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A thematic content analysis of 2010–2015 state tobacco control legislation in the United States: Bill rationales and priority populations

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ABSTRACT

Objective: Tobacco use causes numerous types of cancers, heart diseases, and chronic illnesses, and is responsible for nearly 1 in every 5 deaths in the United States (U.S.) annually. This study assessed whether tobacco control laws introduced in state legislatures between 2010 and 2015 provided a rationale for the proposed bill and/or specified priority population groups, and we then examined emerging themes in the text that did so.
Methods: Using LexisNexis® State Net®, we identified tobacco control bills introduced in all states and coded their bill rationales and population category. We then conducted qualitative thematic analysis on a sample of bills with rationales or specified populations.
Results: Of the 2815 tobacco control bills introduced in state legislatures in the analysis period, 422 (15.0%) included a bill rationale, and 1309 (46.5%) specified at least one priority population. Four overarching themes emerged: 1) Addressing tobacco-related health harms and financial costs incurred to society; 2) Protecting the public from tobacco-related harms as a government responsibility; 3) Providing services to priority populations; 4) Exempting or preempting some population groups and localities.
Conclusions: Rationalizing tobacco control legislation by focusing on both health and cost implications was a key feature of tobacco policy bill text we analyzed; given the history of this approach, it is likely to remain so in the future. Our study may serve as a benchmark for tracking current and future tobacco control legislation to examine whether there is a growth in prioritizing populations experiencing unjust burdens of tobacco use and related disease.

1. Introduction

Tobacco use causes numerous types of cancers, heart diseases, and chronic illnesses "Health Effects of Smoking and Tobacco Use." (2017). Despite progress in reducing smoking, 11.5 % adults and 1.9 % of youth in the United States (U.S.) smoked cigarettes in 2021, and 18.7 % of adults and 13.4 % of youth used some commercial tobacco product in 2021 (Gentzke et al. 2022; Cornelius et al. 2023). Some of this progress has been attributed to tobacco control policymaking, especially at the state level where such laws are most widely and commonly implemented. Between 1990 and 2005, many states increased tobacco taxes and passed smoke-free policies, and cigarette smoking prevalence dropped by more than 10 % (The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General 2014; Fallin and Glantz 2015). Additionally, an analysis of proposed state tobacco control bills documented increased legislative action around non-traditional tobacco control strategies, such as those focused on the tobacco retailer environment (Kong et al. 2020).

Inequities in tobacco use for priority populations, defined as those groups facing a disproportionate burden of tobacco use and related health outcomes, remain ("Health Disparities Related to Commercial Tobacco and Advancing Health Equity.," 2020; Drope et al. 2018; "Top 10 Populations Disproportionately Affected by Cigarette Smoking and Tobacco Use." (2022); "Priority Populations." (2022); "Tobacco 21." (2021a); The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General 2014). For example, compared to other

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racial and ethnic groups, American Indian and Alaska Native youth and adults have the highest cigarette smoking prevalence "Tobacco use in the American Indian/Alaska Native community." (2020), American Indians/Alaska Natives and Tobacco Use (2019), "Burden of Tobacco Use in the U.S." (2021). People with lower socioeconomic status also have higher cigarette smoking prevalence and are less likely to quit smoking ("Current Cigarette Smoking Among Adults in the United States." (2020), Cornelius et al., 2023), and smoking prevalence among lesbian, gay, and bisexual adults exceeds that of heterosexual adults by nearly four percentage points (Corenlius et al, 2023). Approximately 18 % of U. S. military personnel currently smoke cigarettes (Meadows et al. 2021), and among them, almost 40 % began smoking after joining the military ("Tobacco use in the military.," 2018; Grier et al. 2010). Youth and pregnant women also face greater health risks from tobacco use and secondhand smoke "Health Effects of Secondhand Smoke." (2020), "Secondhand Smoke (SHS) Facts." (2021).

Public health decision making is driven mostly by science and evidence (Hunter 2016); however, political decision making is often motivated by complex factors, such as the financial cost of the issue, government responsibility for the problem, and priority in the affected populations (Hunter 2016; Oliver 2006). The U.S. is comprised of 50 different state jurisdictions, most of which pass bills following debate and vote in one or two legislative bodies, and approval from an executive branch governor. Legislation also often takes the form of a previous bill amendment, rather than new policymaking, but the approval process is similar. Legislative findings are often described in the text at the beginning of the bill, which can provide a rationale for the proposed bill. Even though this text summarizes the intent behind introducing the legislation and may be the most accessible to legislative members, it has often been ignored by scholars (Shobe 2018). Examining the legislative findings as well as any stated rationales for proposing legislation could help provide insight on the framing being used in tobacco control legislation.

State tobacco control legislation may also specify certain population groups deemed particularly vulnerable as beneficiaries of a policy as part of their rationale. In other cases, legislation may exempt certain groups from new tobacco legislation, based on concerns about discrimination or jurisdictional authority. Examining proposed state tobacco control legislation to assess whether it is prioritizing, or alternatively exempting, some populations may help inform the tracking of pro-equity based initiatives to further decrease tobacco use and tobacco-related disease among priority populations. The objective of this study is to conduct a thematic content analysis of a sample of introduced state tobacco control bills from 2010 through 2015.

2. Materials and methods

2.1. Data source

This study was not human subjects research. A full description of the data source compiled for this study is described elsewhere (Kong et al. 2020). In short, we used LexisNexis® State Net®, a state legislative tracking database, and created a search string to identify proposed state tobacco control bills introduced into all state chambers (including the District of Columbia [D.C.]) from 2010 to 2015. We included all introduced bills, rather than just those that were chaptered (enacted), as we are interested in capturing the language of all bills that entered political discourse.

