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NC Health & Wellness Trust Fund

**2011 Evaluation of the
North Carolina
TRU Media Campaign
*Preliminary Report***

***Prepared by the UNC School of Medicine
Tobacco Prevention and Evaluation Program (TPEP)
for the North Carolina Health and Wellness Trust Fund***

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1. Executive Summary

North Carolina's Teen Tobacco Use Prevention and Cessation (TTUPC) Initiative, funded by the North Carolina Health and Wellness Trust Fund (HWTF), has included a statewide media campaign called *Tobacco.Reality.Unfiltered.*, or TRU, since 2004. The campaign utilizes a theme of the serious health consequences of tobacco use affecting real people in North Carolina (NC) and is evaluated using telephone surveys with NC youth. After a baseline survey in early 2004, follow-up surveys with a cohort of youth to examine the impact of the campaign took place later in 2004, 2006, 2007, and in 2009. These evaluations showed favorable youth reaction to and increasing youth awareness of the campaign. Annual funding levels of the campaign have ranged from \$1.7 million to \$4.5 million.

In September 2010 HWTF launched a new series of six ads. Three ads featured Destini, a high school senior from Winston Salem, who shared the story of her fathers' death from lung cancer. Three ads featured Justin, a 30 year old father from Raleigh, who shared the story of his fight with lung cancer, diagnosed a few months after quitting smoking at age 28. Following his death in November, 2010, memorial text was added to the end of each of the Justin ads. The 2011 TRU media evaluation survey began six months after the Destini and Justin ads first aired and used a new cross sectional sample of NC youth. Evaluation results reported here provide outcome data for the 2010-2011 TRU media campaign and show changes in key outcomes over the first seven years of the TRU media campaign.

The 2010-2011 TRU media evaluation shows that the TRU media campaign, as currently constructed and executed, remains an integral and successful component of North Carolina's teen tobacco prevention initiative. The TRU campaign has reached record levels of campaign awareness, appears well received by youth, and is preferentially reaching those North Carolina youth at highest risk for future tobacco use. The campaign, combined with state, school and community policies (i.e., increased state excise tax, tobacco-free schools legislation, and community coalition activities), is playing a substantial role in the historically low levels of tobacco use seen among North Carolina middle and high school youth in recent surveys. The NC Health and Wellness Trust Fund has devoted the necessary resources to create and maintain a successful media campaign, but will be abolished on July 1, 2011, leaving the future of the TRU campaign uncertain. Failure to continue the campaign through other funding sources will undo the significant progress made during the campaign's first seven years and will be a major setback to the health of North Carolina's youth.

Major findings from the 2011 TRU media evaluation include:

- Youth awareness of the TRU campaign ads, brands, and slogans has significantly increased over the first seven years of the campaign.
 - Between 2004 and 2011, youth awareness of TRU ads significantly increased from 48% to 80%, and over 680,000 youth (11 to 17) in NC have seen and are aware of the NC TRU campaign.
 - Youth awareness of the *Tobacco.Reality.Unfiltered.* slogan significantly increased from 31% in 2004 to 48% in 2011.
 - Youth awareness of the TRU brand surpassed awareness of the national truth® campaign brand, reaching 63% in 2011.
 - Social marketing efforts to disseminate the TRU campaign and brand beyond TV showed early success, with more than one-third of youth who are aware of the TRU brand seeing it in places such as facebook, movie theaters, and TRU branded promotional items like t-shirts.

- NC youth responded positively to the series of TRU ads aired in 2010-2011.
 - More than 90% of NC youth who had seen the new TRU ads reported they were convincing and attention-grabbing, and more than 95% said the ads gave good reasons not to smoke.
 - Between 11.5% and 29.5% of NC youth who had seen the TRU ads reported that they talked to their friends about the ads, indicating moderate “chat value.”
 - Between 27% and 37% of youth who had seen the TRU ads reported talking to their family members about ads; youth who live with someone who smokes were more likely to talk with family about the ads, suggesting that the campaign has potential as a tool to reduce parental smoking.
- The TRU campaign is reaching youth who are at higher risk for tobacco use.
 - Youth who are susceptible to smoking are significantly more likely to be aware of the TRU brand.
 - Youth who engage in sensation seeking behaviors are significantly more likely to recognize the *Tobacco.Reality.Unfiltered.* slogan.
 - Youth who engage in sensation seeking behaviors and youth who have more positive attitudes about smoking and the tobacco industry are significantly more likely to be susceptible to smoking.

Other findings from the 2009 TRU media evaluation include:

- Anti-tobacco and pro-health attitudes among NC youth have strengthened since 2004.
 - Significantly fewer youth report that smoking makes people their age look cool or fit in, from 9.5% in 2004 to 6% in 2011, or that smoking is a way to show others you are not afraid to take risks, from 12% in 2004 to 8% in 2011.
- Somewhat fewer NC youth appear susceptible to smoking in 2011 compared to 2004, though the decrease is not significant.
- Over 85% of youth report support for smoke-free policies in outdoor areas they frequent.
- Youth reports indicate that exposure to secondhand smoke in the home environment is decreasing, with significantly fewer youth reporting that there are no rules about smoking in their home and significantly more youth reporting that smoking is not allowed in their home
- Youth report similar levels of anti-tobacco organizations and events in their school or community in 2004 and 2011.

The 2011 TRU media evaluation recommendations include:

- Funding
 - State entities should continue funding the TRU media campaign in 2011-2012, at levels similar to or increased from the 2010-2011 campaign, to maintain campaign effects.
- Campaign
 - Develop and air new ads, continuing to focus TRU campaign messages around the serious health consequences of tobacco use affecting real people in North Carolina.
 - Increase ad “chat value” to 35% (possible strategies include building on youth social networking through communication strategies such as text messaging).
 - Continue airing ads on a consistent basis to maintain and grow current awareness rates.
 - Continue to target ads to at-risk youth (i.e., youth who are high sensation seeking and susceptible to smoking).
- Integration
 - Continue integrating the TRU campaign with community and school programs.
- Evaluation
 - Continue annual evaluation of the TRU media campaign to support and provide direction for campaign growth.

2. Introduction

Tobacco use is the leading cause of preventable death in the United States and in North Carolina.¹ Most tobacco users start as youth. Approximately 3,598 youth under the age of 18 initiate cigarette smoking each day in the United States, and over 1,000 youth become daily smokers. Over 3 million youth (about 12% of all youth ages 12-17) report having used a tobacco product in the past month.² Before they reach high school, one-fourth of youth have tried smoking, and by their senior year that proportion climbs to 47%. While smoking rates have been on the decline since the mid-1990s, the national rate of decline has slowed in recent years.³

Results from the 2009 North Carolina Youth Tobacco Survey (YTS) show that 52.5% of NC high school students have ever used a tobacco product and that 16.7% are current smokers. Among NC middle school students, 30.2% have ever used a tobacco product and 4.3% are current smokers.⁴

In 2001, the North Carolina Health and Wellness Trust Fund established the Teen Tobacco Use Prevention and Cessation (TTUPC) Initiative as one of its major programs. Each year since 2004, the TRU media campaign has received a portion of the funding allocated to the TTUPC Initiative, ranging from \$1.7 million to \$5 million annually (Table 2A).

Table 2A. TRU Media Campaign Funding, 2004 – 2011 ⁵⁻⁸

Fiscal Year	Teen Tobacco Use Prevention and Cessation Initiative (TTUPC) Funding	Portion of TTUPC Dedicated to TRU Media Campaign
2004-2005	\$10.9 million	\$2.66 million
2005-2006	\$15 million	\$1.7 million
2006-2007	\$15 million	\$4.5 million
2007-2008	\$17.1 million	\$5 million
2008-2009	\$17.1 million	\$4.5 million
2009-2010	\$18.3 million	\$1.9 million
2010-2011	\$18.3 million*	\$3.1 million

The TRU campaign launched in April of 2004 with three ads featuring youth telling personal stories of loved ones who had suffered serious health consequences from tobacco use. The ads were developed by Capstrat, an advertising agency in Raleigh, NC, with information from a best practices in youth tobacco prevention ads report compiled by the University of North Carolina Tobacco Prevention and Evaluation Program.¹⁰ This report suggested that ads projecting a negative emotional tone and featuring real North Carolinians telling true stories about the serious health consequences of tobacco use could be a part of an effective mass media campaign.

The first ads based on these themes, *Anna*, *Jacobi*, and *Brad*, ran from April through October of 2004. A fourth ad, *Travelogue*, was added in the fall of 2004. *Travelogue* featured a young man who wanted to quit smoking and introduced Terrie Hall, a woman with a tracheotomy who had started smoking as a teen.

A new series of ads was developed for fall of 2005. These ads continued the theme of featuring youth telling stories about loved ones suffering serious health consequences from tobacco use and used footage from a “road trip” around North Carolina taken by the media vendors. *Travelogue* was part of this series, and additional ads featured a young man who had lost his mother and a teenage girl whose grandmother had died from tobacco-related disease. A fourth ad, *Facing Reality*, introduced Gruen von Behrens, a young man who shared his story of undergoing 35 surgeries as a result of developing oral cancer from spit tobacco use.

In 2006, a new ad, *Truth and Consequences*, was added to the TRU rotation. Based on focus group feedback showing strong, positive youth reaction to cancer survivor Terrie Hall, who had appeared in *Travelogue* and the 2005 ads, *Truth and Consequences* featured Terrie's story. This ad ran in 2006 and 2007.

