Rural Tobacco Use: Research and Interventions
Prevalence of Tobacco Use in the Rural United States
Rural Prevalence of Tobacco Use

- Prevalence of tobacco use in rural vs. urban locations
  - Behavioral Risk Factor Surveillance System, 2006 and 2008\(^1\)
    - Adults residing in rural areas significantly more likely to smoke cigarettes (22.2% vs. 17.3% suburban and 18.1% urban)
    - Rural adults also significantly more likely to use smokeless tobacco (5.9% vs 3.6% suburban and 2.2% urban)
  - National Survey on Drug Use and Health, 2012-2013\(^2\)
    - Rural prevalence higher than urban for: past 30-day smoking (24.1% vs. 21.0%), chew (2.2% vs. 0.9%), and snuff (5.6% vs. 2.3%)
  - National Youth Tobacco Survey, 2014\(^3\)
    - Greater percentage of rural high school youths used cigarettes only (5.3%) compared with those attending urban schools (2.8%)

1 Vander Weg et al. Addict Behav 2011.
2 Roberts et al. Health Place 2016.

Population Assessment of Tobacco and Health

PATH
PATH Study Background
The PATH Study is a nationally representative longitudinal study of tobacco use, its determinants, and its impacts.

- Longitudinal Study: Follow the same participants over time
- Sample Size: ~46,000 participants at Wave 1
- Nationally representative sample age 12 and older
  - Wave 1 –civilian, non-institutionalized population
- Tobacco Use: current users, former users, and never users of tobacco products
### Tobacco Products Assessed

<table>
<thead>
<tr>
<th>Cigarette</th>
<th>E-cigarette</th>
<th>Cigar, cigarillo, little filtered cigar</th>
<th>Pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="cigarette.png" alt="Image" /></td>
<td><img src="ecigarette.png" alt="Image" /></td>
<td><img src="cigar.png" alt="Image" /></td>
<td><img src="pipe.png" alt="Image" /></td>
</tr>
<tr>
<td>Hookah</td>
<td>Dissolvable tobacco</td>
<td>Smokeless (snus pouches, chewing tobacco, dip, moist snuff)</td>
<td>Bidis and kreteks (youth)</td>
</tr>
<tr>
<td><img src="hookah.png" alt="Image" /></td>
<td><img src="dissolvable.png" alt="Image" /></td>
<td><img src="smokeless.png" alt="Image" /></td>
<td><img src="bidis.png" alt="Image" /></td>
</tr>
</tbody>
</table>
The PATH Study Wave 1

Percent of Youth Reporting Ever, Past 30-Day, Frequent,* and Daily Use, by Product

- **Any tobacco:** 8.9% (Ever use), 2.7% (Past 30-day use), 1.4% (Frequent use), 0.8% (Daily use)
- **Cigarettes:** 13.4% (Ever use), 4.6% (Past 30-day use), 1.5% (Frequent use), 0.5% (Daily use)
- **E-cigarettes:** 10.7% (Ever use), 5.1% (Past 30-day use), 0.4% (Frequent use), 0.2% (Daily use)
- **Any Cigar:** 7.5% (Ever use), 2.5% (Past 30-day use), 0.2% (Frequent use), 0.1% (Daily use)
- **Cigarillos:** 6.5% (Ever use), 2.1% (Past 30-day use), 0.2% (Frequent use), 0.1% (Daily use)
- **Hookah:** 7.4% (Ever use), 1.7% (Past 30-day use), 0.3% (Frequent use), 0.1% (Daily use)
- **Smokeless (incl. snus):** 4.8% (Ever use), 1.6% (Past 30-day use), 0.4% (Frequent use), 0.1% (Daily use)
- **Smokeless (excl. snus):** 4.4% (Ever use), 1.4% (Past 30-day use), 0.6% (Frequent use), 0.3% (Daily use)
- **Traditional cigars:** 2.3% (Ever use), 0.7% (Past 30-day use), 0.5% (Frequent use), 0.1% (Daily use)
- **Snus pouches:** 1.7% (Ever use), 0.5% (Past 30-day use), 0.1% (Frequent use), 0.1% (Daily use)
- **Filtered cigars:** 2.3% (Ever use), 0.5% (Past 30-day use), 0.1% (Frequent use), 0.1% (Daily use)
- **Pipe tobacco:** 1.9% (Ever use), 0.3% (Past 30-day use), 0.1% (Frequent use), 0.1% (Daily use)
- **Kreteks:** 1.4% (Ever use), 0.4% (Past 30-day use), 0.1% (Frequent use), 0.1% (Daily use)
- **Bidis:** 0.2% (Ever use), 0.1% (Past 30-day use), 0.1% (Frequent use), 0.1% (Daily use)

* Frequent use is defined as: use of a product on 20 or more of the past 30 days; for hookah, frequent use is defined as: use at least 20 times per month on average; frequent use of “any tobacco” product reflects only those who used a particular product on 20 or more of the past 30 days; daily use of “any tobacco” product reflects only those who used a particular product daily.