2.2. Bill samples

Trained coders read each proposed bill and indicated (yes/no) whether a newly proposed bill, or the amended part of a bill, specified a rationale or intention, referenced scientific, empirical data, and/or statistics about tobacco use and/or related outcomes, or included provisions regulating tobacco control policies targeted at or affecting specific priority populations.

From 2010 to 2015, there were 2815 tobacco control bills proposed in state legislatures and D.C. (Kong et al. 2020). Of those, 422 (15.0 %) included a bill rationale or referenced scientific data, and 1309 (46.5 %) specified at least one specific population. Approximately 8 % (n = 228) of all 2,815 bills included both a rationale and population while 1,503 (24.4 %) of all bills included a rationale, specified population, or both. To create a sample for qualitative analysis, we first categorized each bill based on eight potential rationales and seven populations (Table 1), and then pulled a 10 % random sample (or, for smaller categories, at least 10 bills) from each category. Samples were pulled independently from each rationale/population. If the same bill was pulled for two different samples we did not replace it with a new bill, and we analyzed all pulled bills for all rationales and populations. This helped ensure a broad array of rationales and populations in our sample. As some bills were coded as having more than one category, analyzed bills in some categories exceeded 10 %, resulting in a total sample of 367 (24.4 %) of the original 1,503 rationale and/or population-specified bills for the qualitative analysis.

2.3. Content analysis

We conducted two rounds of thematic coding. First, two trained coders read sections of bills previously highlighted as having a specified rationale or priority population, and and wrote narrative summaries for an identical set of bills. Coders then met with study authors (AYK, SDG) to discuss any emerging themes and discrepancies. In the second round of coding, we divided the remaining bill sample across coders for narrative summary. Coders then met with the authorship team to discuss overarching themes.

3. Results

We describe the count and percent of all 2010–2015 proposed bills that included a rationale or priority population by category and then present themes identified in the qualitative sample.

3.1. Quantitative overview

Bill rationale and population categories for all bills that included one are summarized in Table 1. Of the 422 bills that included a rationale, the most common focused on health outcomes or general welfare/public

Table 1
Count and percent of proposed tobacco control bills that specified a bill rationale, United States, 2010–2015.

Description	n (%)	Enacted (%)
Specified bill rationale	422 (15.0)	64 (15.2)
Health outcomes or general welfare/public health	305 (72.3)	46 (15.1)
Youth	148 (35.1)	21 (14.2)
Health costs	90 (21.3)	9 (10.0)
Economic development and businesses	37 (8.8)	10 (27.0)
Education or awareness of tobacco use/health outcomes	30 (7.1)	4 (13.3)
Scientific or empirical data	174 (6.2)	16 (9.2)
Government responsibility or role of government	12 (2.8)	1 (8.3)
Other rationale	163 (38.6)	32 (19.6)
Specified population	1309 (46.5)	257 (19.6)
Youth	717 (54.8)	133 (18.6)
Pregnant people	63 (48.8)	15 (23.8)
People with lower socioeconomic status	138 (10.5)	24 (17.4)
Indigenous peoples	49 (3.7)	13 (26.5)
Military and veterans	31 (2.4)	13 (41.9)
Other populations	526 (40.2)	104 (19.8)
Bill exempts priority population	72 (5.5)	14 (19.4)
Specified rationale and population	228 (8.1)	40 (17.5)

health (72.3 %) and youth (35.1 %). Of the almost 50 % of introduced bills that specified a priority population, the most common were youth (54.8 %) and pregnant people (48.8 %). Additionally, 526 (40.2 %) bills specified a population outside of our named categories, such as incarcerated individuals and aging adults. A little over 5 % of bills exempted a specific population from the proposed tobacco control bill regulations. Bills about economic development and businesses (27.0 %) or military and veterans (41.9 %) had the highest enactment rates.

3.2. Emerging bill content themes

Four overarching themes related to bill rationales and specific populations emerged:

1) Addressing tobacco-related health harms and financial costs incurred to society.
2) Protecting the public from tobacco-related harms as a government responsibility.
3) Providing services to government-identified priority populations.
4) Exempting some population groups from tobacco control policies or preempting localities from implementing stronger tobacco control policies.

These themes are listed in Table 2 with select examples and described in more detail below, where bolding is added to emphasize language aligned with themes.

3.2.1. Theme 1. Addressing tobacco-related health harms and financial costs

Health outcomes related to tobacco use and secondhand smoke were often cited as a rationale. For example, the Mississippi Uniform Smoke-Free Public Place Act of 2014 (Mississippi Senate Bill [SB] 2171) aimed to amend legislation to further prohibit smoking in various public and private places (e.g., government building, college buildings). Bill text also referenced empirical data about the harms of smoking, especially for children:

> *SECTION 2. Findings. (1) Information available to the Legislature based upon* ***scientific research data*** *has shown that nonsmokers often receive* ***damage to their health*** *from the smoking of tobacco by others. (2) Direct smoking of tobacco and indirect smoking of tobacco through inhaling the smoke of those who are smoking nearby are* ***major causes of preventable diseases and death.*** *(3) Secondhand smoke is a known cause of* ***lung cancer, heart disease, chronic lung ailments such as bronchitis and asthma, particularly in children, and low-weight births.*** *(4)*

