

2014-2015 Community Health Assessment



Knox County
Health Department
Every Person, A Healthy Person

2014-2015 Community Health Assessment



K n o x C o u n t y
Health Department
Every Person, A Healthy Person

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*Releasing
these findings
is a crucial
step in building
a healthier
community.*

- Dr. Martha Buchanan,
Director, Knox County
Health Department

Letter to the Community

To effectively respond to the health needs of our community, we must have a deep understanding of the challenges we face. This report, which outlines the priority health issues for Knox County, is the culmination of more than one and half years of data collection and evaluation. This extensive process, based on a national model, involved dozens of partners and thousands of residents.

We are uniquely positioned to conduct this work because of our expertise in this area, namely in our epidemiology division. Even so, we devote time and resources to this for a variety of reasons. This assessment is not only a crucial part of our own strategic approach to improve health, but it also informs the work of our partners, medical providers, nonprofits and many others. In addition, we produce this report in support of the Community Health Council’s health improvement plan, which brings together a diverse group of organizations from across the community.

The Community Health Assessment draws on data and information gathered from four assessments recommended under the national Mobilizing for Action through Planning and Partnerships (MAPP) framework. All of the information gathered from the assessments was then synthesized by our epidemiologists, resulting in the 14 topic areas outlined. The topic areas were determined either by statistical relevance using a variety of valid sources, or were cited repeatedly during key informant interviews and focus groups.

As you’ll read in this report, some groups of people have higher rates of certain diseases compared to others. We have noted these differences when they are statistically significant. It is important to recognize these disparities because race, ethnicity, gender, socioeconomic status and other social factors can play a major role in an individual’s health. Therefore, to improve the health of everyone in our community, we must be aware of and address these social determinants of health.

This is the second Community Health Assessment we’ve conducted; the first was in 2010. As part of our commitment to improving the health of our community, we plan to release a similar assessment every few years, and we hope they serve as useful tools and references for all readers. If you have any questions or suggestions for future reports, please contact our Director of Community Assessment at 865-215-5095.

Sincerely,

Dr. Martha Buchanan
Director, Knox County Health Department

2014-2015 Community Health Assessment

Acknowledgements

The Knox County Health Department thanks the following individuals and organizations for their invaluable contributions to this report.

Financial Contributors

\$10,000

Fort Sanders Regional Medical Center/Parkwest Medical Center
University of Tennessee Medical Center

\$240

University of Tennessee Department of Public Health

Community Health Council 2014-15

Kindall Aaron, Coalition on Childhood Obesity
Kristy Altman, Knoxville Track Club
David Brace, City of Knoxville
Martha Buchanan, Knox County Health Department
Jim Dickson, YMCA of East Tennessee
Paul Erwin, University of Tennessee Department of Public Health
Alon Ferency, Heska Amuna Synagogue
Mark Field, Knoxville Chamber
Lara Fleming, The Trust Company
Gaye Fortner, HealthCare 21 Business Coalition
Pam Frye, Harmony Family Center
Ben Harrington, Mental Health Association of East Tennessee
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Jerry Harnish, Rural/Metro
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Chadwick Howe, Clancy Optical / Spex Eyeware
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Hilde Phipps, Helen Ross McNabb Center CenterPointe
Carlos Pinilla, Centro Hispano of East Tennessee
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Mahasti Vafaie, Tomato Head Restaurants
Lisa Wagoner, Knox County Schools
Dirk Weddington, Knox County Juvenile Court

Host Sites for Focus Groups

Cherokee Health Systems
City County Building
The Community of St. Ninian
Compassion Coalition
Holy Ghost Catholic Church
Knox County Senior Centers
Knoxville-Knox County Community Action Committee
Leadership Knoxville
Mayor's Council on Disability Issues – City of Knoxville
St. John's Lutheran Church
Town of Farragut
University of Tennessee Medical Center



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Community Health Assessment: Health Priorities

Introduction

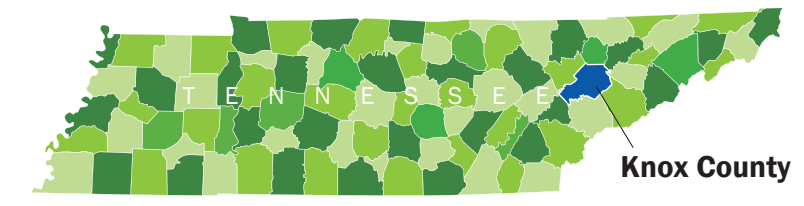
The 2014-2015 Community Health Assessment was conducted by the Knox County Health Department in support of Together Healthy Knox, an initiative of the Community Health Council. Created in part to guide a community health improvement process, the council is an independent entity made up of various community members that serves the City of Knoxville, Knox County and the Town of Farragut.

This assessment details the priority health issues for Knox County after consideration of all the data collected. The Community Health Council will select four top issues from this assessment to integrate into a Community Health Improvement Plan.

Methodology

In 2014, the Knox County Health Department held monthly meetings with partner agencies to organize and coordinate the assessment data collection process (12 focus groups, 26 key informant interviews, a quality of life survey with more than 2,000 responses, etc.). Once the qualitative assessments were underway, the meetings were used to review the 2010 Knox County Community Health Assessment to determine any new data needs. Additionally, the Knox County Health Department epidemiology staff reviewed local and state health assessments for methodology and data collection comparisons. Information from the Behavior Risk Factor Survey (BRFS), conducted every three years in Knox County, and the Youth Risk Behavior Survey (YRBS), conducted every two years in Knox County public middle and high schools, was combined with local birth, mortality and disease prevalence data. To set a benchmark, the data were compared to the applicable targets outlined in *Healthy People 2020*, a national set of standards created to improve health. The health department's epidemiology staff also noted areas of limitation in which County-level data were not available. All data were evaluated to reveal the health issues for Knox County. These health issues were then narrowed down to 14 topic areas that represent the priority health issues for Knox County.

Public input on a summary of this assessment was sought in person and online in June 2015. Obesity, nutrition and physical activity were most commonly cited as major community issues.

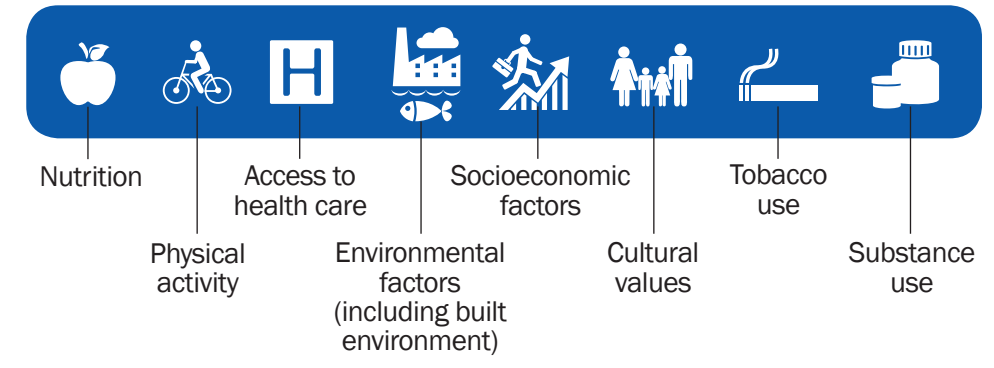


Community Description

Approximately 448,644 individuals reside in Knox County based on 2014 estimates. Since 2010, the population has increased nearly four percent. The average Knox County resident is 37 years old and 14 percent of the population is over 65 years old. The makeup of Knox County is slightly more female than male and predominantly white. Black individuals make up nearly 10 percent of Knox County's population with individuals of other races and ethnicities making up five percent. The median annual household income for Knox County residents is \$47,694 with 14.6 percent of all residents living below poverty level. Approximately 1 in 5 children in Knox County are living below the poverty level. More than 93 percent of Knox County residents completed high school, and 33 percent hold a bachelor's degree or higher. Approximately 13 percent of Knox County residents report living with some type of disability.

GRAPHICS KEY

The symbols below represent contributing factors to the health issues described in this report. Look for these symbols in this report to learn about root causes of health issues in Knox County.



The Knox County Health Department epidemiology staff identified the following health priorities for the county, based on all data collected. This information was presented to the Community Health Council for review.

TOPIC AREAS IDENTIFIED	HEALTH PRIORITIES
Access to Health Services	<ul style="list-style-type: none"> Increase health coverage for Knox County residents (emphasis on unemployed)
Cancer	<ul style="list-style-type: none"> Decrease lung cancer mortality Increase radon awareness
Diabetes	<ul style="list-style-type: none"> See obesity, nutrition, physical activity
Environmental Health	<ul style="list-style-type: none"> Increase access and availability of safe greenways, sidewalks and parks
Food Access	<ul style="list-style-type: none"> Increase access and availability of healthy food versus unhealthy food Address potential misconceptions around perceived cost of healthy food versus unhealthy food
Heart Disease	<ul style="list-style-type: none"> See obesity, nutrition, physical activity
Injury and Violence	<ul style="list-style-type: none"> Decrease bullying among adolescents Decrease poisoning deaths (especially those related to opioid and meth use)
Maternal, Infant and Child Health	<ul style="list-style-type: none"> Increase the number of women receiving adequate preconception/prenatal care Decrease Neonatal Abstinence Syndrome (NAS) incidence
Mental Health	<ul style="list-style-type: none"> Increase access to mental health services Decrease depression/suicidal thoughts among adolescents
Obesity, Nutrition, Physical Activity	<ul style="list-style-type: none"> Decrease screen time in youth Increase availability of physical education in schools Decrease unhealthy food choices
Oral Health	<ul style="list-style-type: none"> Increase access to oral health services for youth, the unemployed and those unable to work
Reproductive and Sexual Health	<ul style="list-style-type: none"> Increase birth control education
Substance Use	<ul style="list-style-type: none"> Decrease opioid abuse Decrease marijuana use and binge drinking in youth
Tobacco Use	<ul style="list-style-type: none"> Decrease tobacco use, particularly in youth and pregnant women

Access to Health Services

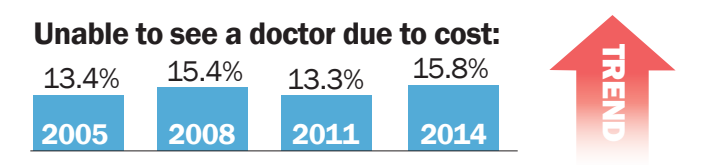
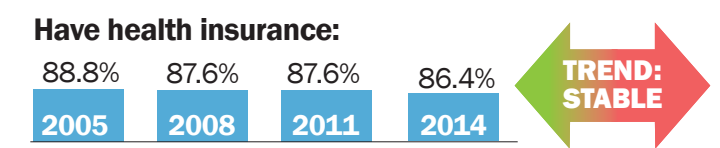
Health Priorities and Areas of Concern

- Increase health care coverage for Knox County residents (emphasis on unemployed)
- Impact of the Affordable Care Act

Benchmark

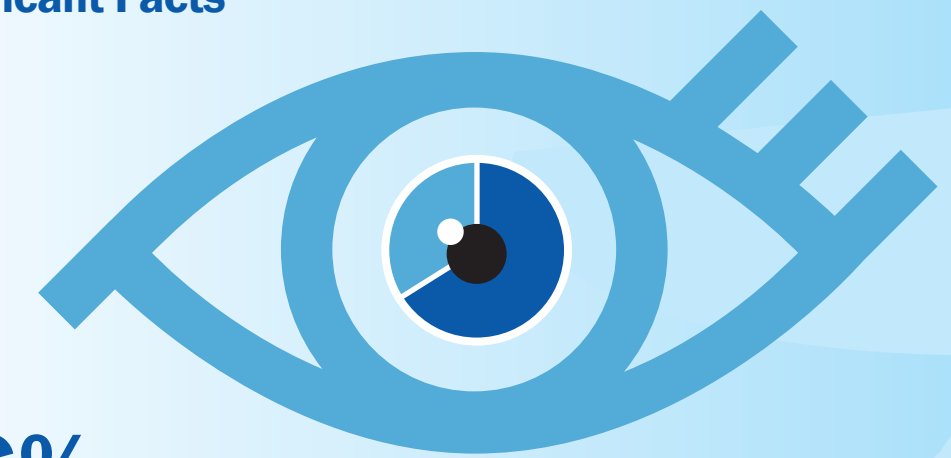
Persons with medical insurance:

- **Healthy People 2020 target:** 100 percent
- **Knox County:** 86.4 percent



Source: BRFS, 2005, 2008, 2011, 2014

Significant Facts

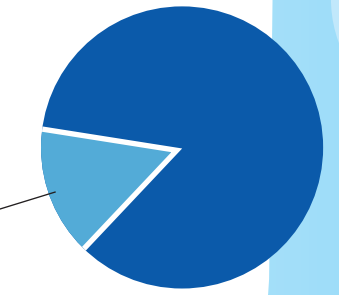
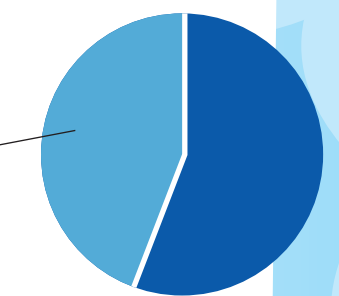


66% of Knox County adults aged 40+ reported having insurance for eye care.
Source: BRFS, 2014



FACT

43.8 percent of unemployed adults reported they were **unable to see a doctor** in the past year due to cost (compared to 15.9 percent of employed adults).



Source: BRFS, 2014



15.8 percent of Knox County adults (14.9 percent white, 16.9 percent black) reported that they couldn't see a doctor in the past year due to cost. This is more than three times higher than the *Healthy People 2020* target of reducing the proportion of persons who are unable to obtain or delay in obtaining necessary medical care (4.2 percent).
Source: BRFS, 2014

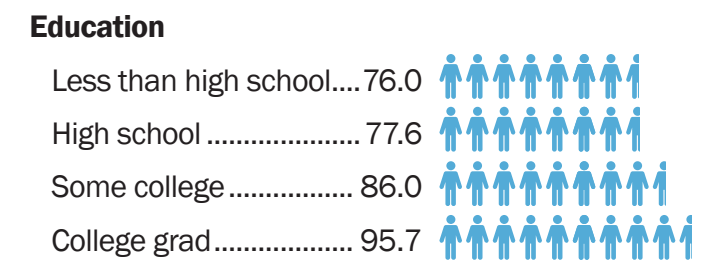
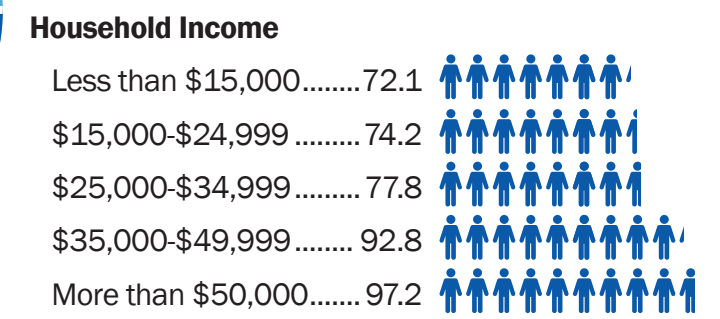
I think a healthy community is where everyone can get health care, whether it's mental health care or physical, but ... where everyone can get some health care.
— Focus Group, 2014

POSITIVES/RESOURCES

- Hospitals/physicians per capita
- TennCare system
- Knox County Indigent Care Program
- City of Knoxville Office on Homelessness
- Cherokee Health Systems integrated care
- InterFaith Health Clinic
- The Free Medical Clinic
- Knox Area Project Access

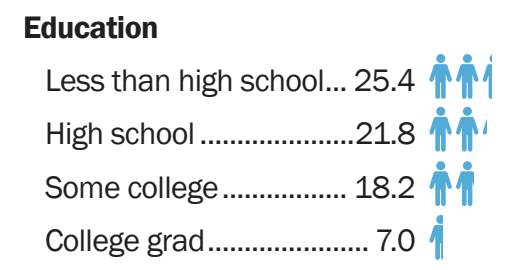
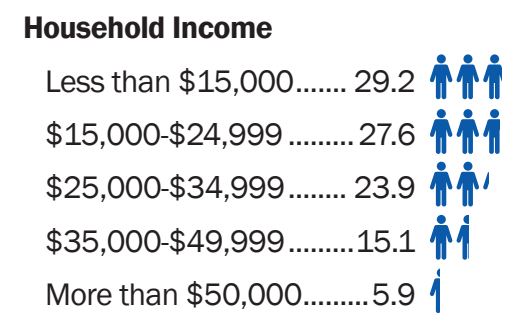
Disparities

Percent of adults who reported they have health coverage: 1 person icon = 10 percent

