

**AN ANALYSIS OF BARRIERS TO COMPREHENSIVE TOBACCO USE POLICIES ON
COLLEGE CAMPUSES: A CASE EXAMPLE OF THE UNIVERSITY OF
PITTSBURGH**

by

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ABSTRACT

The purpose of this thesis is to explore the barriers to comprehensive tobacco use policies on college campuses and examine the case of the University of Pittsburgh's attempt to enact such a policy, in particular, with regard to e-cigarette and hookah. This thesis also offers a set of recommendations for implementing a comprehensive policy at the University of Pittsburgh that address not only the potential implementation barriers but also the necessary elements for an effective tobacco-free policy identified in the literature. The findings of this research have significant implications for public health in Pittsburgh. The prevalence of tobacco use in Allegheny County remains higher than the national average and as such, the County must find methods to mitigate and ultimately eliminate the harm experienced by residents from tobacco products, whether those occur through direct use or second or third-hand smoke. The use of tobacco products (cigarettes, e-cigarettes and hookah) produces harmful health consequences for users and bystanders alike. This thesis research provides University of Pittsburgh officials with information to develop and implement a comprehensive policy addressing tobacco use on the University's main and branch campuses. The enactment of this policy would directly combat the growing use of tobacco products among college students and result in positive health outcomes.

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1.0 INTRODUCTION

1.1 PURPOSE OF THESIS

The purpose of this thesis is to explore the barriers to comprehensive tobacco use policies on college campuses and examine the case of the University of Pittsburgh's attempt to enact such a policy, in particular, with regard to e-cigarette and hookah. This thesis also offers a set of recommendations for implementing a comprehensive policy at the University of Pittsburgh that address not only the potential implementation barriers but also the necessary elements for an effective tobacco-free policy identified in the literature.

1.2 DEFINITIONS OF TERMINOLOGY USED

This thesis uses a number of terms that require explanation in order for the reader to have a clear understanding of the topic. First, an e-cigarette is any product containing or delivering nicotine that can be used to simulate smoking through the inhalation of vapor or aerosol from the product. The product may be marketed as an "e-cigarette", "vape pen" or "e-pipe." Hookah refers to a water pipe and any associated products or devices that are used to produce fumes, smoke and or vapor from the burning of material within the water pipe. Those materials are not limited to tobacco, shisha or other matter. In addition, the terms smoke-free versus tobacco-free

need to be defined. Smoke-free refers to policies to eliminate the use of smoke producing tobacco products such as cigarettes, cigars, hookah and e-cigarettes. These policies often highlight that the primary concern is second-hand smoke. Tobacco-free, by contrast, refers to policies that eliminate the use of any tobacco product, this often includes innovative products such as e-cigarettes. The primary concern is overall health and the ethical behavior of the institution. A more comprehensive version of a tobacco-free policy may also address tobacco sales, marketing, sponsorships and investments within the institution. The use of the word tobacco indicates a rejection of the tobacco industry in all forms beyond use exclusively.

1.3 THE ENVIRONMENTAL CONTEXT OF THE RESEARCH

The data collected for this thesis occurred within a particular context. The use of e-cigarette and hookah is on the rise nationally and in the Pittsburgh area as well. The incidence of tobacco use among adolescents has grown over the past 5-10 years. The Centers for Disease Control and Prevention (CDC) reports that if tobacco use continues to increase at its current rate among adolescents in the United States, 5.6 million of today's youth will die early from a smoking-related illness. Estimates show that 24% of young adults use tobacco products and that 1 in 3 of these young adults are in postsecondary school³. Approximately half of the young adults in the US attend a college or university¹. And, between one-quarter and one-half of all university students have tried hookah smoking.¹³

Despite an overarching misconception that use of emerging tobacco products is less harmful than cigarette use, both e-cigarettes and hookah pose a serious threat to individual health. Many individuals hold the erroneous belief that hookah smoking and e-cigarettes are

safer than smoking conventional cigarettes.¹ However the data shows that e-cigarette and hookah use result in harmful consequences similar to those from conventional cigarettes.²

1.4 THE LOCAL CONTEXT

The Allegheny County Health Department (ACHD) has a great concern about tobacco use and its health effects on the population of Allegheny County. It has led several initiatives including Tobacco-Free Pittsburgh and the “Allegheny Quits for Life” project which is an extension of the Tobacco Free Allegheny movement. In 2015, the ACHD found that 23% of adults in Allegheny County smoke which accounts for thousands more smokers than the national average of 18%³. Since 2015, the ACHD has set goals in the “Plan for a Healthier Allegheny” to reduce the number of adult smokers in the County by 10% or a decrease of 23,000 smokers¹⁵.

As Allegheny County’s regulations become more up-to-date based on current research findings, it can provide a framework for the University’s policies. As of March 7, 2017, Allegheny County Council voted to ban the use of electronic vapor devices (or e-cigarettes) in public indoor spaces or, “spaces where cigarettes are banned”¹⁵. The Allegheny County Health Department has a vested interest in protecting Pittsburgh’s health profile and, in particular, decreasing the prevalence of smoking in the County. Currently, college students account for a significant portion of Allegheny County adults and the ACHD notes that “all 10 colleges and universities in Allegheny County serving more than 160,000 students, staff and faculty have smoking policies” and that “many are going completely tobacco-free”³. However, the policies that currently exist are not entirely comprehensive and lack many of the policy components that lead to positive outcomes. The Allegheny County Health Department aims to see effective,

comprehensive policies enacted to protect the health of the City, particularly among its large population of students.

Among the campuses in Allegheny County, The University of Pittsburgh hosts one of the largest populations of students and staff. The University of Pittsburgh is a state-related University that is comprised of 17 undergraduate and graduate schools and colleges located in its urban campus, in Pittsburgh’s Oakland area. The University is home to a population of approximately 19,000 undergraduate students and 9,860 postgraduate students—totaling 28, 617 students. In addition to hosting a large population of students, the University employs thousands of individuals in academic support, daycare facilities and healthcare facilities on or near the campus.

The University of Pittsburgh has a reputation as a leading force in health education, it is highly ranked among the top research universities in the U.S and, is the sixth-largest recipient of federally-sponsored research funding—with a particularly strong relationship with the National Institute of Health. With its sprawling population and leading role in health research, there is an opportunity to make an impact by reducing the number of adults smoking at the University of Pittsburgh’s campus through the enactment of a comprehensive smoking policy.

1.5 THE UNIVERSITY OF PITTSBURGH EXISTING POLICY

The University of Pittsburgh does not currently have a policy that specifically indicates being “smoke-free” or “tobacco-free”. The policy that is most up-to-date, from September 25th, 2017 is an administrative, perimeter-based smoking policy. It indicates that: “smoking is prohibited within fifteen feet of building primary entrances and HVAC intake vents of all

University owned and leased property. The policy does not indicate any particular enforcement for violations of this policy. However, it does encourage violators to attend a University-sponsored smoking cessation seminar and clinic. The exact language found on the University's website is: "Smoking is prohibited in all University-owned and leased facilities and in all University vehicles. Procedures for requesting the designation of smoking areas are described in University Policy 04-05-03, Smoking." This paper explores the process that the University is following to enact a more comprehensive policy as well as the barriers that stand to interfere in that campaign.

Currently, the University of Pittsburgh's written policy does not address the use of hookah or e-cigarettes in specific language. The rising prevalence of these products demonstrates a need for the University of Pittsburgh to develop a policy and an accompanying marketing campaign that speaks to the predictors of use among college students who use emerging tobacco products as well as traditional tobacco products.

1.6 RESEARCH QUESTIONS

This paper aims to answer the following two research questions:

1. What are the key components of effective comprehensive tobacco use campus policies identified in the literature that have led to positive health outcomes at universities nationally?
2. What are the barriers to enacting a comprehensive tobacco use policy at the University of Pittsburgh?

