

**SUBSTANCE ABUSE**

**Among North Carolina ADOLESCENTS**

*Understanding Substance Use  
in Your Community*

*November 2009*

## Contents

Overview .....	3
Website Tools .....	3
A Note on Using the Website .....	5
Data Sources .....	6
NOTE Please let us know .....	7
Appendix.....	8
Notes on Numbers.....	8
Rates.....	8
Denominators .....	8
Survey Data—Why some values are missing for regions in some years.....	8
Acknowledgements.....	9

## Overview

This document describes how to use the tools provided on the *Substance Abuse Among North Carolina Adolescents* website <http://substanceabuse.ssri.duke.edu/subabuse>.

This website brings together **four different kinds of information** to help local counties see the nature of the substance abuse problem in their county. It also allows a county to compare itself to other counties and to look at itself over time. This can be used to help communities plan prevention strategies, determine community service needs and evaluate the benefits of alternative programs and policies.

The four data sources include information about arrests, emergency room visits, responses from the Youth Risk Behavior Survey (YRBS) and responses from the Youth Tobacco Survey (YTS). By making information more readily available, our hope is that it will be easier for local communities to use this information to improve policy. If communities like using this kind of tool, it can be expanded to include other kinds of information.

### A Note on the information on this website

The structure of the information on this website, the categories and the units of analysis, depends on how it was originally gathered. While most information is available by county, some is available only by region. There is county data for indicators such as emergency room visits and arrests. Survey data is usually available only by region of the state (West, East and Central).

## Website Tools

When users go to the <http://substanceabuse.ssri.duke.edu/subabuse/> homepage they will see **five ways to look at these four kinds of information**. Each of the ways of looking at information is described below:

1. **Change over Time:** This enables users to look at one kind of information, such as arrests, for a specific county over time. Survey information is organized by region. After choosing a county and a data source and hitting the “Show Chart and Data” button, the screen will display information about how that indicator has changed over time both in a bar chart and a table.
2. **Indicators by Year:** This enables users to select a data source for a specific county and year. Hitting the “Show Chart and Data” button lets users see all the selected data meeting that description for that year.
3. **Rate Comparisons:** This enables the user to rank counties on an indicator in a given year. Users select an indicator and a year. A table is displayed which lists the rate of that indicator in each county where data are available. *Please take care when comparing*

*rates between different regions. Differences between counties could reflect differences in reporting rather than real differences in use rates.*

4. **Motion Charts** (available only for the SBI arrest data): Motion Charts enable users to visually explore how multiple indicators change over time. This is a relatively new way to display information. While these charts may appear to be complex, you will see that they are relatively easy to use and can help people see relationships between two or more indicators over time. To see a few examples using motion charts, we recommend visiting <http://www.gapminder.org/> and watching one of the videos. The web browsers that are best for viewing these motion charts are Mozilla or Safari.

#### **More on motion Charts**

Some basic information about the motion charts

- a. The axes

The default Y-axis (the vertical axis) displays the rate for all substance use arrests. The default X-axis (the horizontal axis) displays the rate for all index crimes. You can change the variables that appear on the X and Y axis by clicking the axis label.

- b. The circles

Each circle represents a county and the size of the circle is proportional to population size. The color of the circle represents the region (East is blue, green is Piedmont and yellow is West). By dragging your mouse over a circle, the name of the county will appear. You can select a specific county by clicking on it. This will then allow you trace the path of this county when you adjust time (see below).

- c. Time

**Play:** In the lower left-hand corner is a “play button.” This shows a movie of how the counties change over time. When you play this movie, you will notice the year in the lower right corner changes. **Controlling time:** Across the bottom of the chart is a bar. You can move this bar from left to right to select the year you would like to see.

5. **Maps:** Maps allow users to see geographic patterns. We created maps using a free program called MAPresso. (In order to view maps on this website, you will have to have java installed on your computer. Most computers are java enabled) The drop down menu allows you to choose the indicator you want to examine. Counties are assigned colors which correspond to the indicator. For example, the higher the rate of drug use, the darker the color. There is a scale showing what the colors mean next to each map. If you put your cursor on the county, information on the county will appear in the box next to the drop down menu.

**More advanced users can** customize the maps.

a. **Portraying two indicators at once on a map**

Under colors you can select “Bi/tri-variate Map.” Then you can select two indicators (you can select three but the interpretation gets to be challenging). In most circumstances you’ll want to select two rates which will then show you which counties have low rates in both indicators, which counties have high rates in both indicators and which counties are high in one indicator but low in the other.

b. **Showing county labels**

Under geometry, you can alter the way the counties appear on the map.

c. **Additional information on MAPresso can be found on their website:**

<http://www.mapresso.com/help.html>

## **A Note on Using the Website**

The best way to learn how to use this website is to use it. These instructions are meant to help you get started; the more you use it, the easier the website will be to use.

Please give us your feedback on these instructions and how you used the website.

## Data Sources

There are four main data sources used by this website:

### 1. Arrests Related to Substance Use

Arrests for possession and sales of various drugs are collected by the State Bureau of Investigation (SBI). This is part of the Uniform Crime Reporting System of the Federal Bureau of Investigation. State law enforcement agencies voluntarily report information on arrests for various crimes.

