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COVERAGE OF SMOKELESS TOBACCO IN US NEWSPAPERS
AND NEWS WIRES – A CONTENT ANALYSIS

By

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ABSTRACT OF THE DISSERTATION

Coverage of Smokeless Tobacco in US Newspapers and News Wires

– a Content Analysis

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Background. Tobacco use remains a significant public health issue in the United States. Although smokeless tobacco (SLT) use is less prevalent than smoking, SLT sales are on the rise and include new products featuring cigarette brand names aimed at smokers. While some tobacco control professionals have argued that SLT may provide a less harmful alternative for smokers unable or unwilling to quit, others argue that SLT promotion could result in harmful consequences, e.g., uptake among new users. Despite a lack of consensus on the appropriateness of SLT for harm reduction or related messaging, such information is being communicated to the public through news stories. Coverage of SLT is significant given the news media's role in shaping readers' knowledge and attitudes. This study provides the first description of SLT in the news, exploring the types of topics covered, health and risk information presented, and slant of opinion articles.

Methods. A content analysis was conducted on SLT-related news and opinion articles from top circulating national and state newspapers and select wire services. Articles between 2006 and 2010 were obtained from electronic news databases and coded for

various SLT-relevant variables including: product attributes, SLT associations, prevalence and sales trends, health references and overall main SLT article topic.

Results. Among news/feature articles (n=677), these main SLT topics included business news (28%), new products, product regulation and harm reduction (19%), prevention/cessation (11.4%), taxes (10.2%), profiles/trends in use (9%), bans (8.1%), and tobacco industry promotional activities (4.9%). While references to health risks (i.e., addictiveness, carcinogenicity and specific health effects) were found in 40% of news articles, various “pro” SLT messages were also found, including references to SLT as less harmful than smoking (16.5%). Articles, particularly those about new products, also referred to other SLT attributes potentially perceived as beneficial over smoking (e.g., ability to use indoors). Although the majority of opinion articles (n=176) conveyed an anti-SLT slant (64%), 25.6% were pro-SLT.

Conclusions. Future research should explore the extent with which the public has been exposed to SLT news stories and ways in which they interpret and are impacted by included information, particularly that related to SLT risks and potential benefits.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Tobacco use remains a significant public health issue in the United States (1). Smokeless tobacco (SLT) is a form of non-combustible tobacco that is much less prevalently used in the US than cigarettes. However, the consumption of cigarettes is declining while that of the most popular category of SLT, moist snuff, has been growing (2, 3). The growth in moist snuff may be attributed to a variety of factors including concerns about both the health-related and financial costs of smoking, aggressive marketing of moist snuff products (4, 5) and increases in smoking restrictions, which may have created a greater demand for alternative tobacco products that can be used indoors and more discreetly (6). Like cigarettes, SLT is addictive and its use has been associated with several health risks including oral and pancreatic cancer (5) as well as cardiovascular health problems (7).

Although SLT is not without health risks, researchers generally agree that risks associated with SLT use are lower than that for smoking cigarettes (8-19). For one thing, use of SLT does not require the combustion of tobacco or inhalation of tobacco smoke, thus significantly reducing the risks associated with these processes (such as various respiratory illnesses)(10). Given the lower risks associated with SLT, it has been argued that SLT may serve as a less harmful alternative to smoking for those smokers who either have not been able to quit successfully before, or do not want to quit tobacco use (9, 18, 20-25), i.e., that SLT may be used for “harm reduction”. This argument is particularly

made for styles of SLT with lower levels of tobacco-specific nitrosamines (a class of carcinogens), such as the type of moist snuff commonly used in Sweden called “snus” (8). Indeed, professionals frequently point to data in Sweden as demonstrating the ability of SLT to act as a “harm reduction” product that can lead to public health benefits. In Sweden, use of snus is more prevalent among men than smoking and is believed to have played a significant role in the decline of male smoking and lung cancer rates observed in Sweden (9).

Yet, while researchers may agree that SLT risks are lower than those for smoking, the promotion of SLT as a harm reduction product or as an alternative to smoking more generally has been an ongoing source of debate and concern in the public health and tobacco control fields (15, 20). Tobacco control professionals argue that SLT promotion could result in unintended consequences that would ultimately be negative for public health (13, 26). They worry, for example, that SLT promotion could deter individuals from quitting tobacco altogether and facilitate dual use of both cigarettes and SLT (6, 10, 13, 27, 28). Dual use may be additionally harmful not only by acting to facilitate continued smoking and addiction, but also by increasing total tobacco consumption and providing more exposure to harmful constituents from both tobacco product types (10, 13).

Health professionals also worry that promoting SLT as a safer alternative to smoking could cause harm to the extent that individuals misinterpret such messages to indicate that SLT is “safe” (10, 13, 26, 29). This might constitute net harm, for example, if such messages encourage former smokers to resume tobacco use or facilitate uptake among young people who may not have otherwise started tobacco use (13). Harm associated

with new users may be compounded if SLT use acts as a “gateway” into later smoking (10, 13, 15, 26). As pointed out by Tomar and colleagues (26), previous research has shown that low or minimal risk messages are commonly interpreted by individuals as meaning no risk. Some researchers wonder whether an accurate message about the relative risks of SLT versus cigarettes can be effectively communicated to the public, as previous research has shown that the public often do not understand relative risk information (12, 29). As Savitz et al. (12) point out, “while scientists may be able to acknowledge a gradient of harmfulness, the public may dichotomize products and behaviors as harmful or safe”. In addition, it has been argued that describing SLT as less harmful than cigarettes may send a “mixed message” to the public that is confusing (26).

In contrast, several researchers have asserted that even though the information may be complicated, individuals should be informed about the relative risks of different tobacco products (30-33) and that not doing so may be a matter of ethics (8, 21, 30, 31). It has been argued that while the traditional messages in the US that “SLT is not a safe alternative to cigarettes” and that “there is no safe tobacco” may be literally true, they may also be misleading, and that public health officials should consider moving to more nuanced messages even though they may be more complex (31).

Some have also argued that not informing individuals about the relative risks could prevent smokers from switching to lower harm products such as SLT because they think all products are equally harmful (21, 33). Indeed, several studies examining SLT risk perceptions have pointed out that a substantial proportion of people perceive SLT to be as harmful (or even more harmful) than cigarettes (31, 34-37), leaving some to conclude that smokers are largely misinformed about the relative risks of SLT versus cigarettes. To

date, very few studies have examined mediated communication about SLT, with these concluding that SLT information has been inaccurate or misleading (30, 38). More research is needed to investigate communication about SLT, including *current* messages that may be reaching the public.

Several factors related to SLT have made debate regarding its promotion additionally complex. For example, different types of SLT vary in their toxic profiles such that their associated risks may also therefore vary (39). This adds complexity to both interpreting the research literature regarding SLT health risks and to potentially communicating SLT risk information. In addition, research literature reporting on both health risks and other possible unintended consequences of SLT use/promotion (e.g., whether SLT use acts as a gateway into smoking) have often been conflicting, thus making it difficult to interpret what the effects of promoting SLT as a less risky alternative would be. Of additional note is that a considerable number of studies in the SLT literature have been conducted by researchers receiving funding from the tobacco industry.

Debate regarding SLT has been ongoing within the tobacco control community for years and may have remained largely theoretical if not for several recent factors making SLT in the United States a much more relevant and current public health issue. As mentioned earlier, consumption of SLT is growing. Between 1986 and 2009, sales of moist snuff increased by 153% (40). SLT use may continue to rise given the growing number of smoking bans, the price of cigarettes, and also the recent entry into the SLT market of US cigarette companies looking to maintain profit levels in the face of declining cigarette sales (19). Between 2006 and 2010, the two major US cigarette parent companies (i.e., Altria, owner of Philip Morris USA, and Reynolds American, owner of

RJ Reynolds) purchased the two major SLT companies in the US (i.e., The United States Smokeless Tobacco Company and Conwood Tobacco Company). During this same time period, new SLT products were launched for the first time in the US under the most popular cigarette brand names – i.e., Camel Snus and Marlboro Snus. These companies appear to be reaching beyond traditional SLT users and are actively marketing Camel and Marlboro Snus to smokers as modern more “acceptable” forms of SLT that can be used as alternatives to smoking (6). Unlike other forms of SLT, these products are marketed as being spitfree and discreet, and thus easier to use anywhere, from sporting events to indoor professional settings (6).

In addition, the 2009 landmark law granting the FDA authority to regulate tobacco has potential policy implications for SLT in general and the harm reduction issue in particular. Tobacco companies are beginning to appeal to the FDA for permission to market reduced risk claims about certain SLT products (claims they are currently prohibited from making), even citing public health research studies as evidence for support (41). Meanwhile the FDA has been charged with reviewing the marketing of certain dissolvable SLT products to determine if they inappropriately target or appeal to youth.

Significance and Aims of Study

Despite the fact that public health professionals have not come to a consensus on whether SLT could be an appropriate alternative to smoking or a consensus on messaging surrounding SLT, such information is nevertheless being discussed and communicated to the public through news stories. This is significant given the role that SLT knowledge and risk perceptions may play in whether SLT is used in general and whether smokers

may switch to SLT. To date, few studies have examined mediated communication about SLT and none have examined risk information presented through news media. News media coverage of SLT is also significant given the news media's role in helping to define what issues the public perceives to be important, and also in shaping how the public thinks about those issues, which may influence both individual attitudes and behaviors, as well as support for policies related to those issues (42-44).

In addition, while the news media may serve as an important vehicle for disseminating information about tobacco risks and tobacco cessation resources and communicating arguments for policies to control tobacco, it may also provide tobacco companies with a form of free advertising, for example, through the discussion and "diffusion" of information about new tobacco products. To the extent that news stories communicate about the characteristics and "benefits" of new SLT products, such information could work to facilitate interest in and potential adoption of these products.

Given the potential of news stories to influence tobacco related attitudes, behaviors and policies, previous content analysis studies have been conducted to describe the prevalence and content of tobacco related news (44). However, one recent review concluded that research focused on the news media has been relatively understudied in tobacco control and that more research is needed to examine news texts about tobacco (44). In addition, no previous research has focused on analyzing the coverage of SLT in the news. This dissertation will contribute to the small body of SLT communication literature and also to the tobacco news literature by describing the coverage of SLT in newspapers and news wires through content analysis methods. Study aims and research

questions are presented next. Since this study is considered exploratory and descriptive, no hypotheses are presented.

Study Aim 1. Because of limitations of space, time and attention afforded to news in a given day, only those issues considered most “newsworthy” succeed in gaining coverage, such that resulting coverage of those issues may suggest to the public that they are important (44). News coverage of particular topics may also *reflect* issues that are of perceived importance at both national and local levels and existing public sentiment towards those issues (45). Previous studies have examined the types of topics covered in general tobacco-related news and only one study described the coverage of a specific tobacco type – cigars (46). Therefore, the first aim of this study is to describe the types of SLT related topics covered in US newspapers and select news wires.

Research Question 1a: What types of topics about SLT are covered in US newspapers and news wires?

Research Question 1b: Do the types of SLT-related topics covered differ by type of news source (i.e., national news wire, health news wires and national, state, and tobacco hometown newspapers)?

Study Aim 2: The news media has historically served as a source of health information in general and for tobacco specifically (47, 48). Some research has found, however, that information about the health consequences of tobacco has been missing or underemphasized in more recent tobacco news coverage (49-51). The frequency or type of health/risk information communicated in SLT-related news is not known. As described earlier, perspectives also differ in whether/how the relative risks of SLT and cigarettes

should be communicated. The second aim of this dissertation is to describe the frequency and type of SLT-related health information presented in SLT news stories.

Research Question 2a: What proportion of unique SLT-related news stories contain information about SLT health risks?

Research Question 2b: What types of health risks are mentioned in SLT news stories?

Research Question 2c: Are the risks of SLT compared to that of cigarettes/smoking? If so, how?

Study Aim 3: As indicated previously, the news media may not only influence and reflect what types of things we think about but also *how* we think about those issues. Given the potential influence on public attitudes and policy, previous research has examined the types of messages and arguments found in news stories that may frame thinking about tobacco issues (44). Previous studies have also suggested that the framing of research on tobacco health effects as controversial or unsettled could mitigate the impact of health warnings on tobacco attitudes and behavior (48, 52). The third aim of this dissertation is to describe ways in which SLT issues are framed in SLT news stories.

Research Question 3: To what extent is SLT portrayed as growing in use in SLT news stories?

Research Question 4: Which arguments related to the promotion of SLT (i.e., its marketing and potential role in harm reduction) are included in SLT news stories?

Research Question 5: How frequently do news stories frame SLT issues as being controversial?

Research Question 6: What is the slant of opinion articles related to SLT?

Study Aim 4. The Diffusion of Innovation (DOI) Theory points to various attributes of an innovation that “are most likely to affect the speed and extent of the adoption and diffusion process”, such as its perceived “relative advantage” over what it would replace (53). Cigarette companies have introduced new SLT products (i.e., Camel Snus and Marlboro Snus) in hopes that these will be adopted by smokers to offset declining cigarette sales. Using a DOI framework as a guide for organizing the results, the fourth and final study aim will describe whether and how news stories communicate about product attributes of Camel and Marlboro Snus that might facilitate their adoption.

Research Question 7a: What types of product characteristics of Camel Snus and Marlboro Snus are communicated in SLT news stories?

Research Question 7b: What attributes of an innovation, as described in Diffusion of Innovations theory, do these characteristics reflect?

CHAPTER 2

LITERATURE REVIEW

Types of Smokeless Tobacco

Although various types of SLT are used around the world, research and debate surrounding the use of SLT as a harm reduction method has centered around SLT used in the US and in Scandinavia. As such, the research discussed in this dissertation is focused on these forms of tobacco.

In the US there are several different styles of SLT, with these varying in the way they are manufactured, in their levels of carcinogens, and also in their popularity (39). SLT used in the US can largely be classified as belonging to one of two main types: “chewing” tobacco (which comes in loose leaf, plug and twist forms) and “snuff” tobacco (which can be made as dry or moist snuff)(54).

In terms of chewing tobacco styles, “loose leaf” chewing tobacco refers to air - cured tobacco strips (made from cigar leaf tobacco) that are sweetened and loosely packed (5, 54). Plug chewing tobacco is made from cured tobacco leaves that are sweetened with sugar and licorice and pressed together into a “cake” or plug, and twist tobacco refers to tobacco leaves that are air or fire-cured and twisted together in the style of a rope (5, 54).

“Snuff” refers to a finely grained flavored tobacco that can be made as “dry” or “moist” snuff. Dry snuff is fire-cured fermented tobacco that is processed into a powder (54). While other styles of SLT are typically used orally (placed between the cheek or lip and gum), dry snuff can be used nasally (5, 54).

Moist snuff (MST) is cured (i.e., dried) and fermented tobacco processed into fine particles, which may typically contain 20-55% moisture by weight (hence the descriptor “moist”). It can be packaged in tins from which users take a “pinch” of the loose tobacco particles and place it between their cheek (or lip) and gum, or the tobacco can be bundled into small teabag-like pouches which are then placed in the mouth (5, 54). These pouches may be more “user friendly” than loose moist snuff as they may remain in place in the mouth, do not cause tobacco to get stuck in between teeth, can easily be removed when done, and may also reduce the need for associated expectoration (55). As described below, moist snuff is currently the most popular form of SLT in the US.

The new cigarette brand name SLT products, Camel and Marlboro Snus, also represent a SLT type new to the American market. Snus is the Swedish word for the type of moist snuff most popular in Sweden (9). It is a type of moist snuff which, like American moist snuff, can be used in a loose or pouched form. Snus differs from American moist snuff in the way it is manufactured. For example, while American moist snuff tends to make use of blends high in fire cured tobacco, Swedish snus tends to use tobacco that has been air or sun cured. In addition, American snuff traditionally undergoes fermentation as a part of the flavor development process, a process which also facilitates the development of carcinogens (9). These carcinogens are produced as a result of chemical reactions between the bacteria involved in fermentation and compounds in the tobacco leaves (12). In contrast, Swedish snus is exposed to a pasteurization-like heating process that kills bacteria (9). In addition, snus is typically refrigerated after it is packaged, which may further work to prevent bacterial development, while American snuff is not, allowing for continued fermentation in the can (9). It is believed that these

differences in tobacco selection, production and storing methods contribute to the lower level of cancer causing agents (i.e., tobacco specific nitrosamines) found in Swedish snus (9, 56), as discussed below.

Toxic Profiles Associated with Smokeless Tobacco

Several studies have demonstrated that different forms and even brands of SLT vary in their levels of both nicotine and tobacco specific nitrosamines (TSNAs), a class of carcinogens specifically found in tobacco products (39, 56). The difference in these levels may be attributed to a variety of factors including differences in the quality of tobacco used, the presence of water, salt, and flavor additives and the manufacturing technique used (e.g., with or without fermentation, pasteurization and type of storage preservation)(12, 57). Thus, to some extent the levels of toxins in SLT products are within the control of tobacco manufacturers (12, 56).

With regard to American SLT, previous research has pointed to dry snuff as containing substantially higher levels of TSNAs than chewing tobacco or moist snuff. It has also been noted that TSNA levels in both dry and moist snuff have fallen over time (possibly as a result of changes in manufacturing processes) (39), but those in dry snuff continue to be higher than those in other SLT types (55)¹. Within the moist snuff category (the most popular type of SLT in the US) there is variety - Richter et al. (58) recently found an almost 20 fold range in the level of TSNAs among the top 40 selling brands of moist snuff in the US.

Studies have also pointed out that brands of Swedish snus contain lower levels of TSNAs compared to American brands of snuff (9, 56). Recently Stepanov et al. (56)

¹ It should be noted that authors of this study received unrestricted grant funding from the United States Smokeless Tobacco Company.

found that one brand of Swedish snus (General) and both new American brands of snus, Camel and Marlboro Snus, all had lower levels of total TSNAs than did styles of moist snuff brands that have been traditionally popular in the US, such as Skoal, Copenhagen and Kodiak. As such, snus is sometimes referred to in tobacco control literature as a type of “low nitrosamine smokeless tobacco” (LN-SLT) and has been at the forefront of much of the SLT harm reduction debate (13).

Trends in SLT Consumption, Use and Marketplace

Although chewing tobacco sales dominated in the late 1980s and early 1990s, today moist snuff represents the most popular type of SLT in the United States (2, 40). Sales of moist snuff increased by approximately 153% between 1986 and 2009 and in 2009 exceeded sales for all other types of SLT combined (2, 40). Today moist snuff represents over 90% of total SLT sales in the US (59). Not surprisingly, moist snuff also represents the type of SLT most supported and promoted through tobacco company marketing expenditures (2). Given this dominance, when SLT use is discussed, it is for the most part understood as referring to use of moist snuff.

While sales data have been used to describe the consumption of SLT, survey data has been used to describe the prevalence of SLT use in the US and correlates of such use. Data show that SLT is used predominantly among males – about 6.5% of adult men use SLT in the United States on average (compared to 0.4% of women) (60). Recent data have shown that considerable variability exists in the prevalence of SLT use among men in different states within the US, with prevalence of use ranging from 2.3% to 17.1% in states with the lowest and highest male prevalence, respectively (61).

Use is also higher among whites and American Indians and Native Alaskans than other races and ethnicities, more prevalent among 18-24 year olds than other adult age groups (61), and more commonly used in the South or Midwest, and in smaller metropolitan or rural areas (62). SLT users are also more likely to have less education than never users and work in skilled labor occupations (62, 63), although some research suggests that use among college graduates and educated professionals may be growing (63). In addition, marketing for new SLT products (i.e., Camel and Marlboro Snus) use images of “white collar” professionals and appear to target those outside the traditional SLT user profile (6).

The “Swedish Experience”

Researchers have pointed to trends in Sweden, where about 20% of males use snus daily, as a natural SLT harm reduction experiment (sometimes referred to as the “Swedish Experience”). In 2003, Foulds and colleagues published a now commonly cited review of studies on tobacco trends in Sweden to provide an overview of the effects of snus use on smoking and public health (9). They described that as the rate of smoking fell substantially in Sweden, particularly in the last 20 years, the prevalence of snus use in the country significantly increased, suggesting that a significant proportion of the decrease in smoking may be associated with individuals switching to snus. They argue that the theory is supported by evidence of sex differences in tobacco consumption in Sweden. Specifically, the prevalence of smoking decline in males has been significantly greater than that observed for females over the same time period, while the increase in use of snus is largely attributed to males. Foulds et al. also described observed health trends, noting that along with a reduction in smoking, the incidence of major smoking diseases in

Swedish men has also been substantially reduced. Swedish men have experienced a decrease in lung cancer incidence and rate of heart attacks, trends not similarly observed among Swedish women. Authors noted that although other tobacco control factors such as price, health education and smoke-free policies likely had an influence on the decrease in smoking and health improvements observed in Sweden, the concurrent increase in snus use and observed differences between males and females also points to snus as having played a significant role.

Studies of ex-smokers in Sweden have also provided evidence of the use of snus in the cessation of cigarette smoking, with some indicating that a significant proportion of males make use of snus as an aid to quit smoking rather than nicotine replacement therapy products (pharmacological aids clinically approved for use in smoking cessation)(64, 65).

It should be noted, however, that there is also a lack of consensus in Sweden about the role of snus use in harm reduction. Health professionals point to other factors as having played a large role in the country's smoking reduction, such as tobacco price, advertising restrictions, and smoke-free policies (66), and leaders of public health agencies from several Scandinavian countries warn about the potential risks of snus rather than advocate for its use in harm reduction (67). Furthermore, it has also been pointed out that there is no scientific evidence in support of snus as being an effective aid to cessation (66, 67).

SLT Health Effects

SLT and Cancer

SLT contains more than 30 carcinogens and has been classified as a human carcinogen by the International Agency for Research on Cancer (68). Like cigarettes,

SLT contains two types of tobacco specific nitrosamines known to be carcinogenic, NNK and NNN (69). As such the potential increased risk of cancer from SLT use has been a public health concern.

Probably the most common health association made with SLT has been oral cancer. Studies first reporting on risks from chewing tobacco appeared in 1962 and on moist snuff in 1977 (55) and by 1986 the US Surgeon General's Report indicated that SLT use can be a cause of oral cancer (70). Since 1986, one of the rotating warning labels required on SLT products in the US indicates that "this product may cause mouth cancer".

However, this association has been a source of some debate (71). While it is generally agreed that SLT use is a risk factor for oral cancer in developing countries and regions including India, Sudan and countries in South Asia, the association has been less clear based on data from the United States and Europe (69). A few early studies in the US showed significant and large relative risks for oral cancer with use of SLT (72, 73). However, some recent analyses of US data have not found significant associations with oral cancer (16) and several studies from Sweden, where prevalence of SLT use is higher but the toxic profile of SLT used appears to be lower, have failed to find an association (69, 74, 75). It has been noted however, that failure to find associations in some studies may be related to a lack of statistical power to do so (57, 76). SLT has also been associated with other negative oral cavity effects such as gingival recession, dental caries (12, 68) and lesions in the mouth, typically appearing where SLT products are applied (5, 77, 78). Such lesions may serve as precancerous effects of SLT (5).

Studies have also linked SLT use with other types of cancers. One review found a significantly elevated risk of esophageal cancer associated with SLT use (based mostly

on studies from Nordic countries)(5). A few studies have also found associations between SLT use and increased risk of pancreatic cancer (69, 75, 79). Although a few studies have suggested an association between SLT use and increased risk of lung cancer (16, 80), others have not (69, 75).

SLT and Cardiovascular Health Effects

Like cigarettes, SLT contains nicotine which may have both acute and systemic effects on the cardiovascular system (81). However, this literature too has been somewhat mixed, with some studies finding SLT use to be associated with increased risk for hypertension, heart disease, and/or myocardial infarction (MI) (82-85) and others finding a lack of significant associations (86-90). A recent meta-analysis of 11 studies, including studies from both the US and Sweden, found a moderate increase in risk of fatal MI and stroke among SLT users compared to non users (7). At least two studies published at the same time of this review (and not included in the review) did not find evidence to clearly support an association between snus use and cardiovascular disease (91, 92). Most recently, a review and statement by the American Heart Association published in 2010 concluded that the organization “does not recommend the use of SLT as an alternative to cigarette smoking or as a smoking cessation product” and that “clinicians should continue to discourage use of all tobacco products” (93).

SLT and Addiction

One undisputed effect of SLT is its ability to lead to and cultivate addiction (9, 10, 15, 56, 57). Like cigarettes, SLT contains nicotine, the active drug that facilitates addiction to tobacco use. Although the method of nicotine delivery may not be as fast and efficient as

that delivered by smoked tobacco products (57), SLT products are capable of delivering quantities of nicotine that are comparable to smoking (9).

Risks of SLT Compared to Smoking

As mentioned previously, despite the risks associated with SLT use, many researchers agree associated risks are lower than those of smoking cigarettes. A few studies have attempted to quantify risk comparisons between SLT and cigarette use. In one study a panel of nine tobacco control experts estimated at least a 90% reduction in the relative risk of low-nitrosamine SLT products, such as Swedish snus or Ariva (a brand of dissolvable smokeless tobacco), as compared with smoking (8). A report by the Royal College of Physicians estimated that SLT use is considered 10-1000 times less hazardous than smoking (depending on the SLT product)(94).

In contrast, it has also been argued that while risks may be less for lifetime SLT users versus lifetime smokers, the benefits of *switching* from smoking to SLT use may not be as clear (26). One study found that the rates of all cause mortality and tobacco-related diseases were higher among men who switched from cigarettes to SLT versus those who quit tobacco completely (95). Recently some researchers have referred to different forms of tobacco-related products falling on a spectrum of risk, with use of SLT falling below that of cigarette use, but above that of using nicotine replacement therapy products and quitting all forms of tobacco and nicotine completely (13, 19, 22, 96).

Unintended Consequences of SLT Promotion

As indicated earlier, tobacco control and public health professionals express skepticism about the promotion of SLT out of concern for possible unintended consequences and potential for greater population level harm (13, 26). Researchers

sometimes refer to the promotion of light cigarettes as an example of a failed harm reduction approach – one that turned out to have large and lasting unintended negative consequences on public health (9, 13, 26, 27). At the same time, some researchers argue that concerns about unintended consequences represent “worst case scenarios” that are unlikely (24, 97). In addition, studies about certain unintended effects of SLT use, such as its potential role as a “gateway” product into smoking have produced mixed findings, thus adding to the overall debate on SLT. The main points of concern and debate regarding the promotion of SLT are described next.

Dual Tobacco Use

Although harm reduction may occur if individuals who would have otherwise continued to smoke switch to SLT completely, one of the major concerns about the promotion of SLT is that it may deter individuals from quitting tobacco altogether and even facilitate the dual use of both cigarettes and SLT (10, 13, 27). Tobacco control policies such as smoking bans in indoor spaces have been effective in motivating smokers to reduce consumption and quit (21). However, the use of SLT as an alternative to smoking in places or situations where individuals cannot smoke can undermine these tobacco control policies and has the potential to maintain nicotine addiction and facilitate continued smoking (6, 21, 27, 28). To the extent that smokers use SLT as a crutch in between smoking episodes rather than migrating to SLT completely or quitting tobacco completely, such dual use may constitute harm rather than harm reduction (28). Dual use may be additionally harmful not only by acting to facilitate continued smoking, but also by increasing total tobacco consumption and providing more exposure to harmful constituents from both tobacco product types (10, 13).

Dual product use is of particular concern given that SLT product marketing indeed advertises and promotes the use of SLT as an alternative to smoking in situations where smoking is not allowed or practical (6, 10). This has been a practice found in SLT marketing since the 1970s, and is currently used in materials promoting new products Camel Snus and Marlboro Snus (6).

In a recent study, Tomar et al. (98) analyzed data from four national surveys and found that among males ages 25 years or older, 0.6% of daily smokers also used moist snuff daily, and 1.7% used snuff some days. The prevalence of concurrent use is higher when the proportion of SLT users who also smoke is considered – 7.3% of those who use snuff daily also smoke daily, while 37.4% of those who use snuff some days also smoke daily. Since this study was conducted based on data collected before the introduction of new SLT products by cigarette brands and their accompanying marketing, it is possible that the prevalence of concurrent use might grow in the future (98).

Facilitating New Use and Gateway Effects

In addition to concerns about negative consequences from dual use, it has also been argued that the promotion of SLT may unintentionally cause harm if former smokers begin using SLT or never tobacco users, in particular youth, begin using SLT because they misperceive SLT to be safe (29, 99). Uptake among new users may cause additional individual and population level harm if SLT use acts as a gateway to smoking, such that individuals who begin to use SLT, including young people, move on to later use cigarettes (10, 13, 15, 17, 26, 76).

However, research on the gateway issue thus far has been mixed, with different findings in the US versus Sweden and with some studies even suggesting that SLT use

may have a protective effect against future smoking (100). Several US studies, including two longitudinal studies with adult military recruits and two with adolescents, have concluded that SLT use acts as a predictor or potential risk factor for future smoking (101-105). However, other analyses of US data have suggested that SLT use does not increase the likelihood of future smoking (106) and that, as in Sweden, the majority of initial snuff users are not gateway uses, i.e., do not go on to be cigarette smokers (100, 107).

Indeed, several studies examining data from Sweden have found that snus use was more strongly associated with smoking cessation rather than initiation (9, 64, 108, 109). Some studies have reported that those who used snus initially were less likely to initiate smoking than non snus users (64) and that people are more likely to switch from cigarettes to snus than from snus to cigarettes (110). However, in a recent review of SLT harm reduction arguments, Tomar et al. (26) concluded that trends observed in Sweden are not replicated in the US, and that “the preponderance of evidence suggests that SLT use *is* a predictor of cigarette smoking in the US”. Authors further noted that “the findings in one country regarding temporal changes in patterns of tobacco use cannot be assumed to apply elsewhere.”

The Burden of Proof

Given these various concerns about potential unintended consequences, it has been argued that the “burden of proof is on proponents to provide scientifically credible evidence to support the harm reduction position” (26). In contrast, it has been argued that enough is already known about SLT to be confident that it is “substantially less

dangerous than cigarettes” and that “it is unnecessary to establish a precise estimate of risk and to show that the product is absolutely safe” (97).

It should be noted that the FDA’s criteria for approving tobacco products to be marketed as lower or modified risk takes the broader public health perspective into consideration. Tobacco companies must demonstrate that such a product would not only reduce harm to the exposed individual, but would also “benefit the health of the population as a whole, taking into account both users of tobacco products *and* persons who do not currently use tobacco products”(111).

Translation Issue

Although public health professionals have pointed to Sweden as an example of SLT’s harm reduction potential, some have also questioned whether the harm reduction findings attributed to snus could be translated to the US (21, 76, 112), noting that the behaviors of switching from smoking to SLT and using SLT to quit smoking observed in Sweden have not been largely replicated thus far in the US (26, 112). This discrepancy might relate to cultural differences, including differences in perceptions about SLT use (21). Zhu et al. (112) note that the act of smokers switching to SLT may be conditional on SLT use being sufficiently widespread in the first place, where it is perceived as a viable and acceptable alternative to smoking. Indeed, in Sweden snus use appears to be a more acceptable form of tobacco use and normative behavior among males than in the US and other western countries (21). In fact, the issue of snus was a topic of negotiation for Sweden upon its entry into the European Union. Although SLT is banned in countries belonging to the European Union, Sweden requested and received an exemption to this policy (25).

Promoting SLT is Unnecessary

It has also been argued that the promotion of SLT as a harm reduction agent is unnecessary, as effective tobacco control programs already exist to help smokers quit (21, 67, 76). Indeed, even in Sweden where the role of SLT use in harm reduction has received the most attention, studies have found that the majority of smokers who quit did so without switching to snus (76, 113). Promotion of SLT could divert resources from effective programs (26) and distract from the promotion and further development and improvement of clean forms or nicotine such as NRT (10, 21, 76). Indeed several tobacco control professionals have argued against the promotion of SLT when safer alternative forms of pharmaceutical products for cessation exist (17, 66, 67).

SLT Risk Perceptions

As mentioned earlier, one concern regarding the promotion of SLT as a safer alternative to smoking is that people may misperceive such a message to mean that SLT is “safe”. In contrast, it has also been argued that harm reduction might be facilitated if more people were aware of the relative risks of SLT compared to cigarettes such that they might then choose SLT over cigarettes (21, 31, 33). Although some tobacco industry research from the 1970s suggested that consumers believed SLT to be safer alternatives to cigarettes (6), several more recent studies have pointed out that a substantial proportion of people perceive SLT to be as (or even more) harmful than cigarettes (31, 33-37, 114-116).

Haddock et al. (34) surveyed young adults entering the US Air Force between 1999 and 2000, and assessed their beliefs in being able to reduce risks associated with smoking by either switching to alternative products such as low tar cigarettes, cigars and

smokeless tobacco or engaging in behaviors such as adopting a healthy diet and exercising. Over 75% of respondents believed switching to smokeless tobacco provided no risk reduction potential. More respondents believed that switching to low tar cigarettes, exercising and dieting could provide significant risk reduction potential while respondents were least likely to rate switching to SLT as a significant potential risk reduction strategy. Another study surveying college freshman found that 89% incorrectly perceived dip and chew to be as or more harmful than cigarettes (35). This study also found that respondents were more likely to believe light cigarettes to be less risky than they were to believe SLT as being less risky than regular cigarettes.

One study examined survey data from a nationally representative sample of US adult smokers, i.e., the US arm of the 2003 International Tobacco Control Policy Evaluation Project Four Country Survey (ITC-4) (37). Among smokers who were aware of SLT, only 10.7% agreed that SLT products are less harmful than ordinary cigarettes, while 82.9% disagreed. In a later study, these researchers examined data from three years of the ITC-4 survey from all four countries included in the survey (the United States, United Kingdom, Canada and Australia)(31). This study similarly found that overall only about 13% of those smokers aware of SLT believed that they were less harmful than cigarettes. In a national survey with smokers in New Zealand, where sales of oral snuff are illegal, 15.7% believed smokeless tobacco products to be either “a little less” (8.1%) or “a lot less” (7.2%) harmful than ordinary cigarettes (116), and authors concluded that smokers were poorly informed about the lower risk of SLT compared to cigarettes.

Only a few studies thus far have examined, to some extent, risk perceptions among youth. In a survey of high school males from rural counties in California, Gansky et al.