# Estimate suppressed because it is statistically unreliable; it is based on a sample size of less than 50, or the coefficient of variation of the estimate is larger than 30 percent.

Kasza et al. New England Jr Medicine, 2017
The PATH Study Wave 1

Percent of Youth Reporting Past 30-Day Use, by Age

- Any tobacco: 2.8% (12-14 yrs), 15.0% (15-17 yrs)
- Cigarettes: 1.4% (12-14 yrs), 7.8% (15-17 yrs)
- E-cigarettes: 1.0% (12-14 yrs), 5.3% (15-17 yrs)
- Any Cigar: 0.5% (12-14 yrs), 4.5% (15-17 yrs)
- Cigarillos: 0.5% (12-14 yrs), 3.8% (15-17 yrs)
- Hookah: 0.5% (12-14 yrs), 2.9% (15-17 yrs)
- Smokeless (incl. snus): 0.5% (12-14 yrs), 2.7% (15-17 yrs)
- Smokeless (excl. snus): 0.4% (12-14 yrs), 2.5% (15-17 yrs)
- Traditional cigars: 0.2% (12-14 yrs), 1.3% (15-17 yrs)
- Snus pouches: # 0.8% (12-14 yrs)
- Filtered cigars: # 0.9% (15-17 yrs)
- Pipe tobacco: # 0.5% (15-17 yrs)

# Estimate suppressed because it is statistically unreliable; it is based on a sample size of less than 50, or the coefficient of variation of the estimate is larger than 30 percent.
Percent of Adults Reporting Current (Every Day and Some Day) Tobacco Product Use*, by Product

<table>
<thead>
<tr>
<th>Product</th>
<th>Every day use</th>
<th>Someday use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any tobacco</td>
<td>27.6%</td>
<td></td>
</tr>
<tr>
<td>Cigarettes</td>
<td>18.1%</td>
<td></td>
</tr>
<tr>
<td>Any Cigar</td>
<td>7.8%</td>
<td></td>
</tr>
<tr>
<td>E-cigarettes</td>
<td>5.5%</td>
<td></td>
</tr>
<tr>
<td>Traditional cigars</td>
<td>4.5%</td>
<td></td>
</tr>
<tr>
<td>Cigarillos</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Hookah</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>Smokeless (incl. snus)</td>
<td>3.4%</td>
<td></td>
</tr>
<tr>
<td>Smokeless (excl. snus)</td>
<td>3.1%</td>
<td></td>
</tr>
<tr>
<td>Filtered cigars</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Pipe tobacco</td>
<td>1.1%</td>
<td></td>
</tr>
<tr>
<td>Snus</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Dissolvable tobacco</td>
<td>10.1%</td>
<td></td>
</tr>
</tbody>
</table>

* Current use for cigarettes is defined as smoking at least 100 cigarettes in lifetime and currently smoking every day or some days.
Current use for other products is currently using every day or some days with no minimum threshold.
Distribution of everyday vs. someday use does not consider the 100 cigarette threshold.

Kasza et al. New England Jr Medicine, 2017
Rural Versus Urban Use of Traditional and Emerging Tobacco Products in the United States, 2013-2014

Study Design

- Wave 1 adult data on tobacco use (2013-2014)
  - Traditional: Cigarettes, smokeless tobacco, pipes, cigars
  - Emerging: E-cigarettes, hookah, cigarillos
  - Dual and poly-tobacco use
    - Traditional, emerging, or mixed

- Outcomes
  - Daily cigarette use
  - Past 30-day use for cigarettes and all other products
Study Design

• Urban-rural classification
  – Urban-rural differences in prevalence of tobacco use
    • By gender, poverty level (below vs. at or above), and region (Northeast, South, Midwest, or West)
  – 21% of sample classified as rural

4 Roberts et al. AJPH 2017.
Urban-Rural Differences in Prevalence

- Rural prevalence significantly higher for:
  - Daily and past-30 day cigarettes (daily = 18.3% vs. 13.4% urban)
  - Smokeless tobacco (6.3% vs. 2.1% urban)
  - Traditional dual or poly-tobacco use (2.2% vs. 1.2% urban)

- Urban prevalence significantly higher for:
  - Hookah (2.5% vs. 0.9% rural)
  - Cigarillos (4.6% vs. 3.8% rural)
  - Emerging dual or poly-tobacco use (0.4% vs. 0.2% rural)

- No significant urban–rural differences in:
  - Menthol cigarettes, e-cigarettes, non-cigarillo cigars, or pipes, or mixed dual or poly-tobacco use
  - Most common dual or poly-tobacco use combination (cigarettes + e-cigarettes)
Urban-Rural Differences in Prevalence