1.7 OUTLINE OF THESIS

This thesis consists of four chapters following this introduction. Chapter two contains a review of the literature on this topic including relevant findings from recently published journal articles that demonstrate the need for comprehensive smoking policies. This review reports on what is known and unknown about the health effects of using conventional cigarettes, hookah, and e-cigarettes as well as the some of the reasons for the prevalence of and increased use of these products on college campuses. The literature review also summarizes key elements of various universities' "tobacco" or "smoking" policies and the impact of these policies on various attitudinal and behavioral outcomes. Chapter three describes the methodology for the data collection from interviews with key stakeholders and data analysis. Chapter four reports the findings from the interviews. Chapter five presents a discussion of the findings and

The implications for policy formulation and implementation. In addition, chapter 5 also contains a set of recommendations for the development of a tobacco free policy at the University of Pittsburgh. Lastly, chapter six provides a summary of the major findings.

1.8 PUBLIC HEALTH SIGNIFICANCE

The findings of this research have significant implications for public health in Pittsburgh. The prevalence of tobacco use in Allegheny County remains higher than the national average and as such, the County must find methods to mitigate and ultimately eliminate the harm experienced by residents from tobacco products, whether those occur through direct use or second or third-hand smoke. The use of tobacco products (cigarettes, e-cigarettes and hookah) produces harmful

health consequences for users and bystanders alike. This thesis research provides University of Pittsburgh officials with information to develop and implement a comprehensive policy addressing tobacco use on the University's main and branch campuses. The enactment of this policy would directly combat the growing use of tobacco products among college students and result in positive health outcomes.

2.0 LITERATURE REVIEW

2.1 HEALTH EFFECTS OF E-CIGARETTE AND HOOKAH USE

The health consequences of cigarette use are well-known yet cigarette smoking remains the leading preventable cause of death in the United States¹⁷. Use of cigarettes causes nearly one in five deaths and it can be the cause of fatal diseases such as pneumonia, emphysema, lung cancer and chronic obstructive pulmonary disease¹⁷.

As traditional cigarette use is reaching a stalemate nationally, there is a gap in use of tobacco products. This gap has created room for the rapid emergence of e-cigarette and hookah use. Both of these tobacco products pose a serious threat to individual health. Consumers hold the belief that hookah smoking is safer than smoking cigarettes¹³. However, in a single 45-50 minute hookah smoking session, a smoker is exposed to levels of carbon monoxide, tar, nicotine, carcinogenic polycyclic aromatic hydrocarbons and heavy metals that exceed those found in a single cigarette¹³. Consumers also hold the belief that hookah smoking and use of e-cigarettes are safer than smoking cigarettes¹. However, data show that e-cigarette and hookah use have harmful consequences for respiratory and reproductive systems similar to cigarettes¹⁷.

Estimates show that 24% of young adults use tobacco products and that one in three of these young adults are enrolled in postsecondary school³. Between one-quarter and one-half of all university students in the United States have tried hookah¹³. Furthermore, a study found that

e-cigarette use among college students has increased from 13.3% in 2011 to 43.5% in 2013⁵. Studies determine that 18-24 year olds have a higher percentage of alternative product awareness compared with other age groups⁶. Moreover, 18% of 18-24 year olds have tried at least one alternate tobacco product in their lifetime¹³. A study conducted in 2013 found that within the 30 days before they were surveyed, 18.6% of the sample used cigarettes, 10.8% used hookah and 3.1% used e-cigarettes¹³. Incidence of use has increased since this time. This data suggests the public health risk that emerging tobacco products are beginning to pose.

2.2 SECOND-HAND EXPOSURE TO SMOKE

One of the most prominent and successful arguments against smoking in public places is to protect the broader population from the harmful consequences of secondhand smoke. The “Americans for Non-Smokers Rights Foundation” is a successful lobbying organization that has changed the conversation surrounding tobacco use. It is known that second-hand smoke poses a significant health risk to those who are exposed. Second-hand smoke from cigarettes is notably harmful and has been linked to the development of chronic cough, asthma, respiratory infections and even lung cancer²⁰. The same threats are potentially posed through e-cigarette vapor. Toxicology studies have demonstrated that within the second-hand vapor emitted from e-cigarettes, there is particulate matter, volatile organic compounds and tobacco-specific chemicals²⁰.

In addition to the known threat of secondhand smoke, the Americans for Nonsmokers Rights indicates that there is still another burgeoning threat to health from these products—third-hand smoke. Third-hand smoke refers to the residual contamination from tobacco smoke that

lingers in rooms where one has smoked. It is known that tobacco product smoke includes a variety of gasses and particulate matters; carcinogens, arsenic, lead and cyanide²⁰. These particulates are actually able to cause the formation of carcinogens, a 2010 study found that nicotine remains on surfaces for days and weeks, being ingested or absorbed weeks after smoking ends²⁰. The health consequences of third-hand smoke suggests a need for a campus-wide policy to be implemented because, in a shared environment, every persons' health must be a priority and any potential threats to health needs to be mitigated by authority figures.

2.3 THE PREVALENCE OF E-CIGARETTE AND HOOKAH USE

A study conducted by the University of Pittsburgh, between 2013 and 2014 analyzed data from a population of 1,785 adults ages 18 to 30²². The participants were from across the U.S but the study focused on the college student population, explicitly mentioning “the prevalence of hookah bars near University campuses”²². The research was longitudinal and it looked at the intention to smoke hookah and the initiation of hookah use. The results found that 7% of users who had reported “never smoking hookah” had transitioned to current users²². When the researchers extrapolated the findings to the greater U.S population, nearly 9 million non-smokers ages 18 to 30 may have an intention to participate in hookah tobacco smoking”²². Coupled with national research and, regional tobacco sales information indicates the epidemiological significance of surveying populations for use to ascertain concrete data in regards to use of emerging tobacco products. In Allegheny County alone there has been a jump in privately-owned vape shops from 78 to 91 from May to September of 2016, alone. Even a quick Google search yields that there are 11 hookah lounges within a 5-mile radius of the University of Pittsburgh.

The sustained use of tobacco businesses and an increase in emerging tobacco businesses demonstrates that there is an increasing demand for product in Pittsburgh. This demand could likely be a reflection of an increase in use.

2.4 THE APPEAL OF E-CIGARETTES AND HOOKAH

To understand why there is an increase in e-cigarette use, it is valuable to ask: “what are electronic cigarettes and why are they novel?” The novelty of e-cigarettes relies on the inhalation of vapor instead smoke and, the general idea that an e-cigarette “mimics the act of smoking, in addition to delivering nicotine can address both “pharmacologic and behavioral” components of cigarette addiction. Theoretically, individuals suffer less harmful consequences from inhaling vapor emitted from e-cigarettes than the smoke inhalation from traditional cigarettes⁵. In order to substantiate this claim, the study reviewed evidence regarding the “safety” of electronic cigarettes. The review determined that “a preponderance of the available evidence shows them to be much safer than tobacco cigarettes and comparable in toxicity to conventional nicotine replacement products”⁵. While this study asserts that e-cigarettes are comparatively safe, it does not state they do not pose dangers to health. E-cigarettes deliver high levels of nanoparticles which have been linked to asthma, stroke, heart disease and diabetes¹⁹. The vapors that enter the lungs, dubbed as “less harmful”, carry solvents known as lung irritants⁵. These irritants can transform into carbonyls that include cancer-causing chemicals such as formaldehyde and suspected carcinogens¹⁹. However, due to the newness of e-cigarette products, their health consequences are still being studied and debated in the scientific health community.

Research demonstrates that there is merit to the argument that e-cigarettes are useful as a harm-reduction tool for those individuals who are already addicted to tobacco products²¹. However, individuals entering college in 2017 are not are part of that demographic so their use in younger generations poses more of a risk than a benefit associated with e-cigarette use. The conclusions regarding the harmful impact that hookah use has on the human body is more conclusive. Research has resoundingly demonstrated that the charcoal used to heat tobacco in the hookah increases health risks to individuals by producing smoke that contains high levels of carbon monoxide, metals and cancer-causing chemicals²¹. The use of hookah is damaging not only for the individual smoking it but the second-hand smoke is markedly damaging to health as well.