(115) found that the majority of respondents (56.9%) perceived the risk of harm from using dip or chew to be “great” or “moderate” (30.4%). Tomar et al. (36) examined several years of data from Monitoring the Future, a national survey of high school students in the US, and found that over half of high school seniors perceived regularly using SLT to be as risky as smoking a pack of cigarettes or more per day. Authors indicated that their results were consistent with previous research in finding that people may be misinformed about the relative risks of different tobacco products. In contrast, a survey of adolescents and young adults (ages 16-20) in Norway, where use of snus is considerably more prevalent compared to the US, found that 59% of respondents rated snus as less harmful than cigarettes (114).

A few studies have examined associations between SLT related risk perceptions and tobacco use, generally finding use to be correlated with lower SLT risk perceptions. In their analysis of tobacco survey data from four countries, O’Conner et al. (31) found that current SLT users were 2.7 times more likely to report that SLT was less harmful than cigarettes. Among adults surveyed in Indiana, where both Taboka snus and Camel Snus were test-marketed, Biener and Bogen (33) found that having ever tried one of these snus products was significantly more likely among respondents who believed that SLT is less harmful than cigarettes (OR = 3.86) than among those who perceived SLT to be equally or more harmful than cigarettes. Among a small sample of California rural high school males, those who believed that SLT posed no or minimal harm were significantly more likely to use SLT than those who believed it to pose moderate or great harm (115). A recent survey study of a consumer panel found that the majority of “dual users” (i.e.,

those using both cigarettes and SLT) believed SLT is as harmful as smoking and were significantly more likely to hold this belief than exclusive SLT users (117).

It should be noted that the directionality with these studies is not clear – it may be that their risk beliefs are modified by their use of the product, rather than being a predictor for their use of SLT (115). However, one recent longitudinal study with military recruits which examined changes in tobacco use patterns after one year did find that a behavior change in line with “harm reduction” (i.e., smokers or dual users switching to exclusive use of SLT by follow up time) was three times as likely among men who reported a belief at baseline that switching to SLT would provide a moderate to large reduction in health risk (105).

Fewer studies have examined potential interest in use of SLT based on perceptions of SLT. In a survey of smokers in New Zealand, 34.8% of smokers indicated that they would be interested in trying SLT products (with an additional 11% saying “maybe”) when asked to assume that SLT products were much less harmful than cigarettes (116). The 2005 California Tobacco Survey similarly asked smokers if they would consider replacing their cigarettes with smokeless, tobacco, dip or chew if they thought it had few consequences - among daily smokers, only 12.7% responded that they probably or definitely would (118). Being receptive to switching to SLT was significantly more likely among smokers with past quit attempts and among smokers who were currently trying to cut down. More recently, Gartner et al. (119) provided a convenience sample of daily smokers in Australia with brief information about the harmfulness of low nitrosamine forms of SLT (LN SLT) versus cigarettes and found that 48% expressed a willingness to buy an LN SLT. Those interested in purchasing LN SLT were more likely to believe that

it was less harmful than smoking. Heavner et al. (120) surveyed a convenience sample of adult smokers in Alberta, Canada about their willingness to consider switching to less harmful products such as medicinal nicotine and SLT. Only 10% considered switching (n=242) to SLT. Reasons for not considering switching included misperceptions about associated health risks (such as believing that tobacco use in any form is as bad as smoking, and that SLT is more likely to cause addiction and increase risk of oral cancer than smoking) as well as beliefs about SLT unrelated to health (such as the belief that SLT is socially unacceptable or gross or hard to use)².

Information and Communication about SLT

Based on SLT risk perception research thus far, some researchers have concluded that smokers are largely misinformed about the relative risks of SLT versus cigarettes (31, 33, 36, 37). However, very few studies to date have examined information presented about SLT.

Kozlowski and O’Conner (30) pointed out that in 2002, sections of websites of two major US public health agencies, the Centers for Disease Control and Prevention and the Substance Abuse and Mental Health Services Administration, both erroneously reported that SLT is not safer than cigarettes. Philips et al. (121) analyzed 316 public service or health information websites in 2003 that provided information about SLT and its health risks. Authors indicated that only a “handful” (at least 7) of websites provided information indicating that SLT was not as harmful as cigarettes, but all of these were ranked low on the resulting list of websites and thus less likely to be viewed or read by individuals searching for information on SLT. In contrast, in 108 websites SLT was

² It should be noted that authors of this study received unrestricted grant funding from the United States Smokeless Tobacco Company.

explicitly or implicitly characterized as being as harmful or even more harmful than cigarettes. In at least 68 websites, authors identified statements that they described as being “literally true” but misleading, e.g., that SLT is not a safe substitute to cigarettes or that “there is no safe tobacco”. It should be noted however that authors of this study received funding support from the United States Smokeless Tobacco Company, as indicated in the paper’s disclosure statement.

Waterbor et al. (38) reviewed almost 50 brochures about SLT risks printed between 1981 and 2001 as well as SLT epidemiological studies to examine whether stated risks in the brochures were supported by scientific literature. Authors found that the stated health effect most strongly supported by scientific evidence was oral lesions and certain other oral conditions. In contrast, authors indicated that there was little or no evidence at the time to support claims in brochures that SLT causes various cancers (including cancers of the stomach, lung, pancreatic, larynx, pharynx, prostate, bladder, kidney and breast). Oral cancer was the risk most emphasized and authors concluded that although evidence on oral cancer was not “decisive”, it “may be strong enough to justify the warnings found in many brochures”. However, they noted that many brochures overemphasized the risk and provided potentially misleading information by citing the findings of one study by Winn et al. (72) which found that older female users of dry snuff were almost 50 times as likely to develop oral cancer than non users. Authors indicated that the commonly used statistic was taken out of context and often attributed to SLT use in general, including moist snuff. It should be noted that recently, in April 2010, the American Cancer Society indicated it would no longer use this statistic (122).

Importance of Tobacco News Coverage

The news media acts as an important tool for informing the public about health issues (47). A previous study found that approximately 40% of adults follow health news stories closely, and that those who do are significantly more likely to answer knowledge questions about those health issues correctly than those who do not (47). This same study found news about tobacco to be a consistent source of public interest between 1996 and 2002, with about 55% of adults indicating that they follow tobacco stories closely.

Indeed, the news media has played an important role in informing the public about the dangers of tobacco since the 1950s when research began to suggest that tobacco use may be dangerous (48). The release of regular Surgeon General's reports since 1964 provided regular newsworthy opportunities for updating the public on knowledge about tobacco health risks. Current research suggests that tobacco related news may continue to play a role in public education. A recent study found that, following a period of increased news coverage related to light cigarettes (based on a lawsuit regarding the tobacco industry's deception about the risks of light cigarettes), smokers of light cigarettes who were more frequent newspaper readers were less likely to hold inaccurate beliefs about light cigarettes than those who read the newspaper less frequently (123).

The news media also plays a broader role than transferring information to the public – it also works to define for people which issues they should be thinking about, which issues are most important (43). Media attention given to issues can be influential itself in terms of communicating that by inclusion of those issues in news coverage, they are newsworthy and salient (42). In addition, news media coverage not only suggests *what* the public should think about, but can also influence opinions and attitudes by shaping

how we think about issues through the way in which they are portrayed and framed (44). Framing is a way of selecting, organizing and "packaging" information about an issue to influence the way it is perceived and thought about (50, 124, 125). Frames may influence our perception by selecting and making certain aspects of an issue more salient, while omitting others (124-126).

Previous studies have found associations between tobacco news coverage and people's tobacco related behaviors, beliefs and attitudes (48, 123, 127) and have documented ways in which tobacco issues have been framed to influence policy (51, 128, 129). Analysis of tobacco news coverage is important for understanding which issues are perceived as important, how the problem of tobacco is being defined for the public and policy makers and the types of solutions suggested (51). Because the news is not exclusively unidirectional, analysis of tobacco news coverage can also reflect and help us to understand existing attitudes and public sentiment towards tobacco related issues (45).

While news coverage may be beneficial in terms of providing free and ongoing publicity of tobacco control events and resources, it may also provide tobacco companies with a form of free advertising, for example, by "diffusing" information about new tobacco products. Indeed, according to the Diffusion of Innovation theory, which is used to study the uptake or "adoption" of new products, programs and behaviors, a basic prerequisite for adoption of an innovation is awareness that the innovation exists (53). The theory also points to various attributes of an innovation that are "most likely to affect the speed and extent" of its adoption. These include, for example, attributes such as the perceived "relative advantage" of the innovation compared to what it would replace.

These attributes should be addressed in communications about the innovation to facilitate adoption (53).

Previous Research on Tobacco News Coverage

Content analysis studies have been conducted in previous research to examine tobacco related news, and a recent review found that most have focused on analyzing coverage in newspapers because newspapers are “considered by most researchers to be the official record for news events” (44). Study authors have noted that newspapers can serve as a “proxy” for the news media in general (130, 131), as they can inform other channels and set the daily “news agenda” of issues to be covered by other news media (radio, television and Internet) during the rest of a given day (132). Newspaper coverage may be especially important in its ability to reach and influence policy makers (50, 51), and is also beneficial in that it allows for examining topics of national and local news interest, as well as opinion pieces, which can be reflective of journalists’ and public opinions (131). For research purposes, focusing on newspapers provides an added advantage in terms of “the ease and relative lack of expense in accessing” news stories as compared to other media channels (44). Finally, in terms of tobacco specifically, at least two previous studies examining tobacco related news in more than one channel found tobacco stories to be most frequent in newspapers (49, 130).

Several content analysis studies have focused on describing the volume and types of tobacco issues covered in newspapers. Most recently, Nelson et al. (130) examined tobacco stories published between 2004 and 2005 in 10 US newspapers and four wire services and identified 1280 stories, finding at least one story published almost every day. The three main tobacco themes identified were policy/ regulation (31% of articles),

legal/lawsuits (24%), and health effects/statistics (15.9%). Additional main themes of articles included: tobacco economics/business (8.8%), advertising/ marketing (4.8%), new products/harm reduction (3.4%), state programs (3.2%), taxes/prices of products (2.2%) and cessation/addiction (2.2%). Another recent study examining articles from daily local newspapers and one national paper in 2002 and 2003 found that “government” and “health” were the two topics most frequent in tobacco news articles, but that the two topics tended not to occur together in stories (49). Authors noted that coverage of stories related to government control of tobacco without a connection to the health related rational for such regulation was problematic. This study also found, contrary to expectations, that articles in papers from the southeast (a major tobacco-growing region) did not differ in their level of coverage of tobacco issues, health effects or positive coverage of governmental tobacco control efforts from those from other parts of the country. In addition to examining the types of topics found in newspapers, Clegg Smith et al. (131) examined the tone of opinion articles, and found that editorials were most likely to be supportive of tobacco control efforts, while opinion columns and especially letters to the editor were more likely to provide mixed or critical views of tobacco control.

Other studies have focused on describing the framing of tobacco in general and of particular tobacco topics, including policy issues. One study examined the framing tactics used in tobacco articles in *The NY Times* and the *Washington Post* between 1985 and 1996, and found that frames used by tobacco companies consistently pointed out the positive economic influence of the industry, appealed to values regarding free speech, and portrayed tobacco control advocates as antismoking zealots (50). In contrast, frames used by tobacco control advocates changed over time, moving away from a “killer” frame

(which emphasized tobacco as being a dangerous product) and towards framing the problem in terms of tobacco companies' manipulation of nicotine levels, deceit of the public, and marketing towards youth. A later study examined the frequency of these same frames in news articles covering debate on the tobacco settlement policy between 1997 and 1998 and also found that tobacco was most frequently framed as a youth related problem (51). Study authors noted that the basic fact that tobacco remains a deadly product should not be forgotten, and that the youth frame may imply tobacco use is acceptable as long as young people are not using it (50, 51).

A few studies have examined newspaper press coverage of debates related to local smoking bans, examining the major arguments used to shape support or opposition to such policies. Two studies found that the major arguments used to oppose smoking bans in bars related to economics, choice/cultural ideology, and enforcement issues (128, 129). A recent study found that a frame of political "compromise" was also used to argue for exempting casinos from a state's smoking ban (133). These studies documented how tobacco control advocates framed the issue (e.g., the need to protect workers' health) and engaged in media advocacy to shape policy perspective, such as making use of public opinion surveys, publicizing research studies on secondhand smoke, citing evidence of success in other places with smoke-free bans, and sharing the personal stories of workers negatively effected by smoke exposure.

One study examined coverage of a particular tobacco health issue rather than policy, i.e., articles between 1981 and 1994 reporting on passive smoking research (52). Authors found that while most articles conveyed that passive smoking is dangerous, articles also left readers with the impression that the issue continued to be controversial. Authors

noted that the construction of controversy might be due to journalists' tradition of "balanced reporting" (in which views from both side of an issue are sought) but warned that "by quoting tobacco industry sources as well as scientists, journalists may be suggesting that the opposing voices carry equal scientific weight."

Only one study has analyzed content on a specific type of tobacco – cigars (46). Noting an increased trend in consumption of cigars in the 1990s, Wenger et al. conducted a content analysis of cigar focused articles published between 1987 and 1997 in magazines and a sample of newspapers (i.e., the 5 largest circulation newspapers in the country and 8 largest circulation newspapers in California). In terms of article focus (i.e., main topic), the majority focused on cigar business (39%) and cigar events (19%), and the majority of articles were found to portray cigars positively (62%). Celebrities or public figures were quoted in 42% of articles, with most of these being favorable towards cigars. Although a minority of articles focused on health effects (4%), 21% mentioned them. Cigars were compared to cigarettes in 14% of articles and characterized as less harmful, having fewer chemicals and as being more socially acceptable. Authors concluded that stories tended to frame cigars as more of a "trendy habit or lucrative business rather than as a health risk" and that public health advocates should develop strategies for all tobacco types and be ready to address future tobacco use trends.

CHAPTER 3

METHODS

Data Source and Sample*Newspapers and News Wires*

Consistent with previous research and for reasons described earlier, this content analysis was based primarily on analyzing SLT related articles published in newspapers. Because circulation is a measure of a paper's distribution and the number of people potentially exposed to a news article (52), the newspaper sample from which SLT articles were obtained was limited to top circulating daily newspapers, including both:

- National papers: Specifically, the top three circulating national daily US newspapers – i.e., *The Wall Street Journal*, *USA Today*, and *The New York Times*; and
- State papers: Specifically, the top 2-3 circulating daily newspapers in each state³.

State papers can provide perspective into local issues, such as SLT use prevalence, events, and tobacco related policies, and a larger sample of opinion articles for analysis.

To determine the top circulating national and state papers, rankings of circulation figures were obtained through two sources:

³ The *top two* circulating daily papers in each state were included in the newspaper sample. The top 3rd paper was also included for states in which it was found to have a high circulation (i.e., 100,000 or more) or in which the top 2nd and 3rd papers had close circulation numbers that were both relatively high (i.e., at least 50,000). The top 4th paper was also included for two states – New York and California. Because the top two daily papers in New York (other than *The NY Times*, counted in this study as a national paper) are based in New York City, the next two highest circulating papers outside of the city (*Buffalo News* and *Rochester Democrat and Chronicle*) were also included for geographic diversity. Similarly, because the top three papers in California were all based in the southern part of the state, the 4th largest paper (the *San Francisco Chronicle*, based in northern CA) was also included. A table listing the papers included for each state can be found in the Appendix (see section A, pg. 126).

- The Audit Bureau of Circulations (ABC): ABC provides independent, third-party circulation audits of print media circulation. Basic circulation data for print media, including state and national papers is free to the public through eCirc (<http://abcas3.accessabc.com/ecirc/index.html>).
- Mondo Times: Mondo Times is a worldwide media guide which provides profiles of various media channels. The newspaper section of Mondo Times (<http://www.mondonewspapers.com>) provides the names, locations, circulation figures, and publisher/owner information for daily and weekly news publications in each state.

The newspaper sample also included two daily papers based in the “hometown” of the major cigarette companies (i.e., RJ Reynolds and Philip Morris) that have moved into the SLT market and launched new SLT products. These papers are:

- *The Winston-Salem Journal*, based in Winston-Salem, North Carolina, the headquarters for RJ Reynolds. This is the 4th highest circulating paper in North Carolina.
- *The Richmond Times*, based in Richmond, Virginia, the headquarters for Philip Morris. This is the 2nd highest circulating paper in Virginia. Articles from this paper were counted under the category of “tobacco hometown papers” but were not also counted as a Virginia state paper⁴.

In addition, SLT news stories were obtained from select news wire services. News wires have been used in other research examining news coverage content, and are relevant as news wire stories are commonly printed in newspapers and, like newspaper

⁴ The number one (*Virginia Pilot*) and number three (*Roanoke Times*) highest circulating daily newspapers in Virginia were counted as Virginia state papers.

stories, serve as a source of information for other media channels (such as television and Internet news)(130, 134). Specifically, SLT news stories were searched for from the Associated Press (AP), a national news wire service which has been included in previous content analysis studies (130, 134) , and from two available health focused news wire services:

- Reuters Health eLine (a Reuters news service product based in the US) and
- UPI Consumer Health Daily (a national health wire service from United Press International).

Overall, 129 different news sources (i.e., 126 newspapers and 3 news wire services) were reviewed for unique SLT-related articles.

Time Period

Articles for analysis were limited to those occurring between 2006 – 2010. This time period was selected because it included several important SLT and tobacco related events, such as the movement of the two major cigarette companies into the SLT market, the launch of new SLT products, and passage of the Family Smoking Prevention and Tobacco Control Act, which granted the Food and Drug Administration authority to regulate tobacco products and marketing. A timeline outlining various SLT related events occurring during this time period is presented in the Appendix (see section B, pg. 130).

Data Sources

Previous content analysis studies of tobacco related news coverage have typically either used a commercial clipping service or an online electronic news database to obtain news stories for analysis, both of which have their advantages and disadvantages. This study obtained news stories from electronic news databases for reasons described below.

Clipping services provide clients with news articles matching their outlined search criteria which are physically “clipped” from print copies of newspapers. As such, the clippings received should represent the articles as actually published in papers, including both original staff written articles and stories from wire services. Given this, clipping services may be the preferred source of data when a study’s primary goal is to describe the frequency or volume of a topic in newspapers (135). However, use of a clipping service can be cost-prohibitive and may be limited to studies examining current news or news moving prospectively rather than for finding articles published in years past.

Electronic news databases do not allow researchers to “see” the news stories as they actually appeared in print. For example, researchers would not be able to measure the size of the heading or the space filled by the article in print, a measure of prominence used in some research (136). In addition, electronic database results in a given newspaper may be limited to original content published by that paper (e.g., staff and opinion articles), and it may or may not reflect news wire stories which appeared in the print version of the paper. This could lead to potentially underestimating the “true” volume of coverage of a given topic in a given newspaper (135). The major advantages of using electronic news databases relate to practicality and convenience. Researchers can search for articles using combinations of keywords and results are available immediately and can be sorted and saved electronically. Importantly, electronic databases can provide retrospective access to archived articles, allowing researchers to examine past news coverage of a topic, as required by this project.

For this study, which aimed to examine news coverage of SLT during the years 2006 – 2010, news stories for analysis were obtained from 3 main electronic news database sources.

- Access World News: The primary database used was NewsBank Inc's Access World News, available through Rutgers University's library. This database includes access to articles from over 1250 daily state and national newspapers and has been used in previous studies analyzing the content of news stories (137-140). This database was used to obtain relevant SLT articles from the majority of the newspapers selected for this study – i.e., top circulating national and state newspapers and two tobacco company hometown papers. Access World News was also used to locate stories from two wire services available in the database - the Associated Press and UPI Consumer Health Daily.
- Factiva: Supplemental searches were conducted through Factiva, an electronic news database also available through Rutgers University Libraries. Factiva includes full text access to national and certain state newspapers, though is not as comprehensive overall in newspaper sources as Access World News. Factiva was used to search for articles in select state papers not covered by Access World News, the *Wall Street Journal* and Reuters Health eLine (a health wire service not available through Access World News).
- Online archives of individual newspapers: It should be noted that neither Access World News nor Factiva included access to 18 of all 126 papers selected for this study, nor did LexisNexis, another electronic news database used in content analysis studies. Articles from these papers were searched for by using the archive

search engines available on their individual newspaper websites (almost all of which were archived by the same host company), and paying for resulting relevant articles.

As mentioned earlier, electronic database results for a given newspaper may be limited to original content published by that paper and not reflect wire stories which were also printed (135). Indeed, Access World News, the primary database used in this study, does not *require* a newspaper publisher to submit to them which wire stories they printed (although some papers do). This is not unique to Access World News. LexisNexis, a database commonly used in content analysis research also does not systematically include wire stories published in printed versions of newspapers in its electronic archives of those papers, a point commonly ignored in studies (135). To control for this in the present study, SLT relevant wire stories were identified directly from the AP, UPI Health Daily and Reuters Health eLine archives and were only counted and coded in the sample *one time*. When these same wire stories were found in the results of individual newspaper searches (e.g. a particular AP story about SLT found in the results of *The Star Ledger* and *The Chicago Tribune*), they were saved but were *not* included in the sample of articles from those papers to be coded. Thus, only stories representing original content (i.e., staff written or staff contributing articles, opinion articles, or any other articles not indentified as straight duplicates of wire source articles) from each newspaper were included in the sample.

Overall, this study sample should be considered to be representative of unique stories from national newspapers, state papers, and wire services, rather than of *all* SLT stories found in newspapers (which would include wire stories). This is appropriate for the

current study since its main goal is to describe *what types* of SLT topics are covered in the news, *how* SLT is covered, and the frequency of certain types of information (e.g., health) within unique stories about SLT, rather than the absolute volume of SLT coverage.

Inclusion and Exclusion Criteria

Criteria for inclusion and exclusion of articles in the study was developed based on both review of previous tobacco news content analysis studies and initial searches for SLT related articles. Guidelines were developed to limit included articles to those that are primarily about a SLT related issue OR that focus on a SLT related issue in at least part of the article. Articles for analysis were identified by first searching electronically for the following key words in article text: “tobacco” AND (smokeless OR snuff OR snus OR chew OR dip OR spit OR dissolvable). To be considered for analysis, articles resulting from these search terms needed to meet all of the following criteria:

- *Be of sufficient length.* Articles needed to be at least four sentences long for inclusion. Preliminary review suggested this approach would exclude simple news briefs which contain limited content for analysis.
- *Contain substantive tobacco content.* Articles needed to contain a tobacco related term (e.g., smoking, tobacco company name) in the headline OR at least one paragraph related to tobacco/ smoking. Preliminary review suggested this approach would work to avoid including articles which simply mentioned tobacco in passing but were largely unrelated to tobacco.
- *Contain substantive smokeless tobacco content.* Similarly, to avoid including articles which simply mentioned smokeless tobacco in passing, articles needed to either include a smokeless tobacco-related reference (e.g., refer to SLT or related

terms such as snus, chew, or to a SLT tobacco company or brand name) in the headline (thus automatically indicating the article relates to an SLT related issue) OR in at least three different sentences within the article.

Exceptions to the above criteria were made for one type of article, letters to the editor, because of their inherently short length. To be included for analysis, letters to the editor needed to refer to SLT or an SLT related term in at least *two* different sentences.

It should also be noted that articles related to dissolvable smokeless tobacco were included but articles about “electronic cigarettes” were not counted as SLT and were excluded. In addition, any resulting articles in which reference to the key search words (“chew”, “snuff”, “smokeless”, etc.) was not related to SLT (e.g., “new ban aims to snuff out smoking”) were excluded. News, feature, advice and opinion articles meeting the above criteria were included for analysis but any resulting obituaries or simple announcements/listings (e.g., listing of the date and time of an upcoming SLT cessation event) were excluded.

Coding and Analysis

Instrument Development and Codes

Articles meeting the above criteria were downloaded and saved, with each article serving as the unit of analysis to be coded. A coding instrument and guide was created, with codes developed both through inductive and deductive methods. Deductively developed codes were based on review of codes used in previous content analysis studies of tobacco news coverage (e.g., slant of opinion articles), the study research questions (e.g., the presence of SLT health information), and review of SLT literature to identify SLT specific content codes related to the research questions (e.g., the arguments/

messages used in the harm reduction debate). Codes were also developed inductively by reviewing the sampled articles and creating content codes for emerging SLT related topics and patterns in the data.

Indeed, the development of a coding scheme in content analysis can be an iterative process, where the researcher may develop an initial set of coding notes and definitions based on predetermined research questions, then add to and refine these by reviewing a portion of the sampled data for emerging themes as well as clarifying examples, then again add to and refine the list and definitions by examining the fit with another portion of the sampled data, and so on, until the researcher is confident that the coding scheme both captures the data and “works”, i.e., definitions make sense and can be used reliably. For this study, a near-final draft of the instrument was sent to three tobacco control experts with content knowledge of and experience in SLT research for review of face validity and commentary. In addition, a pilot test of inter-coder reliability was conducted with a purposive sample of 30 articles⁵ before formal coding began to confirm that the materials could be used reliably, with an average Kappa value of 0.7 considered acceptable for moving on. A Kappa value of 0.85 was achieved during this pre-test, and the coding scheme was edited and finalized based on experts’ comments and results of the preliminary reliability testing. The final coding instrument (including both coding sheet and guide) can be found in the Appendix (see section C, pg. 132).

Using the final coding scheme, each article was given a unique ID number and coded for certain standard descriptive variables such as the date and source of the article, the

⁵ A sample size of 30 units has previously been identified as being a “good rule of thumb” for pilot reliability testing.

141. Lombard M, Snyder-Duch J, Bracken CC. Content analysis in mass communication - assessment and reporting intercoder reliability. *Human Communication Research*. 2002;28(4):587-604.

presence of an SLT-related term in the headline and the type of news article the article represented (e.g., a “news/feature”, opinion or other article type). “News” and “feature” articles were combined into one category (news/feature) to include traditional news stories (i.e., those objectively reporting on the facts of an issue, often including differing perspectives and quotes for “balance”) as well as those articles reporting on “softer” news, such as profiles of individuals. In terms of opinion articles, editorials/opinion column articles were defined as articles reflecting the views of the author which were written by newspaper staff (or some other regular paper contributors or columnists). “Letters to the editor” represented short opinion pieces written and submitted by members of the public while “Op-ed” articles were defined as longer more formal opinion pieces submitted by members of the public. Other article types included Advice/Q&A columns (where members of the public posed questions responded to by a writer/columnist) and health column articles (i.e., informational pieces submitted by community health professionals and used to educate about a health issue and/or promote local prevention or cessation resources).

In terms of SLT content, each article was coded for the presence of various SLT related variables such as those related to: brand and company references, product attributes, SLT associations, business-related issues and perspectives, FDA regulation references, prevalence and sales trends, and health related references. In addition, each article was coded for the *main topic* or issue of the smokeless tobacco content within the article (e.g., SLT taxes). Articles were also coded for inclusion of various messages related to SLT risk comparisons and other issues of concern cited in the debate surrounding SLT (as described in the background chapter), as well as the source/type of

person these messages were attributed to within articles in which they were present (e.g., tobacco companies, legislators, public health professionals). Finally, all opinion articles were also coded for the slant of the SLT-related content within the article (i.e., an “anti” SLT/pro tobacco-control slant; a “pro” SLT/ anti tobacco-control slant; or a neutral or mixed slant).

Reliability Testing

A sample of the articles was coded independently by a second coder to formally assess inter-coder reliability. Inter-coder reliability is used to measure the extent of agreement in content analysis between different coders, where low reliability may indicate that the measures used are too subjective or not well enough defined. To assess reliability, 10% of articles from each year (2006 – 2010) were randomly selected for double coding, averaging to 10% of the sample overall (and totaling 88 articles). This is an acceptable number for double coding which has been used in previous tobacco content analysis studies (49, 130, 142). A research assistant was trained on use of the coding materials during preliminary reliability testing (referred to above), and procedures and coding materials were reviewed again with the research assistant before formal testing. Reliability results of formal testing were good⁶, with an average Kappa value of 0.89 (range of 0.65-1.0) and average percentage agreement of 97.2% (range of 86.4% – 100%).

⁶ There is no one standard agreed upon accepted level of agreement. According to Banerjee et al, “values greater than 0.75 or so may be taken to represent excellent agreement beyond chance, values below 0.4 or so may be taken to represent poor agreement beyond chance, and values between 0.4 and 0.75 may be taken to represent fair to good agreement beyond chance”.

143. Banerjee M, Capozzoli M, McSweeney L, Sinha D. Beyond kappa: a review of interrater agreement measures. *The Canadian Journal of Statistics*. 1999;27(1):3-23.

Data Analysis and Reporting

Results consist of a descriptive reporting of the variables coded for to address the research questions outlined. This includes a description of the types of SLT related topics covered in articles coded and the relative frequency of each, the frequency and type of SLT health and risk comparison information included in the coded SLT news articles, the slant of SLT-related opinion articles, etc. All results were prepared using SPSS 18.0. Chi-square tests were used to determine if differences/relationships between certain categorical variables were statistically significant/dependent. Before chi-square testing, contingency tables were checked to confirm that expected cell counts were adequately large to meet assumptions for testing. Because several tests were conducted, a more conservative significance level of .01 was used to control for type 1 error rates.

Results are presented for articles overall and also broken down by different news source (i.e., national papers, state papers, tobacco industry hometown papers, and news-wires), thus allowing comparisons to be made by type of news source. Data resulting from state papers is presented both in aggregate as one “state papers” category and is also further broken out into four state categories based on the state prevalence of SLT use among males in 2009 (61). The four state categories/quartiles are:

- Q1 States – i.e., states with male prevalence between 2.3 and 4.1%
(= states ranked 1-11 in male SLT prevalence)
- Q2 States– i.e., states with male prevalence between 4.9 – 7.9 %
(= states ranked 12 – 29 in male SLT prevalence)
- Q3 States – i.e., states with male prevalence between 8.4 – 11.4 %
(= states ranked 30 – 41 in male SLT prevalence)
- Q4 States- i.e., states with male prevalence between 11.8 – 17.1 %
(= states ranked 42 – 50 in male SLT prevalence)

A table detailing SLT prevalence by state is included in Appendix D (p. 178).

Results also describe the frequency with which articles that referred to new SLT products Camel Snus and Marlboro Snus also referred to various SLT product features and potential benefits. These results are organized and presented with respect to Diffusion of Innovation Theory (DOI) product attribute constructs they relate to ⁷.

⁷ That is, those attributes of an innovation as described and summarized by Oldenburg and Parcel, 2002. 144. Oldenburg B, Parcel G. Diffusion of innovations. In: Glanz K, Rimer B, Lewis F, editors. *Health Behavior and Health Education*. 3rd ed. San Francisco, CA: Jossey-Bass; 2002.

CHAPTER 4

RESULTS

A total of 877 unique articles related to SLT were identified and coded. Table 1 details the number of SLT articles in the sample by news source and by news article type. The majority of articles (58.4%) were obtained from state newspapers, 17.4% were identified from the two tobacco hometown newspapers, 10.7% from the Associated Press, 9.1% from national newspapers, and 3.8% from the two health wires. Over three quarters of all articles (77.2%) were news/feature articles, 20% were opinion articles (i.e., editorials, op-ed articles or letters to the editor) and 2.8% were advice or health column articles. Because the majority of the sample consisted of news/feature articles, the next sections of results are limited to news/feature articles only (n=677). Results related to the opinion articles are discussed separately below.

News/Feature Articles

Smokeless Tobacco-Related Terms

Table 2 presents the frequency with which different terms and words were used to refer to SLT within news/feature articles in the sample (n=677). The term/phrase “smokeless tobacco” was used in about 77% of all news/feature articles and in 100% of articles from national papers, while used least frequently in articles from state papers (64.4%). The terms “chewing tobacco”, “chew” or “chaw” were used in about 46% of all news/feature articles, and used most frequently in articles from the Associated Press (60.6%) and from state papers (60.5%). The third most frequent term used in news/feature articles was “snuff” or “moist snuff” (39.6%), followed by “dip” or

“dipping” (12.6%) and “spit tobacco” (9.2%). The terms “dip/dipping” and “spit tobacco” were both most frequently found in articles from state papers (used in 17.5% and 14.8% of state paper articles, respectively). Among the state paper categories, the term “spit tobacco” was particularly frequent in articles from Q4 states (i.e., those states with the highest prevalence of SLT use) (28.1%). Finally, it should also be noted that about a quarter of all news/feature articles specifically referred to snus (25.7%) and 14.6% to dissolvable tobacco (also referred to as “tobacco lozenges” or “tobacco pellets”), SLT terms and products newer and/or less familiar to the American public. Snus was most frequently referred to in national papers (45.9%) and least frequently in state papers (11.0%), while dissolvable tobacco was most frequently referred to in tobacco hometown papers (23.7%) and least frequently in health wire articles (9.1%).

Focus of SLT Content

Among all news/feature articles in the sample (n=677), about 40% included SLT content focused on *local* smokeless tobacco issues (such as local bans, tobacco sponsorships or prevention/cessation programs, and state taxes) while 60% focused on national or more general SLT issues (such as new products, SLT company news, and SLT health and harm reduction issues)(see Table 3). Not surprisingly, local issues were most frequently discussed in articles from the state papers category (i.e., in 70.3% of articles from state newspapers). Among state papers, the focus of SLT content was significantly related to the state SLT prevalence category ($X^2 = 44.1$, $df=3$, $p<.001$). News articles from states with the highest prevalence of SLT use (i.e., Q4 states) were most likely to focus on local SLT issues (86.5%) while those with the lowest prevalence

of use (Q1 states) were least likely to focus on local issues (35%) and most likely to focus on national or general SLT topics (64%)(see Table 3).

Headlines

A SLT-related term (e.g., “chew”), company (e.g., Conwood) or brand name (e.g., Skoal) was present in the headline of almost half of all news/feature articles in the sample (48.3%). A list of these headlines is included in the Appendix (section E, pg. 179).

Types of Smokeless Tobacco Topics

Relevant Research Questions:

- 1a: What types of topics about SLT are covered in US newspapers and news wires?
- 1b: Do the types of SLT-related topics covered differ by type of news source?
- 3: To what extent is SLT portrayed as growing in use in SLT news stories?

Each article in the sample was coded for the main topic/issue of the SLT content presented within the article. Content analysis revealed eight main categories of topics related to smokeless tobacco discussed in news/feature articles. Table 4 presents the frequency with which each of these topics was present in the sample overall and within different news sources. Details about articles falling under each of these topics are presented next.

1. Business News

The main SLT topic of approximately 28% of all news/feature articles in the sample was business news. Business-focused articles were most frequently found in articles from the Associated Press (59.6%), tobacco hometown papers (57.9%), and national papers (in particular, from the *Wall Street Journal*, 61.1%)(see Table 4).

