

Tobacco Use Prevention Among Youth and Young Adults

Justus-Warren Heart Disease and Stroke Prevention Task Force

Jim D. Martin, MS, Director of Policy and Programs

N.C. Tobacco Prevention and Control

Division of Public Health

Department of Health and Human Services

April 11, 2018

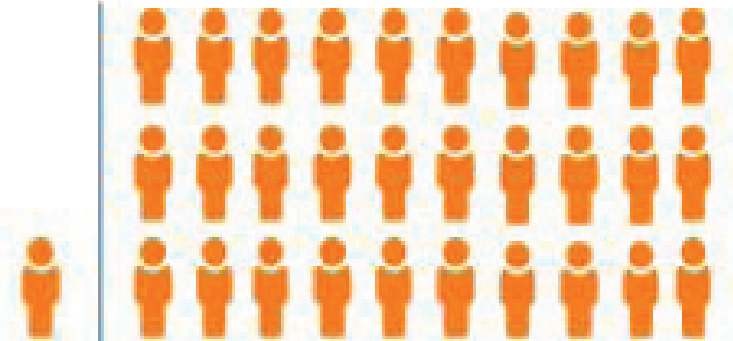


The Burden of Tobacco Use in NC

1 in 5
Deaths in NC due to
tobacco use



For every death,
30
sick or disabled



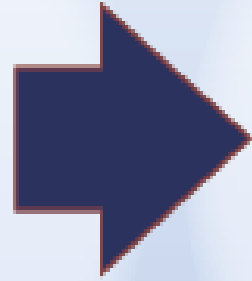
Tobacco Use, Heart Disease & Stroke

Almost **1/3** of deaths from coronary heart disease are attributable to smoking and secondhand smoke.

Prolonged exposure to secondhand smoke increases the risk of a stroke by **20-30%**

Source: US Department of Health and Human Services. 50 Years of Progress: A Report of the Surgeon General, 2014. 2014. Available at: <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/50-years-of-progress-bysection.html>.