2.5 THE MARKETING OF E-CIGARETTES AND HOOKAH AND PERCEPTION OF HARM

Despite the clear consequences of tobacco product use, use of emerging tobacco products—e-cigarettes and hookah, is increasing. To understand the reasons why e-cigarette and hookah use is rising, one needs to look at how these products are marketed. Marketing of hookah and e-cigarettes often results in consumers with a skewed perception of the harm that these products can result in. Data demonstrates that college aged individuals have a high awareness of emerging tobacco products. This is likely due to the fact that the tobacco industry targets persons aged 18-24 as the population which receives the largest segment of targeted tobacco marketing efforts². The tobacco industry does specific, targeted promotions towards college students with marketing centered in bars and clubs close to college campuses¹⁰.

Harm perception differs between alternative tobacco products particularly, due to the promotion of emerging tobacco products as a ‘harm-reducing’ nicotine product. Promotion of emerging tobacco products using a harm-reduction lens leads to experimentation and initiation of product use because, consumers’ decisions to use particular products is influenced by perceptions of the products perceived harm and safety². One study found that college students who used water-pipes and cigars perceived them as less harmful than regular cigarettes and as such, students who perceive less product harm are more likely to use the product². In a sample of college freshmen, 37% of responders incorrectly perceived water-pipe to be less harmful than regular cigarettes¹³. A study conducted by researchers at the University of California and Dartmouth found that, among 12-17 year olds who have never used tobacco products, being receptive to marketing of e-cigarettes is associated with susceptibility to smoke cigarettes”¹⁸. The study found that receptivity to advertising was highest for e-cigarettes with 28 to 33 percent across age groups, followed by 22 to 25 percent for cigarettes¹⁸. The tobacco industry understands that college is a period of time when tobacco use is often initiated and habits are formed. In fact, college students are often early adopters of novel products and have historically been at the forefront of societal norms that then become relevant in the general population¹⁹.

There is a particular threat posed to health by the marketing of e-cigarettes as a “harm-reduction” tool for smokers. This framework has not yet been entirely discounted by scientists, as the transition from use of traditional cigarettes to e-cigarettes does demonstrate fewer health risks than traditional cigarette use. However, this assumption poses a significant risk to those individuals who have never used traditional cigarettes or, even tobacco products prior. Research has resoundingly proven that there is a strong likelihood that those individuals who begin tobacco use with e-cigarettes are more likely to participate in a “dual-use” behavior with

cigarettes. While it is true that smoking cigarettes is becoming less of a socially-acceptable habit², researchers are seeing a resurgence of cigarette use among ‘dual-users’ who did not initially use cigarettes but after being introduced to e-cigarettes moved their interest towards cigarettes^{5, 19}.

2.6 OPTIMISTIC BIAS

The bias towards having an optimistic attitude regarding the use of emerging tobacco products can be stated as: “smokers perceive themselves as being less at risk from tobacco use than others who smoke”¹¹. This bias was observed in the population of college students studied by Prokhornov et. al. Over half of the sampled population believed their health to be better than the average smoker their age and nearly one fifth of the population believed their health to be better than non-smokers their own age¹¹. It is clear from these findings that a lack of education regarding the health consequences of tobacco products may lead to the initiation of and continued use of tobacco products. Optimistic bias is particularly relevant to young populations such as college students who feel invulnerable to health threats¹¹.

As the use of emerging tobacco products has increased among college-aged students, universities and colleges across the country have tried to combat: increased marketing towards students, increased use of tobacco-products on campuses, and combat the growth of tobacco-centric businesses around campuses. The 2010 Surgeon General’s Report on Tobacco Use among Youth and Young Adults corroborates that the marketing towards 18-24 year olds does have a significant effect on use of tobacco products among students. In 2010, 24.8% of full-time college students were current smokers, moreover the number of smokers who initiated smoking

after 18 increased from 600,000 in 2002 to 1 million in 2010²¹. This increase in use and threat to the health of college communities necessitated a change in how colleges and universities in the U.S approach tobacco use on campus.

2.7 HISTORY OF CAMPUS POLICIES ADDRESSING TOBACCO USE

The American College Health Association (ACHA) represents over 800 universities and colleges throughout the U.S and its mission is to promote campus health care for students and advance the interests of college health. In 2009, the ACHA adopted a position statement on tobacco which detailed that “tobacco use in any form, active and/or passive, is a significant health hazard.” The ACHA further suggested that “colleges and universities be diligent in their efforts to achieve a 100% indoor and outdoor campus-wide tobacco-free environment”²⁰. This marked a turning point, and in 2017 there are 1,757 campuses across the U.S that have enacted comprehensive tobacco-free or smoke-free policies²⁰. As a result of these policies being enacted the prevalence of tobacco use was lower among young people who were exposed to smoke-free policies ([OR] = .85)¹⁶.

Despite the effectiveness of these policies, many of these policies aren’t yet inclusive of hookah and e-cigarette products. This creates a potential incentive for individuals who cannot smoke their normal tobacco products to initiate use of emerging tobacco products. Despite this loophole, the success of these policies demonstrates the potential for future policy efforts. If anti-tobacco policies have been effective in reducing the initiation of traditional tobacco use in young people, the model can be similarly effective when policies against emerging tobacco products are enforced.

Additionally, there is a component of stratification in these policies. Often, institutions are wary of implementing 100% smoke free policies. Smoke-free policies are categorized as ones that do not allow smoking in perimeter/designated areas or 100% tobacco-free. An observational research study tested the strength of both policy levels by identifying the number of cigarette butts found surrounding main campus buildings, a unique way to identify the presence of smoking in prohibited areas¹². Research found that 100% tobacco free campuses had significantly fewer cigarettes present compared to those campuses without outdoor restrictions¹². These findings, while somewhat obvious, demonstrate that enacting comprehensive, multi-component policy is more effective than those that veer away from a 100% smoke-free policy.

2.8 BARRIERS TO IMPLEMENTATION: STUDENT OPPOSITION

The primary groups that have historically protested college-campus tobacco policies are; student groups, local business owners who sell tobacco products and “Big-Tobacco” lobbyists.

Researchers have studied college campus protests against tobacco policies. In one study researchers analyzed campus protests from 1992 to 2013, with the majority of the protests occurring after 2007¹⁷. The campus settings where these protests took place vary-- some on urban campuses with student populations up to 73,373 to small, rural campuses with 3,674 student enrollment. They found that of the 21 protests, 12 protests were held in opposition to newly implemented policies and nine were against policies that had been proposed (but not implemented) by administrators, students, or state legislators. The policies being protested varied in category; from entirely smoke-free campuses, entirely tobacco-free campuses, smoke-free

buildings perimeters, smoke-free park areas, increased penalties for violating an existing policy and tobacco free-campus with the exception of designated areas for tobacco use¹⁷.

The nature of the protests varied in terms of the oppositional action taken. Of the 21 protests, 11 of them entailed groups of tobacco and non-tobacco users convening in a public space on campus to use tobacco products¹⁷. Of the remaining protests, a petition against the campus policy was circulated. Students were shown to demonstrate opposition to the punitive measures associated with tobacco use on campus as well as the belief that the policies infringed on their rights. One was quoted as saying: “We don’t want our current rights encroached on. They don’t enforce the current policy, they can’t stop us.”¹⁷ The discord between students’ perceptions of policy and the reality of its enactment is pinpointed as a motivation for policy protest—the article notes that the same protests were held against policies with almost no restrictions as those with extremely prohibitive rules. It is clear that the information given to students while enacting policy is critical. Of all of the recorded protests, only one had an adverse effect on policy--which resulted in a change in favor of tobacco use¹⁷.

2.9 BARRIERS TO IMPLEMENTATION: LOCAL BUSINESS OPPOSITION

Local politics also plays a part in influencing what universities can and cannot do. Within the broader scope of the City of Pittsburgh and Allegheny County, there has been much opposition to federal and local regulation of e-cigarette sales and use. In light of recently passed federal legislation, this particular population of students is extremely relevant in Pennsylvania. As of May of 2016, it was announced that e-cigarette sales will be banned for minors and, vaping products will require safety reviews before being sold. These regulations were not previously in

place in Pennsylvania and, allowed for minors to access e-cigarettes and develop subsequent preferences for use of products that they bring into their lives as college freshmen independent of parental authority or scrutiny. Following the change in federal regulations, Allegheny County Council voted to pass a bill which would ban “vaping” in public places where cigarette use is already banned¹⁵. This change in policy effectively holds e-cigarettes to the same standard and status as cigarettes.