Other bills cited financial costs due to tobacco use. Maine House Bill (HB) 1106 (2011) was amended and enacted to include language clarifying that "Alcohol and drug counseling services" also covered "nicotine addiction counseling and treatment." The bill included the following language about financial health costs:

> *Whereas, tobacco use continues to take a significant and yet largely preventable toll on the health of Maine residents and* ***drains the economic resources*** *of the state; and…*

Another Mississippi bill (MS SB 2713 [2012]) cited health costs and "economic analyses" describing reductions in broader social costs due to smoke-free air laws:

> *(q) The Society of Actuaries has determined that secondhand smoke costs the U.S. economy roughly* ***Ten Billion Dollars ($10,000,000,000.00) a year: Five Billion Dollars ($5,000,000,000.00) in estimated medical costs*** *associated with secondhand smoke exposure and* ***$4.6 Billion in lost productivity.*** *(r) Numerous economic analyses examining restaurant and hotel receipts and controlling for economic variables have shown either* ***no difference or a positive economic impact after enactment of laws requiring workplaces to be smoke free.*** *Creation of smoke-free workplaces is sound economic policy and provides* ***the maximum level of employee health and safety.***

Financial costs savings from tobacco cessation programs were also referenced. Pennsylvania SB 317 (2013) aimed to require health insurance coverage for tobacco cessation and medical treatment and cited several instances of cost savings:

> *Tobacco cessation is* ***5 to 80 times more cost effective*** *than pharmacologic interventions used to prevent heart attacks. Experience in health plans indicates that access to all cessation services* ***saves $4 for every dollar*** *invested. Each adult smoker costs employers $1,760 in lost productivity and $1,623 in excess medical expenditures.*

3.2.2. Theme 2. Protecting the public from tobacco-related harms as a government responsibility

Several bills included language about the government's responsibility in protecting people from tobacco-related harms, such as those due to secondhand smoke exposure. Mississippi SB 2171 (referenced earlier) also included the following bill language, framing smoke-free air as a right of people:

> *It is therefore declared to be the public policy of the state of Mississippi that* ***the rights of mississippians be protected*** *in the manner provided in this act.*

Other examples of this theme come from bills that added new language to previous tobacco control laws about e-cigarettes and secondhand smoke. Maryland SB 989, titled "Electronic Smoking Devices" (2010) aimed to prohibit the use of e-cigarettes in certain public and private places, stating:

> *24–502. It is the* ***intent of the General Assembly that the State protect the public and employees*** *from involuntary exposure to environmental tobacco smoke and* ***smoke from an electronic smoking device*** *in indoor areas open to the public, indoor places of employment, and certain designated private areas.*

The bill text also subtly reinforced a role for local government in tobacco control, amending existing language to allow additional regulations on the local level to include e-cigarettes.

In 2014, Hawaii introduced a bill (HI SB 2495) to amend an existing statute regulating where tobacco products could be used and to re-define "smoking" for the purpose of state regulation. The bill specifically raised concerns for youth use of e-cigarettes, citing projected e-cigarettes sales data and a statistic about the growing use of e-cigarettes among middle and high school students. The bill also included the following language about the role of governments:

> *In response,* ***a growing number of state and local governments have taken steps*** *to regulate the sale, marketing, and use of electronic smoking devices. The* ***legislature concludes that Hawaii should also take additional steps*** *to regulate these products.*

3.2.3. Theme 3. Providing services to government-identified priority populations

The third theme that emerged centered on allocating funding or describing the need for tobacco control programs to be directed to a government-recognized priority population, citing tobacco-related health outcomes or inequities. For example, Florida SB 2744 (2010) aimed to include state and community tobacco control interventions focused specific populations. The proposed bill added the following text:

> *These interventions include, but not be limited to, a statewide tobacco control program that combines and coordinates community-based interventions that focus on preventing initiation of tobacco use among* ***youth and young adults;*** *promoting quitting among adults,* ***youth, and pregnant women;*** *eliminating exposure to secondhand smoke;*

Table 2
Identified tobacco control themes and examples of introduced tobacco control legislation, 2010–2015, USA.

