
Awareness of recent changes in laws in general	**Overall participants were either not aware of or were uncertain about recent law changes related to smoking and vaping in Florida.** • A few participants had heard of the new age restriction (minimum purchase age now 21) in Florida, federally, or in other states. • A couple mentioned hearing of restrictions about where smoking or vaping was allowed (i.e., certain distance from a school). • A few PTVs mentioned hearing about restrictions on flavored EVPs or tobacco products, but expressed uncertainty about details or location.	"I really don't know what the Florida law is. I'm old enough to buy cigarettes. I don't usually pay it any attention."
State Pre-emption		
SUBCODES	Emerging Themes Identified *[Theme Statement. Specific descriptions and/or examples added as sub-bullets.]*	**Supporting Quotes**
Attitudes		
Attitudes & Awareness	**Participants generally want laws at the state level to supersede local laws, mostly for consistency across the board.** • If the majority of municipalities were against a state level law or want stricter restrictions, they should be able to enact change at the state level through representation. **The content of the law itself played into many participants' considerations of state vs. Local, especially with issues such as youth access.** • Opinions changed based on what the law was. If they felt a local law restricted access (higher minimum age), then the state shouldn't allow it. But if it was for something more minor (marketing/placement of	"I think the state should make the determination, because obviously they've done a lot of research…they have more access to funds to do deeper dives than individual cities and individual counties and things like that so I would feel more comfortable to go along with the state's findings and laws as it relates to smoking." "Could you imagine if every county had different rules? All these counties we have had all these different rule. We'll be

	products in retailers), then local governments should have the ability to create policies. **Regulations/laws should be clear and concise across the board so they are easier to follow and understand.** • Participants felt that it can cause a lot of confusion when people are unsure of what rules to follow in each county. • They also noted that you could simply go to a different county to bypass those regulations (again, focus on access, not marketing/product placement laws).	messed up. We couldn't go from county because we wouldn't know the rules. We got to have state government say something to know the rules, make the rules." "I think, sometimes, if you find a county, let's say in Fort Lauderdale versus the panhandle, you're going to find just a different demographic. I think it's better to keep it local. I think it should be at the county level, even though I think the taxes are just state taxes. I don't know how much of that is divided up back to the counties of tobacco tax. I think it should be at a local level. At a county level, I think it would make sense." "Just to circle back. I would assume that if each municipality is saying, well, I don't like this law that the state is doing. And then they go and enforce and say all of the state, you got 90% of us who don't want this then the state should change their rules. But I think that's just in theory and maybe in practice it doesn't work that way. And I would assume that what ends up having happening is that the municipality makes the change on its own and the state will look the other way as long as they're getting a kickback from the municipality. So then they get to do what they want to do the same way marijuana laws are and all everywhere too. Those people are doing the same thing."

Appendix 5: Policy Types by County

Name of local jurisdiction	EVP self-service or display ban	Tobacco self-service or display ban	Youth access (EVP only)	Retail licensing	Sampling restrictions	Coupon restrictions	Outdoor advertising restrictions	Online or other non-POS advertising restrictions	POS or indoor retail advertising restrictions	Pharmacy	Flavored tobacco	Tobacco 21	Number of policies
Alachua County	1	1	1	0	0	0	0	0	0	0	0	0	3
Bay County	0	1	0	0	0	0	0	0	0	0	0	0	1
Bradford County	1	1	1	0	0	0	0	0	0	0	0	0	3
Broward County	0	1	0	0	0	0	1	0	1	0	0	0	3
Calhoun County	0	1	0	0	0	0	0	0	0	0	0	0	1
Clay County	0	1	0	0	0	0	0	0	0	0	0	0	1
Collier County	0	1	0	0	0	0	0	0	0	0	0	0	1
Dixie County	0	1	0	0	0	0	0	0	0	0	0	0	1
Flagler County	0	1	0	0	0	0	0	0	0	0	0	0	1
Franklin County	0	1	0	0	0	0	0	0	0	0	0	0	1
Gilchrist County	0	1	1	0	0	0	0	0	0	0	0	0	2
Hendry County	0	1	0	0	0	0	0	0	0	0	0	0	1
Hillsborough County	0	1	0	0	0	0	0	0	1	0	0	0	2
Holmes County	0	1	0	0	1	1	0	0	0	0	0	0	3
Indian River County	1	1	0	0	0	0	0	0	0	0	0	1	3
Jefferson County	0	1	0	0	1	1	0	0	1	0	0	0	4
Lake County	0	1	0	0	0	0	1	0	0	0	0	0	2
Levy County	0	1	0	0	0	0	0	0	0	0	0	0	1
Liberty County	0	1	0	0	0	0	0	0	0	0	0	0	1

Manatee County	0	1	0	0	0	0	0	0	0	0	0	0	1
Marion County	1	1	1	0	0	0	0	0	0	0	0	0	3
Martin County	1	1	1	1	0	0	0	0	1	0	0	0	5
Miami-Dade County	1	1	1	0	0	0	0	0	0	0	0	0	3
Nassau County	1	0	1	0	0	0	0	0	0	0	0	0	2
Orange County	0	0	0	0	0	0	1	0	0	0	0	0	1
Osceola County	1	1	1	0	0	0	1	0	0	0	0	0	4
Palm Beach County	0	1	0	0	0	0	0	0	0	0	0	0	1
Pasco County	0	1	0	0	0	0	0	0	0	0	0	0	1
Polk County	0	1	0	0	0	0	0	0	0	0	0	0	1
Putnam County	1	0	1	0	0	0	0	0	0	0	0	0	2
St. Johns County	0	1	0	0	0	0	0	0	0	1	0	0	2
St. Lucie County	1	1	1	0	0	0	0	0	0	0	0	0	3
Taylor County	0	1	0	0	0	0	0	0	0	0	0	0	1
Wakulla County	0	1	0	0	0	0	0	0	0	0	0	0	1
Washington County	0	1	0	0	0	0	0	0	0	0	0	0	1

Appendix 6: Policy Types by Municipality

Name of local jurisdiction	EVP self-service or display ban	Tobacco self-service or display ban	Youth access (EVP only)	Retail licensing	Sampling restrictions	Coupon restrictions	Outdoor advertising restrictions	Online or other non-POS advertising restrictions	POS or indoor retail advertising restrictions	Pharmacy	Flavored tobacco	Tobacco 21	Number of policies
Archer	1	0	1	0	0	0	0	0	0	0	0	0	2
Atlantic Beach	0	1	0	0	0	0	0	0	0	0	0	0	1
Baldwin	0	1	0	0	0	0	0	0	0	0	0	0	1
Belleview	1	1	1	0	0	0	0	0	0	0	0	0	3
Callaway	0	1	0	0	0	0	0	0	0	0	0	0	1
Chipley	0	1	0	0	1	1	0	0	0	0	0	0	3
Clermont	0	0	0	0	0	0	1	0	0	0	0	0	1
Coral Gables	0	0	0	0	0	0	1	0	0	0	0	0	1
Davie	1	0	1	0	0	0	0	0	0	0	0	0	2
Daytona Beach	0	0	0	0	0	0	1	0	0	0	0	0	1
Deerfield Beach	1	0	1	0	0	0	0	0	0	0	0	0	2
Doral	0	0	0	0	0	0	1	0	0	0	0	0	1
Fort Lauderdale	1	1	0	0	0	0	0	0	0	0	0	1	3
Fort Myers	0	0	0	0	0	0	1	0	0	0	0	0	1
Fort Pierce	0	1	0	0	0	0	1	0	0	0	0	0	2
Fruitland Park	0	1	0	0	0	0	0	0	0	0	0	0	1
Gainesville	0	1	0	0	0	0	0	0	0	0	0	0	1
Green Cove Springs	1	0	1	0	0	0	0	0	0	0	0	0	2
High Springs	1	0	1	0	0	0	0	0	0	0	0	0	2