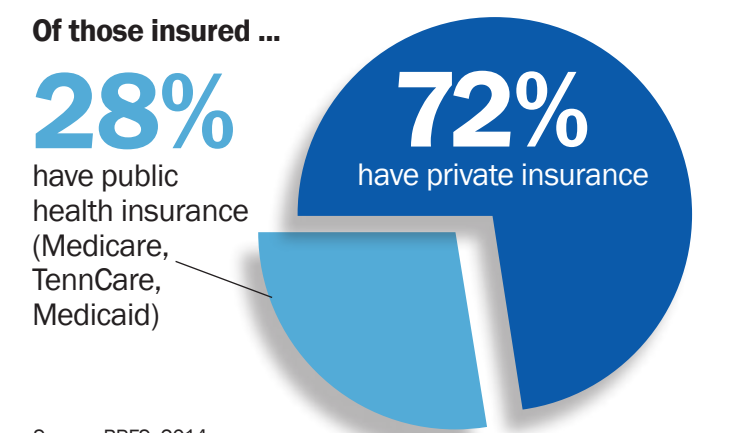
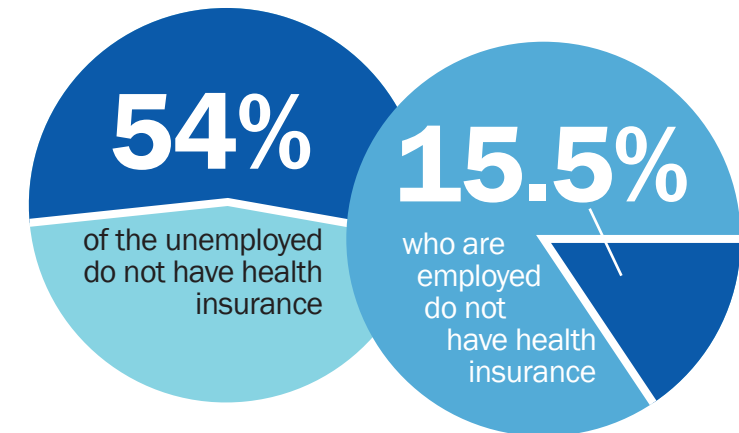


Source: BRFS, 2014

Percent of adults who reported they couldn't see a doctor in the past 12 months due to cost:



Source: BRFS, 2014



Source: BRFS, 2014

Contributing Factors



Cancer

Health Priorities and Areas of Concern

- Lung cancer mortality
- See *Obesity, Tobacco, Nutrition and Physical Activity*
- Radon awareness

Benchmarks

Death rates for all types of cancer

Target: 179.3 deaths per 100,000
Knox: 197.5 deaths per 100,000

- **Healthy People 2020 target:** 179.3 deaths per 100,000
- **Knox County:** 197.5 deaths per 100,000
 - White: 211.0 per 100,000
 - Black: 151.5 per 100,000

Lung cancer death rate

Target: 45.5 deaths per 100,000
Knox: 58.9 deaths per 100,000

- **Healthy People 2020 target:** 45.5 deaths per 100,000
- **Knox County:** 58.9 deaths per 100,000 (disparities evident)
- Smoking causes approximately 90 percent of all lung cancer deaths.
- Radon continues to be a risk for lung cancer in Knox County.

Breast cancer death rate

Target: 20.7 deaths per 100,000 females
Knox: 22.7 deaths per 100,000 females

- **Healthy People 2020 target:** 20.7 deaths per 100,000 females
- **Knox County:** 22.7 deaths per 100,000 females

Colorectal cancer death rate

Target: 14.5 deaths per 100,000
Knox: 15.2 deaths per 100,000

- **Healthy People 2020 target:** 14.5 deaths per 100,000
- **Knox County:** 15.2 deaths per 100,000

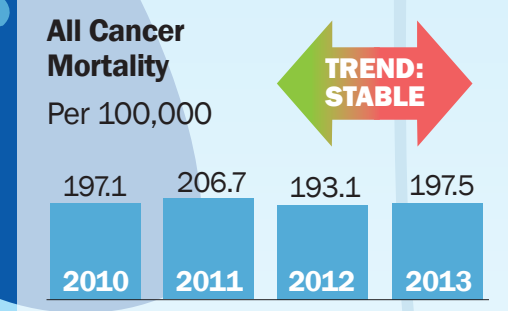
Sources: Health Information Tennessee, 2009; 2010-2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health; Centers for Disease Control and Prevention

Contributing Factors



Screening for cervical, colorectal, and breast cancers helps find these diseases at an early, often highly treatable stage.

Knox County adults met the Healthy People 2020 target for breast cancer and colon cancer screening.



Sources: 2010-2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

Causes of Cancer Include

- Tobacco use
- Poor diet and physical inactivity
- Sun and UV exposure
- Radiation exposure
- Genetics
- Environmental carcinogens (including radon exposure)

Source: American Cancer Society website, 2015

Disparities

Black males: 95.8 deaths per 100,000
White males: 79.5 deaths per 100,000

• **Lung cancer** mortality is greatest among black males (95.8 deaths per 100,000) compared to white males (79.5 per 100,000). However, lung cancer mortality is greater among whites than blacks in general.

Black females: 27.6 deaths per 100,000
White females: 22.4 deaths per 100,000

• **Breast cancer** mortality is greater among black females (27.6 deaths per 100,000) compared to white females (22.4 per 100,000).

Black males: 25.6 deaths per 100,000
White males: 19.4 deaths per 100,000

• **Colon cancer** mortality is greater among black males (25.6 deaths per 100,000) compared to white males (19.4 deaths per 100,000).

Males: 19.8 deaths per 100,000
Females: 11.9 deaths per 100,000

• Males experience a greater mortality from **colon cancer** than females (19.8 deaths per 100,000 males compared to 11.9 deaths per 100,000 females).

Source: Health Information Tennessee, 2009

Knox County Rates of Diagnosis

Per 100,000

All cancer	497.9
Prostate cancer	165.5
All childhood cancer (0-19 years)	156.5
Female breast cancer	130.9
Lung cancer	78.9
Colorectal cancer	39.1
Skin melanoma	30.0
Pancreatic cancer	12.6

Source: Cancer in Tennessee, 2007-2011

FACT

Cancer (all types) was the leading cause of death in Knox County in 2013.

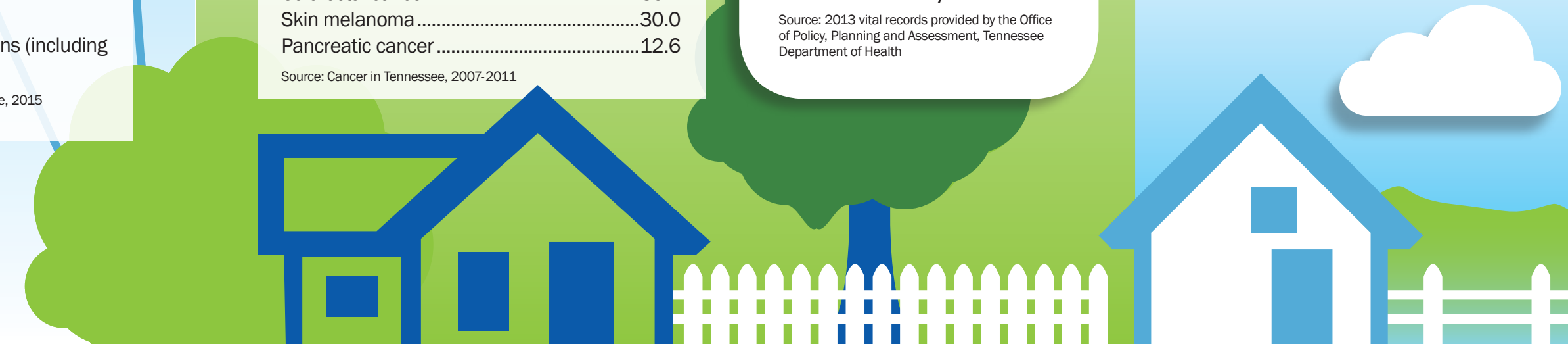
Source: 2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

“ You're never going to have equality in health unless you get people out of poverty. ”
– **Focus Group, 2014**

POSITIVES/RESOURCES

The number of adults who reported they smoked is gradually decreasing in Knox County.

- American Cancer Society
- Hospitals and oncologists in community for treatment
- Cancer Support Community of East Tennessee
- Reported cancer screening rates in Knox County meets *Healthy People 2020* targets.

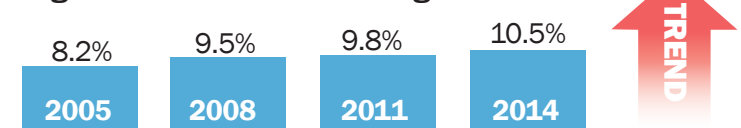


Diabetes

Prevalence



Percent of Knox County adults who reported they were diagnosed with diabetes during their lifetime:



Source: BRFSS, 2005, 2008, 2011, 2014

Benchmarks

The proportion of adults with diabetes who perform self-blood glucose monitoring at least once daily.

- **Healthy People 2020 target:** 70.4 percent
- **Knox County:** 65 percent

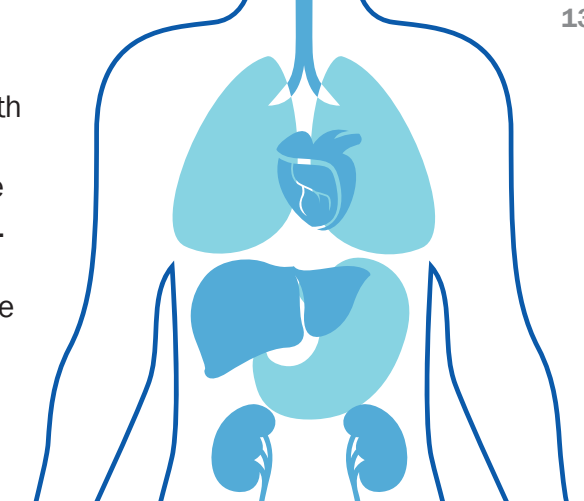
The proportion of persons with diagnosed diabetes who receive formal diabetes education.

- **Healthy People 2020 target:** 62.5 percent
- **Knox County:** 51 percent

Source: BRFSS, 2014

Complications

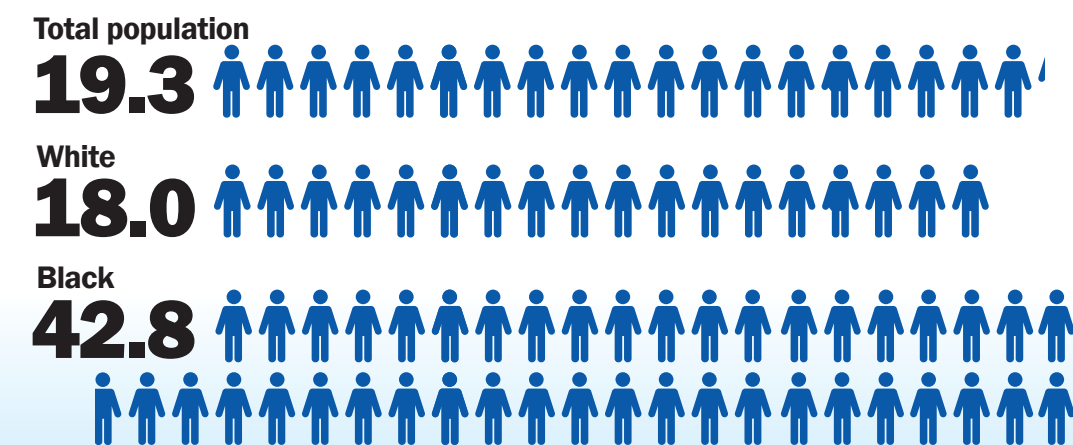
Diabetes can cause serious health complications including heart disease, blindness, kidney failure and lower-extremity amputations. Diabetes is the seventh leading cause of death in the U.S. and the eighth leading cause of death in Knox County.



Health Priorities and Areas of Concern

- Rising number of Type 2 diabetes in Knox County Youth
- See *Obesity, Nutrition and Physical Activity*

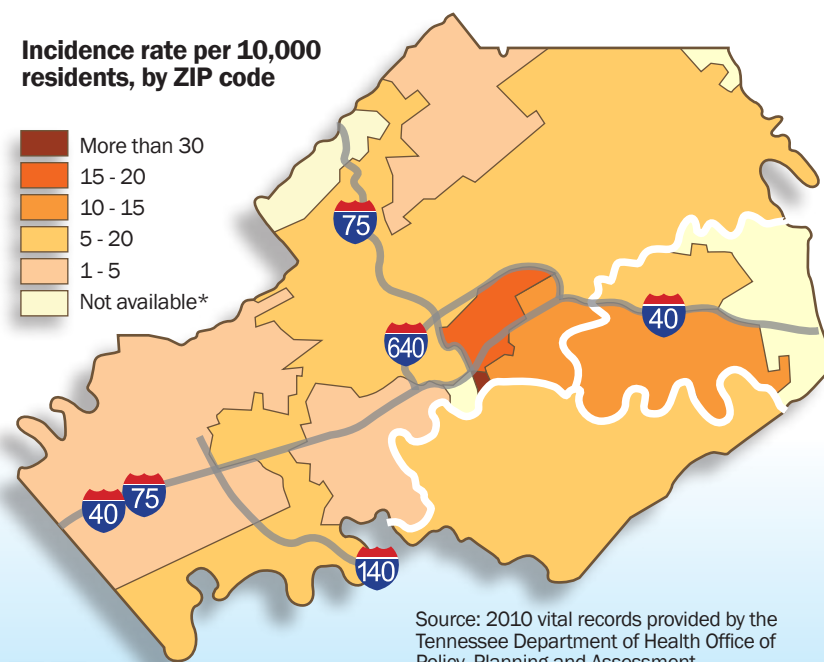
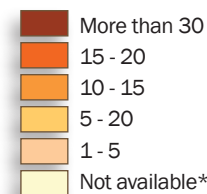
Mortality (Deaths per 100,000 population)



Source: Health Information Tennessee, 2009

Diabetes Hospitalizations, 2010

Incidence rate per 10,000 residents, by ZIP code



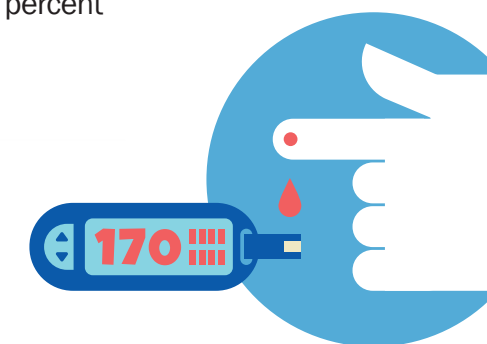
Source: 2010 vital records provided by the Tennessee Department of Health Office of Policy, Planning and Assessment

*Rates for some ZIP codes are not reported because the ZIP code has significant population across the county line, rendering the rate inaccurate. For the University of Tennessee campus area, rates are inaccurate because most students obtain health care using their parents' insurance, with illnesses recorded as occurring at their home address.

FACT

The prevalence of diabetes, especially in the **African-American community**, was cited as a **critical health issue** in the key informant interviews.

Source: Key informant interviews, 2014



37% of Quality of Life survey respondents chose diabetes as an important health problem among Knox County adults.

