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Alcohol Policy Best Practices in Franklin and Hampshire Counties, Massachusetts

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Alcohol Policy Best Practices in Franklin and Hampshire Counties, Massachusetts

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Capstone Project 2018
School of Public Policy
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Alcohol Best Practices in Hampshire and Franklin Counties, Massachusetts

EXECUTIVE SUMMARY

Research question: What are "*efficient*" policies and best practices to reduce youth alcohol consumption in Franklin and Hampshire counties, Massachusetts?

Motivation: Excessive alcohol consumption leads to monetary and societal costs.

Methodology: A hybrid of quantitative (multiple linear regression) and qualitative (policy evaluation, case studies, phone and in-person interviews) methods.

Deliverables

- 1) Database 1: general overview of existing alcohol best practices
- 2) Checklists: a menu of about 65 alcohol best practices for communities
- 3) Database 2: community policy database (community matrix)
- 4) Focus groups: with town stakeholders in Amherst and South Hadley
 - Presented checklists
 - Compared checklists with Database 2
 - Community readiness survey

Discussion: There strong variability and heterogeneity in the degree to which towns craft and implement their own alcohol policies. Towns such as Amherst and South Hadley have established local alcohol policies, in addition to Massachusetts General Laws (MGL). Other towns such as Ware and Belchertown only follow MGL. There is also a connection between town location, size, population, and the implementation of local alcohol policies

Recommendations

- 1) We encourage towns to examine our policy menu, and to implement policies in response to their community need.
- 2) Implementing alcohol policies proactively will help mitigate future alcohol consumption problems, if financial and administrative resources are available.
- 3) There can be a disparity between the work of public health officials and selectboard in towns, so it is important to identify stakeholders who can mobilize in favor of alcohol regulations and to focus on incremental changes.
- 4) We recommend establishing evaluation programs to assess the success of policies, post implementation.

Conclusion: While some alcohol policies are universal and should be implemented in all towns such as sever training, other alcohol policies should be adopted if needed, such as keg registration in college towns. Implementing new alcohol regulations require mobilization from public health officials and selectboard, and incremental changes are preferred over forcing significant changes in a community.

1. INTRODUCTION

Massachusetts provides individual towns and municipalities with legislative power to create and enforce their own alcohol regulations. All towns follow Massachusetts General Laws (MGL), but some take the initiative to craft and implement their own alcohol policies. Although this has allowed communities to address their own community needs, it has also led to a variability in the implementation of best practices across different municipalities.

In Massachusetts, youth alcohol abuse is a persistent problem. Binge drinking levels among those under the age of 21 remains consistently high. In an effort to better address these issues in Hampshire and Franklin counties, our team identified and provided alcohol policy best practices to reduce youth risky behaviors that are related to alcohol consumption. We worked with two clients on this study. The Strategic Planning Initiative for Families and Youth (SPIFFY) Coalition and the Communities That Care Coalition (CTC) are nonprofit organizations that work on community projects relating to youth substance use and violence in Hampshire and Franklin counties, respectively.

Our methodology consisted of a qualitative literature review, individual town case studies, and two focus groups with community stakeholders in Amherst and South Hadley. In doing so, we created a database of existing alcohol policies across the counties, dissected a countywide Teen Health Survey, and created two policy checklists that translate regulations for local organizers and officials.

Our analysis confirms that local alcohol policies in Hampshire and Franklin counties (MA) are fragmented and heterogeneous. Some towns solely follow Massachusetts General Laws (MGL). In addition to MGL, some towns have their own local alcohol policies. Additionally, as far as we know, there is not a comprehensive study on local alcohol best practices in Hampshire and Franklin counties. Lack of information prevents any inter-towns learning opportunities. Through this project, we significantly contributed to the alcohol policy framework and discussion. Not only we identified and synthesized key alcohol policies, but we also created consolidated and comprehensive menus for local communities. We also made the language of our policies accessible to all stakeholders and avoided complex legal jargon.

The remaining sections of this report are organized as follows: section 2 presents the research question and the motivation behind this study; section 3 provides a background on our clients and a literature review on alcohol regulations; section 4 is statistical analysis of the teen health survey data; section 5 outlines our methodology; section 6 presents the three main deliverables of this project; section 7 provides a discussion of results; section 8 is our general recommendations to clients; and section 9 is our conclusion.

2.MOTIVATION AND RESEARCH QUESTION

2.1. Motivation

Excessive alcohol consumption and alcohol-related reckless behavior lead to severe public health losses. Here are a few significant statistical facts. In 2014, alcohol-impaired fatalities accounted for 9,967 deaths (31% of all driving fatalities) (CDC, 2014). Because nearly 880,009 people die from alcohol related causes annually, alcohol is the third leading preventable cause of death in the United States (CDC, 2014). Besides death, excessive alcohol consumption leads to other social problems. For example, annually, 97,000 students experience alcohol related sexual assault or rape (CDC, 2014). Additionally, alcohol excessive consumption is costly. In 2010, alcohol misuse problems cost the U.S. \$249.0 billion. These behavioral, societal, moral, and monetary costs motivated us to investigate potential policies to limit youth alcohol abuse.

Alcohol abuse is a particularly persistent issue in Massachusetts. 1,525 deaths annually occur in Massachusetts because of binge drinking (Alcohol Policy Forum, 2018). 17.4% of adults and 18.9% of high school students were reported to have been involved in binge drinking, which is the lead cause of alcohol poisoning and other fatal outcomes (CDC, 2017). Despite these humanitarian and monetary costs, alcohol policies have not changed in Massachusetts for a long time (Alcohol Policy Forum, 2018). Learning from the "tobacco legislation" process in Hampshire and Franklin counties, we believe bringing up issues around alcohol policies might be an effective strategy to amend alcohol policies and to further protect youth.

Examining local alcohol policy in Massachusetts is necessary, because of the current, observed patterns. In addition to a proliferation in the number of alcohol licenses provided in Massachusetts, the three-tier system is threatened (Alcohol Policy Forum, 2018). The three-tier system separates alcohol manufacturers from suppliers, and consumers. Furthermore, protecting youth from irresponsible alcohol consumption is harder because of globalization. For example, college students can easily order fake U.S. ID from websites in China, such as "China God ID." Additionally, with the rise of corporate power, competition between liquor stores will lead to a "race to the bottom" (Alcohol Policy Forum, 2018). After Amazon purchased Whole Foods, the latter could sell alcohol at lower prices (Alcohol Policy Forum, 2018). This can ultimately lead to a public health problem due to a higher consumption of alcoholic products.

2.2. Research question

Our study investigated efficient alcohol policy and best practices to reduce youth alcohol consumption in Franklin and Hampshire counties, Massachusetts. Our client requested four main deliverables. We created a database of existing policies through a literature review. We also made alcohol policy checklists for towns. Additionally, we made a community policy database that cross-compared towns in Franklin and Hampshire counties and identified policy gaps across towns. Finally, we ran focus groups with stakeholders in Amherst and South Hadley to present our policy checklists, compare checklists with town current policies, and assess community readiness.

3. BACKGROUND

3.1. Client history

SPIFFY, founded in 2002, helps communities in Hampshire County reduce risk factors that may lead youth to engage in unhealthy behaviors, such as drug use and bullying, by partnering with communities to make positive changes. Some of SPIFFY's recent work includes conducting a large survey of Easthampton parents for a social norms marketing campaign and hosting trainings on adolescent brain development and addiction. Our point person from SPIFFY was Heather Warner, a SPIFFY Coalition Coordinator.

CTC, also founded in 2002, strives to build connections among families, schools, and communities to combat substance abuse and violence and to improve the health of children and teens in Franklin County. They work not only on preventing harmful behaviors but also on overall positive youth development to ensure that young people can reach their full potential. Since the creation of the CTC, youth substance use in Franklin County has declined and the coalition has received national recognition for its work. Our point of contact at CTC was Ilana Gerjuoy, the Prevention Strategies Coordinator for the CTC.

3.2. Literature review

Alcohol abuse is a growing problem in the United States, and one that policymakers and media often ignore. Excessive alcohol consumption is the third preventable cause of death in the U.S.A (Mokdad et al., 2004), and it leads to an average of 80,000 deaths annually (CDC, 2012a). Alcohol abuse can lead to health risks ranging from violence, heart disease, sexually transmitted diseases, birth defects, and several other risks to poor birth outcomes (the community guide, 2013; CDC, 2017). That is in addition to the high cost associated with excessive alcohol consumption (the community guide, 2013). Hence, there is a dire need for alcohol regulations to control these negative effects.