**Smoking costs
North Carolina
\$3.81 billion
per year in
health care costs**



**Including
\$931 million
in Medicaid costs.**

**There is an additional
annual cost of
\$293 million
from health problems
due to secondhand smoke.**



From Vision 2020, NC Tobacco Prevention & Control Branch, 2016

The Health Consequences of Smoking—50 Years of Progress

A Report of the Surgeon General

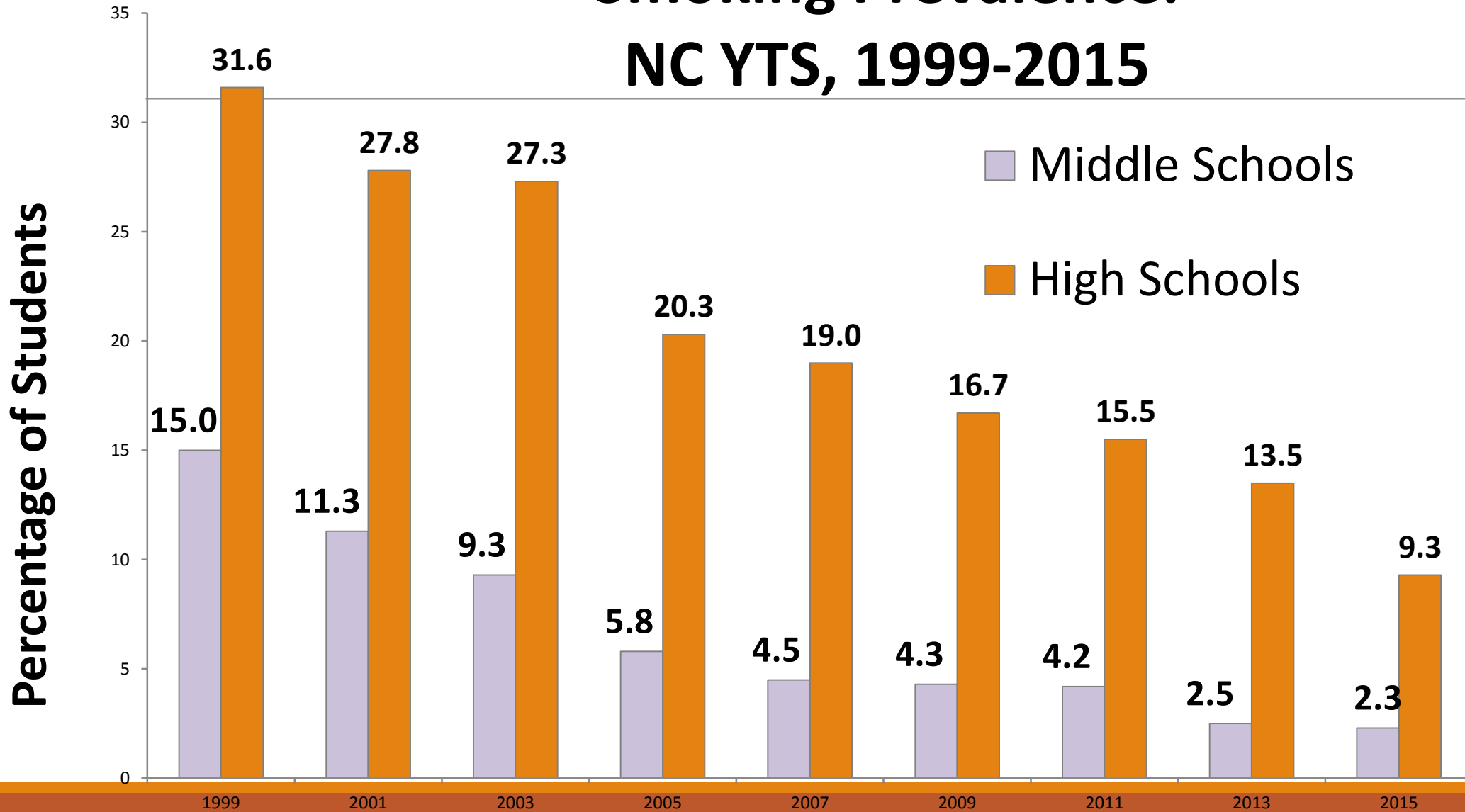


U.S. Department of Health and Human Services

90%

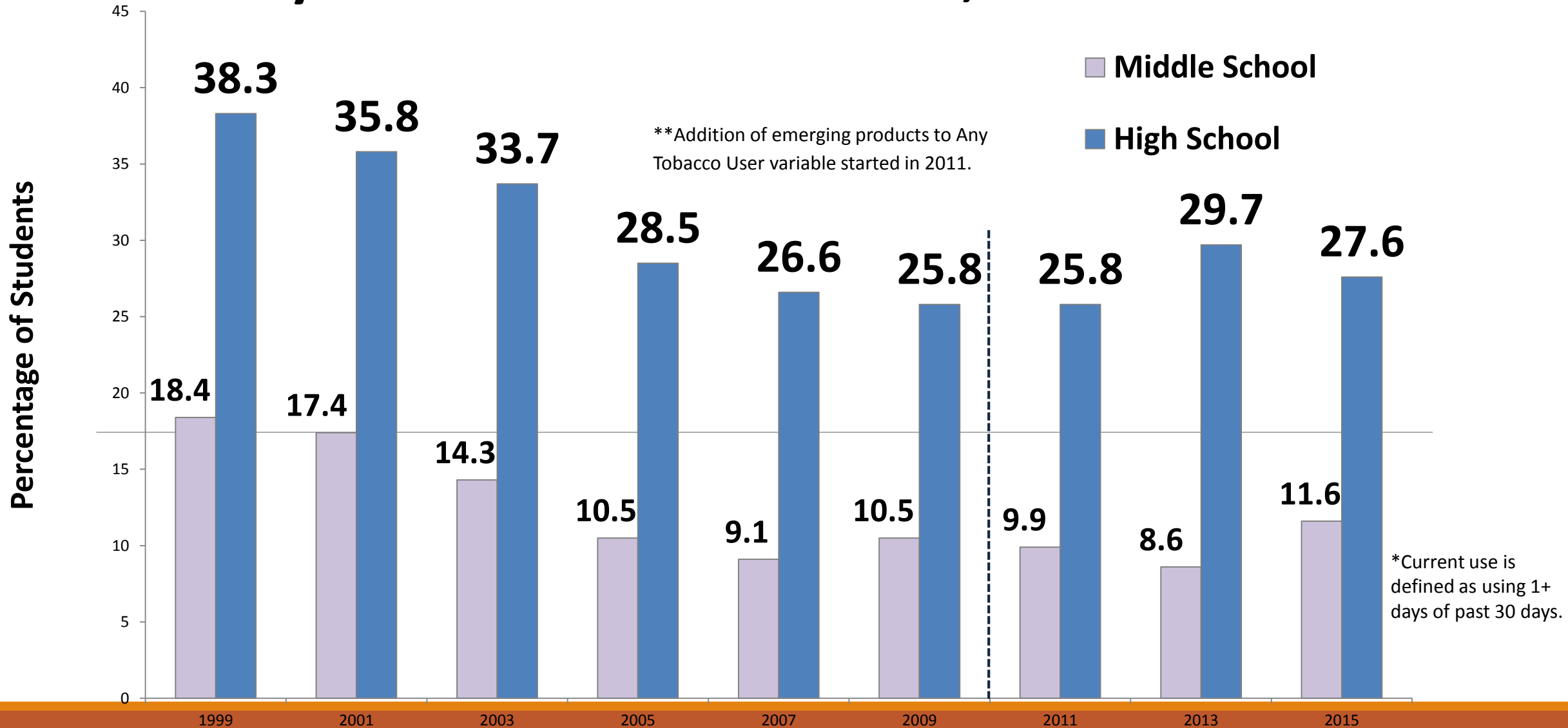
of tobacco users
start before the age of 18

NC Middle & High School Current* Smoking Prevalence: NC YTS, 1999-2015



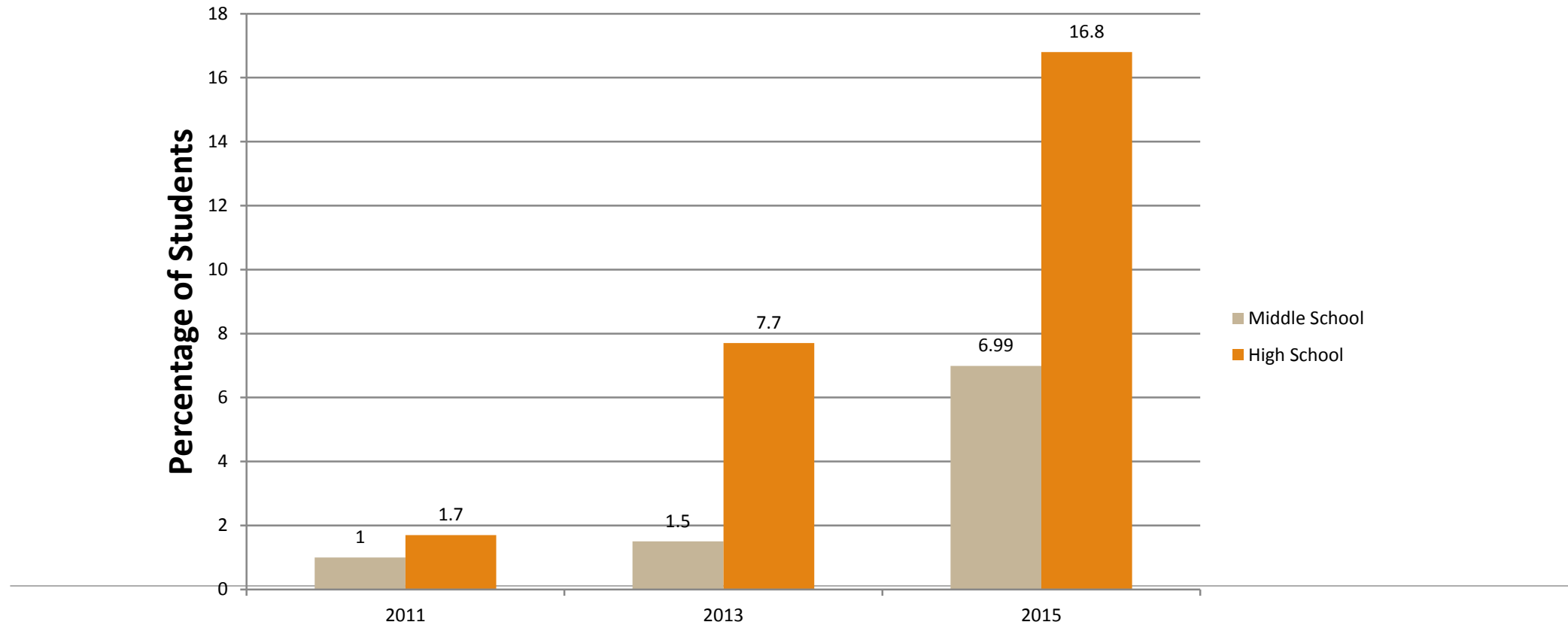
*Current use is defined as using 1+ days of past 30 days.