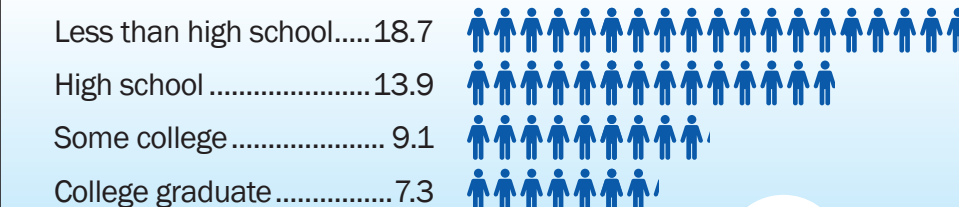
— *Quality of Life Survey, 2014*

Disparities

Household Income



Education



Source: BRFSS, 2014



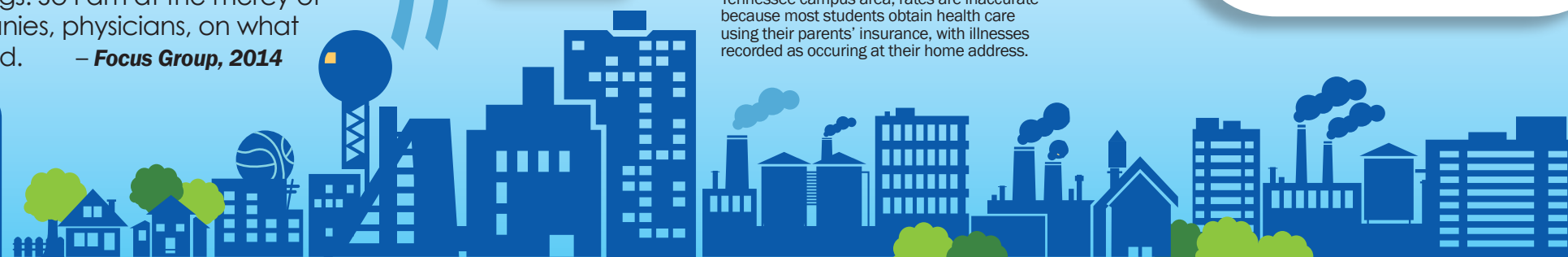
POSITIVES/RESOURCES

- Hospitals/physicians in area
- YMCA Diabetes Prevention Program
- Knox County Health Department diabetes management classes
- Community awareness

Contributing Factors



“ We should also mention affordable medications for people that require them ... I have Type 1 diabetes. I spend lots of money on medications and pump supplies and things in a year. I have no choice. To survive, to live another day, I must buy these things. So I am at the mercy of a whole lot of systems, insurance companies, physicians, on what I can take, what I can't, what is regulated. — **Focus Group, 2014** ”



Environmental Health

Health Priorities and Areas of Concern

- Access and availability of safe greenways, sidewalks
- Built environment factors contributing to poor health

Safety

The Knox County Health Department performed an analysis of automobile-pedestrian and automobile-bicycle crashes in Knox County that occurred Dec. 2006 - June 2011, based on data provided by the Knoxville Regional Transportation Planning Organization (TPO).

In that time period, there were 494 crashes involving pedestrians or bicyclists.

- Of those:
- 348 crashes involved pedestrians
 - 145 crashes involved cyclists
 - 1 crash involved both

Given the relatively small percentage of pedestrians and bicyclists in Knox County the statistics reinforce the importance for everyone to safely share our roads.

Source: Pedestrian/Bicycling Crash Data Assessment for Knox County, Tennessee, 2012

Contributing Factors

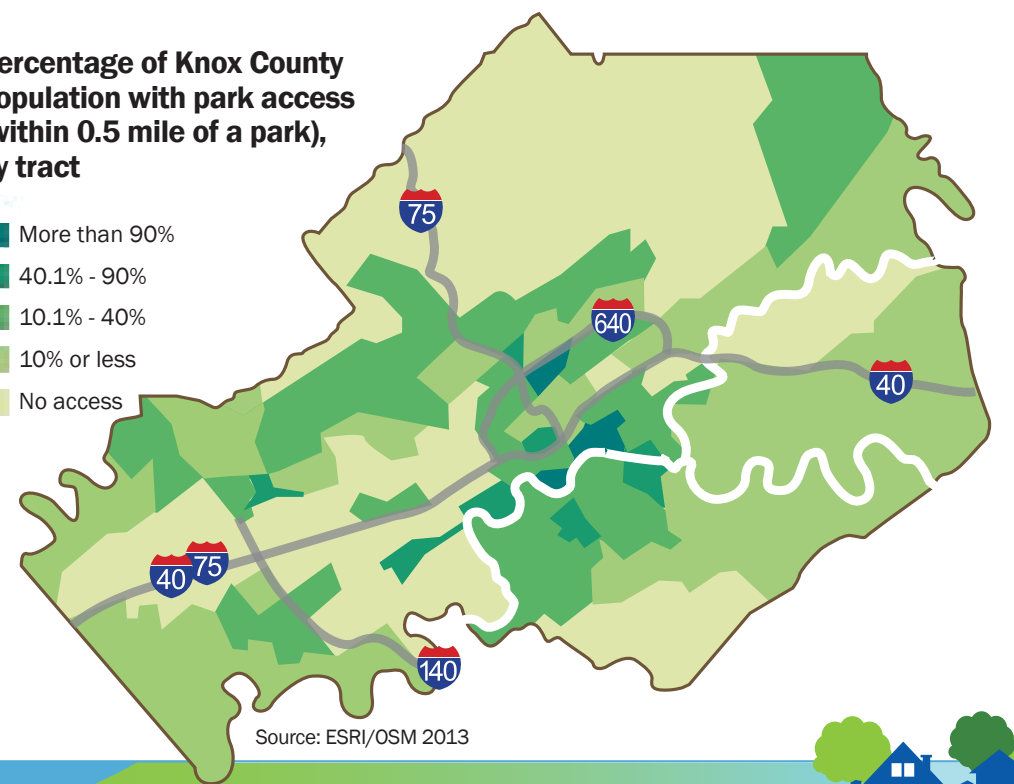


FACT

Only 23 percent of individuals live within one-half mile of a park in Knox County. Data show a lack of access to parks contributes to a sedentary lifestyle and obesity.

Percentage of Knox County population with park access (within 0.5 mile of a park), by tract

- More than 90%
- 40.1% - 90%
- 10.1% - 40%
- 10% or less
- No access



Source: ESRI/OSM 2013



• **Air Quality**
Knox County has met *Healthy People 2020* goals in 2013 and 2014. Prior to that, air quality was slowly improving despite a growing population.



• **Drinking water**
In the past decade, there have been no reported waterborne disease outbreaks connected to any of our utility providers in Knox County.



• **Waterways**
Since 2004, 500 miles of waterways have been added to the region's list of impaired waterbodies in East Tennessee, meaning they are not safe for swimming or fishing.

Source: Tennessee Department of Environment and Conservation and ET Index Livability Report Card 2015, Plan East Tennessee

Housing Disparities

29.7 percent of housing in Knox County meets one or more of these four conditions:

- Lack of complete plumbing
- Lack of complete kitchen facilities
- Gross rent or selected owner costs are greater than 30 percent of household income
- More than one person per room is living in the household

These factors can contribute to poor health in multiple ways.

Source: Economic Research Service of USDA, 2007-2011 or Knox County Community Health Status Indicators, 2015



Drinking water demand

While there is a sufficient water supply available in East Tennessee at present, there is a rapidly increasing demand for drinking water that must be addressed in planning for the future.

Benchmarks

- Knox County meets several goals for healthy drinking water supplies addressed in *Healthy People 2020*.
- Knox County also meets the *Healthy People 2020* target for air quality, which aims to reduce the number of days the Air Quality Index (a figure created to measure outdoor air pollution) exceeds 100. In 2013 and 2014, Knox County Air Quality Management's monitoring stations recorded no days with AQI over 100.

Source: ET Index Livability Report Card 2015, Plan East Tennessee

Walkability

A 2014 study found that, excluding the elderly, residents of neighborhoods with greater walkability had on average 13 percent lower development of diabetes over 10 years versus those in less walkable neighborhoods. Obesity was also lowest in the most walkable neighborhoods.

- People living in highly walkable neighborhoods are three times more likely to walk or bicycle and half as likely to drive as a means of transportation.



- A 2013 survey by the National Association of Realtors found that **8 in 10 Americans prefer being in a community that offers sidewalks and good places to walk.**
- Six in 10 prefer a neighborhood featuring a mix of houses, shops and services within an easy walk versus a neighborhood that requires a car for every errand. Prices are higher and time to sell shorter for homes with sidewalks.

Sources: National Association of Realtors' National Community Preferences Survey, October 2013; Diabetes.org website, Do "Walkable Neighborhoods Reduce Obesity, Diabetes?" June 2014; Knoxville Regional Transportation Planning Organization, April 2013



POSITIVES/RESOURCES

- Multiple greenways and parks in the area
- City of Knoxville Complete Streets Ordinance
- Safe Routes to School Partnership
- Legacy Parks Foundation
- Knox and Blount counties and a portion of Anderson County are now considered to be in attainment, a U.S. Environmental Protection Agency declaration that the area complies with key air-pollution standards.



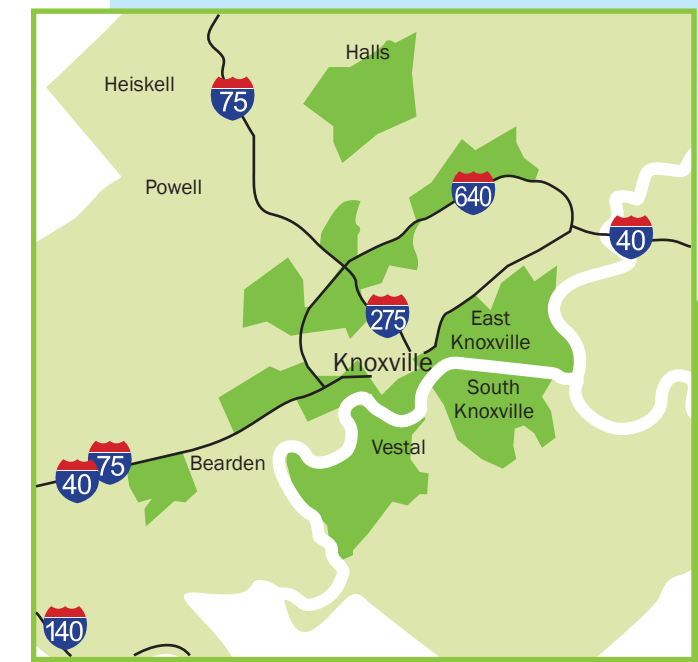
Health Priorities and Areas of Concern

- Access and availability of healthy food versus unhealthy food
- Potential misconceptions around perceived cost of healthy food versus unhealthy food

Benchmarks

- **Diet Choices/Food Deserts**
Knox County high school students surveyed consistently eat fewer fruits and vegetables than state or national averages, a risk factor for obesity. In the YRBS, when high school students were asked if they ate five or more servings of fruit or vegetables during the previous week, the percent answering “yes” consistently fell 1-2 percent below state percentages and 4-5 percent below national percentages.

According to the USDA, food deserts are communities without ready access to fresh, healthy, and affordable food. The low-income neighborhoods shaded in dark green on the map at right have less access to markets where their families can obtain fresh fruits and vegetables.



Areas defined by census tract. Source: USDA Economic Research Service, 2014



39 percent of Knox County students qualify for free or reduced-cost breakfast and lunch.

Source: Knox County Schools, 2015



11.5 percent of Knox County households received SNAP benefits (food stamps) in 2013.

Source: American Community Survey, 2013



11.3 percent of individuals in Knox County are low-income and do not live close to a grocery store.

Source: USDA Economic Research Service, 2012

FACT
Eating **fruits and vegetables** lowers the risk of developing many chronic diseases, and can also help with weight management.

Additional information on food choice behaviors of Knox County residents and students are reported in the section on Nutrition and Physical Activity, pages 26-27.

PRODUCTION OF AND ACCESS TO FRUITS AND VEGETABLES



Food Production	U.S.	Tenn.	Knox County
Percentage of cropland acreage harvested for fruits and vegetables (vegetables + orchards + berries)	2.4	0.6	0.30
Percentage of total land acreage harvested for fruits and vegetables (vegetables + orchards + berries)	0.4	0.1	0.03

Food Access	U.S.	Tenn.	Knox County
Number of farmers markets per 100,000 residents	2.5	1.5	1.60
Percentage of farmers markets that accept SNAP	21.0	11.8	29.00

Sources: USDA Ag Census 2012; CDC State Indicator Report on Fruits and Vegetables, 2013

Disparities

18.2% of black adults versus **13.1 percent** of white adults reported always or usually feeling stressed about preparing nutritional meals.

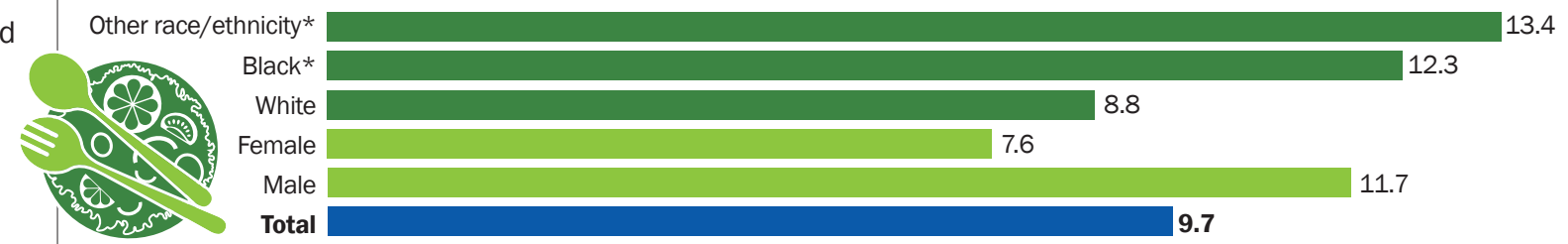
38.9% of those with income **less than \$15,000** per year reported being stressed about preparing nutritious meals and **4.2 percent** of those with income **greater than \$50,000** per year report the same.

37.2% of adults unable to work reported always or usually feeling stressed about preparing nutritious meals.

Source: BRFS, 2014

High schoolers and green vegetables

Percentage of high school students surveyed who ate green salad, carrots or other vegetables (excluding potatoes) three or more times per day during the seven days before the survey, 2013:



* Limited reliability - interpret with extreme caution

Source: High School YRBS, 2013



POSITIVES/RESOURCES

- Emergency food resources
- Knoxville-Knox County Food Policy Council is the oldest municipal food policy council in the U.S., formed in 1982 as a result of efforts of the then Department of Planning at the University of Tennessee.
- Increase in farmers markets and those that accept SNAP/EBT.
- Knox County Schools Nutrition Program

Contributing Factors



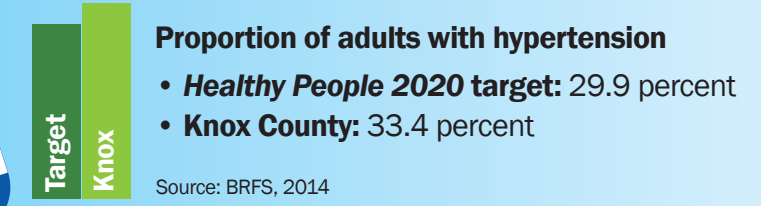
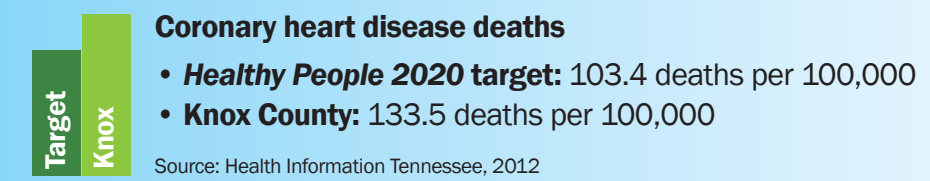
Heart Disease

Health Priorities and Areas of Concern

- See *Obesity, Nutrition and Physical Activity*.
- Race, income and education disparities for hypertension and heart disease



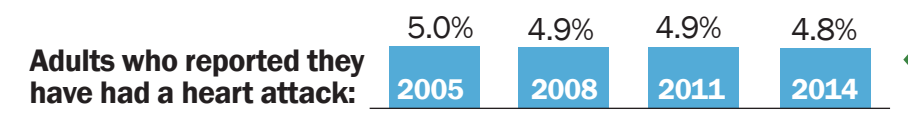
Benchmarks



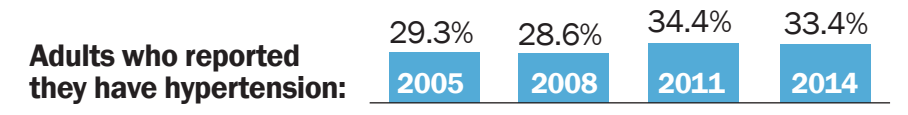
... the less economically secure you are, the more stress you're under on a constant daily basis, at your job, at home and wherever. And that in and of itself then becomes a contributor to all sorts of bad health conditions and so on.