There is a need for targeted policy interventions in the U.S. and Massachusetts in particular. Massachusetts has been identified as not carrying out some of the best practices towards combating youth alcohol abuse. For example, the state lacks some major restrictive alcohol advertising laws, which have reduced the rate of youth harm due to substance abuse (Center for Alcohol Marketing and Youth, 2012). Additionally, Massachusetts lags other states behind in excise taxes, which have been proven to reduce the rate of abuse (CDC, 2017; The World Health Organization 2017; the community guide, 2013). Since Alcohol consumption is shaped by alcohol regulatory landscape and the public attitudes towards drinking, local governments and municipalities should regulate zoning laws and Conditional Use Permits (CUPs) (The U.S. Department of Justice).

The literature also provides a basis for understanding the public health history behind youth alcohol restrictions, and evidence-based, recommended best practices (PIRE, 2004). The US Department of Justice "Regulatory Strategies for Preventing Youth Access to Alcohol" broke best practices to prevent youth alcohol access into three broad categories – commercial availability, social availability, and youth possession. Commercial availability refers to youth accessing alcohol through stores and bars and cites best practices to target adults who may provide alcohol to youth such as compliance checks and shoulder tapping programs. Social and public availability policies target the culture of youth drinking and penalize adults who may provide alcohol to youth at parties

through enforcing teen party ordinances. The final category, youth possession policies, are designed to impose sanctions on youth for possessing alcohol in public and private settings, consuming alcohol while operating a motor vehicle, and possessing false identification (The US Department of Justice).

4. EXPLORATORY STATISTICAL ANALYSIS

4.1. Data

We conducted a quantitative analysis in STATA using data from the 2017 Prevention Needs Assessment Survey, conducted by SPIFFY for 8th, 10th, and 12th graders in Hampshire County schools. There were 121 questions related to demographics, family life, substance use behaviors, and perceived consequences. The purpose of the survey was to collect data on student attitudes towards substance use. The sample size of the survey was 3,321 students.

The goal of our analysis is to determine whether in our sample alcohol consumption is related to academic performance. We hypothesize that there might be a negative relationship between alcohol consumption and school performance. *Table 1* illustrates some key demographics of the sample.

Table 1: Demographic Variables Used in Empirical Model		
Age	Mean Respondent Age was 15	
Gender	49.92% Female 47.30% Male 2.78% Other Gender Identity	Binary variable = 1 if female
Race	84.82% White 15.18% Non-White	Binary variable = 1 if white
Academic Performance	85.02% Reported Strong ¹ Academic Performance 14.98% Reported Poor ² Academic Performance	
Poverty	76.23% Did Not Receive Free Lunch 23.77% Did Receive Free Lunch	Binary variable = 1 if received free lunch

1. Receiving mostly "A's" and "B's"
2. Receiving mostly "C's", "D's", and "F's"

Table 1: key demographic variables used in our empirical model, and their distribution in our sample. (Source: SPIFFY, 2017 Prevention Needs Assessment Survey)

Our sample had slightly more female respondents than males or other gender identity. The sample is disproportionately white, with over 80 percent of respondents identifying as Caucasian and

15.18% identifying as Black, Asian, Hispanic, Native American, or Pacific Islander. Most students reported strong academic performance or receiving mostly A's and B's. In terms of socioeconomic status, about 24 percent of students received free lunch.

4.2 Descriptive Statistics

Table 2 lists the variables of interest. These included academic performance, gender, race, sexual orientation, poverty, and first use age of alcohol, marijuana, cigarettes, and e-cigarettes, as well as regular use of alcohol.

Table 3 outlines descriptive statistics for the variables used in our models. After compiling the descriptive statistics of our variables, we also examined the frequency of first use of alcohol, marijuana, cigarettes, and e-cigarettes by age group. *Table 4* and *Figure 1* illustrate the reported first use of substances for ages 10-12, 13-15, 16-17, and those who have never used. From these two figures, we identified that youth are most likely to try all four substances between the ages of 13-15.

The baseline age for the analysis is 10-12. We suspect that substance use has a lesser observed effect on academic performance during this age for several reasons. First, more people consume substances later on, approaching high school age and the total sample of those who reported using substances between 10 and 12 is relatively small. Additionally, the mean respondent age was 15, these respondents may under-report substance use between 10-12 as they may not remember behaviors five years prior. Finally, those who were exposed at an early age, through religious or family settings, may be less likely than older peers to continue consistent use through adolescence – possibly decreasing the effect of use on academic performance.

Table 2: Dependent and Independent Variables	
Variable Name¹	Description
<i>Dependent Variable</i>	
<i>Academicperf</i>	Academic performance of respondent
<i>Newacademic</i>	Recoded academic performance variable into binary for strong academic performance (A's & B's) and poor academic performance (C's, D's, & F's)
<i>Independent Variables</i>	
<i>Gender</i>	Gender of respondent
<i>Newgender</i>	Binary variable = 1 if the respondent is female
<i>Sex</i>	Sexual orientation, coded into heterosexual and non-heterosexual (i.e. bisexual, gay/lesbian, not sure, and other)
<i>Binaryrace</i>	Race was coded in original survey separately for each race, recoded into binary = 1 if white and = 0 if not white, as the over 80% of respondents were Caucasian
<i>Poverty</i>	Binary variable = 1 if the respondent receives free lunch. This variable is a proxy for low household income level.
<i>Firstuseage</i>	First age of consuming more than a few sips of beer, wine, or hard alcohol, recoded into age brackets: <i>firstb</i> = 13-15, <i>firstc</i> = 16-17, as well as never consumed category
<i>Marijuanaage</i>	First age of marijuana use, recoded into age brackets: <i>mjb</i> = 13-15, <i>mjc</i> = 16-17 as well as never consumed category
<i>Ecigage</i>	First age of use of e-cigarettes (vape pens, vape pipe, e-hookah), recoded into age brackets: <i>ecigb</i> = 13-5, <i>ecigc</i> = 16-17, as well as never consumed category
<i>Cigage</i>	First age of use of cigarettes, recoded into age brackets: <i>cigc</i> = 13-15, <i>ecigc</i> = 16-17, as well as never consumed category
<i>Regularuseage</i>	Reported age of regular alcohol use (more than once or twice per month), recoded into age brackets: <i>regb</i> = 13-15, <i>regc</i> = 16-17.

1. All data is self-reported

Table 2: Description and coding of dependent and independent variables included in our assessment (Source: SPIFFY, 2017 Prevention Needs Assessment Survey).

Variable	Observations	Mean	Std. Dev.	Min	Max
Newgender	3,219	.514	.499	0	1
Binaryrace	3,294	.848	.848	0	1
Academicperf	3,238	4.272	.803	1	5
Poverty	3,248	.238	.426	0	1
Firstuseage	3,240	2.050	1.100	0	3
marijuanaage	3,243	2.424	.922	0	3
Ecigage	3,219	2.505	.868	0	3
Cigage	3,235	2.678	.804	0	3
regularuseage	567	1.473	.611	0	2

Table 3: Descriptive Statistics of Variables Included in Empirical Model (Source: SPIFFY, 2017 Prevention Needs Assessment Survey)

		Alcohol	Marijuana	Cigarettes	E-Cigarettes
Never used		1,694	2,242	2,743	2,348
		52%	69%	85%	73%
Has used		1,546	1,001	492	871
		48%	31%	15%	27%
Age of first use					
	10 to 12	349	116	143	85
		11%	4%	4%	3%
	13 to 15	842	635	264	554
		26%	20%	8%	17%
	16 to 17	355	250	85	232
		11%	8%	3%	7%
Total number of respondents		3,240	3,243	3,235	3,219

Table 4: Reported First Use of Alcohol, Marijuana, Cigarettes, and E-Cigarettes among youth (Source: SPIFFY, 2017 Prevention Needs Assessment Survey)