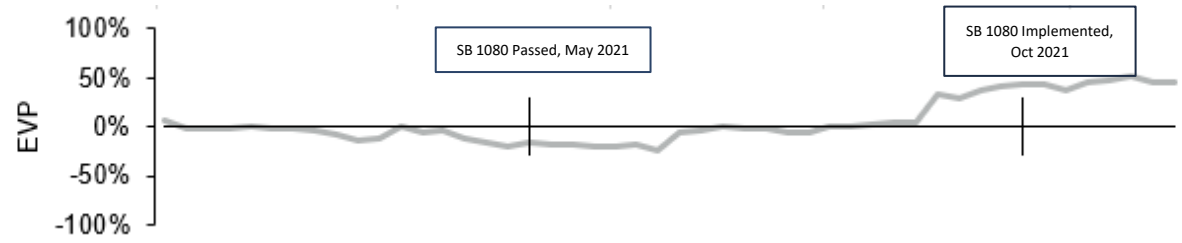
Inglis	0	1	0	0	0	0	0	0	0	0	0	0	1
Jacksonville	0	0	0	0	1	0	1	0	0	0	0	0	2
Keystone Heights	1	1	1	0	0	0	0	0	0	0	0	0	3
LaBelle	0	1	0	0	0	0	0	0	0	0	0	0	1
Lady Lake	0	1	0	0	0	0	0	0	0	0	0	0	1
Lauderdale-By-The-Sea	1	0	1	0	0	0	0	0	0	0	0	0	2
Lauderdale Lakes	1	0	1	0	0	0	0	0	0	0	0	0	2
Lauderhill	1	0	1	0	0	0	0	0	1	0	0	0	3
Leesburg	0	1	0	0	0	0	0	0	0	0	0	0	1
Lighthouse Point	1	0	1	0	0	0	0	0	0	0	0	0	2
Live Oak	0	1	0	0	0	0	0	0	0	0	0	0	1
Madison	0	1	0	0	0	0	0	0	1	0	0	0	2
Marco Island	0	1	0	0	0	0	0	0	0	0	0	0	1
Miami	0	0	1	0	0	0	1	0	0	0	0	0	2
Miami Beach	1	0	1	0	0	0	0	0	0	0	0	0	2
Miami Gardens	1	0	1	0	0	0	0	0	0	0	0	0	2
Minneola	0	1	0	0	0	0	0	0	0	0	0	0	1
Miramar	0	0	1	0	0	0	0	0	0	0	0	0	1
Monticello	0	1	0	0	0	0	0	0	0	0	0	0	1
New Port Richey	0	1	0	0	0	0	0	0	0	0	0	0	1
Newberry	1	0	1	0	0	0	0	0	0	0	0	0	2
North Lauderdale	1	0	1	0	0	0	0	0	0	0	0	0	2
Ocala	1	1	1	0	0	0	0	0	0	0	0	0	3
Orange Park	1	1	1	0	0	0	0	0	0	0	0	0	3
Orlando	0	0	0	0	0	0	1	0	0	0	0	0	1
Oviedo	1	0	1	0	0	0	0	0	0	0	0	0	2
Palmetto Bay	0	0	0	0	0	0	1	0	0	0	0	0	1
Pembroke Park	1	0	1	0	0	0	0	0	0	0	0	0	2

Pinellas Park	0	0	0	0	0	0	1	0	0	0	0	0	1
Port St. Joe	1	0	1	0	0	0	0	0	0	0	0	0	2
Port St. Lucie	1	0	1	0	0	0	0	0	0	0	0	0	2
Royal Palm Beach	0	0	0	0	0	0	1	0	0	0	0	0	1
Sanford	0	0	0	0	0	0	1	0	0	0	0	0	1
Sebastian	1	0	1	0	0	0	0	0	0	0	0	0	2
South Daytona	0	1	0	0	0	0	0	0	0	0	0	0	1
South Miami	0	0	0	0	0	0	0	0	0	0	1	0	1
Southwest Ranches	1	0	1	0	0	0	0	0	0	0	0	0	2
Springfield	0	1	0	0	0	0	0	0	0	0	0	0	1
St. Petersburg	1	0	1	0	0	0	0	0	0	0	0	0	2
Starke	1	1	1	0	0	0	0	0	0	0	0	0	3
Stuart	1	0	1	0	0	0	0	0	1	0	0	0	3
Sunny Isles Beach	1	0	1	0	0	0	0	0	0	0	0	0	2
Sunrise	1	0	1	0	0	0	0	0	0	0	0	0	2
Sweetwater	1	0	1	0	0	0	0	0	0	0	0	0	2
Tallahassee	0	0	0	0	1	0	0	0	0	0	0	0	1
Tavares	0	1	0	0	0	0	0	0	0	0	0	0	1
Umatilla	0	1	0	0	0	0	0	0	0	0	0	0	1
Vero Beach	1	0	1	0	0	0	0	0	0	0	0	1	3
Williston	0	1	0	0	0	0	0	0	0	0	0	0	1

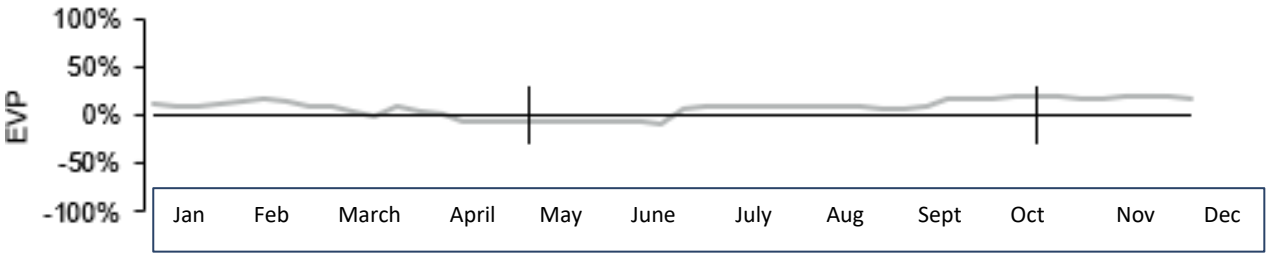
Appendix 7: Scanner Data

Year-over-Year Percent Change in Total Dollar Sales, EVP, January to December, 2021 over 2020

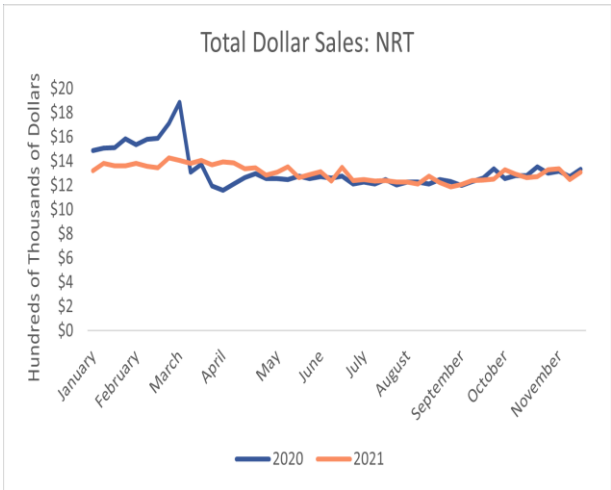
Florida:

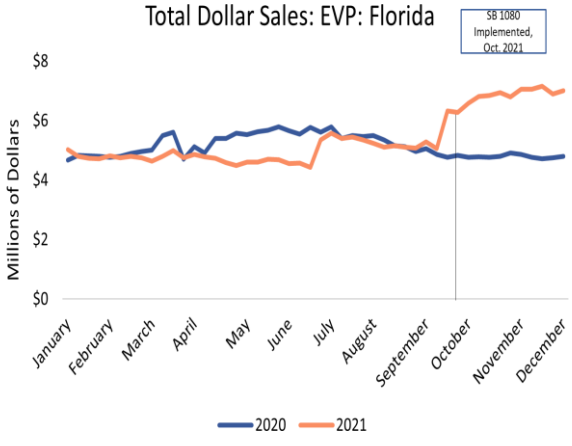


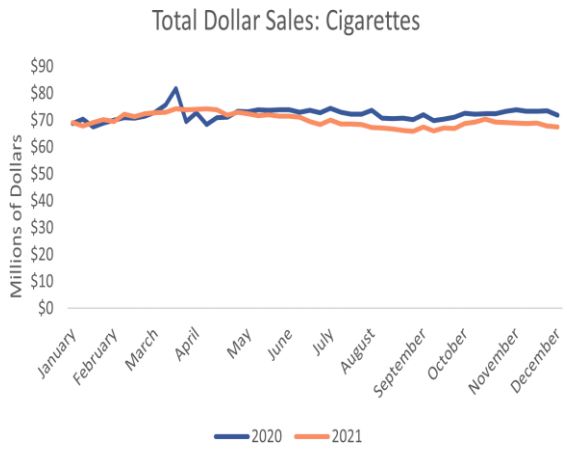
United States:

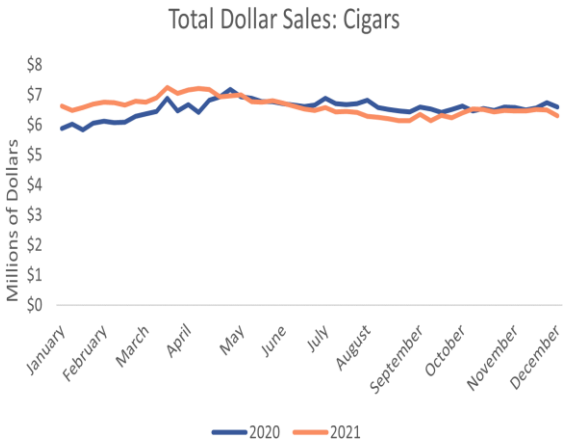


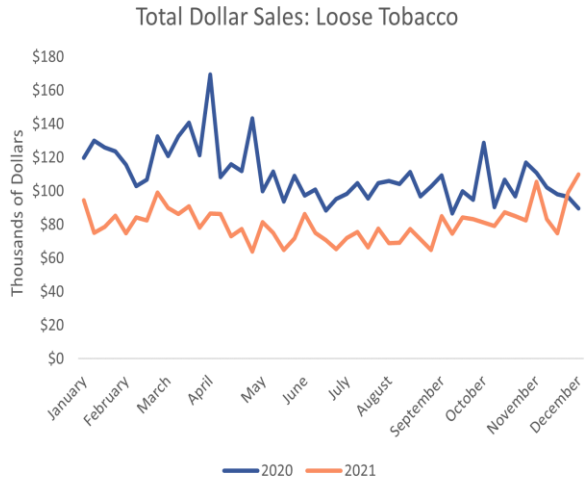
Total Dollar Sales in Florida, Year-over-Year, by Product