- Urban-rural differences in tobacco use persisted after controlling for age, gender, poverty level, and region
  - Prevalence of any current cigarette use (daily and past 30-day), smokeless tobacco use, and traditional dual or poly-tobacco use significantly higher in rural compared with urban areas
  - Prevalence of hookah use significantly higher in urban areas
  - Prevalence of cigarillo and emerging dual or poly-tobacco use no longer significantly different between urban and rural

- Results suggest that other factors besides age, gender, poverty level, and region are driving urban-rural differences in tobacco use

4 Roberts et al. AJPH 2017.
Patterns of Use of Smokeless Tobacco in US Adults, 2013-2014

Study Design

• Wave 1 adult data on smokeless tobacco (SLT) use (2013-2014)
  – Low youth prevalence of SLT (1.6%)

• SLT categories (single and dual-use):
  – Pouched snus
  – Other SLT, included loose snus, moist snuff, dip, spit, and chewing tobacco

• Definition of SLT user groups
  – Established or experimental
  – Poly-use with other tobacco products, including cigarettes

• Urban vs. non-urban classification
Characteristics of SLT Use

- 16.5% of US adults reported ever use of any SLT type
  - 2.9% of US adults reported current established use:
    - 0.4% for pouched snus and 2.7% for other SLT
    - Among single-product users (n = 9,450)
      - 0.5% used pouched snus and 8.7% used other SLT
    - Among multi-product users (n = 6,238)
      - 6.3% used pouched snus and 17.0% used other SLT

- Current established use of any SLT most common in:
  - Younger (18-24 and 25-34 years) (4.0%) vs. older (≥50 years) adults (1.6%)
  - Men (5.7%) vs. women (0.2%)
  - Non-Hispanic Whites (3.9%) vs. other racial and ethnic groups (0.9%)
  - GED diploma (5.0%) vs. no high school diploma (2.9%)
  - Non-urban (8.1%) vs. urban (2.5%) residence
Characteristics of SLT Use

- Users of pouch snus only (vs. other SLT only):
  - Less likely to use product daily (41.6% vs. 66.9% other SLT only)
  - More likely to use other tobacco products (64.0% vs. 44.7% other SLT only)

- Non-daily SLT users more likely to be current established cigarette smokers than daily SLT users (57.9% vs. 20.2%)
  - Among current established cigarette smokers, those who use SLT some days rather than every day are more likely to smoke cigarettes every day (82.9% vs. 56.0%), and they report higher median number of cigarettes per day (19.2 vs. 13.5)

Reasons for Use

• Most common reasons for SLT use:
  – “I can use at times when/in places where smoking cigarette is not allowed” (pouched snus: 85.0%; other SLT: 79.5%)
  – “Come[s] in flavors I like” (pouched snus: 82.9%; other SLT: 66.9%)
  – “Less harmful to people around me than cigarettes” (pouched snus: 60.1%; other SLT: 60.5%)
  – “Affordable” (pouched snus: 56.2%; other SLT: 50.4%)

• Other reasons for SLT use*

## Reasons for Use

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Current Established Users of Pouched Snus² (n=253)</th>
<th>Current Established Users of Loose Snus, Moist Snuff, Dip, Spit, and Chewing Tobacco³ (n=1420)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>Weighted %</td>
</tr>
<tr>
<td>Affordable</td>
<td>146</td>
<td>56.2</td>
</tr>
<tr>
<td>People in the media/other public figures use/used</td>
<td>21</td>
<td>8.5</td>
</tr>
<tr>
<td>Smokeless/snus pouches come in flavors I like</td>
<td>215</td>
<td>82.9</td>
</tr>
<tr>
<td>Smokeless/snus pouches don’t smell</td>
<td>122</td>
<td>47.5</td>
</tr>
<tr>
<td>More acceptable to non-tobacco users</td>
<td>130</td>
<td>51.1</td>
</tr>
<tr>
<td>People who are important to me use</td>
<td>37</td>
<td>13.3</td>
</tr>
<tr>
<td>The advertising appeals to me</td>
<td>85</td>
<td>31.2</td>
</tr>
<tr>
<td>I can use at times when/in places where smoking cigarette is not allowed</td>
<td>218</td>
<td>85.0</td>
</tr>
<tr>
<td>Less harmful to me than cigarettes</td>
<td>103</td>
<td>41.8</td>
</tr>
<tr>
<td>Less harmful to people around me than cigarettes</td>
<td>154</td>
<td>60.1</td>
</tr>
<tr>
<td>Help people to quit smoking cigarettes</td>
<td>96</td>
<td>39.7</td>
</tr>
<tr>
<td>Alternative to quitting tobacco altogether</td>
<td>74</td>
<td>31.0</td>
</tr>
<tr>
<td>The sensations are stronger or more pleasurable than cigarettes</td>
<td>18</td>
<td>6.7</td>
</tr>
<tr>
<td>No one can tell when I am using a snus pouch</td>
<td>173</td>
<td>67.2</td>
</tr>
</tbody>
</table>