Theme	(Year) Bill ID	Bill Title	Introduced Date	Last Location in Legislative Term	LexisNexis® State Net® Bill Summary
Addressing tobacco-related health harms and financial costs incurred to society	(2014) Mississippi S 2171	Smoking in All Public Places	1/10/2014	Died	Entitled the Mississippi Uniform Smoke-Free Public Place Act of 2014; prohibits smoking in public places; provides for definitions; prohibits smoking in certain public places and areas; prohibits smoking in any indoor or outdoor public facility in Mississippi during any time that persons under 18 years of age are engaged in an organized athletic event in the facility; provides for exceptions; provides for posting of signs and removal of ashtrays; provides for an informational program.
	(2011) Maine H 1106	Alcohol and Drug Counselors	4/20/2011	Chaptered (6/3/2011)	Clarifies the scope of practice of licensed alcohol and drug counselors regarding tobacco use; clarifies that treatment for nicotine addiction is within an alcohol and drug counselor's scope of practice but does not require those providing nicotine treatment to be licensed as alcohol and drug counselors.
	(2012) Mississippi S 2713	MS Smoke Free Air Act	2/20/2012	Died	Entitled the Mississippi smoke-free air act of 2012; prohibits smoking in public places and in places of employment; provides definitions; prohibits smoking in private clubs and certain residential facilities; provides minimum requirements and rights of persons in control; authorizes the Mississippi State Board of Health to promulgate rules and regulations to enforce smoking prohibitions; prescribes exemptions; provides for enforcement of this act.
	(2013) Pennsylvania S 317	Tobacco Cessation Program Health Insurance Coverage	1/25/2013	Senate Banking and Insurance Committee	Requires health insurance policies to provide coverage for tobacco cessation programs and drugs.
Protecting the public from tobacco-related harms as a government responsibility	(2010) Maryland S 989	Electronic Smoking Devices	2/22/2010	Senate Rules Committee	Prohibits a person from smoking an electronic smoking device in specified places; requires the Department of Health and Mental Hygiene to adopt regulations that prohibit smoke from an electronic smoking device in specified indoor areas; specifies that provisions of law do not preempt a county or municipal government from adopting specified measures regarding involuntary exposure to smoke from an electronic smoking device.
	(2013) Hawaii S 2495	Electronic Smoking Devices	1/17/2014	Concurrence	Prohibits the use of electronic smoking devices in enclosed public areas and other specified locations.
Providing services to government-identified priority populations	(2010) Florida S 2744	Tobacco Use Prevention	3/11/2010	Died	Relates to tobacco use prevention; amends a provision relating to the Comprehensive Statewide Tobacco Education and Use Prevention Program; requires program components to include efforts to educate youth and their parents about tobacco use; requires that the State Surgeon General, or his or her designee, serve on the Tobacco Education and Use Prevention Advisory Council.
	(2013) Minnesota H 1499	Health	3/13/2013	House Health and Human Services Policy Committee	Relates to health; creates culturally targeted tobacco prevention grants; appropriates money.
	(2011) Rhode Island H 5439	Criminal Offenses	2/16/2011	House Health, Education and Welfare Committee	Would require the Department of Behavioral Healthcare, developmental disabilities and hospitals to issue new smoking warnings signs which shall include language that smoking can contribute to lung and heart disease, respiratory illness, and that smoking during pregnancy can result in premature births and low birth weights. The new signs would also encourage smokers who want to quit to call a phone number on the sign or visit a website for a quit smoking organization. This act would take effect July 1, 2011.
Exempting some population groups from tobacco control policies or preempting localities from implementing stronger tobacco control policies.	(2013) New Hampshire H 1396	New Hampshire Veterans Home Smoking Policy	1/8/2014	House	Prohibits the New Hampshire veterans' home from discriminating in its admissions policy against veterans who smoke; the bill also requires the New Hampshire veterans' home to study smoking policies at veterans' homes in other

(*continued on next page*)

Table 2 (*continued*)

Theme	(Year) Bill ID	Bill Title	Introduced Date	Last Location in Legislative Term	LexisNexis® State Net® Bill Summary
					States and propose a policy to accommodate New Hampshire veterans who smoke; 14–2378 05/08.
	(2009) Washington S 6443	Taxation of Cigarettes and Other Tobacco Products	1/14/2010	Senate	Concerns the taxation of cigarettes and other tobacco products.
	(2013) Maine H 173	Tax Exemption for Tobacco	2/1/2013	Indefinitely Postponed	Provides a sales tax refund, rather than a sales tax exemption, for the purchase of loose tobacco for cultural, spiritual, or ceremonial purposes by a member of a federally recognized Indian tribe; removes provisions that include an exemption for cigarettes and other tobacco products; removes the requirement for the State Tax Assessor to work with tribal representatives to establish a process for a tax-exempt purchase.

Note: "Died" indicates that the bill was not passed into law during the legislative session.

> ***identifying and eliminating tobacco-related disparities among population groups;****….*

Examples of youth interventions included "sustaining anti-tobacco media campaigns, making environments tobacco free, and engaging in other efforts to create tobacco free social norms" and increasing the price of tobacco products.

In another example, Minnesota HB 1499 (2013) proposed a bill to create "culturally targeted tobacco prevention grants" aimed at reducing tobacco use in specific priority populations, as described:

> *The commissioner shall award grants to eligible applicants for local projects and initiatives directed at culturally targeted tobacco control initiatives, including tobacco use prevention and cessation programs aimed at reducing tobacco use and tobacco-related illnesses in the* ***African, African American, Asian, American Indian, and Latino communities, and the gay, lesbian, bisexual, and transgender communities****.*

As a final example, Rhode Island HB 5439 (2011), proposed to add warning signs about tobacco use as well as reference to a tobacco treatment help line displayed at the cash register of tobacco retailers. The bill introduces specific language for the proposed signs, focusing on smoking-related health outcomes for pregnant people. The rationale for this bill emphasized general harms and costs, similar to the first identified theme, stating, "This is an ongoing, escalating financial burden borne by every business, large and small, and every person, smoker and nonsmoker, in Rhode Island." A more detailed section expanded this theme to also build a rationale for providing services to priority populations:

> *In Rhode Island, seventeen and three-tenths percent* ***(17.3 %) of adults, and twenty and three-tenths percent (20.3 %) of women of child bearing age****, 18–44 years of age, are smokers. Smoking in women of child bearing age increases the* ***risk of preterm delivery****.* ***Premature and low birth weight babies*** *face an increased risk of serious health complications during the newborn period, chronic lifelong disabilities and health problems, and death.*

3.2.4. Theme 4. Exempting some population groups from tobacco control policies or preempting localities from implementing stronger tobacco control policies

The last theme that emerged was focused on exempting certain populations groups from tobacco control policies or prohibiting local governments from levying stronger tobacco control policies than required by the state.