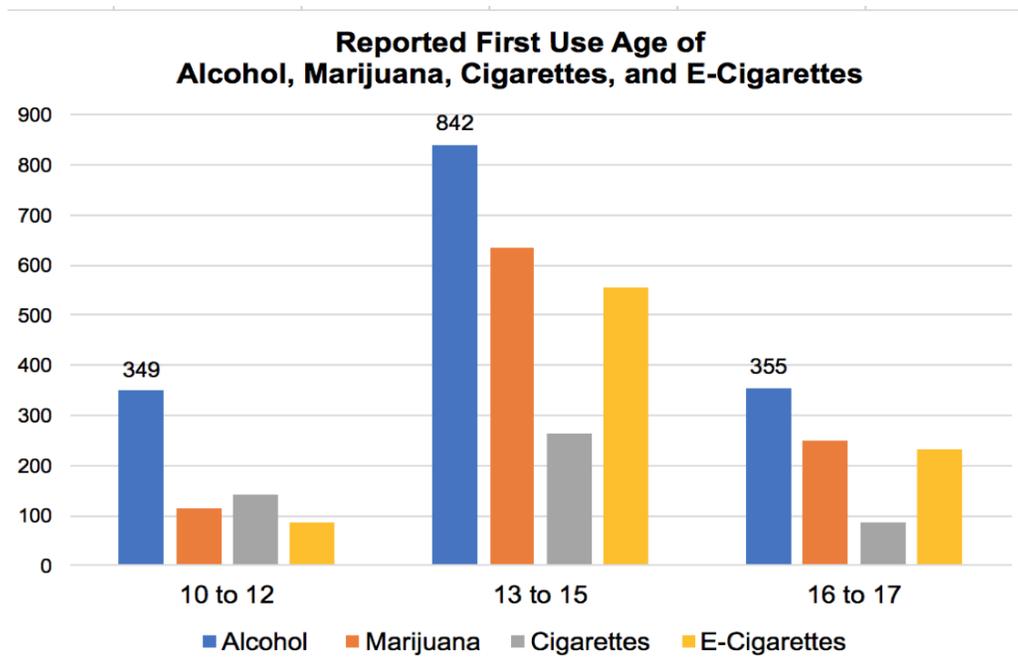


Figure 1: Graph of First Reported Use of Alcohol, Marijuana, Cigarettes and E-Cigarettes among youth (Source: SPIFFY, 2017 Prevention Needs Assessment Survey)

4.3. Empirical model

To assess our research question of whether or not youth substance use is related to academic performance, we constructed three regression models. Model 1 is a logistic regression model and Models 2 and 3 are multiple linear regression models. All models use academic performance as the dependent variable, substance use variables as the independent variables and control for gender, race, and/or poverty.

Model 1, shown in *Table 5*, uses the binary variable for academic performance (*newacademic*) as the dependent variable. Model 2, shown in *Table 6*, uses the ordinal variable for academic performance (*academicperf*). Both Models 1 and 2 use substance use variables for first use of alcohol, marijuana, cigarettes, and e-cigarettes, as well as reported regular use of alcohol, for ages 13-15 and 16-17, as the independent variables. There are six outputs in each model, the first omits substance use variables and the latter five account for each substance individually. Models 1 and 2 control for gender and race. The equations for these models are listed below –

$$\text{Model 1: } newacademic = \text{constant} + gender + binaryrace + firstb(mjb + ecigb + cigb + regb) + firstc(mjc + ecigc + cigc + regc) + \text{error}$$

$$\text{Model 2: } academicperf = \text{constant} + gender + binaryrace + firstb(mjb + ecigb + cigb + regb) + firstc(mjc + ecigc + cigc + regc) + \text{error}$$

Model 3, shown in *Table 7*, uses the binary variable for academic performance (*academicperf*) as the dependent variable. This model uses the same substance use variables for first use of substances between the ages of 13-15 and 16-17 as Model 1 and 2. Model 3 control for

gender and poverty, rather than race. We suspected that poverty and race may be highly correlated so we removed poverty and added race to the last model to further test the robustness of the effects of substance use on academic performance.

$$\text{Model 3: } \textit{academicperf} = \textit{constant} + \textit{gender} + \textit{poverty} + \textit{firstb} (\textit{mjb} + \textit{ecigb} + \textit{cigb} + \textit{regb}) + \textit{firstc} (\textit{mjc} + \textit{ecigc} + \textit{cigc} + \textit{regc}) + \textit{error}$$

Table 5: Regression Model 1, logit model						
Dependent Variable: represents academic performance, <i>newacademic</i> = 1 if student receives mostly A's and B's, = 0 if student receives mostly C's, D's, and F's						
Independent Variables	Logit (1)	Logit (2)	Logit (3)	Logit (4)	Logit (5)	Logit (6)
<i>Gender</i>	.880*** (.12)	.893*** (.11)	.922*** (.19)	.892*** (.11)	.896*** (.11)	.888*** (.11)
<i>Race</i>	.440*** (.13)	.452*** (.13)	.487*** (.13)	.481*** (.11)	.456*** (.13)	.470*** (.13)
<i>First Use Alcohol 13-15</i>		-.243** (.12)				
<i>First Use Alcohol 16-17</i>		-.088 (.17)				
<i>First Use Marijuana 13-15</i>			-.805*** (.12)			
<i>First Use Marijuana 16-17</i>			.141 (.22)			
<i>First Use E-Cigarettes 13-15</i>				-.780*** (.12)		
<i>First Use E-Cigarettes 16-17</i>				-.330* (.20)		
<i>First Use Cigarettes 13-15</i>					-.835*** (.16)	
<i>First Use Cigarettes 16-17</i>					.160 (.36)	
<i>Regular Use of Alcohol 13-15</i>						-.714*** (.17)
<i>Regular Use of Alcohol 16-17</i>						-.122 (.18)
<i>constant</i>	1.017*** (.13)	1.072*** (.12)	1.134*** (.13)	1.155** (.13)	1.073*** (.13)	1.055*** (.13)
<i># of observations</i>	3,119	3,119	3,119	3,119	3,119	3,119
<i>Pseudo-R2</i>	0.032	0.033	0.049	0.045	0.041	0.038

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 6: Regression Model 2, multiple linear regression model

Dependent Variable: represents academic performance, *academicperf* = 1 if “Mostly F’s”, 2 if “Mostly D’s”, 3 “Mostly C’s”, 4 “Mostly B’s”, and 5 “Mostly A’s”

Independent Variables	Reg (1)	Reg (2)	Reg (3)	Reg (4)	Reg (5)	Reg (6)
<i>Gender</i>	.299*** (.03)	.305*** (.03)	.307*** (.03)	.298*** (.03)	.302*** (.03)	.300*** (.03)
<i>Race</i>	.199*** (.04)	.206*** (.039)	.210*** (.04)	.213*** (.04)	.205*** (.04)	.212*** (.04)
<i>First Use Alcohol 13-15</i>		-.137*** (.04)				
<i>First Use Alcohol 16-17</i>		-.028 (.05)				
<i>First Use Marijuana 13-15</i>			-.302*** (.04)			
<i>First Use Marijuana 16-17</i>			-.021 (.05)			
<i>First Use E-Cigarettes 13-15</i>				-.358*** (.04)		
<i>First Use E-Cigarettes 16-17</i>				-.184** (.05)		
<i>First Use Cigarettes 13-15</i>					-.352*** (.09)	
<i>First Use Cigarettes 16-17</i>					-.089 (.09)	
<i>Regular Use of Alcohol 13-15</i>						-.337*** (.05)
<i>Regular Use of Alcohol 16-17</i>						-.080* (.05)
<i>Constant</i>	3.960*** (.04)	3.987*** (.04)	4.004*** (.04)	4.018*** (.04)	3.982*** (.04)	3.978*** (.04)
<i># of observations</i>	3,119	3,119	3,119	3,119	3,119	3,119
<i>R²</i>	0.044	0.050	0.066	0.073	0.059	0.056
<i>Adjusted-R²</i>	0.044	0.048	0.065	0.072	0.057	0.055

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 7: Regression Model 3, multiple linear regression

Dependent Variable: represents academic performance, *academicperf* = 1 if “Mostly F’s”, 2 if “Mostly D’s”, 3 “Mostly C’s”, 4 “Mostly B’s”, and 5 “Mostly A’s”

Independent Variables	Reg (1)	Reg (2)	Reg (3)	Reg (4)	Reg (5)	Reg (6)
<i>Gender</i>	.306*** (.03)	.312*** (.03)	.314*** (.03)	.305*** (.03)	.310*** (.03)	.307*** (.03)
<i>Poverty</i>	-.448*** (.03)	-.453*** (.032)	-.442*** (.03)	-.449*** (.03)	-.443*** (.03)	-.457*** (.03)
<i>First Use Alcohol 13-15</i>		-.145*** (.03)				
<i>First Use Alcohol 16-17</i>		-.022 (.05)				
<i>First Use Marijuana 13-15</i>			-.284*** (.03)			
<i>First Use Marijuana 16-17</i>			-.010 (.05)			
<i>First Use E-Cigarettes 13-15</i>				-.354*** (.04)		
<i>First Use E-Cigarettes 16-17</i>				-.170*** (.05)		
<i>First Use Cigarettes 13-15</i>					-.332*** (.05)	
<i>First Use Cigarettes 16-17</i>					-.094 (.08)	
<i>Regular Use of Alcohol 13-15</i>						-.346*** (.05)
<i>Regular Use of Alcohol 16-17</i>						-.088* (.05)
<i>constant</i>	4.228*** (.02)	4.266*** (.04)	4.279*** (.05)	4.299*** (.02)	4.253*** (.02)	4.261*** (.02)
<i># of observations</i>	3,090	3,090	3,090	3,090	3,090	3,090
<i>R2</i>	0.092	0.099	0.112	0.121	0.105	0.105
<i>Adjusted-R2</i>	0.092	0.097	0.111	0.120	0.104	0.104

*** p < 0.01, ** p < 0.05, * p < 0.1

4.4. Discussion of results

Our descriptive statistics results show that about half (47.72%) of the youth between the ages of 10 and 17 try alcohol in the surveyed schools of Hampshire county. This percentage is alarming, especially because alcohol abuse is often linked to other substance use and societal problems. Additionally, the models presented above illustrate a potential effect of substance use on academic performance among youth. In all three models, there is a statistically significant, negative effect between use of alcohol, marijuana, cigarettes, and e-cigarettes during the ages of 13 to 15, and academic performance.