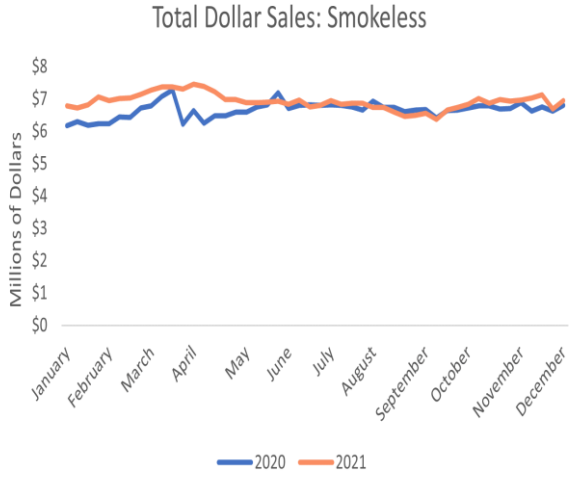





Total Dollar Sales: Cigarettes
Millions of Dollars
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
January
February
March
April
May
June
July
August
September
October
November
December
2020
2021

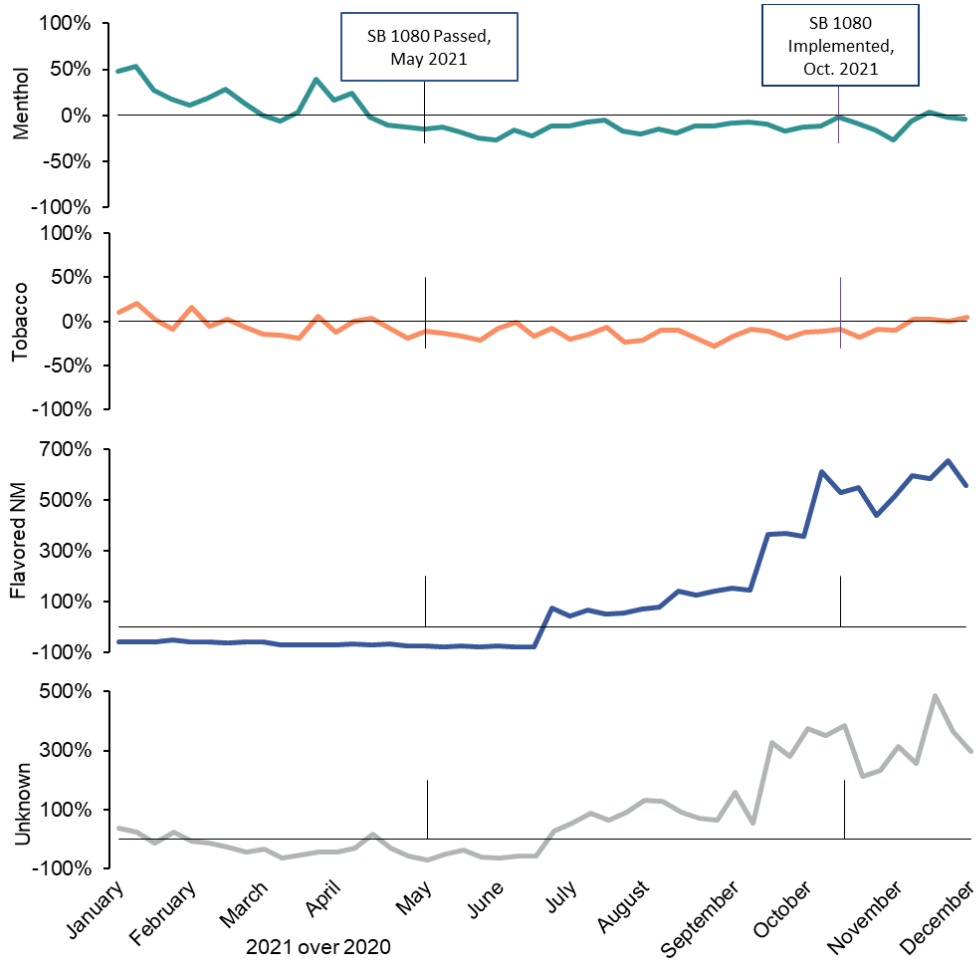

Total Dollar Sales: Cigars
Millions of Dollars
$8
$7
$6
$5
$4
$3
$2
$1
$0
January
February
March
April
May
June
July
August
September
October
November
December
2020
2021


Total Dollar Sales: Loose Tobacco
Thousands of Dollars
$180
$160
$140
$120
$100
$80
$60
$40
$20
$0
January
February
March
April
May
June
July
August
September
October
November
December
2020
2021

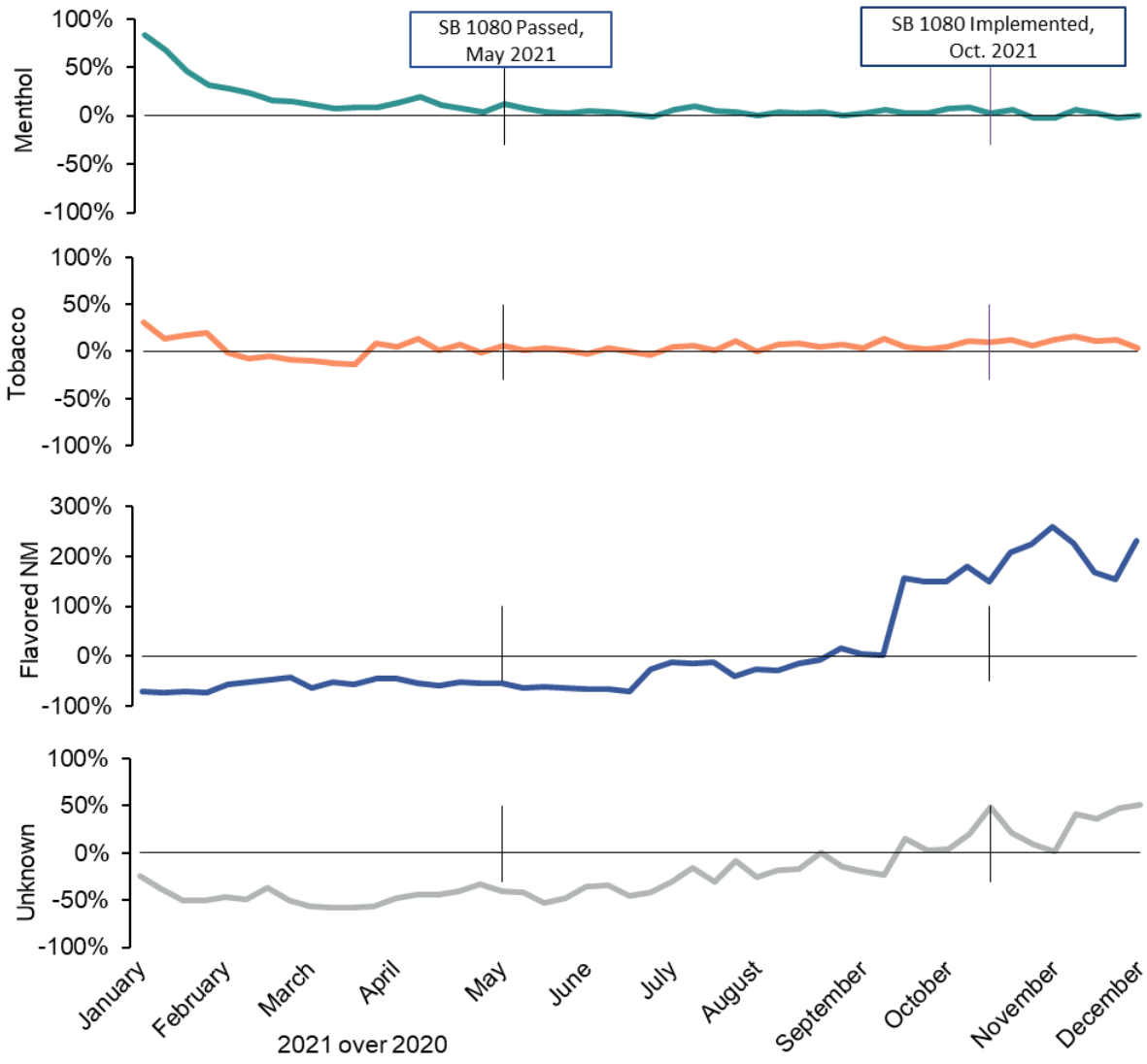

Total Dollar Sales: Smokeless
Millions of Dollars
$8
$7
$6
$5
$4
$3
$2
$1
$0
January
February
March
April
May
June
July
August
September
October
November
December
2020
2021