Summary and Conclusions

• The PATH Study is a resource for understanding tobacco use patterns and their health effects over time.
• Rural areas of the US have elevated rates of SLT use, cigarette smoking, and poly-use of traditional tobacco products.
• In terms of likelihood of poly-use, not all SLT products and use patterns are equal: Pouched snus is less likely than other SLT to be used daily and more likely to be poly-used with cigarettes and other tobacco; people who use SLT daily, rather than non-daily, are less likely to also smoke cigarettes.
• Subsequent waves of the PATH Study will provide information on the trajectories in SLT and other product use over time.
QUESTIONS?

Thank you.
• End of Presentation
THE REAL COST SMOKELESS: THE FIRST NATIONAL SMOKELESS TOBACCO PREVENTION CAMPAIGN

Matthew W. Walker, DrPH, MPH
U.S. Food and Drug Administration
Center for Tobacco Products

October 26, 2017

Disclaimer: This information is not a formal dissemination of information by the FDA and does not represent Agency position or policy.
The Real Cost Smokeless campaign launched in April 2016 with the following key goals:

- Reduce smokeless tobacco (SLT) initiation rates among youth
- Reduce the number of youth already experimenting with SLT and stop the progression to regular use
THE REAL COST STRATEGY FOR ENGAGEMENT

Make teens hyperconscious of the real cost of every cigarette or dip through breakthrough, fresh portrayals of the health and addiction risks of tobacco use.

Focus on health effects that matter to teens... ...cosmetic effects

Disrupt their beliefs about addiction by stressing loss of control

Give them new information to break through their “cost-free” mentality
CAMPAIGN DEVELOPMENT PROCESS

Message Development
- Perform extensive literature review
- Conduct early strategic research to identify salient message themes
- Consult experts in tobacco public health education and the rural community

Concept Development
- Use focus groups to identify promising creative concepts
- Consult experts in tobacco public health education and the rural community

Copy Testing
- Conduct copy testing of final rough cut ads to measure perceived effectiveness, level of engagement, and message comprehension
Literature review, SME consultation, and observational research provided:

- **Target audience** – Those most at risk for initiation with smokeless tobacco: rural, white, non-Hispanic males, 12-17
- **Definition of rural** – Consolidation of several data sets to most efficiently find our target audience and align with media markets
- **Target audience insights** – An understanding of the target audience culture, as well as insights into their perceptions about smokeless tobacco products
Cultural Insights

- Strong community ties, everyone knows everyone else
- Pride in being self-reliant
- Care deeply about independence, freedom and manliness
- Strong intertwined religious and political beliefs
- Vast outdoor playground
- Athletics play an important role, both watching and participating

Perceptions about Dip

- Dip use is socially accepted in these communities
- Using dip is a right of passage to manliness
- Health consequences of dip use are not clearly understood
- Trial and usage starts early
- Target audience belief that girls don’t like boys who dip
CAMPAIGN DEVELOPMENT PROCESS

Message Development

• Perform extensive literature review
• Conduct early strategic research to identify salient message themes
• Consult experts in tobacco public health education and the rural community

Concept Development

• Use focus groups to identify promising creative concepts
• Consult experts in tobacco public health education and the Rural community

Copy Testing

• Conduct copy testing of final rough cut ads to measure perceived effectiveness, level of engagement, and message comprehension
Goal: to understand how at-risk males would react to various strategic concepts intended to prevent youth smokeless tobacco initiation and use

- 15 focus groups (n=106)
- White (non-Hispanic) males between the ages of 12 and 17 who were either at-risk for smokeless tobacco initiation or who had ever tried smokeless tobacco
- 4 Locations
<table>
<thead>
<tr>
<th>STRATEGIC CONCEPTS</th>
<th>No Big Deal</th>
<th>A Real Man</th>
<th>Freedom</th>
<th>Hometown</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Some kids act like using dip is no big deal, but they’re not talking about the lesions in their mouth, bad breath, or cavities. Is the truth about dip uglier than you think?</strong></td>
<td><strong>A real man knows how to stand-up for himself and others who need his help. If a man isn't supposed to rely on anything but himself, why is he relying on chew?</strong></td>
<td><strong>You have a lot in common with your group of friends, but that doesn’t mean you agree on everything. Are you really free to make up your own mind about chew?</strong></td>
<td><strong>There is a lot to like about living in a small town. People stick together and care about one another. You might know people who dip. Their choice doesn’t need to be your choice.</strong></td>
<td><strong>In every guys life there is always that one girl. You want her to notice you but you don’t want to blow your big chance. One thing that might turn her off is chew. Is it worth the risk?</strong></td>
<td></td>
</tr>
</tbody>
</table>
1. Authenticity – (Savvy media consumers)
   a. Small town (over the top)
   b. Stereotyping (not a homogenous group)

2. Kids love facts
   a. Health consequences
   b. Comparative harm/harm reduction vs cigarettes
   c. Progression of health effects

3. Straightforward messaging
   a. Sarcasm, double meanings
   b. Over exaggeration
   c. Girls
At first these look like small white patches, but almost every tobacco-related oral cancer begins with a phase of these patches.