In enacting policy on urban campuses, there is a potential issue in attempting to restrict smoking on streets between campus buildings. This same issue is what opposition used to counter the County Council vote as well, the ban is perceived as a threat to business’ freedoms. This issue is encountered on urban campuses and the backlash of local businesses is one of the most prevalent when enacting campus policy.

2.10 INTERVENTIONS TO FACILITATE COLLEGE CAMPUS TOBACCO POLICIES

A significant barrier to campus, anti-tobacco policy support is student resistance—often based on misinformation about harm or, based in the perception of policy as an ‘infringement of their rights. An intervention aimed to combat the aggressive marketing of tobacco to college students (by funding tobacco prevention programming at state institutions of higher learning) is called STRIKE (Student Tobacco Reform Initiative-- Knowledge for Eternity). STRIKE is meant to increase awareness and support college student advocacy for prevention of tobacco product use in the college student population⁵. The initiative targets 18-25 year-old college students as the youngest legal consumers of tobacco products, and those who were most heavily targeted^{2,3}.

This initiative was created by and made for college students. As such, its core goal is to engage students as advocates for de-normalizing tobacco's role on college campuses.

A study conducted in 2012 aimed to measure the effectiveness of an institutional, 100% tobacco ban on a university campus. The ban had been implemented for three years and was a multi-component model by providing campus-wide cessation services and information to students¹⁴. Through this study, effectiveness was not measured by compliance but by change in attitudes and beliefs related to smoking, reasserting that effective interventions can affect college students' perceptions of social norms. The study asked students questions about their perception of tobacco use annually for four years after the policy was implemented in 2007. Results showed that students' beliefs about nicotine's ability to serve as a viable weight loss supplement decreased over time, as well as a decrease in reports of students and their friends smoking at parties¹⁴. There was a significant increase in their preference to socialize in a smoke-free environment and over time, their agreement with the campus policy significantly increased as well¹². A public, multi-campus metropolitan research university created a multi-step intervention that relied, in part, on the disbursement of educational materials and, attendance at tobacco education events. In order to assess the needs of this intervention and identify targets for action, a preliminary survey was conducted that identified and contextualized campus tobacco trends.

Within the population of students polled, 55% indicated that they would participate in anti-tobacco activities aimed at college students and 8% indicated interest in attending cessation classes or support groups¹⁴. This information lent to a multi-component intervention, student advocacy teams shared tobacco-related information with target peer groups via e-mails, flyers, mass mailings and face-to-face interactions in classes, dorms and off-campus housing sites¹⁴. The outcome of this mass educational effort was encouraging and, demonstrate that

educational efforts resonate with college student populations do have a future in supporting campus anti-tobacco policy.

These interventions speak to the necessity of educational integration and marketing efforts to enact policy. In order to predict or entirely prevent opposition, the implementation phase of policy should involve formally surveying the campus about policy enactment and dissemination of those findings back into the same community. Ultimately, by being active in attempts to change social normative beliefs, there is potential to combat protest and negative backlash¹⁷. This study also addressed that in order to give voice to students with oppositional perspectives, stakeholders may be interested in hosting a formal space for students to air their concerns. This opportunity may facilitate a channel of conversation between outspoken oppositional parties and policy stakeholders.

2.11 KEY ELEMENTS OF UNIVERSITY TOBACCO POLICIES

The “Tobacco Free Campus Initiative” has noted that as of January 2017 more than 1,757 colleges are “smoke-free” and 1,468 of these were fully “tobacco-free”. Of those campuses, 652 explicitly prohibit hookah use and 1,400 prohibit use of electronic cigarettes³.

Table 1 describes key elements of universities’ tobacco policies on their campuses. The schools listed in Table 1 are institutions that are comparable to the University of Pittsburgh in terms of the size of student body, location in an urban setting and are state-related institutions. Table 1 first indicates whether a campus is smoke-free vs. tobacco-free and then whether a campus policy is an administrative, voluntary or legislative one. Administrative policies are established and defined by the operating authority of the college or university’s governing body.

These policies are based on internal mandates, laws and regulations. Voluntary policies are created by a person, business or organization. These do not have to have the legal backing or local or state laws and the policy will only be enforced by those who control the campus affected by the policy (campus police, housing security, organizational policies). Legislative policies are developed by publicly-elected legislators, government staff and external individuals and groups. These policies could be city ordinances, state laws and federal laws which would incite an administrative policy on a campus.

In addition, Table 1 indicates whether the following components are included in the universities policies: specific language including the use of hookah and e-cigarettes as unacceptable through campus policy; perimeter prohibitions are specified—i.e. the campus policy includes language pertaining to “smoke-free” perimeters around campus buildings, parks and lands; the campus policy includes the language “100% Smoke Free”; campuses have extensive and accurate signs to prohibit use of tobacco products or smoking; cessation support is offered –either discounted and free cessation programs for students and connection to off-campus cessation hot-lines and services; and, an enforcement policy. In terms of enforcement, there are varying degrees of enforcement policies. Each university develops these policies at their own discretion. However, there are themes among each of these policies and those are reflected within this table. Among the enforcement policy, there are reoccurring enforcement means through “Fines”, “Disciplinary Action” and “Discharge” for employees. In the following table, each enforcement tactic is listed as F (Fines), D.A (Disciplinary Action) and D (Discharge). For those universities that did not include enforcement, there is “violation reporting” and “voluntary compliance encouragement”, noted in the table as V.R and V.C.E. Each of these terms are operationally-defined in keeping with how they are explained in policy

and research. Table 2 lists the types of campus tobacco policies. Table 3 lists the types of outcomes that have resulted from smoke-free campus tobacco policies.

2.12 TABLES

Table 1: Elements of University Tobacco Policies

	Smoke Free vs. Tobacco Free	“Type” of Policy	Explicit inclusion of e-cigarettes	Explicit inclusion of hookah	Perimeter prohibitions	100% smoke-free	Signage	Cessation support included	Enforcement
University of Wisconsin	S	Administrative	Y	Y	Y	Y	Y	Y	F, D.A and D
University of Pittsburgh	--	N/A	N	N	Y	N	N	N	F
University of Michigan	S	Administrative	Y	N	N	Y	Y	Y	V.R, V.C.E
University of California, San Francisco	T	Administrative	Y	Y	Y	Y	Y	Y	Y
Clark College	T	Advertising and Marketing Policy Administrative	Y	Y	Y	Y	Y	Y	F, D.A
University of Louisville	T	Administrative	Y	Y	N	Y	Y	Y	Y
University of Arkansas	S	(Arkansas State Law) + Tobacco Sales Legislative	Y	N	Y	N	Y	Y	F, D.A
Emory University	S	Administrative	Y	Y	Y	Y	Y	Y	V.R, V.C.E

Legend	
D = Discharge	Y = Yes
V.R = Violation Reporting	N = No
V.C = Voluntary Compliance	F = Fines
D.A. = Disciplinary Action	S = “Smoke-Free”
T = “Tobacco-Free”	

Table 2 describes the existing “types” of smoke-free and tobacco policies and the key elements of each. There are “100% Smoke-Free” policies, “perimeter” policies, “designated smoking areas” policies, “tobacco sales policy”, “research policy” and “advertising and marketing” policies. In addition, a more comprehensive policy may include a combination of the following types.