EVP Total Dollar Sales by Flavor, Year-over-Year, in Major Markets

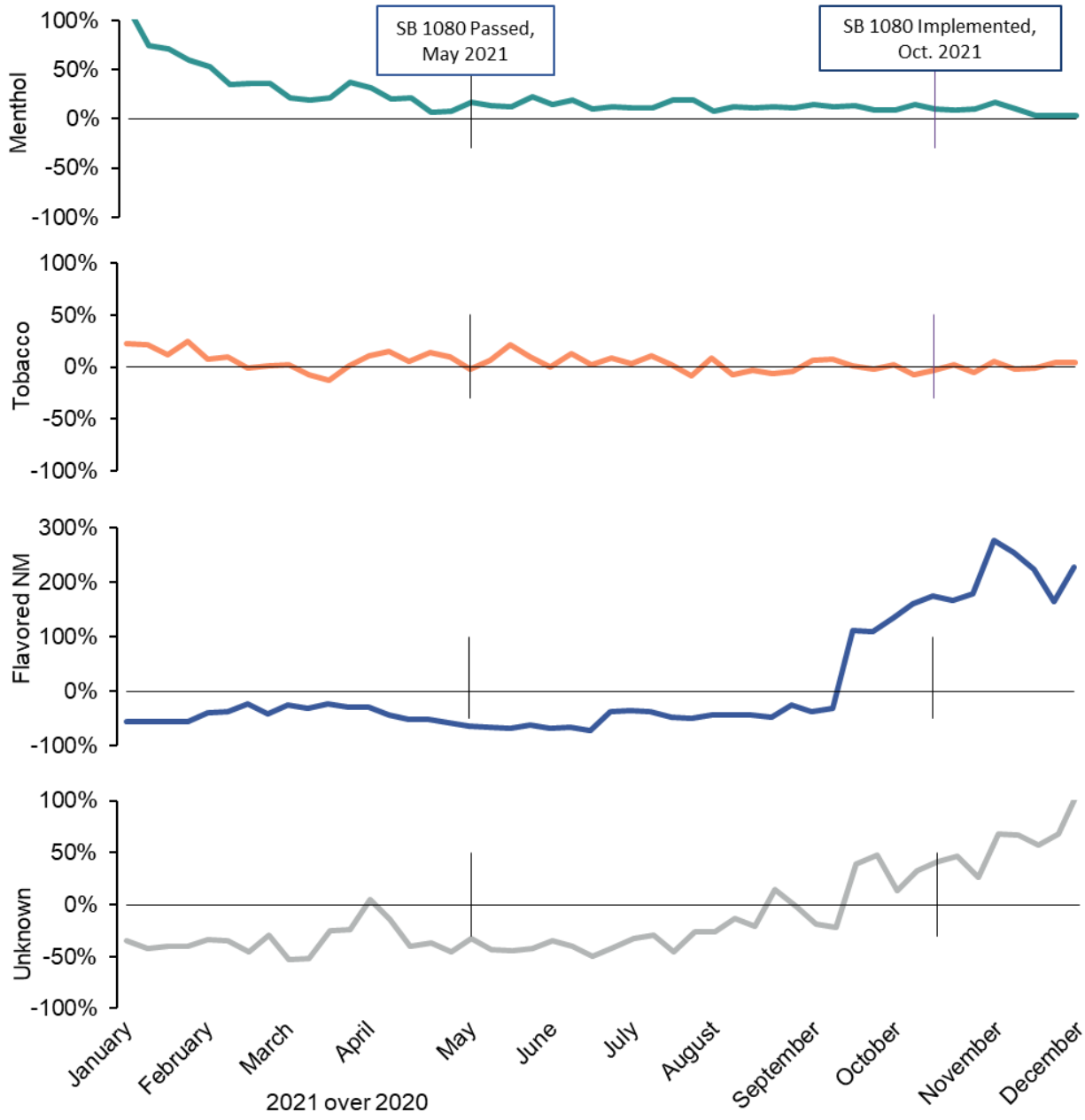
Miami



Orlando


SB 1080 Passed, May 2021
SB 1080 Implemented, Oct. 2021
Menthol
Tobacco
Flavored NM
Unknown
100%
50%
0%
-50%
-100%
300%
200%
January
February
March
April
May
June
July
August
September
October
November
December
2021 over 2020

Tampa


SB 1080 Passed, May 2021
SB 1080 Implemented, Oct. 2021
Menthol
Tobacco
Flavored NM
Unknown
100%
50%
0%
-50%
-100%
300%
200%
January
February
March
April
May
June
July
August
September
October
November
December
2021 over 2020

Appendix 8: Licensed Retailers by County

County	All nicotine or tobacco product retailers	Nicotine product retailers	Tobacco product retailers	All retailers per 10,000 population	Nicotine product retailers per 10,000 population	Tobacco product retailers per 10,0000 population	Adults who currently use EVPs	Percentage of students who have used an EVP in the past 30 days
Alachua	312	1	311	11.8	0	11.7	6.6 % (3.6%–9.6%)	16.8% (14.1%–19.6%)
Baker	45	0	45	16	0	16	2.2 % (0.8%–3.6%)	-
Bay	338	0	338	18.6	0	18.6	9.1 % (6.2%–12.1%)	22.9% (19.6%–26.1%)
Bradford	45	0	45	16.5	0	16.5	2.2 % (0.8%–3.6%)	14.2% (10.2%–18.3%)
Brevard	798	5	793	13.6	0.1	13.5	6.7 % (3.4%–10.0%)	15.0% (11.8%–18.3%)
Broward	2679	2	2677	13.9	0	13.9	4.3 % (2.5%–6.1%)	-
Calhoun	24	0	24	16.7	0	16.7	6.5 % (3.2%–9.9%)	18.3% (12.5%–24.1%)
Charlotte	229	2	227	12.6	0.1	12.5	5.7 % (3.8%–7.5%)	22.5% (18.9%–26.1%)

Citrus	193	1	192	13.3	0.1	13.2	7.1 % (4.2%–10.0%)	24.3% (19.2%–29.3%)
Clay	199	0	199	9.4	0	9.4	6.3 % (3.7%–8.9%)	18.8% (15.8%–21.8%)
Collier	449	3	446	12.1	0.1	12	3.4 % (1.6%–5.1%)	14.7% (12.1%–17.2%)
Columbia	124	0	124	17.7	0	17.7	7.3 % (4.8%–9.8%)	26.1% (19.5%–32.7%)
DeSoto	47	0	47	12.7	0	12.7	3.8 % (1.8%–5.8%)	16.5% (12.7%–20.3%)
Dixie	37	0	37	22.3	0	22.3	5.2 % (2.4%–8.0%)	-
Duval	1397	4	1393	14.9	0	14.9	6.4 % (2.8%–9.9%)	13.9% (11.5%–16.3%)
Escambia	525	1	524	16.7	0	16.7	5.6 % (2.8%–8.5%)	11.1% (8.5%–13.7%)
Flagler	112	0	112	10.2	0	10.2	6.9 % (4.3%–9.5%)	14.1% (10.5%–17.6%)
Franklin	33	0	33	27.9	0	27.9	5.1 % (2.6%–7.5%)	33.4% (20.3%–46.6%)

Gadsden	82	0	82	17.8	0	17.8	4.1 % (1.8%–6.4%)	7.1% (4.4%–9.8%)
Gilchrist	27	0	27	15	0	15	6.5 % (0.1%–12.9%)	25.9% (20.5%–31.4%)
Glades	18	0	18	13.3	0	13.3	5.9 % (1.5%–10.2%)	10.3% (10.3%–10.3%)
Gulf	32	0	32	20.5	0	20.5	2.0 % (0.0%–4.0%)	24.4% (20.0%–28.7%)
Hamilton	28	0	28	19.5	0	19.5	8.0 % (4.2%–11.7%)	19.2% (11.6%–26.8%)
Hardee	37	0	37	13.6	0	13.6	3.0 % (0.7%–5.4%)	22.6% (18.7%–26.4%)
Hendry	92	0	92	22.6	0	22.6	4.8 % (0.8%–8.8%)	8.1% (6.4%–9.9%)
Hernando	212	0	212	11.4	0	11.4	4.4 % (1.4%–7.4%)	18.3% (14.3%–22.4%)
Highlands	160	1	159	15.5	0.1	15.4	7.3 % (3.5%–11.1%)	15.4% (11.9%–18.8%)
Hillsborough	1921	5	1916	13.5	0	13.5	3.1 % (1.6%–4.7%)	13.8% (11.0%–16.6%)

Holmes	36	0	36	18.5	0	18.5	5.7 % (3.4%–8.0%)	18.7% (14.9%–22.5%)
Indian River	219	1	218	14.2	0.1	14.2	6.9 % (4.0%–9.8%)	18.8% (15.1%–22.5%)
Jackson	94	0	94	19.6	0	19.6	4.2 % (2.4%–6.0%)	23.7% (19.9%–27.4%)
Jefferson	31	0	31	21.9	0	21.9	5.8 % (3.6%–8.1%)	-
Lafayette	9	0	9	10.4	0	10.4	4.7 % (1.5%–7.9%)	25.9% (15.4%–36.4%)
Lake	406	2	404	11.7	0.1	11.7	5.1 % (0.9%–9.3%)	17.6% (14.7%–20.5%)
Lee	906	5	901	12.3	0.1	12.2	6.3 % (3.5%–9.0%)	15.3% (11.6%–19.0%)
Leon	340	1	339	11.7	0	11.7	6.6 % (4.5%–8.8%)	13.0% (10.5%–15.5%)
Levy	77	0	77	19.1	0	19.1	7.5 % (3.9%–11.1%)	19.8% (15.3%–24.3%)
Liberty	15	0	15	18	0	18	5.8 % (3.1%–8.6%)	-