—Focus Group, 2014

Contributing Factors

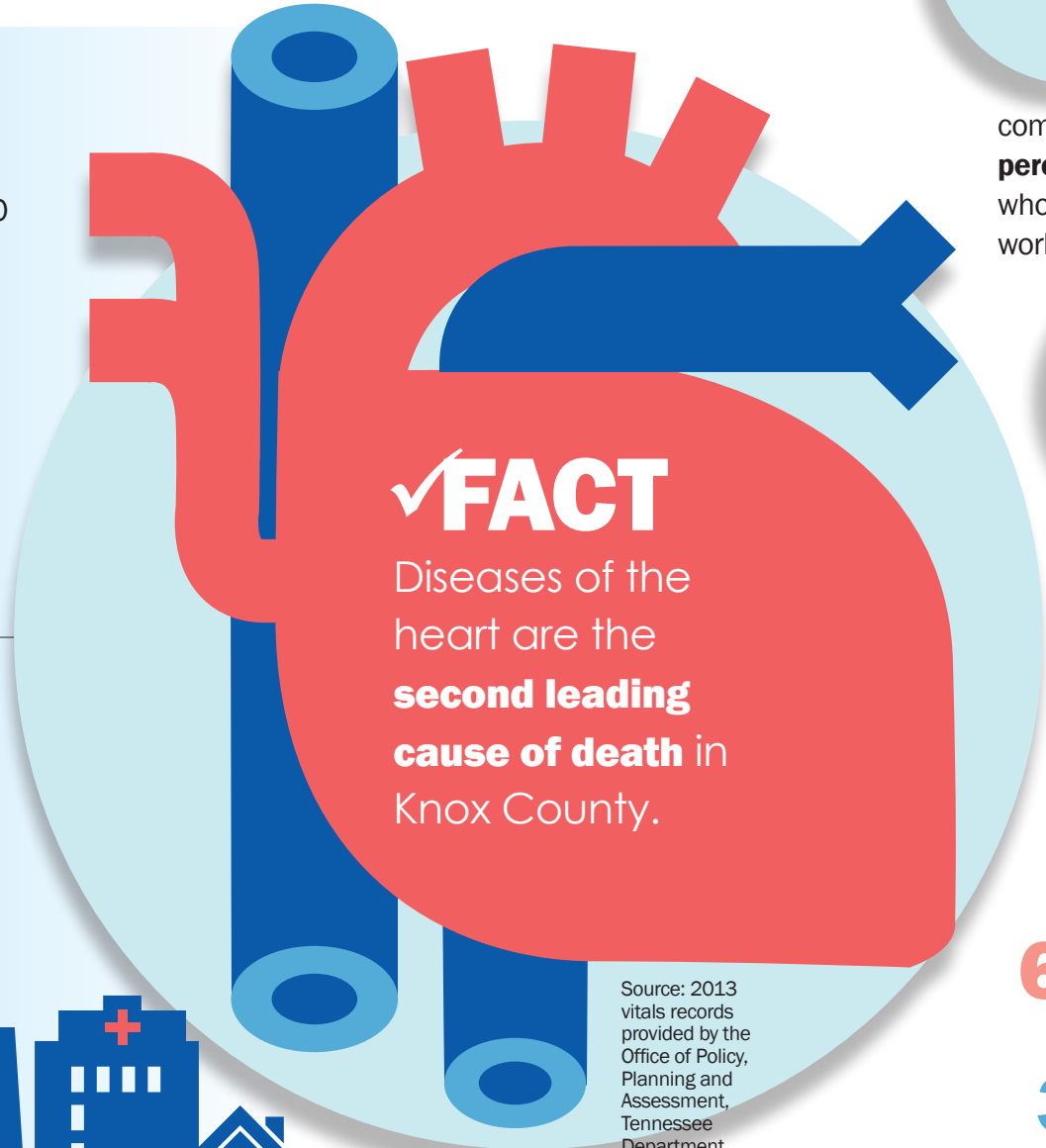


TREND: STABLE



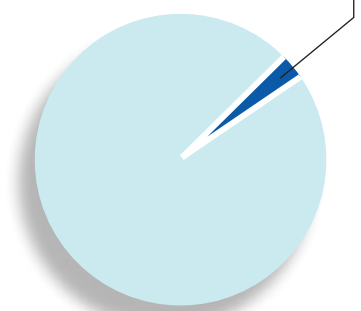
TREND

Source: BRFSS, 2005, 2008, 2011, 2014

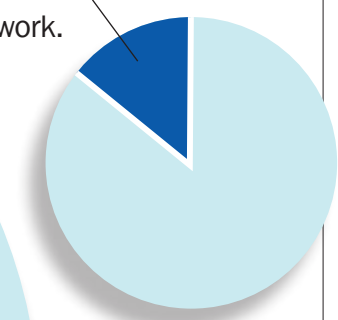


Source: 2013 vitals records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

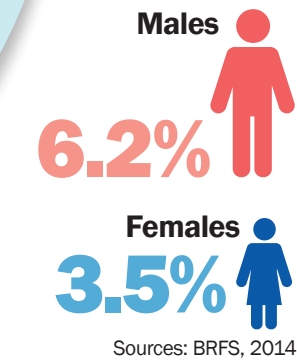
1.9% of individuals who are employed reported having had a heart attack ...



compared to **14.2 percent** of individuals who are unable to work.



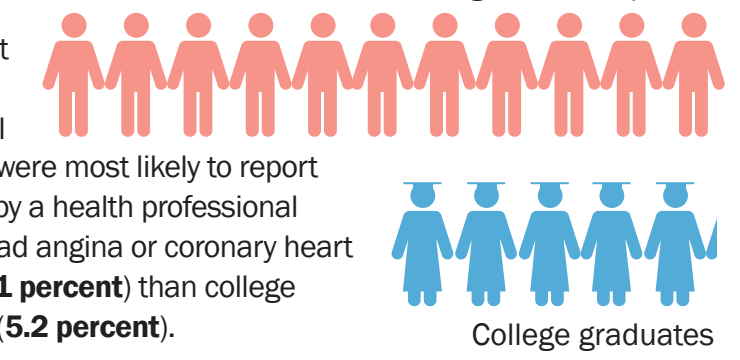
Males were more likely to report having a heart attack than females.



Disparities

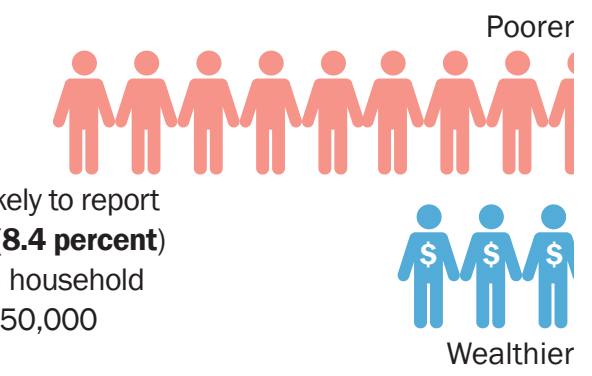
Education

Individuals who did not achieve a high school education were most likely to report being told by a health professional that they had angina or coronary heart disease (**11 percent**) than college graduates (**5.2 percent**).



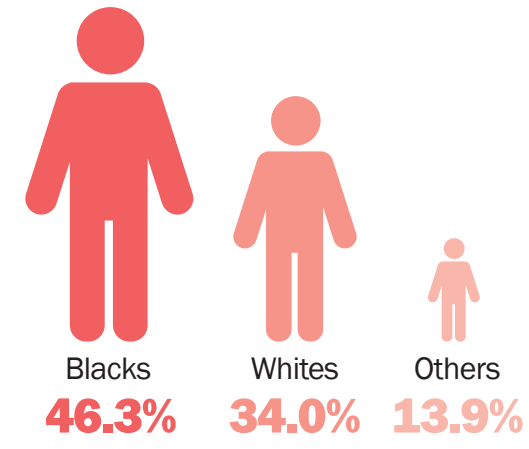
Wealth

Individuals who had an annual household income less than \$15,000 were most likely to report having a heart attack (**8.4 percent**) than individuals with a household income greater than \$50,000 (**2.9 percent**).



Race

Blacks (**46.3 percent**) were more likely to report that they were told by a health professional that they have hypertension than whites (**34 percent**) or individuals of other races/ethnicities (**13.9 percent**).



Source: BRFSS, 2014



Key Risk Factors

About **half of Americans** have at least one the following three risk factors:

- High blood pressure
- High LDL cholesterol
- Smoking

These medical conditions put people at higher risk for heart disease:

- Diabetes
- Excessive weight
- Obesity
- Poor diet
- Physical inactivity
- Excessive alcohol use

Sources: Centers for Disease Control and Prevention; Heart Disease Facts, 2015



POSITIVES/RESOURCES

- Hospitals/physicians in area
- Awareness in community

Injury and Violence



Accidents are the third leading cause of death in Knox County after cancer and heart disease. The majority of these accidents are related to poisonings and motor vehicle incidents.

Health Priorities and Areas of Concern

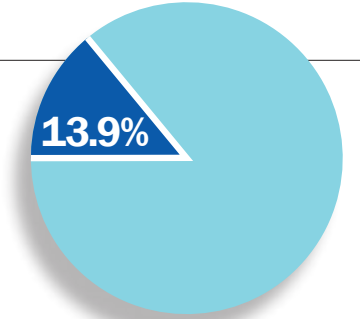
- Bullying among adolescents
- Poisoning deaths (often related to opioid and meth use)
- Falls among adults 65 and older
- Motor vehicle accidents

Prevalence - Youth Violence

- 1 in 5 high school students surveyed reported being bullied.
- Nearly half of middle school students surveyed reported being bullied.



- 13.9 percent of middle school students surveyed said they rarely or never felt safe and secure at school.

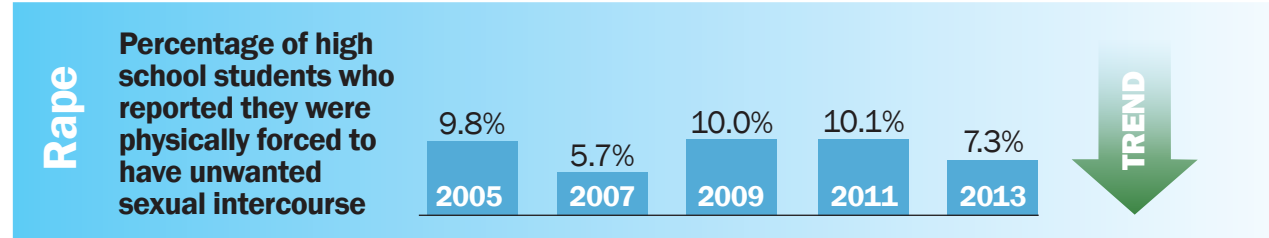
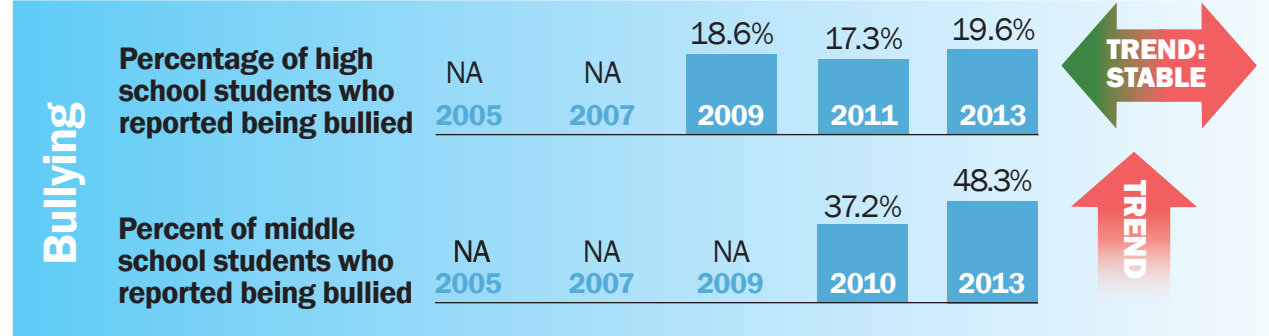
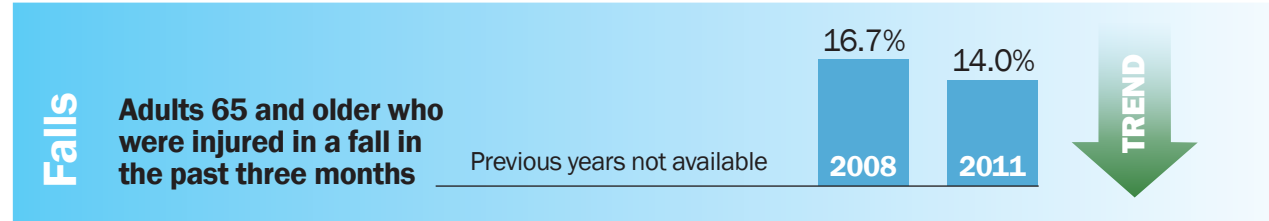


• **Broken down by race:**

White	11.4%
Black	24.1%
Other race/ethnicity	15.7%

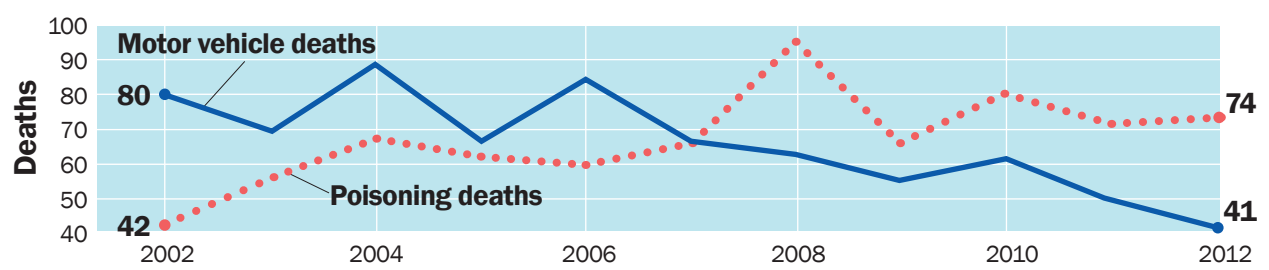
Source: High School and Middle School YRBS, 2013

Contributing Factors



Sources: BRFSS, 2008, 2011; High School and Middle School YRBS, for appropriate years; 2010-2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

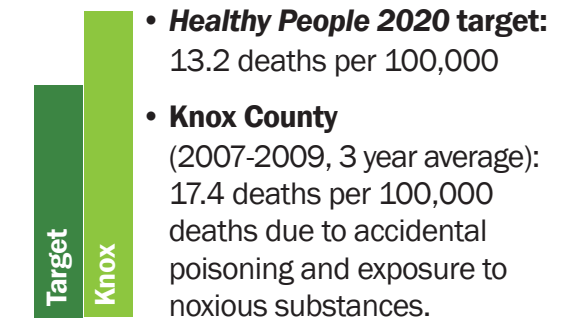
Poisoning deaths (often related to opioid and meth use) have surpassed motor vehicle deaths (ages 12 and older).



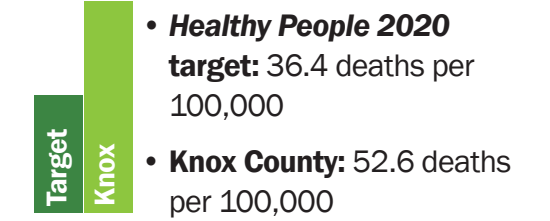
Source: Health Information Tennessee for appropriate years

Benchmarks - Injury

Poisoning deaths among all persons



Unintentional injuries



Sources: High School and Middle School YRBS, 2013; Health Information Tennessee, 2009; 2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

Reported Crimes

Knox County Sheriff's Office and Knoxville Police Department

Crime	2010	2014
Domestic violence	3,772	3,922
Crimes against persons	7,517	7,169

Source: Tennessee Bureau of Investigation, 2010, 2014



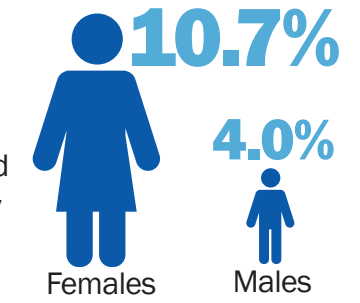
POSITIVES/RESOURCES

- Metropolitan Drug Commission
- Law enforcement community
- Education about bullying is available to Knox County Schools teachers

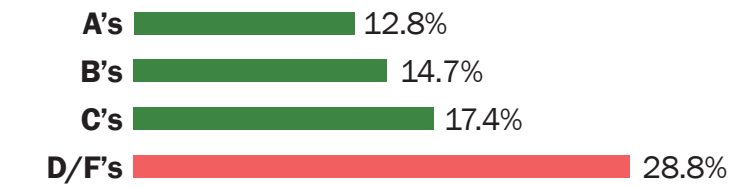
Disparities

Youth Violence

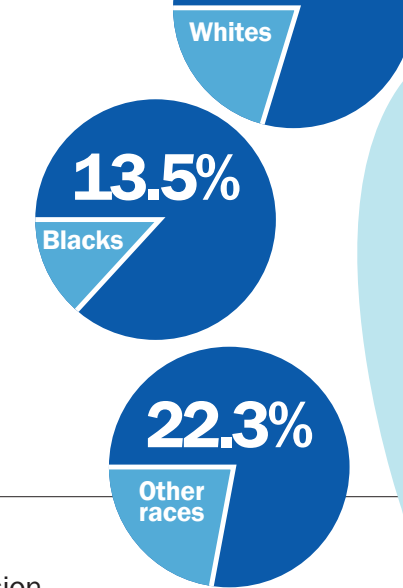
- 7.3 percent of high school students surveyed reported being physically forced to have unwanted sexual intercourse.