A 2014 New Hampshire bill (HB 1396) proposed language about military veterans who smoke and want to apply for veterans' home housing:

> *Rules relative to admittance or rejection of an applicant, including an appeal process and the* ***accommodation of veterans who smoke****, shall be adopted pursuant to RSA 541-A, by the board of managers.* ***The veterans' home shall not discriminate in its admissions policy against veterans who smoke.***

Bill language often centered around state tobacco tax exemptions or refunds for both military personnel and Indigenous peoples. For example, Washington S 6443 (2010) aimed to increase tobacco product taxes and included the following language:

> *In accordance with federal law and rules prescribed by the department, an* ***enrolled member of a federally recognized Indian tribe*** *may purchase cigarettes from an Indian tribal organization under the jurisdiction of the member's tribe for the member's own use* ***exempt from the applicable taxes*** *imposed by this chapter.*

Similarly, a 2013 Maine bill (HB 173) proposed legislation to provide a sales tax refund for certain tobacco product purchases:

> *The State Tax Assessor shall* ***refund sales or use tax paid on loose tobacco used for cultural, spiritual or ceremonial purposes by a member of a federally recognized Indian tribe upon the submission of an application for a tax rebate***

Finally, some bills added preemption clauses, prohibiting localities from enacting stronger tobacco control laws than those enacted at the state level. This occurred even in bills otherwise stating a strong rationale for tobacco control. For example, Mississippi SB 2171 referenced above for its emphasis on the harms of smoking to children, nevertheless prohibited local smoke-free air policy making:

> *It is declared that this act* ***preempts all municipal and county laws, charters, ordinances, rules and regulations*** *relating to smoking in the locations set forth in Sections 4 and 5 of this act….*

4. Discussion

Our content analysis of bill rationales and priority populations identified several intersecting themes centered around tobacco-related health harms and financial costs as well as the role of the government in funding tobacco control prevention and cessation programs for the general population and priority populations.

Health consequences and the costs of tobacco use have long been used as justification for tobacco control efforts. On the heels of the 1964 landmark Surgeon General's report documented a link between smoking and negative health outcomes (The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General 2014), congress passed federal regulations requiring health warnings on cigarette packages and banning cigarette advertising on television and radio

(Federal Trade, 1966). Data about the hazards of secondhand smoke to people who do not smoke formed a fundamental component of the rationale for laws banning workplace smoking (Hyland, Barnoya, and Corral 2012). The costs of caring for people who smoke was the basis of the successful lawsuit, brought collectively by the states attorneys general against the tobacco industry in 1999 (Jones and Silvestri 2010). More recently, tobacco taxes were described as a "win-win" strategy by the World Health Organization for saving lives and generating government revenue (The economic and health benefits of tobacco taxation 2015). Our analysis indicated a continued focus on costs related to medical care, but bill rationales have also expanded to consider lost productivity from smoking and the economic benefits of tobacco control. Additionally, bills detailed health consequences for specific priority groups, especially children and pregnant people or related to emerging products like electronic cigarettes.

The identified theme of government responsibility underscores the success of the tobacco control movement in recognizing tobacco use as a public health problem rather than simply an individual behavior. This was particularly true for bills focused on regulating electronic tobacco products. Electronic cigarettes entered the U.S. market in 2006; by 2012, one in 10 high school students reported having tried an e-cigarette (Chapman et al., 2014). Furthermore, as e-cigarette companies adopted marketing approaches historically used by traditional tobacco products (e.g., youth-appealing flavors, competitive pricing, and celebrity endorsements) (Williams and Knight 2015) state interest in regulation may have grown, even before health risks were exhaustively documented. Bill text focused on e-cigarette regulation also preceded federal action, as it was not until 2016 that the federal government began regulating e-cigarettes for all states "FDA's Deeming Regulations for E-Cigarettes, Cigars, and All Other Tobacco Products." (2022). State legislatures might therefore be an important source of testing messages about government responsibility that could move vertically.

Our analysis also suggests that public health's emphasis on priority populations is entering the political rhetoric related to tobacco control, as more than 1,300 bills mentioned a specific population group. Many of these bills were designed to provide specific preventive, cessation or treatment services to groups who bear a disproportionate burden of tobacco-related risk or harm. Although some policies benefit those population groups most impacted by a health risk (Smith, Hill, and Amos 2021; Tauras 2007), others have been critiqued for maintaining or increasing health inequities by primarily benefiting those groups who already had better health outcomes (Frohlich and Potvin 2008). For example, smoke-free air laws that apply to office settings have less impact on outdoor employees like construction workers, who have historically had higher prevalence of smoking (Smith 2008). In the last several years, more institutions and public health organizations have declared racism a public health issue, bringing health equity and social justice to the forefront. Policy development that incorporates a health equity lens, including policies that specifically support priority populations, has been recommended in tobacco control (Rose et al. 2022; Kong and King, 2021; Kong and Henriksen 2022); our research suggests such recommendations are being incorporated in state policy language.

Despite a focus on inequities in some bills we examined, others included provisions specifying populations for exemption from tobacco control strategies, potentially increasing their risk of tobacco use and associated illnesses and death. Two groups often exempted were military personnel and Indigenous peoples. The Department of Defense has recently modified several military policies to prohibit sales of tobacco products to personnel under the age of 21 and to better align tobacco pricing on military bases with those in surrounding areas (Kong et al., 2021; "Tobacco 21.," 2021b). Exemptions to state laws for military personnel could counter the military's own tobacco control goals. Exemptions to tobacco control policies for Indigenous peoples are often tied to Tribal sovereignty, yet some policies, like those that charge taxes but remit them to Tribal governments, could provide Tribes with additional financial autonomy and disincentive commercial tobacco use (Laux, Chaloupka, and Beebe 2015). Strong collaborations between state and Tribal governments, and re-framing public health efforts to distinguish commercial and traditional tobacco use, may be necessary to adopt solutions (Boudreau et al. 2016).