Table 2: Types of Campus Tobacco Policies

	100% Smoke-Free	Perimeter Policy	Designated Smoking Areas	Tobacco Sales	Research Policy	Marketing and Advertising Policy
Definition / Scope	Smoking is effectively prohibited on all campus property including parking lots	“Smoking is prohibited within x- ft from building”	Smoking is prohibited on campus with the exception of designated smoking areas	The sale of tobacco is prohibited on campus	The University will not accept new research funding from the tobacco industry	Tobacco products and tobacco company advertising and marketing are prohibited on campus
Example Language:	“In the interest of Public Health, _____, is a tobacco-free campus. Use of any form of tobacco is prohibited at all times in the following areas: 1. On all grounds and in all buildings of the campus. 2. In or on any space, building, or classroom leased or rented by the college.	“Smoking is prohibited in outdoor areas within 25 ft of entrances, exits and any other locations where smoke may be brought into a campus facility”	“Smoking is permitted in the marked designated areas only and all parking lots”	“Sale and advertising of tobacco products are prohibited in _____ facilities	“_____ resolves not to accept funding from any kind of organization or company known to be funded by the tobacco industry.	“Advertising and sponsorship of campus events by tobacco companies will not be permitted”

Table 3 describes the types of outcomes that have occurred as a result of smoke-free policies on college campuses. These outcomes are measured through “before” and “after” surveys of participant attitudes¹.

Table 3: Types of Outcomes Resulting from Smoke-Free Campus Tobacco Policies

Citations	Compliance	Behavioral Change	Attitudinal Change
<p>Lechner, W. V., Meier, E., Miller, M. B., Wiener, J. L., & Fils-Aime, Y. (2012). Changes in Smoking Prevalence, Attitudes, and Beliefs Over 4 Years Following a Campus-Wide Anti-tobacco Intervention. <i>Journal of American College Health</i>, 60(7), 505-511.</p>	<p>Not measured</p>	<p>-decrease in student’s and friends smoking at parties</p>	<p>-significant increase in preference to socialize in smoke-free environment</p> <p>-belief about nicotine’s ability to serve as a viable weight loss supplement decreased</p>
<p>Russette, H. C., Harris, K. J., Schuldberg, D., & Green, L. (2014). Policy Compliance of Smokers on a Tobacco-Free University Campus. <i>Journal of American College Health</i>, 62(2), 110-116.</p>	<p>In a study assessing campus policy compliance and enforcement, only 10% of participants reported that current tobacco policy was enforced on campus. One quarter of study respondents reported as always following the policy¹⁷</p>	<p>Not measured</p>	<p>Not Measured</p>
<p>Seo, D. C. (2011). The effect of a smoke-free campus policy on students smoking behaviors and attitudes. <i>Preventative Medicine</i>, 53, 347-352. Retrieved May 05, 2017.</p>	<p>Not measured</p>	<p>Smoke-Free Policy: -larger decrease in perceived prevalence of smoking compared to perimeter policy</p> <p>-significant decrease in the percentage of students who reported having two or more close friends who smoke cigarettes with no change among students on the perimeter policy campus</p>	<p>Smoke-Free Policy: -preference to socialize in a smoke-free environment increased significantly amongst both males and females</p>

3.0 METHODS

3.1 RESEARCH DESIGN

This thesis research involved conducting a literature review, reviewing university policy documents and conducting key informant interviews. In order to understand the research problem and develop recommendations for an effective anti-tobacco policy at the University of Pittsburgh, a significant amount of background information needed to be compiled with regard to the following: types of campus smoking policies, campuses with policies enacted, outcomes of campus policies, opposition to policies, health consequences of e-cigarettes and hookah, national and local prevalence rates and the reasons for the increased use. The above information was obtained from the literature review and helped to structure the content of the key informant interviews.

3.2 LITERATURE REVIEW

The literature review explores the published literature on university campus policies with regard to tobacco, hookah and e-cigarette use. This literature review was conducted using two search engines: the PubMed Journal engine as well as the University of Pittsburgh inter-library loan system, PittCat+. In addition to research studies, statistical information was gathered from

the CDC and the Allegheny County Health Department. Table 4 lists the search terms that were used.

Table 4: Literature Review Search Terms

Campus Policy	E-Cigarette	Hookah	Cigarettes	Health
Tobacco	Prevalence	Harm-perception	Marketing	Harm-perception
Smoke-Free	Increase	Prevalence	Policy	Harm-Reduction
Outcomes	Harm-perception	Students	Regulation	Secondhand
Opposition	College	Adults	College	smoke
Prevalence	Regulation	Business	Prevalence	Consequences
Support	Marketing	Regulation	Consequences	Benefits
Urban	Policy	Policy	Harm-perception	

These search terms yielded approximately 450 journal articles. Due to the high volume of results, certain inclusion criteria were set: articles must be less than five-years old in order to remain relevant with the changing scope of tobacco technology, research must have taken place in the United States, policy papers must be relevant only to campus settings (not workplace inclusive). Both quantitative and qualitative studies were included. After application of the inclusion criteria, 20 articles remained. The literature review was helpful in developing the context for the interviews. By first, understanding the range of policies and outcomes, it became clear what factors play a role in the success or failure of policy enactment.

3.3 INTERVIEWS

Semi-structured interviews were conducted with key informants who were stakeholders in the campaign to enact a comprehensive smoking policy at the University of Pittsburgh. The interview process entailed: identifying key informants, and then preparing questions tailored to

each informant, conducting the interview and keeping notes followed by organizing and analyzing the results.

Identifying key informants occurred through consultation with members of the committee that aimed to enact tobacco policy. The majority of the key informants were directly involved in this campaign, their roles ranged within the committee from the orchestrator of the campaign, the lead researcher, the student health representative to the Allegheny County Health Department liaison.

The interviews themselves were semi-structured, with questions focused on the planning, process and barriers that occurred within the University of Pittsburgh's attempts to enact a comprehensive, smoke-free policy on campus. Each informant's interview was focused on their role on the committee, their experience and their perceptions of success and failure. Interview times ranged from 25 minutes to 55 minutes. They were conducted both in-person and over the telephone. Permission to record interviews was not granted due to the sensitivity of the topic which involved interviewees commenting on decisions made by other members of the committee as well as by other university administrators. Table 5 lists some of the questions that guided the interview process.'

Table 5: Sample Interview Guide

Informant Role	Sample Questions
Orchestrator of Program	“What were the primary motivations amongst this committee to have policy enacted?”
Lead Researcher	What do you feel were the primary reasons that the policy development committee was abandoned?
Student Health Liaison	How did the policy campaign’s procedural process work? What were the projected steps to implementation?

The use of interviewing as a qualitative data collection method was critical in gaining context as to what barriers existed in implementing the initially devised policy. By gathering this information, policy recommendations for the future can aim to create solutions to existing barriers.

3.4 DATA ANALYSIS

The interview findings were categorized into two stratifications: primary and secondary findings. What distinguishes the findings from one is the frequency with which they were mentioned. A primary finding was mentioned in every interview conducted where a secondary finding was mentioned in one or two but not unanimously. The data that was collected was typed as a record because permission was not granted for subject interviews to be recorded. From those notes, the data was divided into five categories; Roles of committee members, motivations, priorities and processes of the committee, policy opposition, support and demonstrations, Policy model, components and process for enactment. Secondary findings were pulled from responses

that did not fit into these exact domains. The data was thematically sorted into domains and then primary and secondary domains were sorted.

4.0 RESULTS

The findings of this thesis were gathered through semi-structured interviews with key stakeholders in the campaign to enact a comprehensive policy about tobacco use on college campuses. A series of questions were asked of each individual, the questions were within five domains asking respondents for their perspectives on; “Roles of committee members” “motivations, priorities and processes of the committee”, “policy opposition, support and demonstrations”, “policy model, components and processes for enactment” and finally, “the future of the project, further expansion and potential.” Each of these categories are elements that the literature review identified as critical to successful implementation of smoking policies on college campuses. Through semi-structured and guided interviews, the following information was compiled and then analyzed and organized by theme.

The word ‘committee’ is referenced in this paper, refers to a group of researchers, University faculty, staff, administrators and students who aimed to develop and enact a policy to address tobacco use on the University of Pittsburgh campus. The committee met between September of 2015 and March of 2016. The standing committee members were comprised of 10 people in the following positions: administrators, faculty members, H.R representatives, leading tobacco researchers, student representatives and members of the Allegheny County Health Department.