Madison	34	0	34	18.4	0	18.4	8.2 % (1.6%–14.8%)	18.1% (13.4%–22.9%)
Manatee	463	1	462	12.1	0	12	4.4 % (1.3%–7.4%)	15.1% (10.3%–20.0%)
Marion	509	0	509	14.4	0	14.4	4.6 % (2.7%–6.6%)	14.4% (11.9%–16.9%)
Martin	243	0	243	15.3	0	15.3	3.3 % (2.0%–4.6%)	17.4% (14.1%–20.8%)
Miami-Dade	5037	1	5036	18.7	0	18.7	4.4 % (2.1%–6.7%)	15.7% (13.4%–18.0%)
Monroe	391	1	390	51.6	0.1	51.5	5.2 % (1.6%–8.8%)	19.2% (15.4%–23.1%)
Nassau	121	0	121	14.6	0	14.6	3.7 % (1.9%–5.4%)	24.0% (20.7%–27.3%)
Okaloosa	301	2	299	14.8	0.1	14.7	8.7 % (5.3%–12.2%)	18.7% (16.0%–21.4%)
Okeechobee	87	0	87	21.1	0	21.1	4.0 % (1.5%–6.5%)	19.6% (16.2%–22.9%)
Orange	1714	6	1708	12.7	0	12.7	6.1 % (4.1%–8.1%)	8.5% (6.3%–10.7%)

Osceola	433	0	433	12.3	0	12.3	6.2 % (3.4%–8.9%)	9.5% (7.5%–11.5%)
Palm Beach	1698	4	1694	11.6	0	11.6	5.4 % (3.3%–7.4%)	18.3% (15.2%–21.4%)
Pasco	573	0	573	10.9	0	10.9	6.7 % (4.0%–9.4%)	15.9% (13.3%–18.6%)
Pinellas	1447	3	1444	15	0	15	8.9 % (5.9%–11.8%)	20.2% (17.1%–23.2%)
Polk	852	0	852	12.4	0	12.4	7.0 % (3.6%–10.3%)	15.7% (13.2%–18.1%)
Putnam	134	0	134	18.3	0	18.3	5.9 % (3.4%–8.3%)	16.9% (13.7%–20.1%)
St. Johns	259	3	256	10.6	0.1	10.5	5.7 % (3.5%–7.8%)	18.1% (15.0%–21.2%)
St. Lucie	378	0	378	12.1	0	12.1	5.1 % (2.6%–7.6%)	13.9% (2.9%–24.9%)
Santa Rosa	172	0	172	9.8	0	9.8	6.5 % (4.1%–9.0%)	16.4% (13.7%–19.1%)
Sarasota	496	1	495	11.8	0	11.8	6.2 % (3.8%–8.6%)	17.7% (14.2%–21.2%)

Seminole	503	3	500	10.9	0.1	10.8	4.9 % (2.7%–7.0%)	12.2% (9.5%–14.9%)
Sumter	111	1	110	8.9	0.1	8.8	2.6 % (1.0%–4.2%)	13.6% (11.1%–16.2%)
Suwannee	66	1	65	15	0.2	14.8	5.4 % (2.8%–8.0%)	18.2% (14.3%–22.2%)
Taylor	52	1	51	23.8	0.5	23.3	4.4 % (3.0%–5.8%)	13.0% (8.8%–17.2%)
Union	18	0	18	11.8	0	11.8	13.2 % (4.9%–21.4%)	17.5% (12.2%–22.7%)
Volusia	821	3	818	15.3	0.1	15.2	4.6 % (2.6%–6.6%)	17.4% (13.7%–21.0%)
Wakulla	44	2	42	13.6	0.6	13	7.1 % (2.4%–11.7%)	27.6% (21.7%–33.6%)
Walton	144	0	144	21.1	0	21.1	8.7 % (5.0%–12.3%)	23.5% (19.5%–27.5%)
Washington	35	0	35	14.1	0	14.1	6.5 % (3.8%–9.2%)	23.1% (18.0%–28.3%)
Total	29,464	67	29,397	-	-	-	-	-

Annual Ad Hoc Study 2 Report:

Exploration of Improvements in Childhood Asthma as a Result of Smokefree Public Housing Policies

Year 9 Quarter 3 Deliverable 8b5
March 2024

Prepared for
Bureau of Tobacco Free Florida
Florida Department of Health
4052 Bald Cypress Way
Tallahassee, FL 32399-1743

Prepared by
RTI International
3040 E. Cornwallis Road
Research Triangle Park, NC 27709
RTI Project Number: 0214739.000.006.011

RTI INTERNATIONAL

Table of Contents

List of Acronyms and Definitions

Acronyms

ACS	American Community Survey
AHCA	Agency for Health Care Administration
BRFSS	Behavioral Risk Factor Surveillance System
BTFF	Bureau of Tobacco Free Florida
EVPs	Electronic Vapor Products
ED	Emergency department
FAA	Florida Apartment Association
FYTS	Florida Youth Tobacco Survey
HUD	U.S. Department of Housing and Urban Development
MUH	Multiunit housing
PHA	Public housing authority
PUMS	Public Use Micro Sample
SFMUH	Smokefree Multiunit Housing
SHS	Secondhand smoke

Introduction

Secondhand smoke (SHS) exposure leads to adverse health outcomes (Office on Smoking and Health, 2006). In 2019, 27% of Floridians lived in housing with two or more units (U.S. Census Bureau, n.d.), and individuals living in multiunit housing (MUH) can be involuntarily exposed to SHS that spreads from neighboring units or common areas. In addition to SHS exposure within the household, MUH residents who are female, have children in the household, or live below the poverty level are more likely to self-report secondhand smoke exposure from sources outside their household (Snyder et al., 2015).

Smokefree multiunit housing (SFMUH) policies are a long-standing intervention to reduce resident, staff, and visitor exposure to SHS (Centers for Disease Control and Prevention, 2014), and the cost savings of these policies are well documented (King et al., 2013; King et al., 2014). The Bureau of Tobacco Free Florida (BTFF) focuses on policies and interventions that reduce Floridians' exposure to SHS and has collaborated for more than a decade with MUH properties throughout the state to establish policies in both market rate and federally assisted properties.

To date, at least 2,700 properties encompassing at least 513,000 units in Florida have established SFMUH policies statewide; however, no health outcomes resulting from Florida's SFMUH policy interventions have been described. Policies have been implemented steadily since 2010 and each policy affects a small proportion of population, which makes attributing outcomes to the individual policies challenging. However, as part of their intervention to reduce SHS exposure, BTFF worked with Florida's public housing authorities (PHAs) to implement SFMUH prior to and in support of the U.S. Department of Housing and Urban Development's (HUD) 2016 rule requiring all PHAs to implement a smokefree policy between January 1, 2017 and July 30, 2018.

The implementation of the HUD smokefree public housing rule serves as a natural experiment, where health outcomes before and after policy implementation can be more clearly measured as there is a known point in time where all PHAs had to implement a policy. With the HUD rule, a larger portion of Florida's population was impacted with one policy change than with the individual SFMUH policies implemented over time.

The intent of the SFMUH policy intervention is to reduce SHS exposure among MUH residents, especially from SHS that can infiltrate apartment units from neighboring units, balconies, and other areas on the grounds of a MUH site. With this reduction in SHS, we can assume that asthma exacerbations among youth living in MUH will decrease as SHS exposure is one of the most important predictors of childhood asthma exacerbations. This reduction in asthma exacerbations should, in turn lead to fewer asthma-related visits to the emergency department (ED) or urgent care (Niu et al., 2021). While there are many health benefits to reducing SHS exposure, we selected asthma-related visits to the ED or urgent care among youth as the health outcome of interest because of the documented association between reduction in

SHS exposure and reduction in asthma exacerbations (Gerald et al.,2009). Additionally, these changes in asthma-related ED or urgent care visits can be seen over a relatively short period of time. This study aims to examine the association between the HUD smokefree public housing policy and asthma-related visits to the ED or urgent care among Florida's youth who reside in public housing.

Evaluation Questions

EQ1. What are the factors related to housing (e.g., a smoker residing in the home, smoke transfer from adjacent properties) that affect childhood visits to the ED for asthma?

EQ2. To what extent does a smokefree policy in public housing decrease the number of youth ED visits for asthma?

Methods

To estimate the impacts of smokefree housing policies on youth ED visits for asthma, we constructed a "synthetic population" for Florida to help us analyze different policy scenarios. A synthetic population is a hypothetical population constructed of known characteristics of individuals such as age, race, ethnicity, primary language, and health insurance status designed to closely match the real population and is based on the 2019 5-year American Community Survey (ACS) data from the United States Census Bureau. We then added youth and adult smoking behavior and youth asthma diagnoses into our synthetic population using data from the 2019 Behavioral Risk Factor Surveillance System (BRFSS) and 2019 Florida Youth Tobacco Survey (FYTS).[1]

Once the rates of smoking and asthma were added to the synthetic population, we were able to manipulate each person's risk of exposure to SHS and therefore likelihood to visit an ED[2] based on different policy scenarios. We constructed three different scenarios:(1) The current scenario in which public housing is smokefree, (2) the counterfactual scenario in which public housing is *not* smokefree, and (3) the hypothetical scenario in which all MUH is also smokefree.