One-hundred percent of business news topic articles referred to one or more SLT producing companies⁸ including Philip Morris/Altria (60.2%), RJ Reynolds (52.9%), USSTC (40.8%) and Conwood (37.7%) (see Table 5, column 1). Approximately 78.5% of business articles referred to one or more SLT brands. The most commonly referred to brands were Skoal or Copenhagen (37.7%), Kodiak or Grizzly (28.8%), Marlboro Snus (21.5%) and Camel Snus (20.4%) (see Table 5, column 1).

In terms of content, business news articles referred to purchase of SLT companies by cigarette companies (54.5% of articles), market updates about SLT company or brand profits (50.3%), the development, testing or launch of new SLT products (47.1%), SLT company name, location and staff changes (18.8%), and corporate legal issues (namely, a patent lawsuit between companies Star Scientific and RJ Reynolds)(7.3%)(see Table 6). In addition, business news articles referred to SLT as a means for companies to deal with decreased cigarette sales and/or to maintain or increase profits (42.9%). This included statements such as: “tobacco companies have turned to smokeless tobacco in the face of decreasing cigarette sales” or “cigarette companies are turning to smokeless tobacco as a growth opportunity”. SLT business articles referred to the rise in number of smoking bans (24.1%) and to cigarette sales or smoking prevalence as declining (55%) while referring to SLT consumption or sales as *growing* (49.2%) and to SLT as a potential alternative product for smokers (15.2%) (see Table 6).

2. New SLT Products/Product Regulation/Harm Reduction

Approximately 19% of all news/feature articles discussed issues related to new SLT products, SLT product regulation, and/or the issue of SLT as an alternative to smoking

⁸ Cigarette making companies such as Philip Morris and RJ Reynolds were only coded as a “SLT producing company” if the article referred to them as involved in SLT business (e.g., as moving into the SLT market, as the maker of SLT products such as Camel or Marlboro Snus, etc.)

and harm reduction, topics which tended to co-occur within these articles (and as such were coded as one topic category). Articles in this category differed from *business* news articles that referred to new products in their inclusion of more general interest, public health and policy perspectives (e.g., quotes from public health professionals, scientists, citizens, legislators etc.). This topic category was most frequently found in national papers (37.7%) followed by tobacco hometown papers (32.2%)(see Table 4).

About 85% of these articles (n=130) referred to one or more SLT producing companies (most frequently to RJ Reynolds and Philip Morris/Altria) and 75.4% referred to one or more SLT brands (most frequently to Camel Snus and Camel Dissolvables) (see Table 5, column 2). In addition, 57% of articles under this main topic (i.e., new products/product regulation/ harm reduction) referred to the FDA in the context of SLT, including references to the FDA's role in regulating SLT as a potential harm reduction or reduced risk product (29.2%) and to FDA's role in the review and regulation of dissolvable SLT (18.5%) (see Table 6).

3. SLT Prevention and/or Cessation

The third most frequent topic of SLT content was related to SLT prevention and/or cessation (11.4% of all news articles), a topic most frequently found within articles from state papers (19.9%)(see Table 4). Within the four categories of state papers, SLT prevention and/or cessation was most commonly discussed in papers from Q4 states (i.e., those with the highest SLT prevalence), appearing in approximately one-third of news/feature articles (see Table 4).

SLT prevention and/or cessation topic articles (n=77) included references to particular events or programs (e.g., the National Spit Tobacco Education Program) (32.5%), to

personal stories of SLT cessation or cessation attempts made by individuals named within the article (26%), and to SLT cessation methods or resources (16.9%)(see Table 6).

4. SLT Taxes

The issue of taxes on SLT was the fourth most frequent topic in the sample overall (10.2% of all news/feature articles), and the second most frequent topic among state papers (18.4%)(see Table 4). The topic of SLT taxes was more frequent in papers from states with higher SLT prevalence than those with lower SLT prevalence (present in 31% of Q3 and 19% of Q4 state articles)(see Table 4). A little over half (52.2%) of news articles that discussed SLT taxes (n=69) referred to the issue of *changing* the method in which SLT is taxed, i.e., moving towards taxing SLT by weight rather than by percentage of price or vice versa (see Table 6).

5. Profiles/Trends in SLT Use

In about 9% of all news/feature articles the main SLT topic covered related to trends in SLT use (such as SLT use statistics from national or state health surveys) and/or use among particular populations or individuals. This topic was most frequent in articles from health wires (24.2%) (see Table 4). Articles focused on profiles/trends in SLT use (n=61) included references to the prevalence of SLT use among youth (31.1%), among adults or the general population (13.1%), or among both (3.3%) (see Table 6). About 28% of articles referred to SLT prevalence as having grown or as being above average. In addition, about 16% referred to the prevalence of SLT use among baseball players.

6. SLT Bans

The sixth most frequent SLT-related topic, discussed in 8.1% of all news/feature articles, discussed policy issues related to SLT bans including bans in public places such

as parks, schools, and legislative buildings, banning the sending of SLT by mail, and the issue of banning SLT use in Major League Baseball. Articles focused on SLT bans were primarily found in state papers (12.2%) and the Associated Press (11.7%)(see Table 4).

7. Tobacco Industry Promotional Activities

The main SLT topic of 4.9% of articles related to smokeless tobacco industry promotional activities. This included stories about SLT company sponsorship of racing or rodeos events, the granting of gifts to local organizations, and efforts to ban, oppose or regulate such promotional activities. This topic was most frequently found in articles from state papers (8.3%)(see Table 4).

Articles focused on this topic (n=33) included references to SLT promotional activities found in rodeos (42.4%), to the issue of free samples or coupons (27.3%), and efforts to ban, oppose or regulate tobacco promotional activities (66.7%). In addition, about 15% of articles described changes to SLT advertising resulting from FDA regulation (i.e., new warning labels and a ban on SLT brand sponsorships) (see Table 6).

8. Health Risks

The main SLT topic of an additional 4.9% of articles related to smokeless tobacco health risks. Not surprisingly, news stories focusing on health risks as the main SLT topic were predominantly featured in health wires (48.5% of all health wire articles) (see Table 4). Although the issue of SLT health risks was not commonly featured as the *main* SLT topic of most articles, reference to some type of SLT health risks was present in 36.9% of all news/feature articles in the sample (see Table 8, column 4). Detailed description about SLT health risk references is presented below.

9. Other SLT Topics

About 4.1% of all news/feature articles referred to some other topic related to SLT that did not fit into the above categories (e.g., articles that referred to civil lawsuits against SLT companies, historic exhibits related to SLT and tobacco farming issues).

Smokeless Tobacco Topics by Year

Table 7 presents the numbers of unique news articles related to each of the main SLT topics discussed above found by year. Not surprisingly, the number of news articles related to most SLT main topics fluctuated across the time period. However, the number of news articles related to the main topic of new products/product regulation and harm reduction increased slightly each year. In addition, while the number of articles related to SLT bans as a main topic equaled 8 or 9 each year, this number jumped to 21 in 2010.

Additional insight into some of these trends and to the coverage of SLT issues over the sample time period can be obtained from the bottom section of Table 7, which presents the number of all news/feature articles referring to particular subtopics or product types related to national or broader SLT relevant events. This data is also presented in Figure 1 along with description about SLT related events occurring during each of those years. As might be expected, the number of articles which referred to the purchase of a SLT company by a cigarette company was greatest in the two years in which these acquisitions occurred (i.e., 2006 and 2009). The number of articles referring to snus increased each year up through 2009, coinciding with the graduated launches of both Camel Snus and Marlboro Snus over this time period. The number of articles referring to dissolvable tobacco spiked to 15 in 2008 when Camel Dissolvables were initially introduced and peaked in 2010, when several newsworthy events related to

dissolvable tobacco occurred (i.e., communications between SLT companies and the FDA, and the release of a study warning about dissolvable SLT risks, see Figure 1).

Although the number of articles referring to the FDA in context of SLT ranged from 8-10 each year between 2006 and 2008, it jumped to 31 in 2009, the year the Family Smoking Prevention and Tobacco Control Act was signed into law. Finally, while the number of articles referring to the issue of a ban on SLT use in baseball ranged from 3-4 each year, it spiked to 15 in 2010, the year in which several baseball players and members of the Major League Baseball (MLB) Players Association attended a congressional hearing regarding the issue of potentially banning SLT use during MLB games.

Smokeless Tobacco Health Risks

Relevant Research Questions:

- 2a: What proportion of unique SLT-related news stories contain information about SLT health risks?
- 2b: What types of health risks are mentioned in SLT news stories?

As mentioned earlier, reference to some type of SLT health risk was present in 36.9% of all news/feature articles in the sample. More specifically, news articles included references to SLT as being addictive (25.6%), as being carcinogenic or as having various types of chemicals, toxins or nitrosamines (8.9%), and as being associated with particular health effects (25.4%) (e.g., cancer, cardiovascular disease)(see Table 8).

The presence of any SLT health risk references in articles was significantly associated with the main SLT topic of the article ($X^2=189.6$, $df=7$, $p<.001$)⁹, such that is was more

⁹ Topic of “health risks” was removed from Main SLT Topic variable in calculation of Chi-square statistic to meet assumption of independence of observations.

frequently found in articles with certain SLT topics over others. As expected, a reference to any of the SLT health risks was included in all articles in which health risks was the main SLT topic, but such a reference was also present in over two-thirds of articles (69.2%) related to new products/product regulation/harm reduction, 58.4% of articles related to SLT prevention or cessation and about half of articles (50.8%) related to trends in SLT use (see Table 8). References to SLT health risks were least commonly found in articles about SLT taxes (8.7%) and business (5.8%). In terms of news sources, the proportion of articles from national and state papers that included any SLT health risk references was similar (45.9% and 41.2%, respectively). Within these source categories, reference to SLT health risks was most frequent in articles from the *New York Times* (55%) and from Q4 state papers (i.e., those states with the highest SLT prevalence) (49.4%)(see Table 8).

Among those articles referring to health effects associated with SLT use (n=172), the most frequent effect mentioned was oral cancer (referred to in 59.9% of articles)(see Table 9). Articles also referred to pancreatic cancer (15.7%), throat or neck cancer (10.4%), esophageal cancer (5.8%), other cancer types (including larynx, bladder, liver, stomach, kidney, colon, salivary gland and lung cancer)(9.3%), or cancer in general (22.1%). About 17% referred to graphic facial disfigurement occurring as a result of SLT use and oral cancer, and 15.1% referred to leukoplakia as a health effect, i.e., oral lesions that are potentially precursors to cancer.

In addition, 17.4% of articles referred to cardiovascular related health effects such as raised blood pressure or heart rate, heart attacks, cardiovascular disease and stroke (see Table 9). About 14% referred to gum-related health effects (e.g., gum disease, gingivitis,

gum recession, and bleeding gums) and 7.6% referred to tooth-related dental effects (e.g., stained or discolored teeth, cavities, tooth decay, eroded tooth enamel, and tooth loss). Finally, about 16% of articles referred to some other type of health effect associated with SLT use such as reproductive health problems, diabetes, bad breath, risk for cataracts, and poisoning among children upon accidental ingestion of SLT.

It was also found that 24.4% of articles referring to health effects also referred to a personal story or profile of a particular individual named within the article who had suffered from health effects attributed to SLT (see Table 9), including facial disfigurement resulting from oral cancer.

Snus and dissolvable tobacco related health effects

It should also be noted that SLT health effect information was included in 46.3% and 44.6% of all non-business news articles that discussed snus (n=95) or dissolvable SLT (n=83)¹⁰, respectively. However, only about half of these articles referred to health effects specifically associated with either snus or dissolvable SLT (see Table 10). Among such articles with product specific health effects, the most frequent effects associated with snus were pancreatic cancer (41.7%), oral cancer (25%), or cancer in general (33.3%) and cardiovascular related effects/disease (29.2%) (see Table 9). Some of these articles qualified these effects by indicating that the risk was very low or that research on such effects had been mixed. Health effects specifically associated with dissolvable tobacco included potential toxic poisoning among children from accidental ingestion (76.5%), some form of cancer or cancer in general (23.5%) and other effects such as cardiovascular or gum disease (17.6%) (see Table 9).

¹⁰ Results in this section were limited to all news articles except those categorized as business articles because, as mentioned earlier in the results, business topic articles did refer to new products such as snus and dissolvable tobacco but were least likely to make references to any SLT health risks.

In addition, about 18% of non-business focused articles in the sample that discussed either snus or dissolvable tobacco included some indication that different types of SLT may vary in their levels of toxicity or risks (i.e., that all SLT types may not be equally harmful)(see Table 10).

Smokeless Tobacco Risk Comparisons and Other Concerns about SLT Promotion

Relevant Research Questions:

- 2c: Are the risks of SLT compared to that of cigarettes/smoking? If so, how?
- 4: Which arguments and concerns related to the promotion of SLT (i.e., its marketing and potential role in harm reduction) are included in SLT news stories?

Table 11 presents the frequency with which news/feature articles included various messages related to SLT and cigarette risk comparisons, concerns about effects of SLT promotion, and messages/arguments used in the harm reduction debate. Table 12 presents the frequency with which these messages could be attributed to different types of interested individuals/spokespeople among articles in which these messages were present. For purposes of simplicity these messages are categorized into the following groups: “Pro” SLT messages; “Anti” SLT risk-related messages; and “Anti” SLT–other concerns.

“Pro” SLT Messages

1. SLT is/may be less risky/harmful than cigarettes

About 16.5% of all news/feature articles included some indication that SLT (or some particular type of SLT) is or may be less risky, less harmful or safer than smoking cigarettes, or included the broader message that SLT could be used as a harm reduction

tool for smokers. This message was particularly frequent in articles under the main SLT topic of new products/product regulation/harm reduction (57.7%)(see Table 11, col. 1).

References to SLT as being less risky or harmful than smoking were significantly more frequent in articles that mentioned snus or dissolvable SLT (36.8%) than in those that did not (6.6%) ($X^2=98.5$, $df=1$, $p<.001$). Among all news articles that included a “less risky/harmful than smoking” message ($n=112$), about one-third (33%) *specifically* referred to snus and 11.6% to dissolvable tobacco, respectively, as being less risky or harmful than smoking (see Table 13).

In addition, 17% of articles with a “less risky/harmful” message included some type of quantitative risk comparison between SLT and cigarettes (see Table 13), including the following variations of risk comparisons used and published in academic literature:

- SLT products are about 90% less dangerous than cigarettes, OR Low nitrosamine
SLT products possess 10% or less of the risks of smoking
- SLT products are about 98% less dangerous than cigarettes, OR SLT products
confer about 1-2% of the risks of smoking
- SLT products are 10-1000 times less harmful than cigarettes, depending on the
product

Among news/feature articles that included a “less risky/less harmful than smoking” message, the message or position was most frequently presented by or attributed to public health/anti-tobacco professionals (43.8%), academics/researchers (32.1%), tobacco company representatives (33.9%), and the writer of the article (19.6%)(see Table 12).

In terms of balance it should also be noted that articles which indicated that SLT is or may be less risky or harmful than smoking also referred to the fact that SLT is addictive

(58.9%), carcinogenic (33.9%), or associated with some particular health effect (e.g., cancer)(44.6%)(see Table 13).

2. SLT can be used to help smokers quit smoking/switch

A smaller percentage of all news/feature articles (5.5%) presented the related but distinct message that SLT can and/or has been used to help smokers quit, and/or that smokers do indeed switch to SLT. This message was present in almost a quarter of articles related to new SLT products/product regulation/harm reduction (23.1%)(see Table 11, column 1) and was most frequently presented by or attributed to academics/researchers (35.1%)(see Table 12).

3. Should be able to provide comparative risk information

Almost 7% of all news/feature articles (and 30% of new SLT/product regulation/harm reduction topic articles) included a message that people should be provided with accurate comparative risk information about different tobacco products/about SLT versus cigarettes, that people have a right to know about such relative risks, and/or that SLT should be *marketed* as being safer than cigarettes/as a reduced risk product (see Table 11). This message was attributed to tobacco company representatives in over two-thirds of news/feature articles in which the message was present, but was also attributed to public health professionals and academics/researchers in 29% and 13% of such articles, respectively (see Table 12).

“Anti” SLT Risk-Related Messages

4. SLT is as/or more addictive than cigarettes

About 5.3% of all news/feature articles included a risk comparison message indicating that SLT is as addictive or even more addictive than cigarettes. This message

was most frequent in articles related to the topics of new SLT products /product regulation/harm reduction (13.8%) and SLT health risks (12.1%)(see Table 11, columns 1 and 2), and was most frequently presented by/attribution to public health professionals (41.7%) and article authors (38.9%)(see Table 12).

5. Like cigarettes, SLT is also risky/harmful

Over 5% of articles (and about 16% of new SLT /product regulation/harm reduction articles) included a message that like cigarettes, SLT also comes with health risks and is harmful (and as such SLT is not a safe or safer alternative to cigarettes)(see Table 11). This message was presented by/attribution to public health professionals/anti-tobacco advocates in over 60% of articles in which it was present (see Table 12).

6. SLT is *just as* harmful/carcinogenic as cigarettes

Fewer news/feature articles (2.2%) included a message that SLT is *just as* harmful or just as carcinogenic as cigarettes, a message more frequently found in SLT health risk topic articles (24.2%)(see Table 11). This message was presented by/attribution to academics/researchers in 60% of articles in which it was present (see Table 12).

7. Though some think SLT is safer than smoking, it isn't

Almost 4% of news articles included a message indicating that although some people suggest SLT might be a safe or safer alternative to cigarettes, such a belief isn't true/SLT is not safe or safer. This included statements such as: "Rick Bender, former baseball player, is now working to dispel the myth that spit tobacco is a safe alternative to smoking." This message was most frequent in articles related to SLT health risks (18.2%) and prevention/cessation (15.6%)(see Table 11, columns 2 and 5), and was presented

by/attributed to public health professionals/anti-tobacco advocates in almost half of articles in which it was present (see Table 12).

8. SLT may be safer than smoking in some ways, but is not without its risks

Few articles (2.2%) included a more complex message attributable to an individual in the article which acknowledged that SLT may be safer than smoking (overall or in some ways), but also indicated that SLT is not “safe” or without its own risks. This message was most frequently found in articles related to SLT health risks (15.2%) and new products/product regulation/harm reduction (6.2%)(see Table 11, columns 1 and 2), and was most frequently attributed to academics/ researchers (60%)(see Table 12).

9. There is no safe tobacco/quitting all tobacco is best

In addition, 5% of news articles included a message which stated that “there is no safe tobacco”, that “all tobacco is dangerous” and/or that quitting all forms of tobacco is the safest course of action. This message was most frequently found in articles about new SLT products/regulation/harm reduction, and was most frequently presented by or attributed to public health professionals (58.8%) and academics/researchers (26.5%)(see Tables 11 and 12).

“Anti” SLT – Other Concerns

10. SLT products aimed at/may appeal to young people

Over 12% of all news/feature articles (and 40.8% of new product/harm reduction articles) included a message expressing concern or critique that SLT products are marketed to youth and/or may appeal to youth or young adults (see Table 11). This message was most frequently attributed to public health professionals/anti-tobacco advocates (62.4%), but was also attributed to legislators, FDA members or other

government-related individuals in about 37% of articles in which the message was present (see Table 12).

Of additional note, among articles which included this youth concern message (n=85), 50.6% referred to SLT (or some particular type of SLT) as tobacco “candy” or as candy-like (see Table 13). In contrast, 36.5% included a message attributed to/presented by a tobacco company spokesperson stating that the products are aimed at adults and not youth, and/or that they are not “candy” products.

11. SLT can facilitate new users/act as smoking gateway

Eight percent of news articles (and 32% of new product/harm reduction articles) included a more specific message expressing concern that SLT promotion could encourage new users (including young people) to start, former users to resume tobacco use, and/or act as a gateway into smoking, messages that often occurred together (see Table 11). This message was most frequently attributed to public health professionals/anti-tobacco advocates (68.5%) followed by academics/researchers (29.6%)(see Table 12).

12. SLT can facilitate dual use/delay smoking cessation

About 7.7% of all news/feature articles (and 31% of new product/harm reduction articles) included a message expressing concern or critique that SLT products could facilitate dual product use among smokers and/or lead to delayed cessation attempts and continued smoking (see Table 11). This message was most frequently attributed to public health professionals/anti-tobacco advocates (65.4%) and academics/researchers (40.4%)(see Table 12).

13. SLT use can circumvent smoking bans

About 6% of all news/feature articles (and 26.2% of new product/harm reduction articles) included a related message which explicitly expressed concern or critiqued the fact that SLT products can be used to circumvent smoking bans (see Table 11). This message was similarly attributed most frequently to public health professionals (58.5%) and academics/ researchers (29.3%)(see Table 12).

14. SLT may not help smokers quit/ much unknown

Finally, 8% of all news/feature articles (and over half of all new product/harm reduction related news articles) included a message expressing caution or skepticism that SLT could effectively be used to help smokers quit smoking, that the “Swedish Experience” could translate in the US, and/or indicating that there is much about SLT that is unknown (e.g., how it would be used and its potential impact)(see Table 11). This message was attributed to public health professionals and academics/ researchers in 60% and 52% of articles in which the message appeared, respectively (see Table 12).

Multiple Perspectives, Controversy & Credibility

Relevant Research Questions:

- 2c: Are the risks of SLT compared to that of cigarettes/smoking? If so, how?
- 4: Which arguments and concerns related to the promotion of SLT (i.e., its marketing and potential role in harm reduction) are included in SLT news stories?
- 5: To what extent do news stories frame SLT issues as being controversial?

Overall, 17.3% of all news/feature articles included at least one of the “Pro-SLT” messages found in Table 11, and 28.7% included at least one “Anti-SLT” message (see Table 14). In terms of balance/multiple perspectives, 12.2% of all articles included at

least one “pro” *and* one “anti” SLT message. Among articles that included at least one message from both sides (n=83), 35% explicitly referred to the existence of a “debate” or “difference in views” regarding SLT. About 79% of these articles (n=29) referred to these differences as being between health professionals and 24.1% referred to these different views as being between health professionals and tobacco companies. About 17% referred to the debate as being controversial or “moralistic” (see Table 14).

It should also be noted that among those news articles with at least one Pro-SLT message (n=117), a minority included claims that the public was somehow being misled about SLT risks or related issues (8.5%)(see Table 15). Such claims were more frequent among opinion articles (described in the opinion articles section, below). In addition, 7.7% referred to research or a researcher mentioned in the article as being funded by the tobacco industry.

Additional Smokeless Tobacco-Related Perceptions and Associations

Articles were also coded for reference to various user or lifestyle activities associated with SLT (see Table 16). A total of 69 articles (or 10.2% of all news/feature articles) included some association between SLT use and baseball – these articles referred to the prevalence of SLT use within the sport/among baseball players (24.6%), its use in baseball as providing a negative example for young people (30.4%), and to the issue of banning SLT use in baseball (42%).

In addition, a total of 26 articles (or 3.8% of all news/feature articles) included some association with SLT use as being “rural” or “country” and 26 articles (3.8% of all) included some association between SLT and rodeos or cowboys. Fewer articles (a total of

15 articles or 2.2%) included some association between SLT use and white collar work (e.g., use in offices, legislative buildings) (see Table 16).

Finally, 8.6% of all news/feature articles included some non-health related negative perception of SLT use (e.g., perceptions related to image or taste). These included references to SLT use as “gross” or “disgusting”. Approximately 45% of these articles (n=58) specifically referred to the issue of spitting associated with SLT use as being negative or unattractive.

Opinion and Other Articles Types

Relevant Research Questions:

- 1a: What types of topics about SLT are covered in US newspapers and news wires?
- 2a: What proportion of unique SLT-related news stories contain information about SLT health risks/consequences?
- 2b: What types of health risks/consequences are mentioned in SLT news stories?
- 2c: Are the risks of SLT compared to that of cigarettes/smoking? If so, how?
- 5: To what extent do news stories frame SLT issues as being controversial?
- 6: What is the slant of opinion articles related to SLT?

As described earlier, Table 1 presents the number of opinion articles (editorials/opinion column articles, op-ed articles and letters to the editor) and other non-news articles (advice and health column articles) in the sample from each news source and in total. The majority of published op-ed articles in the sample (n=17) were written by researchers (47.1%), followed by legislators (23.5%), health professionals (17.6%), tobacco company representatives (11.8%), students (5.9%) and others (11.8%)(see Table

17). In contrast, the majority of published letters to the editor (n=89) were written by private citizens (i.e., individuals without any named titles or affiliations)(53.9%), followed by health professionals (22.5%), researchers (9%), tobacco company representatives (4.5%), students (3.4%), legislators (1.1%), and others (5.6%).

SLT Topics

The most frequent main SLT topics discussed in opinion articles (i.e., editorials/opinion column articles, op-ed articles and letters to the editor, n=176) included new products/product regulation/harm reduction (present in 34.3% of all opinion articles, n=176), followed by SLT taxes (20%), profiles/trends in SLT use (12.9%) and SLT bans (12.9%)(see Table 18), a pattern different from that observed among news/feature articles (see Table 4). All health column articles related to either SLT prevention/cessation issues (63.6%) or health effects (36.4%). The majority of Advice/Q&A articles related to SLT health effects (46.2%) and SLT profiles/trends in use (30.8%) (see Table 18).

SLT Health Risks

Opinion articles were significantly more likely than news/feature articles to include reference to any type of SLT health risk (i.e., present in 50% of all opinion versus 36.9% of news/feature articles, $X^2=9.98$, $df=1$, $p<.01$). Among the opinion article types, references to any SLT health risks were most frequently found in op-ed and editorials/opinion column articles (70.6% and 64.3%, respectively) and least likely to be found in letters to the editor (36.9%)(see Table 18). SLT health risks were also referred to in 100% of health column articles and about 69% of advice/Q&A articles.

Risk Comparison and SLT Debate Messages

Overall, 16.5% of all opinion articles included at least one of the “Pro-SLT” messages described earlier (and found in Table 19) as being presented by the author of the opinion article, including the message that SLT is or may be less risky or harmful than smoking. Among those opinion articles with at least one “Pro-SLT” message (n=41), 36.6% included claims that the public was being somehow misled or withheld from the truth about SLT risks, and/or that SLT risks have been distorted/inaccurate (see Table 15). The presence of such claims was significantly more frequent in opinion articles with “Pro-SLT” messages (36.6%) than in news/feature articles with “Pro-SLT” messages (8.5%)($X^2=17.9$, $df=1$, $p<.001$). About 19.5% of opinion articles with at least one “Pro-SLT” message referred to research or a researcher mentioned in the article as being funded by the tobacco industry (see Table 15).

In contrast, approximately one-third of all opinion articles included at least one of the “Anti-SLT” messages found in Table 19 as being expressed by the author of the article. The most frequently found “Anti-SLT” messages presented by authors were concern about SLT marketing to or appeal among youth (15.9% of opinion articles) and that SLT is as addictive as cigarettes (11.9%)(see Table 19).

Slant of Articles

Table 20 presents the slant of SLT-related content presented in opinion and other non-news articles in the sample. The majority of all opinion articles (63.6%) contained an anti-SLT/pro tobacco-control slant, while about a quarter reflected a pro-SLT/anti tobacco-control slant. Opinion articles from national papers were more likely to express pro-SLT slants than articles from state papers (52.9% versus 22.8%, respectively), though

this difference was not statistically significant ($X^2=5.8$, $df=1$, $p=.016$). Pro-SLT slants were more frequently expressed in opinion articles with SLT content related to new products/product regulation/harm reduction (42.6%) and SLT bans (37.9%). Also of note, 73% of all opinion articles that included an association between SLT and baseball had an anti-SLT slant. The slant of all advice and health column articles was either anti-SLT or mixed/neutral (see Table 20).

New Product Associations

Relevant Research Questions:

- 7a: What types of product characteristics of Camel Snus and Marlboro Snus are communicated in SLT news stories?
- 7b: What attributes of an innovation, as described in Diffusion of Innovations theory, do these characteristics reflect?

New SLT brands Camel Snus and Marlboro Snus were referred to in 15.5% and 10% of all news/feature articles, respectively (see Table 5). Among articles referring to either brand ($n=142$), about 30% explained that snus is of Swedish origin and/or popular in Sweden and 21% described how snus is pronounced, typically by giving an example of a rhyming word (e.g., goose, loose). In addition, news articles discussing Camel and Marlboro Snus also referred to various SLT product features and messages that could shape reader interest in trying them. The frequency with which articles referred to these is presented in Table 21. Within the table, these messages/features are categorized according to the relevant attributes of an innovation most likely to affect an innovation's adoption, as proposed by the Diffusion of Innovation Theory. It should be noted that

certain SLT messages/features fit and are included under more than one innovation attribute. Results grouped according to each of the innovation attributes are presented next.

Relative Advantage

Associated Key Question: Is the innovation better than what it will replace?

Articles which referred to Camel or Marlboro Snus included a number of messages about these particular products or about SLT in general that could be considered by smokers, the primary target audience of these products, to be advantages over smoking. Among those articles referring to either brand (n=142), 92.3% used the term “smokeless” within the article or otherwise specifically made reference to the products as being smoke-free (see Table 21, column 3). These articles also included references to SLT as being/or as possibly being less risky or less harmful than smoking (37%), to smoking bans (47%), to the point that SLT can be used where smoking is prohibited and/or anywhere or anytime (36%), to new SLT products as being discreet or undetectable (12.7%), and to SLT products as being cheaper than cigarettes (4.9%). Almost 8% of articles mentioning Camel or Marlboro Snus referred to other potential benefits of SLT, for example, that SLT tastes good, that it lasts longer than cigarettes, and that it is cheaper than nicotine replacement therapy products (see Table 21).

Compatibility

Associated Key Question: Does the innovation fit with the intended audience?

Articles which referred to Camel or Marlboro Snus similarly included several messages that might influence smokers’ perceptions about the “fit” of these products for them. In addition to referring to the growing number of smoking bans and the ability of

SLT to be used anywhere (frequencies described above), 64.1% of such articles also referred to these new products as being “spit-free” and 16.9% characterized them as more modern or acceptable types of SLT products.

Impact on Social Relations

Associated Key Question: Does the innovation have a disruptive effect on the social environment?

As already described above, articles referring to Camel or Marlboro Snus included references to these products as spit-free, more modern/acceptable than other types of SLT, and as discreet, attributes all related to image and relevant under this innovation construct. In addition, 60.6% of articles referring to Camel or Marlboro Snus also referred to smoking or cigarette sales as declining and 52.1% referred to the prevalence of SLT use or sales as increasing, figures which might communicate a message to readers about the changing acceptability of these products. Also of note, 6.3% of articles included a message that SLT products do not cause secondhand smoke and/or do not harm other individuals around the user.

Complexity

Associated Key Question: Is the innovation easy to use?

Articles which referred to Camel or Marlboro Snus frequently described the products as coming in the form of tea-bag like pouches (65.5%) and indicated how the product was intended to be used (e.g., to be placed between the cheek and gum or under the upper lip).

Trialability

Associated Key Question: Can the innovation be tried before making a decision to adopt?

About 17% of articles referring to Camel or Marlboro Snus referred to the prices of new SLT products (i.e., less than five dollars). A minority of articles (4.2%) referred to the existence of samples or coupons to promote new SLT products.

Commitment

Associated Key Question: Can the innovation be used effectively with only modest commitment?

As mentioned above, 35.9% of articles referring to Camel or Marlboro Snus included a suggestion that SLT could be used where smoking is prohibited. In terms of commitment, these articles may suggest to smokers that such SLT products could be useful without needing to switch to them (i.e., adopt them) completely.

Reversibility

Associated Key Question: Can the innovation be reversed or easily discontinued?

Approximately 38% of articles referring to Camel or Marlboro Snus also referred to SLT as being addictive, suggesting that the product might *not* be easily reversible once initiated.

Risk & Uncertainty Level

Associated Key Question: Can the innovation be adopted with minimal risk and uncertainty?

Articles referring to Camel or Marlboro Snus also referred to health effects (e.g., cancer) associated with SLT use (26.8%) and included messages suggesting that SLT is not a safe or safer alternative to cigarettes (9.2%). In terms of uncertainty, about 15% of articles suggested that a debate or difference in views exists regarding SLT, and almost

10% included a message suggesting that it is unclear whether SLT can really be used to help smokers quit, that there's much about SLT still unknown.

It should be noted that the frequencies for the majority of the attributes described above were higher when the sample of news articles was limited to non-business focused articles that referred to Camel or Marlboro Snus (n=73)(see column 4 in Table 21), articles that may be more likely be read by the general public.

CHAPTER 5

DISCUSSION

This study provides the first description of smokeless tobacco related coverage in the news, analyzing news and opinion articles in select news wires and in major newspapers throughout the country. News articles were found reporting on a variety of SLT topics which, by virtue of their publication, were perceived by journalists as being “newsworthy” enough to gain coverage. These included issues of national or general interest such as new products, product regulation, harm reduction, trends in SLT use and health risks, as well as on SLT related issues of more local interest such as taxes, industry sponsorship activities, SLT prevention and cessation programs, and SLT bans. The content of many of these articles reflected certain traditional news values (such as timeliness, conflict or controversy, proximity, human interest and prominence) which likely contributed to their perceived “newsworthiness” and subsequent coverage (145-147).

Although many news articles portrayed SLT as unattractive, harmful to health, dangerous to youth, distracting from smoking cessation and worthy of increased regulation, news articles also referred to potential benefits of SLT (particularly in the context on new products), such as the ability to use SLT indoors or the possibility of using SLT as a less harmful alternative to smoking. Many articles also included differing perspectives about the risks and potential benefits of SLT that might be perceived as confusing to the public. Major findings of this study are discussed in detail below.

SLT Health Risks and Other Consequences

This study found that news articles have included health-related information about SLT. Although few articles focused on health risks as a *main* topic, a finding consistent with previous research (46), almost half (49%) of all general news articles (i.e., those not focusing on business news) referred to some sort of SLT health risk within the article. In terms of health effects, articles largely referred to the risk most commonly associated with SLT in scientific literature – oral cancer. News stories often brought this risk (and others) “to life” by sharing the names and stories of individuals who had suffered from them, some of them well known baseball figures¹¹ and others private citizens turned anti-tobacco advocates who lived to tell about their numerous disfiguring surgeries. The inclusion of such emotional and dramatic profiles in sources of health information reaching the public is significant given that “narrative” type of evidence can be more persuasive than statistical or quantitative information (148, 149). It should also be noted that their relevance to a traditional news value for “human interest” stories likely also contributed to their perceived newsworthiness and subsequent coverage.