During the first two quarters of 2008, older TRU ads featuring Anna, Jacobi, and Terrie Hall aired throughout North Carolina. In July of 2008, a new series of ads launched statewide. The series of five different ads featured Reena, a 28 year old mother from Asheville, who started smoking at age 13, developed cancer at 19, and had her voice box removed at age 21. The Reena series ran through the end of 2008 and continued through June of 2009. No TRU ads ran between July, 2009 and early March, 2010 due to budget restrictions. Reena ads reappeared in late March, 2010 and ran through the end of June, 2010.

A new series of six ads premiered in September, 2010 and ran through the end of June, 2011. Three of the ads featured Destini, a high school senior from Winston Salem, who shares the story of how her father died from lung cancer caused by smoking. Three ads featured Justin, a 30 year old father from Raleigh, who started smoking at age 14 and was diagnosed with stage IV lung cancer at age 28, a few months after quitting smoking. Following his death in November, 2010, memorial text was added to the end of each of the Justin ads.

This report provides evaluation results of the 2011 TRU television campaign. Prior evaluations of earlier phases of this campaign are available at http://www.tpep.unc.edu/tru_media.htm.

The 2011 TRU media campaign was evaluated based on a logic model developed for the TRU campaign (see Appendix). Since the TRU campaign is television and website-based, major outputs of the campaign include gross ratings points (GRPs) and website hits (reported by vendor). Gross ratings points are a measure of the reach of an ad (the estimated proportion of an audience that would have the opportunity to see the ad) and the frequency of an ad (the estimated number of times the target audience could see the ad in a given time period).

Gross ratings points for 2004, the brief run of Reena ads in 2010, and the Destini and Justin ads in 2010-2011 appear in Table 2B. In 2010 and 2011, TRU ads were shown in select schools across the state as part of an in-school morning news program and in 39 movie theaters across the state; the TRU campaign was also promoted on social networking and video game websites popular with youth.

Table 2B: Gross Ratings Points for 2004 and 2010-2011

Broadcast and Cable Television Market	Total GRPs		
	2004	2010 March-June (Reena)	2010-2011 Sept-June (Destini & Justin)
Asheville Cable	N/A	1,000	1,600
Charlotte/RDU/Triad	13,600	1,800	2,560
Greenville/New Bern	3,400	1,600	2,340
Outlying Counties	2,800	250	400
Wilmington*	3,400	1,400	-

*Wilmington was included in the Greenville/New Bern market for the 2010-2011 runs of Destini and Justin ads

3. Methods

The media vendor created ads for the Tobacco.Reality.Unfiltered., or TRU, media campaign using best practices reports and focus group studies. The campaign's long term goal is to prevent youth smoking, and short term goals include promoting pro-health attitudes and educating NC youth about the dangers of smoking. To reach a critical mass of NC youth, TRU ads aired on teen-friendly channels such as the CW, Nickelodeon, VH1, and MTV.

The 2011 TRU media campaign evaluation was conducted using telephone survey methodology. The Survey Research Unit (SRU) at the University of North Carolina at Chapel Hill conducted interviews with a sample of NC youth to assess tobacco use, attitudes and knowledge regarding tobacco use, and awareness of anti-tobacco media campaigns.

A baseline survey (T1) was conducted in March and April of 2004 with a cohort of NC youth, preceding the campaign launch in April 2004. The T1 survey (N=634) collected basic demographic information; lifestyle information; smoking behaviors and intentions; tobacco-related knowledge and attitudes; involvement in anti-tobacco activities; awareness, comprehension, and reaction to two national anti-tobacco television ads; and brand awareness of several anti-tobacco campaigns.

The second wave of the survey (T2) was conducted immediately following the fall flight of the 2004 TRU media campaign. The T2 survey (N=604) followed the same cohort of NC youth and was identical to the baseline survey in assessing lifestyle information, smoking behaviors and intentions, and involvement in anti-tobacco activities. Some tobacco-related knowledge and attitude questions were revised to better reflect the researchers' interests. The T2 survey also assessed awareness, comprehension, and reaction to two national anti-tobacco ads and the four North Carolina specific anti-tobacco ads, as well as brand awareness for these and other anti-tobacco media campaigns.

The third wave of the survey (T3) was conducted in early 2006, following the fall and winter flight of the 2005 TRU media campaign. The T3 survey closely mirrored the T2 survey, with minor adjustments to better reflect the researchers' interests.

The fourth wave of the survey (T4) was conducted in the spring of 2007. This was the last wave of the survey that followed the cohort of youth first surveyed in 2004, ending use of the longitudinal design for the ongoing TRU media evaluation. The T4 survey assessed the same areas as the previous surveys, and added a domain to measure youth support for tobacco free policies.

The fifth wave (T5) of the survey was conducted between January 7 and March 3, 2009, following the launch of a new series of TRU media campaign ads in the summer of 2008. The T5 survey utilized a cross sectional design, with an entirely new sample of youth respondents.

The sixth wave (T6) of the TRU media evaluation survey was conducted between February 24, 2011 and May 12, 2011. Like the T5 survey, the T6 survey utilized a cross sectional design with a new sample of youth respondents. The methodology reported here refers to the T6 data collection period.

Major outcomes measured in this current evaluation include campaign awareness (both ad and brand awareness) and ad receptivity. Brand awareness is measured through an aided recall question, in which interviewers ask youth if they have seen any ads featuring a particular theme or slogan. In addition to the branding associated with the TRU campaign, youth are asked about brands from a national anti-tobacco campaign and a placebo campaign for purposes of comparison with awareness of the TRU brands. Additional questions ask about youth exposure to the TRU brand across a number of venues, including online brand exposure.

To measure awareness of each specific ad campaign (i.e., the national truth® campaign, older ads from the NC TRU campaign, and new TRU ads featuring Destini and Justin), interviewers provide one identifying piece of information about an ad and ask youth if they have seen the ad (aided recall). If youth say yes, interviewers ask them to describe the ad in order to obtain a measure of confirmed ad awareness. Confirmed awareness helps prevent measurement errors from agreement bias or youth confusion with ads from other campaigns.

To measure youth reaction to ads, they are asked if they found the ads to be convincing, whether the ads grabbed their attention, whether they gave them good reasons not to smoke, and whether they talked with their friends or family members about the ads.

Susceptibility to smoking is an important outcome measure of “likelihood to smoke” for current non-smokers based on a youth’s responses to several questions: Do you think you will smoke a cigarette in the next year? Do you think that you will ever smoke a cigarette in the future? If one of your best friends offered you a cigarette, would you smoke it? Susceptibility to smokeless tobacco use was measured by the youth’s response to the question: Do you think you will ever use chewing tobacco, snuff, or dip in the future? Susceptibility to other types of tobacco use was measured by non-using youth responses to the question “Do you think you will ever use cigars / chewing tobacco / smokeless products like snus?”

A probability sample of households in North Carolina was chosen using a dual-frame approach (a mix of random digit dial [RDD] and a targeted sample) to ensure adequate coverage and reduce costs associated with screening households. A household was eligible for participation if it was headed by an adult (18 years or older) and had a child between the ages of 11 and 17. If more than one eligible child lived in the household, one was randomly selected to participate in the survey. Parents provided consent for the survey and provided basic demographic information. Households with non-English speaking parents or youth as well as households without telephones were considered ineligible for the survey.

Calling for the 2011 survey resulted in 1,002 completed interviews. The breakdown is provided in Table 3A.

Table 3A: Classification of Participation for 2011 Survey

Sampling Frame	Completes	Refusals	Ineligibles*	Not Screened† (Eligibility Unknown)	Totals
RDD Sample	96	59	2196	1092	3443
Targeted Sample	906	541	942	1333	3722
<i>Total</i>	1002	600	3138	2425	7165

* Ineligible cases include business or other non-residential numbers, non-working numbers, and numbers reached without a youth in the target age range.

† Eligibility unknown cases include all numbers in the sample for which contact was not attempted before the end of the calling period, by which time the projected sample had been surpassed.

The overall weighted response rate was 52.9% as given by the standards set by the American Association for Public Opinion Research. Response rate calculations incorporate all phone numbers for which eligibility is unknown by determining which proportion of them, if contacted, should be eligible for completing the survey. Based on this calculation, the response rate for the 2011 survey is similar to that for the baseline 2004 survey (52.4%). A breakdown of response rates by frame is given in Table 3B.

Table 3B: 2011 Survey Response Rates

Sampling Frames	Response Rates	Weighted Response Rate
RDD Sample	53.1%	53.1%
Targeted Sample	40.2%	40.2%
<i>Total</i>	49.7%	52.9%

Sample Weights

Base sample weights were predicated upon original probabilities of choosing households from each frame and were adjusted for the total number of phone lines in the household, the number of eligible children in the household, and nonresponses. A trimming technique was used to redistribute extreme weights that resulted from the sample design and reduce the variable effect of the weights with minimum effect on the weighted estimates. Post-stratification adjustments were made to better align our sample to the population on key demographic variables. These adjustments were based on the 2009 American Community Survey (ACS).

Statistical Analysis

All data were analyzed using SAS survey procedures to account for both complex survey designs (e.g., stratification) and sampling weights. Data analyses included weighted frequencies, chi square analyses, and multi-variable backward regression analyses. Descriptive data analyses, including chi square and were performed on selected variables. Results are presented as frequencies. Logistic regression modeling utilized a backwards stepwise regression procedure. Potential predictors used in models included measures of susceptibility to smoking, attitudes towards the smoking industry, attitudes about the social acceptability and health effects of smoking, awareness of TRU campaign ads and brands, and participation in school and community anti-tobacco activities. Final models include odd ratio estimates and 95% confidence intervals for predictors that had significant levels of .05 or less.