NC Middle & High School Current* Users of Any Tobacco Product: NC YTS, 1999-2015



NC Middle and High School Current* E-Cigarette Use:

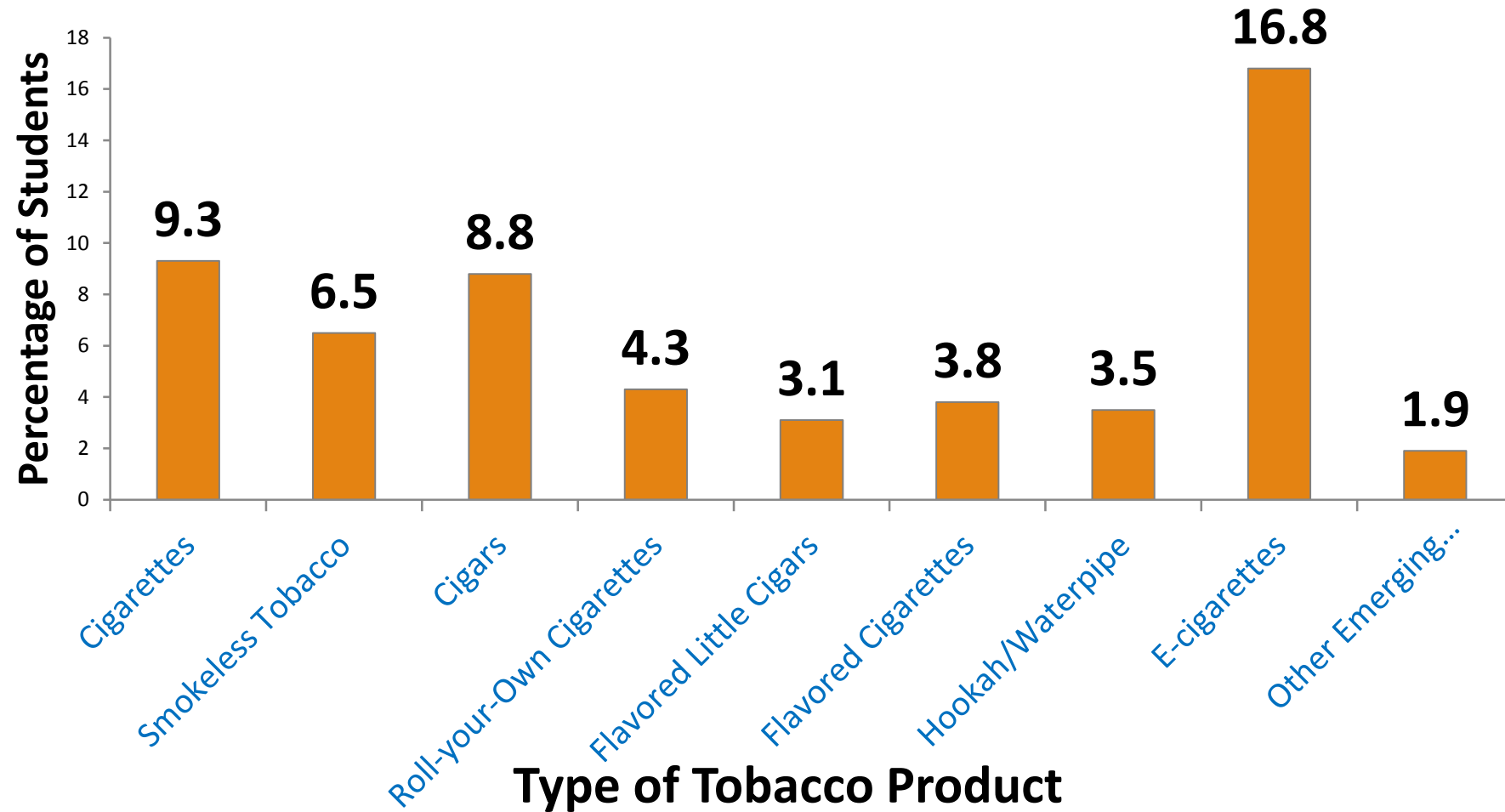
NC YTS, 2011-2015



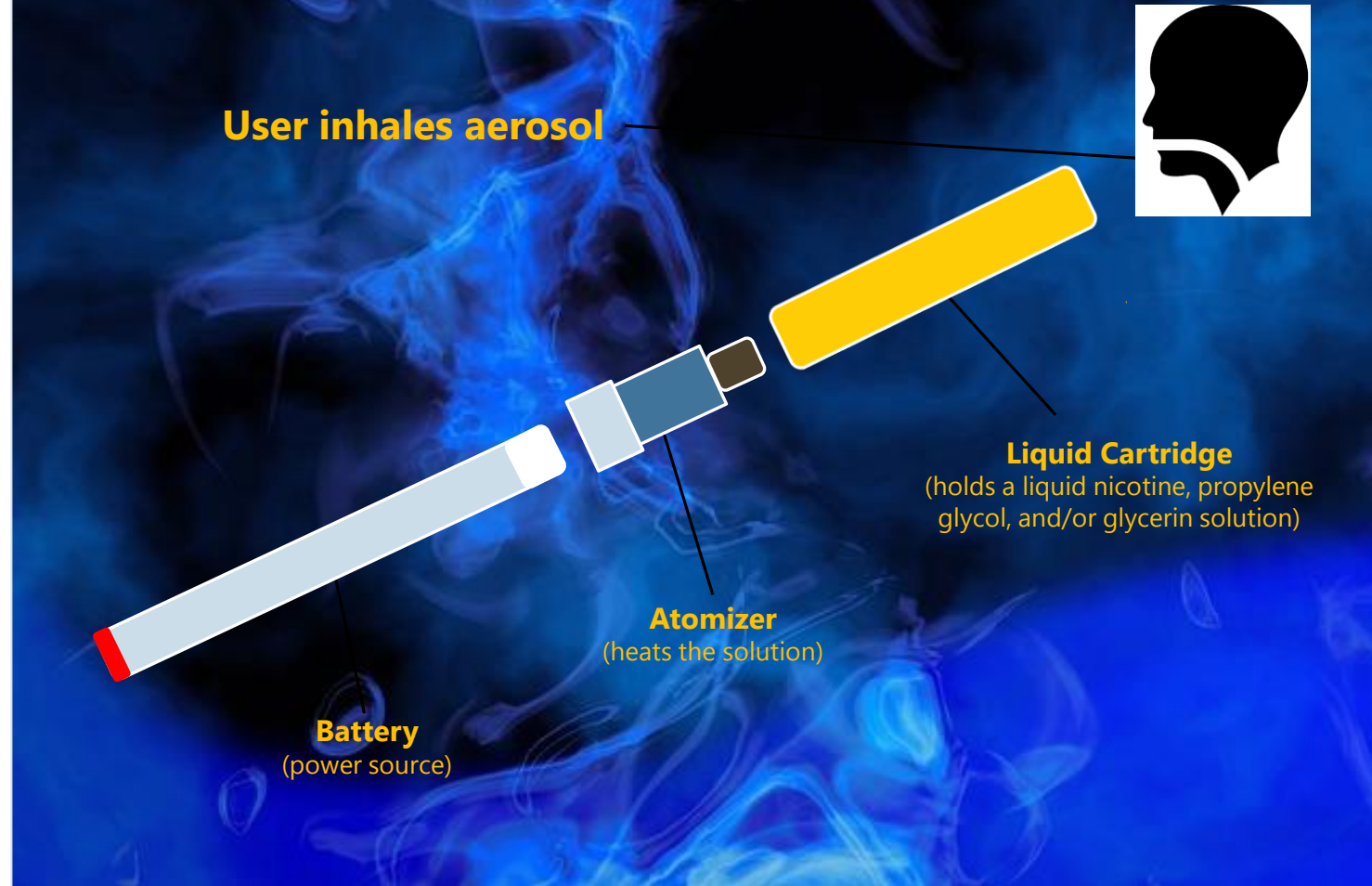
*Current use is defined as using on one or more of the past 30 days