For alcohol, first use between 13-15 decreases academic performance by 13.7% when controlling for gender and race, and by 14.5% when controlling for gender and poverty, as indicated in *Table 6* and *Table 7*. For other substances, like e-cigarettes, the negative effect of use on academic performance is even larger. First use of e-cigarettes between 13 to 15 decreases academic performance by 35.8% when controlling for gender and race, and by 35.4% when controlling for gender and poverty, as indicated *Table 6* and *Table 7*. This means that those who use alcohol and/or other substances are more likely to perform poorly in their classes than those who don't use substances during this age range. We are concerned about the students' academic performance, because it is an indicator of human capital development and high school is an important stage for college preparation.

Academic performance is also affected by an individual's gender, race, and socioeconomic status, as indicated in our models. Being a female positively effects academic performance as indicated in Models 1, 2, and 3. Being white is also demonstrates a positive effect on academic performance, shown in Models 1 and 2, which controlled for race. Taken together, white females are likely to perform better in school than their male and racial minority peers. Receiving a free lunch (which is a proxy variable for low income) has a negative effect on academic performance, as shown in Regression Model 3. In general, students from lower socioeconomic levels may be distracted from school work by the need to provide for themselves or their families. Also, not receiving sufficiently nutritious meals may be linked to poorer academic performance. While the models presented above do not examine the relationships between substance use and race, gender, and poverty, it is important to pay attention to these different identities when crafting harm reduction and prevention education for youth. Being a male, a person of color, or from a low socioeconomic background negatively effects academic performance as does substance use at a young age, therefore it is crucial that these communities receive special attention to delay first use.

The survey results helped us to contextualize the problem of youth use of alcohol and other harmful substances. It also provided strength to our study. Our results clearly point to the need for policies to reduce alcohol consumptions. Communities care not only about the health of youth but also about their future, and we know that academic performance is strongly linked to future success. Hence, youth alcohol consumption is an issue that should grab the attention of public health leaders and policymakers in Hampshire county.

4.5. Conclusion

We conclude that ages of 13 to 15 is a critical period for first substance use and this negatively impacts academic performance. Schools should focus prevention and harm reduction education during the 10 to 12 age range to delay first use of substances and inform students of the

consequences of substance use before they transition into high school, at age 14 or 15. In terms of prevention, school teachers and families should start to have open conversations with their children about alcohol and other substances. They should stay alert and notice any behavioral changes their children show such as receiving lower grades. From a public policy perspective, community leaders should reduce youth exposure to alcohol consumption such as making sure that alcohol stores are situated away from schools and that alcohol advertisement is limited and does not include cartoon characters.

5. METHODOLOGY

We identified best practices and policies related to alcohol that may directly or indirectly improve youth health and young adult health. We created a database of existing alcohol policies across the counties, dissected a countywide Teen Health Survey, and conducted interviews with local stakeholders and state level law enforcement.

Qualitative, town case studies, and focus groups.

This project includes the following four methods of evaluation:

5.1. Qualitative research

We reviewed the literature, articles, and studies provided by clients. Sources included organizations focused on youth public health such as the Center for Disease Control (CDC), the World Health Organization (WHO), the U.S. Department of Justice (DOJ), and the Center on Alcohol, Marketing, and Youth (CAMY). The goal of our literature review was primarily exploratory.

Through our review, we identified trends in Massachusetts and the U.S., and existing policy gaps. Our literature review results also shaped and guided our best practices database, phone interviews, pilot program, and the rest of our research. We translated the public health academic literature on best practices (such as advertisement restrictions targeted at youth) into a checklist. We categorized the policy recommendation options into three parts: retail, pouring, and outside research. Our retail and pouring policies were drawn from the client, and we added the additional research, and the rationale behind the implementation of the policy.

5.2. Town case studies

We chose a case study method for our research question, because it allows us to understand alcohol policy best practices that are implemented at a local level. We limited our research to content analysis of the official website of towns. Alcohol policies, alcohol bylaws, and alcohol regulations were our research key terms.

We followed the following research steps. First, all three group members independently familiarized themselves with the literature of alcohol bylaws existing on towns' website. Second, we discussed our preliminary observations, and developed main themes to better organize data collected on towns. Third, we individually conducted a more in-depth analysis of the website content that pertained to policy assigned themes.

When we could not find the resources online for local alcohol policies, we looked for town's contact information. We reached out to clerk men, town managers, and select boards via

phone and/or email. We asked a few questions on whether they have local alcohol policies or solely follow Massachusetts General Laws Chapter 138 on policy enforcement. Please see the appendix for the interview questions from our Google form questionnaire. From these interviews, we identified which communities have adopted alcohol policies that build on MGL Chapter 138 and those that have not.

5.3. Focus groups

Focus group research was used to collect the data for the pilot assessment. Interview qualitative data were analyzed through a process of open, axial, and selective coding. Due to the exploratory nature of this research, a focus group was appropriate for this study because it allowed participants to express ideas freely. A focus group was also an efficient way of administering a semi-structured interview.

The sample for this study was hand-selected stakeholders from Amherst and South Hadley. An email requesting focus group participation was sent by our client. Our sample included two towns, and it was not representative of the population. Amherst and South Hadley are considered pioneers when it comes to local alcohol policy.

Three interviewers led the focus group, and they asked a series of predetermined questions (see a list of questions in the appendix) and facilitated the ensuing conversation. We also had an additional survey to assess the stakeholders' attitudes towards implementing stricter alcohol regulations in their communities (see appendix for the survey questions). A single note-taker was present to write the participants' answers. Our questions mainly examined how a community would react to our policy proposals, and where gaps existed in terms of strict and lenient youth prevention policies. We summarized our findings in a way that would engage communities with vastly different needs and stakeholders with different agendas.

Our questions focused on implementation, how concerned the stakeholders were with youth alcohol abuse, and the general culture of the area. We asked that stakeholders to rate their responses from 1 to 5, 5 being strongly agree, 2 being strongly disagree, and 1 being neutral or no opinion. We used these in our conversation with South Hadley stakeholders to begin to gauge how interested they would be in adopting new policies to curb alcohol abuse. For example, we asked the stakeholders to "please indicate your level of support or opposition to a policy that restricts alcohol advertisement in your community". In our Amherst piloting session, we focused more on our discussion with the select board member on the political feasibility, and the law enforcement perspective of implementing these potential new laws. Both communities seemed open to the idea of a policy menu that they could choose from, and further interviews to begin to uncover some of the underlying cultural attitudes towards youth alcohol abuse and tools to prevent it.

6. DELIVERABLES

6.1. Database 1: alcohol best practices

Our first database was an excel spreadsheet of identified best practices to limit youth access to alcohol and related harms at the local, state, and national level. This database, of over 60 policies,

was created using existing literature evaluating alcohol policies. The database is a detailed sheet denoting policies, their definition, potential impacts on children, youth, and adults, and existing program evaluation. This larger database is intended for client and stakeholder reference. We used Database 1 to create our more portable policy checklists.

6.2. Checklists

The list of policy options was created to give communities a wide variety of available interventions and rationales behind the interventions to address youth alcohol abuse prevention. Each policy is connected with a community where the invention has been tried, and or research where the invention has been advocated for by public health experts. These policies were, in part, pulled from Massachusetts Lawyer, DJ Wilson's legal framework for municipal alcohol regulations provided to SPIFFY and CTC. We reformatted this legal language, along with other best practices from best practice literature, into easy-to-read, accessible policy menus for town stakeholders. These policy menus were organized in a table format which listed the name of the policy, a brief description, rationale behind how a policy aims to limit youth alcohol use, communities that have implemented the policy, and supporting research.