4. Results

4A. Demographics

Table 4A summarizes gender, age, and race of the 2011 survey sample.

Table 4A: Demographics (2011, unweighted)

Variable	%
<i>Gender</i>	
Male	51
Female	49
<i>Age</i>	
11	13.0
12	15.5
13	15.2
14	14.9
15	14.4
16	14.3
17	12.7
<i>Race</i>	
White	86.2
Non-white	13.8

4B. Tobacco Questions

4B.1 Tobacco use

Behaviors related to cigarette smoking and other tobacco use are shown in Table 4B.1. Significantly fewer youth report ever trying cigarette smoking in 2011 compared to both 2004 and 2009.

Table 4B.1: Tobacco use behaviors (2004 and 2011)

Behavior	% Yes	
	2004	2011
Ever tried cigarette smoking, even 1 or 2 puffs*	15.8	8.3
Current cigarette smoking*	3.7	1.8
Ever tried chewing tobacco, snuff, or dip†	-	3.0
Current chewing tobacco, snuff, or dip use†	-	1.4

* Differences in rates at 2004 and 2011 are statistically significant, $p < 0.05$

† Not asked in 2004

4B.2 Desire to quit

Of the 1.8% of youth in the 2011 sample who reported that they were current smokers, approximately three-fourths (74%) reported wanting to quit. This compares to 69% of youth smokers who reported wanting to completely stop smoking in the 2004 survey. While the increase was not statistically significant, the increase in desire to quit among current smokers suggests movement in the right direction.

4B.3 Susceptibility to tobacco use

Among non-smokers in 2011, 37.1% of youth in this survey appear susceptible to smoking (Table 4B.3).

Table 4B.3: Susceptibility to tobacco use (2004 and 2011)

Susceptibility	%	
	2004	2011
<i>Smoking susceptibility (non-smokers only)</i>		
Susceptible	39.5	37.1
Non-susceptible	60.5	62.9
<i>Smokeless tobacco susceptibility (non-dippers only)[†]</i>		
Susceptible	-	10.6
Non-susceptible	-	89.4

[†] Not measured in 2004.

4B.4 Exposure to secondhand smoke and household smoking behaviors

In 2011 about one in five youth report that there is someone in their home who smokes cigarettes (Table 4B.4a), and 15% of youth report having asthma or other breathing problems.

Table 4B.4a: Household smoking behaviors and health issues (2011)

Question	% Yes
	2011
<i>Other than yourself, does anyone who lives in your home smoke cigarettes?</i>	23.1
<i>Do you have asthma or other severe breathing problems?</i>	15.3

Youth reports of household smoking rules are shown in Table 4B.4b. The percentage of youth reporting that there are no rules about smoking in their homes has decreased over time, while the percentage of youth reporting that smoking is not allowed in the house has increased. Between 2004 and 2011, the changes in the distribution of household smoking rules are statistically significant, and indicate a positive trend in limitations on smoking in NC youths' home settings.

Table 4B.4b: Household smoking rules over time (2004 and 2011)

Question	%*	
	2004	2011
<i>What are the rules about smoking in your home?[†]</i>		
People can't smoke in the house	72.8	78.0
People can smoke only in certain rooms of the house	6.1	5.3
There are no rules about smoking at home	20.5	13.0

* Percentages do not add to 100 because of an "other" category.

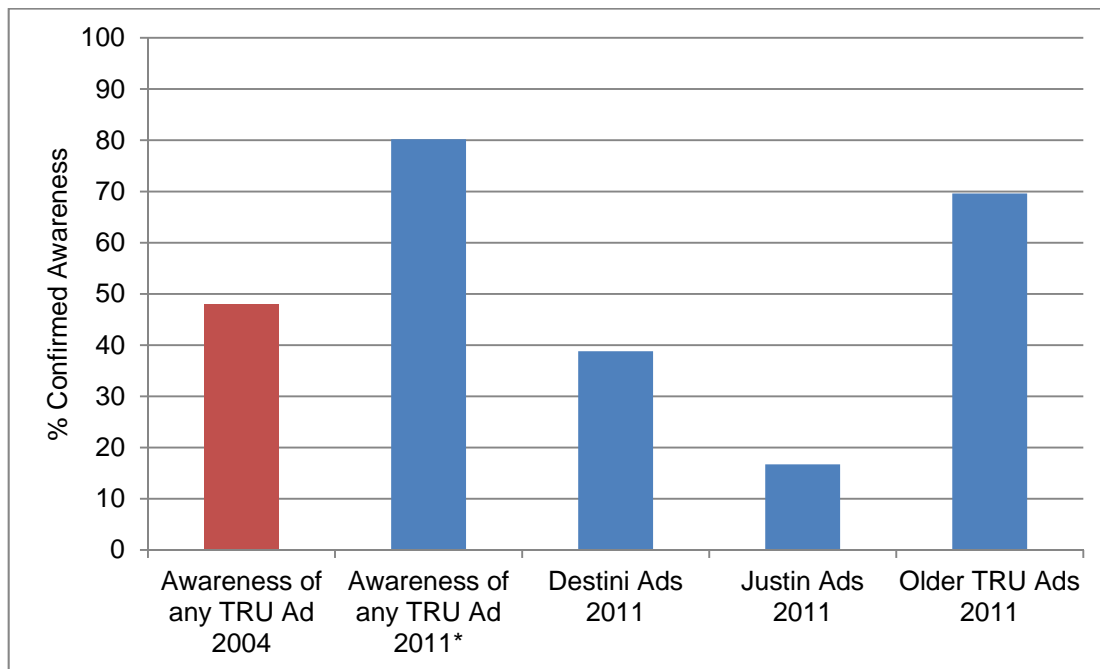
[†] Changes are significant at $p < 0.0001$

4C. Campaign Effects

4C.1. Campaign awareness

Confirmed awareness of the TRU ads (awareness of at least one TRU ad) among NC youth has increased significantly over the first five years of the campaign, from 48% in 2004 to 80% in 2011. The graph below shows awareness levels of each set of ads shown during 2010-2011 and tested in the 2011 survey. Older TRU ads include the *Truth and Consequences* ad featuring Terrie Hall as well as *Reena* ads, which ran as recently as the second quarter of 2010. Youth awareness of the older ads surpassed awareness of the new series featuring Destini and Justin, which had substantially smaller GRPs for the six to nine month period covered by the 2011 survey, compared to the GRPs for previous year's campaigns.

Figure 4C.1: Confirmed awareness of TRU ads by NC youth (2004 and 2011)

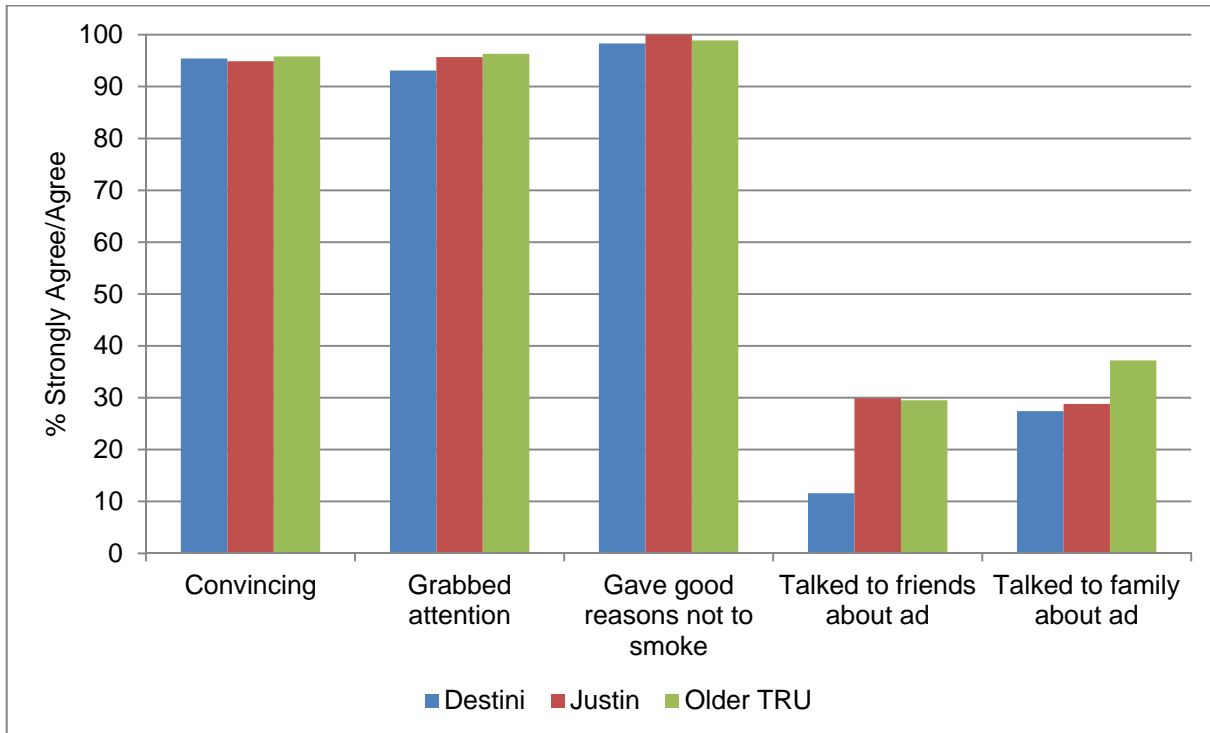


* Change from 2004 significant at $p < 0.0001$

4C.2 Ad receptivity

Youth who had seen one or more of the Destini, Justin, or the older TRU ads reported positive reactions to the ads. Among youth who had confirmed awareness of ads from either of these campaigns (Figure 4C.1), over 93% said the ads were convincing and grabbed their attention (Figure 4C.2). Over 98% of youth with confirmed awareness said that the ads gave them good reasons not to smoke. About 30% of youth reported talking to their friends about the Justin ads or the older TRU ads, indicating that these ads had higher “chat value” compared to the Destini ads. Overall, youth were more likely to report talking to their family members than their friends about the ads.