Policy Scenarios

1. **Public housing is smokefree (Current Scenario)**
2. **Public housing is not smokefree (Counterfactual)**
3. **All multifamily housing is smokefree (Hypothetical Scenario)**

We computed the impact of each policy by comparing 1) the current scenario where public housing is smokefree to the scenario where public housing is *not* smokefree, and 2) the current scenario where public housing is smokefree to the scenario where all multiunit housing is *also* smokefree.

We present our results as estimated changes in youth asthma ED visitors due to each policy. For more details, please see **Appendix A**.

[1] Youth ED visits were defined using the FYTS survey item 'Students With Asthma Who Went to the Emergency Department or Urgent Care Center Due to Asthma One or More Times During the Past Year'
[2] Based on Niu et al 2021

Results

In the following section, we discuss highlights of the synthetic population and modeling analyses. Full county-level tables are available in Appendix B. Unless otherwise specified, the following results are based on the synthetic population and will not exactly match the true population. We assume 100% implementation of the HUD policy change across the state, so this study is not an evaluation of county effort or implementation effectiveness. Any differences between the percent change in counties are based on the demographic composition of residents living in public and multiunit housing.

Synthetic Population Augmentation

First, we calculated adult and youth smoking status and youth asthma-related visits to the ED for each individual in the synthetic population. To confirm our estimates, we compared the real-world rates to the synthetic rates for 2013 (pre-HUD policy) and 2019 (post-HUD policy), and they both matched (See **Appendix A** for more detail). Then, the synthetic households were joined to data from HUD to identify which households lived in public housing and multiunit housing, which can be found in **Table 1** below of smoking status by housing type.

Table 1. Smoking Status of the Synthetic Population by Housing Type, 2019

Measure	Housing Type	% Current Smoker
Adult Smokers	Public Housing	13.5%
	Multiunit Housing	14.6%
	Other	15.3%
Youth Smokers	Public Housing	2.2%
	Multiunit Housing	2.2%
	Other	2.5%

Public Housing – Current Scenario

Population Estimates

To estimate the effect of public housing going smokefree, the current scenario, we first used the synthetic population to recreate the actual reported changes in youth ED visits in 2019. The results in **Table 2** show the estimates of youth with asthma ED visits by housing type. The counts may not be an exact match owing to the use of the synthetic population, but the percentages are reflective of the real-world changes in asthma ED visits for youth. Again, the synthetic population rates matched the real-world rates for 2013 and 2019 (**Appendix A**, FLHealthCHARTS, n.d.)

Table 2. Synthetic Population Estimates of Youth with ED Visits for Asthma, 2019

Measure	Housing Type	2019	Estimated n
Youth Asthma ED Visitors	Public Housing	1.3%	140
	Multiunit Housing	1.0%	12,365
	Other	0.9%	20,278

Effects of the Smokefree Policy

To calculate the effect of the smokefree policy, we estimated the difference between youth ED visits when the public housing smokefree rule was implemented and youth ED visits if public housing did not go smokefree.

Overall, Florida youth living in public housing experienced a 22% decrease in ED visits owing to the smokefree policy (**Table 3)**. In **Table 3**, we report the percent change for four counties that represent over 65% of the youth population living in public housing. All available county estimates are in **Appendix B**.

Table 3. Estimated Percent Change in Youth ED Visits in Selected Counties Owing to Smokefree Public Housing Policy, 2019

Geography	Estimated # of Youth Living in Public Housing	% Decrease
Florida	**13,251**	**21.5%**
Miami-Dade	5,800	19.6%
Palm Beach	1,335	16.4%
Orange	850	18.7%
Duval	747	20.4%

Multiunit Housing – Hypothetical Scenario

Finally, we used the synthetic population to estimate the effect if all MUH went smokefree by reducing smoking behavior to zero in MUH and therefore eliminating exposure to SHS in MUH households.

Statewide, the percent decrease for asthma-related ED visits among youth living in MUH is 28.6% if all MUH properties were to go smokefree (**Table 4**), slightly higher than the percent change in public housing. This difference may be due to the fact that a greater proportion of the population live in MUH or that there are higher rates of smoking among adults in MUH, which would increase youth SHS exposure.

Table 4. Estimated Percent Change in Youth ED Visits in Selected Counties Owing to Hypothetical Smokefree MUH Policy, 2019

Geography	Estimated # of Youth Living in MUH	% Decrease
Florida	**1,198,908**	**28.6%**
Miami-Dade	281,470	28.0%
Palm Beach	116,981	24.6%
Orange	89,965	23.9%
Duval	50,773	27.1%

A SFMUH policy, such as one applied in this scenario, could affect almost 1.2 million Florida youth, as there are almost a hundred times more youth living in MUH than youth living in public housing. In Florida today, 8.8% of youth currently have asthma. Of those, one in five visited the ED or urgent care at least once in the past year. The improvement in youth asthma ED visits in the synthetic population as a result of the smokefree policy suggest the effectiveness of smokefree policies in contributing to better health for youth and adults.

Summary

Key Findings

These analyses suggest that the HUD smokefree housing policy resulted in a decrease in youth ED visits for asthma among youth living in public housing.

EQ I. What are factors related to housing (e.g., a smoker residing in the home, smoke transfer from adjacent properties) that affect childhood visits to the emergency department (ED) for asthma?

Research Question 1 was primarily answered through a search of the literature. Niu and colleagues (2021) reviewed electronic medical records for over 3,000 children with visits to the ED and identified odds ratios for likelihood of ED visit based on many factors, including smoking. Previous studies have primarily explored the effects of a smokefree housing policy through measuring airborne nicotine and indoor particulate matter (Cardozo et al., 2019; Plunk et al., 2020; Thorpe et al., 2020), however few studies measured the effects of the smokefree policy on childhood health outcomes. Additionally, we could not find research estimating the impact of secondhand smoke exposure from external sources that was distinct from SHS exposure within the household, so we estimated it to be 70% of the effect of SHS.

EQ II. To what extent does a smokefree policy in public housing decrease the number of youth ED visits for asthma?

According to FYTS, 19.8% of students had been diagnosed with asthma in 2019, and 18.9% of those students visited the ED for their asthma. HUD estimates that 21,000 children live in Florida public housing, which means that approximately 786 youth living in public housing visit the ED or urgent care for asthma at least once a year.

In the synthetic population, youth living in smokefree public housing (current policy scenario) experienced 22% fewer ED visits compared to the policy scenario where public housing was not smokefree (approximately 30 fewer ED visits for youth in smokefree public housing).

Additionally, a hypothetical scenario where youth are living in smokefree MUH housing resulted in 28.6% fewer ED visits compared to youth living in MUH without a smokefree policy (approximately 2,700 fewer ED visits). This hypothetical MUH policy would affect more youth than a public housing policy because 8.8% of Florida youth live in MUH, but only 0.3% live in public housing.

Study Limitations

This study has several limitations. First, the measure of having at least one visit to the ED in the last year is self-reported, based on the question in the FYTS. To validate

the measure, we requested ED records from the Florida Agency for Health Care Administration (AHCA), but to date, AHCA has not fulfilled the request. Additionally, because few studies ranked predictive factors for childhood ED visits, we used Niu and colleagues (2021) to estimate the likelihood of exposure to SHS and therefore the differential risk of going to the ED. Without existing literature on the subject, we estimated the effect of SHS from other units to be 70%. We would suggest including a wider range in future studies.

Similarly, it is important to note that for the purposes of the analysis, we assumed 100% implementation of the smokefree policy in public housing, which likely does not reflect the current, real-world situation. Therefore, the differences in county rates seen in the analysis are due to the difference in demographics in public and multiunit housing in those counties, not because any counties were more effective than others in implementing the smokefree policy. In fact, a study in Virginia found greater levels of indoor particulate matter and airborne nicotine 12 months after policy adoption. The authors postulated that smokers who would usually smoke on balconies or outdoor hallways started smoking indoors to prevent being caught, which increased the rate of indoor smoking and therefore exposure to SHS (Plunk et al., 2020). It is important to consider the implementation and unintended consequences of these policies in future research.

Finally, the synthetic population is necessarily imperfect; it systematically underrepresents households with very large families and families living in MUH, leading to biased representation of youth age groups and undercounting of Floridians living in MUH. We corrected for the impact of this bias by adjusting the synthetic population counts to match the true population counts in each demographic subgroup before tabulating our results.

Given the limitations of the available data, these results are not suitable for publication in the peer-reviewed literature. Multiple years of robust ED visit data and an updated synthetic population model would allow for more generalizable and consistent results.

Recommendations

These initial results suggest that there is a positive impact on childhood asthma outcomes as a result of smokefree housing policies. BTFF is already making strides in these areas, and we highlight below some additional recommendations for BTFF to consider as it continues to support initiatives to reduce SHS exposure among Floridians.