Finally, preemption of local tobacco control efforts by state governments was included in multiple bills, including those that articulated a strong rationale in support of restricting tobacco use. Cities and counties are policy "laboratories" for tobacco control, serving as a testing ground to identify the best ways to design, implement and evaluate policy (Hudson et al. 2021; Shipan and Volden 2014). Limiting such efforts through preemption, which often results from tobacco industry pressure on state legislatures, can stifle innovation and progressions in protecting public health (Crosbie and Schmidt 2020; Pomeranz and Pertschuk 2017).

Several limitations of our analysis highlight areas for future research. We intentionally included all bills introduced in state legislatures focused on tobacco control in order to fully capture the written discourse of policy rationales and specified populations in our bills, and the strategies of legislators and their staff crafting legislative text. Given incentives for some states to copy verbatim legislative when drafting legislation (Jansa, Hansen, and Gray 2018), this seemed an appropriate approach. However, our analysis cannot, therefore, comment on which policy approaches might be most successful in the political arena. In other analyses, we found that smoke-free air laws, which often employ themes of health and costs, were introduced more often, but enacted less often, than other tobacco control policy topics such as youth access to tobacco products and bills regulating tax evasion (Kong et al. 2020). Future research could examine whether certain rationales, population descriptions, and other political factors (e.g., bill sponsorship, state cigarette smoking prevalence, partisan control, tobacco industry donations) are associated with a higher likelihood of policy enactment, and thereby guide policymakers when writing future legislation. In addition, research assessing the types of scientific evidence used in policy rationales that are associated with bill success could be important for informing dissemination and implementation of public health research to policymaker audiences. Finally, our sample is limited to 2010–2015 following a period where there was a noted stall in the passage of smoke-free air and cigarette tax increase laws (Holmes et al., 2016). Extending the time period of analysis both prior and after this period may help illuminate trends in rationales and priority populations.

Tobacco control policy is constantly evolving, so our analyses may reflect themes specific to our time period. In particular, adaptation of existing laws to incorporate e-cigarettes was prevalent, which may have elevated concerns about youth tobacco initiation. Yet, youth health as a rationale has long been used in tobacco control and likely continued beyond our analysis window. For example, our analyses end in 2015, the same year that Hawaii became the first state to pass "Tobacco 21" legislation to raise the minimum age to purchase tobacco products "Preventing Youth Tobacco Use." (2022). This was preceded by similar laws in many local jurisdictions (Hudson et al. 2021; "Preventing Youth Tobacco Use." (2022)). Specific analyses of these laws could allow for more explicit analyses of youth as a potential policy theme. Despite these limitations, this analysis could inform current tobacco research and policymaking.

4.1. Conclusions

Rationalizing tobacco control legislation by focusing on both health and cost implications was a key feature of tobacco policy bill text we analyzed; given the history of this approach, it is likely to remain so in the future. Furthermore, this is the first study to examine whether priority populations are mentioned in tobacco control legislation. Our study may serve as a benchmark for tracking current and future tobacco control legislation to examine whether there is a growth in prioritizing populations experiencing unjust burdens of tobacco use and related disease.

Credit Author Statement

AYK and SDG conceived the research idea. AYK and VQT conducted coding and data analysis. All authors contributed to the study interpretation and writing and editing of the manuscript. All authors approve of the final manuscript to be published and are accountable for all aspects of the work.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Declaration of Interest

AYK serves as a paid expert consultant in litigation against tobacco companies. All other authors report no conflict of interest.

References

"Burden of Tobacco Use in the U.S." 2021. Centers for Disease Control and Prevention. Accessed 2021/04/07/. https://www.cdc.gov/tobacco/campaign/tips/resources/data/cigarette-smoking-in-united-states.html.

"Current Cigarette Smoking Among Adults in the United States." 2020. Centers for Disease Control and Prevention. Accessed 2020/12/15/. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm.

"FDA's Deeming Regulations for E-Cigarettes, Cigars, and All Other Tobacco Products." 2022. U. S. Food and Drug Administration. Last Modified 2022/03/18/Fri, - 16:35. Accessed 2022/08/19. https://www.fda.gov/tobacco-products/rules-regulations-and-guidance/fdas-deeming-regulations-e-cigarettes-cigars-and-all-other-tobacco-products.

"Health Disparities Related to Commercial Tobacco and Advancing Health Equity." 2020. Last Modified 2020/02/03/. Accessed 2020/01/03/. https://www.cdc.gov/tobacco/disparities/index.htm.

"Health Effects of Secondhand Smoke." 2020. Centers for Disease Control and Prevention. Last Modified 2020/02/27/. Accessed 2021/03/25. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/health_effects/index.htm.

"Health Effects of Smoking and Tobacco Use." 2017. Centers for Disease Control and Prevention. Centers for Disease Control and Prevention. Last Modified 2017/02/09/. Accessed 09/17/2022. https://www.cdc.gov/tobacco/basic_information/health_effects/index.htm.

"Preventing Youth Tobacco Use." 2022. Tobacco21.org. Accessed 2022/09/02. https://tobacco21.org/tobacco-21-fact-sheet/.

"Priority Populations." 2022. South Dakota Quitline. Accessed 2022/03/01. https://www.sdquitline.com/thinking-about-quitting/priority-populations/.