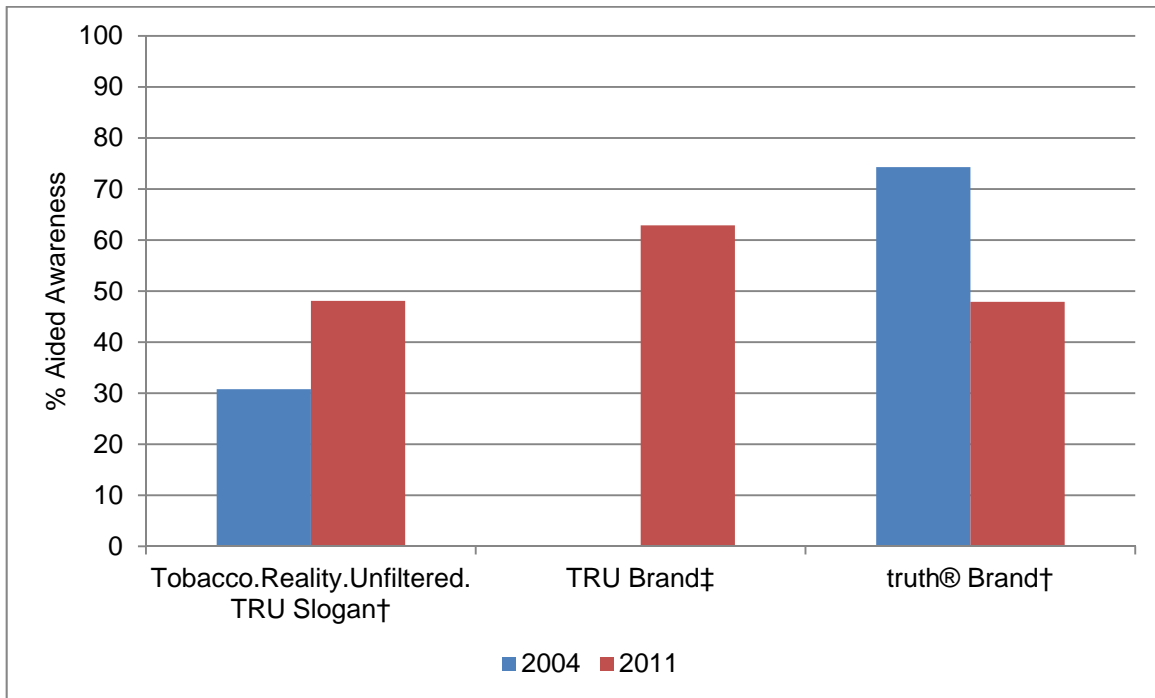
Figure 4C.2: Reactions to the TRU ads among NC youth with confirmed ad awareness (2011)



4C.3 Brand awareness

Nearly two-thirds (63%) of North Carolina youth recognized the TRU brand, and awareness of the TRU campaign slogan, Tobacco.Reality.Unfiltered. increased significantly between 2004 and 2011 (Figure 4C.3). As youth recognition of the national truth® brand continues to significantly decline, the North Carolina TRU brand remains the most widely recognized anti-tobacco media brand among North Carolina youth.

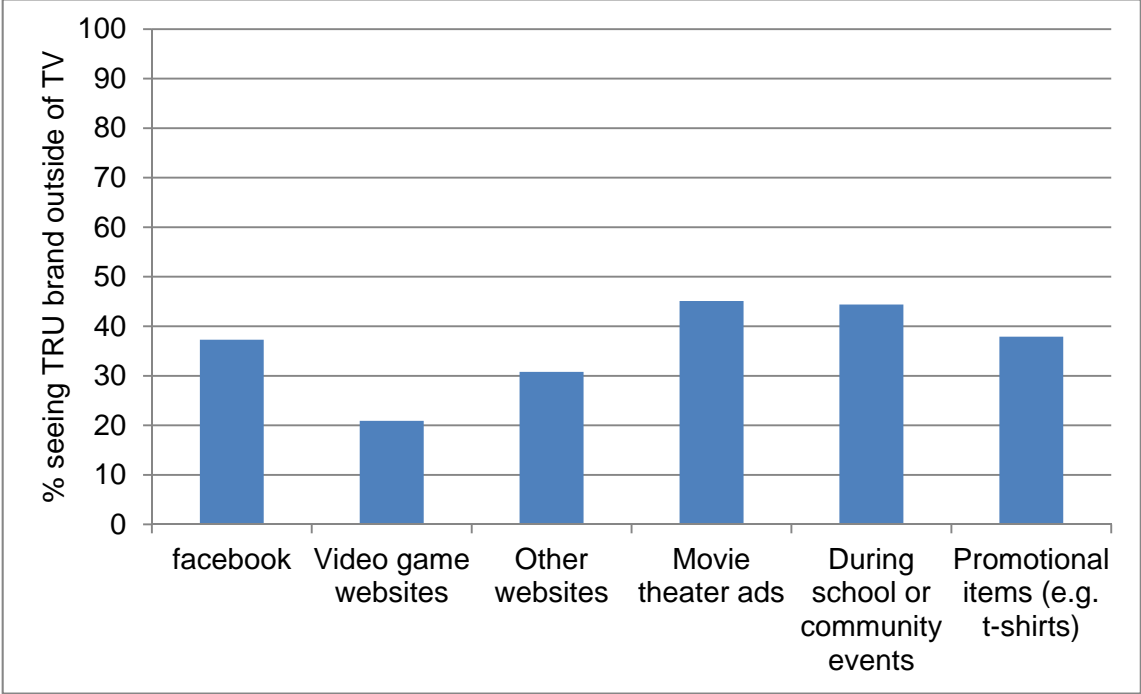
Figure 4C.3: NC youth awareness* of anti-tobacco campaign themes or slogans (2004 and 2011)



* Aided awareness
† Changes significant at $p < 0.0001$
‡ Not asked in 2004
® National Legacy Campaign

The 2010-2011 TRU media campaign included some placement of TRU ads in venues outside of TV commercials, including on social networking sites and other websites frequented by youth and in 30 movie theaters across the state. The TRU brand is also integrated into TTUPC school and community based efforts. Among youth with TRU brand awareness, over one-third reporting seeing TRU on facebook, and close to one half saw TRU ads in movie theaters (Figure 4C.4). While only 10% of youth report having a TRU branded group in their schools, it appears that the TRU brand reaches a great number of youth through these activities and associated promotional items such as TRU branded t-shirts.

Figure 4C.4: TRU brand awareness outside of TV ads (2011)



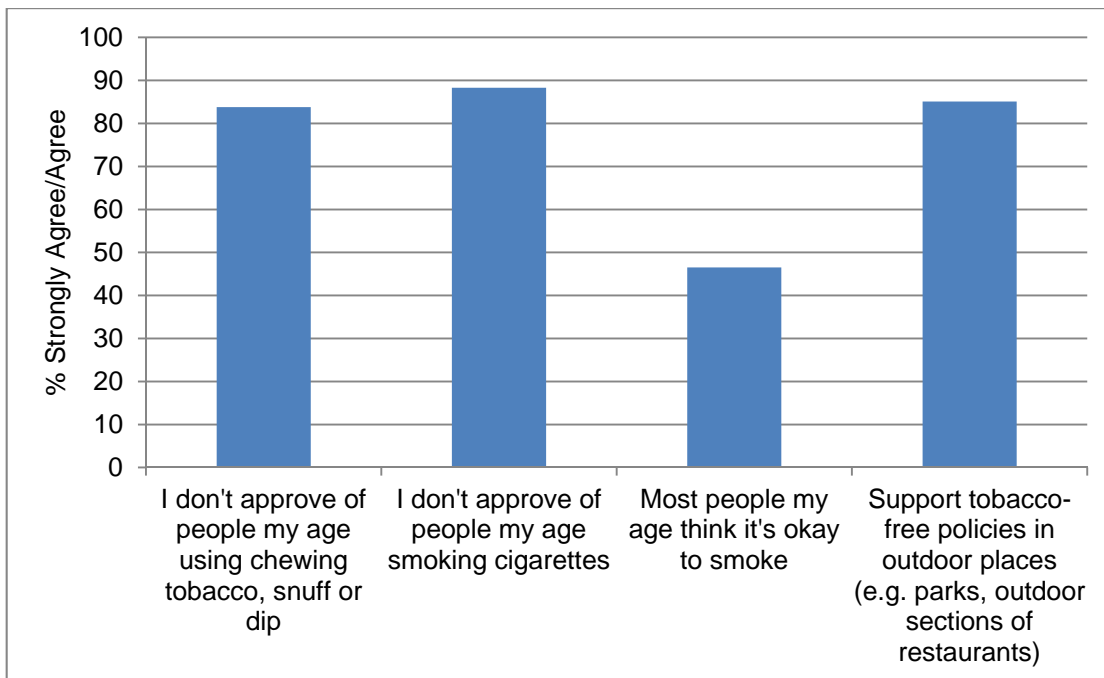
4D. Youth Attitudes

4D.1 Youth attitudes toward tobacco use

Youth attitudes against smoking remain strong in 2011, with 84% of youth indicating disapproval of smokeless tobacco use among their peers and 88% disapproving of their peer's smoking. Despite these strong anti-tobacco attitudes, more than 45% of youth still report believing that their peers think it is okay to smoke. Comparison data from 2004 are not available for these attitude measures; however, significantly more youth report believing that their peers think it is okay to smoke in 2011 compared to 2009 (40%).