The campaign began in September 2015 and the proposed policy was fully composed by December of 2015 and momentum fell apart by January 2016 when the leadership of the changed. By April, the meetings had dissolved and so had the committee. The future of the policy remains “up in the air”, however, two of the individuals interviewed indicated a desire to re-start efforts to enact policy in the Fall of 2018. During the summer of 2018, the conjoined efforts of Health Services and the Student Health Advisory Board resulted in a grant application for \$20,000 in funding that would help support an educational campaign to accompany the rollout of policy enactment. The particular grant that was applied for is sponsored by the CVS and American Cancer Society for college and universities to provide assistance to implement smoke-free policies, it would be allotted for promotional activities associated with the campaign to enact policy. As of the completion of this research, that grant was not received. The group was created when a senior health administrator and faculty member lodged a complaint in regards to use of tobacco products outside of University of Pittsburgh academic buildings. The administrator noted that he had received several complaints from his faculty in regards to the use of tobacco on campus property. As such, the administrator noted that he wondered why the University could not have a more “aggressive” policy to combat the growing issue.

4.1 COMMITTEE MEMBER ROLES

The first of the five sections of information analysis is the role of the committee members”. Of the four campaign members who were interviewed, each played a separate role in the process of developing and attempting to implement a smoking policy at the University of Pittsburgh. Of the individuals interviewed, two were University of Pittsburgh faculty, one was

University of Pittsburgh research staff and the last was a student representative of the University of Pittsburgh undergraduate student body. The members of the University of Pittsburgh who were interviewed respectively worked to represent the interest of Student Health affairs as an agent of change on campus, as a student liaison with the Student Body Government, as the administrator who took the initiative to look into enacting policy, and a highly trained researcher aiming to develop the best possible, most feasible policy.

The varying roles of each interviewer comprise the key structure of the policy development committee. All of the individuals interviewed reiterated that the faculty and administrator who had initially spurred the idea of stronger policy on campus, began the committee meetings when they realized that process for implementing policy was not as fluid as asking for it. This individual took a strong leadership role in appointing members of staff, faculty HR, prominent tobacco researchers and students to a committee to devise and implement policy that would “best suit the needs of the University of Pittsburgh.”

The first individual interviewed played a role as a lead researcher on the advisory committee. In their position, they were tasked with compiling memos, doing preliminary research on policy enactment on comparable University campuses, looking at outcomes of policy enactment and moreover composing a policy that would be most adept for enactment for the University of Pittsburgh. This individual worked closely with the Provost, UPMC General Counsel and the architect of UPMC’s tobacco policy program. The role involved consultation of policies enacted around Pittsburgh, including the current policies at other colleges in Pittsburgh. In particular, looking towards policy enacted by Carnegie Mellon University. This individual noted that her role did not shift in between the duration of the committee meetings but, that her

duties and visibility as a committee member became less significant to the policy making process as committee leadership roles shifted.

The second individual interviewed acted as the Student Health Services representative and a prominent administrator within the process. In the beginning of the process, she brought a context to the committee as she had been privy to the many developing initiatives to implement policy to address tobacco use on the University of Pittsburgh campus. Within the committee, she worked with the student body and varying local college Student Health Services directors in addition to the director of the Allegheny County Health Department to set standards for Pitt's proposed policy and provide context from local University's similar efforts. This administrator was later transferred the responsibility of leading forth the charge for policy enactment. She has been working with current student government representatives to develop a path for the policy to move forward on campus.

The third individual arguably played the most significant role in the committee's fruition. He serves as a highly ranked administrator and faculty member at the University of Pittsburgh. He was the individual whose initiative led to the development of the committee to address Pitt's need for a comprehensive policy that addressed tobacco use on campus.

The final interview was conducted with a student who was an acting member of the student government board during the 2015-2016 school year. He noted that he was brought on to provide a bridge of communication with the student body. As the roles of these committee members grew and changed, instability and disagreement in regards to committee aims became more apparent. The particular point of confusion was regarding whether committee members wanted to develop a policy which included punitive enforcement and, more broadly whether it was feasible to be entirely 'Tobacco-free' as opposed to being 'Smoke-Free.'

4.2 THE MISSION OF THE COMMITTEE

As roles shifted within the committee, it lent to confusion regarding the priorities in the process of policy enactment. Interview findings make it clear that the priorities differed amongst varying committee members. However, all four individuals interviewed came to a consensus in regards to the two driving motivations of the committee: first, to protect the health of the campus and its students and secondly, to maintain the University of Pittsburgh's image as a modern and health conscious environment.

Interviewee's indicated that the incentive to enact policy was based, primarily in both of these motivations. Interviewees noted with particular emphasis that "getting with the times and maintaining the image of the school as a modern and safe environment" was a major incentive. The University of Pittsburgh is a major hub of health research and education so the committee was concerned with maintaining the school's reputation as a leader in health sciences and studies. One of the individuals interviewed noted that some University officials expressed embarrassment at the school's prominence as a leading health facility without a modern or comprehensive policy addressing tobacco-use on campus.

In addition to maintaining the image of the University of Pittsburgh, the institution did feel that it was necessary to protect students from the secondhand smoke. The member of Health Services who was interviewed indicated that while the most recent findings indicated that tobacco use among students was not particularly high, rates of asthma have increased among students visiting health services. The student interviewed indicated that he also felt, the committee had an "imperative to protect the health of other students and its students by sending a signal and message that tobacco use on campus was not accepted."

The combination of these two motives seemed to conclusively unite the committee, they were mentioned by each individual interviewed. Of the individuals interviewed, only one mentioned any other motive of the committee: forming a collegiate task force, further assessing relevant issues on campus and looking particularly towards use of the available campus cessation, educating and engaging students, faculty and staff and ultimately developing a plan and a timeline. However, the terms of the policy were further debated, particularly in light of oppositional parties, and led to a stall in implementation.

4.3 COMMITTEE REACTION TO THE FINAL POLICY DRAFT PROPOSED BY THE COMMITTEE MODEL POLICY

Looking at specific policies, the University of Pittsburgh modeled the policies put in place by the University of Minnesota and the University of Illinois. Each of the five interview respondents were able to identify components of the proposed policy that they agreed upon as necessary and useful. They each noted that the policy would need to be entirely smoke-free without any zones, or perimeters where smoking would be allowed. One of the respondents had explained that Carnegie Mellon University enacted a policy that allowed for zones where smoking was permitted. That was largely perceived as a failing by the health advocates behind the policy.

4.4 ENFORCEMENT

As much as a unified voice was represented in regards to the above components, one of the respondents dissented from the others in regards to the proposed policy's attitude towards execution of policy enforcement. The student representative and health affairs administrator were both particularly concerned with the potential for the policies enforcement. The student representative encouraged enforcement mechanisms that would be "community-based". He added that conclusive support was offered by students in regards to a policy that did employ fines as enforcement. Of enforcement mechanisms, one that was most supported was the nudging concept. The lead researcher on the committee noted that in her findings, she discovered that most universities used punitive enforcement as a last step. Its severity was dependent on the number of violations and was often prefaced with attempts at counseling and education on the health consequences of tobacco use through videos or seminars. Of the respondents representing student interests, they were adamant about responding to student needs by keeping measures of enforcement away from punitive consequences. The student representative also voiced that students supported enforcement mechanisms based in community enforcement. Conclusive student support was voiced towards nudging concepts and no situation where students would be fined. They aimed to "lead with a carrot rather than a stick", aiming to keep Pitt police far away from the process of enforcement.

4.5 POLICY ENACTMENT PROCESS

Of the four individuals interviewed, only two were able to comment on the process of implementing campus wide policy. The proposed smoking policy would have to be implemented across schools on the campus, from the undergraduate school to the School of Medicine, School of Pharmacy, School of Public Health and Law School. Both administrators interviewed indicated that the committee had never moved far enough with the policy to discern particular steps that predicate a policy being implemented. However, they did not think that the presumed process to enact a policy would begin by going before the Board of Trustees to then be proposed to Faculty Senate and then move to a vote by faculty that would pass the policy further. Another administrator noted that the process involved making a proposal to the Office of the Provost, the staff organization, staff senate and the student body organizations. However, both individuals mentioned that the process had not moved far enough to fully determine the path of policy approval and implementation on a University-wide level.