Community providers should continue working with property managers and management companies to implement comprehensive SFMUH policies and to promote BTFF's SFMUH resources to property managers and management companies.

Each year, BTFF community providers working on SFMUH policy survey managers of MUH properties with smokefree policies in their counties. As of June 2023, 42% of smokefree properties contacted had a comprehensive policy prohibiting smoking on all grounds of the property, while 55% of properties prohibited smoking indoors in all buildings. Only 43.5% of properties included electronic vapor products (EVPs) in their smokefree policies; 14% of properties did not include EVPs in their smokefree policy, and 43% of properties did not have data regarding EVPs (Bureau of Tobacco Free Florida, 2024).

These data suggest that there is still work to be done to implement comprehensive SFMUH policies including updating existing policies to cover the property grounds and EVPs; there may also still be MUH properties where BTFF can assist in the implementation of smokefree properties. In 2023, as part of a study on Section 8 housing, we recommended that BTFF promote its available resources among property management companies and onsite property managers (RTI International, 2023).

As community providers locate and connect with properties, they can promote BTFF's resources to ensure policies are comprehensive and provide cessation support for residents, particularly with the 85% of properties surveyed that made the decision to implement policies without provider assistance and may not be aware of BTFF and its SFMUH resources.

Consider identifying non-traditional partners in advocating for smokefree policies.

Community providers have been very effective in helping MUH properties establish smokefree policies, and many properties appear to be making the decision to implement smokefree policies without provider intervention. Newly constructed properties are being established as smokefree, and older properties may be reluctant

to go smokefree until renovations or other property improvements are completed (RTI International, 2023).

Given BTFF's many successes in working with individual properties to adopt SFMUH policies and collaborating with the Florida Apartment Association (FAA) to establish the FAA Smoke-Free Multiunit Housing Certification, we recommended in 2023 that BTFF refocus some of its SFMUH policy education to reach upper-level property management personnel (RTI International, 2023). Additionally, if BTFF would like to expand their work outside of traditional multiunit housing, some new possible partners are listed for consideration below.

Short-term rentals. In May 2023, Miami had 6,962 Airbnb listings, the highest rate in the country. Two other Florida cities, St. Petersburg and Tampa, are in the top ten in the country (Chamber of Commerce, 2023). Many cities have local management companies that manage AirBnbs, VRBOs, and local rentals. BTFF could work with these management companies to support adoption of SFMUH policy for all properties they manage, including multiunit rentals and other property types. For example, some management companies own smaller multi-unit properties with fewer than 10 units. These may already be prioritized by BTFF, but those owners could be approached to implement policies in buildings where they may only manage one or two units instead of the whole property. Developers in Florida are even building condos specifically for short-term rentals, like Airbnb (Bandell, 2023; Kalyanaraman, 2023) and BTFF could work with these developers to adopt SFMUH policies that are in place when these complexes open to the public. Municipalities are prohibited from making zoning regulations to restrict short-term rentals but can work on areas like code enforcement and occupancy restrictions (Hodges, 2023). BTFF has already developed resources for implementing smokefree policies in condos (Bureau of Tobacco Free Florida, 2023). These tools could be resources in approaching developers and short-term rental owners, especially using messaging around protecting their investment.

RV Campgrounds. BTFF has been successful in assisting counties and cities to pass smokefree policies in parks and beaches. As those policies are implemented, we recommend that community providers work with county parks that have RV parking and RV campgrounds to educate visitors on the new policies. In the long term, RV campgrounds in general may be an opportune partner to implement smokefree policies, especially those that are oriented toward long term stays.

Manufactured Housing and Mobile Home Parks. Although mobile home parks are not usually considered MUH, over 8% (approximately 823,000 units) of housing units in Florida are mobile or manufactured homes (U.S. Census Bureau, n.d.). In some parks, lot sizes may necessitate very little space between homes, and some mobile home residents may experience similar SHS exposure that residents of a multiunit building would experience. The HUD policy, for example, does not allow smoking

within 25 feet of a building because a study found that chemicals in SHS are reduced to ordinary background levels around 23 feet away from the source (U.S. Housing and Urban Development, 2016; Repace, 2005).BTFF could consider working with property managers to implement smokefree policies as a condition of the land lease or consider other alternatives to mitigate SHS exposure between homes. Additionally, previous studies suggest that many mobile home parks are located in rural areas or the urban fringe (Pierce et al., 2018). Many of BTFF's MUH activities have been conducted in large cities that have more MUH. Mobile home parks in rural areas could be a new priority area if BTFF would like to expand their MUH activities. For example, the I-10 Corridor project might be a good fit for collaboration, given the high number of rural counties in that area.

To understand the efficacy of policies on outcomes, consider replicating this analysis with ED visit data from AHCA.

The limitations of self-report data may have affected the interpretability of the results. For this study, the data source for youth asthma ED visits was the FYTS, which relies on self-reported data and is subject to the memory and recall of the youth respondents. In contrast, ED data reported to AHCA are collected at the time of visit and are not reliant on respondent recall. Robust ED visit data would allow for more generalizable and consistent results than self-reported data.

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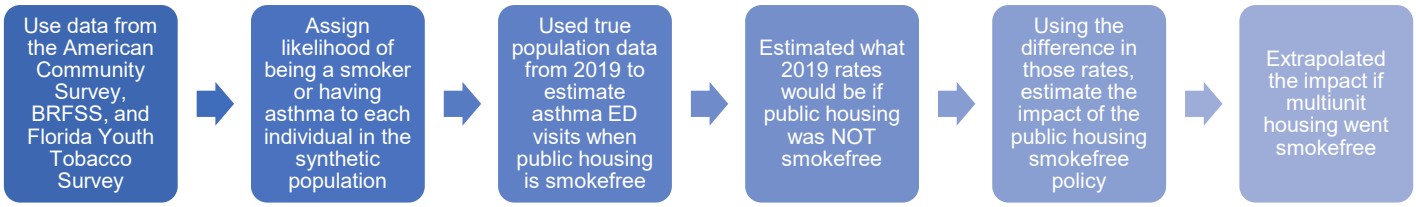
Appendix A: Methods

A synthetic population is a list of imagined individuals and their characteristics that is designed to closely match the demographic and geographic distribution of the real population. The synthetic population allows us to estimate what might happen to asthma outcomes when specific groups of people change their smoking behaviors due to policy interventions, leading to reduced SHS exposures for others.

We started with a basic synthetic population consisting of approximately 20 million synthetic persons in Florida. The synthetic persons have demographic features, including age, race, ethnicity, primary language, and health insurance status. Each person is also a member of a synthetic household. The synthetic households have precise geolocations, estimated household incomes, and housing types (either multiunit, single family, or public housing). These features of the synthetic population and their households are designed to closely mimic the real population of Florida in years 2013-2019 and were based on the 2019 5-year American Community Survey (ACS) and the associated Public Use Micro Sample (PUMS) data.



This basic synthetic population was then augmented with additional population features specific to tobacco use and asthma outcomes and used to construct a quantitative model of a person's likelihood to be a smoker or to visit an ED for asthma in the last 12 months. We then assigned each synthetic person a probability of being a smoker or having visited an ED for asthma. In this study, "youth" refers to Floridians 0--17 years of age.

Public Housing Data Notes

17 counties in Florida do not have HUD-administered public housing; in the synthetic population, three additional counties did not have youth living in the available public housing. Counties with less public housing and fewer residents living in public housing have unstable estimates. Additionally, Broward County had incomplete data and has much smaller estimates than we would expect in the actual population.

Scenario Construction

Given our augmented synthetic population, with estimated probabilities of smoking status and asthma status, we estimated how changes to smoking rates induced by smokefree housing policies might affect asthma outcomes in youth. For this analysis, we considered three scenarios: 1. the current scenario in which public housing was made smokefree in 2017 ("Current Scenario"), 2. a counterfactual scenario in which public housing was *not* made smokefree in 2017 ("No PH SF Scenario"), and 3. a hypothetical scenario in which *all* multiunit housing was also made smokefree in 2017 ("All MF SF Scenario"). By comparing how asthma outcomes changed from 2013 to 2019 in each of these scenarios, we can construct an estimate of the impacts of a smokefree housing policy implemented in public housing or in all multiunit housing.

To begin, we constructed each hypothetical scenario in our synthetic population. For all three scenarios, the 2013 the population remained the same. However, for the 2019 population, we set smoking rates to zero within the housing types that have smokefree housing policies and adjusted the asthma ER visit rates based on SHS exposure according to the risk ratios given by Niu and colleagues (2021). For SHS from neighboring households within multiunit housing, we reduced it by a factor of 0.7. In this analysis, neighboring households are defined as multiunit housing units within 20 meters of each other.