Along with strong anti-tobacco use attitudes, the majority (85%) of North Carolina youth express support for tobacco-free policies in outdoor venues such as parks, outdoor stadiums, and outdoor sections of restaurants.

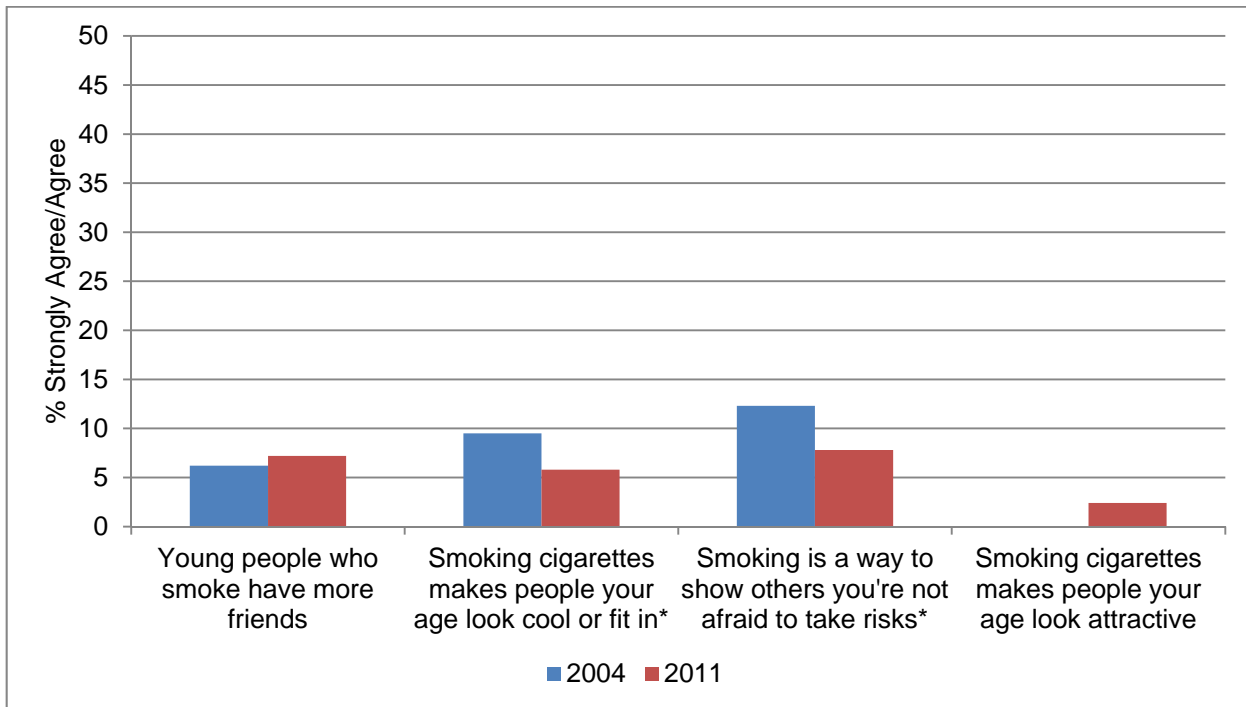
Figure 4D.1: NC youth attitudes towards tobacco use and tobacco policies (2011)



4D.2 Social acceptability of smoking

Youth disapproval of tobacco use by their peers (Figure 4D.1) is reflected in beliefs about the social acceptability of smoking, which have been consistently strong since 2004 (Figure 4D.2). In 2011, compared to 2004, significantly fewer youth believe that smoking makes young people look cool or fit in or that smoking is a way to show others you are not afraid to take risks. Less than 10% of youth believe that young people who smoke have more friends or that smoking makes young people look attractive.

Figure 4D.2: NC youth views on social acceptability of cigarette smoking (2004 and 2011)



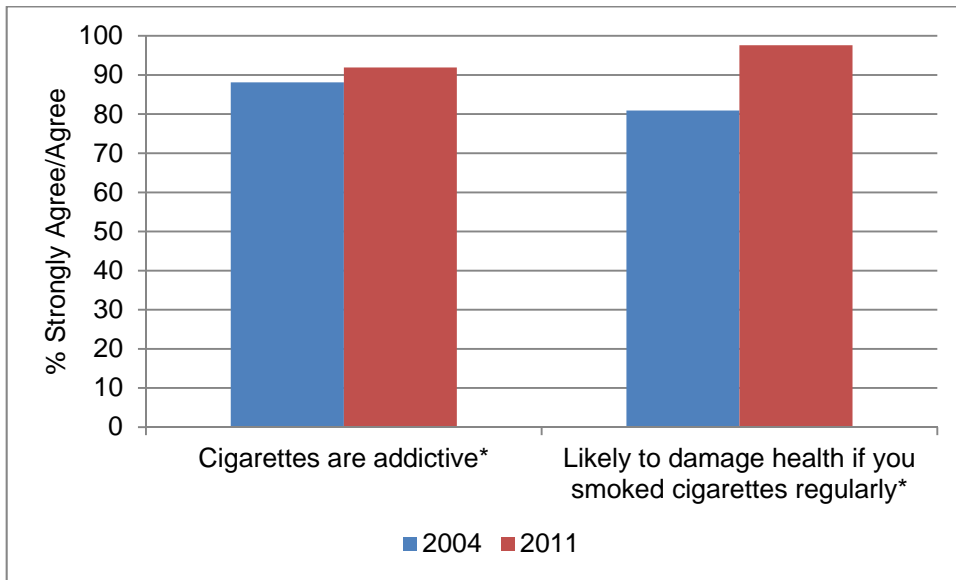
*Differences significant at $p < 0.005$

‡Not asked in 2004

4D.3 Belief about harms of smoking

Significantly more youth express awareness about the negative health consequences of smoking in 2011 compared to 2004, with more youth agreeing that cigarettes are addictive and that you are likely to damage your health if you smoked cigarettes regularly.

Figure 4D.3: NC youth beliefs about harms of smoking (2004 and 2011)



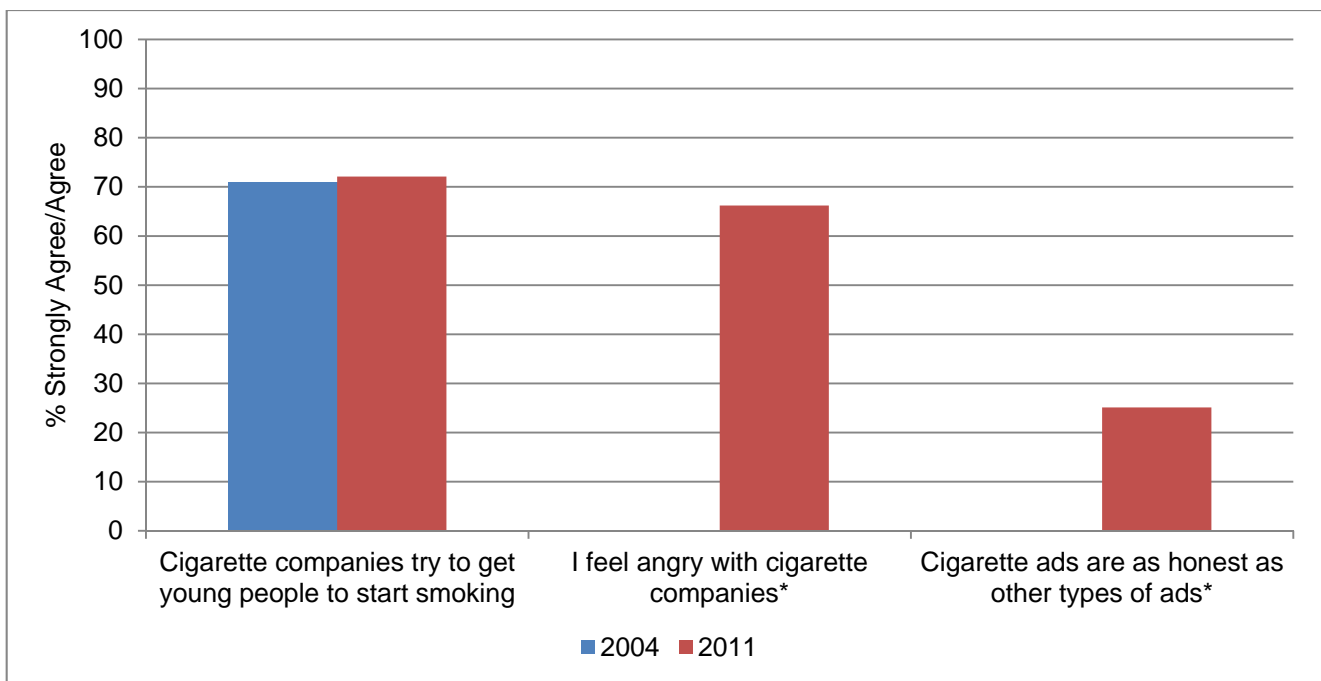
*p<0.05

4D.4 Youth attitudes about tobacco industry and receptivity toward tobacco advertising

Youth expressed negative attitudes toward the tobacco industry, with over 70% believing that cigarette companies try to get young people to smoke and over 60% expressing angry feelings toward cigarette companies.