Linking the white patches youth are aware of a staged progression of more serious consequences, including cancer
“I have heard [of] white patches before and thought ‘no big deal.’ Knowing it’s the first step to cancer makes me think twice.”

Even after the chew is removed, nicotine continues to be absorbed and stays in your blood longer than if you were smoking.

The fact that nicotine stays in the brain longer was new information for most groups. However, some participants indicated this could be seen as a benefit and others explained that they didn’t understand the tangible consequence that would come from this (i.e., does that mean it’s more addictive?).

At least 28 cancer-producing chemicals have been identified in smokeless tobacco, including cadmium, chromium, formaldehyde, lead, nickel, and uranium.

Several chemicals grabbed participants’ attention – specifically, uranium and formaldehyde. However, youth pointed out that the number of chemicals (28) in smokeless tobacco could be seen as very low compared with the number of chemicals in cigarettes.
Message Development

- Perform extensive literature review
- Conduct early strategic research to identify salient message themes
- Consult experts in tobacco public health education and the rural community

Concept Development

- Use focus groups to identify promising creative concepts
- Consult experts in tobacco public health education and the Rural community

Copy Testing

- Conduct copy testing of final rough cut ads to measure perceived effectiveness, level of engagement, and message comprehension
Goal: to obtain feedback on ads presented as animatics, validate previous insights on what resonates, and confirm alignment with TRC brand

- 26 focus groups (n=146)
- White (non-Hispanic) males between the ages of 12 and 17 who were either at-risk for smokeless tobacco initiation or who had ever tried smokeless tobacco
- 5 Locations
CREATIVE CONCEPTS
**Language:** The target population commonly used the terms “dip,” “chew,” and “snuff” to describe SLT products. Other terms included colloquialisms (e.g., “worm dirt”), brands (e.g., Skoal), and descriptors (e.g., “pouches”).
Authentic Casting and Locations: Settings, scenes, hairstyles and clothing that were unfamiliar or unrealistic distracted from understanding the message of the ad

Emotional Connection: Message comprehension and retention improved when the boys could identify with the main character

Incorporate Facts: Facts about what dip can do to the body, and the ingredients in dip were requested

Brand Equity: The Real Cost is a familiar and trusted source for tobacco information
CAMPAIGN DEVELOPMENT PROCESS

**Message Development**
- Perform extensive literature review
- Conduct early strategic research to identify salient message themes
- Consult experts in tobacco public health education and the rural community

**Concept Development**
- Use focus groups to identify promising creative concepts
- Consult experts in tobacco public health education and the Rural community

**Copy Testing**
- Conduct copy testing of final rough cut ads to measure perceived effectiveness, level of engagement, and message comprehension
COPY TESTING METHODOLOGY

Goal: to obtain feedback on 5 ads presented as rough-cut television ads, validate previous insights on what resonates, and confirm alignment with TRC brand

- School surveying (n=800, youth were randomly assigned to view two of the five ads, with 578 viewing ads and 222 not viewing an ad)
- White (non-Hispanic) males between the ages of 12 and 17 who were either at-risk for smokeless tobacco initiation or who had ever tried smokeless tobacco
- 11 Locations
Quantitative copy testing of ads was conducted to assess:

- Overall level of ad performance – assessed from perceived effectiveness, level of engagement and message comprehension
- Potential for any unintended consequences – assessed from responses to health, behavioral, and attitudinal statements

Perceived effectiveness (PE) is a primary component for assessing overall level of ad performance:

- Validated measure that is predictive of potential for attitude & behavior change
- Comprised of six items: (1) This ad is worth remembering, (2) This ad grabbed my attention, (3) This ad is powerful, (4) This ad is informative, (5) This ad is meaningful, (6) This ad is convincing
SUMMARY OF COPY TESTING RESULTS

- All ads received high PE scores
- All ads clearly presented the intended message
- Results support a tailored approach to campaign messaging
- No indications that the ads would result in unintended consequences

![Bar Chart]

<table>
<thead>
<tr>
<th>Ad Description</th>
<th>PE Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monster - Movie Night</td>
<td>3.77</td>
</tr>
<tr>
<td>Pounds</td>
<td>3.77</td>
</tr>
<tr>
<td>Monster - Football</td>
<td>3.81</td>
</tr>
<tr>
<td>Jeans</td>
<td>3.97</td>
</tr>
<tr>
<td>Face of Dip</td>
<td>4.00</td>
</tr>
</tbody>
</table>
UNINTENDED CONSEQUENCES: HEALTH STATEMENTS

If I use smokeless tobacco, I will...