"Secondhand Smoke (SHS) Facts." 2021. Centers for Disease Control and Prevention. Last Modified 2021/01/05/. Accessed 2021/06/07. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/general_facts/index.htm.

"Tobacco 21." 2021a. U. S. Food and Drug Administration. Accessed 2022/09/02. https://www.fda.gov/tobacco-products/retail-sales-tobacco-products/tobacco-21.

"Tobacco 21." 2021b. U.S. Food & Drug Administration. Accessed 2022/09/03. https://www.fda.gov/tobacco-products/retail-sales-tobacco-products/tobacco-21.

"Tobacco use in the American Indian/Alaska Native community." 2020. Accessed 2020/05/28/. https://truthinitiative.org/research-resources/targeted-communities/tobacco-use-american-indianalaska-native-community.

"Tobacco use in the military." 2018. Truth Initiative. Last Modified 2018/06//. Accessed 2021/03/25. https://truthinitiative.org/research-resources/targeted-communities/tobacco-use-military.

"Top 10 Populations Disproportionately Affected by Cigarette Smoking and Tobacco Use." 2022. American Lung Association. Accessed 2022/01/30. https://www.lung.org/research/sotc/by-the-numbers/top-10-populations-affected.

American Indians/Alaska Natives and Tobacco Use, 2019. Centers for Disease Control and Prevention. Accessed 2019/07/22/. https://www.cdc.gov/tobacco/disparities/american-indians/index.htm.

Boudreau, G., Hernandez, C., Hoffer, D., Preuss, K.S., Tibbetts-Barto, L., Villaluz, N.T., Scott, S., 2016. Why the world will never be tobacco-free: Reframing "tobacco control" into a traditional tobacco movement. American Journal of Public Health 106 (7), 1188–1195. https://doi.org/10.2105/AJPH.2016.303125.

Chapman, C., Shawna, L., Li-Tzy, W.u., 2014. E-cigarette prevalence and correlates of use among adolescents versus adults: A review and comparison. Journal of Psychiatric Research 54, 43–54. https://doi.org/10.1016/j.jpsychires.2014.03.005. https://www.sciencedirect.com/science/article/pii/S0022395614000788.

Cornelius, M.E., Loretan, C.G., Jamal, A., Davis Lynn, B.C., Mayer, M., Alcantara, I.C., Neff, L., 2023. Tobacco Product Use Among Adults – United States, 2021. MMWR. Morbidity and Mortality Weekly Report 72 (18), 475–483.

Crosbie, E., Schmidt, L.A., 2020. Preemption in tobacco control: a framework for other areas of public health. American Journal of Public Health 110 (3), 345–350. https://doi.org/10.2105/AJPH.2019.305473.

Drope, J., Liber, A.C., Cahn, Z., Stoklosa, M., Kennedy, R., Douglas, C.E., Henson, R., Drope, J., 2018. Who's still smoking? Disparities in adult cigarette smoking prevalence in the United States. CA: A Cancer Journal for Clinicians 68 (2), 106–115. https://acsjournals.onlinelibrary.wiley.com/doi/abs/10.3322/caac.21444. https://doi.org/10.3322/caac.21444.

Fallin, A., Glantz, S.A., 2015. Tobacco-Control Policies in Tobacco-Growing States: Where Tobacco Was King. The Milbank Quarterly 93 (2), 319–358. https://doi.org/10.1111/1468-0009.12124. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4462880/.

Federal Cigarette Labeling and Advertising Act.

Frohlich, K.L., Potvin, L., 2008. Transcending the known in public health practice: the inequality paradox: the population approach and vulnerable populations. American Journal of Public Health 98 (2), 216–221. https://doi.org/10.2105/AJPH.2007.114777.

Gentzke, Andrea S., Teresa W. Wang, Monica E. Cornelius, Eunice Park-Lee, Chunfeng Ren, Michael D. Sawdey, Karen A. Cullen, Caitlin Loretan, Ahmed Jamal, and David M. Homa. 2022. "Tobacco Product Use and Associated Factors Among Middle and High School Students — National Youth Tobacco Survey, United States, 2021." *MMWR. Surveillance Summaries* 71. 10.15585/mmwr.ss7105a1. https://www.cdc.gov/mmwr/volumes/71/ss/ss7105a1.htm.

Grier, T., Knapik, J.J., Canada, S., Canham-Chervak, M., Jones, B.H., 2010. Tobacco use prevalence and factors associated with tobacco use in new U.S. Army personnel. Journal of Addictive Diseases 29 (3), 284–293. https://doi.org/10.1080/10550887.2010.489445. http://www.ncbi.nlm.nih.gov/pubmed/20635278.

Holmes Carissa B, King Brian A, Babb Stephen D. Stuck in Neutral: Stalled Progress in Statewide Comprehensive Smoke-Free Laws and Cigarette Excise Taxes, United States, 2000-2014. *Preventing chronic disease*. 2016. 13:E80. doi:10.5888/pcd13.150409.

Hudson, S.V., Kurti, M., Howard, J., Sanabria, B., Schroth, K.RJ., Hrywna, M., Delnevo, C.D., 2021. Adoption of Tobacco 21: a cross-case analysis of ten US states. International Journal of Environmental Research and Public Health 18 (11), 6096. https://doi.org/10.3390/ijerph18116096.

Hunter, E.L., 2016. Politics and Public Health—Engaging the Third Rail. Journal of Public Health Management and Practice 22 (5), 436–441. https://doi.org/10.1097/PHH.0000000000000446. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4974059/.