Between 2011 and 2015 current use of electronic cigarettes among NC high school students jumped by 888%, from 1.7% to 16.8%. During the same time period electronic cigarette use among middle school students increased 599%, from 1% to 6.99%.

Percentage of High School Students Currently Using Tobacco Products by Type of Product: NC YTS, 2015



Anatomy of an E-Cigarette



Various Types of E-Cigarettes



Disposables



Rechargeable –
Replacement Cartridges



Rechargeable –
Refillable Tank System



Mods

Image Source: Wake Forest Baptist Health; ecigaretteb2c.com

YOUR HEALTH

Teenagers Embrace JUUL, Saying It's Discreet Enough To Vape In Class

December 4, 2017 11:58 AM ET

ANGUS CHEN



PUBLIC HEALTH
LAW CENTER

Tobacco Control Legal Consortium

JUUL
SMOKING EVOLVED



New Direction for the FDA?

12/6/2017

11

JUUL's Sleek Design

The JUUL device, with its sleek design that resembles a flash drive, is a special hit with teens.

Teens say:

"It's definitely more discreet"

"JUULs are so simple and easy to use"

"JUUL has multiple flavors"

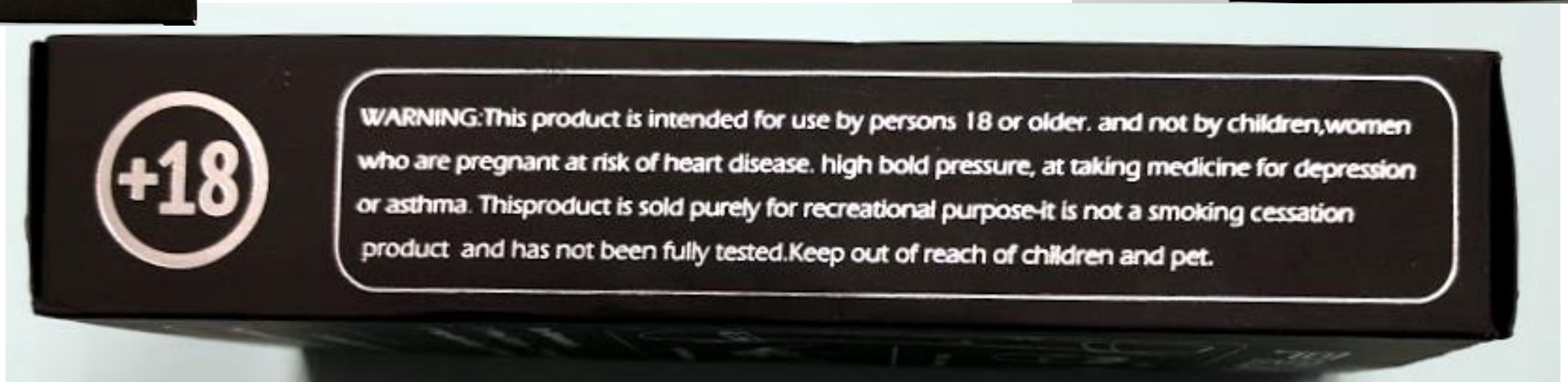
"This is not vaping, it is JUULing"