In addition to warning about potential health risks, news articles also communicated about other points of concern among public health professionals regarding SLT promotion, most frequently that SLT products are aimed at or would appeal to young people. The framing of tobacco as a youth related problem in news stories is consistent with findings of previous tobacco news coverage studies (50, 51). While concern about youth tobacco use and targeting is a legitimate public health issue, such “youth frames”

¹¹ According to traditional news values, stories related to well known “prominent” figures may be considered more “newsworthy” than those related to non-public figures.
147. Purdue Online Writing Lab. Journalism and journalistic writing. Available at: <http://owl.english.purdue.edu/owl/resource/735/01/>. Accessed September 21, 2011.

can also be especially powerful in terms of generating media coverage and as a tool for media advocacy (51), as they can be easily understood and made by both health and non-health professionals alike (i.e., they do not require in depth knowledge of tobacco health and science issues). Indeed, in this study concerns about SLT's potential appeal to youth was the most frequent anti-SLT message used by legislators or other government representatives and by opinion article writers. It was also interesting to find that the framing and referral to various SLT products as "candy" or "candy-like" (particularly with regard to dissolvable tobacco) by public health professionals was one that stuck and appeared in a number of news articles. Such references helped frame these products as being "controversial" and likely contributed to news coverage of them given the value placed on conflict and controversy by the news media (147, 150). News articles also included quotes from tobacco company representatives attempting to clarify in response that the products are neither candy nor aimed at youth.

Importantly, news articles also included other counter-SLT messages that did not focus on youth (albeit less frequently). News articles voiced public health professionals' concerns about the potential of SLT products to cause harm among existing current smokers by providing an "easy out" from smoking bans, facilitating dual product use, and potentially facilitating continued tobacco use over quitting completely, all critical arguments expressed in the SLT harm reduction debate.

References to health risks and other potential consequences of SLT in news articles may be important not only as a means of public education, but also as a means for building public support towards policy efforts to regulate SLT. Previous studies have found that news articles relating to tobacco policy issues have tended to lack information

about tobacco health risks, thus leaving out the fundamental rationale for such policies (49, 51). This study similarly found that references to SLT health risks were largely missing in articles related to some policy issues such as SLT taxes and bans on tobacco use in public places. But, health risk references *were* found in the majority of articles focusing on new SLT products, product regulation and/or harm reduction, timely topics with policy-related implications that have been at the forefront of debate within the tobacco control community and that are currently receiving policy-related attention. Indeed, the FDA's Center for Tobacco Products is beginning to review evidence about (and consider regulatory options for) controlling the sale and marketing of new dissolvable smokeless products, such as Camel Dissolvables, and to consider procedures for reviewing tobacco products (including SLT) applying for "modified risk" status.

SLT Risk Comparisons and Conflicting Perspectives

While news articles included references to potential health and other unintended consequences of SLT use and promotion, they also presented differing perspectives and conflicting views regarding the risks of SLT versus smoking. Although some articles in the sample explicitly referred to the existence of a "debate" or a "difference" in views regarding SLT, articles may have communicated a sense of conflict and controversy simply by describing the different perspectives for and against its use (150). These were presented not only as the different views of tobacco companies versus public health professionals but also as disagreements amongst public health professionals themselves.

"Pro" SLT Risk Related Messages

A major finding of this study was that a sizeable number of news articles, particularly those referring to new SLT products, included a reference to SLT as being (or as possibly

being) less risky or harmful than smoking. Moreover, such references were as likely to be attributed to public health professionals and researchers within news articles as they were to tobacco company spokespeople, thus potentially adding to the statements' perceived legitimacy and salience among readers. Reference to such risk comparisons is significant given that the tobacco control community has not yet come to a consensus about the role SLT should play in harm reduction and the fact that SLT advertising is currently prohibited from making reduced risk comparison claims.

“Anti” SLT Risk Related Messages

On the other hand, this study found that news articles also included messages that SLT is *not* a safe or safer alternative to smoking, messages expressed and phrased in a variety of different ways with somewhat subtle differences. Some articles communicated a message that SLT is *just as* or more harmful or carcinogenic than cigarettes, messages which may lead individuals to have inaccurate risk comparison perceptions. Articles more frequently included messages which suggested that SLT is not a safe smoking alternative because it is also risky/has its own health risks and/or that there is no safe tobacco. However, some tobacco control professionals have argued that these types of messages, while literally true, may also mislead individuals into thinking that SLT and cigarettes are equally harmful (31, 121). In contrast, few articles included a more “nuanced” risk comparison message as some professionals have called for (31, 33, 121). For example, few articles included a more complex nuanced message attributed to a researcher or public health professional which acknowledged that SLT may be safer than cigarettes, but that SLT is nonetheless not without its risks.

Potential Implications of Mixed SLT Risk-Related Messages

The presentation of such various views could potentially impact readers in a variety of ways. On one hand, it could be argued that such articles actually reflect the complexity of the matter and the real arguments being debated within the field. Such articles could present readers with a deeper and more “nuanced” understanding of the issues and appreciation for why it has been a source of debate. On the other hand, the inclusion of such mixed perspectives could ultimately leave readers confused and unclear of the overall “take away” message – is smokeless tobacco a safer alternative or not? As has been noted, while scientists may understand information presented with scientific uncertainties, caveats and gradients of risk, the public may not and may be more likely to dichotomize products and behaviors as being either harmful or safe (12, 149).

In addition, it is possible that for some readers the portrayed disagreements amongst public health professionals could potentially call into question the credibility of public health agencies and messages. Although a minority of articles included claims that public health professionals were misleading the public about the relative risks of SLT versus cigarettes, such a message might more frequently be inferred by readers from articles in which pro-SLT arguments appeared reasonable. Furthermore, to the extent that news articles present messages in support of SLT which are perceived by readers as reasonable, those professionals found cautioning against SLT use in news articles may be perceived as being over-protective or as “anti-tobacco zealots”.

Diffusing Information about New SLT Products

This study also found that new SLT products, including snus and dissolvable tobacco, generated considerable news coverage, both in terms of business news and more general

news stories that provided related public health perspectives. Such coverage was timely given the launch of these products in the last few years and their relevance to current policy issues and health perspectives regarding SLT. Indeed, much of the discussion debating the potential “pros” versus “cons” of SLT was made in the context of these new product offerings. Articles not only discussed these product types generally but also referred to those styles (i.e., Camel Snus, Marlboro Snus, and Camel Dissolvables) launched under brand names familiar to smokers, the main target audience of these products.

Snus Products

Ironically, although researchers, public health professionals and even politicians used the news media to criticize and warn against snus products, this study showed that news articles also contained information that could educate potential readers about these products, potentially acting in some ways as a source of free advertising for them. Articles referring to snus, including new brands Camel Snus and Marlboro Snus, were frequently found explaining what snus is, its Swedish origin, how it is pronounced and how it is supposed to be used. The communication of such basic information is likely important for diffusing awareness and knowledge of a tobacco product type largely new and unfamiliar to American audiences. Indeed, according to Diffusion of Innovations theory, a basic prerequisite for the adoption of new products is awareness that the products exist and knowledge about what the innovation is (53).

Relative Advantage

Diffusion Theory also posits that various perceived attributes of innovations contribute to the rate and extent of their adoption (i.e., either by facilitating or by

detracting from their adoption)(53, 151). Although not designed to be educational materials or persuasive communications, in this study news articles were nevertheless found referring to SLT product characteristics that may be perceived by readers, particularly current smokers, as potential benefits or as “relative advantages” over smoking cigarettes. This included suggestions that SLT (or snus in particular) may be safer than cigarettes, a finding particularly noteworthy given that paid advertisements for these products are prohibited from making such claims. Articles also referred to other potentially more immediate benefits, such as the point that SLT can be used discreetly and be used indoors, a significant product advantage given the growth in restrictions against indoor smoking. Even when such points were made as critiques (e.g., health professionals voicing concerns about SLT’s ability to circumvent smoking bans), such attributes were nevertheless communicated. Such references are important as product relative advantage has previously been described as “one of the best predictors of an innovation’s rate of adoption” in Diffusion Theory research (53).

Compatibility and Impact on Social Relations

News articles discussing new snus products also referred to product attributes which might suggest to smokers that the new products could be *compatible* with their needs, lifestyle, values and norms, and that the products could be adopted with minimal *impact on their social relations*, features which should improve their likelihood of adoption from a diffusion of innovations theory perspective (53, 151). While some articles explicitly referred to new snus products as being more modern and acceptable versions of SLT, numerous news articles referred to one of the key attributes distinguishing them from traditional SLT – that they are intended to be spit-free. This is significant given that this

study also found references to the spitting aspect of SLT as being “gross”, “disgusting”, and generally unattractive in numerous articles. In addition, articles also frequently referred to the fact that smoking is declining while SLT use is increasing. Such information might also work to shape perceptions about the respective acceptability of each product.

Reference to these types of acceptability related product features may be particularly important for facilitating interest in new SLT products among smokers – in this case, their perceived compatibility and impact on social relations might be *as* important to potential consumers as their perceived relative advantages over smoking (less risky, more convenient, etc.). Indeed, some previous studies have found relatively low interest in switching to SLT products among smokers (118, 120) even when asked to assume such products were much safer than smoking (118). In one of these studies, smokers referred to a belief that SLT is unacceptable or gross as among reasons for their unwillingness to switch (120). If smokers are able to view these new snus products as both providing significant advantages over smoking *and* as being acceptable alternatives, their likelihood of adopting them should theoretically be increased.

Complexity

It should also be noted that smokers in one of the same perception studies mentioned above also referred to the perceived difficulty in using SLT as being a barrier to switching to it (120)¹². Indeed, diffusion theory suggests that the more complex or difficult to use an innovation is perceived as being the less likely or slower it may be adopted (53). In this study, news articles were found referring to the fact that Marlboro

¹² It should be noted that authors of this study received unrestricted grant funding from the United States Smokeless Tobacco Company.

and Camel Snus are sold in pouches, a product attribute which could suggest to some readers that these styles might be simpler to use than other forms of SLT they have seen or know of. Indeed, pouched styles of snuff or snus products are considered easier to use than loose forms in that they prevent tobacco from floating around the user's mouth, are easy to put in and remove from the mouth and provide a slower more even release of nicotine (4, 152). As such, pouched snuff products have been considered by tobacco companies as being appropriate styles for new users, including smokers (4).

Trialability and Commitment

Although news articles did not explicitly explain that snus products could easily be tried before adopting them, some referred to the existence of coupons or free samples, or referred to the price of these products, a price (typically less than five dollars) which could suggest to smokers that the products could at least be tried with minimal cost. Perhaps more importantly, news articles may have communicated the idea that these products can be used with minimal commitment or without the need to adopt them completely by referring to the fact that they can be used as a substitute to smoking in times or places where smoking is not allowed. Indeed this issue of incomplete switching and of dual product use has been one of the main concerns among tobacco control professionals about the promotion of SLT products.

Reversibility, Risk & Uncertainty Level

Although news articles discussing new snus products referred to various product attributes that might facilitate their adoption, they also referred to characteristics that could create doubt and detract from interest in using them. Diffusion theory suggests that products which are easy to try, easy to use with minimal commitment and easy to

discontinue if no longer needed or wanted (i.e., easily “reversible”) may be more likely to be adopted, as these types of qualities reduce concern associated with trying something new (53, 151). However, this study found that a considerable number of articles discussing Camel or Marlboro Snus also referred to these products (or to SLT in general) as being addictive, thus potentially communicating that these products might *not* be easy to discontinue once starting. Furthermore, articles also referred to potential health effects that could result from adopting SLT use, suggesting that although they might be safer than smoking, they may not be without some risks.

In addition, although this study found that news articles discussing snus were more likely to refer to SLT as being less risky than smoking, it was also found that health risks between snus and different SLT product types were not always differentiated. This is important as previous research has indicated that different SLT types have different toxic profiles (39) and that snus appears to pose fewer risks than traditional forms of SLT used in the US (56). Furthermore, arguments for using SLT as a means of harm reduction have largely focused on using low-nitrosamine forms of SLT such as snus (8, 13). Without product differentiation, readers might consider snus use to pose the same risk for oral cancer (the health effect most frequently associated with SLT in news articles) as other SLT types, a point which may detract from the product’s rate of adoption.

Dissolvable Products

It was also interesting to find that dissolvable smokeless products gained a considerable amount of press coverage considering their low market share to date (less than 1%)(59) and that those styles promoted by cigarette companies (namely Camel

Dissolvables) have not yet been nationally launched¹³. Coverage of these products and their perception as being “newsworthy” topics was likely related to their status as being “new” and novel, and to their controversial nature. Indeed, news articles captured quotes from public health professionals and legislators, including those in test market areas, expressing concern and even outrage over the marketing of these products given their more overt resemblance to breath mints and various types of candy, and thus their potentially greater appeal to youth. The framing of dissolvable SLT products as potentially appealing to youth was important as it became the basis for an amendment made to the Family Smoking Prevention and Tobacco Control Act before it was signed into law, an amendment which put review of dissolvable tobacco products and their marketing on the CTP’s tobacco regulation agenda (153).

Numerous articles discussing dissolvable products also referred to a single research study published in 2010 (154) about unintentional child poisonings from tobacco products. Interestingly, although the study found that the vast majority of poisonings occurred as a result of ingesting cigarettes, the paper focused its discussion on the potential dangers of *SLT* products to youth (particularly new Camel Dissolvable products), a focus which translated into how the study was presented in the media. Whether the study accurately reflected the risks of these new products or not, it is likely that coverage of this study helped contribute to the framing of these SLT products as being a danger to youth.

¹³ Coverage of this topic was not limited to locations in which the products were test marketed.

New Product Business News

This study also identified and examined a number of business focused articles, largely stemming from *The Wall Street Journal*, the *Associated Press*, and the two tobacco hometown papers. Rather than referring to potential health effects or harm reduction issues surrounding SLT products, business news articles described cigarette companies' view of SLT products as a growth market, as articles frequently referred to cigarette sales as declining and those of SLT products as growing. While some public health professionals may argue that SLT products should be marketed as less risky than cigarettes for harm reduction purposes, for tobacco companies the motivation behind interest in making such claims is clearly related to its profit potential.

Other SLT Topics and Article Types

SLT and Baseball

While much of SLT news coverage focused on new products, this study also found news articles covering a more traditional SLT related issue – the use of SLT in baseball. Such discussion has been timely and significant given that the issue of banning SLT is up for negotiation during Major League Baseball's contract discussions in December 2011, and that press coverage of issues can be important for shaping public opinion and support towards policy issues (42-44). Indeed, articles typically portrayed SLT use and its role in the game as being something negative, frequently referring to players' attempts to quit SLT use and the negative role modeling of SLT use by players on youth. Negative SLT perceptions and support for banning it in baseball were found in opinion as well as in news articles. It should be noted that news articles beyond the time frame of this study (i.e., printed in 2011) have continued to address this issue and that several public health

organizations have come together in a campaign to support banning SLT in Major League Baseball (155).

Local SLT Issues

News articles also discussed other policy issues of local importance to states and communities, fulfilling a traditional news value for stories of “proximity”¹⁴ (145-147). Articles reflected community conflict over the issue of banning SLT company sponsorships of local events such as rodeos and over accepting company donations or gifts, such as utility vehicles perceived as being of potential use to local law enforcement groups. The issue of SLT taxes was also a frequent topic covered in state papers, with over half of these articles referring to proposals to change the method in which SLT is taxed, usually from taxing SLT based on a percentage of product price to taxing based on product weight (thus standardizing taxes, regardless of product price). Researchers have previously pointed out that while such changes would appear to make cheaper SLT products less accessible to youth by increasing their price, they also work to make those premium products most commonly used by young people less expensive while simultaneously benefitting major manufacturers (156).

Opinion Articles

This study also described the topics, messages and slant presented within opinion articles containing SLT content. Opinion pieces represent important components of news sources given their potential to inform and influence both general members of the public as well as policy makers. Letters to the editor and op-ed articles provide a public forum and space where tobacco control professionals and members of the public can debate and

¹⁴ Stories about issues of local relevance and importance to an audience in a given area may be considered “newsworthy” by local news sources.

express their views about timely tobacco related issues (131). These types of articles may also work to suggest to tobacco control professionals areas in which additional education, advocacy or intervention is needed to gain public support for tobacco control measures (131).

Consistent with previous research (131), this study found that the majority of opinion articles expressed slants that were against SLT and supportive of a variety of tobacco-control measures, such as regulating tobacco sponsorships of community events, imposing higher taxes on SLT, opposing the test marketing of new SLT products in communities, and banning the use of SLT in baseball. On the other hand, opinion articles (particularly letters to the editor) were more likely to include criticisms of public health professionals than were news articles, and about a quarter expressed pro-SLT/pro-tobacco slants. Opinion articles with pro-tobacco slants included tobacco topics related to economics and personal liberties such as SLT taxes and bans, a finding also consistent with previous research (131). But in this study pro-SLT opinion articles were most frequently related to the topic of new products, product regulation and harm reduction, suggesting that arguments used in support of SLT within the tobacco control community have also been used in this more public forum. It is not known, however, how representative the opinion articles published and found in this study are of *all* opinion articles submitted to papers by members of the public. It has been noted previously that, as with news articles, editorial staff are also selective about which opinion articles to print and may intentionally print opinion articles reflecting differing and debating viewpoints to create interest (157).

News Sources

Finally, it should also be noted that this study observed some differences in SLT coverage by news source, though these differences were not particularly surprising. National papers and tobacco hometown papers were the news sources most likely to include articles focusing on the topic of new products, product regulation, and harm reduction, and to refer to newer types of SLT – namely snus and dissolvable tobacco. Opinion articles with pro-SLT slants were also more frequent in national papers than in state papers.

On the other hand, state papers were the news source most likely to include articles related to topics of more local significance such as SLT taxes, bans, and SLT prevention and/or cessation. Among state papers, those from states with the highest SLT prevalence, Q4 states, were the most likely to include articles with reference to SLT health risks and to focus on SLT prevention and/or cessation issues, while those papers from the lowest prevalence states, Q1 states, were most likely to focus on broader SLT topics such as new products. State papers were also the news source least likely to use the formal term “smokeless tobacco” and most likely to use the less formal terms “dip/dipping” and “spit tobacco”.

It should also be noted that while the proportion of articles from national and state papers that included any SLT health risk references was similar (45.9% and 41.2%, respectively), national paper articles were more likely to include references to the message that SLT is/may be less risky or harmful than smoking.

Limitations

Several limitations of this study should be noted. This study drew articles from top circulating national and state daily newspapers rather than from a random sample of papers and thus results may not be generalizable to other newspapers within states, including more local community newspapers. As described in the methods section, this study focused on describing the content of unique articles about SLT and included wire stories in the sample only one time. As such, this study sample should be considered to be representative of unique stories from the selected national newspapers, state papers, and wire services, rather than of *all* SLT stories printed in the selected newspapers (which would include wire stories). Furthermore, only those stories meeting the criteria for inclusion (e.g., multiple references to SLT, etc.) were analyzed rather than all articles which made any reference to SLT. In addition, this study does not report what proportion of *all* news articles (i.e., all articles related to and unrelated to SLT) this sample represents. Given this study's focus on recent coverage (i.e., years 2006 – 2010), it also does not describe if and how coverage of SLT has changed over time more broadly.

Although this study focused on stories from the most widely circulated newspapers around the country, it is not clear from this study alone to what extent people, including smokers, have actually been exposed to and read news stories about SLT, nor how those exposed may have interpreted or been impacted by the content. Furthermore, this study only examined SLT related content in one media type (i.e., written news stories) and did not include SLT issues covered by other media such as television programming, which could potentially reach a larger audience and impact audiences in different ways. Finally, the use of electronic news databases to obtain articles for analysis limited the

measurement of certain prominence related variables, such as headline size or use of images in articles, which would have been visible in print versions of articles.

Future Research Recommendations

Despite its limitations, this study should make a significant contribution to the research literature on tobacco news coverage and on SLT communication and provides a platform and knowledge base for future research work. Building on this study, future research is needed next to explore the potential impact of information about SLT found within news articles on readers. In particular, research is needed to explore how individuals interpret the variety of risk comparison messages present in news articles and the potential impact of these messages on readers. Previous studies have indicated that a significant proportion of smokers perceive SLT to be as risky as cigarettes (33-37, 107, 114-116). New studies should examine whether “less risky/less harmful” messages influence individuals’, particularly smokers’, risk perceptions, whether the influence of such messages on risk perceptions is modified by the source these messages are attributed to (e.g., public health professionals versus tobacco company spokespeople), and, importantly, whether such messages can influence intentions to try or switch to SLT. Given that “less risky/less harmful” messages have been diffusing to the public through credible news sources, it is also particularly important for researchers and health professionals to develop, test and study different types of responsive SLT risk comparison messages. Future research should also explore the potential impact of news stories’ differing perspectives about SLT on readers, as the presentation of such mixed information is likely to continue. Indeed, the use of conflicting viewpoints and perspectives is a common journalistic practice which may be used by journalists to

provide “balance” and to appear objective, but which also fulfills a traditional news value for drama (149, 150, 158).

Implications for Public Health Practice and Conclusions

This study presents the first description of smokeless tobacco related news coverage in major newspapers and news wires. Study of tobacco news coverage is important given its potential ability to educate readers (including policy makers and members of the public) and shape their attitudes towards tobacco issues. This study found that news articles reported on a variety of issues perceived of as being “newsworthy” enough to gain coverage, including issues of local importance to states and communities such as SLT taxes and bans, as well as broader issues that have been at the forefront of discussion amongst tobacco control professionals such as concerns about new SLT products, product regulation issues, and health issues. Public health professionals can actively participate in news coverage of tobacco issues by sending press releases or informational pieces to news reporters about new study findings or about local events or resources, by acting as an information source for journalists, and/or by submitting opinion pieces such as op-ed articles and letters to the editor in order to voice their views about a particular tobacco topic or to respond to previous tobacco-related coverage.

This study also found that a considerable number of news articles made reference to health risks associated with SLT. The presence of regular SLT health information in the news media is significant in that it provides a free and ongoing means of reaching potentially broad audiences, while the implementation of specific public health education media campaigns can be expensive, short lived and more sporadic (44). However, this study also found that the public may be exposed to potentially confusing mixed messages

regarding SLT, particularly with respect to its risks compared to those of smoking. Public health professionals should be aware that, despite a lack of consensus in the tobacco control community about whether SLT should be promoted or advertised as less harmful than smoking, these harm reduction ideas are in fact being discussed in the news media and thus potentially reaching the public. Given this and the active promotion of a new generation of SLT products in the US, it is particularly timely and important for tobacco control professionals to move discussions regarding SLT's potential role in harm reduction beyond academic and philosophical debates and into more concrete public health recommendations and messages.

Furthermore, it is also important and timely for public health professionals and educators to have and begin making use of more consistent messages about the risks of SLT in general and in comparison to smoking. This study documented that a variety of different messages are used to warn the public about using SLT as an alternative to smoking. Although this study did not explore individuals' interpretations of different messages (and as such cannot be used to recommend which of these, if any, may be best), it seems reasonable to suggest based on what is currently known about SLT risks that messages which claim that SLT is *just as* risky or harmful as smoking are inaccurate and should be avoided to prevent misleading the public and potentially damaging professional credibility. It would also seem that those more "nuanced" types of risk comparison messages (i.e., which acknowledge that SLT may be safer than smoking overall but may still pose certain risks) would potentially provide the most balanced, ethical and accurate responses, although research is needed to explore how people might interpret these types of messages.

In the meantime, public health professionals should continue to communicate about other potential concerns and consequences of SLT promotion that are not specifically limited to health effects (e.g., dual use among smokers, delayed quitting, etc.). This study found researchers and other tobacco control professionals quoted in news articles making reference to these types of concerns, a finding which could be important for building support towards and understanding of policy initiatives intended to regulate SLT. Indeed, it has previously been indicated that an FDA procedure for granting “modified” or “reduced risk” status to tobacco products would consider not only reductions in risk to the individual but also the overall potential impact of such products on a population level (159)(e.g., increased use among young people). As such, it is important for the public to understand these types of potential population-level consequences in addition to potential health risks.

In addition, public health professionals should be aware that although news articles appear to frequently refer to SLT use as risky, addictive and unattractive, news articles also refer to potential benefits of SLT (such as the ability to use SLT indoors) and in some ways provide a means of free publicity or advertising for new SLT products such as Camel and Marlboro Snus. Furthermore, news articles are able to discuss issues and claims that SLT advertisements themselves currently cannot (namely that these products are/or may be less harmful than smoking), and unlike research studies, they are not subject to a peer-review process for quality. As such, it is important for public health professionals to remember that although the news media can be an important tool for disseminating new research findings or educating about tobacco-related issues, they may

also unintentionally promote new tobacco products or behaviors that are counter to public health initiatives.

Finally, as consumption of SLT continues to rise, new products continue to be introduced into the marketplace and SLT related policy issues continue to be debated, public health professionals should track and be aware of the type of information about SLT that is being disseminated to the public through popular and trusted news sources. Knowledge about the existing types of information and messages reaching the public is an important factor in understanding public perceptions about SLT issues and in being able to develop responsive or corrective public health messages.

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Table 1. Number of Articles in Sample by Article Type and News Source

	News/ Feature articles	Letters to the Editor	Editorial/ Opinion column	Op-ed opinion articles	Advice/ Q&A articles	Health Column articles	Total (all articles)
<i>National Papers</i>							80 (9.1%)
Wall St. Journal	36	7	5	0	1	0	49 (5.6%)
NY Times	20	1	1	0	1	0	23 (2.6%)
USA Today	5	1	1	1	0	0	8 (0.9%)
<i>State Papers</i>							512 (58.4%)
State Q1	50	12	10	4	0	0	76 (8.7%)
State Q2	114	18	31	1	4	1	169 (19.3%)
State Q3	84	32	11	5	1	1	134 (15.3%)
State Q4	89	18	11	5	1	9	133 (15.2%)
<i>Tobacco Hometowns</i>							153 (17.4%)
Richmond Times	75	0	0	1	0	0	76 (8.7%)
Winston Salem J.	77	0	0	0	0	0	77 (8.8%)
<i>Wires/Other</i>							132 (15.0%)
Associated Press	94	0	0	0	0	0	94 (10.7%)
UPI Health	13	0	0	0	0	0	13 (1.5%)
Reuters Health	20	0	0	0	0	0	20 (2.3%)
Syndicated Advice	0	0	0	0	5	0	5 (0.6%)
TOTAL	677 (77.2%)	89 (10.1%)	70 (8.0%)	17 (1.9%)	13 (1.5%)	11 (1.3%)	877 (100%)

Table 2. Number and Percentage of News/Feature Articles Referring to Various Smokeless Tobacco Terms and Types, by News Source

	Smokeless Tobacco	Chew, Chaw, Chewing Tob.	Snuff	Dip, Dipping	Spit Tobacco	Snus	Dissolvable Tobacco
<i>National Papers (n=61)</i>	61 (100%)	19 (31.1%)	23 (37.7%)	8 (13.1%)	2 (3.3%)	28 (45.9%)	13 (21.3%)
Wall St. Journal (n=36)	36 (100%)	10 (27.8%)	15 (41.7%)	1 (2.8%)	1 (2.8%)	17 (47.2%)	7 (19.4%)
NY Times (n=20)	20 (100%)	8 (40.0%)	7 (35.0%)	6 (30.0%)	1 (5.0%)	8 (40.0%)	5 (25.0%)
USA Today (n=5)	5 (100%)	1 (20.0%)	1 (20.0%)	1 (20.0%)	0	3 (60.0%)	1 (20.0%)
<i>State Papers (n=337)</i>	217 (64.4%)	204 (60.5%)	101 (30.0%)	59 (17.5%)	50 (14.8%)	37 (11.0%)	35 (10.4%)
State Q1 (n=50)	27 (54.0%)	32 (64.0%)	8 (16.0%)	12 (24.0%)	3 (6.0%)	4 (8.0%)	5 (10.0%)
State Q2 (n=114)	76 (66.7%)	65 (57.0%)	38 (33.3%)	19 (16.7%)	13 (11.4%)	14 (12.3%)	18 (15.8%)
State Q3 (n=84)	58 (69.0%)	55 (65.5%)	34 (40.5%)	14 (16.7%)	9 (10.7%)	10 (11.9%)	8 (9.5%)
State Q4 (n=89)	56 (62.9%)	52 (58.4%)	21 (23.6%)	14 (15.7%)	25 (28.1%)	9 (10.1%)	4 (4.5%)
<i>Tob. Hometown (n=152)</i>	133 (87.5%)	21 (13.8%)	76 (50.5%)	9 (5.9%)	7 (4.6%)	60 (39.5%)	36 (23.7%)
Richmond Times (n=75)	67 (89.3%)	13 (17.3%)	42 (56.0%)	4 (5.3%)	2 (2.7%)	26 (34.7%)	16 (21.3%)
Winston Salem J (n=77)	66 (85.7%)	8 (10.4%)	34 (44.2%)	5 (6.5%)	5 (6.5%)	34 (44.2%)	20 (26.0%)
<i>Associated Press (n=94)</i>	81 (86.2%)	57 (60.6%)	52 (55.3%)	8 (8.5%)	3 (3.2%)	39 (41.5%)	12 (12.8%)
<i>Health Wires (n=33)</i>	28 (84.8%)	12 (36.4%)	16 (48.5%)	1 (3.0%)	0	8 (24.2%)	3 (9.1%)
UPI Health (n=13)	11 (84.6%)	4 (30.8%)	6 (46.2%)	1 (7.7%)	0	1 (7.7%)	1 (7.7%)
Reuters Health (n=20)	17 (85.0%)	8 (40.0%)	10 (50.0%)	0	0	7 (35.0%)	2 (10%)
TOTAL (n=677)	520 (76.8%)	313 (46.2%)	268 (39.6%)	85 (12.6%)	62 (9.2%)	174 (25.7%)	99 (14.6%)

* Articles were coded for all SLT terms used in article, thus row totals do not add up to 100%

Table 3. Focus of SLT Content within News/Feature Articles, by News Source

	Local	National/ General
<i>National Papers (n=61)</i>	4 (6.6%)	57 (93.4%)
Wall St. Journal (n=36)	0	36 (100%)
NY Times (n=20)	4 (20%)	16 (80%)
USA Today (n=5)	0	5 (100%)
<i>State Papers (n=337)</i>	237 (70.3%)	100 (29.7%)
State Q1 (n=50)	18 (36%)	32 (64%)
State Q2 (n=114)	75 (65.8%)	39 (34.2%)
State Q3 (n=84)	67 (79.8%)	17 (20.2%)
State Q4 (n=89)	77 (86.5%)	12 (13.5%)
<i>Tob. Hometown (n=152)</i>	13 (8.6%)	139 (91.4%)
Richmond Times (n=75)	7 (9.3%)	68 (90.7%)
Winston Salem J (n=77)	6 (7.8%)	71 (92.2%)
<i>Associated Press (n=94)</i>	18 (19.1%)	76 (80.9%)
<i>Health Wires (n=33)</i>	0	33 (100%)
UPI Health (n=13)	0	13 (100%)
Reuters Health (n=20)	0	20 (100%)
TOTAL (n=677)	272 (40.2%)	405 (59.8%)

Table 4. Percentage of News/Feature Articles Covering Various SLT-Related Main Topics, by News Source

	By all news source types						
	National Papers (%) (n=61)	Assoc. Press (%) (n=94)	Tobacco Hometown (%) (n=152)	State Papers (%) (n=337)	Health Wires (%) (n=33)	Total – all News/Feature articles (%) (n=677)	
Type of SLT Topics							
Business news	47.5%	59.6%	57.9%	5.3%	0	191 (28.2%)	
New products/product regulation/harm reduction	37.7%	9.6%	32.2%	13.4%	12.1%	130 (19.2%)	
Prevention and/or cessation	1.6%	5.3%	0.7%	19.9%	9.1%	77 (11.4%)	
SLT Taxes	0	2.1%	3.3%	18.4%	0	69 (10.2%)	
Profiles/Trends in SLT use	1.6%	5.3%	2.6%	12.8%	24.2%	61 (9.0%)	
SLT bans	0	11.7%	2.0%	12.2%	0	55 (8.1%)	
Tobacco industry promotional activities	4.9%	1.1%	0	8.3%	3.0%	33 (4.9%)	
Health risks	3.3%	1.1%	0.7%	3.9%	48.5%	33 (4.9%)	
Other topics	3.3%	4.3%	0.7%	5.9%	3.0%	28 (4.1%)	
By national and state paper categories							
	National Papers			State Papers			
	Wall St. Journal (%) (n=36)	NY Times (%) (n=20)	USA Today (%) (n=5)	Q1 States (%) (n=50)	Q2 States (%) (n=114)	Q3 States (%) (n=84)	Q4 States (%) (n=89)
Type of SLT Topics							
Business news	61.1%	35.0%	0	14%	3.5%	6.0%	2.2%
New products/product regulation/harm reduction	36.1%	30%	80%	12%	18.4%	13.1%	7.9%
Prevention and/or cessation	0	5%	0	18%	13.2%	15.5%	33.7%
SLT Taxes	0	0	0	10%	12.3%	31%	19.1%
Profiles/Trends in SLT use	0	5%	0	18%	11.4%	19%	5.6%
SLT bans	0	0	0	4%	15.8%	9.5%	14.6%
Tobacco industry promotional activities	0	10%	20%	2%	14.9%	0	11.2%
Health risks	0	10%	0	6%	5.3%	1.2%	3.4%
Other topics	2.8%	5%	0	16%	5.3%	4.8%	2.2%

Table 5. Percent of Articles Referring to SLT Producing Companies and Brands among All News/Feature Articles and among News Articles with Various SLT Main Topics

	Among SLT Business articles (n=191)	Among new products/ regulation/ harm reduction topic articles (n=130)	Among all news articles, all topics (n=677)
<i>SLT Companies Mentioned</i>	100%	85.4%	59.1%
RJ Reynolds/Reynolds American	52.9%	66.9%	31.3%
Altria or Philip Morris	60.2%	41.5%	30.0%
USSTC	40.8%	20.8%	25.6%
Conwood	37.7%	12.3%	13.9%
Swedish Match	14.7%	10.8%	7.5%
Star Scientific	8.4%	22.3%	6.8%
Other slt-related company	11.0%	6.9%	4.9%
<i>SLT Brands Mentioned</i>	78.5%	75.4%	50.1%
Skoal and/or Copenhagen	37.7%	16.9%	23.9%
Camel Snus	20.4%	40.0%	15.5%
Kodiak and/or Grizzly	28.8%	10.8%	11.4%
Marlboro Snus	21.5%	16.9%	10.0%
Camel Dissolvables	3.7%	28.5%	7.8%
Taboka	12.0%	14.6%	6.4%
Ariva and/or Stonewall	2.1%	18.5%	4.1%
Marlboro moist slt	12.6%	3.1%	4.1%
Other snus brands	6.8%	5.4%	3.2%
Camel Dip	3.1%	0	0.9%
Other brand	6.3%	9.2%	6.9%