We broke these checklists into retail and pouring alcohol settings. The retail section of policies addresses issues surrounding the sale of alcohol in establishments such as liquor stores and grocery stores. The pouring section of policies addresses issues surrounding the consumption of alcohol in on premise locations such as restaurants, bars, and nightclubs. The last section of policies contains outside research that our group conducted that did not apply to retail or pouring designations, such as one-day liquor licenses. Figure 3 shows a snapshot of our retail checklist.

Policy	Description	Rationale	Communities
Implement Beer Keg Registration	Before purchasing a keg, customers must complete a registration form to be approved by a local authority such as a police department. The approved keg registration form will be collected by the alcohol licensee at the time of the sale.	This purchasing requirement provides an additional step to ensure the buyer is of legal age. The registration process requires the address where the keg will be used is helpful to police, for example to discourage excessive drinking parties or parties where underage persons may be served.	Cambridge, Amherst
No sale of nips or minimum size containers	No retailer shall sell alcoholic liquor in any container with a capacity less than four ounces or 100 milliliters.	Small alcohol bottles are cheap and easy-to-conceal which may be particularly appealing to youth. Because of the small size, nip bottles have shown to contribute to drunk driving incidents as they are easy to transport and consume on the road.	Holden, Chicago

Figure 3: Retail Checklist Example

6.3. Database 2: community matrix

We identified 16 communities throughout Hampshire and Franklin counties where the clients were interested in exploring the gaps in alcohol policies. From rural communities to dense college towns, these communities represent the different cultures across the geographic region. Our

communities' sheet identified any policies that the town of municipality had adopted beyond the Massachusetts General Laws Chapter 138 (the section of the state-wide laws that deals with alcohol). Smaller municipalities have not adopted many policies beyond the MGL. However, many college towns, because of the drinking culture on college campuses and surrounding many pouring locations, have adopted innovative new strategies to address youth alcohol abuse. Our communities' sheet will draw out the gaps in adopted policies and identify neighboring town's practices that could potentially be adopted.

6.4. Focus groups

We introduced our policy checklists to local stakeholders during focus groups. The purpose of these meetings included: testing if the language and structure of our checklists are accessible to local stakeholders; learn from participants about their respective towns' culture surrounding alcohol policies; assess the receptiveness of participants about possible best practices not implemented in their towns yet; and learn about the possible challenges of implementing new policies. Participants represented communities in Franklin and Hampshire counties. We conducted two focus groups, one with stakeholders from South Hadley and one with stakeholders from Amherst. Both included community stakeholders such as public health officials, members of the local government, police officers, fire department officials, etc.

6.4.1. Amherst

We ran a focus group with leaders in the Amherst community during their monthly Cannabis Control Commission (CCC) Municipal Policy Subcommittee meeting. The attendees were:

- Jennifer Gundersen, Amherst Police Department
- John Thompson, Amherst Inspections
- Heather Warner, Strategic Planning Initiative for Families and Youth (SPIFFY) Coalition
- Sally Linowski, UMass Amherst Associate Dean of Students
- Eric Beal, UMass Amherst Neighborhood Liaison
- Jeff Olmstead, Amherst Fire Department
- Andy Steinburg, Amherst Select Board
- Maura Roberts, UMass Amherst Off Campus Student Life Program Coordinator
- Chief Tyrone Parham, UMass Amherst Police Department

During the meeting introduced our community assessment tool to better understand the individual town's culture surrounding alcohol policies and their implementation. Overall, the different stakeholders, all representing different interests and agencies, were receptive to the idea of a concise, easy-to-understand policy menu for local policymakers. The law enforcement members of the committee said that they would support whatever the town decides to implement (a nod of approval). A selectboard member expressed his desire to share the policy menu and begin discussions as to how best to implement the changes, and which leaders would be interested in studying the issue.

Amherst is going through a town government change, but the selectboard member said that regardless of when the policy options were made available, that he believes as a college town there would be a great amount of interest in many of the new regulations. For example, the group had a fruitful discussion of the pros and cons of banning nip bottles, with some members expressing concern from industry and others stating the clear positive environmental and health outcomes for

students and the broader community. The UMass Amherst representatives were overall supportive, with Eric Beal, the UMass Amherst Neighborhood Liaison, expressing interest in sharing the options menu with the neighboring town of Hadley, where he has relationships with key lawmakers. The development and business members of the committee were also receptive to the idea. Many of those stakeholders are looking to update the by-laws in Amherst, and see this as an update that could be pushed as a broader effort to reform.

As the SPIFFY coalition coordinator, Heather Warner, said at the conclusion of the meeting, there was a willingness to participate in a community readiness assessment that suggests the policy options combined with an interview with local stakeholder would be an effective way to move youth alcohol abuse prevention forward across Hampshire and Franklin counties. We discussed next steps, and who in the new town council government to reach out to begin to propose new preventive policies.

6.4.2. South Hadley

We ran a second focus group with stakeholders in South Hadley on April 24th, 2018. Attendees were:

- Sharon Hart, health director
- Karen Walsh Pio, coordinator at South Hadley Drug and Alcohol Prevention Coalition
- Steve Parentella, police chief
- Michael Sullivan, town administrator
- Heather Warner, SPIFFY

We initially inquired about alcohol regulations in South Hadley. Sullivan shared that the local licensing board is the same as the selectboard. South Hadley has BYOB policy by application to ensure training of employees, and BYOB licenses are only granted to stores with liquor licenses. South Hadley also implemented keg registration about 25 years ago, but they stopped it, because it was not found to be effective. South Hadley is witnessing an increase on the demand for alcohol licenses as number of restaurants and store expands.

Alcohol regulations are a topic of discussion among town leaders. The town tried to ban nip bottles because they are non-profitable, easier to conceal, and lead to littering. However, they could not. They tried to ban a mobile cart that sells alcohol and moves across towns, but they also failed to. Additionally, South Hadley encourages restaurants to make their businesses more family friendly, by avoiding the sale of alcohol.

Advertising was an important topic. South Hadley is interested in restricting the number and size of these signs, but enforcement of this policy is an issue. The town also wants to eliminate temporary signs on sidewalks. Overall, constraints on exterior advertising will limit the exposure of youth to drinking culture. There are also rumors on restricting happy hours. Although local stores are in favor of this restriction, casinos are against it.

South Hadley attempts to measure the success of its alcohol regulations. Compliance checks led to a decrease in the number of violations from 70% failure rate to 1-2 failures per year. Policy patrols are very hard to measure. South Hadley police officers must file for incidents; time and place, which is a better way to quantify. They also report categories of violation through codes,

such as underage drinking or open container violations. Policy department are facing a major challenge: they were unable to perform walk-through checks this year due to fiscal cuts.

7. DISCUSSION

There is a variability in the degree to which towns craft and implement their own alcohol policies. There is a room for towns to learn about and adopt alcohol best practices existing in the literature or already implemented in other towns. Our results from the case studies conducted on 16 communities in Hampshire and Franklin counties show that some towns solely follow Massachusetts alcohol laws, such as Ware, Belchertown, Bernardston, Erving, Montague, Shelburne, Deerfield, and Orange. Seven towns have their own municipal policies, in addition to the Massachusetts General Laws (MGL). These include Northampton, Easthampton, Greenfield, South Hadley, Amherst, Athol, and Sunderland.

We believe there is a nexus between local alcohol policies, town location, population, and size. Policymakers in rural locations emphasize less the need for local alcohol policies, because there are not as many local alcohol stores. College towns, such as Amherst and Northampton, have stricter local alcohol policies, because college students are more likely to consume alcohol irresponsibly. A town's size is also positively correlated with its financial and administrative resources, which provide a larger opportunity to implement municipal alcohol policies.

7.1. Universal alcohol policies

We found that there are some alcohol regulations that should be adopted by all towns and localities, regardless of the different cultures and government structures. The public health literature recommends certain best practices that protect youth from advertising, peer pressure, faulty training services, etc. For example, both pouring and retail locations should restrict their hours of operation to stop the supply of the substance after a certain hour. To ensure public safety, a strict closing time should be enforced.

For both pouring and retail locations, we found that these policies should be universal:

7.1.1 Pouring

We would require that all pouring establishments post signs that clearly show they have an active liquor license and their proper documentation. Restaurants and bars should focus on the sales not only of their alcoholic beverages, but also on food and non-alcoholic beverages. The dual sales increase the likelihood that a customer will consume less alcohol, and focus more on the other options available at the restaurant. To take this a step forward, we would recommend that pouring locations be required to make a majority of their revenues sales from non-alcoholic drinks and food.