- Students receiving grades of mostly D's or F's were most likely to report being electronically bullied.



- Percentage of high school students surveyed who reported being bullied:

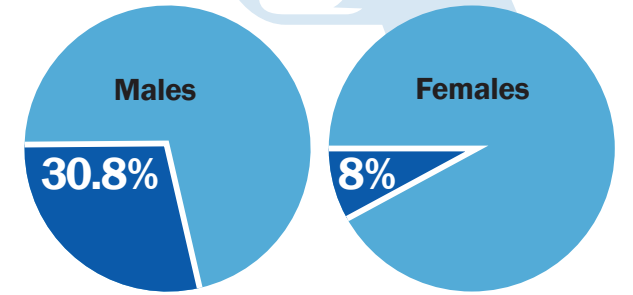


FACT

In 2013, more juveniles were arrested for simple assault than any other crime committed by juveniles.

Going armed

- Percentage of high school students surveyed who reported they had carried a weapon (gun, knife or club) in the past 30 days:



82.2% of middle school students surveyed reported having been in a physical fight.

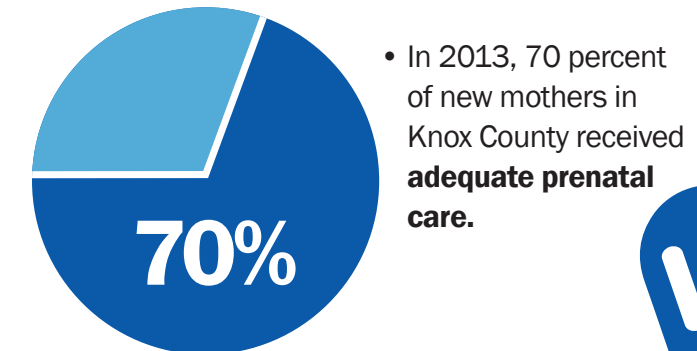
Source: Middle and High School YRBS, 2013

Maternal, Infant and Child Health

Health Priorities and Areas of Concern

- Barriers or gaps in service for preconception care/prenatal care access
- Neonatal Abstinence Syndrome (NAS) and substance use among pregnant women

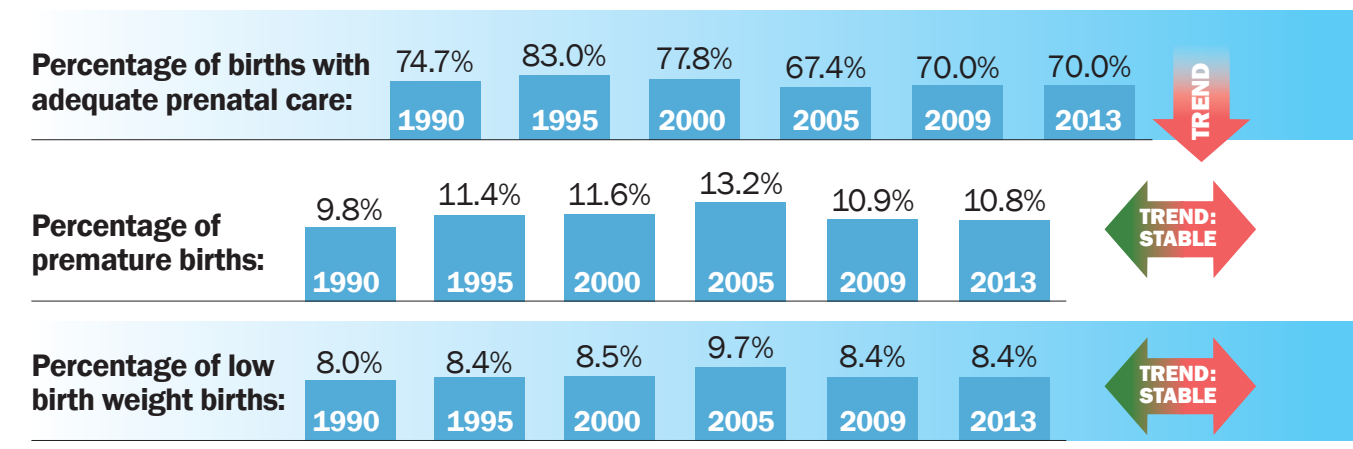
Prevalence



- In 2014, there were 20.2 reported **NAS cases** per 1,000 live births in Knox County. The state average is 12.3.
- There were 4.3 substantiated **child abuse and neglect cases per 1,000 youth in 2013**, down from 6 cases/1,000 youth in 2009.

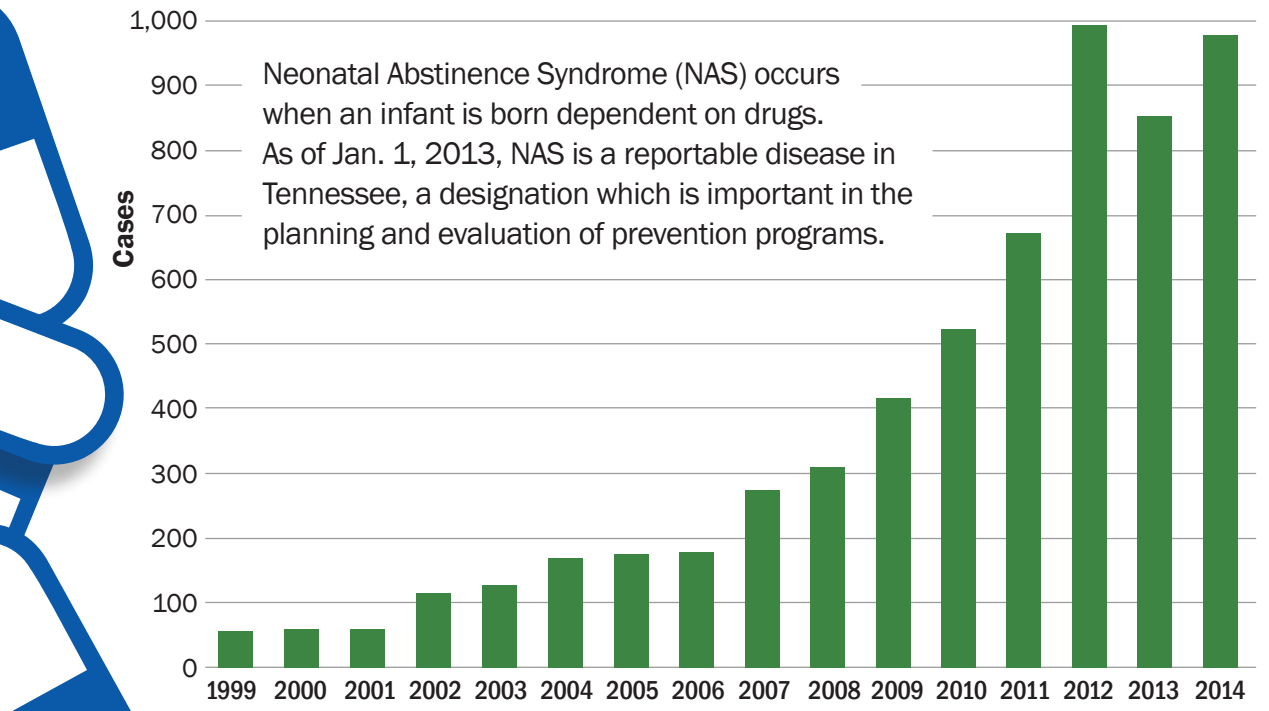
Sources: 2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health; Tennessee Department of Health Maternal and Child Health Division, 2014; Tennessee Commission on Children and Youth, 2009

Contributing Factors



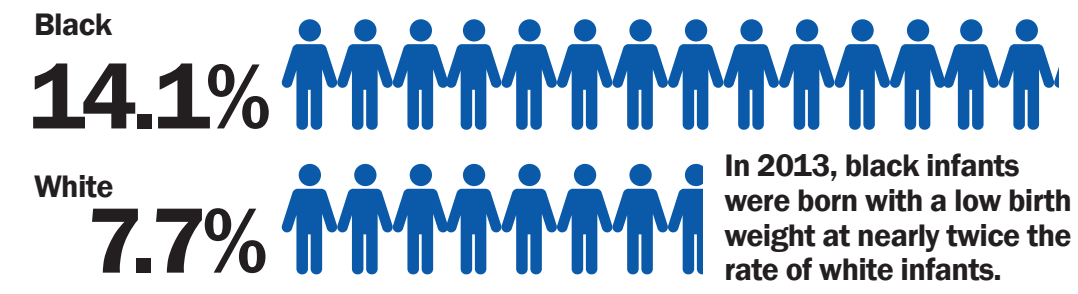
Sources: Vital records provided by Office of Policy, Planning and Assessment, Tennessee Department of Health; Health Information Tennessee for appropriate years

Neonatal Abstinence Syndrome in Tennessee, 1999-2014



Sources: Tennessee Department of Health; Office of Health Statistics; Tennessee Department of Health Neonatal Abstinence Syndrome Weekly Surveillance Summary, 2013 and 2014; Hospital Discharge Data System (HDDS) and Birth Statistical System. Analysis includes inpatient hospitalizations with age less than one, and any diagnosis of drug withdrawal syndrome of newborn (ICD-9-CM 779.5). HDDS records may contain up to 18 diagnoses. Infants were included if any of these diagnosis fields were coded 779.5. Note that these are discharge-level data and not unique patient data.

Disparities



Benchmarks

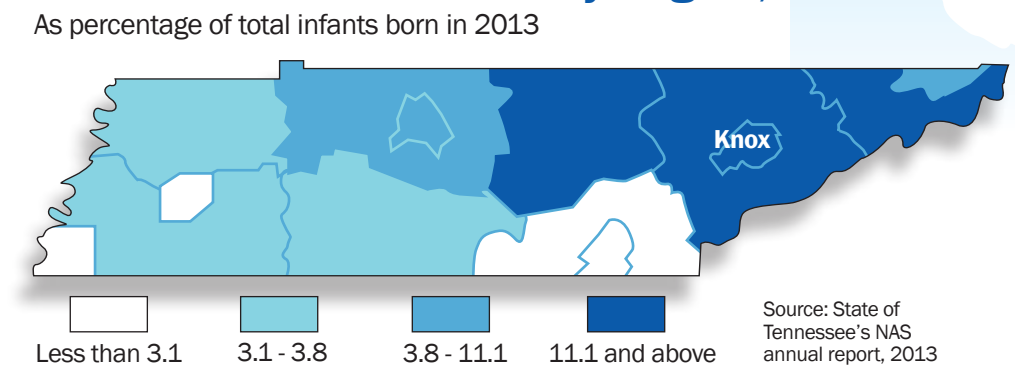
- Low Birth Weight**
 - *Healthy People 2020 target:* 7.8 percent
 - **Knox County:** 8.4 percent (2013)
- Proportion of women who receive early and adequate prenatal care**
 - *Healthy People 2020 target:* 77.6 percent
 - **Knox County:** 70 percent (2013)
- Total preterm births**
 - *Healthy People 2020 target:* 11.4 percent
 - **Knox County:** 10.8 percent (2013)
- Infant mortality rate**
 - *Healthy People 2020 target:* 6.0/1,000 live births
 - **Knox County:** 4.9/1,000 live births (2013)

FACT

Non-Hispanic black women were at greater risk for having a low birth weight child and/or pre-term delivery compared to women of other races/ethnicities.

Sources: 2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

Distribution of NAS Cases by Region, 2013



Preterm Births

Preterm birth (birth before 37 weeks gestation) is the leading cause of newborn death in the U.S. Infant mortality is higher for infants born with inadequate prenatal care. Babies who survive an early birth often have breathing problems, cerebral palsy, intellectual disabilities and other lifelong problems. Even babies born just a few weeks early have higher rates of hospitalization and illness than full-term infants. In addition, preterm births cost the nation more than \$26 billion annually, according to the Institute of Medicine.

- Premature births accounted for 16.9 percent of all infant deaths in the U.S. in 2010.
- That same year, the rate of infant deaths due to prematurity and low birth weight was 145.9 deaths /100,000 live births for Tennessee, compared to 103.8 deaths /100,000 live births in the U.S.

Neonatal Abstinence Syndrome

In addition to the human cost, the average monetary cost to stabilize a newborn with Neonatal Abstinence Syndrome (NAS) is \$62,973 versus \$7,258 to stabilize a newborn not suffering withdrawals. The Tennessee Department of Health estimates that from January to October 13, 2013, NAS cost the state \$36,771,900.

- In the 2014 state NAS report, Knox County had the highest percentage (11 percent) of NAS cases.
- In 2014, 36.6 percent of NAS cases in Knox County were attributed to illicit drug use, 27.7 percent were attributed to prescription drugs, and 35.7 percent are a combination of the two.

Source: Prescription for Success: Statewide Strategies to Prevent and Treat the Prescription Drug Abuse Epidemic in Tennessee. Neonatal Abstinence Syndrome Surveillance Annual Report, 2014; March of Dimes Peristats, 2014.

POSITIVES/RESOURCES

- Metropolitan Drug Commission
- Great Starts and Susannah's House treatment programs
- East Tennessee Children's Hospital
- Area prenatal care providers
- Local child abuse prevention agencies



Health Priorities and Areas of Concern

- Access to mental health services
- Depression/suicidal thoughts among adolescents

	2007	2008	2009	2010	2011	2013	TREND
High school students who seriously considered suicide in past 12 months	11.8%	NA	14.6%	NA	13.3%	14.5%	↑
High school students who attempted suicide one or more times in past 12 months	4.7%	NA	4.7%	NA	8.7%	6.2%	↔
Middle school students who seriously thought about committing suicide	NA	17.2%	NA	16.5%	NA	19.0%	↑
Middle school students who reported ever attempting suicide	NA	6.7%	NA	7.2%	NA	6.8%	↔

Sources: High School and Middle School YRBS, 2013

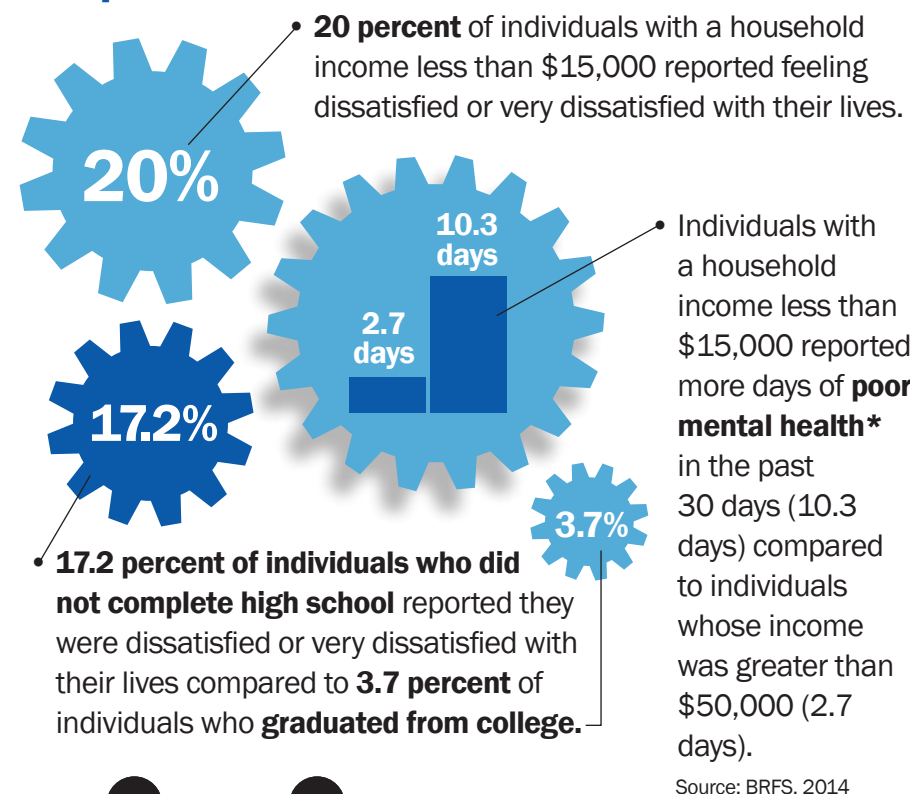
Benchmarks

Suicide attempts by adolescents

- **Healthy People 2020 target:** 1.7 percent of adolescents attempting suicide.
- **Knox County:** 6.2 percent of high school students surveyed reported they attempted suicide in the past 12 months.