4.6 OPPOSITION TO THIS POLICY

Each of the four interviewees expressed that there were not strong or organized oppositions to the efforts to enact policy. Due to a fear of the consequences of vehement student opposition, a lot of thought and encouragement was allotted to including student perspectives to included in the process. Despite this effort made by several members of the committee and committee advisory members such as the Provost and General Counsel of UPMC, findings

indicated that student support was decidedly ‘mixed and misinformed’ leading to an inability to enact policy with full campus support.

Dissent from students was associated with misinformation. Each of the individuals interviewed indicated that whilst they were aware of some student discontent with the policies, the opposition was not overwhelming. A particular measure of the student body response, described by two individuals interviewed, was a ‘non-scientific’ survey published on the Student Body Government Board Facebook page. The ‘survey’ asked one question, verbatim, “Would you support a Tobacco-Free campus?” While exact results were not revealed by the arbiter, results were at about a 50-50 pro and con list. The student advisor to the committee indicated that ‘most everyone was behind the idea of banning smoking on campus’ and that the challenge lied in taking the next step, particularly the logic jump moving from ‘Smoke-Free’ to ‘Tobacco-Free.’

It was noted that “students were concerned with the “big brother” approach, they were extrapolating portions of the policy and these specific populations of opposition were behind the stall in the policy. One administrator noted that those parties, “created a lot of noise to drive the uncertainty.” This same sentiment was reiterated by the student representative who established that students were concerned about the language, the nuances in the policy and the possible “infringement of their rights” and their freedoms. The lead researcher in the committee noted that the language and nuances in the writing of the policy were polarizing during committee meetings and led to a hold-up in the continuation of the policy development ad enactment process.

However, the student representative also noted that while there was discernable opposition, students were similarly interested in supporting policy. Particularly due to an

initiative which was implemented in order to invigorate the student body, the ‘Breathe Easy’ campaign. The Facebook page associated with the campaign has 272 ‘likes.’ One of the individuals interviewed noted that they did not believe that there was “enough student engagement and education” which may have taken away from the strength of this campaign. This sentiment was reasserted by the lead administrator who mentioned that more effort should have been given to engaging the student body in the ‘Breathe Easy’ campaign.

Three of the four individuals interviewed demonstrated a concern with antagonizing any particular group of individuals involved in the process. Concern was also expressed in regards to staff support of the policy, the H.R representatives were eager to support the initiative “as long as they could get the staff to support it.” The policy developed did include benefits aimed to entice staff and faculty support including H.R benefits to cessation seeking individuals. While the initiative was being developed, there was not any current data on the smoking prevalence amongst University of Pittsburgh. The lead administrator at Student Health Affairs noted that the most recent data was gathered using a survey spanning multiple health topics and within that survey, a question was asked of students in regards to their tobacco use. University of Pittsburgh students use of tobacco products was “teetering around 12%, which is already less than the national average.”

Opposition demonstrated by local businesses led to a lengthy discussion in regards to the nuances of implementing policy on an urban campus. Being on an urban campus provides room for nuance in the policy because there is no ability to control the private industry surrounding the campus. Interviewees noted that one of the biggest challenges in designating an urban campus as smoke-free or tobacco-free is centric to designating what is University property. For example, a street half of a block away from the Student Health Affairs building may be public property and

there is no concrete way to designate that area as smoke-free within a school policy. Another individual interviewed had suggested that there be a focus on restricting smoking around campus property more so on grassy areas and quads rather than on sidewalks owned by the city. The lead administrator on the committee noted that they had introduced the idea to have City Council declare particular areas on campus as an entity that could be designated as smoke-free by the City. These were the major ideas that the committee had hoped to use as a combatant towards the threat of tobacco-use on city properties surrounding campus.

Ultimately, the interview findings indicate that the lapse in the fluid implementation of policy can be explained by a few concurrent factors: conflict in group decision making, hesitation to implement due to misinformation perpetuated by oppositional groups and, a failure to combat misinformation with a promotional or educational campaign. These factors were overarching, a few other contributing factors were: an unfamiliarity with who would need to approve the policy and what the formal enactment process was and the inability to control for factors surrounding an urban campus like city property and tobacco-centric businesses surrounding campus.

5.0 DISCUSSION AND POLICY RECOMMENDATIONS

The content of the literature review in Chapter 2 provides a lens through which the findings, particularly those elements identified as the key barriers to implementation of a comprehensive, campus tobacco use policy at the University of Pittsburgh, can be understood. Key barriers identified include: disagreement regarding enforcement mechanisms, lack of student engagement in the initiative, pervasive miscommunication about the policy and conflicts within the group.

In order for a policy to be successful at the University of Pittsburgh, it would appear that we need to take the following into consideration when addressing each barrier.

5.1 RECOMMENDATION 1: DEVELOP AN EDUCATIONAL CAMPAIGN FOR UNIVERSITY OF PITTSBURGH STUDENTS THAT ADDRESSES THE HEALTH THREATS FROM TOBACCO PRODUCTS AND HOW A TOBACCO-FREE POLICY WOULD BE IMPLEMENTED ON THE CAMPUS

It is apparent that one of the most significant reasons that the University of Pittsburgh policy was not passed through its initial efforts was the opposition of students was compounded by misinformation about the policy. In future efforts to implement policy, there should be a concerted effort to include a promotional campaign towards students which not only addresses

the harmfulness in tobacco use but, addresses specifically how the policy will be implemented on their campus and the logic grounding it. These initiatives often center around a few themes that shed light to the purpose of the policy. Among many of the themes that have been demonstrated to work include, ones that promote the motivations of the University of Pittsburgh are; ‘Keeping our Campus Healthy’, “We are here for you when you are ready to quit” and “Rethinking Smoking.” Each of these themes does not unduly accuse or shame smokers, but asks for a different perspective on tobacco use. Research demonstrates that messaging themes that do not work have themes grounded in ‘shame’ or ‘guilt’. Those may include campaigns surrounding long-term physical harm, telling people they should be quitting or using graphic images of physical harm consequences of tobacco use.

During the campaign, the primary goal should be to get the tenants of the specific policy across to students. This can be done through peer advocacy. The University of Pittsburgh could revitalize and repurpose the ‘Breathe Easy Pitt’ campaign to be led by students, engage the student body and educate them as to the necessity of policy at the University as well as it’s parameters. As the campaign begins, a fruitful solution to lessen opposition would be to hold a meeting in which oppositional parties, particularly students could express dissent as well as identify the parts of the policy they are not comfortable with. This dialogue could primarily serve as a benefit because individual concerns would be met with an understanding of the policies bounds and limitations. The campaign being student run could help mitigate the feeling of ‘big brother’ like surveillance that students reported in opposition to the initial University of Pittsburgh policy. It would be more collaborative for the committee to work with the Student Health organizations on campus to further develop the campaign’s advocacy of the policy.

5.2 RECOMMENDATION 2: ESTABLISH A NON-CONFRONTATIONAL APPROACH TO TOBACCO-FREE ENFORCEMENT ON THE UNIVERSITY OF PITTSBURGH CAMPUS

The findings from the key informant interviews have noted that there was a major disconnect between what research demonstrated as an effective enforcement policy versus what Policy lenience towards e-cigarettes and hookah use lends to use of these products. Research has shown that permissive public policies may be contributing to increased hookah use³. In a study assessing campus policy compliance and enforcement, only 10% of participants reported that current tobacco policy was enforced on campus. One quarter of study respondents reported as always following the policy¹⁷. These policies are likely to be more effective if they are 100% tobacco-free and enforced by campus authorities.

While research of policy outcome notes that punitive enforcement contributes to lower prevalence of tobacco use, the most common form of enforcement by college campuses remains passive enforcement. Passive enforcement is also understood to be “voluntary compliance”, these enforcement mechanisms within policies are trademarked by vague language within the actual policy. This method of enforcement relies on putting up signs in areas that are non-smoking but, signage without an indication of fines or punishment. Outcome research does demonstrate that active policy enforcement tactics are more effective.