Youth in North Carolina remain heavily exposed to cigarette advertising, with more than 85% reporting they have seen cigarette ads in stores they have visited in the past 90 days. Approximately one-quarter of NC believe that cigarette ads are as honest as other types of ads, suggesting that a substantial number of youth are still susceptible to the tobacco industry's marketing techniques.

Figure 4D.4: NC youth attitudes toward the tobacco industry (2004 and 2011)

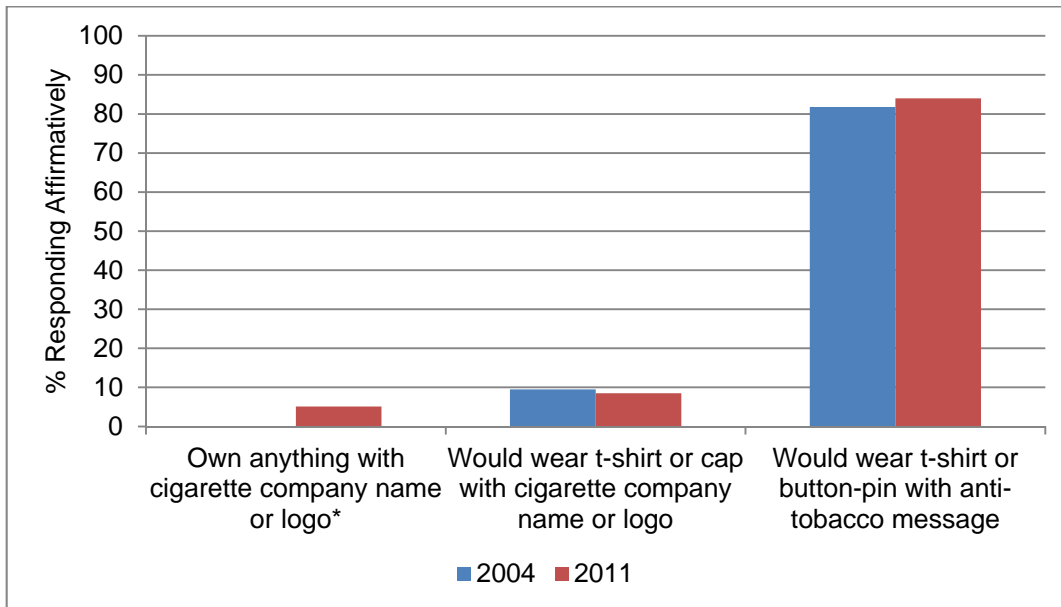


*Not asked in 2004

4D.5 Youth interest in tobacco branded or anti-tobacco branded merchandise

Few youth report owning something with a cigarette company logo on it, or report that they would wear something with a cigarette company name or logo on it. The great majority (84%) of youth said they would wear something like a t-shirt or button-pin with an anti-tobacco message on it.

Figure 4D.5: Tobacco and anti-tobacco merchandise (2004 and 2011)

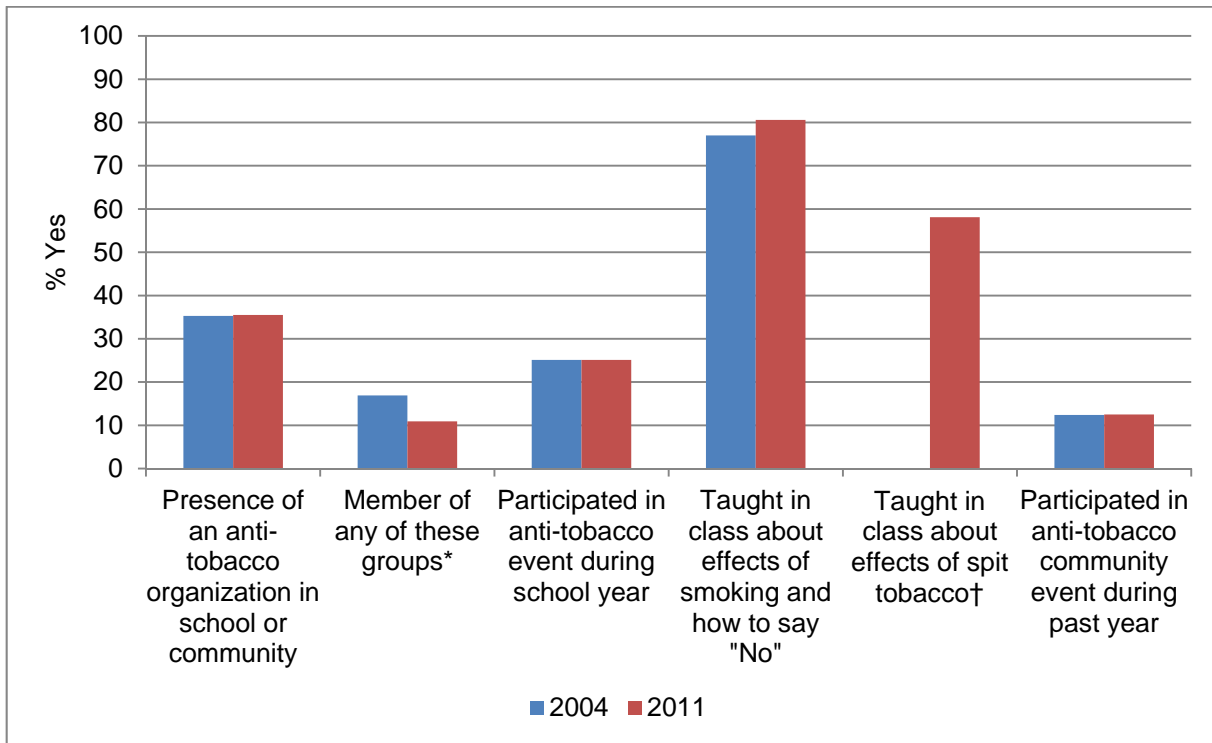


*Not asked in 2004

4E. Youth Participation in Anti-tobacco Organizations, Classes, or Events

Youth report similar levels of anti-tobacco organizations and events in their school or community in 2004 and 2011. Significantly fewer youth report being a member of an anti-tobacco group in their school in community in 2011 compared to 2004. Most youth (80%) report being taught about smoking and how to say “no” in and over half (60%) report being taught about the harmful effects of spit tobacco in classes.

Figure 4E: NC youth involvement in anti-tobacco organizations, classes, or events (2004 and 2011)



* p<0.05
 † Not asked in 2004

4F. Factors Relating to Awareness of the TRU Media Campaign

Three statistical models show associations between TRU media campaign awareness outcomes and predictor variables. In the first model (4F.1), the likelihood of being aware of any TRU media campaign ad is predicted by three variables: older age (14-17), stronger anti-tobacco attitudes, and willingness to wear gear with anti-tobacco messages.

Table 4F.1: Odds Ratios Showing the Likelihood of Being Aware of any TRU Media Campaign Ad

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
Older Age	1.93	1.37	2.72
Anti-tobacco attitudes	0.68	0.46	0.98
Would wear gear with anti-tobacco message	1.8	1.2	2.71

The second model (Table 4F.2) shows that the likelihood of recognizing the TRU campaign brand is predicted by six variables: caucasian race, stronger anti-tobacco attitudes, presence of anti-tobacco organizations in school or community, higher TRU ad dose (number of times youth report seeing TRU ads), sensation seeking behavior and susceptibility to smoking.

Table 4F.2: Odds Ratios Showing the Likelihood of Recognizing the TRU Brand

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
Caucasian Race	1.41	1.01	1.98
Anti-tobacco attitudes	0.48	0.33	0.7
Presence of anti-tobacco organizations	2.41	1.71	3.4
TRU ad dose	1.47	1.36	1.59
Sensation seeking behavior	2.43	1.36	4.35
Susceptibility to smoking	1.44	1.03	2.01

The third model (Table 4F.3) shows that the likelihood of recognizing the TRU campaign slogan, *Tobacco.Reality.Unfiltered.*, is predicted by six variables: older age (14-17), stronger anti-tobacco attitudes, presence of an anti-tobacco group in school or community, willingness to wear gear with anti-tobacco message, higher TRU ad dose (number of times youth report seeing TRU ads), and sensation-seeking behavior.

Table 4F.3: Odds Ratios Showing the Likelihood of Recognizing the Tobacco.Reality.Unfiltered Slogan

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
Older Age	1.36	1.01	1.84
Anti-tobacco attitudes	0.65	0.46	0.91
Presence of anti-tobacco organization	1.91	1.41	2.58
Would wear gear with anti-tobacco message	1.87	1.24	2.81
TRU ad dose	1.33	1.24	1.41
Sensation Seeking	2.12	1.31	3.44

Two models show predictor variables for talking with friends and family about the TRU ads, among those youth with confirmed TRU ad awareness. The first model (Table 4F.4) shows that the likelihood of talking with friends about the TRU ads is predicted by higher TRU ad dose, such that youth who have seen the TRU ads more times have higher odds of talking with their friends about the ads.