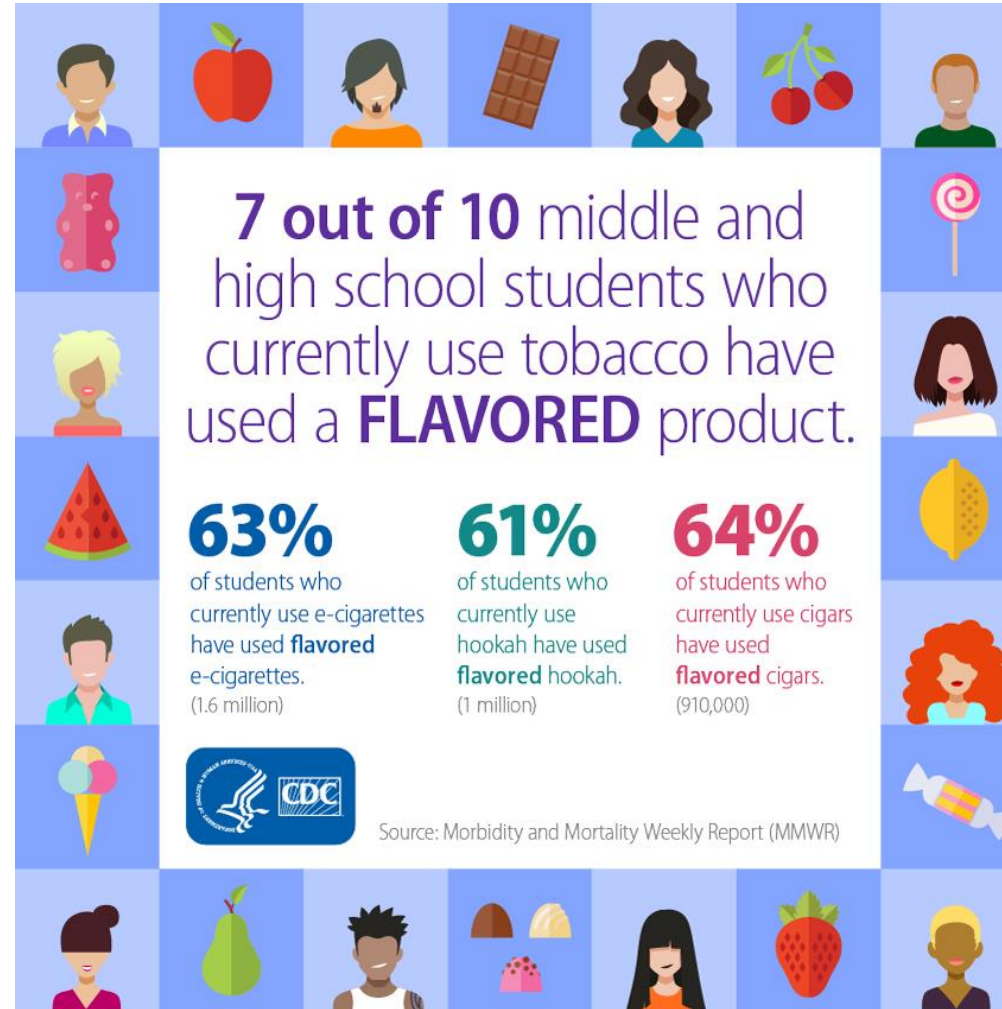


“Warlock Peas”

Popular Among Teens in Eastern NC
Purchased online 3-2018 for \$12.95



A Majority of Current Youth E-cigarette Users Report Using Flavored E-cigarettes



Flavors and Brands

Over 460 brands (Zhu et al., 2014)

7,764 unique flavors



Image Sources:
www.ecigarettereviewed.com

What's in the E-cigarette Aerosol?

Misperception of harmless “water vapor”

Nicotine – highly addictive

Flavors – increasing our understanding of the risks from inhalation of these flavors into lung tissue

Several harmful toxins have been found, but at levels lower than conventional cigarettes; depends largely on the device voltage

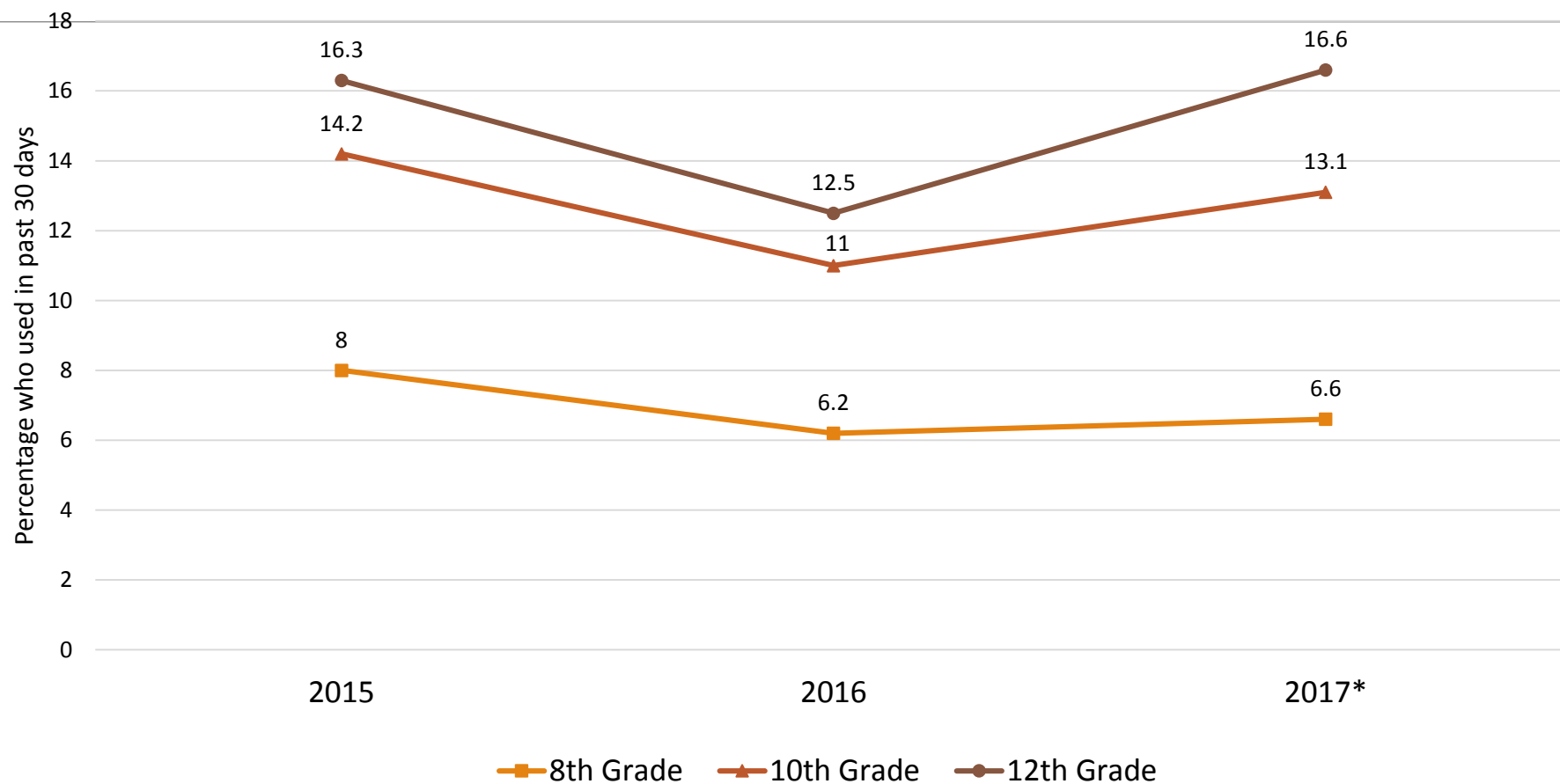
Fine and ultrafine particles delivered are similar to conventional cigarettes– some tobacco specific carcinogens have been documented