Table 6. Frequency of References to Various SLT Topic Details
among News/Feature Articles, by SLT Main Topics

References within:

Business news articles (n=191)

Purchase of SLT companies by cigarette companies	54.5%
Market updates about SLT company or brand profits	50.3%
Development, testing or launch of new SLT products	47.1%
SLT company name, location and staff changes	18.8%
Corporate legal issues	7.3%

Cigarette sales or smoking prevalence as declining	55.0%
SLT consumption or sales as <i>growing</i>	49.2%
SLT as a means for maintaining or increasing profits	42.9%
Rise in number of smoking bans	24.1%
SLT as a potential alternative product for smokers	15.2%

New products/ regulation/harm reduction articles (n=130)

FDA in context of SLT discussion	57.0%
FDA's role in SLT harm reduction regulation	29.2%
FDA's role in review dissolvable SLT	18.5%

SLT prevention and/or cessation articles (n=77)

Particular SLT-related events or programs	32.5%
Personal stories of SLT cessation or cessation attempts	26.0%
SLT cessation methods or resources	16.9%

SLT tax articles (n=69)

Changing SLT taxing method	52.2%
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Profiles/trends in SLT use articles (n=61)

Prevalence of SLT use among youth	31.1%
Prevalence of SLT use among adults or general pop.	13.1%
Prevalence of SLT use among youth <i>and</i> adults	3.3%
Prevalence as growing or above average	27.9%
Prevalence of SLT use among baseball players	16.4%

Tobacco industry promotional activities articles (n=33)

Opposition of tobacco promotional activities	66.7%
Rodeos	42.4%
Free samples or coupons	27.3%
FDA related changes to SLT advertising	15.2%

Table 7. Number of News/Feature Articles Referring to Various SLT-Related Topics, by Year

	By year and overall					
	2006 (n=125)	2007 (n=127)	2008 (n=112)	2009 (n=165)	2010 (n=148)	Total (n=677)
<i><u>By Main SLT Topics of Articles</u></i>						
Business news	34	27	39	52	39	191(28.2%)
New products/prod. regulation/harm reduction	18	21	23	33	35	130 (19.2%)
Prevention and/or cessation	24	21	9	14	9	77 (11.4%)
SLT Taxes	7	10	4	36	12	69 (10.2%)
Profiles/Trends in SLT use	17	10	15	7	12	61 (9.0%)
SLT bans	8	9	9	8	21	55 (8.1%)
Tobacco industry promotional activities	11	10	7	3	2	33 (4.9%)
Health risks	3	11	3	5	11	33 (4.9%)
Other topics	3	8	3	7	7	28 (4.1%)
<i><u>By select SLT Sub-topics & references</u></i>						
Test marketing/launch of new products	36	38	34	44	36	188 (27.8%)
Purchase/acquisition of SLT company	30	22	27	45	17	141(20.8%)
Snus	25	36	41	42	30	174 (25.7%)
Dissolvable SLT	5	4	15	32	43	99 (14.6%)
FDA in context of SLT	8	10	9	31	41	99 (14.6%)
Banning SLT in baseball	4	4	3	3	15	29 (4.3%)

Table 8. Percentage of News/Feature Articles Referring to Various Types of SLT Health Risks, by Article Topic

	Reference to SLT health effects	Reference to SLT as addictive	Reference to SLT as carcinogenic	Reference to ANY SLT health risks
<u>By Type of SLT Topic</u>				
Health risks (n=33)	60.6%	45.5%	39.4%	100%
New products/regulation/harm reduct. (n=130)	42.3%	57.7%	26.2%	69.2%
Prevention and/or cessation (n=77)	50.6%	31.2%	2.6%	58.4%
Profiles/Trends in SLT use (n=61)	42.6%	36.1%	1.6%	50.8%
Tobacco industry promo. activities (n=33)	24.2%	27.3%	15.2%	30.3%
SLT bans (n=55)	16.4%	16.4%	0	29.1%
Other topics (n=28)	21.4%	17.9%	3.6%	28.6%
SLT Taxes (n=69)	4.3%	5.8%	0	8.7%
Business news (n=191)	2.6%	5.2%	2.1%	5.8%
Total (n=677)	25.4%	25.6%	8.9%	36.9%
	Reference to SLT health effects	Reference to SLT as addictive	Reference to SLT as carcinogenic	Reference to ANY SLT health risks
<u>By News Source</u>				
<i>National Papers (n=61)</i>	21.3%	42.6%	24.6%	45.9%
Wall St. Journal (n=36)	16.7%	36.1%	25.0%	41.7%
NY Times (n=20)	30.0%	55.0%	30.0%	55.0
USA Today (n=5)	20.0%	40.0%	0	40.0
<i>State Papers (n=337)</i>	32.3%	27.6%	8.0%	41.2%
Q1 States (n=50)	34.0%	24.0%	2.0%	42.0
Q2 States (n=114)	31.6%	31.6%	11.4%	43.0
Q3 States (n=84)	22.6%	20.2%	7.1%	29.8%
Q4 States (n=89)	41.6%	31.5%	7.9%	49.4%
<i>Tob. Hometown Papers (n=152)</i>	11.8%	17.1%	5.9%	24.3%
Richmond Times (n=75)	9.3%	18.7%	8.0%	24.0
Winston Salem J (n=77)	14.3%	15.6%	3.9%	24.7%
<i>Associated Press (n=94)</i>	13.8%	14.9%	4.3%	22.3%
<i>Health Wires (n=33)</i>	57.6%	42.4%	18.2%	75.8%
UPI Health (n=13)	46.2%	38.5%	30.8%	69.2%
Reuters Health (n=20)	65.0%	45.0%	10.0%	80.0%
TOTAL (n=677)	25.4%	25.6%	9.0%	36.9%

Table 9. Frequency of References to Various SLT Health Effects

Among all news articles with references to any SLT health effects (n=172)	
<i>Cancer Related</i>	
Oral cancer	59.9%
Cancer – general	22.1%
Pancreatic cancer	15.7%
Throat or neck cancer	10.4%
Esophageal cancer	5.8%
Other cancer type	9.3%
Facial disfigurement	16.8%
Leukoplakia (oral lesions)	15.1%
<i>Other Health Effects</i>	
Cardiovascular or stroke related	17.4%
Gum-related	14.0%
Teeth-related	7.6%
Other health effects	15.7%
<i>Personal story of health effects</i>	24.4%
Among news articles with reference to snus specific health effects (n=24)	
Pancreatic cancer	41.7%
Oral cancer	25.0%
Cancer – general	33.3%
Cardiovascular effects	29.2%
Among news articles with reference to dissolvable specific health effects (n=17)	
Accidental poisoning of children	76.5%
Form of cancer or cancer-general	23.5%
Other effect (e.g., gum disease)	17.6%

Table 10. Frequency of References to Health Effects among Non-Business News Articles Referring to Snus or Dissolvable SLT

	<u>Among Non-Business Articles Referring to</u>		
	Snus (n=95)	Dissolvable tob (n=83)	Snus or Dissolvable tobacco (n=137)
Reference to SLT health effects	46.3%	44.6%	45.3%
Reference to snus specific health effects	25.3%	--	17.5%
Reference to dissolvable health effects	--	20.5%	12.4%
Reference to point that different SLT types may vary in toxicity or risks	20.0%	20.5%	18.2%

Table 11. Percentage of News/Feature Articles Referring to Various SLT and Cigarette Risk Comparison Messages, Concerns about Potential Effects of SLT Promotion, and Harm Reduction Debate Arguments, by SLT Topic of Articles

	% among articles with the following main SLT topics							
	New product/ harm reduction (n=130)	SLT health risks (n=33)	profiles/ trends in SLT use (n=61)	tob. promo activities (n=33)	prevention/ cessation (n=77)	SLT business (n=191)	SLT tax, ban & other topics (n=152)	All news topics (n=677)
<i>“Pro” SLT messages/arguments</i>								
1. SLT is/may be less risky/harmful than smoking	57.7%	33.3%	6.6%	12.1%	2.6%	5.2%	3.9%	16.5%
2. SLT can be used to help smokers quit/switch	23.1%	9.1%	3.3%	0	0	0.5%	0.6%	5.5%
3. Should be able to provide comparative risk info	30.0%	3.0%	1.6%	6.1%	0	1.0%	0	6.6%
<i>“Anti” SLT– risk related messages</i>								
4. SLT is as/or more addictive than cigarettes	13.8%	12.1%	8.2%	3.0%	6.5%	0.5%	1.3%	5.3%
5. Like cigarettes, SLT is also risky/harmful	16.2%	9.1%	3.3%	12.1%	5.2%	0	2.6%	5.6%
6. SLT is <i>just as</i> harmful/carcinogenic as cigarettes	1.5%	24.2%	1.6%	3.0%	2.6%	0	0.6%	2.2%
7. Though some think SLT is safer than smoking, it isn’t	2.3%	18.2%	4.9%	0	15.6%	0	0.6%	3.7%
8. SLT may be safer than smoking in some ways but is not without its risks	6.2%	15.2%	1.6%	3.0%	0	0	0	2.2%
9. There is no safe tobacco/quitting all tobacco is best	19.2%	3.0%	8.2%	3.0%	0	0	1.3%	5.0%
<i>“Anti” SLT– other concerns/messages</i>								
10. SLT products aimed at/may appeal to young people	40.8%	12.1%	13.1%	12.1%	5.2%	0.5%	7.2%	12.6%
11. SLT can facilitate new users/act as smoking gateway	32.3%	6.1%	6.6%	6.1%	0	0.5%	2.0	8.0%
12. SLT can facilitate dual use, delay smoking cessation	30.8%	6.1%	9.8%	12.1%	0	0	0	7.7%
13. SLT use can circumvent smoking bans	26.2%	0	4.9%	6.1%	2.6%	0	0	6.1%
14. SLT may not help smokers quit/ much unknown	17.7%	3.0%	1.6%	0	0	0	0	3.7%

Table 12. Frequency with which Various SLT Messages were Attributed to Different Spokespeople, among (n) News/Feature Articles in which Those Messages Appeared

	Academic/ Researcher	Public Health/ Anti Tobacco Professional	Government/ FDA Rep or Legislator	Tobacco Company Representative	Citizens	“Others”	Article Writer
“Pro” SLT messages/arguments							
1. SLT is/may be less risky/harmful than smoking (n=112)	32.1%	43.8%	5.4%	33.9%	1.8%	13.4%	19.6%
2. SLT can be used to help smokers quit/switch (n=37)	35.1%	16.2%	0	16.2%	8.1%	18.9%	18.9%
3. Should be able to provide comparative risk info (n=45)	13.3%	28.9%	4.4%	68.9%	0	8.9%	4.4%
“Anti” SLT– risk related messages							
4. SLT is as/or more addictive than cigarettes (n=36)	16.7%	41.7%	5.6%	2.8%	2.8%	0	38.9%
5. Like cigarettes, SLT is also risky/harmful (n=38)	18.4%	63.2%	7.9%	2.6%	0	10.5%	2.6%
6. SLT is <i>just as</i> harmful/carcinogenic as cigarettes (n=15)	60.0%	33.3%	6.7%	0	0	0	6.7%
7. Though some think SLT is safer than smoking, it isn’t (n=25)	20.0%	48.0%	4.0%	0	4.0%	16.0%	16.0%
8. SLT may be safer than smoking in some ways but is not without its risks (n=15)	60.0%	40.0%	0	0	0	0	6.7%
9. There is no safe tobacco/quitting all tobacco is best (n=34)	26.5%	58.8%	0	14.7%	0	5.9%	0
“Anti” SLT– other concerns/messages							
10. SLT products aimed at/may appeal to young people (n=85)	12.9%	62.4%	36.5%	2.4%	4.7%	5.9%	2.4%
11. SLT can facilitate new users/act as smoking gateway (n=54)	29.6%	68.5%	9.3%	0	0	5.6%	1.9%
12. SLT can facilitate dual use, delay smoking cessation (n=52)	40.4%	65.4%	0	0	0	11.5%	0
13. SLT use can circumvent smoking bans (n=41)	29.3%	58.5%	2.4%	0	2.4%	7.3%	2.4%
14. SLT may not help smokers quit/ much unknown (n=25)	52.0%	60.0%	4.0%	0	4.0%	8.0%	8.0%

Table 13. Frequency of References to Various Details among News/Feature Articles with Certain Pro or Anti SLT messages

Among articles with a “less risky/harmful than smoking” message” (n=112)	
Snus as being less risky/harmful than smoking	33.0%
Dissolvable tobacco as being less risky/harmful than smoking	11.6%
Quantitative risk comparisons between SLT use and smoking	17.0%
SLT as being addictive	58.9%
SLT as being carcinogenic	33.9%
Health effects associated with SLT	44.6%
Among articles with a “SLT may appeal to young people” message” (n=85)	
SLT as “candy” or “candy-like”	50.6%
Tobacco company message that SLT is not candy	36.5%

Table 14. Communication of Multiple Perspectives, Debate and Controversy in News/Feature Articles

Among all news/feature articles (n=677)	
Inclusion of at least one “Pro-SLT” message	17.3%
Inclusion of at least one “Anti-SLT” message	28.7%
Inclusion of at least one “Pro” <i>and</i> one “Anti” SLT message	12.2%
Among articles that included at least one Pro <i>and</i> Anti message (n=83)	
Reference to “debate” or “difference in views” regarding SLT	35.0%
Among articles referring to debate or “difference” in SLT views (n=29)	
Reference to differences as between health professionals	79.0%
Reference to differences as between health professionals & tobacco companies	24.1%
Reference to debate as being controversial or “moralistic”.	17.0%

Table 15. Frequency of Credibility Related References in News/Feature and Opinion Articles Containing at Least One “Pro-SLT” Message

	Among news articles (n=117)	Among opinion articles (n=41)
Claims that the public is misled about SLT risks	8.5%	36.6%
Reference to research/researcher funded by SLT industry	7.7%	19.5%

Table 16. Percent of News/Feature Articles (n=677) with Various SLT Related Associations

Articles including association between SLT and:

Baseball	69 (10.2%)
<i>Specific references within slt/baseball articles (n=69):</i>	
prevalence of SLT use among baseball players	17 (24.6%)
use as providing negative example for young people	21 (30.4%)
banning SLT use in baseball	29 (42.0%)
Being “rural” or “country”	26 (3.8%)
Rodeos or cowboys	26 (3.8%)
White collar work	15 (2.2%)
Non-health related negative perception of SLT use	58 (8.6%)
<i>Among these (n=58):</i>	
Articles with reference to spitting as unattractive	26 (44.8%)

Table 17. Percentage of Op-Ed Articles and Letters to the Editor Written by Different Types of Authors

	Op-ed articles (n=17)	Letters to the editor (n=89)	Total: All Op-ed and Letters to the editor (n=106)
Private citizens	0	53.9%	45.3%
Health professionals	17.6%	22.5%	21.7%
Researchers/academics	47.1%	9.0%	12.3%
Tobacco company representatives	11.8%	4.5%	5.7%
Legislators	23.5%	1.1%	4.7%
Students	5.9%	3.4%	3.8%
Other	11.8%	5.6%	6.6%

Table 18. Percentage of Opinion and Other Non-News Article Types Covering Various SLT-Related Main Topics and Making References to SLT Health Risks

Topics and Making References to SLT Health Risks	Editorials /Opinion Columns (n=70)	Opinion Articles		All Opinion articles (n=176)	Other Non-News Articles	
		Letters to the Editor (n=89)	Op-Ed articles (n=17)		Health Column articles (n=11)	Advice/ Q&A articles (n=13)
<i>Type of SLT Topics</i>						
New products/regulation/harm reduction	34.3%	32.6%	47.1%	34.7%	0	0
SLT Taxes	20.0%	11.2%	29.4%	16.5%	0	0
Profiles/Trends in SLT use	12.9%	15.7%	5.9%	13.6%	0	30.8%
SLT bans	12.9%	20.2%	11.8%	16.5%	0	0
Prevention and/or cessation	10.0%	6.7%	5.9%	8.0%	63.6%	7.7%
Tobacco industry promotional activities	4.3%	9.0%	0	6.3%	0	0
Other topics	2.9%	1.1%	0	1.7%	0	7.7%
Health risks	1.4%	3.4%	0	2.3%	36.4%	46.2%
Business news	1.4%	0	0	0.6%	0	7.7%
<i>SLT health risk references</i>						
Reference to SLT health effects	45.7%	21.3%	47.1%	33.5%	100%	61.5%
Reference to SLT as addictive	47.1%	24.7%	58.8%	36.9%	63.6%	7.7%
Reference to SLT as carcinogenic	18.6%	58.8%	23.5%	12.5%	53.8%	46.2%
Reference to ANY SLT risks	64.3%	36.9%	70.6%	50.0%	100%	69.2%

Table 19. Percentage of Opinion and Other Non-News Articles Referring to Various SLT and Cigarette Risk Comparison Messages, Concerns about Potential Effects of SLT Promotion, and Harm Reduction Debate Arguments

	Opinion Articles				Other Non-News Articles	
	% among editorials/ opinion columns (n=70)	% among op-ed articles (n=17)	% among letters to the editor (n=89)	% among all opinion articles (n=176)	% among advice/Q&A articles (n=13)	% among health column articles (n=11)
<i>“Pro” SLT messages/arguments</i>						
1. SLT is/may be less risky/harmful than smoking	14.3%	29.4%	15.7%	16.5%	7.7%	0
2. SLT can be used to help smokers quit/switch	14.3%	17.6%	2.2%	5.7%	0	0
3. Should be able to provide comparative risk info	7.1%	23.5%	7.9%	9.1%	.0	0
ANY “Pro” SLT message	14.3%	29.4%	15.7%	16.5%	7.7%	0
<i>“Anti” SLT– risk related messages</i>						
4. SLT is as/or more addictive than cigarettes	17.1%	23.5%	5.6%	11.9%	7.7%	63.5%
5. Like cigarettes, SLT is also risky/harmful	7.1%	11.8%	1.1%	4.5%	15.4%	45.5%
6. SLT is <i>just as</i> harmful/carcinogenic as cigarettes	1.4%	5.9%	3.4%	2.8%	0	9.1%
7. Though some think SLT is safer than smoking, it isn’t	2.9%	11.8%	0	2.3%	0	54.5%
8. SLT may be safer than smoking in some ways but is not without its risks	2.9%	0	0	1.1%	7.7%	0
9. There is no safe tobacco/quitting all tobacco is best	2.9%	11.8%	2.2%	3.4%	0	9.1%
<i>“Anti” SLT– other concerns/messages</i>						
10. SLT products aimed at/may appeal to young people	22.9%	17.6%	10.1%	15.9%	7.7%	18.2%
11. SLT can facilitate new users/act as smoking gateway	8.6%	11.8%	3.4%	5.1%	7.7%	0
12. SLT can facilitate dual use, delay smoking cessation	1.4%	17.6%	3.4%	4.0%	7.7%	0
13. SLT use can circumvent smoking bans	4.3%	5.9%	2.2%	3.4%	0	0
14. SLT may not help smokers quit/ much unknown	0	0	2.2%	1.1%	0	0
ANY “Anti” SLT message	42.9%	41.2%	24.7%	33.5%	30.8%	81.8%

Table 20. Slant of Opinion and Other Non-News Articles, by Article Type and Source

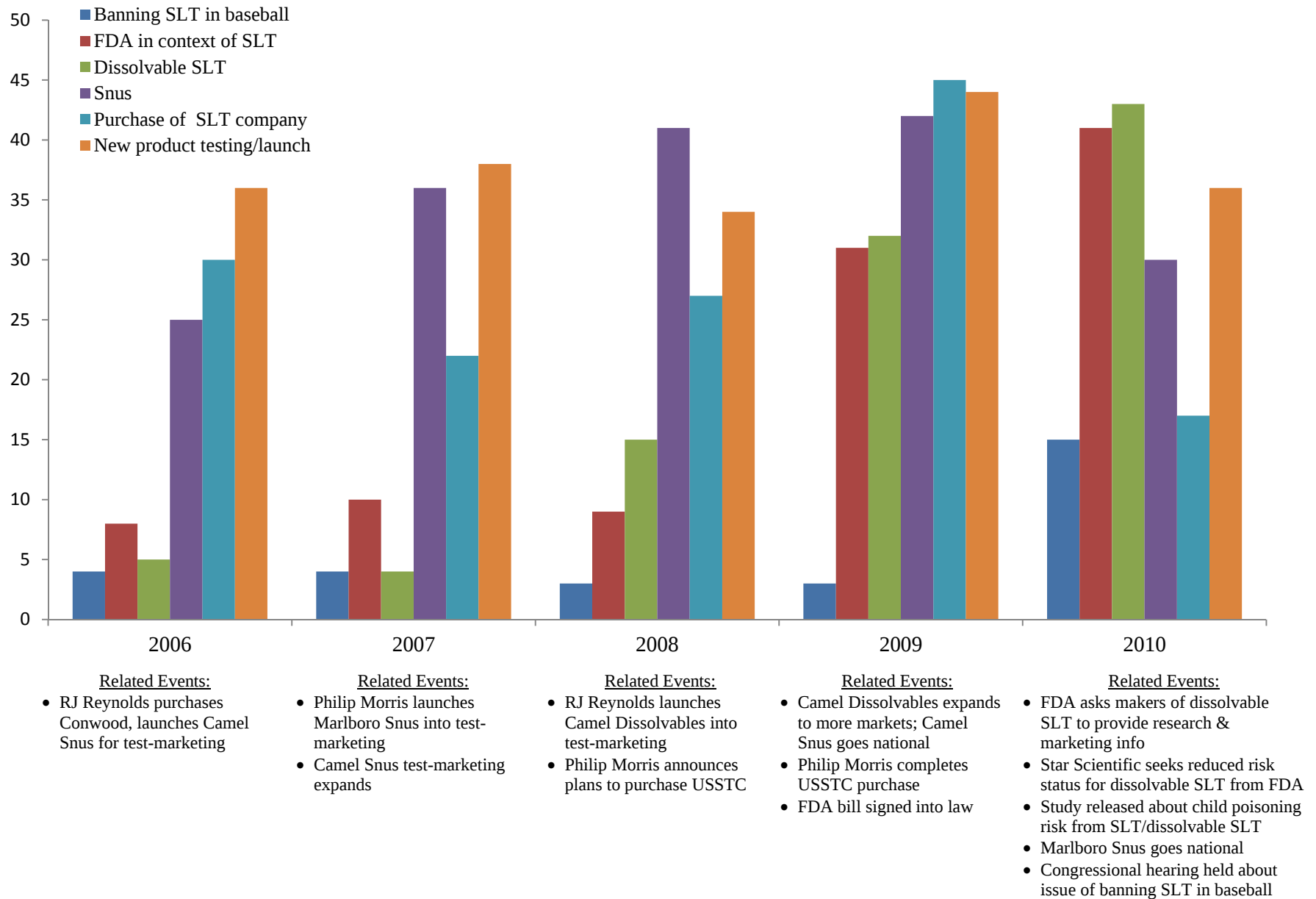
	Anti-SLT/ pro tobacco- control	Pro-SLT/ anti tobacco- control	Neutral/ Mixed Slant
<i>Type of Opinion Article</i>			
Editorial/Opinion Column (n=70)	70.0%	12.9%	17.1%
Letters to the Editor (n=89)	59.6%	33.7%	6.7%
Op-ed article (n=17)	58.8%	35.3%	5.9%
Any opinion article (n=176)	63.6%	25.6%	10.8%
<i>SLT Topic of Opinion Articles (n=176)</i>			
Health risks (n=4)	100%	0	0
Prevention and/or cessation (n=14)	92.9%	0	7.1%
Tobacco promotional activities (n=11)	90.9%	9.1%	0
Profiles/trends in SLT use (n=24)	75.0%	12.5%	12.5%
SLT taxes (n=29)	69.0%	13.8%	17.2%
SLT bans (n=29)	48.3%	37.9%	13.8%
New products/regulation/harm red. (n=61)	50.8%	42.6%	6.6%
Other topics (n=4)	50.0%	0	50.0%
Association with baseball (n=30)	73.3%	16.7%	10.0%
<i>News Source of Opinion Articles (n=176)</i>			
State Papers (n=158)	67.7%	22.8%	10.1%
National Papers (n=17)	35.3%	52.9%	11.8%
Tobacco Hometown Papers (n=1)	0	0	100%
<i>Other Non-News Articles</i>			
Health Column (n=11)	100%	0	0
Advice/Q&A Column (n=13)	76.9%	0	23.1%

Table 21. Percentage of News/Feature Articles Mentioning Camel or Marlboro Snus which Referred to Various SLT Related Messages or Product Features, Categorized by Innovation Attributes Described in Diffusion of Innovation Theory

		Among all news/feature articles mentioning Camel Snus (n= 105)	Among all news/feature articles mentioning Marlboro Snus (n=68)	Among all news/feature articles mentioning Camel or Marlboro Snus (n= 142)	Among non-business focused news articles mentioning Camel or Marlboro Snus (n= 73)
Innovation Theory Attribute & Key Question	% of articles with any reference to following SLT descriptors, issues or product features:				
<i>Relative Advantage</i>					
Is the innovation better than what it will replace?	• “Smokeless” tobacco or smoke-free	92.4%	91.2%	92.3%	97.3%
	• SLT is/may be less risky/harmful than smoking	44.8%	38.2%	37.3%	61.1%
	• Growing number of smoking bans	49.5%	51.5%	47.2%	58.9%
	• Can use SLT where/when cant smoke/anytime	40.9%	36.8%	35.9%	58.9%
	• SLT product as discreet	16.2%	14.7%	12.7%	23.3%
	• SLT product as cheaper than cigarettes	5.7%	4.4%	4.9%	4.1%
	• Other Benefits (longer lasting than cigs, taste)	10.5%	4.4%	7.7%	11.0%
<i>Compatibility</i>					
Does the innovation fit with the intended audience?	• Growing number of smoking bans	49.5%	51.5%	47.2%	58.9%
	• Can use SLT where/when cant smoke/anytime	40.9%	36.8%	35.9%	58.9%
	• SLT product as spit-free	71.4%	60.3%	64.1%	80.8%
	• SLT product as modern, more acceptable, not just for rural users	21.9%	16.2%	16.9%	28.8%
<i>Impact on Social Relations</i>					
Does the innovation have a disruptive effect on the social environment?	• Smoking as declining: Decreasing smoking prevalence or sales	56.2%	64.7%	60.6%	53.4%
	• SLT as growing: Increasing SLT prevalence or sales	50.5%	58.8%	52.1%	41.1%
	• SLT product as spit-free	71.4%	60.3%	64.1%	80.8%
	• SLT product as modern, more acceptable, not just for rural users	21.9%	16.2%	16.9%	28.8%
	• SLT product as discreet	16.2%	14.7%	12.7%	23.3%
	• SLT doesn’t harm others/no ETS	8.6%	5.9%	6.3%	11.0%
<i>Complexity</i>					
Is the innovation easy to use?	• Where to put SLT/how to use	52.4%	44.1%	46.5%	54.8%
	• SLT product as being sold in pouches	69.6%	64.7%	65.5%	72.6%

		Among all news/feature articles mentioning Camel Snus (n= 105)	Among all news/feature articles mentioning Marlboro Snus (n=68)	Among all news/ feature articles mentioning Camel or Marlboro Snus (n= 142)	Among non- business focused news articles mentioning Camel or Marlboro Snus (n= 73)
<i>Trialability</i>					
Can the innovation be tried before making a decision to adopt?	• Price of SLT product • SLT coupons or samples	20.0%	14.7%	16.9%	24.7%
		4.8%	5.9%	4.2%	5.5%
<i>Commitment</i>					
Can innovation be used effectively with only modest commitment?	• Can use SLT where/when cant smoke/anytime	40.9%	36.8%	35.9%	58.9%
<i>Reversibility</i>					
Can the innovation be reversed or easily discontinued?	• SLT as addictive	47.6%	33.8%	38.0%	65.8%
<i>Risk & Uncertainty Level</i>					
Can the innovation be adopted with minimal risk and uncertainty?	• Any health effects of SLT	34.3%	23.5%	26.8%	47.9%
	• Any message that SLT is not a safe/safer alternative to cigarettes	18.1%	5.9%	9.2%	17.8%
	• Reference to “difference in views” about SLT	11.4%	16.2%	14.8%	26.0%
	• Message SLT may not help smokers quit/ there’s much unknown	12.4%	5.9%	9.9%	19.2%
<i>Observability</i>					
Are the results of the innovation observable and easily measurable?	• Not Applicable				
<i>Communicability</i>					
Can the innovation be understood clearly and easily?	• Not Applicable				
<i>Modifiability</i>					
Can the innovation be updated and modified over time?	• Not Applicable				
<i>Time</i>					
Can the innovation be adopted with a minimal investment in time?	• Not Applicable				
Additional snus-related references:					
	• Swedish origin of snus	29.5%	41.2%	29.6%	39.7%
	• Pronunciation of snus	22.9%	26.5%	21.1%	31.5%

Figure 1. Number of news/feature articles referring to particular sub-topics or SLT product types by year, and corresponding SLT related events



Appendix A: List of Sampled News Sources

State Newspaper Publications

<i>State</i>	<i>Publication Name</i>
Alabama	Birmingham News Mobile Press-Register
Alaska	Anchorage Daily News Fairbanks Daily News-Miner
Arizona	Phoenix/ Arizona Republic Tucson Daily Star East Valley Tribune
Arkansas	Democrat Gazette Southwest Times Record
California	LA Times San Jose Mercury News San Diego Union Tribune San Francisco Chronicle
Colorado	Denver Post Colorado springs Gazette
Connecticut	Courant (Hartford) New Haven Register Connecticut Post
Delaware	News Journal (Wilmington) Delaware State News
Florida	St Petersburg Times Miami Herald Orlando Sentinel
Georgia	Atlanta Journal – Constitution Augusta Chronicle Gwinnett Daily Post
Hawaii	Honolulu Star-Advertiser Hawaii Tribune Herald
Idaho	Idaho Statesman (Boise) Lewiston Morning Tribune

Illinois	Chicago Tribune Chicago Sun Times Arlington Height Daily Herald
Indiana	Indianapolis Star Northwest Indiana Times Fort Wayne Journal Gazette
Iowa	Register (Des Moines) Gazette, Cedar Rapids Quad City Times
Kansas	Wichita Eagle Topeka Capital-Journal
Kentucky	Courier-Journal (Louisville) Lexington Herald Leader
Louisiana	Times-Picayune (New Orleans) Baton Rouge Advocate
Maine	Portland Press Herald/ Maine Sunday Telegram Bangor Daily News
Maryland	Baltimore Sun Anapolis Capital
Massachusetts	The Boston Globe Boston Herald Springfield Republican
Michigan	Detroit Free Press Detroit News Grand Rapids Press
Minnesota	Star Tribune (Minneapolis) St Paul Pioneer Press
Mississippi	Clarion-Ledger (Jackson) Sun Herald
Missouri	St. Louis Post-Dispatch Kansas City Star
Montana	Billings Gazette Great Falls Tribune
Nebraska	Omaha World-Herald Lincoln Journal Star

Nevada	Las Vegas Review-Journal Reno Gazette Journal
New Hampshire	New Hampshire Union Leader/Sunday News Nashua Telegraph
New Jersey	Star Ledger Bergen County Record Asbury Park Press
New York	Daily News NY Post Buffalo News Rochester Dem. & Chronicle
New Mexico	Albuquerque Journal Santa Fe New Mexican
North Carolina	Charlotte Observer Raleigh News and Observer
North Dakota	Fargo Forum The Bismark Tribune
Ohio	The Plain Dealer (Cleveland) Columbus Dispatch Cincinnati Enquirer
Oklahoma	Oklahoman (Oklahoma City) Tulsa World
Oregon	Portland Oregonian Eugene Register Guard Bend Bulletin
Pennsylvania	Philadelphia Inquirer Pittsburg Tribune Review Pittsburg Post Gazette
Rhode Island	Providence Journal Newport Daily News
South Carolina	The Charleston Post and Courier Columbia -The State Greenville News
South Dakota	Argus Leader Rapid City Journal

Tennessee	Tennessean (Nashville) Commercial Appeal (Memphis)
Texas	Houston Chronicle Dallas Morning News Fort Worth Star Telegram
Utah	Salt Lake City Tribune Deseret News Standard Examiner
Vermont	Burlington Free Press Rutland Herald
Virginia	The Virginian Pilot (Norfolk) Roanoke Times
Washington	Seattle Times Tacoma News Tribune Spokane Spokesman-Review
West Virginia	Charleston Gazette Huntington Herald-Dispatch
Wisconsin	Milwaukee Journal Sentinel Wisconsin State Journal
Wyoming	Casper Star Tribune Wyoming Tribune Eagle

National Newspaper Publications

NY Times
USA Today
Wall Street Journal

Tobacco Hometown Newspaper Publications

Richmond Times
Winston Salem Journal

Wire Sources

Associated Press
UPI Health
Reuters E-healthline

Appendix B. Timeline of SLT Relevant Events, 2006 – 20102006

(April) Reynolds American announces it will purchase Conwood

(May) Reynolds American purchases and acquires Conwood tobacco company

(May) Philip Morris introduces Taboka into test marketing in Indianapolis

(June) RJ Reynolds introduces Camel Snus into test marketing in Portland, OR and Austin, TX

(August) United States Smokeless Tobacco Company (USSTC) introduces Skoal Dry into test marketing in Austin TX and Louisville, KY

(October) Lorillard announces agreement to work with Swedish Match to develop a smokeless tobacco product for the US

2007

(August) Philip Morris introduces Marlboro Snus into test marketing in Dallas/Ft. Worth, TX area

(September) Red Man moist snuff is introduced into test marketing in 11 states

(October) Philip Morris introduces Marlboro Moist Snuff into test marketing in Atlanta, GA

(December 2007) Lorillard plans to launch Triumph Snus into test marketing;

Camel Snus test markets expand to additional cities: Raleigh NC, Indianapolis, Columbus Ohio, Kansas City, MO, and Orlando Florida

2008

(January) Philip Morris announces it will discontinue test marketing of Taboka

(March) Test marketing of Marlboro Snus expands to Indianapolis

(August) USSTC discontinues Skoal Dry

(September) Altria announces plans to purchase USSTC

(October) RJ Reynolds announces plans to introduce Camel Dissolvables into test marketing in 2009

(October) RJ Reynolds announces plans to launch Camel Snus nationally in early 2009

2009

(January) Altria completes acquisition of USSTC

(January) RJ Reynolds introduces Camel Dissolvables into test marketing in Indianapolis, IN, Columbus, OH, and Portland, OR

(January) Marlboro moist snuff is discontinued

(Jan-Feb) RJ Reynolds launches Camel Snus nationally

(June) Camel Dip is launched for test marketing in Florida and Colorado by Reynolds American under Conwood

(June) Family Smoking Prevention and Tobacco Control Act (FDA bill) is signed into law

(September) First lawsuits challenging FDA law are filed by tobacco companies on grounds of first amendment issues. Companies aim to challenge rule that restricts their ability to publicize the relative health risks of certain products such as smokeless tobacco

2010

(January) Altria files letters with the FDA regarding reduced risk marketing for SLT products

(February) FDA sends letters to RJ Reynolds and Star Scientific, makers of dissolvable SLT products, asking the companies to provide the FDA with their research and marketing information on how people under age 26 perceive and use the products

(February) Philip Morris announces that Marlboro Snus is to go national in March

(February) Lorillard announces plan to develop a new SLT product

(February) Star Scientific asks the FDA to approve its wintergreen flavored dissolvable products, Ariva-BDL, as a “modified risk” product

(March) Philip Morris launches Marlboro Snus nationally

(April) Baseball players and members of the Major League Baseball Players Association attend a congressional hearing regarding the issue of banning SLT use during games

(June) As a result of FDA regulation, SLT marketing materials and products are required to carry enlarged warning labels.