Due to the University’s clear concern with aggrandizing particular groups, a fruitful solution might be by encouraging compliance through positive enforcement. This positive enforcement can be incorporated into the campaign developed before the policy’s implementation. Ideas include practicing tactful, non-confrontational approaches to nudging individuals to cease tobacco use when they are witnessed violating policy. In terms of signage,

there are particularly places where signage would be particularly necessary: outside of the Cathedral of Learning, outside of the grassy quad at the William Pitt Union and This would include a gentle verbal reminder, directing the violator towards signage that is posted. Suggested language for tactful reminders are, “For the sake of our students, we ask that you not smoke on school property.” If directly addressing the violator is not favored by the committee, a step that has been recommended is to present the violator with informational cards that inform them of the policy. Both of these softer enforcement tactics could be adopted by University of Pittsburgh campus security, who findings reported, were weary of being the arbiters of punitive enforcement. Other parties that could be considered as arbiters of enforcement include student health services, facility management or students from relevant advocacy clubs.

However, there should be a punitive measure taken when an individual becomes a repeat offender of the policy. While University of Pittsburgh campus security does not want to be the arbiter of punitive enforcement for policy non-compliance, it would behoove them to report repeat offenders to student health services who would then engage offenders with cessation materials.

5.3 RECOMMENDATION 3: PROVIDE INTERNET-BASED CESSATION SUPPORT FOR STUDENTS, FACULTY AND STAFF AT THE UNIVERSITY OF PITTSBURGH

As the findings demonstrated, there is a desire from within the committee to further develop cessation within the policy. The proposed policy would reach a wide audience at the University of Pittsburgh, from students to faculty and staff. The findings demonstrated that there

was a standing cessation service, QUITs, for students which would have been incorporated into the original policy proposal but, there are ways to further innovate cessation tools.

Varying campuses across the country are focusing cessation efforts to their young populations through internet-based cessation interventions. These interventions come in the form of websites that provide evidence-based information, strategies and behavioral support to motivate and assist tobacco users interested in quitting. The Community Health Guide assessed that these interventions aided in a decrease of tobacco use initiation among people decreased by 6.7%, studies also reported favorable results on changes in quit outcomes and exposure to secondhand smoke⁶. The benefits of internet- based interventions amongst young people may successfully lend to a multi-component intervention policy that includes cessation aid through the internet, this method could be used similarly as a means to educate college students on tobacco products as well⁷. By providing these interventions as well as direct cessation aids, anti-tobacco policies comprehensively deal with the most prevalent issues that promote initiation and perpetuation of emerging tobacco product use within the college aged population.

5.4 RECOMMENDATION 4: CONDUCT ON-GOING EVALUATION IN ORDER TO MEASURE COMPLIANCE WITH THE CAMPUS TOBACC-FREE POLICY AT THE UNIVERSITY OF PITTSBURGH

After the implementation of policy, it would behoove the University of Pittsburgh to measure effectivity of policy through compliance. Evaluation of policy effectiveness and compliance will lend to decisions in policy update which will help the policy of tobacco use adapt to the dynamic patterns and methods of tobacco use amongst the college student

population. A measurement of the effectiveness of this policy will be implemented by administering the TF-CAT, approximately 1 year after the policy has been implemented. A study conducted by the Journal of American College health recommends a tool of policy enforcement, Tobacco-Free Compliance Assessment Tool (TF-CAT)¹⁸. This enforcement mechanism aims to: investigate concurrent validity, evaluate inter-reliability and describe feasibility of use. Ultimately, this study determined that the TF-CAT is a feasible measurement device and as such, usable to measure widespread compliance progress on campuses that implement policy addressing tobacco use on campus¹⁸.

In conclusion, outcomes from effective policies addressing tobacco use on campuses across the U.S provide guidance for the University of Pittsburgh. The identified barriers have feasible solutions, solutions that can work within the parameters of the University's desired and 'ideal' policy. In order to assuage oppositional parties, there should be a multi-component promotional campaign on campus. Experimental and observational research has demonstrated positive outcomes for enforcement of campus tobacco policies, however, there are steps to mitigate the need for punitive enforcement and those steps should be taken by the University of Pittsburgh in their own policy implementation^{17,18,15}. It is also clear that providing cessation aid for infrequent smokers is effective within the college population^{4,11,21}. In order to keep the policy from remaining static and encourage change with the patterns of use and tobacco trends, a yearly outcome evaluation should be conducted at the University. This would guide the policy moving forward as well as identify if there is a need for stronger enforcement mechanisms.

6.0 CONCLUSIONS

This paper concluded that there are two primary barriers keeping the University of Pittsburgh from enacting a comprehensive policy addressing tobacco use on its campuses. Those primary barriers are; the overall lack of policy advocacy and education amongst University students and staff and disagreement over effective policy enforcement mechanisms.

Each barrier has potential solutions that have been proven effective in combatting barriers at other institutions and universities across the U.S. Given the evidence compiled through the literature review, the paper moves to make recommendations that will mitigate barriers in implementing policy addressing tobacco use on the University of Pittsburgh main and ancillary campuses. Beyond these primary factors, varying other factors were discovered to have relevance in creating an environment in which a comprehensive tobacco policy could be feasibly enacted and embraced at the University of Pittsburgh. One of the most prominent factors is the fact that the University of Pittsburgh's main campus is in the city and its campus is in close proximity to several tobacco retailers, hookah and 'vaping' lounges. The inability to police private businesses, public streets and parks adjacent to the University present issue when attempting to create a healthy space for students, staff and faculty.

However, by initially developing a comprehensive policy addressing tobacco use on and around campus property, the University of Pittsburgh can take the first step in being a health conscious and safe space for its students, faculty and staff. The University of Pittsburgh would

be best suited to keeping a longstanding committee tasked to implementing, evaluating and updating the policy as trends in tobacco use and environmental context continues to change. The public health significance of tobacco use is not static and as emerging products gain traction, it behooves the University to remain conscious of those changes. By remaining in the loop, the University tobacco policy committee may adjust policy accordingly and maintain its responsibility to public health as highly ranked, research and health studies University.

6.1 LIMITATIONS

The findings of this paper do have significant limitations, and in future iterations the study's rigor could be increased by working to lessen the impact of these limitations.

The first set of limitations Due to the sensitive information that was given during some of the interviews, permission was not granted to record interviews. This process did not allow for professional transcription of interview recordings. Without a professional transcription, there is not an ability to remove interviewer bias from interview findings. In this particular research, it would have been best to have multiple coders who would test for inter-rater reliability.

The second set of limitations are centric to the participants in the research. The individuals who were interviewed were purposively selected to include perspectives necessary due to their roles in the committee. However, there were a variety of roles that were not interviewed. In particular, the role of faculty and staff perspectives within the process of the campaign was lost in this series of interviews, despite their large presence on campus and in the process of enacting policy. By having more perspectives and a larger sample, there is room for thematic saturation. Thematic saturation would allow for interviews to continue occurring certain

key findings were repeatedly mentioned. Lastly, the findings are limited due to the data analysis plan. In a future iteration of this study, it would behoove the study reliability to develop a more sophisticated plan for analysis in which one could develop a codebook to examine emerging themes in the data.

APPENDIX A: QUESTIONS ASKED DURING INTERVIEWS

Tell me about your experience within the committee's campaign to develop policy at Pitt?
What role did you play within the committee given your expertise?
Who were the primary opponents to this policy?
How did the policy campaign's procedural process work? What were the projected steps to implementation?
What were some of the major motivations of individuals on the committee regarding the need for a comprehensive tobacco policy?
Amongst those motivations, does the institution feel concerned in terms of protecting students from the health consequences of tobacco products?
What do you feel was the primary reason that the policy development committee was abandoned?
What was the model policy that you wanted to follow? <ul style="list-style-type: none">• How does the policy address enforcement?• Does the policy include cessation support?• Is there an educational or advocacy push within the campaign for the policy?

APPENDIX B: LIST OF INDIVIDUALS INTERVIEWED

1. Student Government Liaison. (2017, June 19). Phone interview.
2. Lead Committee Researcher. (2017, May 18). In person interview.
3. Committee Developer. (2017, May 31st). Phone interview.
4. Student Health Affairs Faculty (2017, May 22nd). In person interview.

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