To ensure safety off-premise, we recommend that pouring locations require all customers to consume the alcohol they purchased on premise. This eliminates the possibility that they walk off the premise highly intoxicated and end up disrupting the public or harming themselves. The pouring locations should also check for the customer's ID before every purchase to make sure that

they are who they say they are, and that those who let them into the restaurant or bar didn't make a mistake in judging that the person is of age to consume alcohol.

Inside bars and restaurants, we recommend that all staff are trained and certified by the state programs that have had prior approval. This to ensure that from locality to locality, bartending staff do not have different standards and will not sell to youth who can easily cross over into the next town if the town has lax training laws. We also would require that all pouring locations have a minimum age of 21 for staff who handle alcohol. Staff under the age of 21 could provide alcohol to others their age and would be more likely to give in to peer pressure to supply the substance.

7.1.2 Retail

Youth are especially susceptible to alcohol advertising, especially if it is in close proximity to their schools or community areas, so strict advertising requirements are needed to make sure that the establishments are not targeting youth. We would also require that these stores post their liquor licenses in sight of the customer.

The banning of alcoholic beverages in vending machines is also a regulation we believe should be enforced everywhere. Recently, Cambridge has adopted a policy that allows for vending machines to have champagne in them, which allows for intoxication in public and could result in easy access of alcohol to youth. It may seem oddly specific to have this law, but we believe it's an important law to have to ensure that those negative externalities do not come to fruition. Going along with the policies that are essential to safety outside of the stores, stores should not have drive-up windows where those operating a vehicle can purchase alcohol. Stores should also be banned from selling alcohol at other non-traditional outlets because the purchase of alcohol outside the premises encourages the same bad behavior.

Inside the stores, every retail location should be banned from selling alcohol to someone who is clearly intoxicated because it risks harming them further, and those around them. A store owner also cannot know how that customer arrived there and how they plan on making it back to wherever they were headed, so they should steer clear of intoxicating the person more than they already are. Retail locations should be held liable for this.

Another important universal policy that should be adopted in regard to retail is that all clerks should undergo extensive, state confirmed training and be required to be of a certain age. This ensures that those selling alcohol to others are not susceptible to peer pressure, and will not be a supply for other under-age people to obtain alcohol.

7.2. Town specific alcohol policies

Implementing policies require administrative and financial resources. Town select boards are more inclined to adopt retail and pouring alcohol policies that pertain the most to their community needs and alcohol consumption problems. A counterargument to this analysis is the need to implement proactive and preventative alcohol policies. Even if an alcohol policy does not seem to address a specific problem in a town at the moment, there is still a value in adopting it. Towns cannot predict whether problems related to alcohol policies will arise in the future, so having a policy already in place will ensure a faster response to problems. Towns are also geographically connected, so they are not in isolation of each other alcohol related problems.

7.2.1 Pouring

We identified six alcohol policies that are implemented, depending on a town's culture and needs. We define a town culture based on whether it is a college town, located in a rural area, and on other factors such as size and population.

Bring your own beverage "BYOB" might be especially needed in rural towns in Franklin county. Rural towns have festivals or other community events. It is important to regulate alcohol access during these events, especially if youths are present. On the contrary, restriction of operation hours and quantity of alcohol sold might not be especially needed in rural towns. Shops in rural areas tend to close at an early time during the evening anyways. Similarly, requiring electronic scanners at all restaurants and bars for repeat offenders might cause a larger financial burden on smaller towns that have local restaurants.

College towns are likely to benefit from the prohibition of alcohol infused food products and beer pitchers. Young adults in college are affected by the college culture that promote drinking for fun. Thus, prohibition of beer pitchers will decrease the risk of excessive alcohol drinking among college students. Similarly, prohibition of alcohol-infused food products will limit the chances of hiding alcohol among minors and of excessively consuming alcohol.

7.2.2 Retail

We identified five retail policies that are town culture specific. Similar to pouring alcohol policies, restriction of operation hours and requiring electronic scanner at alcohol retailers to track repeated offenders might be unnecessary in rural areas.

Keg registration is another policy that depends on town's population. It is likely to be needed in college towns but not in rural areas. Amherst policy chief mentioned that keg registration was implemented, because students at UMass Amherst were found to be drinking alcohol from large containers. Implementing a keg registration also helps to track and control big college parties. However, a town like South Hadley had removed keg registration after implementing it for 25 years, because it was not found to be effective. Only a few keg registrations happened every year, which did not justify the administrative costs. Prohibiting the sale of single beer containers, unless one quart or larger, follows the same logic as that of keg registration.

Prohibition of the sale of nips alcohol bottles is especially desired in college towns. During the alcohol policy forum, the Vice Chancellor at UMass Amherst shared their interest in having a nips policy specific to UMass, given the issue of nips littering on our campus. Nips also do not generate revenue, so alcohol store owners will be in favor of this policy. Finally, since towns are geographically connected and nips littering might move between towns, prohibition of nips bottles is also desired in rural areas, unless it poses a large administrative and financial burden on town enforcement.

7.3. Community readiness

Our focus groups in Amherst and South Hadley revealed a few key insights into where those towns are in regard to youth alcohol abuse prevention, but also where future focus groups should focus their research. In both Amherst and South Hadley, we observed that the private-sector leaders that

were part of the groups were more hesitant than some of the public health and law enforcement officials when discussing new restrictions on the alcohol industry and preventative measures. The law enforcement officials involved were receptive to the policies because of their direct interaction with college students who have access to alcohol and how that translates into easier access for high school students in college towns as well. The select board and community members were also receptive for similar reasons, most see the effects of youth alcohol abuse. The public health leaders were the most receptive because they understand the far-reaching impact binge drinking and the abuse of the substance can have on health and development. In both towns, the focus group members were able to point us to lawmakers that would need to be made aware of these policies for next steps (such as legislative drafting and coalition building) to occur.

Amherst and South Hadley both have comparatively proactive alcohol policies, but many of their rural neighboring localities do not. Future focus groups should examine the readiness of the communities that have less financial and political feasibility to adapting new laws.

8. RECOMMENDATIONS

Our analysis allowed us to identify a set of recommendations. Towns need to be proactive when crafting alcohol policies. Alcohol policies should be implemented proactively, only if towns possess the administrative and financial resources to do so. Town administrators are advised to have policies in place, in case future alcohol consumption arise or in case they were affected by alcohol consumption problems in neighboring towns. For instance, there has been a Champagne vending machines in Cambridge, which means that intoxicated persons can have an extended access to alcohol in the absence of a trained server. Had there been an alcohol bylaw to regulate vending machines, the Champagne vending machine would not have been located in Cambridge in the first place.

Incremental changes and assessing the stakeholders' attitude towards alcohol policies are desired. SPIFFY and CTC work is very challenging, and it requires identifying the towns' public health "champions". Town administrators and community leaders usually favor alcohol regulations, but this is not necessarily the case of selectboard. The selectboard might be composed of individuals who are eager to protect alcohol businesses and looser alcohol regulations. In short, mobilizing should start with building coalitions with stakeholders who are pro-tighter alcohol regulations, especially because introducing major changes might backlash.

A new discourse should be adopted with alcohol businesses, particularly with the observed phenomenon of license expansion. Alcohol bylaws should be framed so that they protect local alcohol stores. These family-oriented stores tend to care more about their community than their profits. At the same time, big corporates should be regulated, because those are the ones who

The spread of corporations that sell alcohol cause prices to "sink to the bottom". SPIFFY and CTC can work with local authorities to prevent the ubiquitous spread of alcohol corporate-retail stores such as Big Y and Casco. especially when it comes to protecting local ones and regulating big corporates. Local authorities should continue to administer alcohol regulations even

if these are eroded at the state level. Additionally, community partners should make alcohol businesses aware that youth alcohol policies will not hurt their revenues. Similarly, they also should make restaurants aware that selling alcohol may not be the best way to attract customers, families in particular.

9. CONCLUSION

We believe there is not a one size fits all alcohol policy package that towns should adopt. There are universal alcohol policies that all towns should implement; these are the least common denominator. Additionally, towns should properly define the alcohol-related problems in their communities to implement specific policies that address these problems and needs. While towns should implement policies proactively, we acknowledge that this may be infeasible. Community readiness, political risks, and financial resources should all be considered before implementing new policies. Finally, policy evaluation is key to decide which policies are successful and recommended to neighboring communities.