Appendix C – Coding Instrument: Coding Guide and Sheet

General descriptive information:

1. a. Article ID #

Every unique article should be labeled with a unique ID #. Record the ID number of the article.

1b. Publication Date: ____/____/____

Record the date of article. A date of May 5, 2008 should be recorded as: 05/05/2008.

1c. Publication name

Select the number representing the title of the publication/news source of the article. See the full numbered title list in the “at a glance” publication source guide.

1d. Publication state: _____

If the article is from one of the top circulating state papers in the sample or from one of the tobacco hometown newspapers, select the number representing the state the paper is from. If the article is a wire story, select the state indicated in the stories’ dateline, if provided. See the full numbered state list in the “at a glance” publication source guide.

1e. If state, which SLT quartile: _____

If the article is from one of the top circulating state papers in the sample, select the number representing the SLT prevalence quartile of the state that the state paper is from (i.e., 1, 2, 3 or 4). See the full state list by quartiles in the “at a glance” publication source guide.

1f. Local or general/national news

Select 1 if the content of the article relates to/is driven by news that has a local focus, i.e., news that is pertinent to the state/city the story is coming out of. This would include, for

example, stories about state taxes, local tobacco bans, prevention or cessation programs, state statistics, etc. Select 2 if the content of the article is not specifically a local issue, i.e., it refers to some national SLT issue or some general SLT/tobacco issue that isn't confined to any particular area. This would include business reports about new products or SLT company market updates, results of research studies about SLT health effects, articles about the issue of SLT use in the MLB in general/congressional efforts to ban it, etc.

1g. Type of article

Select the number for the type of news article the article best represents. Descriptions for each article type/category are described below.

- 1- news or feature article
- 2- advice/Q&A column
- 3- editorial or opinion column/commentary
- 4- letter to the editor
- 5- op-ed article
- 6- health column

News or feature article

Select 1 if the article represents a hard news or feature article. A news article focuses on reporting facts and typically does not present the author/writer's view. It may include perspectives/quotes from different sides of an issue. A feature article is an article that is typically about "softer" news. A feature may be a profile of a person who does a lot of volunteer work in the community or a movie preview.

Advice/Q&A Column

Select 2 if the article represents an advice or Q&A column. These include columns where someone writes in for advice or with questions (Dear Abby, Dr. Gott) and the columnist responds. This may be about personal/relationship issues or health issues. The authors of these articles are either staff writers, regular column contributors to the paper, or syndicated columnists (e.g., Dear Abby and Dr. Gott).

Editorial or opinion column/commentary

Select 3 if the article represents an editorial or some opinion column/commentary written by a staff member/reporter/regular writer or contributor. Editorials are opinion articles that are typically unsigned, and may represent the view of the paper/editor. Articles may be labeled as “editorial” or with the words “our view”. Columns or commentary articles are also articles in which the writer expresses his/her view, and are typically written by a staff member from the paper or some other corresponding journalist/reporter or writer that may regularly contribute to the paper.

Letter to the editor

Select 4 if the article represents a letter to the editor. Letters are short opinionated submissions (several sentences or short paragraphs, usually between 150-250 words) sent by people/citizens to a newspaper. They are typically signed with an individual’s name at the end. Often letters are submitted in response to an article or editorial printed in the paper, but can simply be related to some issue of interest to the person.

Op –ed article

Select 5 if the article represents an op-ed opinion article. These are opinion articles that are not written by paper staff members but rather sent to the paper by an outside person

(e.g., Thomas Briant, Director of the National Association of Tobacco Outlets). The authors name and affiliation is usually noted at the end. These pieces are longer (500-750 words) and more formal than letters to the editor, and are typically not written in response to a previous article but rather to express the writer's perspective about some issue. They may sometimes be referred to as "guest commentaries".

Health Column

These are health related articles that are not news articles and are typically not written by newspaper staff or regular columnists but rather submitted health professionals in the community. These may be used to educate about a health issue and promote local prevention or cessation programs or resources. These article may be found in sections titled "Health" or "Lifestyles" rather than in traditional "Opinion" sections.

Prominence related variables:

2. Is an SLT related term mentioned in headline? (yes/no)

Select yes if the headline of the article (not a subheading within the article) contains an SLT related term such as "smokeless", "snuff", "snus", "spit", "dip", "chew", "dissolvable tobacco" "lozenge tobacco" or "oral tobacco". This would also include articles that include the name of a company that exclusively/primarily makes SLT (ie, UST, Conwood or Star Scientific) in the headline.

- **2a. If yes, what is the headline:** _____

If yes, record the headline in the space.

3. Is SLT related issue the main issue/topic of the story? (yes/no)

Select yes if an SLT issue is the main issue or dominant topic of the story, e.g., if the majority of the story is about an SLT issue, if an SLT issue is discussed in the headline/leading paragraphs, etc. If the main topic of the article is related to SLT company business/news (e.g, about UST moving to a new location) this would also count as yes.

Main SLT related topics/themes of articles:

4. Indicate which of the following topics represents the main SLT topic represented in the article (i.e., choose only one): _____

Select the number for the topic which represents the main SLT topic represented in the article. An article may include or refer to more than one topic, but in answering this question, the coder should consider which topic/issue, with respect to SLT, is the one mainly driving the news coverage (or at least inclusion of the SLT related information in the article, if the article is not primarily about SLT). For articles in which SLT is not the main issue, note that you are coding for the main topic/theme of the SLT section/references within the article, not the main topic of the article overall.

1- SLT Prevention/Education or Cessation

Includes articles relating to efforts to prevent or stop SLT use, including local and national prevention or educational programs/campaigns, youth empowerment groups, and screening programs. This would include articles describing individuals who give talks/spread the message about the dangers of SLT. This also includes articles about

SLT cessation, articles that describe individuals' stories about cessation/cessation attempts, information about quitting resources or programs.

2- SLT use/prevalence/trends in SLT use

Includes articles providing updates/news/statistics about prevalence of SLT use (such as results of national or state surveys or other studies) or other articles about trends in SLT use, about the growth in use or popularity of SLT, and/or use among particular populations or cultures (e.g., articles about use of chew among Cambodian women, about the prevalence and trends of SLT use among baseball players). For opinion articles this might include articles that make general observations/comments about the use of SLT or about the type of people that use SLT.

3 - SLT and health effects/risks (including results of new research studies)

Includes articles reporting/referring to various health effects or risks of SLT, including those based on results of research studies. This would include articles reporting on the study about dissolvable tobacco which found it to be a risk for child poisoning, and on articles reporting on studies showing that SLT is as addictive/carcinogenic as cigarettes.

4 - SLT taxes

Includes articles related to proposed or passed tax increases (or other changes with respect to taxes) on SLT products, either on the state or federal level.

5 - Tobacco industry promotional activities/sponsorships/advertising

Select yes if the article reports on smokeless tobacco related industry promotional activities, sponsorships or advertising issues. This would include stories about SLT company sponsorship of events such as racing or rodeos, the granting of ATV/Polaris

Ranger vehicles from the United States Smokeless Tobacco Company to local police departments (Operation Ranger program), and articles related to efforts to ban, oppose or regulate such events/sponsorships/SLT advertising/promotional activity, including articles about efforts to ban free SLT sampling. This would also include the donation of gifts or sponsorship of travel for politicians. This would also include stories reporting on youth exposure to tobacco advertising (e.g., an article reporting on the volume of SLT advertising in youth magazines) and also articles focused on describing changes to SLT advertising resulting from FDA regulation (e.g., articles focused on describing the new warning labels on SLT advertising, or the end of SLT brand sponsorships).

6 - SLT bans & other policy issues

Select yes if the article reports on policy issues *other than* taxes, those related specifically to new products, or those related to tobacco advertising. This might include issues related to banning the use of SLT in public places such as parks, schools, legislative buildings; issues related to banning flavored SLT, regulations against sending SLT by mail and regulations against SLT use in baseball. This would include articles reporting on the Arkansas proposal to ban SLT use in the State House and on articles focused on the issue of snus/SLT being banned in the EU. This would also include articles about the reversing of bans related to SLT, such as the reversal of a ban on hard snuff/tobacco lozenges in Maine.

7 - New Products/Product Regulation/Harm Reduction

(including public health, policy/regulation perspectives)

Select yes if the article reports on new SLT products (e.g., Camel Snus, Camel Dissolvables, Marlboro Snus, Energy Dip) and/or related issues/perspectives about these new products (or SLT in general) such as concerns about their marketing, health effects, use for harm reduction, potential public health impact, and means for regulating them. This should not be an exclusively business focused article but more of a general news or feature article which may include quotes/perspectives from tobacco industry and health professionals, legislators and citizens. This category would also include articles discussing the issue of *regulating* new SLT products by the FDA or banning new products like dissolvable tobacco. This would also include articles which are focused on new SLT alternative products like Blue Whale – an herbal product marketed as an alternative to regular SLT. Finally, this would also include articles that are focused on discussing the issue of SLT in harm reduction, even if not in the context of new SLT products.

8 - New SLT products/Industry Expansion – business news/focused

Select yes if the article reports on tobacco industry plans or actions with respect to new products such as product announcement/development, new product test marketing or the launch of new products AND/OR the article reports on issues related to the SLT market expansion. This includes articles related to cigarette companies' acquisition of SLT companies, movement into the SLT market and development of new business deals/ventures to work on SLT products. This would include articles in which investors speculate about cigarette companies moving into SLT business. To count as yes, this should be a business focused article, not one that includes discussion/quotes from citizens, health professionals etc.

9- Other SLT business (e.g., market updates, company changes, corporate legal issues)

Select yes if the article reports/focuses on SLT business news *other than* that related to new SLT products or SLT market expansion, such as other SLT company changes/news (e.g., company name change, company location move, staff changes), market updates about SLT company or brand profits, articles related to changes in SLT product prices and articles related to SLT corporate legal issues (not including civil cases) such as Star Scientific's patent lawsuit against RJ Reynolds.

10 - Other

Select yes if the article reports on some other issue related to SLT that does not fit into one of the above categories. This would include NJ/NY stories related to the renovation of the old NY snuff mill, stories about tobacco leaf growing/farming issues, stories about Mike Veon becoming a lobbyist for UST, and stories related to civil lawsuits against the SLT industry (there should only be a few of these). If you select other, indicate briefly what the SLT issues is about.

The next sections assess additional details about various SLT topics/categories present in articles (these may or may not have been the main focus of the overall article):

Prevalence related

Does article refer to:

5. Prevalence of SLT use

1-yes, youth prevalence

2-yes, adult/general prevalence

3-yes, youth & adults

4 -no

SLT prevalence refers to an estimate of the number of people who use SLT (e.g., 6%), SLT use statistics. Select 1 if the article refers to the prevalence of smokeless tobacco use among youth/young people specifically. Select 2 if the article refers to adult prevalence or the prevalence of SLT in general (i.e., does not specifically refer to youth prevalence). Select 3 if the article refers to both youth and adult prevalence. Select 4 if the article does not refer to prevalence. This code does not include references to the sales of SLT or the SLT category in general as growing (these references are to be captured by the code below). This also does not include references to the prevalence of use among baseball players specifically.

○ **5b. If yes, is it described as growing in use or larger than average? (yes/no)**

If the article refers to the prevalence of SLT, select yes if it is referred to as growing or if the prevalence is described as being larger/greater than that of people in other places, larger than the average.

6. SLT consumption/sales/category described as growing/positive?

Select yes the article refers to the consumption or sales or category of SLT as growing. This includes references to the “expanding SLT market” or the SLT market as growing. This is distinct from references to the *prevalence* of SLT. This would also include positive predictions/outlooks about the growth of SLT/SLT market share and references to cigarette companies’ entry into the SLT market being a *good business move* (e.g., as stated by analysts). This also includes references to positive results/outcomes of SLT business/cigarette company movement into SLT, such as increase of SLT stocks/prices,

jobs, increases in overall company profits, etc. This may overlap with articles that provide market updates. It would also include statements like: “Buying UST gives Altria a leading position in the expanding SLT market”.

7. a. Prevalence of smoking or cigarette sales as decreasing/declining?

Select yes if the article refers to the prevalence of smoking or cigarette sales as decreasing/declining. This could include references to decreases in cigarette sales based on a market update of a particular company’s own cigarette sales.

7b. Smoking Bans/Ban Reaction

Select yes if the article refers to tobacco companies moving into the SLT business in the face of decreased cigarette sales from smoking bans, that smokers are smoking less because of smoking bans/growing number of smoking bans, or that slt products are intended for smokers who are facing/dealing with increased smoking bans.

This also refers to general statements about the growing number of smoking bans. This could also include articles that make references to states having passed a new statewide indoor smoking ban.

SLT Products and Attributes

8. Which words/terms used to refer to SLT?

Record which terms are used to refer to/discuss SLT (e.g., chew, chaw, spit, dip, snuff, moist snuff, snus, smokeless tobacco, chewing tobacco, dissolvable tobacco, tobacco lozenges, hard snuff). If the terms “chewing” or “dipping” are used as verbs, record this. Record all unique terms used in article. Include terms mentioned in the headline.

9. Any SLT producing companies mentioned? (yes/no) If so, which: _____

Select yes if any company that exclusively (or predominantly) makes SLT is referred to in the article – i.e., Conwood/American Snuff Company, The United States Smokeless Tobacco Company (which may be abbreviated as UST or USSTC) or Star Scientific.

Also select yes if any of other tobacco company is mentioned **and** is referred to in the article as producing/having SLT products (or hoping to get into the SLT business/develop SLT products). This may include: Swedish Match, Reynolds American/RJ Reynolds, Philip Morris/Altria, Lorillard, and BAT. Record the company names mentioned in the space provided.

10. Any SLT brands mentioned? (yes/no) If so, which: _____

Select yes if the article makes reference to any particular SLT brands, and record all names of brands mentioned in the space provided. Brand names which may be seen in articles include:

- USSTC Brands: Skoal, Skoal Snus, Skoal Dry, Copenhagen
- Conwood brands: Grizzly, Kodiak
- Swedish Match/Pinkerton brands: Red Man, Red Seal, Timber Wolf, Longhorn
- Reynolds American brands: Camel Snus, Camel Dissolvables, Camel Dip
- Altria/Philip Morris brands: Taboka, Marlboro Snus, Marlboro Moist Snuff)
- Star Scientific brands: Stonewall, Arriva (these are dissolvable tobacco products, may also be called lozenges or hard/pressed snuff)
- Note: This should also include references to Blue Whale – an herbal SLT, but not other fake or candy SLTs like Jacks Links Jerky Chew.

In some cases, an article may be describing a particular brand but not quite name it in full. For example, it may refer to a “snus product made by Camel” or a “moist snuff under the Marlboro brand name” (this is common in AP articles). In these cases, record the actual brand names of the products that are being referred to (e.g., Camel Snus, and Marlboro moist snuff).

Variables 11-26:

Does article refer to any of the following:

(1 -yes, SLT general 2=yes, new SLT product 3=no)

For the following variables, select 2 if the article (i.e., either the writer himself or someone quoted in the article) makes reference to the topic with respect to a new SLT product. New SLT products would include (but not necessarily limited to) reference to any of the following products (even if they are not specifically referred to in the articles as being “new” per se):

Camel Snus, Camel Dip, Camel Dissolvables (Orbs, Strips, Sticks),

Taboka, Marlboro Snus, Marlboro Moist/Snuff/Smokeless,

Skoal Dry, Skoal Snus (but not regular Skoal)

Other SLT products may also be considered “new” if they are identified as such in the article.

Select 1 if the article makes reference to the topic/point but not with respect to a new SLT product specifically (may be in reference to an existing brand/style or to SLT in general, or not a clear reference to a new SLT product). Select 3 if the article make no reference to the point at all.

For the variables below that relate to product attributes, you can select “yes” (ie, select 1 or 2) if the attribute is mentioned in a variety of contexts - for example if it is stated in the article as a fact, as a perceived benefit, as something that the tobacco industry *hopes* the product is perceived as (e.g., “tobacco companies hope smokers find these products to be a *less messy*, convenient form of tobacco”) or even in the context of a critique (e.g., “...because the products can be used *discreetly*, health professionals worry that youth may even use them in school”).

11. SLT products as spitless/spitfree

Select yes if the article includes some reference to SLT products as being spitfree or spitless.

12. SLT products as being sold in pouches/packets

Select yes if the article includes some reference to SLT products as being sold/available in pouches or packets (may refer to these as being like “teabags”). This may also refer to the pouches as being easy to use or convenient, easy to put in/remove.

13. Where to put SLT/how to use (between cheek & gum; under upper lip)

Select yes if the article includes some reference to how to use SLT, including where it goes/where you put it in your mouth (e.g., between cheek and gum; or under upper lip).

14. SLT products as being discreet

Select yes if the article includes some reference to SLT products as being “discreet” or unnoticeable, that can be used without being detected, that they may be “undetectable to anyone”.

15. SLT products as being smoke-free

Select yes if the article includes some reference to SLT products as being smoke-free.

This code is intended for more explicit references than just calling it “smokeless tobacco”.

16. Can use SLT where/when you can’t smoke, indoors/special situations/anywhere

Select yes if the article makes reference to the point that one can use SLT products

where/when you cannot smoke, that it can be used indoors (including at work or in

classrooms), in *particular* situations in which you cannot smoke (such as hunting, mining,

or for work where you need free hands) or that it can be used anywhere. This would

include references to the point that you don’t have to go out in the cold to use SLT

products. This would also include references to tobacco companies marketing the

products as for use in places where you cannot smoke, and references indicating that SLT

can be used indoors which are stated as critiques/negatives (e.g., statements that SLT

products *circumvent* indoor smoking bans).

17. Price of SLT product

Select yes if the article refers to the price of some SLT product. This may include a dollar

amount or may include statements that indicate the price is about that of the cost of

cigarettes.

18. Marketing/advertising of SLT products

Select yes if the article refers to ways in which SLT is being (or has been)

marketed/advertised (*other than* by free samples or with coupons, as defined below). This

may include references to specific channels such as advertising in magazines, through

direct mail, bar parties, point of sale, or particular sponsorships, etc. Would also include

references to particular slogans used in advertising materials, like “Pleasure for

wherever”. Do not count general references to SLT being marketed as an alternative to smoking, or to “tobacco marketing” in general, etc. here. This variable is not intended to capture criticisms about marketing but rather descriptions of actual advertising methods/channels used.

19. Free samples of or coupons for SLT products

Select yes if the article refers to the distribution of free samples of SLT products (e.g., at bars, concerts, point of sale, sporting events, to baseball players) or the promotion of SLT products through coupons.

20. Cheaper than cigarettes

Select yes if the article refers to SLT products/particular SLT product as being cheaper than cigarettes. Would also include references to the fact that cigarettes are more expensive than SLT products.

21. Longer lasting than cigarettes

Select yes if the article refers to SLT products/particular SLT product as lasting longer than cigarettes.

22. SLT products as tasting good

Select yes if the article makes reference to the point that SLT products (or some particular SLT product) taste good, are satisfying, flavorful, aromatic, etc.

23. Product as being less messy (than other SLT)/no litter

Select yes if the article includes some reference to new SLT products as being less messy than other SLT products, being easy to dispose of, or having no litter associated with it (as in the case of dissolvable products).

24. Product as modern, more acceptable, not just for rural users

Select yes if the article includes some reference or message to SLT products as being modern, not just for rural users or cowboys. This would include statements like, “this is not your grandfather’s chew”. This would also references to tobacco companies hoping that smokers will find SLT /new SLT products to be acceptable alternatives to cigarettes (less smelly/no smoke, no spitting) OR more acceptable (less stigmatized) alternatives to traditional SLT types (including references to being more acceptable to women).

25. SLT does not harm others (no secondhand smoke)

Select yes if the article communicates a message that SLT does not harm other people around the user (ie, given that it does not give off any smoke unlike cigarettes).

26. Other benefit (1=yes 2- no)

Select yes if the article includes makes reference to any other attribute of an SLT product not referred to above that might be considered to be a benefit or positive in some way (e.g., can fight nausea for pregnant women, can be relaxing). This would included references to the point that SLT does not smell, e.g., statements such as: “tobacco companies are hoping that smokers find SLT products to be less smelly.” This code should not include references to use of SLT for harm reduction or cessation as benefits/positives (these are captured by other codes) or for business/financial purposes.

In addition, also indicate if the article refers to any of the following:

27. How snus is pronounced?

Select yes if the article refers to the pronunciation of snus, for example, by mentioning that it rhymes with the word “goose”.

28. Swedish origin/popularity in Sweden/Europe?

Select yes if the article refer to snus as being from Sweden or Scandinavia (including references to “snus” being a Swedish word) AND/OR if the article refers to the prevalence of snus or snuff use in Sweden or parts of Europe OR just generally refers to snus/snuff use as being popular/prevalent in Sweden or parts of Europe. This would also include messages that indicate the SLT/snus use has a long history in Sweden and that it is more common among men than smoking.

29. SLT product as candy/candy-like?

Select yes if the article makes any reference to SLT or some particular SLT product being candy-like, candy flavored, marketed as/like candy, etc. This would also include references to candy in statements made by tobacco companies in defense of their products (e.g., “our products are not candy flavored”).

Business Related:

Select yes if the article makes reference to any of the following business related topics:

30. SLT company purchase by cigarette company

Select yes if the article refers to the purchase/acquisition of SLT companies by cigarette companies (ie, Altria’s purchase of UST and Reynolds American’s purchase of Conwood). This would include articles in which investors speculate about such acquisitions/purchases.

31. Development/test marketing/launch of new SLT product

Select yes if the article refers to the plans for/development of/test marketing of/launch of/ or release of a new SLT product. This may would include reference to new products such

as Skoal Snus, Skoal Dry, Taboka, Marlboro Snus, Marlboro Moist Snuff, Camel Snus, Camel Dip, Camel Dissolvables and others characterized in the article as new, including new styles of existing brands (e.g., Copenhagen Wintergreen). This would also include statements about predicted new products, e.g., “RJR is expected to develop a SLT product under its brand name.”

32. SLT brand profits/market share

Select yes if the article describes/provides an update on or reference to the market share, profits or losses experienced by an SLT brand or company, usually for some given time period (e.g., most recent year quarter). These articles are common among the AP, WSJ, Winston Salem and Richmond Times sample of articles. Do not count as yes references to market updates for *cigarette brands* (e.g., Camel cigarettes) – only count for references related to **SLT brands** (e.g. Camel Snus) or SLT companies/SLT divisions of cigarette companies. This would also NOT include references to the amount of sales created by the SLT industry in general (e.g., “moist snuff accounts for about 3 billion dollars in sales annually”) – this code is looking for **brand** profits/market share in particular.

33. Other SLT company changes/news

Select yes if the article refers to company changes other than mergers/acquisitions or new products. These would include articles that refer to the Conwood’s company name change to American Snuff Company and UST’s move from Greenwich to Stamford, CT. Also select yes if the article refers to other news related to an SLT company not captured in the above categories, such as news about company staff members (e.g., retiring staff members, staff profiles, etc.).

34. SLT corporate legal issues

Select yes if the article refers to business/corporate related legal issues. This would include articles referring to Star Scientific's patent lawsuit against RJ Reynolds. This does not include articles related to policy issues such as FDA regulation, or company appeals to the FDA. This also does not include articles about *civil* lawsuits against a SLT producing company.

Industry intentions/business frames (select all that apply):

Indicate if the article makes reference to any of the following hopes/reasons/intentions/strategies as being behind tobacco companies' movement into and support/development of SLT business and SLT products. Select yes to all that apply, if any apply at all.

35. Maintain/increase profits

Select yes if SLT is framed as a way for companies to deal with decreased cigarette sales/to keep smokers as buyers/customers, to maintain or increase profits. This includes references to tobacco companies hoping/aiming to get smokers who want to quit to use snuff. This would include statements like: "tobacco companies have turned to SLT in the face of decreasing cigarette sales" or "cigarette companies are turning to Smokeless as a growth opportunity". . This code is meant for references that are more explicit than references which simply state that SLT is growing.

36. Smoking alternative (general)

Select yes if the article makes reference to tobacco companies targeting smokers with SLT products, trying to convert smokers to alternatives like SLT, marketing/positioning

SLT as an “alternative” to smoking, or that the products are intended for smokers looking for alternatives to cigarettes (for example, to replace cigarettes because of price, health concerns, because of smoking bans, or just in general/no specified reason).

Note: If you the article specifically refers to SLT as a an alternative to use in place where you can’s smoke, you should also select yes for #17 under SLT attributes – can be used where can’t smoke/anywhere/anytime).

Acceptability related & user associations

Does article refer to/include:

37. Negative perceptions of SLT (1-yes 2- no)

Select yes if the article includes any non-health or cessation related negative perceptions about SLT indicated by smokers or SLT users or other individual in the article (e.g., including legislators). These would include references to SLT as being “gross”, not cool, only for “hicks”, etc. This should not include people’s references to negative health effects or risks (eg, that it’s addictive) or about their struggles with quitting SLT, which are captured by other codes. This code is intended to capture perceptions that are more *image* related. Note: Do not include any negative references stated by the tobacco industry.

38. Issue of spitting as a negative of SLT

Select yes if the article includes some reference to the spitting aspect of SLT in particular as being negative (as stated by anyone in the article, smoker, slt user, writer, except for a tobacco company rep). This does not include simple references to new products as being spitfree. If you select yes, then you should also select yes for the variable above.

39. Any association made cowboys/rodeos

Select yes if the article makes any association with cowboys/rodeos, e.g., refers to the use of SLT at rodeos, sponsorships of rodeos/cowboy stars by SLT companies/brands.

40. Association with hunting, blue collar work

Select yes if the article makes any association between SLT and hunting or “blue collar”/physical work. This might include mentions that SLT use is more common among those in service/ physical labor work.

41. SLT as most commonly used in rural areas/southeast/as being “country”

Select yes if the article includes references to SLT being most commonly/traditionally used by those in rural areas or the southeast, or if it is associated with/perceived as being rural, “hick”, “redneck”, for “country bumpkins”, etc.

42. Association with “white collar work”/use in cities

Select yes if the article includes any references to the use of or ability to use SLT in offices. This would also include references to use of SLT by traditional white collar professionals (e.g., bankers, office workers in general, legislators, state house workers). Also select yes if the article includes any references to the use of SLT in cities/growing use in urban areas/new markets. This would include articles that refer to banning the use of SLT in legislative buildings.

43. Any association made with baseball?

Select yes if the article makes any association with baseball, e.g., refers to the use of SLT by players in baseball, baseball players’ quit attempts, health effects experience by baseball players, attempts to ban SLT use in baseball, and the prevalence of SLT use among baseball players.

43a- If yes, any references to prevalence of use in baseball?

Select yes if the article makes any association with baseball and also refers to the prevalence of use of SLT among baseball players as a particular group/population.

43b- If yes, any references to banning SLT/tobacco in baseball?

Select yes if the article makes any association with baseball and refers to the issue of potentially banning SLT/tobacco use in the MLB/in baseball/among baseball players.

This includes articles with individuals' opinions/position that tobacco/slt should be banned in baseball. This would also include articles which refer to slt use as having been banned in the minor leagues.

43c - Youth/role models – select yes if the article makes reference to the issue of slt use in baseball/by baseball players as being negative for youth, e.g., a bad example, a bad image for youth to be exposed to, bad role modeling. This would include references to baseball players as being role models for young people.

FDA related:**44. Does article refer to FDA in context of SLT? (yes/no)**

Select yes if the article refers to the FDA's regulation of tobacco in some context or way that is related to SLT. This would include references to what FDA regulation does/bans (or would do/ban) with respect to SLT in general and any of the following topics: FDA and dissolvable tobacco, changes to SLT marketing as a result of FDA regulation, FDA's role in harm reduction regulation with regards to SLT. This may also include reference to other topics, like whether the FDA should regulate Blue Whale, an herbal SLT alternative product.

Note that the formal name of the law granting FDA authority to regulate tobacco is the *Family Smoking Prevention and Tobacco Control Act*.

If 44 = yes, also indicated if the article refers to any of the following more specific topics:

45. Refer to FDA and dissolvable/lozenge tobacco (specific).

Select yes if the article specifically refers to the issue of dissolvable/lozenge SLT and the FDA. This would include articles referring to the FDA's charge to examine the risks and marketing of dissolvable tobacco, articles referring to the FDA's request to dissolvable/lozenge tobacco makers for product information and articles related to pharmaceutical companies upset about dissolvable SLT products/calling for FDA to remove them. This does not include articles related to dissolvable/lozenge tobacco makers requesting the FDA for modified risk approval (they should be coded as yes under #47 below).

46. Refer to changes in marketing as a result of FDA

Select yes if the article refers to changes to SLT marketing since the FDA (e.g., new warning labels, end of SLT sponsorships, etc.) or potential changes to marketing that would/could occur as a result of FDA regulation.

47. Refer to FDA's role in regulating SLT as a potential harm reduction product?

Select yes if the article refers to the FDA's role in regulating SLT as a potential harm reduction or reduced risk product. This may include statements explaining that the FDA could or should permit reduced harm claims for products that meet certain standards set by the agency.

SLT Health and Risk Related Information:

Does the article include:

48. Mention of health risks associated with SNUS (specifically)?

b. If yes, what/which: _____

Select yes if the article mentions any health risks associated specifically with snus (*other than* references to it containing carcinogens or being addictive). If yes, record what risks are mentioned (e.g., pancreatic cancer). Also record if the article makes mention that certain risks are not associated/found with snus. For example, you might write, “risk found for pancreatic cancer but not oral cancer”.

49. Mention of health risks associated with Dissolvable/Lozenge Tobacco (specifically)?

b. If yes, what/which: _____

Select yes if the article mentions any health risks associated specifically with dissolvable/lozenge SLT (*other than* references to it containing carcinogens or being addictive). If yes, record what risks are mentioned (e.g., pancreatic cancer). Articles that refer to the study finding that dissolvable tobacco products were found to cause poisoning about children should be coded as “yes” (write “child poisoning” as the risk, or however it is characterized in the article). Also record if the article makes mention that certain risks are not associated/found with dissolvable tobacco. For example, you might write, “risk found for pancreatic cancer but not oral cancer”.

50. Mention of health risks associated with SLT (general)?

(other than refs to containing carcinogens, being addictive or just saying SLT is unhealthy)

Select yes if the article mentions any health risks associated with any type of SLT *other than* snus or dissolvable SLT, or to SLT in general (i.e., any risks other than references to it containing carcinogens or being addictive). If yes, record what risks are mentioned (e.g., cancers of the lip, tongue, cheek, gum and mouth, pancreatic cancer, cancer in general, heart attack/cardiovascular health issues).

51. Reference to SLT as carcinogenic? (1=yes 2 - no)

Select yes if the article refers to SLT as being carcinogenic. This might include a statement that SLT is a known carcinogen, as well as mentions that different SLT products/brands have different levels of carcinogens, nitrosamines, toxins or other chemicals. Note: If an article indicates that some type of SLT (e.g., snus or dissolvable tobacco) has *lower levels* of carcinogens/nitrosamines than other SLT, you should still code this as yes, because it notes that it is carcinogenic, even if less so.

52. Reference to SLT as addictive? (1=yes 2 - no)

Select yes if the article refers to SLT as being addictive. This would include references to SLT as containing nicotine/high levels of nicotine and also references to people being/getting addicted to SLT. Note: if the article makes a specific reference to SLT as being just as addictive (or even more addictive) than cigarettes, you should also select yes for #66 in the coding grid.

53. Does article indicate that different SLT may vary in levels of toxins/safety?

Select yes if the article communicates a message/indicates that different styles or types of SLT may vary in levels of toxins or carcinogens and safety. For example, the article might refer to certain products as being low in “nitrosamines” (low nitrosamine SLT types), report study results finding that different SLT tobacco types or brands include

different levels of carcinogens, or e.g., suggest that particular forms of SLT (e.g., snus or dissolvable tobacco) may be safer than other forms of SLT.

54. Study/research results related to SLT health effects/risks/toxicity?

Select yes if the article refers to the findings of scientific studies/research results or “evidence” in discussing SLT health effects/risks and/or the levels of carcinogens/nitrosamines in SLT products or results/evidence regarding the addictiveness of SLT. This does not include references to the Surgeon General’s Report. This would also include articles with references to studies related to SLT and harm reduction/switching to SLT and SLT cessation. If the study is based on data from Sweden, select yes for the next code as well.

55. Any reference to evidence/studies from Sweden in context of SLT health info

OR risk comparison/harm reduction discussion?

Select yes if the article refers to evidence/studies from Sweden in the context of SLT health information OR cigarette risk comparison/harm reduction discussion. This would include article references to lower rates of cancer or tobacco related illnesses in Sweden, to studies in Sweden suggesting smokers switched to snus, studies about the health effects of snus which are stated as based on Sweden data, etc.

56. Any personal story/profile of person with SLT health effects?

Select yes if the article includes any personal story or profile/reference to a person with health effects that the person attributes to SLT. This might include, for example, reference to an SLT user who had oral cancer. This may include articles referring to former baseball players with health effects they attribute to SLT use.