Table 4F.4: Odds Ratios Showing the Likelihood of Talking to Friends about TRU Ads

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
TRU ad dose	1.45	1.35	1.56

The second model (Table 4F.5) shows that the likelihood of talking with family members about the TRU ads is predicted by three variables: younger age (11-14), living with someone who smokes, and higher TRU ad dose.

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
Younger Age	0.84	0.78	0.9
Living with someone who smokes	2.1	1.51	2.93
TRU ad dose	1.32	1.24	1.41

4G. Factors Relating to Smoking Experimentation and Susceptibility

Two statistical models show associations between tobacco use outcomes and predictor variables. In the first model (Table 4G.1), susceptibility to smoking was predicted by four variables: having more positive attitudes about smoking, having more positive attitudes about the tobacco industry, more frequently seeing actors using tobacco on TV or in the movies, and displaying sensation seeking behaviors.

Table 4G.1: Odds Ratios Showing the Likelihood of Being Susceptible to Smoking

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
Attitudes towards smoking	2.22	1.57	3.13
Attitudes towards tobacco industry	1.88	1.31	2.7
See actors on TV and movies using tobacco	1.41	1.15	1.73
Sensation Seeking	2.41	1.54	3.76

The second model (Table 4G.2) shows factors associated with youth report of experimenting with smoking. Four factors were associated with reported experimentation: having more friends who smoke, having more positive attitudes about smoking, having more positive attitudes about the tobacco industry, and living with someone who smokes.

Table 4G.2: Odds Ratios Showing the Likelihood of Reporting Experimentation with Smoking

Predictor Variables	Odds Ratios		
	Estimate	95% CI Lower Limit	95% CI Upper Limit
Having friends who smoke	2.98	2.16	4.11
Attitudes towards smoking	2.07	1.06	4.05
Attitudes towards tobacco industry	2.99	1.64	5.45
Living with someone who smokes	4.13	2.33	7.33

5. Discussion

Current research continues to support inclusion of a well-funded, on-going mass media campaign as an important component of a comprehensive tobacco prevention and control program.⁶ The TRU media campaign plays an integral role in the school and community-based programs that form the Health and Wellness Trust Fund's Teen Tobacco Use Prevention and Cessation Initiative, and helps ensure that the core message of the Initiative is delivered statewide. The major, overarching goal of this statewide program is to reduce youth tobacco use.

The primary purpose of the TRU campaign evaluation is to examine campaign awareness and ad reactions among North Carolina youth. Findings include ad and brand awareness and ad receptivity, along with youth tobacco use behaviors, attitudes toward smoking and the tobacco industry, knowledge about the health effects of smoking, participation in school and community-based anti-tobacco activities, support for tobacco-free policies, and exposure to secondhand smoke. The 2011 evaluation also compared select outcome data from 2011 to baseline data from 2004, providing a picture of the first seven years of North Carolina's TRU media campaign.

The 2011 TRU media evaluation shows that the TRU media campaign, as currently constructed and executed, remains an integral and successful component of North Carolina's teen tobacco prevention initiative. The TRU campaign has reached record levels of campaign awareness, appears well received by youth, and is preferentially reaching those North Carolina youth at highest risk for future tobacco use. The campaign, combined with state, school and community policies (i.e., increased state excise tax, tobacco-free schools legislation, and community coalition activities), is playing a substantial role in the historically low levels of tobacco use seen among North Carolina middle and high school youth in recent surveys. The NC Health and Wellness Trust Fund has devoted the necessary resources to create and maintain a successful media campaign, but will be abolished on July 1, 2011, leaving the future of the TRU campaign uncertain. Failure to continue the campaign through other funding sources will undo the significant progress made during the campaign's first seven years and will be a major setback to the health of North Carolina's youth.

Awareness of the TRU campaign continues to increase, and receptivity to the ads remains strong and positive, indicating that the campaign has accomplished important short term outcomes related to achieving the overarching goal of the TTUPC Initiative (see Appendix). Since the TRU media campaign launched in 2004, youth awareness of campaign ads has significantly increased, from 48% in 2004 to an all time high of 80% in 2011. Other state youth tobacco prevention campaigns with demonstrated success, achieved ad awareness rates of over 80%.¹²⁻¹⁴ While the independent, long-term impact of the campaign on reducing consumption of tobacco products and susceptibility to using tobacco among NC youth is difficult to pinpoint, sustaining high levels of campaign awareness can be expected to contribute to reduced tobacco use among youth. The TRU media campaign remains an integral piece of a comprehensive approach to teen tobacco use prevention and cessation (that includes extensive youth community and school-based coalition programs and policy efforts throughout the state).

As new TRU ads were introduced between 2004 and 2011, ad receptivity among youth with confirmed awareness of TRU ads has remained strong and positive. The vast majority of youth reported in 2011 that both the older and new TRU ads aired in 2010-2011 were convincing, attention-grabbing, and gave good reasons not to smoke. Reactions to the *Destini* and *Justin* ads, introduced in 2010, were strong, with 95% of more of youth reporting that these ads were convincing, grabbed their attention, and gave good reasons not to smoke. Interestingly, youth reported equally strong reactions to older TRU ads, such as the Reena series, which had not been on the air for at least six months prior to the survey. This suggests that even older ads deliver a strong message that sticks with youth, and that

continuing to develop and air new TRU ads may have a strong and positive cumulative message effect for youth.

Across the three series of TRU ads, between 11.5% and 29.5% of youth who saw the ads reported discussing the ads with their friends, indicating a wide range of the “chat value” of the ads (the percentage of youth who report talking to friends about the ads). While the chat value of the older and newer ads did not reach the 35% goal set in the 2009 TRU Media evaluation, achieving close to 30% chat value suggests that social networking continues to be a potentially powerful tool for spreading the TRU message among youth. Continued integration of TRU media messages into school and community based programs and use of communication channels that facilitate social networking, such as online youth networking sites or text messaging initiatives, should support increased chat value. It is interesting to note that substantially fewer youth who saw the Destini ads reported talking to their friends about them compared to the Justin series or the older TRU series featuring Terrie and Reena. Exploring what characteristics of ads contribute to greater chat value should be a focus of future research.

The 2011 survey added a new question to assess a different kind of chat value, asking youth whether they talked with their family members about TRU ads they saw on TV. Overall, across the three series of ads, more youth (27% - 37%) reported talking with family members about the ads compared to talking with their friends about the ads. Regression analyses show that younger youth (ages 11 through 14) and youth who live with someone who smokes were more likely to talk to their family about the ads. These findings suggest that the campaign is a potentially important tool in reducing parental smoking, and by proxy, youth exposure to secondhand smoke.

The 2011 TRU Media evaluation showed sustained high level of youth awareness of the TRU campaign brand and slogans. Nearly two-thirds (63%) of NC youth were aware of the T-R-U or TRU brand in 2011, as awareness of the national truth[®] campaign brand continued to significantly decline among NC youth, reaching a low of 48% in 2011. Furthermore, among those youth with awareness of the TRU brand, substantial numbers reported seeing the TRU brand in other places, including social networking sites (37%) and other websites (31%), movie theaters (45%), school and community events (44%), and on promotional items like t-shirts (38%). This level of awareness outside of the TV ad campaign suggest that these social marketing efforts are having early success in spreading the TRU brand across the state, a potentially powerful strategy for furthering the prevention message communicated in the TV ads.

Youth recognition of the TRU campaign slogan remained high in 2011, at 48%, significantly greater than awareness levels in 2004. Sustained higher recognition of brands and slogans associated with the media campaign have been observed since 2009 and suggest that the campaign is becoming a more familiar and ingrained part of the media landscape for NC youth. This growing familiarity offers an opportunity for TRU media messages to easily integrate into a wide range of statewide prevention activities and supports the continued inclusion of the TRU media campaign as an important tool in any and all continued comprehensive youth tobacco prevention efforts conducted in North Carolina.

Youth knowledge about the health effects of smoking have remained strong over time, with an overwhelming majority acknowledging that cigarettes are addictive and that youth can damage their health if they start smoking. This indicates that knowledge of the harmful effects of smoking is strong and likely to remain so with continued support of the TRU campaign as part of future youth prevention efforts. However, should the campaign be discontinued, it is possible that youth knowledge would begin to decline in the coming years.

Significantly fewer youth believe that smoking makes their peers look cool in 2011 (6%) compared to 2004 (9.5%) and very few youth (7%) believe that teens who smoke have more friends, a belief that has held steady since 2004. Strong majorities (88%) of NC youth do not approve of youth smoking,

but nearly half of youth (46.5%) continue to believe that their peers think it is okay to smoke. These mixed results suggest that youth perceptions of the social acceptability of smoking and ideas about social norms related to smoking deserve continued attention as part of the TRU campaign and other future youth tobacco prevention activities.

Susceptibility to tobacco use is an important indicator of experimentation with smoking and of future smoking. Regression analyses from this evaluation show that youth who have more positive attitudes towards smoking and the tobacco industry, have more exposure to actors on TV and in the movies using tobacco, and who engage in sensation seeking behavior are more likely to be susceptible to smoking. The TRU campaign brand and slogan are reaching those youth at risk for future smoking. Youth who are susceptible to smoking are more likely to be aware of the TRU brand, and youth who engage in sensation seeking behaviors more likely to be aware of the Tobacco.Reality.Unfiltered slogan.