### Damage My Body

- **Ad Viewers**
  - Strongly Agree: 50%
  - Agree: 40%
  - Neither Agree nor Disagree: 2%
  - Disagree: 2%
  - Strongly Disagree: 6%

- **Non-Ad Viewers**
  - Strongly Agree: 90%
  - Agree: 45%
  - Neither Agree nor Disagree: 2%
  - Disagree: 2%
  - Strongly Disagree: 9%

### Consume Harmful Chemicals

- **Ad Viewers**
  - Strongly Agree: 48%
  - Agree: 40%
  - Neither Agree nor Disagree: 3%
  - Disagree: 3%
  - Strongly Disagree: 7%

- **Non-Ad Viewers**
  - Strongly Agree: 47%
  - Agree: 41%
  - Neither Agree nor Disagree: 4%
  - Disagree: 5%
  - Strongly Disagree: 5%

### Develop Cancer*

- **Ad Viewers**
  - Strongly Agree: 31%
  - Agree: 46%
  - Neither Agree nor Disagree: 17%
  - Disagree: 6%
  - Strongly Disagree: 3%

- **Non-Ad Viewers**
  - Strongly Agree: 27%
  - Agree: 45%
  - Neither Agree nor Disagree: 21%
  - Disagree: 1%
  - Strongly Disagree: 1%

* Indicates statistically significant difference in averages from non-ad viewers in expected direction.
UNINTENDED CONSEQUENCES: BEHAVIORAL STATEMENTS

If I use smokeless tobacco, I will...

Be Controlled by Smokeless Tobacco*

<table>
<thead>
<tr>
<th></th>
<th>Ad Viewers</th>
<th>Non-Ad Viewers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>29%</td>
<td>20%</td>
</tr>
<tr>
<td>Agree</td>
<td>38%</td>
<td>32%</td>
</tr>
<tr>
<td>Neither Agree or Disagree</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>Disagree</td>
<td>9%</td>
<td>17%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>

67%  52%

Miss Out on Activities I Enjoy*

<table>
<thead>
<tr>
<th></th>
<th>Ad Viewers</th>
<th>Non-Ad Viewers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Agree</td>
<td>32%</td>
<td>34%</td>
</tr>
<tr>
<td>Agree</td>
<td>32%</td>
<td>25%</td>
</tr>
<tr>
<td>Neither Agree or Disagree</td>
<td>13%</td>
<td>13%</td>
</tr>
<tr>
<td>Disagree</td>
<td>8%</td>
<td>26%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>4%</td>
<td>4%</td>
</tr>
</tbody>
</table>

66%  45%

* Indicates statistically significant difference in averages from non-ad viewers in expected direction
### UNINTENDED CONSEQUENCES: ATTITUDINAL STATEMENTS

#### Using smokeless tobacco is...

<table>
<thead>
<tr>
<th></th>
<th>Ad Viewers*</th>
<th>Non-Ad Viewers</th>
<th>Ad Viewers*</th>
<th>Non-Ad Viewers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>&lt;1%</td>
<td>1%</td>
<td>8%</td>
<td>24%</td>
</tr>
<tr>
<td>Good</td>
<td>29%</td>
<td>61%</td>
<td>28%</td>
<td>49%</td>
</tr>
<tr>
<td>Neither Good or Bad</td>
<td>90%</td>
<td>49%</td>
<td>23%</td>
<td>28%</td>
</tr>
<tr>
<td>Bad</td>
<td>26%</td>
<td>26%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Very Bad</td>
<td>&lt;1%</td>
<td>1%</td>
<td>&lt;1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

* Indicates statistically significant difference in averages from non-ad viewers in expected direction.
SUMMARY OF FACE OF DIP – EMOTIONAL ENGAGEMENT

Please indicate how much this ad made you feel...

% 4/5 Very

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sad</td>
<td>17%</td>
</tr>
<tr>
<td>Afraid</td>
<td>28%</td>
</tr>
<tr>
<td>Irritated</td>
<td>11%</td>
</tr>
<tr>
<td>Hopeful</td>
<td>19%</td>
</tr>
<tr>
<td>Motivated</td>
<td>37%</td>
</tr>
<tr>
<td>Understood</td>
<td>58%</td>
</tr>
<tr>
<td>Angry</td>
<td>7%</td>
</tr>
<tr>
<td>Worried</td>
<td>28%</td>
</tr>
<tr>
<td>Disgusted</td>
<td>41%</td>
</tr>
<tr>
<td>Uneasy</td>
<td>27%</td>
</tr>
<tr>
<td>Surprised</td>
<td>32%</td>
</tr>
</tbody>
</table>
EMOTIONAL REACTIONS – REAL COST SMOKELESS

Please indicate how much this ad made you feel... (% 4/5 Very)

Sad  Afraid

Surprised

Uneasy  Irritated

Disgusted  Hopeful

Worried

Angry  Understood

Motivated
FACE OF DIP- SHAREABILITY AND INFORMATION SEEKING

If you saw this advertisement, how likely would you be to do each of the following?