Target
Knox

Disparities



17% of U.S. adults (estimated) are considered to be in a state of optimal mental health. There is emerging evidence that positive mental health is associated with improved health outcomes.

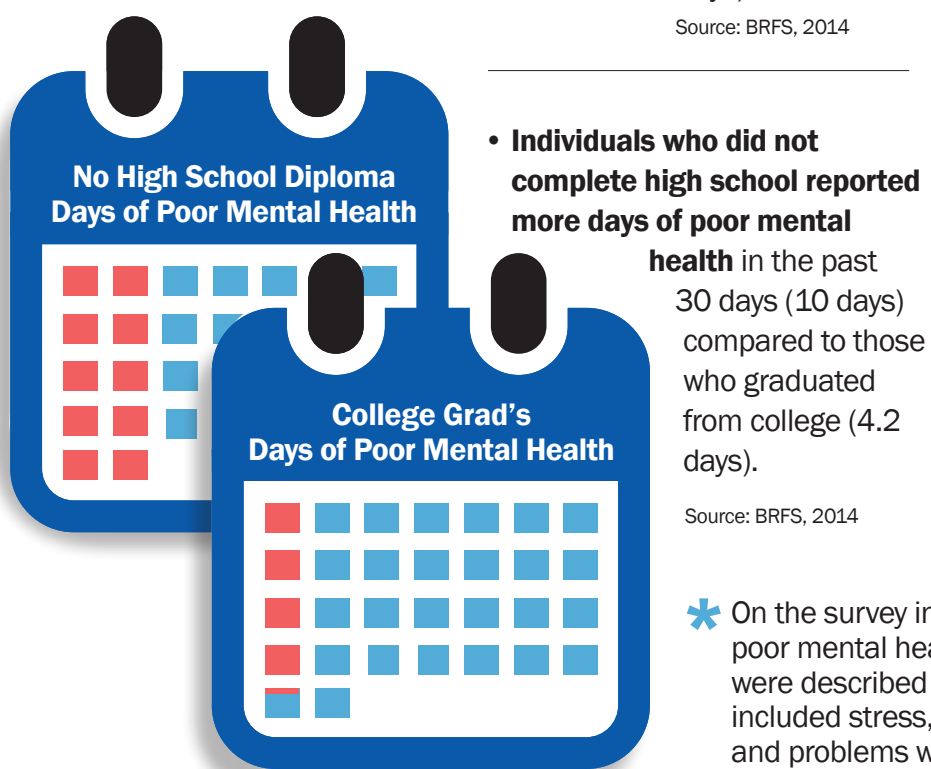
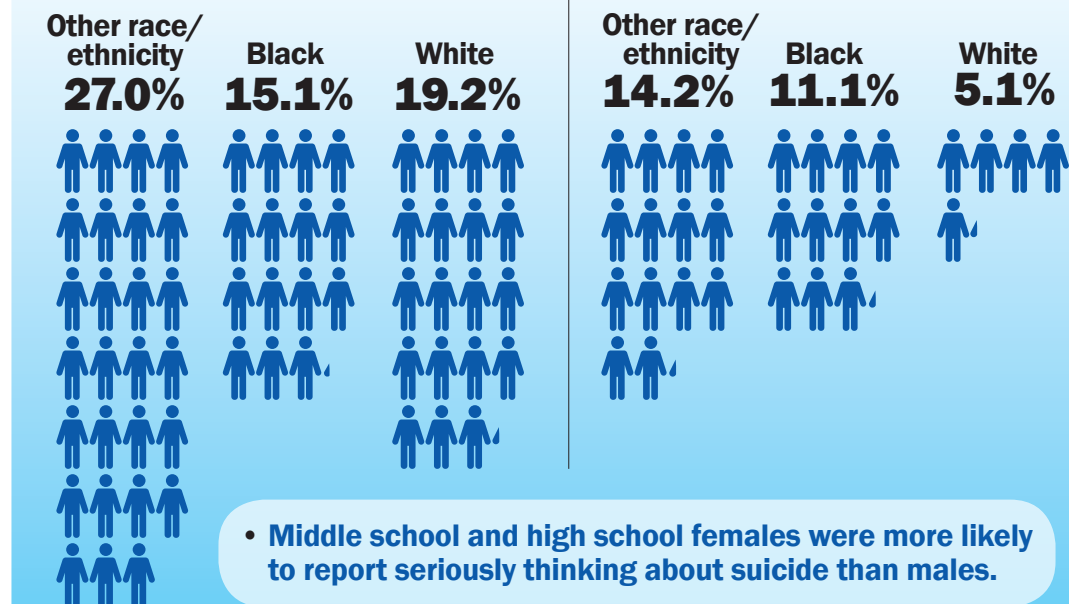
East Tennessee is home to more than one million residents, of whom 26.2 percent will need mental health treatment in any single year, and 51 percent will need mental health treatment in their lifetime according to the National Institute of Mental Health.

Fewer than four of every ten people in need of mental health treatment receive care in any given year.

Untreated mental illness will worsen over time leading to impairment and disability. Mental illness is the leading cause of disability in people ages 15-44.

Sources: World Health Organization, Strengthening Mental Health Promotion, Geneva, WHO (Fact Sheet 220), 2001; Mental Health Association of East Tennessee

- Middle school students surveyed reported **seriously thinking about suicide:**
- Middle school students surveyed reported ever **attempting suicide:**

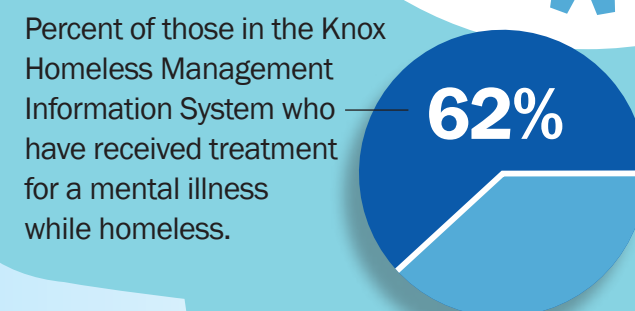


* On the survey instrument, poor mental health days were described as those that included stress, depression and problems with emotions.



POSITIVES/RESOURCES:

- Cherokee Health Systems
- Helen Ross McNabb Center
- Mental Health Association of East Tennessee

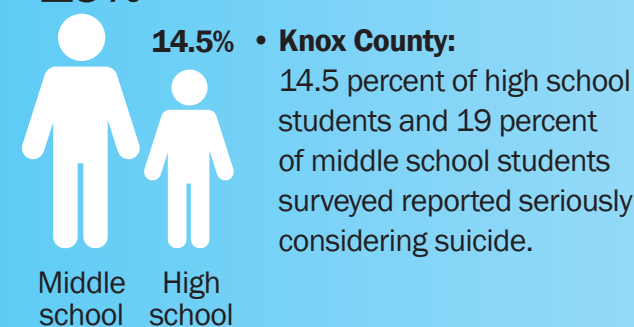


FACT

Intentional self-harm was the ninth leading cause of death in 2009.

Sources: Health Information Tennessee, 2009

19% YOUTH WHO CONSIDERED SUICIDE



Contributing Factors



Sources: High School and Middle School YRBS, 2013; KnoxHMIS 2014 Annual Report/2013-2014 Biennial Study of Homelessness in Knoxville/Knox County

Nutrition and Physical Activity

Health Priorities and Areas of Concern

- Physical education in schools
- Vegetable and fruit consumption by children/adolescents
- Access to healthy foods
- Screen time in youth
- See *Environmental Health*

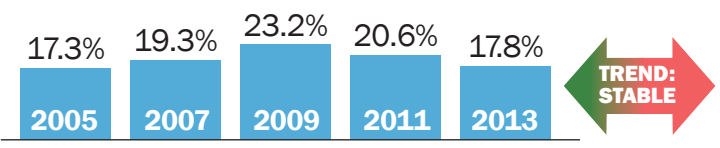
Prevalence

- **35.8 percent** of high school students surveyed reported playing video games or using the computer for non-academic purposes for three or more hours on an average school day.
 - **17.8 percent** of high school students surveyed reported they attended physical education classes every day during the school week.
 - Only **9.7 percent** of high school students surveyed reported eating vegetables three or more times per day during the seven days before the survey.
 - **23.8 percent** of high school students surveyed report watching TV for three or more hours on an average school day.
 - **56.5 percent** of high school students surveyed played on at least one sports team in the previous year.
- Sources: High School YRBS, 2013

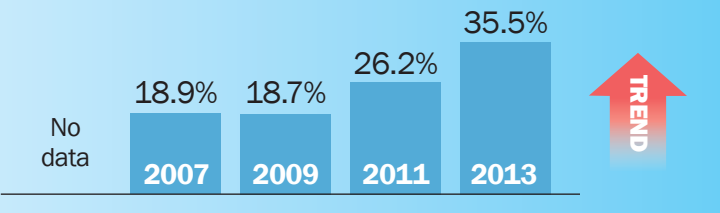
Contributing Factors



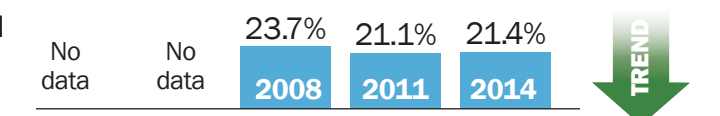
High school students surveyed who reported attending physical education classes every day during the school week:



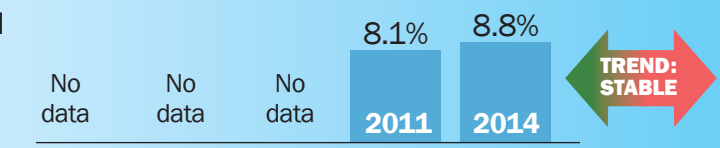
High school students surveyed who played video games or used the computer for something other than school work for three or more hours on an average school day:



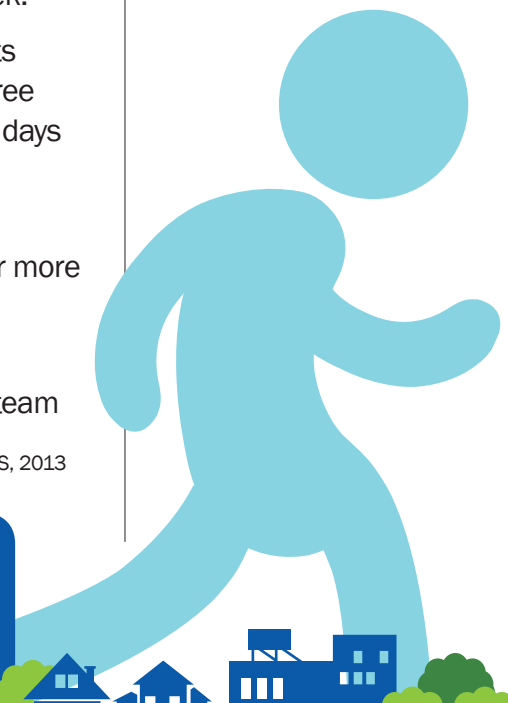
Knox County adults who reported no leisure time physical activity in the past 30 days:



Knox County adults who reported they always or usually stress about having enough money to pay for nutritious meals:



Sources: YRBS, BRFS for appropriate years



The Centers for Disease Control and Prevention estimates that more than

\$75 billion

in health care costs can be linked to lack of physical activity.

Source: CDC Preventing Obesity and Chronic Diseases Through Good Nutrition and Physical Activity, 2008

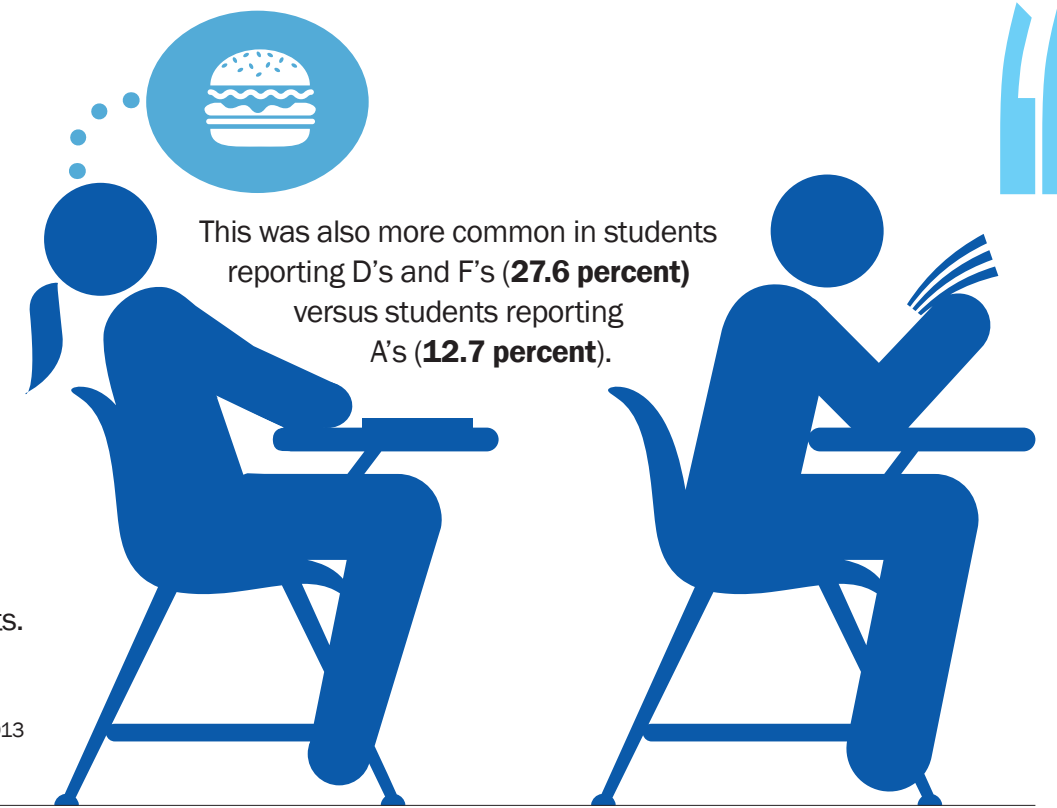


Disparities

21.6%

of female middle school students surveyed reported fasting 24 hours or more to lose weight or to keep from gaining weight versus **11.3 percent** of male middle school students.

Source: Middle School YRBS, 2013



This was also more common in students reporting D's and F's (**27.6 percent**) versus students reporting A's (**12.7 percent**).

- Adults earning less than \$15,000 per year reported they were always or usually stressed about preparing nutritious meals at a far greater rate than those with incomes between \$35,000 and \$49,999.



46.2%

of adults with less than a high school education reported no leisure time activity in past 30 days.

13.2%

of adults with a college degree reported the same.

Source: BRFS, 2014

Most of the health problems I see amongst my neighbors are related to poverty. Just literally not having cash to make good food choices.

-Focus Group, 2014

28.9%

of black adults reported no leisure time physical activity in the past 30 days.

20.6%

of white adults reported the same.

Source: BRFS, 2014

POSITIVES/RESOURCES:



- Increase of farmers markets and farmers accepting SNAP
- Greenways/parks in the community

- Events to increase physical activity in the community (races, Let's Move event)
- Passing of the Urban Agriculture Zoning Ordinance
- Knox County Health Department Nutrition Education Activity Training (NEAT) program

Obesity

Health Priorities and Areas of Concern

- See *Nutrition and Physical Activity*
- See *Food Access*
- See *Environmental Health*

Prevalence

Students

- **13.5 percent** of high school students surveyed were obese, based on self-reported height and weight.

- **24.0 percent** of middle school students surveyed described their weight to be slightly overweight or overweight.

- **45.3 percent** of middle school students surveyed reported they are trying to lose weight.