Propylene glycol--can cause respiratory illness (Grana et al., 2014)

Heavy Metals have been documented: tin, silver, iron, nickel aluminum, sodium, chromium, copper, magnesium, manganese, lead, potassium and silicate nanoparticles (CDC, 2017, Rule, 2018)

National Trends in Youth E-cigarettes Use

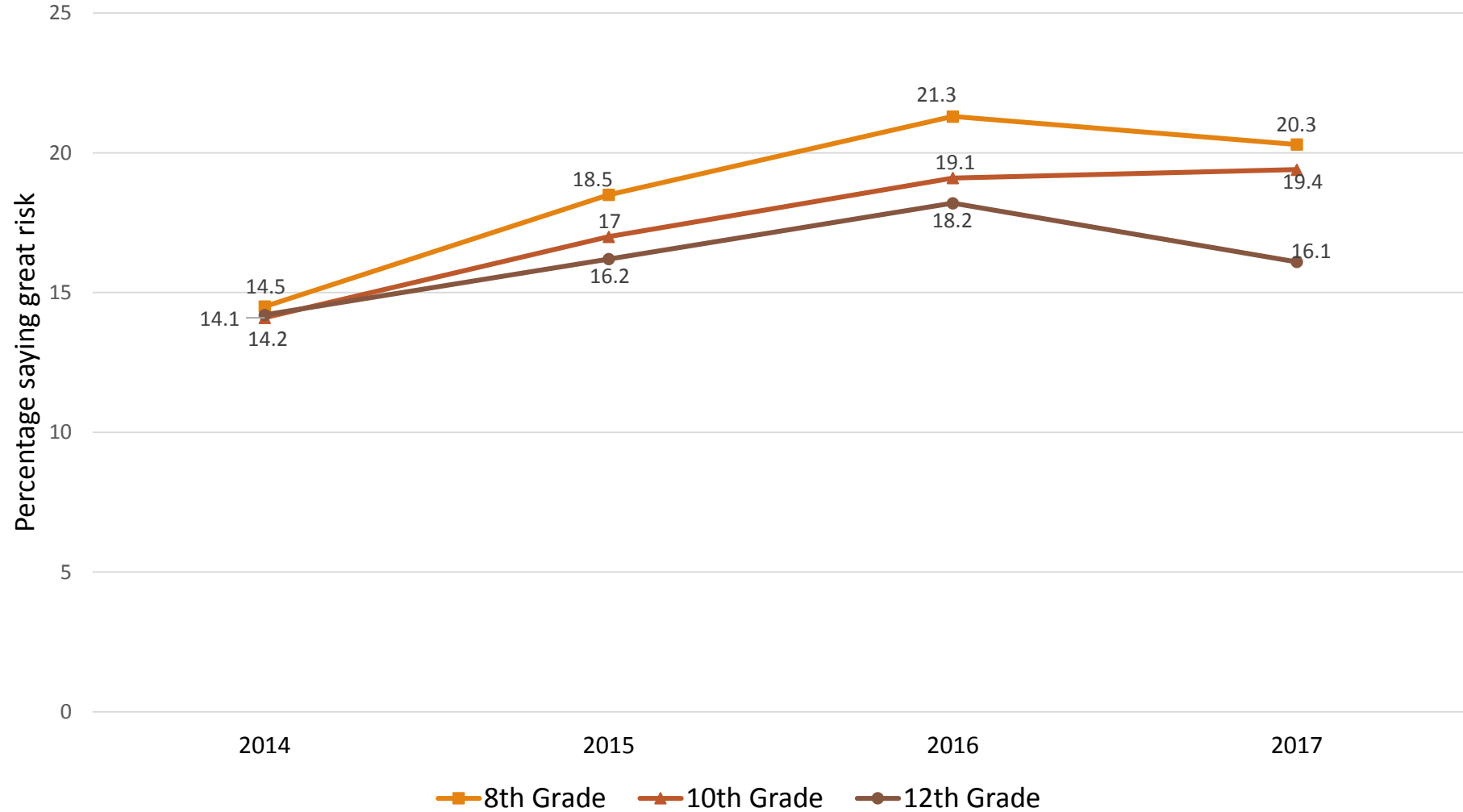
30 Day Use
Monitoring the Future 2015-2017



*In 2017, the surveys switched from asking about vaping in general to asking separately about vaping nicotine, marijuana, and just flavoring. Beginning in 2017, data presented for any vaping are based on these new questions.

National Perceptions of Harmfulness of Using E-cigarettes Regularly

Monitoring the Future 2014-2017



Among Youth, E-cigarette Use May Lead to Conventional Cigarette Use

U.S. adolescents and young adults who had never smoked, but used e-cigarettes at baseline, were **8.3 times more likely to progress to cigarette smoking after 1 year than nonusers** of e-cigarettes

- US Surgeon General Report, 2016



Research at UNC-CH School of Medicine (TCORS)

“When we expose (human lung) cells to e-liquids in either e-liquid form or in aerosol . . . We see cell death, we see that cells get stressed, because of exposure to e-liquids. These are definitely negative effects on the cells we study in the lab.”

A portrait of Dr. Flori Sassano, a woman with long dark hair, wearing a light blue button-down shirt. She is looking slightly to the right of the camera with a neutral expression. The background is a blurred laboratory setting with various pieces of equipment.

Dr. Flori Sassano

TARRAN LAB, MARSICO LUNG INSTITUTE
UNIVERSITY OF NORTH CAROLINA

National Academies of Sciences, Engineering, and Medicine Report on E-cigarettes

- National Academies of Sciences, Engineering, and Medicine released a new 2018 report on e-cigarettes that's the most comprehensive look at the evidence to date.
- A panel of experts analyzed the findings of 800 peer-reviewed studies and came out with a grab bag of conclusions about e-cigarettes' public health impact.
- 600-page Report
- The FDA commissioned the NAS report to help inform its regulations.

Major Conclusions of the Report

1) E-cigarettes may — or may not — help adults quit smoking

There is “insufficient evidence” that e-cigarettes can help people quit smoking.

2) E-cigarette use increases the likelihood that young people will smoke cigarettes

Children using e-cigarettes are at an increased risk of using tobacco cigarettes in the future

3) The big-picture/long term health effects of e-cigarettes are still a question mark

Committee didn't report that e-cigarettes are safe or that switching from traditional cigarettes to e-cigarette use will save lives.