Hyland, A., Barnoya, J., Corral, J.E., 2012. Smoke-free air policies: past, present and future. Tobacco Control 21 (2), 154. https://doi.org/10.1136/tobaccocontrol-2011-050389. http://tobaccocontrol.bmj.com/content/21/2/154.abstract.

Jansa, Joshua M., Eric R. Hansen, and Virginia H. Gray. 2018. "Copy and Paste Lawmaking: Legislative Professionalism and Policy Reinvention in the States." *American Politics Research* 47 (4): 739-767. 10.1177/1532673X18776628. 10.1177/1532673X18776628.

Jones, W.J., Silvestri, G.A., 2010. The Master Settlement Agreement and its impact on tobacco use 10 years later: lessons for physicians about health policy making. Chest 137 (3), 692–700. https://doi.org/10.1378/chest.09-0982.

Kong, A.Y., Henriksen, L., 2022. Retail endgame strategies: reduce tobacco availability and visibility and promote health equity. Tobacco Control 31 (2), 243–249. https://doi.org/10.1136/tobaccocontrol-2021-056555. https://tobaccocontrol.bmj.com/content/tobaccocontrol/31/2/243.full.pdf.

Kong, A.Y., King, B.A., 2021. Boosting the Tobacco Control Vaccine: recognizing the role of the retail environment in addressing tobacco use and disparities. Tobacco Control 30 (e2), e162 e168.

Kong, A.Y., Robichaud, M.O., Ribisl, K.M., Kirkland, J.H., Golden, S.D., 2020. Characteristics of proposed and enacted state tobacco control legislation in the United States, 2010–2015. Journal of Public Health Policy 41 (3), 334–350. https://doi.org/10.1057/s41271-020-00234-1. https://www.ncbi.nlm.nih.gov/pubmed/32665610.

Kong, A.Y., Golden, S.D., Ribisl, K.M., Krukowski, R.A., Vandegrift, S.M., Little, M.A., 2021. Cheaper tobacco product prices at US Air Force Bases compared with surrounding community areas, 2019. Tobacco Control. https://doi.org/10.1136/tobaccocontrol-2021-056984.

Laux, F.L., Chaloupka, F.J., Beebe, L.A., 2015. Excise Tax Differences at Oklahoma Smoke Shops: An Opportunity for Inter-Tribal Coordination. S119 American Journal of Preventive Medicine 48 (1, Supplement 1), S111. https://www.sciencedirect.co

m/science/article/pii/S0749379714004954. https://doi.org/10.1016/j.amepre.2014.08.028.
Meadows, S.O., Engel, C.C., Collins, R.L., Beckman, R.L., Breslau, J., Bloom, E.L., Dunbar, M.S., Gilbert, M., Grant, D., Hawes-Dawson, J., Holliday, S.B., MacCarthy, S., Pedersen, E.R., Robbins, M.W., Rose, A.J., Ryan, J., Schell, T.L., Simmons, M.M., 2021. 2018 Department of Defense Health Related Behaviors Survey (HRBS): Results for the Active Component. RAND Corporation, Santa Monica, CA.
Oliver, T.R., 2006. The politics of public health policy. Annual Review of Public Health 27, 195–233. https://doi.org/10.1146/annurev.publhealth.25.101802.123126. http://www.ncbi.nlm.nih.gov/pubmed/16533115.
Pomeranz, Jennifer L., and Mark Pertschuk. 2017. "State Preemption: A Significant and Quiet Threat to Public Health in the United States." *American Journal of Public Health* 107 (6): 900-902. 10.2105/ajph.2017.303756. https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2017.303756.
Rose, S.W., Ickes, M., Patel, M., Rayens, M.K., van de Venne, J., Annabathula, A., Schillo, B., 2022. Centering equity in flavored tobacco ban policies: Implications for tobacco control researchers. Preventive Medicine 165, 107173.
Shipan, C.R., Volden, C., 2014. When the smoke clears: expertise, learning and policy diffusion. Journal of Public Policy 34 (3), 357–387. https://doi.org/10.1017/S0143814X14000142.
Shobe, Jarrod. 2018/03/13/ 2018. *Enacted Legislative Findings and Purposes.* Social Science Research Network (Rochester, NY). https://papers.ssrn.com/abstract=3387593.
Smith, D.R., 2008. Tobacco smoking by occupation in Australia and the United States: a review of national surveys conducted between 1970 and 2005. Industrial Health 46 (1), 77–89. https://doi.org/10.2486/indhealth.46.77.
Smith, Caroline E, Sarah E Hill, and Amanda Amos. 2021. "Impact of population tobacco control interventions on socioeconomic inequalities in smoking: a systematic review and appraisal of future research directions." *Tobacco Control* 30 (e2): e87-e95. https://doi.org.libproxy.lib.unc.edu/10.1136/tobaccocontrol-2020-055874.
Tauras, J.A., 2007. Differential impact of state tobacco control policies among race and ethnic groups. Addiction 102, 95–103. https://doi.org/10.1111/j.1360-0443.2007.01960.x.
The economic and health benefits of tobacco taxation. 2015 2015. World Health Organization (Geneva). https://apps.who.int/iris/handle/10665/179423.
The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. 2014. *Reports of the Surgeon General.* Atlanta (GA): U. S. Department of Health Human Services, Centers for Disease Control and Prevention (US).
Williams, R.J., Knight, R., 2015. Insights in public health: Electronic cigarettes: marketing to Hawai'i's adolescents. Hawaii J Med Public Health 74 (2), 66–70.