In the Current Scenario, our aim was to preserve the overall smoking and asthma ER visit rates in each county to be sure we matched the observed population data, while adjusting how smoking and asthma ER visits are distributed within each county to better match the specified smoking policy. To do this, we adjusted the smoking likelihoods of people who live in public housing down to zero and the smoking likelihoods of people who do not live in public housing up to preserve the total number of smokers in each county measured in 2019. After determining smoking likelihoods for each person, we determined which people in our synthetic population live with smokers or are close neighbors to smokers in multiunit housing. These smoke exposures are then used to adjust the likelihood that each individual visited an ER for asthma in the last 12 months. Finally, we again adjusted the asthma likelihoods of everyone up slightly, to preserve the total measured incidence of asthma ER visits in each county. The net effect of this asthma likelihood adjustment is to redistribute the asthma ER visits within the population away from those subpopulations whose smoke exposure is lower, primarily those in public housing.

In **Table A1**, the synthetic smoking rates for adults and youth and youth ED visits are listed for 2013 and 2019.

Table A1. Characteristics of the Synthetic Population in Florida

Measure	2013	2019	% Decrease
Adult Smokers	16.6%	15.3%	7.8%
Youth Smokers	6.7%	2.5%	62.7%
Youth Asthma ER Visitors	1.2%	0.9%	25.0%

The percent decreases in Table A1 are based on the percent change between 2013 and 2019 in the synthetic population and match the decreases found in real-world Florida youth and adults (FLHealthCHARTS, n.d.).

Table A2. Smoking Status of the Synthetic Population by Housing Type

Measure	Housing Type	2013	2019	% Decrease
Adult Smokers	Public Housing	15.0%	13.5%	10.0%
	Multiunit Housing	16.4%	14.6%	11.0%
	Other	16.7%	15.3%	8.4%
Youth Smokers	Public Housing	5.7%	2.2%	61.4%
	Multiunit Housing	6.0%	2.2%	67.2%
	Other	6.8%	2.5%	63.2%

In Table A2, the synthetic estimates of smoking status are available based on housing type. The percent decreases match those found in real-world Florida youth and adults (FLHealthCHARTS, n.d.).

In the All MF SF Scenario, we adjusted the smoking likelihoods of each person in multiunit housing down to zero, allowing the total smoking rate in each county to fall accordingly as we assumed that SHS exposure would be zero. Next, we adjusted asthma ER visit probabilities, allowing total asthma ER visit rates to fall if appropriate. The net effect of this adjustment was to reduce total asthma ER visits in each county by reducing the number of visits from multiunit housing due to the lower smoke exposures.

In the No PH SF Scenario, we estimated the number of people who would have been smokers in public housing if not for the smokefree policy. This approach helps us isolate the effect of the policy separate from normal changes to youth ED visits. To do this, we adjusted smoking rates down in the public housing and estimated the total change in county-wide smoking rates that results from this adjustment. Next, in the original synthetic population, we adjusted smoking likelihoods of each person *up* by the ratio that they decreased in each county with no smokers in public housing. This allows us to estimate how the total number of smokers in each county might have been different with no smokefree public housing.

Having constructed each of our scenarios, we apply a difference in difference analysis to estimate the impact of each policy. Computing these results for each county, demographic group, and housing type gives us the tables and figures provided in the Results section.

Appendix B: Additional Data and County Tables

See Data Deliverable for full results. Any results in red are based on small numbers and should be used with caution.

County	Current Scenario: All Youth ED Visitors 2019	Current Scenario: Youth ED Visitors Living in MUH, 2019	Current Scenario: Youth ED Visitors Living in Public Housing, 2019	Hypothetical Scenario: All Youth ED Visitors	Hypothetical Scenario: Youth ED Visitors Living in MUH, 2019	Hypothetical: Youth ED Visitors Living in Public Housing, 2019
Florida (Statewide)	**32,782.29**	**12,364.83**	**139.68**	**30,936.47**	**2,473.25**	**94.28**
Alachua County	370.45	134.74	2.58	340.84	41.06	1.77
Baker County	27.44	1.94	0.09	26.38	0.24	0.09
Bay County	169.4	46.28	0.24	161.99	7.36	0.17
Bradford County	49.07	5.91	0	48.72	0.55	0
Brevard County	392.08	81.11	1.05	381.58	11.87	0.71
Broward County	4,036.44	2,191.33	1.08	3,668.02	356.49	0.5
Calhoun County	9.85	0.32	0	9.91	0.04	0
Charlotte County	107.78	25.7	0.56	108.01	1.61	0.22
Citrus County	70.84	5.95	0	70.42	0.75	0
Clay County	392.55	45.49	0	377.34	6.97	0
Collier County	417.94	258.13	0	380.23	25.64	0
Columbia County	102.08	11.5	0	98.79	2.8	0
DeSoto County	47.2	7.55	0.99	46.71	1.71	0.54
Dixie County	15.67	0.97	0.05	15.61	0.06	0.05
Duval County	2,266.55	705.07	10.66	2,126.53	152.39	8.09
Escambia County	595.49	129.77	4.39	560.16	22.75	2.17
Flagler County	101.42	17.63	0.22	99.58	1.96	0.07
Franklin County	15.54	1.48	0.1	16	0.04	0.1
Gadsden County	171.22	17.83	0.06	168.98	2.72	0.06

County	Current Scenario: All Youth ED Visitors 2019	Current Scenario: Youth ED Visitors Living in MUH, 2019	Current Scenario: Youth ED Visitors Living in Public Housing, 2019	Hypothetical Scenario: All Youth ED Visitors	Hypothetical Scenario: Youth ED Visitors Living in MUH, 2019	Hypothetical: Youth ED Visitors Living in Public Housing, 2019
Gilchrist County	18.25	0.71	0.02	17.8	0.18	0.02
Glades County	13.78	1.06	0	14.02	0.21	0
Gulf County	27.16	6.23	0.05	28.27	0.14	0.09
Hamilton County	18.97	2.05	0.21	18.47	0.73	0.22
Hardee County	32.58	9.16	0	31.92	1.2	0
Hendry County	120.32	10.91	0	118.56	3.92	0
Hernando County	185.49	23.55	0	182.23	2.97	0
Highlands County	114.99	21.64	0	110.23	3.4	0
Hillsborough County	2,632.93	865.92	3.41	2,463.86	203.92	3.51
Holmes County	14.43	0.51	0.02	14.35	0.02	0.02
Indian River County	88.83	26.61	0	82.21	2.19	0
Jackson County	70.86	6.93	0.14	69.99	0.89	0.16
Jefferson County	36.89	2.9	0	35.34	0.73	0
Lafayette County	4.52	0.83	0	4.55	0.03	0
Lake County	337.98	70.05	0.47	322.65	8.89	0.21
Lee County	736.82	288.17	1.29	699.23	43.89	1.26
Leon County	550.8	177.43	0.95	509.51	47.77	0.89
Levy County	40.97	2.43	0.23	41.09	0.31	0.26
Liberty County	11.74	0.15	0.02	11.5	0.11	0.02
Madison County	50.99	3.3	0	51.53	1.48	0
Manatee County	306.61	112.47	2.18	295.1	28.04	1.47
Marion County	666.88	109.15	0.84	646.86	28.08	0.58
Martin County	79.89	32.52	0.05	76.5	4.09	0.08
Miami-Dade County	5,239.78	3,062.55	64.5	4,984.98	720.16	45.35
Monroe County	48.06	18.15	0.24	44.33	4.17	0.21

County	Current Scenario: All Youth ED Visitors 2019	Current Scenario: Youth ED Visitors Living in MUH, 2019	Current Scenario: Youth ED Visitors Living in Public Housing, 2019	Hypothetical Scenario: All Youth ED Visitors	Hypothetical Scenario: Youth ED Visitors Living in MUH, 2019	Hypothetical: Youth ED Visitors Living in Public Housing, 2019
Nassau County	85.61	6.13	0.15	84.58	0.9	0.15
Okaloosa County	272.1	65.52	0.83	268.06	6.59	0.8
Okeechobee County	85.28	11.26	0	84.92	2.83	0
Orange County	2,642.92	938.29	9.79	2,510.39	226.7	5.17
Osceola County	838.56	203.31	0	828.86	33.5	0
Palm Beach County	1810.5	976.77	12.71	1,640.08	146.73	3.94
Pasco County	472.71	61.6	0.13	461.64	13.52	0.14
Pinellas County	1,217.38	539.89	2.34	1,115.51	107.23	1.74
Polk County	2,011.23	429.31	4.01	1,933.23	106.1	3.72
Putnam County	128.23	8.63	1.71	126.03	1.39	1.6
Santa Rosa County	175.12	21.19	0.44	173.77	2.71	0.09
Sarasota County	153.51	43.53	0.52	147.01	6.16	0.15
Seminole County	458.27	111.42	0.02	441.96	23.2	0.02
St. Johns County	136.13	21.35	0	134.57	4.2	0
St. Lucie County	482.88	155.28	5.55	446.91	16.47	3.99
Sumter County	42.98	3.24	0	41.96	0.5	0
Suwannee County	45.08	2.86	0.41	44.25	0.4	0.26
Taylor County	16.98	1.3	0	16.32	0.22	0
Union County	22.52	3.18	0.09	22.29	0.47	0.11
Volusia County	779.14	205.35	4.17	737.81	27.73	3.4
Wakulla County	24.01	0.95	0	23.94	0.05	0
Walton County	53.27	9.81	0.01	52.97	0.89	0.01
Washington County	18.35	0.58	0.11	18.53	0.23	0.1