Conclusions of the Report--Heart Disease and Stroke

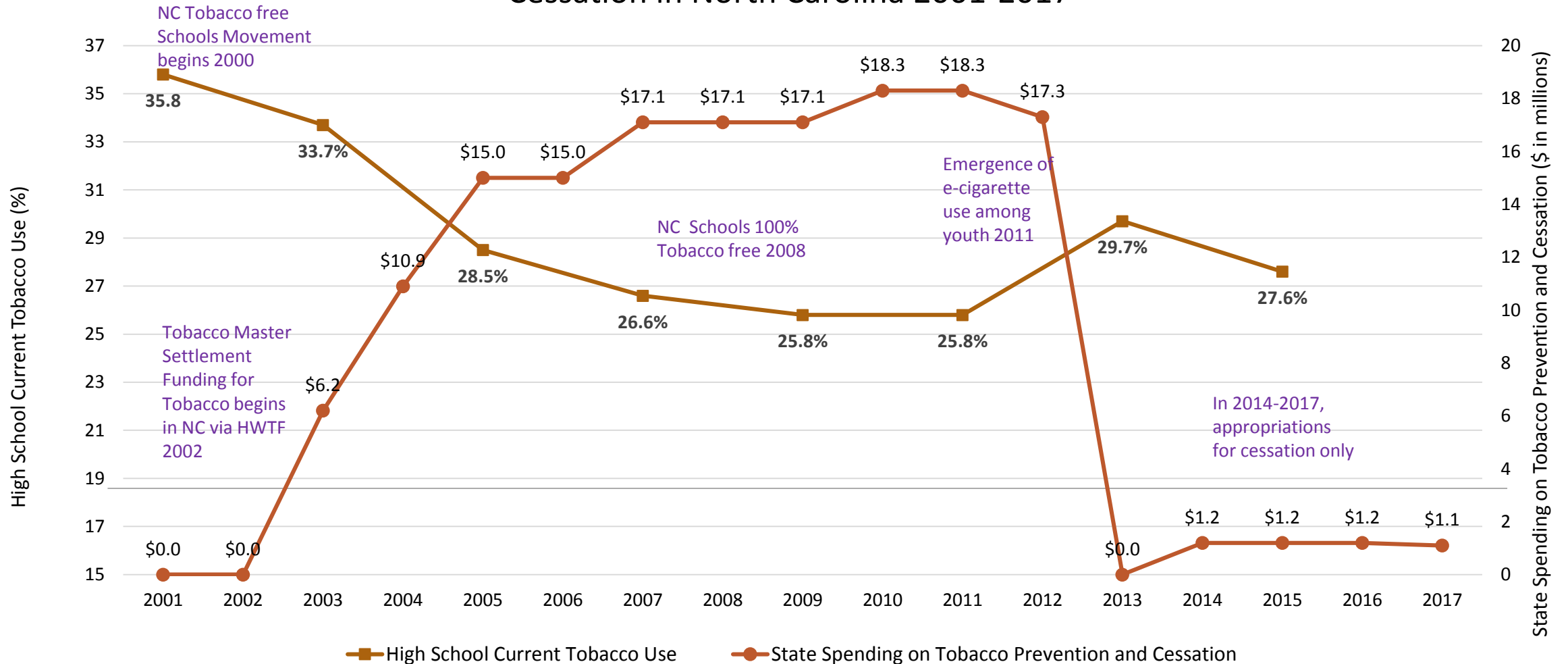
Conclusion 9-2. There is *substantial evidence* that heart rate increases after nicotine intake from e-cigarettes.

Conclusion 9-3. There is *moderate evidence* that diastolic blood pressure increases after nicotine intake from e-cigarettes.

Conclusion 9-4. There is *limited evidence* that e-cigarette use is associated with a short-term increase in systolic blood pressure, changes in biomarkers of oxidative stress, increased endothelial dysfunction and arterial stiffness, and autonomic control.

Conclusion 9-5. There is *insufficient evidence* that e-cigarette use is associated with long-term changes in heart rate, blood pressure, and cardiac geometry and function.

High School Tobacco Use and State Spending on Tobacco Use Prevention and Cessation in North Carolina 2001-2017



Since 2001, North Carolina has received an average of **\$149,825,874 per year** from the Tobacco Master Settlement Agreement

News and Observer Headline

April 4, 2018

10A | **News** | The News & Observer

AT

Vaping devices raise fears of new teen addiction

BY KATE ZERNIKE
New York Times

The student had been caught vaping in school three times before he sat in the vice principal's office at Cape Elizabeth High School in Maine this winter and shamefacedly admitted what by then was obvious.

"I can't stop," he told the vice principal, Nate Carpenter.

So Carpenter asked the school nurse about getting the teenager nicotine gum or a patch, to help him get through the school day without violating the rules prohibiting vaping.



NICK COTE NYT

Liz Blackwell, a school nurse with Boulder Valley School District, shows a collection of vape pens that have been confiscated from students during a presentation last month at Nevin Platt Middle School in Boulder, Colo.

evaluation was that those things don't work," Jennifer Kovarik, who runs tobacco prevention programs for Boulder County, Colo., said of the company's efforts to keep their products away from teenagers. "If they didn't want youth to use it, it would be sold in 18-and-over-only establishments. It's available at Circle Ks across the country."

E-cigarettes deliver nicotine through a liquid that is heated into vapor and inhaled, cutting out the cancer-causing tar of combustible cigarettes. But vaping liquids contain additives such as propyl-

ready pretty scary."

The industry points to a 2016 British study that says that vaping does not lead nonsmokers to become smokers. But the 2016 Monitoring the Future study, sponsored by the federal government's National Institute on Drug Abuse, followed students who in 12th grade had never smoked a cigarette and found that a year later, those who used e-cigarettes were about four times as likely to have smoked a cigarette.

A study released in January by the National Academies of Sciences, Engineering and Medicine

Prevention is Critical

“Successful multi-component programs prevent young people from starting to use tobacco in the first place and more than pay for themselves in lives and health care dollars saved”.

Source: US Department of Health and Human Services. 50 Years of Progress: A Report of the Surgeon General, 2014. Available at: <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/50-years-of-progress-bysection.html>.