% Likely/Very Likely

- Share on social media: 22%
- Tell family: 50%
- Tell friend: 47%
- Look for information online: 28%
- Visit website: 27%
QUESTIONS?
• End of Presentation
RURAL SMOKELESS TOBACCO EDUCATION CAMPAIGN (RUSTEC) EVALUATION

Presented by
Alexandria Smith
Social Scientist
Office of Health and Education
Research and Evaluation

October 26, 2017

This information is not a formal dissemination of information by FDA/CTP and does not represent Agency position or policy.
**Target population:** Rural 12- to 17-year-old males who are at risk for smokeless tobacco use or already experimenting

**Main Message:** Smokeless Doesn’t Mean Harmless

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**THE REAL COST SMOKELESS**

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**THE REAL COST™)**

SMOKELESS DOESN’T MEAN HARMLESS

TheRealCost.gov/dip
CAMPAIGN EVALUATION DESIGN

- In-person and online data collection in 30 media markets across the country randomized to either campaign (N=15) or comparison (N=15)

- Recruited males aged 11-16 from 30 selected markets using address-based sampling of households

- Addresses are clustered into Census block groups within media markets
• We began data collection by sending a paper and pencil household screening survey to identify potentially eligible households.

• We then sent field interviewers to households with age eligible boys to recruit them into the study.

• Once successfully recruited, parents completed a self-administered survey on a tablet and youth completed a survey on a laptop.

• Youth received $20 in cash for completing the baseline survey.
• Follow-up 1 – Follow-up 4 conducted in-person and online
• Participants who complete the survey within ~1 month of launch receive a $5 early-bird incentive in addition to the standard $20 incentive
• Online participants receive an incentive by a check in the mail
• In-person participants receive $20 cash
• Longitudinal cohort will age out at 20 years old
• 70% completion online for follow-ups
### TIMELINE FOR DATA COLLECTION

<table>
<thead>
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<tbody>
<tr>
<td><strong>Baseline</strong></td>
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<tr>
<td><strong>N</strong></td>
<td>2,200</td>
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<td>(76.4% before launch)</td>
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<tr>
<td><strong>Launch</strong></td>
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<td><strong>April 2016</strong></td>
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<tr>
<td><strong>Follow-Up 1</strong></td>
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<td><strong>Final</strong></td>
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<tr>
<td><strong>N</strong></td>
<td>1,937</td>
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<td><strong>Follow-Up 2</strong></td>
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<td><strong>to date</strong></td>
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<td><strong>N</strong></td>
<td>1,770</td>
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<td><strong>Follow-Up 3</strong></td>
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<td><strong>N</strong></td>
<td>1,416</td>
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<tr>
<td><strong>Follow-Up 4</strong></td>
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<tr>
<td><strong>target</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>1,132</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Baseline: N=2,200 (76.4% before launch)
- Launch: April 2016
- Follow-Up 1: Final N=1,937
- Follow-Up 2: to date N=1,770
- Follow-Up 3: target N=1,416
- Follow-Up 4: target N=1,132
EVALUATION LOGIC MODEL

Contextual factors (e.g., state-level policies, individual characteristics, other media campaigns)

Campaign activities and advertising (e.g., message development, media buys)
Advertising and messages delivered to target audiences (TV, radio, digital online, out-of-home)
Audience exposure to and recall of the campaign
Audience reactions to and perceptions of campaign messages, peer-to-peer communication about messages
Knowledge, attitudes, beliefs, and social norms
Intention to use smokeless tobacco
Smokeless Tobacco use initiation, progression to established tobacco use

Targeted message content (e.g., themes, stylistic features)
Propensity for individuals to be exposed to campaign

Campaign Implementation
Short-term Outcomes
Intermediate Outcomes
Longer-term Outcomes
**OUTCOMES**

Follow-up 1

- Short-Term Outcome: Achieve 75% youth recall of *The Real Cost Smokeless* campaign ads

Follow-up 2

- Short-Term Outcome: Maintain 75% youth recall of *The Real Cost Smokeless* campaign ads

Follow-up 3

- Intermediate Outcome: Achieve significant change in beliefs and attitudes targeted by *The Real Cost Smokeless* campaign ads

Follow-up 4

- Intermediate Outcome: Maintain significant change in beliefs and attitudes targeted by *The Real Cost Smokeless* campaign ads
CAMPAIGN SCREENER AND MEASURES
Household data collected from baseline screeners on parents and youth include:

- Number of eligible youth
- Relationship status
- Education
- Household income
- Employment status
- Tobacco use
Baseline and Follow-Up Surveys
- Smokeless tobacco use
- Knowledge, attitudes, and beliefs (KABs)

Follow-Up Surveys
- Campaign media awareness
- Brand awareness
- Perceived effectiveness
KNOWLEDGE, ATTITUDES, AND BELIEFS AT BASELINE
<table>
<thead>
<tr>
<th>Ad</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>If I use smokeless tobacco I will...</td>
<td></td>
</tr>
<tr>
<td>Face of Dip, Jeans</td>
<td>Damage my body</td>
</tr>
<tr>
<td>Jeans</td>
<td>Shorten my life</td>
</tr>
<tr>
<td>Pounds</td>
<td>Consume harmful chemicals</td>
</tr>
<tr>
<td>Pounds, Face of Dip, Jeans</td>
<td>Develop cancer of the lip, mouth, tongue or throat</td>
</tr>
<tr>
<td>Face of Dip, Jeans</td>
<td>Develop red or white patches in the mouth</td>
</tr>
<tr>
<td>Face of Dip</td>
<td>Lose my teeth</td>
</tr>
<tr>
<td>Football Monster, Movie Monster</td>
<td>Be controlled by smokeless tobacco</td>
</tr>
<tr>
<td>Football Monster, Movie Monster</td>
<td>Be unable to stop when I want to</td>
</tr>
<tr>
<td>Movie Monster</td>
<td>Gross out people I want to date</td>
</tr>
<tr>
<td>Movie Monster</td>
<td>Miss out on things I enjoy doing</td>
</tr>
</tbody>
</table>
## SMOKELESS TOBACCO RELATED KABS

<table>
<thead>
<tr>
<th>Ad</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using smokeless tobacco...</td>
<td>Can cause immediate damage to my body</td>
</tr>
<tr>
<td>Jeans, Face of Dip</td>
<td>Is safe if used for only a year or two</td>
</tr>
<tr>
<td>Football Monster, Movie Monster</td>
<td>Occasionally will not cause addiction</td>
</tr>
</tbody>
</table>
RUSTEC BASELINE SAMPLE AGE

<table>
<thead>
<tr>
<th>Age</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>16.5%</td>
</tr>
<tr>
<td>12</td>
<td>16.3%</td>
</tr>
<tr>
<td>13</td>
<td>16.4%</td>
</tr>
<tr>
<td>14</td>
<td>16.7%</td>
</tr>
<tr>
<td>15</td>
<td>16.9%</td>
</tr>
<tr>
<td>16</td>
<td>17.2%</td>
</tr>
</tbody>
</table>
RUSTEC BASELINE SAMPLE RACE/ETHNICITY

White, NH: 79.3%
Black, NH: 6.7%
Hispanic: 6.0%
American Indian or Alaska Native: 2.9%
Native Hawaiian or Pacific Islander: 0.2%
Multiracial: 4.1%
RUSTEC BASELINE SMOKELESS SUSCEPTIBILITY AND USE

Percent

Never smokeless tobacco user, not susceptible 72.7%
Never smokeless tobacco user, susceptible 16.8%
Smokeless tobacco experimenter 5.6%
Current smokeless tobacco user 4.9%

Smokeless Tobacco Use Category
RUSTEC BASELINE OTHER CURRENT TOBACCO USE

Current Other Tobacco Use

- Cigarettes: 4.5%
- Cigars, cigarillos, or little cigars: 4.2%
- Hookah: 1.1%
- E-cigarettes: 7.2%
SMOKELESS TOBACCO USE: RUSTEC VS PATH VS NYTS

Smokeless Susceptibility and Use

<table>
<thead>
<tr>
<th>Category</th>
<th>RuSTEC</th>
<th>PATH, 2016</th>
<th>NYTS, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never smokeless user, susceptible</td>
<td>16.8%</td>
<td>9.7%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Smokeless tobacco experimenter</td>
<td>5.6%</td>
<td>3.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Current smokeless tobacco user</td>
<td>4.9%</td>
<td>1.6%</td>
<td>3.4%</td>
</tr>
</tbody>
</table>
CONCLUSIONS
• Successfully recruited rural male youth for an online longitudinal cohort

• High percentages of online completion for follow-ups

• Relative higher susceptibility and smokeless tobacco use among this sample than national samples

• Follow-up surveys will examine changes in campaign-targeted KABs
THE REAL COST SMOKELESS EVALUATION RESEARCH: WHO’S INVOLVED

A Big Thank You to the team!

FDA/CTP
• Janine Delahanty
• Pamela Rao
• Xiaoquan Zhao

RTI International
• Matthew Farrelly
• Nate Taylor
• Jane Allen
• Melissa Helton
• Patty LeBaron
• End of Presentation