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Background Research: Development and Enforcement of Public Policy to Reduce ATODs

Institute of Government and Public Affairs, University of Illinois, January, 2009

APPENDIX 1

Variables used in the Empirical Specification and Coding Structure for Statistical Analysis

Variable	Variable Name	Variable Type	Coding
Gender	Gender	Ordinal	0 Other Gender Identity 1 Male 2 Female
	Newgender	Binary	0 Male 1 Female
Academic Performance	academicperf	Ordinal	1 Mostly F's 2 Mostly D's 3 Mostly C's 4 Mostly B's 5 Mostly A's
	newacademic	Binary	0 Mostly C's, D's, and F's 1 Mostly A's and B's
Race	Binaryrace	Binary	0 White 1 Non-White
Free Lunch Recipient	poverty	Binary	0 No Free Lunch/Not Sure 1 Received Free Lunch
Age of First Use of Alcohol	Firstuseage	Ordinal	0 10-12 1 13-15 2 16-17 3 Never
	Firsta	Binary	0 ≠ 10-12 1 10-12
	Firstb	Binary	0 ≠ 13-15 1 13-15
	Firstc	Binary	0 ≠ 16-17 1 16-17
	Firstd	Binary	0 ≠ Never 1 Never
Age of First Use of Marijuana	Marijuanaage	Ordinal	0 10-12 1 13-15 2 16-17 3 Never
	Mja	Binary	0 ≠ 10-12 1 10-12
	Mjb	Binary	0 ≠ 13-15 1 13-15
	Mjc	Binary	0 ≠ 16-17 1 16-17
	Mjd	Binary	0 ≠ Never 1 Never
Age of First Use of E-Cigarettes	Ecigage	Ordinal	0 10-12 1 13-15 2 16-17

			3 Never
	Eciga	Binary	0 ≠ 10-12 1 10-12
	Ecigb	Binary	0 ≠ 13-15 1 13-15
	Ecigc	Binary	0 ≠ 16-17 1 16-17
	Ecigd	Binary	0 ≠ Never 1 Never
Age of First Use of Cigarettes	Cigage	Ordinal	0 10-12 1 13-15 2 16-17 3 Never
	Ciga	Binary	0 ≠ 10-12 1 10-12
	Cigb	Binary	0 ≠ 13-15 1 13-15
	Cigc	Binary	0 ≠ 16-17 1 16-17
	Cigd	Binary	0 ≠ Never 1 Never

APPENDIX 2

Handout from a SPIFFY Meeting on March 14th, 2018

Lauren Coakley, Ghida EL-Banna & Reily Connaughton

School of Public Policy, Capstone Project

University of Massachusetts, Amherst

I. Municipal Alcohol Policies

Table 1. A Selection of Six Municipal Alcohol Policies

Policy	Description	Rationale	Communities
Beer Keg Registration	Customers should complete a registration form that is approved by the local authority	<ol style="list-style-type: none"> 1. Ensure legal age of drinking 2. Discourage excessive drinking at parties 	Cambridge, Amherst, Athol
Prohibition of Alcohol Sale at non-traditional outlets	No alcohol sale at educational institutions, movie theaters, Laundromats etc	<ol style="list-style-type: none"> 1. Employees in these facilities may not be trained to handle alcohol 2. Minimize youth access to alcohol 	Chicago
No sale of alcohol caffeinated products	Prohibit the sale of all alcohol caffeinated products	<ol style="list-style-type: none"> 1. Avoid excessive drinking, especially because caffeine can mask the effect of alcohol 2. Discourage the drinking culture on campuses, as students tend to use caffeinated products 	Massachusetts
No sale of alcohol-infused food products	Prohibit the sale of all food containing alcohol such as, cookies, candies, and ice cream	<ol style="list-style-type: none"> 1. These products particularly appeal to youths 	Massachusetts (ice cream only)
No new retail stores within 500 feet of an existing liquor store	Limit the density of retailers in an area	<ol style="list-style-type: none"> 2. Correlation between youth alcohol consumption and availability of liquor stores 	N/A
Training Clerks	Employees handling alcohol should be trained at least 30 days prior to hiring	<ol style="list-style-type: none"> 3. Lessen alcohol abuse 	Needham, Athol, South Hadley

II. Research Methods

1. Researching literature on both the national and international levels for implemented alcohol policies
2. Examining alcohol regulations available on towns' websites in Hampshire and Franklin counties
3. Calling town managers to inquire about local alcohol policies

III. Findings

1. A variability in the degree to which towns craft and implement their own alcohol policies
 - a. Some towns such as Amherst and South Hadley have established local alcohol policies VS towns such as Ware and Belchertown follow only Massachusetts alcohol regulations
 - i. Correlation between urban/rural location of the town, size and the emphasis on the need for local alcohol policies

IV. Future Steps

1. Examine whether these policies have been evaluated upon implementation in certain communities
2. Perform a pilot assessment in 1-2 towns to inquire about the effectiveness of our compiled alcohol policies

Meeting Highlights

1. Create a map/diagram to link specific policy interventions with communities' pertinent needs. This will require us to categorize towns into college towns, rural areas etc.
 - a. Communities are not interested in implementing policies that are irrelevant to their needs
 - b. This brought back the idea of "program evaluation", i.e. are these policies backed up? The police officer from Amherst mentioned some interesting thoughts about "keg registration".
2. Are there policies that should be implemented everywhere, such as clerk training?
3. Add more details on some policies. For instance, what is the allowed alcohol content in alcohol infused products? Cooked vs non-cooked?
4. We should add Hadley to our community list (in addition to South Hadley)

There might be an interest in creating a table summary for policies, like the sample in today's handout

APPENDIX 3

Handout from Community Forum Presentation on March 19th, 2018

Meeting Highlights

1. Proliferation of alcohol licensing in MA
2. Getting rid of the three tier system and the implications of that on alcohol abuse
3. Accepting ID from outside of MA- China God ID website
4. Police departments are creating a system to geographically track retail/pouring areas that are responsible for the largest number of alcohol policy violations
5. Competition between liquor stores that lead to “race to the bottom” issue
6. Amazon/Whole Foods outcompeting with smaller, local alcohol stores (higher alcohol availability at a lower cost higher consumption)

APPENDIX 4

Article from Community Forum Presentation

Our project was featured in the **Daily Hampshire Gazette**.

Article title: Alcohol summit brings alcohol manufacturers, retailers, and law enforcement together

Date of Publication: Tuesday, March 20th

Link: <http://www.gazettenet.com/Beverage-Forum-16307647>

APPENDIX 5

Interview Questionnaire Google Form

When we were not able to find town municipal alcohol policies online, we reached to town officials via phone and/or email. We asked questions regarding whether they solely follow MA regulations or have their own local alcohol policies. In the event that they had their own alcohol policies, we asked them to share these documents with us. Furthermore, we asked about who is in charge of enacting alcohol policies, i.e. select board etc.

Here are the questions from the Google form:

1. Could you indicate your full name?
2. What is your title/position?
3. What is your preferred contact information?
4. What is your email address?
5. Can you direct me to a copy of your city/town alcohol policies, by-laws, or ordinances?
6. If it is available on a website, could you kindly confirm the link?
7. Would you prefer to send me the details via email?
8. Who is responsible for enacting alcohol regulations in your community?
 - a. Select board
 - b. Licensing board
 - c. Some other type of alcohol licensing authority
9. If you selected "select board", could you please indicate if the licensing authority includes all select board members or just a subgroup?
 - a. All members
 - b. Just a subgroup
 - c. Not sure
 - d. Other
1. If you selected "licensing board", is the licensing board responsible for all licensing or just alcohol?
 - a. All licensing
 - b. Just alcohol
 - c. Other
11. If you selected "some other type of alcohol licensing authority", could you please explain in more detail?
12. Is it possible to get a full list of all alcohol licenses?
13. Will the list be provided via email during the follow up email?
14. Does the list tell what type of license it is?
15. Do you have the contact information of the licensing board chair or members so that the local prevention coalition can follow up in the future?