LET'S MAKE THE NEXT GENERATION **TOBACCO-FREE**

Your Guide to the 50th Anniversary Surgeon General's
Report on Smoking and Health



Current FY18 State Funding for Tobacco Use Prevention

\$375,000 for ten regional tobacco use prevention programs through local health departments and collaborating partners, covering all one hundred (100) counties in North Carolina.

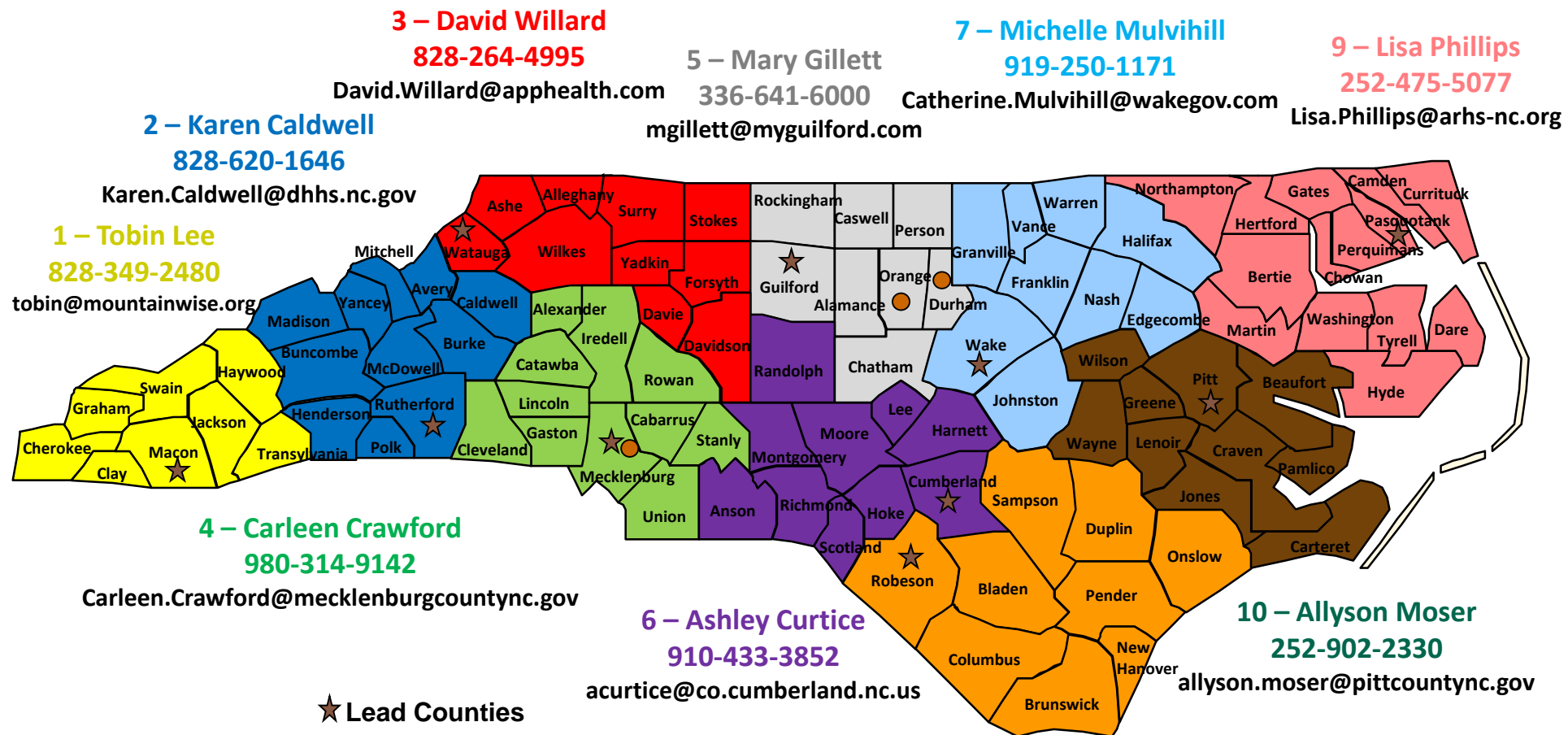
\$75,000 for a contract with Youth Empowered Solutions (YES!) to plan and conduct trainings and technical assistance in collaboration with state and local agencies focused on peer-led, adult-supported tobacco use prevention programs.

\$50,000 for a contract with UNC-CH, Tobacco Prevention Evaluation Program (TPEP), an independent evaluator, to assess the reach and effectiveness of the tobacco use prevention program.

Performance Measures 2017-18:

- Effective tobacco-use prevention messages
- Education of and organizational involvement of adults who influence youth such as parents, teachers, staff and faculty, health and mental health professionals
- Number of smoke-free/tobacco free policies, including e-cigarettes, adopted by local governments, colleges, housing, and workplaces
- Compliance with tobacco-free schools law, tobacco-free child care center rules and tobacco-free college campuses
- Collaborative efforts to reduce youth access to tobacco products
- Collaborative efforts to address tobacco use prevention in schools through the Whole Child, Whole School, Whole Community model

Tobacco Prevention and Control Branch (TPCB) Funds Regions 2015-2020



1. Macon County Public Health
2. Rutherford-Polk-McDowell District Health Department
3. Appalachian District Health Department
4. Mecklenburg County Health Department
5. Guilford County Department of Health and Human Services, Public Health Division

6. Cumberland County Public Health Department
7. Wake County Human Services
8. Robeson County Department of Public Health
9. Albemarle Regional Health Services
10. Pitt County Health Department

Local Tobacco Coordinators

Durham County Health Department – Natalie Rich, nrich@dconc.gov

Orange County Health Department – April Richard, arichard@orangecountync.gov

Mecklenburg County Health Department - Kim Bayha, Kimberly.bayha@mecklenburgcountync.gov

For Further Information Contact:

Sally Herndon, MPH
Branch Head
(919) 707-5401
sally.herndon@dhhs.nc.gov

Jim Martin, MS
Director of Policy and Programs
(919) 707-5404
jim.martin@dhhs.nc.gov

Jennifer Park, MPH
Director of Local Program
Development and Regulations
(919) 707-5407
jennifer.park@dhhs.nc.gov

Ann Staples, MA
Director of Communication and Education
(704) 543-2347
ann.staples@dhhs.nc.gov

Joyce Swetlick, MPH
Director of Tobacco Cessation
(919) 707-5402
joyce.swetlick@dhhs.nc.gov

Steph Gans, LCAS, LCSWA, CTTS
Tobacco Treatment Specialist
(919) 707-5415
stephanie.gans@dhhs.nc.gov