*Additional Resources:*

- NC State Bureau of Investigation:  
<http://sbi2.jus.state.nc.us/crp/public/Default.htm>  
To navigate this website, select the year of interest, go to “county arrests” and select the link that matches your needs.
- Federal Bureau of Investigation provides national information from the Uniform Crime Report: <http://www.fbi.gov/ucr/ucr.htm>

### 2. Emergency Department Visits Related to Substance Use

Admissions to emergency rooms across the state of North Carolina are collected through the North Carolina Disease Event Track and Epidemiologic Collection Tool (NC DETECT). *Additional Information is available from:* <http://www.ncdetect.org/>

Please note the following:

- the NC DETECT group does not take responsibility for the scientific validity or accuracy of methodology, results, statistical analyses or conclusions presented in this website.
- the data for some counties might under-represent the true number of emergency room visits related to substance use because the hospitals in that community may not have reported their data for the entire year. For example, Duke hospital in Durham county began submitting data to NC DETECT in October 2007. Information on hospital participation in NC DETECT can be found here: <http://www.ncdetect.org/HospitalStatus.html>

### 3. Youth Self-Reported Behaviors

The Youth Risk Surveillance Survey (YRBS) is a national school-based survey designed to track “priority health risk behaviors that contribute to the leading causes of death, disability and social problems among youth and adults in the United States.” The YRBS is conducted as part of the Centers for Disease Control and Prevention’s (CDC) Youth Risk Behavior Surveillance System. In North Carolina, the YRBS is conducted statewide every other year. It was conducted in 1999, 2001, 2003, 2005 and 2007. There is a middle and high school version. For recent years, estimates are possible by three geographic regions: East, West and Central (although in some years there is insufficient

data to make inferences at the region level.

*Additional Resources:*

Some school districts periodically choose to administer the YRBS in their school. When a school district chooses to administer the YRBS separate from the national survey, their results are not included in the statewide and region wide estimates. Additional information can be found at the following sites:

- National Data: <http://www.cdc.gov/HealthyYouth/yrbs/>
- North Carolina Data: <http://www.nchealthyschools.org/data/yrbs/>
- Local Sites:
  - Durham  
<http://www.healthydurham.org/stateofcounty/2007/2007YRBSurvey.pdf>
  - Charlotte Mecklenburg Schools  
<http://www.cms.k12.nc.us/departments/CSH/YRBA/HSHighlights.pdf>  
[http://www.cdc.gov/HealthyYouth/yrbs/pdf/states/yrbs07\\_charlotte\\_us\\_comparison.pdf](http://www.cdc.gov/HealthyYouth/yrbs/pdf/states/yrbs07_charlotte_us_comparison.pdf)  
<http://www.cms.k12.nc.us/departments/CSH/YRBA/MSHighlights.pdf>

#### 4. **Youth Self-Reported Tobacco Use**

The Youth Tobacco Survey (YTS) is a school-based survey conducted in middle and high schools to track the use of tobacco products, cigarettes, smokeless tobacco and cigars. Nationally, this survey is administered by the Centers for Disease Control and Prevention. The survey has been conducted bi-annually both nationally and statewide every other year since 1999.

*Additional Resources:*

- National Youth Tobacco Survey  
[http://www.cdc.gov/tobacco/data\\_statistics/surveys/nyts/index.htm](http://www.cdc.gov/tobacco/data_statistics/surveys/nyts/index.htm)
- North Carolina Youth Tobacco Survey  
<http://www.tobaccopreventionandcontrol.ncdhhs.gov/data/yts/index.htm>

**NOTE:** Please let us know what other kinds of information you would like to see in this format. If there is interest we will try to add more information.

## Appendix

### Creating your own charts in other applications such as Excel

Below each table, the raw data are given to you in a comma delimited format (csv). You can copy and paste this information into Excel. After pasting these values into Excel, under “Data” you can select text to columns. This file is comma delimited. A comma delimited file is a fairly generic data type and can be used in other packages such as STATA, R, SPSS, SAS, etc.

## Notes on Numbers

### Rates

A rate is simply the number of events that occur per some population unit. A common rate is the number of events per 100,000.  $\text{Rate per 100,000} = (\text{number of events/population}) * 100,000$ . It is useful for comparing groups that differ in size. For example, Mecklenburg may have a large number of arrests for a particular indicator, but that is not surprising given the size of the county. In order to compare Mecklenburg with other counties, the state, or the nation it is helpful to put the data in the same units.

### Denominators

In order to determine the denominator for each county by age group and year, data from the North Carolina Office of Budget and Management was used.

[http://www.osbm.state.nc.us/ncosbm/facts\\_and\\_figures/socioeconomic\\_data/population\\_estimates/county\\_estimates.shtm](http://www.osbm.state.nc.us/ncosbm/facts_and_figures/socioeconomic_data/population_estimates/county_estimates.shtm)

### Survey Data—Why some values are missing for regions in some years

Both the YRBS and the YTS have complex sample survey designs. Thus, estimates take into account probability weights as well as the sample design features (primary sampling unit and strata). For some years and some regions the sample size was insufficient for estimates.

## **Acknowledgements**

Sarah Langer, North Carolina Healthy Schools-Department of Public Instruction

Tim Parker, State Bureau of Investigation

Nidu Menon, Division of Mental Health Developmental Disabilities and Substance Use

Paul Savery, Division of Mental Health Developmental Disabilities and Substance Use

Scott Proescholdbell, Injury and Violence Prevention Branch

Joel Rosch, Center for Child and Family Policy

## **Special Thanks**

David Moffat—Web programming

Joy Stutts—Graphic Design

Chris Kerr—Network Support

## **Partners**

This website was produced by Elizabeth Gifford and Alan Hoyle from The Center for Child and Family Policy at Duke University in collaboration with University of North Carolina at Greensboro's Center for Youth, Family, and Community Partnerships and the North Carolina Division of Mental Health, Developmental Disabilities, and Substance Abuse Services with financial support from the Substance Abuse and Mental Health Services Administration (SAMHSA), Center for Substance Abuse Treatment (CSAT), U.S. Department of Health and Human Services (grant number 6 J79 T117387-02-2).