57. Does article include any risk comparison of SLT to cigarettes?

(e.g., safer or not safer)

Select yes if the article makes any reference to a risk comparison between SLT and cigarettes. (e.g., “some studies suggest that smokeless tobacco is less harmful than smoking”). This would also include statements that indicate/suggest SLT is not safer than cigarettes (e.g., “SLT is not a safe alternative to cigarettes”; “SLT is as addictive as cigarettes”; “contrary to what some believe, SLT is not a safe alternative to smoking”). If you select yes, select yes to all risk related messages that apply in the coding grid.

58. If yes, any reference to SLT being/possibly being less risky/

harmful than cigarettes?

If the article makes any reference to a risk comparison between SLT and cigarettes, select yes if the article specifically makes a reference to SLT as being or as possibly/maybe being less risky/less harmful/safer than cigarettes. To count as yes, the reference should be explicit. If an article simply refers to SLT as a possible “harm reduction” product but does not explain what this means (e.g., does not indicate that this means SLT might be less risky than cigarettes) than code as “no”. If an article includes a reference to the fact that tobacco companies hope to market SLT products as less harmful alternative or hope that people perceive them as less harmful than smoking, than this should also count as yes.

Note, if you select yes to this question, than you should also automatically code as yes the first message in the coding grid.

59. If yes, also indicate for which type of SLT the reference is made about:

SLT in general, snus in particular, and/or dissolvable/lozenge SLT in particular. Select yes for all that apply.

60. If yes, is any quantitative comparison made? (yes/no) What? _____

If the article does make reference to SLT as being less risky/harmful/safer than cigarettes, select yes if it makes reference to a quantitative estimate of how much safer/less risky it is (e.g., 99 times less risky than cigarettes). Record the estimate referenced.

61-78. SLT Coding Grid

Review messages related to SLT in the coding grid and select yes for all those that are present in the article. These include messages/arguments/stated concerns related to/in context of:

- Risk comparison of SLT with cigarettes
- The promotion of SLT/new SLT products/product development/ business growth
- SLT product regulation
- The SLT harm reduction debate

If the message is present at all in the article, select yes in the first column of the grid.

Then, select yes under the appropriate source column to whom the message can be attributed to within the article. Messages may be expressed through direct and indirect quotes of individuals in the article, OR may be summarized/attributed to particular parties by the writer of the article (e.g., “on one hand, *tobacco company execs* believe X.... ; on the other hand, *health professionals* believe YZ ...”). A given article may include multiple messages, and a single message may be expressed/attributed to multiple sources

in a single article. Therefore, select all messages and sources that apply. The source should be selected according to how that individual is characterized in the article/how it would be perceived by a reader (i.e., not the coder's own personal knowledge of that individual). Source codes are defined as follows:

Academics/Researchers/Scientists/ "Experts"

Includes quotes from OR attributions made to particular research studies or individuals referred to as professors, academics or researchers/scientists from various universities/institutions. Would include references like:

“According to Person X, who is the Director of the Tobacco Use Research Center at the University of X, SLT is just as carcinogenic as cigarettes.”

Would also include references to “researchers”, “scientists” or “experts/medical experts” in general (ie, does not have to be a particular individual). For example: “Scientists agree that SLT is safer than cigarettes”.

Note: this does NOT include messages attributed to research /scientific evidence in general where no attribution to a person/type of person or particular study is made (e.g., “evidence has been mounting that SLT poses fewer risks than smoking”). In such cases, the source would be the writer (see below).

Public health/health professionals/anti tobacco advocates

Includes quotes from OR attributions made to individuals, other than professors/academics/ researchers who are identified as being health professionals (e.g., clinicians, physicians) or from some organizations that are or would be interpreted to be health related organizations (e.g., American Cancer Society, Campaign for Tobacco Free

Kids, American Council on Science and Health, the World Health Organization/WHO, the Royal Academy of Physicians). This would also include references/attribution to “public health experts”, “anti-tobacco advocates”, “tobacco opponents”, “health officials”, “tobacco industry watchdogs”, the US Surgeon General and also members from the CDC.

Government/FDA representative/legislators

Includes quotes from OR attributions made to federal or state legislators/lawmakers, state governors, or any individual identified as a representative of the FDA, including members of the FDA’s tobacco advisory board. Would include references to “regulators”. Also includes individuals identified as being (or having been) employed by the government other than the US Surgeon or employees of the CDC (these are coded under health professionals since they are health specific govt. positions).

Tobacco Company

Includes quotes from OR attributions made to a tobacco company, the tobacco industry in general, or a particular individual identified as being (or having been) employed by a tobacco company.

Citizens (including tobacco users)

Includes quotes from OR attributions made to individuals not identified as being affiliated with any particular organization, ie, private citizens. This would include individuals identified as being tobacco users (smokers and SLT users).

“Others”

Select yes if the message is attributed to some general group of people but not attributed to any *particular* group or person. For example, this would include messages attributed to

“supporters” or “advocates” or “critics” of SLT in general. This would also include statements such as “*some* believe that SLT can be used as a harm reduction product, while *others* worry about dual use of SLT and cigarettes. Also select “other” if the message is attributed to a particular person that does not quite fall into any of the other categories (e.g., a position attributed to John Smith, a law professor and tobacco expert, or a position/message attributed to a baseball player).

Writer

Select yes if the view is one that is expressed by the writer of the article/letter him or herself, if it represents the author's view/reasoning. This may be the case for messages expressed in opinion articles (columns, editorials, op-ed pieces and letters to the editor).

In non opinion articles, messages should be attributed to the writer himself if the message is not attributed to anyone else and/or if it is stated as fact (e.g., “although SLT is safer than smoking, ...”). If the article attributes a message as being supported or indicated by research studies/science *in general* (i.e., without quoting or attributing a message to a particular researcher or particular study), then select “writer” as the source of the message.

For example, this would statements such as: “Research studies suggest that smokeless tobacco may be a less harmful alternative to cigarette smoking” or “evidence has been mounting that SLT poses fewer risks than smoking”. In this case you would select message #74 in the grid as being present, and select the writer as the source of the message.

“Pro” SLT messages/arguments

**61. SLT is/may be safer than cigarettes/can reduce harm/can be less harmful
alternative/smokers should switch**

Select yes if the article communicates a message that SLT is or is believed to be safer than cigarettes or possibly safer than cigarettes, that SLT is a harm reduction product, or can/should be used to reduce harm, that slt can be a less harmful alternative, that it could be beneficial for smokers/for public health if smokers switch to SLT. This would include messages/positions which indicate that even though SLT is not safe/that SLT has risks, it is still safer than cigarettes.

62. SLT can/has been used to help smokers quit/smokers do switch

Select yes if the article communicates a message that SLT can help smokers quit or has been shown to help smokers quit smoking or wean off/decrease levels of smoking.

Includes messages that indicate that smokers do successfully switch to SLT (but not if this is made exclusively in a business context, e.g., saying that smokers do switch to SLT so SLT can be profitable). This includes references to evidence from Sweden showing that the rate of smoking has fallen while that of SLT usage has risen when this reference is presented in the context of risk comparisons or harm reduction or SLT regulation topics. ...

**63. Should be able to provide comparative risk info/market as safer than cigs/as
reduced risk**

Select yes if the article communicates a message that people/the tobacco industry should be able to provide consumers/tobacco users with accurate comparative risk information about different tobacco products/about SLT versus cigarettes, that people have a right to

know about the relative risks of different products and/or that people have the right to know that SLT is safer than cigarettes. This would also include articles that communicate a message that SLT (or some type of SLT) should be *marketed* as being safer than cigarettes/as a reduced risk product. This would also include articles which argue that FDA legislation doesn't/should allow for SLT or harm reduction innovation and marketing, and/or that the proposed FDA standards would be too high/impossible to meet. This would also include articles that refer to tobacco companies appealing to the FDA to be able to market their SLT product as having reduced risk (in this case, position would be attributed to tobacco company).

64. SLT products are marketed to adults, not youth

Select yes if the article communicates a message that SLT products are marketed to adults, not youth. This is most likely expressed by/attribution to tobacco company representatives.

“Anti” SLT– risk related messages

Note that for messages #65-72, these codes only should be used/counted as present if they are used in article in broader context/discussion of risk comparisons of SLT to cigarettes. If SLT health effects are discussed, but not in relation/context of comparing risks with cigarettes, then only code for health risks under the earlier health risk section (codes #53-63). Also note that a single article can include more than one of these messages, different messages could even be attributed to the same person.

65. Statement that “there is no safe tobacco” or “all tobacco is dangerous”

Select yes if the article includes the simple statement/message that “there is no safe tobacco” or “all tobacco is dangerous”.

66. SLT is/can be as/or more addictive than cigarettes

Select yes if the article communicates a message that SLT is or can be as addictive as cigarettes/smoking (or even more so).

**67. SLT is/can be just as (or more) carcinogenic/harmful/dangerous as cigarettes
(so not a safer alternative)**

Select yes if the article communicates a message that suggests SLT is not a safe alternative to cigarettes because SLT is/may be *just as* risky as cigarettes. This would include references to SLT being just as or more carcinogenic than cigarettes and statements such as “SLT is just as harmful/deadly/risky as cigarettes” or “SLT has many of the same risks that cigarettes have”.

Do not code as yes if the article includes the statement that “SLT is not a safe alternative to cigarettes” simply in reference to it being one of the required warning labels on SLT products.

68. SLT *also* has its health risks, is not safe alternative to cigarettes

Select yes if the article communicates the message that SLT also has health risks, and as such it is not a safe alternative. This is different than message above in that it mentions SLT has risks but does not state or suggest that SLT’s risks are equivalent with those of cigarettes. This is a message that overall does not acknowledge/communicate that SLT could be a safer alternative.

69. Although some suggest SLT might be safer, it really isn’t/that’s not true.

Select yes if the article communicates the message that although some suggest SLT might be safer than cigarettes, it really isn’t/that point is not true. This is a message that acknowledges that there is some thought that SLT may be safer but counters it generally

(ie, it does not counter it with any specifics/any examples of why it is not safer). This would also include statements like: “Rick Bender, former baseball player, is now working to dispel the myth that spit tobacco is a safe alternative to smoking.”

70. SLT is/may be safer than cigarettes in some ways, but is not safe/ without risks/could cause other problems/risks

This is a more complex/balanced message. Select yes if the article communicates a message that acknowledges that SLT is or may be safer than cigarettes in some ways (e.g., with respect to lung cancer risk), but ultimately is not safe or without its own risks; SLT could lead to other problems/risks (e.g., increase risk for oral or pancreatic cancer).

71. There is no evidence that SLT can be effectively used to quit smoking, not clear that smokers would switch, that Swedish results would translate...

Select yes if the article communicates a message that there is no evidence that SLT can be effectively used to quit smoking and/or that it is not clear that smokers would or could switch completely. This would also include messages that indicate or suggest that the switching/trends patterns observed in Sweden haven’t been replicated in the US, that the Swedish trends haven’t or may not translate, and that there are factors other than SLT/snus use which contributed to lower rates of smoking in Sweden.

72. Quitting all tobacco is best

Select yes if the article communicates a message that quitting all tobacco is the best approach (e.g., rather than switching to alternatives, like SLT).

“Anti” SLT– other concerns/messages

73. Could facilitate dual product use/2nd addiction, marketed as smoking alternative

Select yes if the article communicates a message SLT promotion could facilitate dual product use (i.e., use of both SLT and cigarettes) and/or a second tobacco addiction. This would also include articles that communicate that SLT is being marketed as an alternative to smoking (rather than a replacement for smoking, thus potentially facilitating dual use). To count as yes, this should be framed as being something negative/a critique (i.e., as opposed to articles in which this is framed positively in terms of the industry’s business intentions).

74. SLT can circumvent smoking bans/provides alternative where smoking is banned

Select yes if the article communicates a message that SLT promotion/use can circumvent smoking bans/provides alternative where smoking is banned. To count as yes the message should be communicated as being a critique/something negative (as opposed to article in which this is framed positively in terms of the industry’s business intentions).

75. Could facilitate continued smoking/tobacco use/delay quitting

Select yes if the article communicates a message that SLT could facilitate continued smoking/tobacco use and/or cause smokers to delay quitting. This would include messages which indicate that SLT derails quit attempts, maintains tobacco use among those who might otherwise quit.

76. Could lead to misperceptions about safety of SLT /Could encourage non-tobacco users to start/ facilitate new users/act as gateway to smoking

Select yes if the article communicates a message that SLT promotion could lead to misperceptions about the safety of SLT AND/OR could encourage non-tobacco users to start/facilitate new users to start (including young people), encourage former tobacco users to resume tobacco use, and/or act as gateway to smoking.

77. Concern that products are marketed to or will appeal to youth or young adults

Select yes if the article communicates a message of concern/critique that SLT products are marketed to youth or will/may appeal to youth or young adults. This may include references to SLT products being easy for kids to use in school because they are discreet/easy to conceal, that SLT products come in candy flavors or attractive packaging, and that SLT products use cigarette brand names that are popular with youth. (Note: this should not be used for general references about concerns for youth in articles about SLT taxes and SLT bans).

78. Pandora's box – there's a lot we don't know

Select yes if the article communicates a message expressing caution/concern about SLT because there is much “unknown” about SLT, e.g., that it is not known what is in SLT products (or new SLT products), how they would be used, what impact it would have; it is a “pandora's box”.

Controversy/Credibility Related:

79. Does article refer to there being a “debate” or “difference in views” on SLT?

Select yes if the article indicates in some way that there is a “debate”, a “difference in views”, “differing perspectives”, disagreement, etc. with respect to views about SLT.

This may be found in articles referring to SLT’s role in harm reduction, about risk comparisons, and about how SLT should be promoted and regulated. Additional terminology that might suggest disagreement include references to “two schools of thought”, public health officials as being “divided”, the issue as being “divisive”, etc.

If yes, does the article refer to the issue as:

If 79=yes, also indicate if the article refers to the issue/difference/debate as being:

80. Controversial (or “moralistic”)

Select yes if the article literally uses the words controversial/controversy or moralistic/moral debate with respect to SLT discussion.

81. Representing disagreement between tobacco companies and health professionals

Select yes if the article communicates that the disagreement lies between tobacco companies and health/tobacco control professionals or scientists. If no such reference is made or can be ascertained, select no.

82. Representing disagreement amongst/between health professionals

Select yes if the article communicates that the disagreement lies between/amongst health/tobacco control professionals/scientists themselves. If no such reference is made or can be ascertained, select no. Note that in a given article, both this question and the one above could be answered as “yes”.

83. Does article refer to misleading the public/withholding truth?

Select yes if the article makes reference or implication to the issue of the public being misled or deceived about the risks of SLT, or that such information is being withheld, or that information about the risks of SLT has been exaggerated/distorted or inaccurate.

This would include statement such as: “The bill reflects the reluctance of many public health officials to let the industry that lied about the health effects of cigarettes tell the truth about smokeless tobacco.”

84. Any reference to SLT research/researcher receiving tobacco industry funding?

Select yes if the article makes reference to some discussed SLT research (e.g., some particular study) or a researcher (e.g., Brad Rodu) receiving funding by a tobacco industry. This does *not* count research conducted/initiated by tobacco companies themselves (e.g., Philip Morris’ new harm reduction research facility).

Cessation and prevention related:

85. Does article refer to SLT prevention or cessation (yes/no)

Select yes if the article refers to SLT prevention or cessation. SLT prevention or cessation does not have to be the main SLT topic of the article to count as yes.

If yes, does it:

86. Refer to a particular event or program? If so, what: _____

If an article includes SLT prevention or cessation as a topic, indicate if it refers to a particular event or program, and record it. This might include, for example, programs and events such as Thru with Chew Week, Great American Spit Out, National Spit Tobacco Education Program.

87. Refer to quitting methods (e.g, NRT, herbal SLT) or resources?

If an article includes SLT prevention or cessation as a topic, indicate if it refers to methods or resources for quitting, e.g., nicotine replacement therapy products (NRT), such as the gum or patch, herbal SLT tobacco, quitlines, meetings, cessation websites, clinics such as the Mayo Clinic, etc.

88. Personal story/profile of SLT cessation?

If an article includes SLT prevention or cessation as a topic, select yes if it includes/refers to a person's personal story of SLT cessation. This includes stories of cessation attempts (even if not successful). This includes any mention of a person in an article having quit, trying to quit or wanting to quit, even if the issue is not the main topic of the article or discussed in detail. This does not include references to people trying to quit smoking by using SLT – that is to be captured under code #69

Tax related: If article includes SLT taxes as a main topic, does it refer to:

89. Does article refer to taxes on SLT (1 – yes 2 – no)

Select yes if the article refers to taxes on SLT. SLT taxes does not have to be the main SLT topic of the article to count as yes.

90. State or federal tax increase/issue? (1 – state 2 – federal 3 – both)

If the main SLT topic of the article is related to taxes, select 1 if it refers to a state tax on SLT, 2 if it refers to a federal tax increase on SLT, or 3 if the article refers both to state and federal taxes on SLT.

91. Change in SLT tax system

If the main SLT topic of the article is related to taxes, select yes if the article refers not only to an increase on taxes on SLT but a change in the way SLT taxes, i.e., indicating that SLT would now be taxed by weight rather than by percentage (ad valorem tax).

Other

92. Does article refer to opposing/trying to ban SLT advertising/sponsorships?

If the article reports on smokeless tobacco related industry promotional activities, sponsorships or advertising issues (e.g., sponsorship of events such as racing or rodeos) select yes if it also refers to efforts to ban, oppose or regulate such events/sponsorships/SLT advertising/ promotional activity. This would include references to banning of SLT sponsorships by the FDA and references to the slt Master Settlement Agreement (MSA).

93. Does article refer to SLT related study/research results that are not health related? (yes/no)

Select yes if the article refers to research/study results related to SLT but not about SLT health effects or health risks. This might include, for example, studies related to youth exposure to SLT advertising, studies about SLT prices/taxes, studies reporting on prevention programs, studies reporting on prevalence updates from surveys, etc.

Opinion articles:

94. Slant of article:

(1 – anti SLT/pro tobacco control 2 – pro SLT/ anti tobacco control

3-neutral/mixed/can't tell)

If the article is an opinion article (ie, an editorial, opinion column, letter to the editor or an op-ed piece), also indicate what the slant of the article/writer's position is with respect to SLT. Select 1 if the slant of the article is negative towards SLT in some way and/or in support of tobacco control measures. Select 2 if the slant of the article is positive towards SLT in some way and/or opposed to tobacco control measures. Select 3 if the article is neutral with respect to SLT, if it has mixed positions, or if the slant towards SLT is otherwise not clear (this may be more commonly used among opinion articles in which SLT is discussed but is not the main topic of the article).

95. Letter/Op-Ed writer/author

If the opinion article is a letter to the editor or an op-ed piece, select the category the best represents the author of the piece:

1 – Health/Public Health Professional

(e.g., member of a health/public health organization as the American Lung Association)

2 – Academic/Scientist Researcher

(individual indentified as being a professor or researcher from a university or some other research group/center)

3 – Tobacco Industry Rep

(individual identified as being an employee of a tobacco company)

4 - Student/youth group

(individual identified as being a school student, and/or as belonging to some sort of youth related group)

5 - Private Citizen – individual's name given/signed without any particular affiliation.

6 - Legislator/Politician

General descriptive information:

- 1a. Article ID #: _____
 1b. Pub Date: ____/____/____
 1c. Publication name: _____
 1d. Publication state: _____
 1e. If state, which quartile: _____
 1f. Focus: 1-local 2-general/national
 1g. Type of article: _____

Prominence related:

- 2a. Is an SLT related term in headline? (1- yes / 2- no)
 2b. If yes, what is the headline: _____

3. Is SLT related issue the main issue/topic of the story? (1- yes / 2- no)

- 4a. Main SLT related topic/theme of article: _____

- 4b If "other, what: _____

Prevalence related: Does article refer to:

- 5a. Prev of SLT use: (1-yes, youth / 2-yes, adult/general prev
 3-yes, youth & adults / 4 -no)

- 5b. If yes, described as growing/above ave.? (1 – yes/ 2- no)

6. SLT consump/sales as growing/positive? (1 – yes/ 2- no)

- 7a. Prev of smoking or cig sales as declining? (1 – yes/ 2- no)

- 7b. Smoking bans/Ban reaction? (1 – yes/ 2- no)

SLT Products and Attributes

8. Which words/terms used to refer to SLT?
 (e.g., smokeless tobacco, chew, dip, snus)

9. Any SLT producing companies mentioned? (1- yes/ 2- no)

If so, which: _____

10. Any SLT brands mentioned? (1- yes/ 2- no)

If so, which: _____

Does article refer to any of the following:

(1-yes, SLT general; 2 -yes, new SLT product 3-no)

11. products as **spitless/spitfree** (1 / 2 / 3)
 12. products as sold in **pouches/packets** (1 / 2 / 3)
 13. **where to put** /how to use (1 / 2 / 3)
 14. products as **discreet/concealable** (1 / 2 / 3)
 15. products as being **smoke-free** (1 / 2 / 3)
 16. use where/when can't smoke/anytime (1 / 2 / 3)
 anywhere (**indoors, special situations**)
 17. **Price** of SLT product (1 / 2 / 3)
 18. **Marketing**/advertising of products (1 / 2 / 3)
 19. Free samples /**coupons** for (1 / 2 / 3)
 20. **Cheaper** than cigs (1 / 2 / 3)
 21. **Longer lasting** than cigs (1 / 2 / 3)
 22. products as **tasting** good (1 / 2 / 3)
 23. Product as **less messy** /no **litter** (1 / 2 / 3)
 24. **modern**, more acceptable, not just rural (1 / 2 / 3)
 25. SLT does **not hurt** others/no ETS (1 / 2 / 3)
 26. other benefit: _____ (1 / 2 / 3)

does article refer to: (yes/no for each)

27. How snus is pronounced? (1-yes / 2-no)
 28. Swedish origin/popularity in Swed/Europ? (1-yes / 2-no)
 29. SLT product as candy/candy-like? (1-yes / 2-no)

Business Related: any refs to following topics/points?:

30. SLT company purchase by cig company (1-yes/ 2-no)
 31. develop/launch/testing of new SLT products (1-yes/ 2-no)
 32. SLT brand profits/market share (1-yes/ 2-no)
 33. Other SLT company changes/news (1-yes/ 2-no)
 34. SLT corporate legal issues (1-yes/ 2-no)

Industry intentions/business frames

(select all that apply, if at all):

35. Maintain/increase profits/deal with cig decl (1-yes/ 2-no)
 36. Smoking alternative (general) (1-yes/ 2-no)

Acceptability related & user associations:

Does article refer to/include any:

37. **Negative** perceptions of SLT (1–yes / 2- no)
 38. Issue of **spitting** as a negative of SLT (1–yes / 2- no)
 39. association with cowboys/rodeos (1–yes / 2- no)
 40. association with hunting, blue collar work (1–yes / 2- no)
 41. SLT as rural/"country" (1–yes / 2- no)
 42. assoc. w/ white collar work/use in cities (1–yes / 2- no)
 43a. association with baseball (1–yes / 2- no)
 If yes, refer to:
 b. prevalence of use in baseball? (1–yes / 2- no)
 c. banning slt/tobacco in baseball? (1–yes / 2- no)
 d. youth/negative role model? (1–yes / 2- no)

FDA related:

Does article refer to:

44. FDA in context of SLT? (1 –yes / 2- no)

If yes, does the article refer to:

45. FDA & dissolvable/lozenge tob (specific)? (1 –yes / 2- no)
 46. changes in marketing as a result of FDA? (1 –yes / 2- no)
 47. FDA's role in reg of SLT as harm reduct? (1 –yes / 2- no)

Health and Risk Comparison Information: Does the article include:

- 48a. Mention of health risks associated with SNUS (specifically)? (1 –yes / 2- no)
 b. If yes, what/which: _____
- 49a. Mention of health risks associated w/ dissolvable/lozenge tobacco? (1 –yes / 2- no)
 b. If yes, what/which: _____
- 50a. Mention of health risks associated with SLT (general)? (1 –yes / 2- no)
 b. If yes, what/which: _____
51. Ref to SLT as **carcinogenic**/having toxins/chemicals/nitrosamines? (1 –yes / 2- no)
 52. Reference to SLT as **addictive/nicotine**? (1 –yes / 2- no)
53. Does article indicate that different SLT may **vary** in levels of toxins/safety? (1 –yes / 2- no)
54. Study/**research** results related to SLT health effects/harm reduction/cessation? (1 –yes / 2- no)
55. Any reference to evidence/studies from Sweden in context of SLT health info OR risk comp/harm reduction? (1 –yes / 2- no)
56. Any **personal** story/profile of person with SLT health effects? (1 –yes / 2- no)
57. Does article include **any risk comparison** of SLT to cigarettes? (e.g., safer or not safer) (1 –yes / 2- no)
 58. If yes, any reference to SLT/ being/possibly being **less risky**/harmful than cigarettes? (1 –yes / 2- no)
59. If yes, was ref made about:
 a. SLT in general (1 –yes / 2- no) b. Snus in particular (1 –yes / 2- no) c. Dissolvable SLT in particular (1 –yes / 2- no)
60. If yes, any quant. comparison made? (1 –yes / 2- no) What? _____

SLT Coding Grid – see grid for variables 61 – 78. Select yes for all that apply.Controversy/Credibility Related:

Does article refer to

79. “debate” or “difference in views” on SLT? (1-yes / 2-no)
 If yes, does the article refer to the issue as:
80. Controversial or “moralistic” (1-yes / 2-no)
 81. disagreement bet. tob comps & health profs (1-yes / 2-no)
 82. disagreement between health professionals (1-yes / 2-no)
83. misleading the public/withholding truth about SLT? (1-yes / 2-no)
 84. SLT research/researcher receiving tob ind funding? (1-yes / 2-no)

Cessation and prevention related: Does article refer to

85. SLT prevention/education or cessation ? (1-yes / 2-no)
 If yes, does it refer to:
- 86a. particular prevention event/program? (1-yes / 2-no)
 b.if so, what: _____
- 87a. quitting methods, resources? (1-yes / 2-no)
88. Personal story/profile of SLT cessation? (1-yes / 2-no)

Taxes:

89. article refer to taxes on SLT? (1 – yes/ 2 – no)
 90. state or federal tax increase/issue? (1 – state 2 – fed 3 – both)
 91. change in type of SLT tax system (1 – yes/ 2 – no)

Other

92. Does article refer to opposing/trying to ban SLT advertising/sponsorships? (1 – yes / 2 – no)
 93. Does article refer to SLT related study/**research** results that are not health related? (1 – yes / 2 – no)

OPINION articles:

94. Slant of article: (1 – anti SLT/pro tobacco control 2 – pro SLT/ anti tobacco control 3 – neutral/mixed/can’t tell)
 95. Letter/op-ed author: _____

Appendix D. Prevalence of SLT Use by State & Gender, 2009 Behavioral Risk Factor Surveillance System

		Prev of Smokeless Tobacco Use (%)		
		Men	Women	Total
<i>Quartile 1 States</i>				
1	Rhode Island	2.3	0.7	1.5
2	California	2.4	0.3	1.3
3	Maryland	2.5	0.9	1.7
4	Massachusetts	2.6	0.4	1.5
5	Connecticut	2.9	0.5	1.6
6	New York	3.5	0.7	2.0
7	New Jersey	3.6	1.1	2.3
8	Delaware	3.9	0.2	1.9
9	Hawaii	4.0	1.3	2.6
10	Maine	4.1	0.7	2.3
11	New Hampshire	4.1	1.1	2.6
<i>Quartile 2 States</i>				
12	Utah	4.9	0.5	2.7
13	Florida	5.1	1.3	3.2
14	Illinois	5.2	1.2	3.2
15	Nevada	5.3	1.3	3.3
16	Arizona	5.7	0.5	3.1
17	Vermont	6.2	1.0	3.6
18	Michigan	6.3	1.0	3.5
19	Wisconsin	6.6	0.9	3.7
20	Texas	6.7	0.9	3.8
21	Washington	6.8	0.6	3.7
22	Louisiana	7.0	1.2	3.9
23	Minnesota	7.1	0.8	3.9
24	Colorado	7.2	0.6	3.9
25	Oregon	7.2	0.6	3.9
26	North Carolina	7.5	1.3	4.3
27	Ohio	7.7	0.8	4.1
28	Georgia	7.8	1.7	4.7
29	New Mexico	7.9	0.6	4.2
<i>Quartile 3 States</i>				
30	South Carolina	8.4	1.4	4.7
31	Indiana	8.5	0.9	4.6
32	Tennessee	8.5	1.6	4.9
33	Virginia	8.6	0.9	4.6
34	Iowa	8.9	0.4	4.5
35	Alaska	8.9	2.5	5.8
36	Nebraska	9.1	0.6	4.7
37	Pennsylvania	9.7	0.7	5.0
38	Missouri	10.4	0.7	5.4
39	Idaho	10.5	0.8	5.7
40	Kansas	10.8	1.1	5.9
41	North Dakota	11.4	1.8	6.6
<i>Quartile 4 States</i>				
42	Alabama	11.8	1.9	6.6
43	South Dakota	11.9	0.7	6.2
44	Kentucky	12.4	1.3	6.7
45	Mississippi	13.1	2.4	7.5
46	Montana	13.4	1.5	7.4
47	Oklahoma	13.9	1.0	7.3
48	Arkansas	13.9	1.3	7.4
49	Wyoming	16.9	1.2	9.1
50	West Virginia	17.1	0.4	8.5

Appendix E. List of Headlines Including SLT-Related Terms, by State, Publication Name, and Article Date

State Newspapers

State	Publication Name	Article Date	Article Headline
Alaska	Anchorage Daily News	2/19/07	The delta tobacco blues - Yukon - Kuskokum youths use nicotine, especially smokeless products at alarming rates
Arizona	Arizona Republic/Phoenix	9/08/07	Joe Garagiola is on a mission to get ballplayers to kick the dip habit
Arizona	Arizona Republic/Phoenix	7/26/08	Garagiola on spit tobacco, school
Arkansas	Democrat Gazette	8/30/07	LR legislator proposes, withdraws bid to snuff chew tobacco in House
Arkansas	Democrat Gazette	10/19/07	Legislators snuff ban of chewing tobacco House short of votes to rule out spit cups
Arkansas	Southwest Times Record	8/30/07	Sponsor pulls smokeless tobacco ban
Arkansas	Southwest Times Record	10/19/07	House rejects ban of smokeless tobacco
California	LA Times	7/17/06	Eschewing the chew
California	LA Times	6/18/08	Doctor linked cancer to chewing tobacco
California	San Francisco Chronicle	8/30/07	Numb finger causes Chulk to chuck dip
Colorado	Colorado Springs Gazette	7/07/08	The lesser of the two - some experts tout snuff, which is gaining popularity as a safer alternative to cigarettes
Colorado	Colorado Springs Gazette	7/11/08	Chew giveaways a quandry for rodeo organizers in state
Connecticut	Hartford Courant	9/19/06	UST to cut 10% of non-union jobs
Connecticut	Hartford Courant	12/05/06	No chaw for Francona
Connecticut	Hartford Courant	1/07/09	Altria group completes its acquisition of UST
Connecticut	Hartford Courant	12/08/10	Chewing tobacco company settles \$5 million for cancer victim's family
Connecticut	Connecticut Post	10/25/08	UST post-tax break, posts health profit
Florida	St Petersburg Times	3/25/07	A little tax between the cheek and gum
Florida	Orlando Sentinel	8/21/07	Snuff is brimming with carcinogens
Georgia	Atlanta Journal Constitution	7/15/06	Philip Morris tests smokeless tobacco
Georgia	Atlanta Journal Constitution	9/12/06	Tobacco goes cheeky
Georgia	Gwinnett Daily Post	7/08/06	Chew loses its bite in dugouts
Idaho	Idaho Statesman	3/16/06	Lawmakers divided over House bill to boost tax on cheap chew
Idaho	Idaho Statesman	3/23/06	Panel snuffs chewing tob bill
Illinois	Chicago Tribune	4/26/06	Pritzkers pocket head turning deal - Family gets a whopping \$3.5 billion for smokeless tobacco firm
Illinois	Chicago Tribune	9/16/07	Snuffing out smokes - In Sweden use of snus pouch tobacco has replaced the

			smoking habit for a growing number of people
Illinois	Chicago Tribune	1/19/10	Chew on this - still tobacco-free, Danks is mulling new deal while awaiting medical report
Illinois	Chicago Tribune	12/07/10	Smokeless tobacco on the rise - popularity grows as smokers seek cheaper, less obtrusive options
Illinois	Chicago Sun Times	6/11/06	Smokeless tobacco is hot
Illinois	Arlington Height Daily Herald	8/20/07	Snuff worse than smoking
Indiana	Indianapolis Star	7/08/06	No smoke, no spit, just tobacco
Indiana	Indianapolis Star	1/05/08	Soldiers start day with dip of tobacco
Indiana	Indianapolis Star	1/11/08	Test sites go smokeless?
Indiana	Fort Wayne Journal Gazette	8/01/06	High schoolers prefer chewing to smoking - pipe usage also rises, researchers discover
Kansas	Topeka Capital-Journal	2/18/07	Event focuses on chewing tobacco
Kentucky	Courier-Journal	7/11/06	Spitless tobacco to be tested locally
Kentucky	Courier-Journal	1/28/08	Going smokeless to kick habit fuels debate
Kentucky	Courier-Journal	2/10/10	Snuff tax changes rejected in House
Kentucky	Lexington Herald Leader	2/12/06	Tobacco chewers are encouraged to spit it out on Thursday
Kentucky	Lexington Herald Leader	9/09/08	Altria plans to buy maker of Skoal, Cope
Kentucky	Lexington Herald Leader	2/24/09	Hamilton: no dipping
Kentucky	Lexington Herald Leader	2/02/10	Tax hike rejected on premium snuff
Louisiana	Times-Picayune	5/20/08	No smoking or chewing
Louisiana	Baton Rouge Advocate	5/20/08	Smokeless tobacco ban wins support
Maryland	Baltimore Sun	3/25/09	Snuff bedfellows - proposal to change taxes on smokeless tobacco finds cancer society, RJ Reynolds on same side of general assembly 2009
Massachusetts	The Boston Globe	4/25/07	Something to chew on
Massachusetts	The Boston Globe	3/25/09	Advocates push wider tobacco tax - smokeless products, mini-cigars targeted
Massachusetts	Boston Herald	2/14/07	Plenty to chew on managing Sox presents challenge for Tito
Massachusetts	Boston Herald	4/04/08	Spittin' made irate dad - wants tobacco-chewing football coach canned
Massachusetts	Boston Herald	5/21/09	Massachusetts tobacco chewers win \$10.6M settlement
Massachusetts	Boston Herald	7/07/09	'Chew' users may get \$750
Michigan	Detroit Free Press	3/21/06	Franzen gets a bit chippy without chaw
Michigan	Detroit Free Press	3/26/07	Spitting distance
Michigan	Detroit Free Press	10/26/10	World Series teams should nix chew
Minnesota	Minneapolis Star Tribune	7/29/10	Keeping tobacco beyond kids' reach - tobacco whether smoked, chewed or otherwise ingested must be behind Minnesota store counters by Sunday