Source: High School and Middle School YRBS, 2013

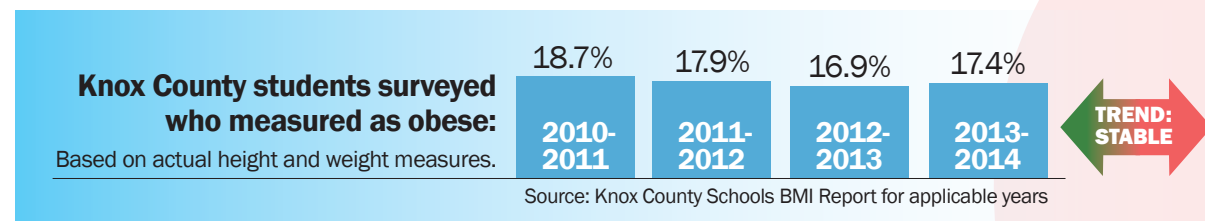
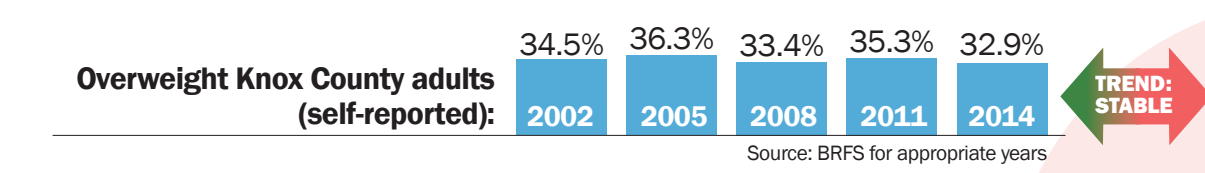
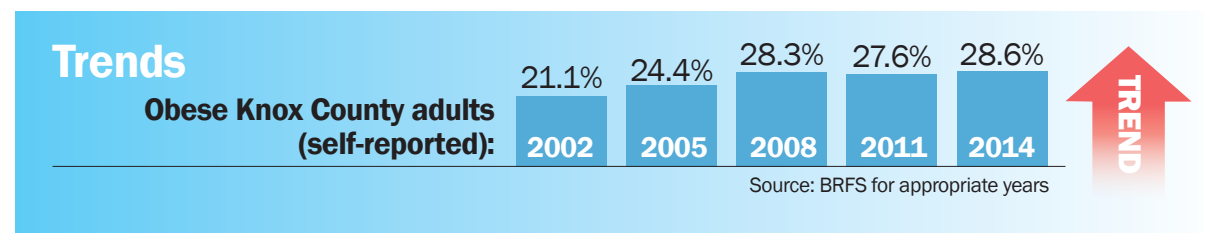
Adults

- **28.6 percent** of Knox County adults are obese based on self-reported height and weight.

- **32.9 percent** of Knox County adults are overweight based on self-reported height and weight.

Source: BRFSS, 2014

Contributing Factors



17.4% of students assessed in grades K, 2, 4, 8 and 10 were obese.

Sources: Knox County Schools BMI report, 2013-2014; YRBS, 2013; BRFSS, 2014

Benchmarks

Proportion of children and adolescents ages 2 to 19 who are obese

- **Healthy People 2020 target:** 14.5 percent
- **Knox County:** 17.4 percent

Proportion of adolescents age 12 to 19 who are obese

- **Healthy People 2020 target:** 16.1 percent
- **Knox County:** 13.5 percent (self-reported data only)

Proportion of adults who are obese

- **Healthy People 2020 target:** 30.5 percent
- **Knox County:** 28.6 percent (self-reported data only)

Proportion of adults who are at a healthy weight

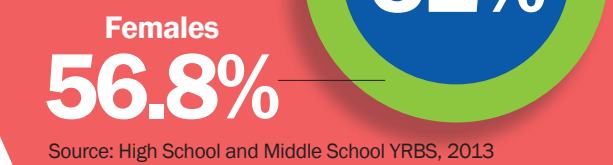
- **Healthy People 2020 target:** 33.9 percent
- **Knox County:** 38.5 percent (self-reported data only)

Disparities

- High school males surveyed were more likely than females to be obese.



- Female middle school students surveyed were more likely than males to report trying to lose weight.

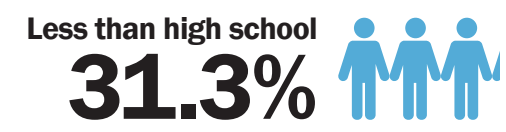
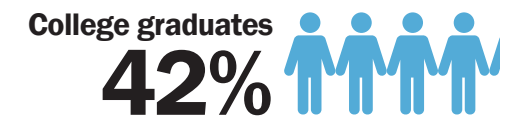


- Middle school students surveyed who reported trying to lose weight:

Students with lower grades reported trying to lose weight more often than students with higher grades.

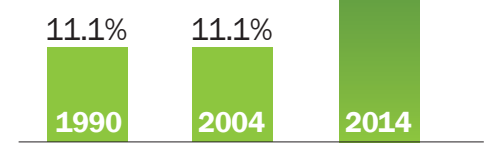


- College graduates were more likely than those with less than a high school education to report being at a healthy weight.



Obesity rates for children have tripled in fewer than 30 years.

According to *The State of Obesity: Better Policies for a Healthier America*, Tennessee now has the fourth-highest obesity rate among adults in the nation, 33.7 percent in 2014, rising from 11.1 percent in 2004.



Obesity-related health issues include but are not limited to hypertension, heart disease, stroke, certain cancers, asthma, diabetes and osteoarthritis.

Source: Centers for Disease Control and Prevention; Obesity: Halting the epidemic by making health easier; USDHHS, 2011; Trust for America's Health and Robert Wood Johnson Foundation; The State of Obesity, 2014.

I mean we're talking about obesity and, you know, problems with the kids. They've got to get out. They've got to do things, and the only way to do that is to require them. I'm a firm believer in that.

– Focus Group, 2014

- POSITIVES/RESOURCES:**
- Childhood Obesity Coalition
 - Parks/recreation areas/greenways in community
 - Farmers markets
 - Knox County Health Department's Project Diabetes grant work

Oral Health

Health Priorities and Areas of Concern

- Access to oral health services for the unemployed and those unable to work
- Disparities in receiving oral health services
- Dental health in youth

Prevalence

- Percent of Knox County adults over 65 who reported they had all teeth extracted due to infection, tooth decay or gum disease:



Sources: BRFS, 2014

- Percent of Knox County adults who reported visiting a dentist in the past year:



Sources: BRFS, 2014

- Knox County dentist/resident ratio:



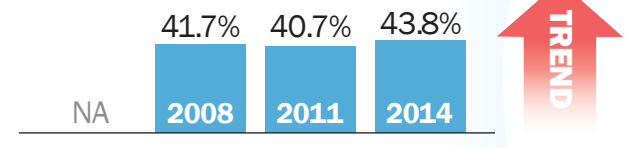
Source: Annie E. Casey Foundation's Kids Count data for Knox County, 2014

Contributing Factors

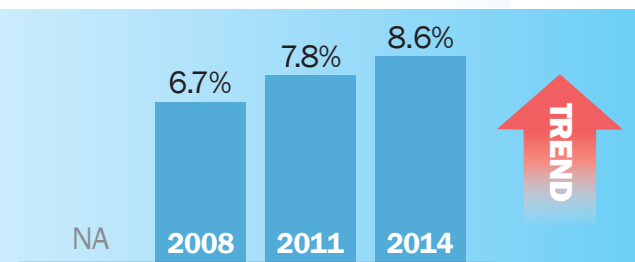


Trends

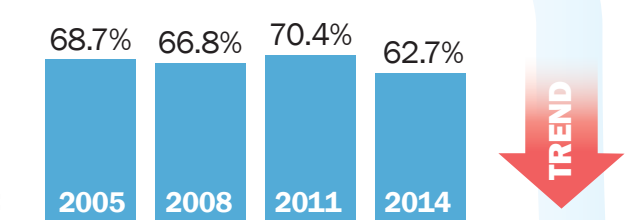
Percentage of adults who have had one or more tooth extractions due to infection:



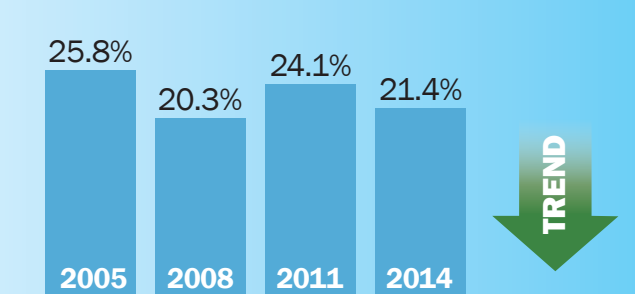
Percentage of adults who have had all of their teeth extracted:



Percentage of adults who reported visiting a dentist in the past year:



Percentage of adults 65 years and older who reported they had all of their teeth extracted due to infection, tooth decay or gum disease:



Sources: BRFS for appropriate years

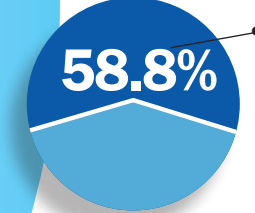
Income, health status and oral health literacy are some of the barriers to accessing oral health care.

Poor dental health impacts the quality of life for those affected. Pain, diet, social interaction, speech, physical appearance and self-esteem are issues that many face.



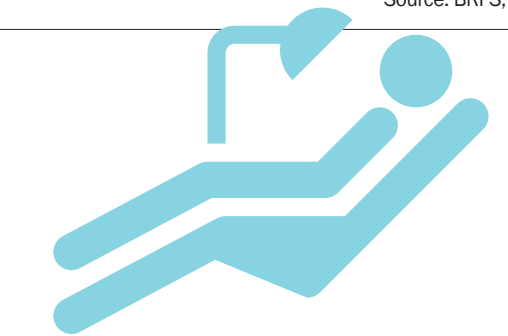
Disparities

- Percent of adults over 65 who reported they had all teeth extracted:

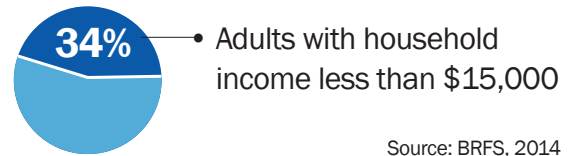
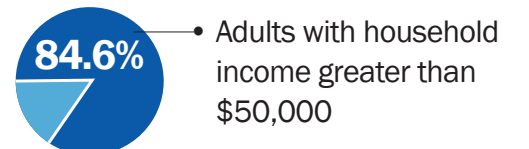


- Percent of adults over 65 with less than a high school education who reported they had all teeth extracted compared to 6.7 percent of those with a college degree.

- Percent of adults reporting they visited a dentist in the past year:



Percentage of Knox County adults who reported seeing a dentist within the past year.



POSITIVES/RESOURCES

- Comparable number of dentists per 100,000 residents with other Tennessee metropolitan areas
- Knox County Health Department dental clinic and in-school sealant program
- Elgin Foundation Dental Program at Knox County's Community Schools

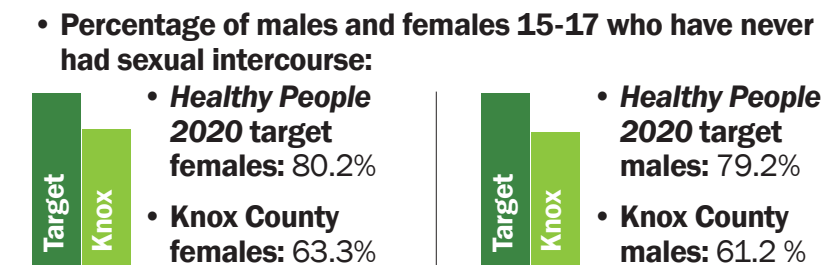


Reproductive and Sexual Health

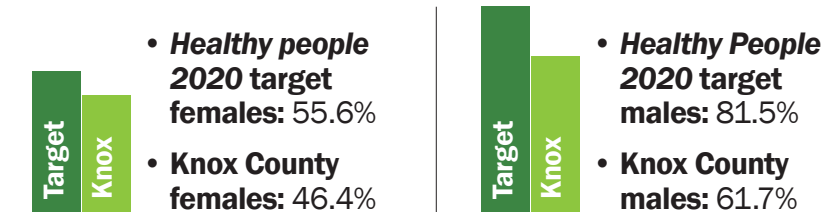
Health Priorities and Areas of Concern

- Birth control education
- Increase in sexually transmitted infection rates

Benchmarks



The proportion of sexually active males and females ages 15-19 who used a condom at last intercourse:

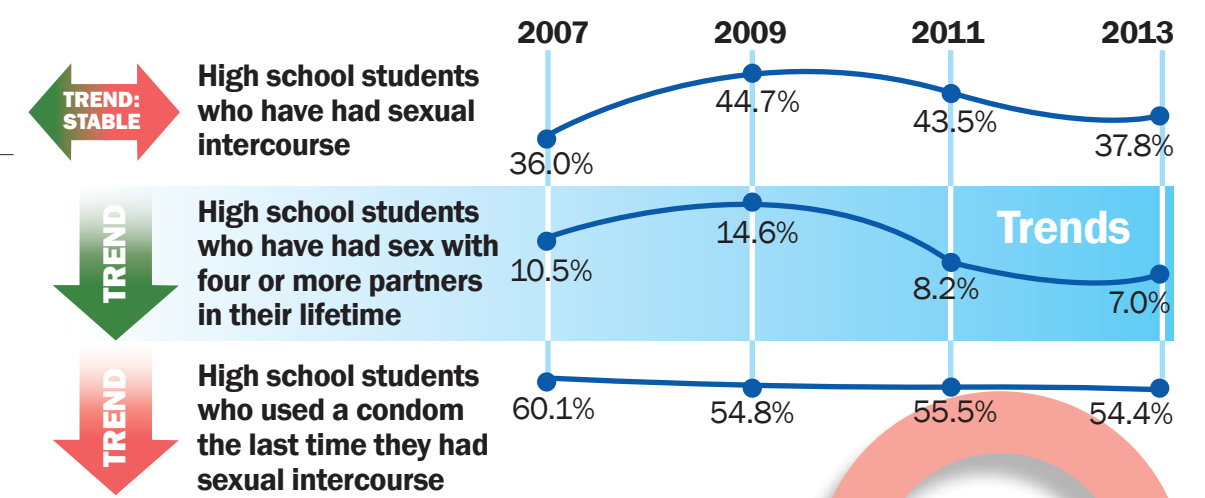


The proportion of males and females who received formal instruction on sexually transmitted diseases before they are 18 years old:

- Healthy People 2020 target, females: 95.8%
- Healthy People 2020 target, males: 93.8%
- Knox County: 89.9 percent among high school students

Source: High School YRBS, 2013

Contributing Factors

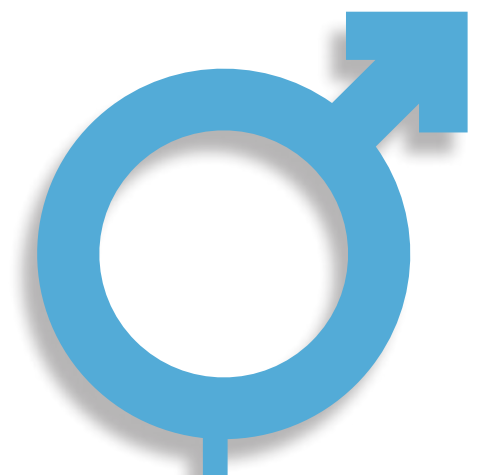


Source: High School YRBS, for appropriate years

Gonorrhea rates among males and females ages 15-44, per 100,000 population:



Sources: Knox County Patient Reporting Investigating Surveillance Manager (PRISM) data, 2013



30.9%

75.4%

- In 2013, 30.9 percent of white infants were born to unmarried women while 75.4 percent of black infants were born to unmarried women.

Source: 2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

“They hear everybody talking about it, and they think it’s some big great thing, and it can be, but when you’re 12, 13 and 14 years old you’re not ready for the consequences ... and the kids need that in school. I think it should be a class, and you can consent to take it or not.”

– Focus Group, 2014

Disparities

- Knox County high school students who reported grades of mostly D’s or F’s were most likely to report having sexual intercourse with one or more people during the past three months compared to students making mostly A’s.



Source: High School YRBS, 2013

Sexually active students reporting condom use:



Source: High School YRBS, 2013



POSITIVES/RESOURCES

- Hospitals and physicians in the area
- Health department programs to track, prevent and treat sexually transmitted infections.
- Lisa Ross Birth and Women’s Center
- Knox Adolescent Partners in Prevention Initiative (KAPPI)
- Women’s Health Clinic at the Knox County Health Department

Chlamydia

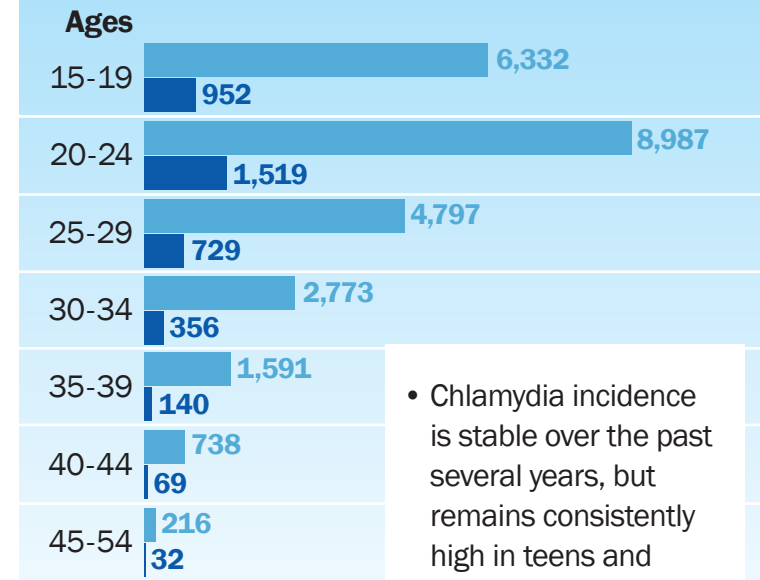
6X↑

CHLAMYDIA: BLACKS VS. WHITES

- Incidence rates of chlamydia are greatest among black females and males between the ages of 15 and 34. **The incidence of chlamydia among blacks is six times greater than incidence among whites.**

CHLAMYDIA: BLACKS & WHITES, 2013

(Rate per 100,000 people)



- Chlamydia incidence is stable over the past several years, but remains consistently high in teens and young adults.