While exposure to secondhand smoke remains high, with 23% of youth reporting that at least one person in their homes other than themselves smokes, there is evidence that positive changes are occurring with regard to household smoking rules. In 2011, compared to 2004, significantly fewer youth report that there are no rules about smoking in their homes (13% vs. 20.5%) and significantly more youth report that smoking is not allowed in their homes (78% vs. 73%). Environmental influences and the modeling of smoking behaviors are important risk factors for youth tobacco use, and these changes represent important progress towards mitigating these risks. Continued policy efforts to decrease secondhand smoke exposure among all youth remain a critically important outcome.

The overwhelming majority of youth (85%) support smoke-free policies in outdoor areas they frequent, such as parks, stadiums, and outdoor sections of restaurants. Channeling this support into advocacy for tobacco-free policies has been a critical and successful component of the TTUPC school and community programs. Great progress has been made with recent passage of state legislation mandating 100% Tobacco Free Schools (2007) and prohibiting smoking in certain public places (2009). It is possible that continuation of the TRU campaign can support ongoing efforts to expand the reach of smoke-free policies to all areas, as supported by NC youth.

Despite the removal of tobacco advertisements from many outdoor environments, including billboards, for many years, youth exposure to tobacco industry advertising remains too high, with the overwhelming majority (85%) of youth reporting exposure to cigarette ads in the previous two months. The majority of youth reported believing that cigarette companies try to get young people to start smoking and report that they feel angry with tobacco companies. The national truth[®] media campaign from the American Legacy Foundation has successfully capitalized on negative youth attitudes toward the tobacco industry. Evaluations of the national truth[®] campaign show that youth respond well to ads directly countering tobacco industry messages, and that the truth[®] campaign was associated with decreases in national smoking prevalence observed between 1999 and 2002.^{18,19} State level campaigns that also used anti-industry themes have reported similar positive youth responses.¹²⁻¹⁷ While these themes would likely work well with North Carolina youth, the political feasibility of their use in a state campaign remains unlikely for now. Instead, the data support continued grassroots approaches through school and community-based activities to counter tobacco industry influence on NC youth.

Schools remain an important site for tobacco education and anti-tobacco activism, with 35.5% of youth reporting the existence of an anti-tobacco organization at their school or community. Among youth who have a local anti-tobacco group, 11% report membership. Among youth who do not have a local anti-tobacco organization, over half indicate interest in joining such a group if it were available, reinforcing the potential impact of ensuring that school and community based prevention groups and activities continue in North Carolina. Youth participation in school-based anti-tobacco events appears

to be at similar levels as in 2004, with a quarter of youth reporting participation, and only slightly more reporting being taught about the effects of smoking in class in 2011 than in 2004 (80.5% vs. 77%). A cultural shift in anti-smoking attitudes and behaviors seems to be underway with youth, as evidenced by data from this and other surveys. Ongoing comprehensive efforts by school and community based prevention programs, and youth experiences with these efforts are critical to build on this shift and contribute over time to substantive socio-normative behavior change.

There are some limitations to the results reported here. The first concerns the use of telephone surveys to assess smoking estimates of teenagers. Research has shown that telephone surveys typically yield lower estimates of tobacco use behavior than school-based, self-administered surveys, such as the NC YTS.²⁰ It is likely that some youth being interviewed, particularly younger youth, are uncomfortable answering questions related to tobacco use behavior and thus under-report their behaviors. Despite inclusion of questions about whether the youth was alone when completing the phone survey and whether his or her answers would have been different if he/she had been alone, it is difficult to know with certainty to what extent this study offers conservative estimates of youth tobacco use behaviors. However, for the purposes of tracking the media campaign, a telephone survey is highly reliable and cost-effective.

A second limitation is that the 2011 TRU media evaluation survey utilized a cross-sectional design, which does not allow for demonstration of causality (e.g., showing a direct link between awareness of the TRU campaign and strong anti-tobacco attitudes). However, using this design allowed for comparison with baseline data gathered in 2004, providing valuable information about changes in attitudes, campaign awareness, and other key outcomes over the first seven years of the campaign.

The TRU Media Campaign continues to use best practices guidelines for constructing, refining, and delivering effective messages. Youth awareness of this campaign has increased significantly over the first seven years and is nearing levels recorded in other state media campaigns with demonstrated success. These record awareness levels are likely associated with large funding increases and campaign continuity. To build on these gains and maximize campaign awareness, the TRU media campaign should continue to be funded at levels similar to or increased from the 2010-2011 campaign. *New ads using the same theme of the serious health consequences of tobacco use should be developed, targeted to youth most at-risk for smoking, and aired on a consistent basis to continually capture youth attention.* As a critical tool in the comprehensive effort to reduce teen tobacco use in North Carolina, the TRU media campaign should continue integrating with statewide school and community programs. Continued evaluation of the campaign will complement school and community-based program initiatives and provide insight into campaign growth and new directions.

6. References

1. U.S. Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2004.
2. Substance Abuse and Mental Health Services Administration. Results from the *2007 National Survey on Drug Use and Health: National Findings*. Substance Abuse and Mental Health Services Administration; 2009 [updated 2009 April 24; cited 2009 May 13]. Available from: <http://www.oas.samhsa.gov/nsduh/2k7nsduh/2k7Results.pdf>.
3. Johnston L, O'Malley, PM, Bachman, JG, Schulenberg, JE. *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2008*. Bethesda, MD: National Institute on Drug Abuse; 2009.
4. N.C. Department of Health and Human Services. Tobacco Prevention and Control Branch. Surveillance and Evaluation Team. Detailed summary tables - statewide. Raleigh, N.C.: N.C. Department of Health and Human Services; 2010.
5. North Carolina Health and Wellness Trust Fund. North Carolina Health and Wellness Trust Fund 2008 Annual Report. <http://www.healthwellinc.com/hwtfc/pdf/GovOps2008.pdf>. Accessed April 29, 2009.
6. CDC. Trends in cigarette smoking among high school students--United States, 1991-2001. *MMWR Morb Mortal Wkly Rep*. May 17 2002;51(19):409-412.
7. North Carolina Health and Wellness Trust Fund. Annual report to the joint legislative commission on governmental affairs and the joint legislative health care oversight committee.; 2006:277.
8. McCullough, Anna (Tobacco Prevention and Evaluation Program, UNC Chapel Hill). Email to: Barbara Moeykens (North Carolina Health and Wellness Trust Fund). 2009 May 15.
9. McCullough, Anna (Tobacco Prevention and Evaluation Program, UNC Chapel Hill). Email to: Greg Ives (Capital Strategies). 2011 June 23.
10. University of North Carolina School of Medicine Tobacco Prevention and Evaluation Program. Recommendations for 2004 North Carolina Youth Tobacco Use Prevention Media Campaign. http://fammed.unc.edu/TPEP/hwtfceval/reports/media_analysis03.pdf.
11. Farrelly MC, Niederdeppe J, Yarsevich J. Youth tobacco prevention mass media campaigns: past, present, and future directions. *Tob Control*. Jun 2003;12 Suppl 1:i35-47.
12. Sly DF, Heald GR, Ray S. The Florida "truth" anti-tobacco media evaluation: design, first year results, and implications for planning future state media evaluations. *Tob Control*. Mar 2001;10(1):9-15.
13. CDC. Effect of ending an antitobacco youth campaign on adolescent susceptibility to cigarette smoking--Minnesota, 2002-2003. *MMWR Morb Mortal Wkly Rep*. Apr 16 2004;53(14):301-304.
14. Al-Delaimy WK, White MM, Trinidad DR, Messer K, Gilmer T, Zhua S-H, Mills AL, Pierce JP. The California Tobacco Control Program: can we maintain the progress? Results from the California Tobacco Survey, 1990-2005. Sacramento, CA: California Department of Public Health; 2008.
15. Hicks JJ. The strategy behind Florida's "truth" campaign. *Tob Control*. Mar 2001;10(1):3-5.
16. Sly DF, Hopkins RS, Trapido E, Ray S. Influence of a counteradvertising media campaign on initiation of smoking: the Florida "truth" campaign. *Am J Pub Health*. February 2001; 91(2):233-238.
17. Balbach ED, Glantz SA. Tobacco control advocates must demand high-quality media campaigns: the California experience. *Tob Control*. Winter 1998;7(4):397-408.
18. Davis KC, Farrelly MC, Messeri P, Duke J. The impact of national smoking prevention campaigns on tobacco-related beliefs, intentions to smoke and smoking initiation: results from a longitudinal survey of youth in the United States. *Int J Environ Res Public Health* 2009;6:722-740.

19. Farrelly MC, Davis KC, Duke J, Messeri P. Sustaining 'truth': changes in youth tobacco attitudes and smoking intentions after 3 years of a national antismoking campaign. *Health Ed Res* 2009;24(2):42-48.
20. Currivan DB, Nyman AL, Turner CF, Biener L. Does telephone audio computer-assisted self-interviewing improve the accuracy of prevalence estimates of youth smoking? Evidence from the UMass Tobacco Study. *Public Opinion Quarterly*. Win 2004;68(4):542-564.

Appendix: TRU Media Campaign Logic Model