Mississippi	Clarion-Ledger	2/21/06	High school baseball coaches discourage dipping
Missouri	St. Louis Post-Dispatch	4/26/07	So why do baseball players choose to chew?
Missouri	St. Louis Post-Dispatch	9/03/07	Smokeless tobacco is unsafe, researchers say
Missouri	St. Louis Post-Dispatch	4/27/09	Carpenter is trying to kick bad habit - Pitcher is trying acupuncture treatments in his effort to stop chewing tobacco
Missouri	St. Louis Post-Dispatch	5/31/09	No dip, no problem
Missouri	Kansas City Star	9/29/08	Marines invent chewing tobacco with a kick for combat conditions
Montana	Billings Gazette	2/20/07	Through with Chew Week' kicks off
Montana	Billings Gazette	2/17/09	Senate passes moist snuff tax increases
Montana	Billings Gazette	9/22/09	Wyoming tobacco program gets recognition
Montana	Billings Gazette	1/27/10	Presentation set on chew tobacco danger
Montana	Missoulian	1/27/06	Spit tobacco victim shares stories of pain, costs
Montana	Missoulian	2/25/08	Cancer survivor to warn Montana youth about spit tobacco
Montana	Missoulian	3/04/08	Man brings vivid message about spit tobacco use
Montana	Missoulian	2/11/10	Oral cancer survivor brings 'Through with Chew' tour to Missoula
Nebraska	Omaha World Herald	6/15/06	Spit-free tobacco enters fray - industry seeks alternatives amid smoking bans - the dangers of smokeless
Nebraska	Omaha World Herald	4/06/07	Smokeless tobacco tax hike draws veto as unnecessary
Nebraska	Omaha World Herald	2/21/09	Lawmakers debate chewing tobacco tax
Nebraska	Lincoln Journal Star	3/16/07	Taxing snuff
Nebraska	Lincoln Journal Star	4/06/07	Governor vetoes hike in snuff tax
New Jersey	Star Ledger	3/28/07	Spirits high at UST
New Jersey	Star Ledger	8/22/07	Philip Morris hopes to grow by taking a dip
New Jersey	Star Ledger	9/23/07	Choosing to chew - many players ignore the risk and dip, knowing their tobacco road could lead to cancer
New York	Daily News	5/27/09	Majors to chew it over unlike in minors, bigs' tobacco policy isnt up to snuff
New York	Daily News	4/16/10	Forbidden chew
New York	NY Post	4/03/06	Chaw breaker - Sheff spits out tobacco for his son
New Mexico	Albuquerque Journal	6/28/08	Smokeless tobacco in, but not at Santa Fe Rodeo - event takes stand against product
New Mexico	Santa Fe New Mexican	2/11/06	Snuff tax nothing to sniff at, lawmakers say
New Mexico	Santa Fe New Mexican	6/22/08	Classic cowboys, minus the chew
New Mexico	Albuquerque Journal	5/14/06	Smokeless on these flights -gov gets free travel from Spit Tobacco industry
North Carolina	Raleigh News and Observer	1/03/10	New exhibit puts a shine on spittoons
North Dakota	Fargo Forum	2/22/07	Cass Public Health promotes Spit Out

Ohio	The Plain Dealer	3/28/08	The new chew gum, sunflower seeds pitch hit for tobacco at baseball players become more health conscious
Ohio	The Plain Dealer	5/04/09	Smokeless tobacco sets off firestorm, lawmakers outraged at flavored nicotine
Ohio	Columbus Dispatch	3/17/08	New snus taking on smoking ban
Oklahoma	Oklahoman	8/15/07	Smokeless tobacco dangers outlined
Oklahoma	Oklahoman	3/05/08	Spit tobacco growth worries health officials
Oklahoma	Oklahoman	2/17/10	Through with Chew is Thrusday
Oregon	Portland Oregonian	1/07/07	Snus: no smoke, no spit, but many worry about kids
Oregon	Portland Oregonian	1/19/10	Your snuff might be far too minty
Pennsylvania	Philadelphia Inquirer	11/06/08	Somehting new to dip into - a Montico man has given snuff users an alternative: a product with no tobacco
Pennsylvania	Philadelphia Inquirer	10/03/09	Revised budget plan debated - levies on natural gas drillers, cigars, smokeless tobacco would replace proposed "art tax" in PA
Pennsylvania	Philadelphia Inquirer	4/15/10	Congress not in the mood for Skoal, brother
Pennsylvania	Philadelphia Inquirer	4/15/10	Councilman proposes taxing cigars, smokeless tobacco
Pennsylvania	Philadelphia Inquirer	6/11/10	Bochy battles to skip the dip
Pennsylvania	Pittsburg Tribune Review	4/19/10	Smokeless tobacco use rising among teens
Pennsylvania	Pittsburg Post Gazette	11/01/06	Chew over this - health officials target hazards of spit tobacco
Pennsylvania	Pittsburg Post Gazette	2/27/07	Cigar, snuff tax blocked for years
Pennsylvania	Pittsburg Post Gazette	11/20/08	New snuff marketing makes W. VA spittin' mad
Pennsylvania	Pittsburg Post Gazette	4/28/10	Democratic legislators push for tax on smokeless tobacco and cigars
Rhode Island	Providence Journal	7/24/06	Baseball eschews chaw
South Dakota	Argus Leader	9/13/06	No more chew - auction raises money for travel, scholarshpos
South Dakota	Rapid City Journal	6/10/07	My dad and Copenhagen
South Dakota	Rapid City Journal	2/25/08	National speaker to present dangers of chewing tobacco
Tennessee	Tennesean	8/18/09	Snus pouches take smoke, spit out of tobacco
Tennessee	Commercial Appeal	4/26/06	Reynolds American buys Conwood
Tennessee	Commercial Appeal	6/01/06	Reynolds buys Memphis' Conwood
Tennessee	Commercial Appeal	5/29/10	Snuff plant expanding - Reynolds American will grow smokeless tobacco operations here
Tennessee	Commercial Appeal	8/27/10	American Snuff cuts 45, new plant still on track
Texas	Houston Chronicle	4/18/10	Proposal ban on chew stirs up emotions. Sampson says parents must be more proactive
Texas	Dallas Morning News	2/23/09	Hamilton kicks another bad habit - at daughter's urging, Ranger gives up using smokeless tobacco

Texas	Dallas Morning News	3/07/09	Lawmakers chew on change to tobacco tax; legislature - under bill excise collections on snuff would be based on weight, not price
Texas	Dallas Morning News	5/11/09	Two bills down to embers - tobacco firms target popular plans for smoking ban chew tax
Texas	Dallas Morning News	5/13/09	House approves weight-based tax for smokeless tobacco
Texas	Fort Worth Star Telegram	7/12/07	Snus to be let loose
Texas	Fort Worth Star Telegram	10/27/10	Lawmakers asks series teams to say no to chew at games
Utah	Salt Lake City Tribune	2/08/08	Tax on snuff may cost more by the ounce
Utah	Salt Lake City Tribune	7/27/09	To chew or not, that is the question
Utah	Salt Lake City Tribune	9/11/09	Ruling: Miners can keep chewing tobacco
Utah	Salt Lake City Tribune	11/09/09	New smokeless tobacco products in test markets
Utah	Deseret News	4/06/06	Evils of chew stressed
Utah	Deseret News	2/08/08	Chewing tobacco cost would rise with new tax
Utah	Standard Examiner	2/11/09	DOD attacks smokeless tobacco during February Challenge
Utah	Standard Examiner	8/16/10	Davis lawmaker to introduce bill at interim session that would ban flavored, smokeless tobacco
Virginia	Roanoke Times	3/11/08	Replacing smokes with snus may be a safer choice
Washington	Spokane Spokesman-Review	9/21/07	Gift nothing to spit at - tobacco firm gives country or rescue ATV
West Virginia	Charleston Gazette	9/19/07	Smokeless snus new sold in state
West Virginia	Charleston Gazette	11/18/08	WVU: Tobacco product high in nicotine RJ Reynolds disputes suit of smokeless, spitless product available in West Virginia
West Virginia	Charleston Gazette	4/02/09	Bill would ban sales of dissolvable tobacco
West Virginia	Huntington Herald Dispatch	2/15/06	Through with Chew Week
West Virginia	Huntington Herald Dispatch	2/19/06	Through with Chew week urges end to use of smokeless tobacco
West Virginia	Huntington Herald Dispatch	8/23/07	Smokeless tobacco habit may be tougher to break, experts say
West Virginia	Huntington Herald Dispatch	11/09/10	Use of smokeless tobacco carries plenty of risks too
Wisconsin	Milwaukee Journal Sentinel	9/04/07	Snuff settlement includes \$816 apiece in coupons - suit accused smokeless tobacco maker of trying to monopolize market
Wisconsin	Milwaukee Journal Sentinel	12/19/07	Judge Oks \$16 million in fees in snuff case - city las firm to be awarded \$6.9 million
Wisconsin	Milwaukee Journal Sentinel	9/13/09	For tobacco growers, a very good year, Bumper crop gives them plenty to chew on
Wisconsin	Milwaukee Journal Sentinel	11/05/10	Smokeless tobacco products worry health officials; they say substitute may hurt anti-cigarette efforts
Wyoming	Casper Star Tribune	6/17/06	US Smokeless scholarships spark debate

Wyoming	Casper Star Tribune	6/19/06	Smokeless tobacco donate vehicle
Wyoming	Casper Star Tribune	9/29/06	UW chew debate brews
Wyoming	Casper Star Tribune	8/20/09	Dip tax change goes to gov
Wyoming	Casper Star Tribune	8/20/09	Price of dip could go up
Wyoming	Wyoming Tribune Eagle	2/20/08	Getting through with Chew - program teaches children the dangers of chewing tobacco
Wyoming	Wyoming Tribune Eagle	4/15/08	Bucking chew
Wyoming	Wyoming Tribune Eagle	1/20/09	Moist snuff bill passes House on third reading, heads to Senate
Wyoming	Wyoming Tribune Eagle	2/14/09	Chewing tobacco addiction forever changed life and looks of teenager
<i><u>National Newspapers</u></i>			
	New York Times	1/18/06	Dip is not hip, city slickers tell urban cowboys
	New York Times	2/03/07	Today in business - UST sells headquarters
	New York Times	6/09/07	Philip Morris to test a smokeless tobacco product in Texas
	New York Times	8/21/07	Smokeless tobacco on par with cigarettes
	New York Times	10/03/07	Smokeless from Sweden
	New York Times	9/05/08	Altria said to be in talks with tobacco maker UST
	New York Times	9/08/08	Altria is said to buy maker of smokeless tobacco
	New York Times	11/27/08	New smokeless tobacco worries experts
	New York Times	4/19/10	Flavored tobacco pellets are denounced as a lure to young users
	USA Today	6/09/06	Tobacco giants test smoke-free products - health advocates: new pouches aren't risk-free
	USA Today	8/07/07	As cigarette sales dip, new products raises concerns - spit-free, smokeless tobacco represents latent marketing strategy to come under fire
	USA Today	12/24/08	Dissolvable tobacco pills set off alarms - new product offers way around smoke-free laws
	Wall Street Journal	4/26/06	Smokeless tobacco deal is struck
	Wall Street Journal	5/03/06	PM holds market test of smokeless tobacco product
	Wall Street Journal	8/09/06	UST test-markets spitless Skoal to use where smokers can't go
	Wall Street Journal	9/16/06	Changing habits: should snuff be used as a tool to quit smoking?
	Wall Street Journal	11/13/06	UST's Kessler to take CEO post in January, succeeding Gierer
	Wall Street Journal	3/27/07	The case for smokeless tobacco
	Wall Street Journal	6/09/07	Marlboro brand goes smokeless
	Wall Street Journal	9/06/08	Corporate news: Altria holds deal talks to buy UST
	Wall Street Journal	9/08/08	Altria to pay \$10.3 billion for maker of Skoal brand

Wall Street Journal	9/09/08	Altria continue testing smokeless Marlboro products
Wall Street Journal	10/04/08	Altria may delay purchase of UST amid tight credit crunch
Wall Street Journal	1/07/09	Altria completes UST acquisition
Wall Street Journal	1/27/09	Tobacco road takes a turn to the smokeless
Wall Street Journal	1/30/09	Altria suspends share buybacks - cigarette maker needs flexibility to refinance bridge loan used for UST
Wall Street Journal	2/04/09	Smokeless tobacco to get push by venture oversees
Wall Street Journal	4/13/09	Corporate news: with tobacco patent suit, Star Scientific presses for clout
Wall Street Journal	7/23/09	Smokeless tobacco gives Altria a lift
Wall Street Journal	9/10/09	Coporate news: Altria adds smokeless flavor
Wall Street Journal	1/06/10	PM pushes smokeless: Firms wants FDA to position tobacco products as safer alternatives to cigarettes
Wall Street Journal	2/09/10	Lorillard to offer smokeless tobacco
Wall Street Journal	2/22/10	Tobacco lozenges seek FDA stamp - Star Scientific asks agency to certify new smokeless product as modified risk
Wall Street Journal	5/24/10	Smokeless prices to rise
Wall Street Journal	9/28/10	Glaxo aims to snuff out 'dissolvable' tobacco items
Wall Street Journal	12/08/10	Coprorate news: smokeless tobacco lawsuit is settled

Tobacco Company Hometown Newspapers

Richmond Times	5/03/06	Philip Morris to test smokeless, spitfree product
Richmond Times	5/04/06	Smokefree a fiery issue
Richmond Times	5/11/06	Altria Group CEO hints ast smokeless venture
Richmond Times	7/22/06	Philip Morris test markets smokeless product
Richmond Times	11/27/06	Little guy dips into snuff market
Richmond Times	4/09/07	Smokeless yearning for FDA guidance
Richmond Times	4/09/07	Going smokeless – more and more consumers take a shine to spit tobacco
Richmond Times	6/12/07	Philip Morris will test smokelss product
Richmond Times	7/06/07	Marlboro Snus to go national?
Richmond Times	8/08/07	New Red Man snuff to hit shelves
Richmond Times	8/22/07	Another smokeless product in tests – Philip Morris expanding with a moist snuff selling under Marlboro name
Richmond Times	1/11/08	Philip Morris rivses smokeless tobacco test markets
Richmond Times	2/05/08	Altria might buy smokeless tobacco company
Richmond Times	3/19/08	smokeless tobacco catches on as US cigarette smoking wanes
Richmond Times	4/02/08	Star Scientific's hitches it's wagon to patent

		case
Richmond Times	8/12/08	Richmond area firm: star scientific
Richmond Times	9/06/08	Altria discounts reports of UST deal
Richmond Times	9/09/08	Altria to buy UST \$10.4 billion for smokeless tobacco firm
Richmond Times	10/23/08	Star scientific suit against Reynolds can move forward
Richmond Times	11/11/08	Richmond area firm: star scientific
Richmond Times	1/07/09	Altria complete purchase of UST
Richmond Times	2/04/09	Philip Morris joins snus venture – Swedish Match will be a partner in sales of smokeless tobacco
Richmond Times	3/10/09	Star's tobacco patent suit to go on – court wont hear reynolds' appeal over curing method
Richmond Times	4/02/09	Altria targets smokeless tobacco
Richmond Times	4/03/09	Altria unit trimming sales jobs – consolidation affects 16 workers in Va with US smokeless tobacco
Richmond Times	5/20/09	Altria presses growth in snuff, cigars
Richmond Times	7/03/09	Philip morris international to buy snuff maker
Richmond Times	11/11/09	Star scientific at risk of nasdaq delisting
Richmond Times	11/24/09	Star scientific changes its ticker symbol
Richmond Times	12/22/09	Judge denies new trial for star scienfitc
Richmond Times	12/26/09	Altria expects big impact from □mokes□gen wintergreen
Richmond Times	1/29/10	New snuff boosts profits for Altria
Richmond Times	2/19/10	Altria refines smokeless tobacco strategy
Richmond Times	2/23/10	Star scientific seeks fda approval for “safer” □mokes tobacco
Richmond Times	2/25/10	Swedish Match US snuff sales flat, cigars jump
Richmond Times	2/26/10	Chesterfield based Swed Match North America seeks to boost its dipping tobacco
Richmond Times	3/05/10	Chewing tobacco tax bill goes to governor
Richmond Times	3/17/10	Snus maker swedism match hits wall street
Richmond Times	3/18/10	Private stock slaes boost tobacco company star scientific
Richmond Times	3/24/10	Judge rules against altria in NY snuff case
Richmond Times	5/07/10	Many teens mistook smokeless tobacco products for candy
Richmond Times	5/13/10	Richmond area firm: star scientific
Richmond Times	5/15/10	Star Scienfitc loses as US patent office
Richmond Times	5/29/10	Reynolds closing two plants, expanding smokeless
Richmond Times	11/09/10	Star Scientific
Winston Salem Journal	1/31/06	Reynolds may roll out Camel smokeless, analysts says
Winston Salem Journal	4/06/06	Rumors link cigarette makers to smokeless tobacco deal
Winston Salem Journal	4/26/06	Reynolds chases smokeless trend
Winston Salem Journal	4/27/06	New debt to buy Conwood is ok, analysts say

Winston Salem Journal	4/28/06	Snus to go into trials – Reynolds plans spitless pouch
Winston Salem Journal	5/05/06	Growing tastes – reynolds’ new smokeless products targets small segment with potential into fray
Winston Salem Journal	6/01/06	Snuff gets new home – Reynolds American owner of Conwood
Winston Salem Journal	7/09/06	Reynolds tobacco strikes deal with makers of snus
Winston Salem Journal	9/08/06	Philip Morris looks to snuff for growth
Winston Salem Journal	10/26/06	Reynolds american’s profit increases 45%
Winston Salem Journal	3/01/07	RJR unit will expand in Winston-Salem – smokeless tobacco maker Conwood may add 100 jobs
Winston Salem Journal	6/14/07	Reynolds picks Raleigh to test snus
Winston Salem Journal	8/22/07	Philip Morris to start testing new moist tobacco product
Winston Salem Journal	9/14/07	British American Tobacco to test – market snuff product
Winston Salem Journal	1/15/08	Philip Morris to start selling spitless snuff in Indianapolis
Winston Salem Journal	1/25/08	Snuff makers profit rose 1.4% in forth quarter
Winston Salem Journal	2/05/08	Altria group may go after snuff maker UST
Winston Salem Journal	2/27/08	Liggett follows suit with its own snus
Winston Salem Journal	4/12/08	RJR adds test cities – smokeless snus gaining traction
Winston Salem Journal	6/12/08	Smokeless use on rise as cigarette sales fall
Winston Salem Journal	9/06/08	Altria may buy UST
Winston Salem Journal	10/08/08	Reynolds moves to be on top when smoke clears – dissolvable tobacco offered as smoking bans proliferate
Winston Salem Journal	10/18/08	Reynolds is taking its snus national – smokeless tobacco product gaining traction, RJR says
Winston Salem Journal	11/10/08	Smokeless tobacco becomes a target
Winston Salem Journal	1/07/09	Altria closes UST purchase in deal worth \$10.4 billion
Winston Salem Journal	1/16/09	Reynolds smokeless subsidiary to expand
Winston Salem Journal	3/15/09	Smokeless tobacco targe for tax increase
Winston Salem Journal	4/02/09	UST completes move to new parent altria
Winston Salem Journal	4/15/09	UST plans to cut 74 jobs at its plant in mooreville
Winston Salem Journal	4/20/09	Camel dip to be test marketed
Winston Salem Journal	11/01/09	Cancer institute studies smokeless tobacco
Winston Salem Journal	11/25/09	Snuff maker revives old name
Winston Salem Journal	12/15/09	Use of smokeless products increases
Winston Salem Journal	2/19/10	Altria group to go national with smokeless snus
Winston Salem Journal	2/23/10	Star Scientific wants FDA to certify its tobacco lozenges
Winston Salem Journal	5/25/10	American Snuff Co. raises list price of some products

Winston Salem Journal	6/22/10	Star Scientific applies to FDA to market new tobacco product
Winston Salem Journal	9/28/10	Glaxo calls for ban on dissolvable tobacco
Winston Salem Journal	12/21/10	Reynolds moving smokes tests to new markets

News Wires

Associated Press	2/14/06	Officials want chewers to quit
Associated Press	4/25/06	Reynolds buying chewing tobacco company for \$3.5 billion
Associated Press	4/27/06	Reynolds American profit up 23 percent, making big move into smokeless tobacco
Associated Press	5/03/06	Altria's Philip Morris plans to test smokeless, spit-free tobacco
Associated Press	5/23/06	Reynolds American says FTC approves planned purchase of Conwood
Associated Press	7/30/06	Farmers growing more tobacco for chewing as smokers quit
Associated Press	10/07/06	UST pledges to remain in state
Associated Press	12/30/06	RJ Reynolds' ads urge tobacco pouches for smokers
Associated Press	2/23/07	UST retired CEO Vincent Gierer Jr. makes \$4.6 million in 2006, before retiring
Associated Press	8/21/07	Philip Morris USA introduces Marlboro brand moist smokeless tobacco
Associated Press	8/30/07	Arkansas lawmaker wants to snuff out snuff at State Capitol, where spittoons are welcome
Associated Press	9/05/07	Settlement good for Wisconsin snuff users - deal would give users coupons to buy UST products at a discount
Associated Press	10/11/07	Lawmaker wants snuff banned from Arkansas House, where tobacco juice is OK but water isn't
Associated Press	10/18/07	Arkansas House rejects rule to ban snuff
Associated Press	10/23/07	Smokeless tobacco use by boys on the rise
Associated Press	3/11/08	Altria expects growth in Marlboro brand, smokeless products after international unit spinoff
Associated Press	4/13/08	Cashier thwarts robbery by hurling chewing tobacco
Associated Press	9/05/08	Altria calls reports on UST 'pure speculation'
Associated Press	9/08/08	Altria aims to be No. 1 in smokeless with UST deal
Associated Press	1/06/09	Altria closes buy of smokeless tobacco company UST
Associated Press	2/03/09	Philip Morris Int'l to enter smokeless market
Associated Press	4/01/09	Tobacco maker UST moves to Altria's Virginia HQ
Associated Press	4/20/09	Ad campaign takes aim at smokeless tobacco
Associated Press	5/19/09	Altria cites smokeless items as key for

		business
Associated Press	6/26/09	Altria announces departure of UST executive
Associated Press	7/02/09	Philip Morris to buy South Africa snuff maker
Associated Press	7/24/09	Utah miners union is challenging new no-chewing tobacco policy
Associated Press	12/03/09	Cambodian moms-to-be chew tobacco for nausea
Associated Press	2/04/10	FDA concerned dissolvable tobacco appeals to kids
Associated Press	2/18/10	Altria plans to expand Marlboro Snus nationwide
Associated Press	4/14/10	Congress urges baseball to ban smokeless tobacco
Associated Press	6/10/10	Brochy's quest to quit dipping is a tough haul
Associated Press	11/04/10	Wyoming, W. VA lead in chewing tobacco use
Associated Press	12/07/10	Chewing tobacco maker agrees to \$5M settlement
Reuters E-Healthline	5/30/06	Water pipes, smokeless tobacco harmful, WHO warns
Reuters E-Healthline	7/24/06	Smokeless tobacco use increases cataract risk
Reuters E-Healthline	5/10/07	Swedish oral tobacco tied to pancreatic risk
Reuters E-Healthline	8/28/07	Chewing tobacco not safe "alternative" to smoking
Reuters E-Healthline	9/13/07	Smokeless tobacco use linked to throat cancer
Reuters E-Healthline	3/14/08	Smokeless tobacco associated with stomach cancer
Reuters E-Healthline	7/02/08	Smokeless tobacco ups oral cancer risk 80 percent
Reuters E-Healthline	11/28/08	Smokeless tobacco may increase stroke risk
Reuters E-Healthline	3/05/09	Chewing tobacco use surges among boys
Reuters E-Healthline	2/25/10	Swedish snuff just as addictive as cigarettes
Reuters E-Healthline	4/15/10	Smokeless tobacco use rising among teens
Reuters E-Healthline	9/17/10	Snus tobacco linked to stillbirth risk
Reuters E-Healthline	12/08/10	Altria in rare settlement over chewing tobacco
UPI Health	8/30/06	Smokeless tobacco: more nicotine absorbed
UPI Health	11/28/06	New chewing tobacco worries researchers
UPI Health	8/10/07	Snuff exposes users to carcinogen
UPI Health	10/05/07	Teens exposed to smokeless tobacco ads
UPI Health	6/11/08	Lack of taxes make cigars, snuff use cheap
UPI Health	8/17/09	More chemicals found in smokeless tobacco
UPI Health	12/07/09	High level of toxins found in moist snuff
UPI Health	6/18/10	Smokeless tobacco may hurt DNA, enzymes
UPI Health	9/14/10	Smokeless tobacco products not 'safer'
UPI Health	11/04/10	Smokeless tobacco common with male smokers

Appendix F. Curriculum Vita

Olivia A. Wackowski

EDUCATION

University of Medicine & Dentistry of New Jersey - School of Public Health
& Rutgers, the State University of New Jersey, New Brunswick, NJ

Ph.D., Public Health, Health Education & Behavioral Science Concentration, October 2011
Dissertation Title: Coverage of smokeless tobacco in US newspapers & news wires –
A content analysis

M.P.H., Public Health, Health Education & Behavioral Science Concentration, May 2003

Rutgers, the State University of New Jersey, New Brunswick, NJ
B.A., Biology Major, Psychology Minor, May 2001

PROFESSIONAL EXPERIENCE

UMDNJ School of Public Health, New Brunswick, NJ

Research Specialist, Center for Tobacco Surveillance & Evaluation Research, 7/04 - Present
Health Educator, Tobacco Dependence Program, 1/04 – 6/04

TEACHING EXPERIENCE

UMDNJ School of Public Health, Health Education & Behavioral Science Department,
New Brunswick, NJ

Teaching Assistant, Social Marketing, Spring 05, 06, 07, 11; Fall 07, 11

Teaching Assistant, Introduction to Health Education and Behavioral Science, Fall 2009

Teaching Assistant, Health and Risk Communication, Fall 04, 05, 06; Spring 08

Site Supervisor for MPH Student Fieldwork Projects, Spring 06, 11; Summer 09; Fall 09

- Titles of student projects supervised include:
 - Content analysis of sexual health information in magazines popular among female adolescents/young adults.
 - Under the radar: how brand-sponsored websites are being used to market smokeless tobacco products.
 - A description and analysis of brand-specific cigarette websites: Camel, Doral, and Kool.
 - A content analysis of direct-to-consumer advertising of prescription medication towards women.
 - A content analysis of cigarette brand loyalty catalogs.

Substitute Teacher, Bridgewater-Raritan High School, Bridgewater, NJ, Fall 01-Spring 02

Peer Instructor, Exploring Health and Medicine, Rutgers University, Fall 2000

PUBLICATIONS

Peer Reviewed Publications in Academic Journals

Wackowski OA, Lewis MJ, Hrywna M. (2011). Banning smoking in New Jersey casinos – a content analysis of the debate in print media. *Substance Use & Misuse*, 46(7):882-8.

Wackowski OA, Lewis MJ, Delnevo CD. (2010). Qualitative analysis of Camel Snus' website message board – users' product perceptions, insights and online interactions. *Tobacco Control*, 20(2):e1.

Wackowski OA, Delnevo CD, Lewis MJ. (2010). Risk perception of menthol cigarettes compared to non-menthol cigarettes among New Jersey adults. *Nicotine and Tobacco Research*, 12(7): 786-790.

Delnevo CD, Gundersen DA, Hrywna M, **Wackowski O**, ZuWallack, RS. (2010). Estimates of smoking among adults: real or spurious estimates from the 2006 New Jersey Adult Tobacco Survey? *American Journal of Health Behavior*, 34(5): 585-592.

Sokol J, **Wackowski O**, Lewis MJ. (2010). Marketing pharmaceutical drugs to women in magazines: a content analysis. *American Journal of Health Behavior*, 34(4): 402-411.

Gundersen DA, Delnevo CD, **Wackowski O**. (2009). Exploring the relationship between race/ethnicity, menthol smoking, and cessation, in a nationally representative sample of adults. *Preventive Medicine*, 49: 551-555.

Wackowski O, Delnevo CD. (2007). Menthol cigarettes and indicators of tobacco dependence among adolescents. *Addictive Behaviors*, 32(9): 1964-1969.

Lewis MJ, **Wackowski O**. (2006). Dealing with an innovative industry: a look at flavored cigarettes promoted by mainstream brands. *American Journal of Public Health*, 96: 244-25.

Research Reports and Other Publications

Wackowski O, Hrywna M, Delnevo CD. (2010). The 2008 New Jersey Smoke-Free Air Act Policy Survey: A Statewide Report. UMDNJ -School of Public Health, New Brunswick, NJ

Wackowski O, Lewis MJ, Hrywna M. (2009). Tobacco Surveillance Data Brief: Print coverage of tobacco news and CTCP programs. Volume 3, Issue 1. UMDNJ-School of Public Health, New Brunswick, NJ.

Wackowski O, Lewis MJ, Hrywna M. (2008). Tobacco Surveillance Data Brief: Print coverage of the casino smoking ban debate. Volume 2, Issue 4. UMDNJ-School of Public Health, New Brunswick, NJ.

Wackowski O, Lewis MJ. (2008). USA: Continued promotion of “green” brand. *Tobacco Control*, 17(6): 370.

Wackowski O, Lewis MJ. (2008). Camel Snus plays up Swedish heritage. *Tobacco Control*, 17(3): 148.

Wackowski O, Lewis MJ. (2007). Tobacco Surveillance Data Brief: Point-of-purchase tobacco marketing. Volume 1, Issue 5. UMDNJ-School of Public Health, New Brunswick, NJ.

Delnevo CD, **Wackowski O**, Berger HF. (2006). Tobacco Surveillance Data Brief: Cigars and smokeless tobacco. Volume 1, Issue 4. UMDNJ-School of Public Health, New Brunswick, NJ.

Lewis MJ, **Wackowski O**. (2006). USA: Salem's new look website. *Tobacco Control*, 15(2):81-82.

Lewis MJ, **Wackowski O**. (2006). USA: Kool's "Be True" funding. *Tobacco Control*, 15(6): 420-421.

Wackowski O, Hemminger L, Schlegel B. (2006). What's in a picture? Lesson plan for students about tobacco marketing. *Environmental Health Perspectives*, Student Edition. Available at: <http://www.ehponline.org/science-ed/lessons2006.html>

Delnevo CD, Hrywna M, **Wackowski O**, Lewis MJ, Hoffman BR. (2005). Independent evaluation of the New Jersey Comprehensive Tobacco Control Program: key outcome indicators. UMDNJ-School of Public Health, New Brunswick, NJ.

Foulds J, Repetto PD, Speelman N, **Wackowski O**, Zimmermann M, et al. (2004). QUIT 2 WIN/Win Independence from Nicotine, New Jersey's Youth Cessation Program. Tobacco Dependence Program at UMDNJ -School of Public Health, New Brunswick, NJ.

Goodhart FW, **Wackowski O**, Cancialosi L, Rojewski M. (2003). Practice Notes: NJPHA Legislative Scorecard. *Health Education & Behavior*, 30 (1): 5-9.

PRESENTATIONS

Wackowski OA, Lewis MJ. Smokeless tobacco magazine advertising: a content analysis. Presentation at the National Summit on Smokeless and Spit Tobacco, Austin, TX, May 2011.

Lewis MJ, **Wackowski OA**. Selling Camel Snus: a review of the dynamic marketing behind a new smokeless tobacco product. Presentation at the National Summit on Smokeless and Spit Tobacco, Austin, TX, May 2011.

Lewis MJ, **Wackowski OA**. Trinkets & Trash – a tool for tracking tobacco marketing. Presentation at the National Summit on Smokeless and Spit Tobacco, Austin, TX, May 2011.

Wackowski O, Delnevo, CD, Lewis MJ. Risk perceptions of menthol cigarettes compared to regular cigarettes among New Jersey adults. Invited presentation at the Second Conference on Menthol Cigarettes, Washington, DC, October 2009.

Wackowski O, Lewis MJ, Hrywna, M. Banning smoking in New Jersey casinos: an analysis of the debate in print media. Presentation at the National Conference on Tobacco or Health, Phoenix, AZ, June 2009.

Wackowski O, Lewis MJ. Moving online: tobacco brands' use of digital marketing. Panel presentation at the American Public Health Association Annual Meeting, San Diego, CA, October 2008.

Wackowski O, Lewis MJ. Tobacco deals delivered straight to smokers: a look at tobacco brand coupons. Presentation at the American Public Health Association Annual Meeting, San Diego, CA, October 2008.

Lewis MJ, **Wackowski O**. Smokeless tobacco advertising – an analysis of changing messages and strategies. Panel presentation at the American Public Health Association Annual Meeting, San Diego, CA, October 2008.

Lewis MJ, **Wackowski O**. Perceptions about cancer clinical trial participation among Latinos in New Jersey. Presentation at the American Public Health Association Annual Meeting, San Diego, CA, October 2008.

Wackowski O, Lewis MJ. Online smoker communities: a content analysis of tobacco brand website message boards. Panel presentation at the American Public Health Association Annual Meeting, Washington, DC, November 2007.

Wackowski O, Lewis MJ. Tobacco users' perceptions of Camel Snus: reactions from Camel's online community. Panel presentation at the American Public Health Association Annual Meeting, Washington, DC, November 2007.

Lewis MJ, **Wackowski O**. Big Tobacco's current marketing and PR efforts - Tobacco direct marketing. Sub-plenary presentation at the National Conference on Tobacco or Health, Minneapolis, MN, October 2007.

Lewis MJ, **Wackowski O**. Tobacco Industry brand e-mails: a content analysis. Presentation at the National Conference on Tobacco or Health, Minneapolis, MN, October 2007.

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Wackowski O, Lewis MJ. Tobacco or spa? Tracing the evolution of Salem's new "Refresh your Spirit" campaign. Presentation at the American Public Health Association, Boston, MA, November 2006.

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