Source: Knox County Patient Reporting Investigating Surveillance Manager data (PRISM), 2013

Substance Use

Health Priorities and Areas of Concern

- Marijuana access/use among youth
- Opioid access and use
- Binge drinking among youth

Benchmarks

- **Proportion of adolescents who reported using alcohol or any illicit drugs in the past 30 days**



- **Healthy People 2020 target:** 16.6 percent
- **Knox County:** 29.8 percent report alcohol use; 23.3 percent report marijuana use

- **Proportion of adolescents who reported using marijuana in the past 30 days**



- **Healthy People 2020 target:** 6 percent
- **Knox County:** 23.3 percent

- **Proportion of students who reported being offered, given or sold illegal drugs on school property**



- **Healthy People 2020 target:** 20.4 percent
- **Knox County:** 22.5 percent

- **Proportion of adolescents ages 12 to 17 who reported engaging in binge drinking in the past month**



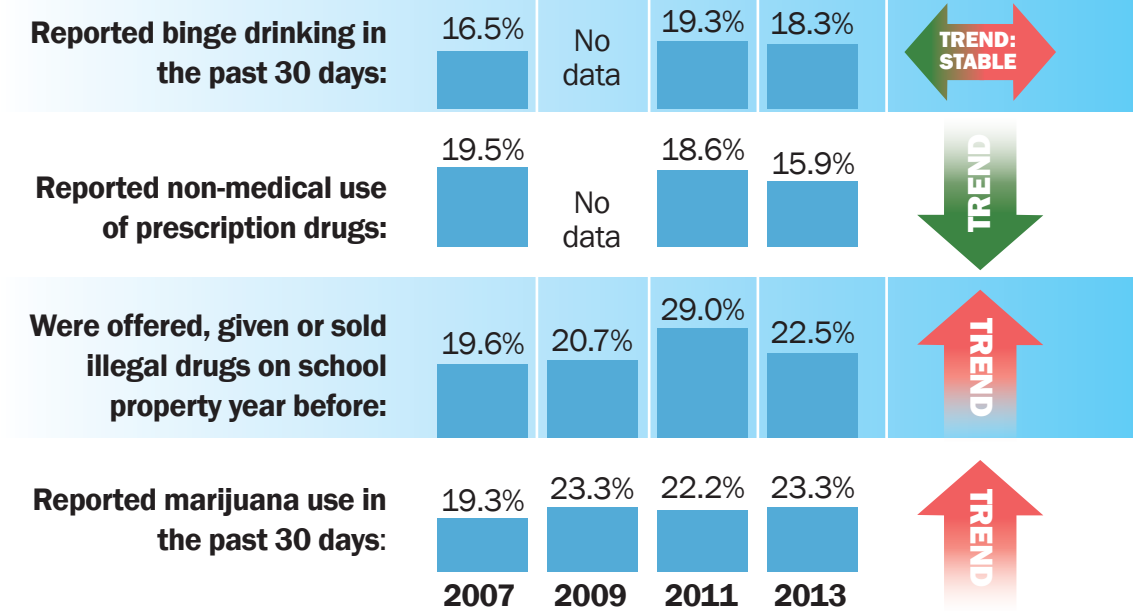
- **Healthy People 2020 target:** 8.6 percent
- **Knox County:** 18.3 percent

Sources: High School YRBS, 2013

Contributing Factors



High school students



Source: YRBS for appropriate years.

Neonatal Abstinence Syndrome (NAS)

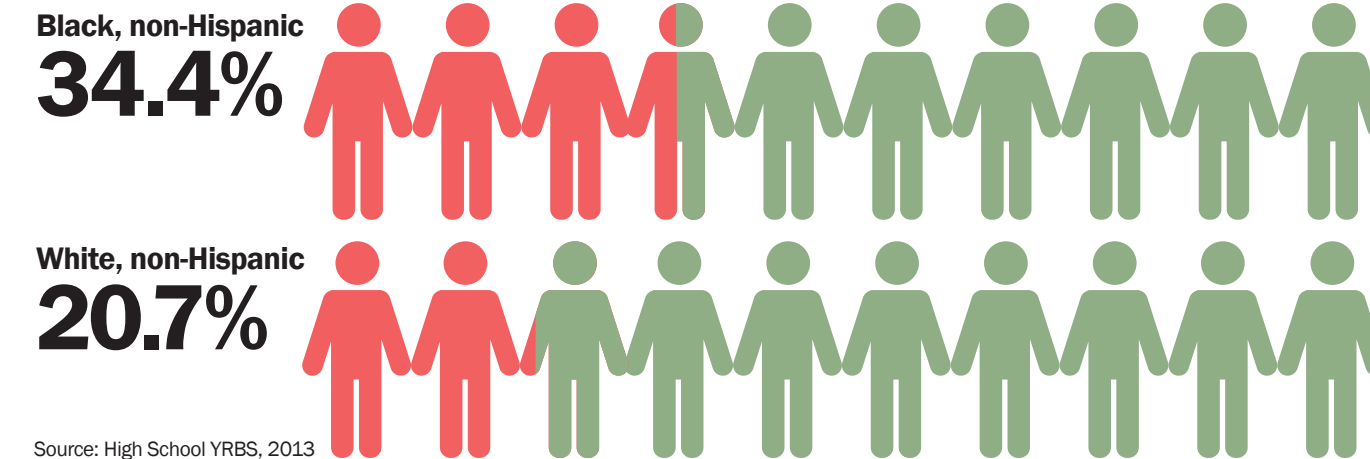
From 2000 to 2010, there was a 10-fold increase in NAS cases in Tennessee. East Tennessee has the highest NAS rates in the state.

In 2014, 36.6 percent of NAS cases in Knox County were attributed to illicit drug use, 27.7 percent were attributed to prescription drugs, and 35.7 percent are a combination of the two.

Source: NAS Summary Archive, Tennessee Department of Health, 2013-2014

Disparities High School Students

34.4 percent of black, non-Hispanic high school students surveyed reported using marijuana in the past 30 days. In contrast, 20.7 percent of white, non-Hispanic students surveyed reported the same.



Source: High School YRBS, 2013

40.3 percent of high school students surveyed who reported grades of mostly D's and F's reported using marijuana in the past 30 days compared to ...



11 percent of students who reported grades of mostly A's.

Source: High School YRBS, 2013

47.1 percent of high school students surveyed who reported grades of mostly D's and F's reported drinking alcohol in the past 30 days compared to ...

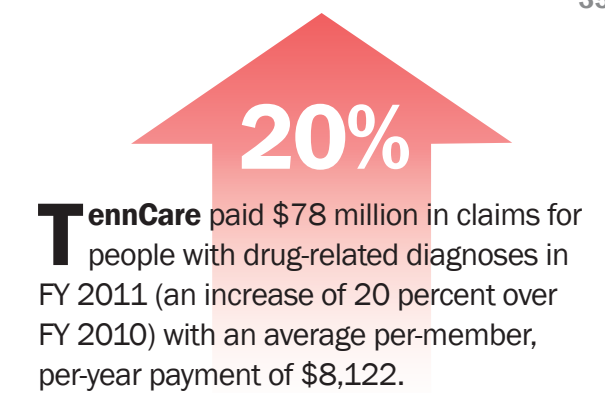


21.8 percent of students who reported grades of mostly A's.

37.4 percent of high school students surveyed who reported grades of mostly D's and F's reported taking prescription drugs not prescribed to them compared to ...



8.9 percent of students who reported grades of mostly A's.



The costs associated with a TennCare member with drug abuse-related diagnosis is twice that of the average TennCare member.

Source: Actuarial Review of the TennCare Program, January 2012

No. 2

- Tennessee ranks No. 2 per capita in the number of Schedule II controlled substances (medications with a high potential for abuse) prescribed in the United States, with the 8th highest drug overdose mortality rate (16.9 per 100,000 people).

Source: Prescription Drug Abuse: Strategies to Stop the Epidemic, 2013 Report; 2007-2008 Novartis Pharmacy Benefit, Trust for America's Health

POSITIVES/RESOURCES

- Metropolitan Drug Commission
- Law enforcement agencies
- Coalition for medication collection events.
- Area treatment facilities

Tobacco Use

Health Priorities and Areas of Concern

- Tobacco use, particularly in youth and pregnant women
- Increased use of e-cigarettes and vaping products

Prevalence High school students surveyed

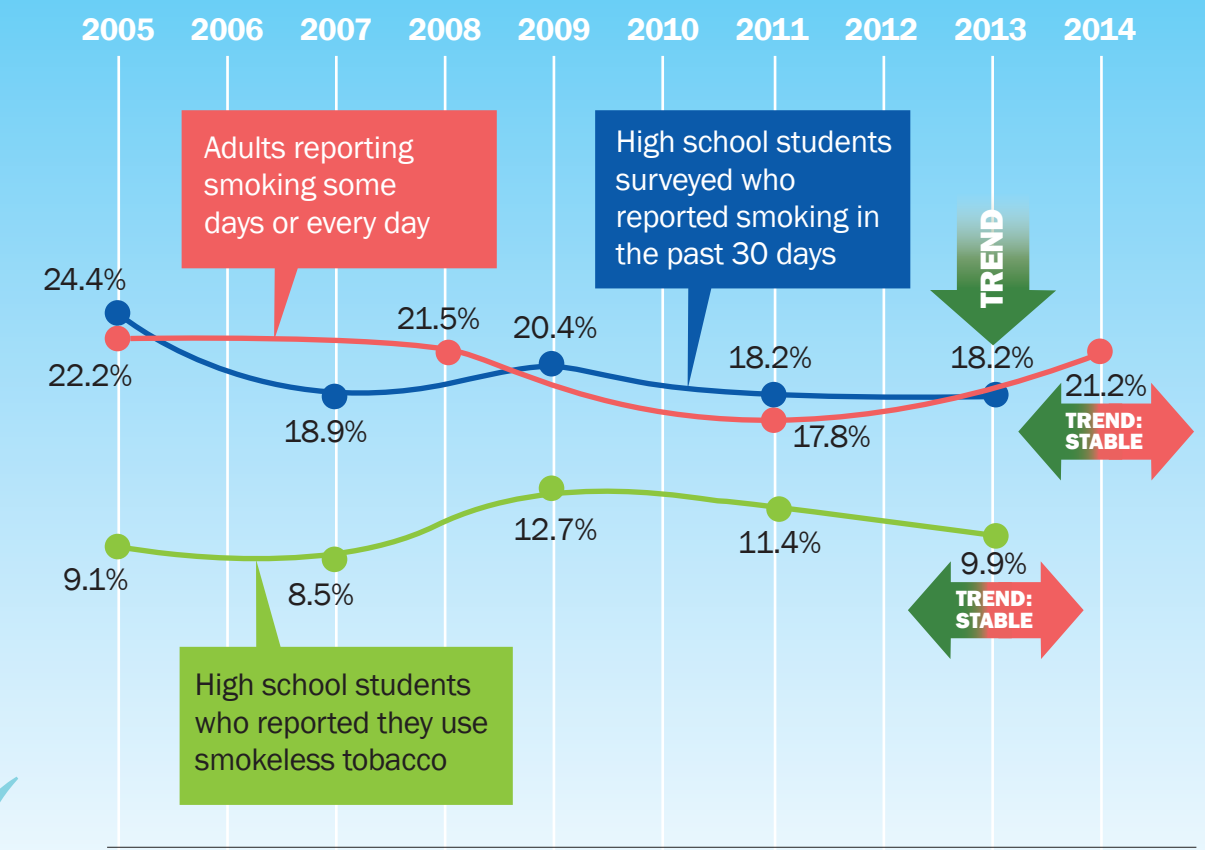
- **18.2 percent** smoked cigarettes in the past 30 days.
- **9.9 percent** reported using smokeless tobacco in past 30 days.
- **17.6 percent** reported smoking cigars in past 30 days.
- **54.4 percent** of those who smoked reported cessation attempts year before survey.

Knox County Adults

- **21.2 percent** of adults reported smoking cigarettes some days or every day.
- **11.9 percent** of women reported smoking some time during pregnancy in 2013.

Sources: BRFS, 2014; High School YRBS, 2013; 2013 vital records provided by the Office of Policy, Planning and Assessment, Tennessee Department of Health

Contributing Factors



• **17.4 percent** of male high school students surveyed reported using smokeless tobacco products in past 30 days.

According to the Centers for Disease Control and Prevention, **e-cigarette use among middle and high school students**

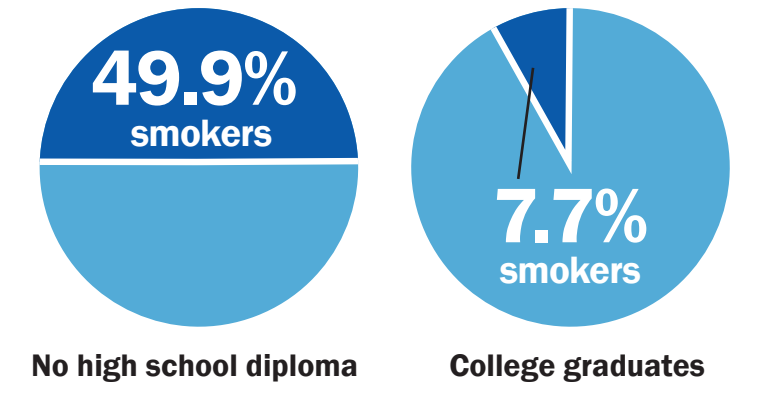
tripled

from 2013 to 2014. The 2015 Knox County YRBS will collect data about e-cigarette use. Previously, local data were not available.

Sources: National Youth Tobacco Survey Findings, 2014

Disparities

- **Almost half of adults** with less than a high school education reported they were smokers while only 7.7 percent of college graduates reported they were smokers.



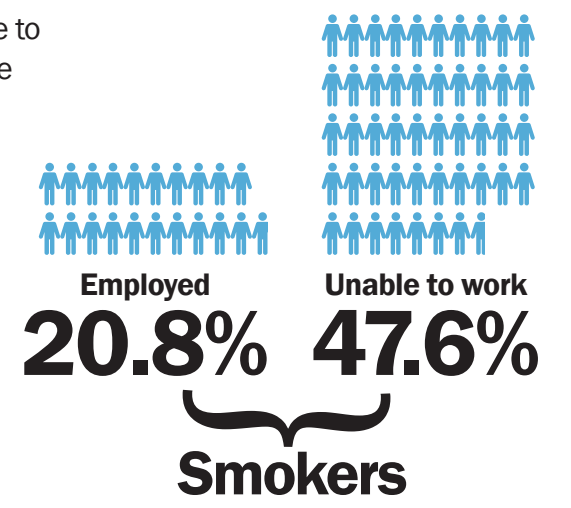
Sources: BRFS, 2014

- Percent of adults who reported they were smokers:



Sources: BRFS, 2014

- Adults who were unable to work reported they were smokers at more than **twice the proportion** of employed adults.



Sources: BRFS, 2014

Moms who smoke during pregnancy are at a greater risk for having a low birth weight and/or preterm delivery compared to moms who do not smoke during pregnancy.

Tobacco use increases the risk of cancer, heart disease, stroke and respiratory illnesses to name a few, but the list is exhaustive as tobacco use impacts every organ of the body. Half of all current smokers who continue smoking will die from a tobacco-related illness.

Diseases of the respiratory system are the No. 1 reason for hospitalization among children 1-9 years old. Secondhand smoke exposure has a significant impact on the occurrence of respiratory illness, especially among youth.

Sources: Maternal and Child Health Bureau Child Health USA, 2011

POSITIVES/RESOURCES:

- Non-Smoker Protection Act
- Tobacco settlement funding for prevention efforts
- Tennessee Tobacco QuitLine
- Smoke-Free Knoxville Coalition



Knox County
Health Department
 Every Person, A Healthy Person