APPENDIX 6

COMMUNITY HEALTH ALCOHOL SURVEY

We are asking community leaders and residents about their views about current and potential local policies related to teenage drinking. Your help is voluntary, but very important. The information you give us will be strictly confidential. The questions I have will take about 5- 10 minutes

SEX: (Check one)

- 1. MALE
- 2. FEMALE
- 3. Non-binary

AGE: (Circle one)

- 18-21
- 22-35
- 35 or older

Are you a parent of children under the age of 24? (Circle one)

- Yes
- No

QUESTION: Place a check in one box to the right of the item indicating your level of concern.	(5) VERY CONCERNED	(4) SOMEWHAT CONCERNED	(3) SLIGHTLY CONCERNED	(2) NOT CONCERNED	(1) NEUTRAL/ NO OPINION
1. How concerned are you about the problem of underage DRINKING?					
QUESTION: Place a check in one box to the right of each proposal indicating your level of support or opposition.	(5) STRONGLY SUPPORT	(4) SOMEWHAT SUPPORT	(3) SOMEWHAT OPPOSE	(2) STRONGLY OPPOSE	(1) NEUTRAL/ NO OPINION
Would you support:					
2. A policy that prohibits anyone under 21 from serving or selling alcohol in a store, restaurant, or bar in your community?					
3. A law prohibiting delivery of alcoholic beverages to homes to make it harder for teenagers to get alcoholic beverages?					
4. A policy that requires liquor stores and bars to check everyone's ID, not just those who appear young enough to be underage?					
5. A policy banning nip bottles and sprits bottled in amounts less than 4 oz or 100 ml					

6. A policy requiring high quality ID scanners in every place that sells alcohol?					
7. A policy prohibiting BYOB (bring your own beer/wine/alcohol) into restaurants?					
8. Creation of a special phone number to anonymously report underage drinking or businesses that sell alcohol to teenagers?					
9. A policy that restricts alcohol advertisements in your community?					
10. A policy prohibiting new alcohol licenses to be located within 500 feet of a school, playground or park?					
11. Limiting hours or days of sales of alcoholic beverages in your community?					
12. A local excise tax (3-5%) on alcohol to support substance use prevention locally?					
13. An alcohol cap/limit in order to reduce youth access and exposure to alcohol?					
14. Stricter penalties/enforcement for adults who provide alcohol to underage youth?					
Please turn over to continue					
QUESTIONS: Place a check in one box to the right of each statement to indicate your level of agreement or disagreement.	(5) STRONGLY AGREE	(4) AGREE	(3) DISAGREE	(2) STRONGLY DISAGREE	(1) NEUTRAL/ NO OPINION
15. Stores and bars are not careful enough in preventing teenagers from buying alcohol.					

16. Kids make mistakes- punishments for teenage drinking shouldn't be too severe.					
17. If a teenager is caught drinking, which of the following do you feel is/are the most appropriate punishment(s)? (CIRCLE ONE OR MORE)	(5) \$500.00 fine	(4) Suspension of license for one year	(3) 20 hours of community service	(2) Not eligible for town or state scholarships	(1) Diversion to alcohol education or treatment
18. Parents in this community are permissive or look the other way when it comes to teen alcohol use					

THANK YOU FOR COMPLETING THIS SURVEY
PLEASE RETURN ALL SURVEYS TO THE

EXTRA QUESTIONS FROM STONEHAM SURVEY					
19. A community law or laws enforcing stricter laws than the state on the sale and consumption of alcohol?					
20. Limiting hours or days of sales of alcoholic beverages in Stoneham even if it would negatively impact some small businesses?					
21. Higher taxes on people who drink alcohol to help pay for programs to address drinking problems?					
22. Kids make mistakes-punishments for teenage drinking shouldn't be too severe.					
23. Alcohol policies should be concerned more with people who give or sell alcohol to teenagers and less with teenagers who drink.					

APPENDIX 7

**Municipal Alcohol Regulations to Prevent Underage and High Risk Drinking
Stakeholder Interview Questions**

Possible audiences: select boards; licensing authorities, health department director, law enforcement, town administrator/mayor; school administrators; college or university leaders; business associations or chambers; alcohol licensees; youth action leadership groups...

I. Introduction

Introduce yourself; why did we develop these municipal alcohol policy tools? (Why now? Why are they important?) Examples of how policy is an effective tool for PH (tobacco example). Why are we meeting with you? E.g, introduce these tools; assess community readiness; identify which policies might be best matched for your community at this point in time; goal to implement in other communities—see what works well and replicate in other communities.

II. Background information about the community

A. Existing regulations, licensing structure and enforcement:

1. First, can you give us some background on how alcohol is regulated in your community?

2. Who is responsible for regulating alcohol in the town/city (e.g., full select board or another type of licensing authority)?
3. Do you view your community as a leader in municipal alcohol policy in comparison to neighboring communities?
4. Has there been any recent movement or discussion to revise alcohol policies in community? If so, when? Who was behind the effort? Who worked to block the effort?
5. What is your experience enforcing the existing alcohol regulations? (How does your community check for compliance? What kinds of violations are most common? What are barriers to enforcement?)
6. What is your experience handling violations? When a violation is brought before the licensing authority is punitive action taken? Are penalties consistent? Are penalties increased for repeat offenders? What are barriers to issuing penalties for violations e.g., politics?)
7. What do you think is the best way determine whether or not a policy is effective and has worked the way it was intended to?
8. Do you believe new evaluation measures would help your community assess whether or not certain policies are working as best they can?
9. How has the interaction with state alcohol regulators/Massachusetts General Laws Chapter 138 impacted your views on the need to implement alcohol policies at the local level?

B. Local issues related to youth and adult alcohol sales and consumption

10. What do you view as the biggest problems in the community related to alcohol and youth?
11. What do you view as the biggest problem related to retail sales of alcohol (off-premise)?
12. What do you view as the biggest problem related to the sale and use of alcohol in bars, restaurants and clubs (on-premise/pouring)?
13. To what degree do you think these problems can be addressed by strengthening local regulations or better enforcement of existing regulations?

* Present some local data on youth use rates; age of first use; compliance checks; hospital ER visits; accidents; etc. (less depending on how much time you have)

III. Introduce municipal alcohol policy best practices tools

A. Review “frameworks” documents & “menu/checklist” and community readiness survey:

1. Have you already implemented these policies? Were they successful? Why or why not?
2. Which policies are most relevant to the culture or problems in your community?

B. Assessing community readiness

3. What do you think is be the best way to offer this policy menu to your community’s stakeholders? Who would be most interested? Is there a clear champion(s) who would get the attention of the licensing authority? (political leader; police; residents; business leader; youth...)
4. What is your community’s readiness to adopt/strengthen local alcohol regulations? (timing with local elections, town meetings, politics; relationship to marijuana regulation; recent tragedy; concern for economy)
5. What might your community want to achieve in terms of alcohol policies?
6. What policies would be the most meaningful or easiest to pass? What is the “low hanging fruit”?
7. How much awareness is there among stakeholders about the value of preventing underage drinking through local alcohol policy? How can you/we increase awareness of the value of regulating alcohol locally?
8. How important is it to your community to know what alcohol polices exist in neighboring towns/municipalities? Why?

C. Targeted feedback on the draft municipal alcohol regulation tools:

(“Frameworks” documents; menu/checklist; community survey)

9. How might your community use the “Frameworks” documents—which provide model wording for local licensing authorities?
10. In what ways can you imagine using the “menu/checklist” of alcohol policy best practices? Who might benefit from seeing it? What is the best way to deliver it?
11. In what ways can you imagine using the “community readiness” survey? Who might take the survey (what groups, sectors, or individuals in the community?)
12. Did you find this guide to be helpful? (*if they have reviewed policy menus beforehand*)
13. How could the menus be more effective? If you could change one thing about the menus, what would it be?
14. Did any specific policies jump out to you or surprise you? If so, why?

15. Do you feel as though the majority of the policies applied to your community? Why or Why not?
16. What other tools could we (coalitions) provide to help strengthen alcohol policies aimed at reducing underage drinking in your community?
17. What would be a measure of the usefulness of the policy menu/checklist?

NOT INCLUDED AS PART OF THE STATEWIDE 1:1 INTERVIEW TOOL

Survey results and targeted intervention moving forward:

1. As part of our report, we analyzed a survey that SPIFFY/CTC conducts annually on youth health and wellbeing in Hampshire and Franklin counties. From our research using the results, we found that youth are most likely to try a new substance (e-cigarettes, cigarettes, marijuana, and alcohol) when they are between the ages of 13 and 15.
2. Do these results align with what you've seen in your own community?
3. Why do you believe 13 to 15 years old is the most important age?
4. Do you know of any prevention policies that are specifically targeted for that age group or the age group preceding 13-15?
5. Which stakeholders do you believe would be most important to gather when creating an invention for 13-15 year olds?
 - a. As a policymaker, have you heard of any possible solutions to address this issue?

For Amherst specifically

1. Will there any political or group interest hurdles in the face of combating youth drinking culture?
 - a. This is a particularly valid question, given the current changes in the Amherst leadership.
2. Amherst has a law regarding minor's possession and transportation of alcohol that most surrounding communities don't have. Can you discuss why this is necessary and what effect it has had?
3. Amherst has a four-tiered punishment system for licenses, with the fourth time punishment being the revoking of their liquor license. How often are these punishment used?
4. Do you believe Amherst should have fewer liquor licenses or more?

5. Have there been problems with retail locations that haven't been addressed with the tools that local regulator have?