# FloridaCHARTS User's Guide **Empowering Communities with Health Information**

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# **Chapter 1: Overview**

#### FloridaCHARTS --- your source for health statistics!

- County and community level data in prepared reports.
- Detail or summary data based on your selections.
- Trend graphs for simpler health problem analysis.
- Definitions and descriptions to assist in interpretation.
- Interactive community maps with health indicators at the census tract level.
- Downloadable report tables and maps for most data sets.

# http://www.FloridaCHARTS.com/

# **Learning Objectives**

Using FloridaCHARTS can help assess the health of Florida and its communities. This guide will help you understand ways to empower yourself and others with key health information through mastery of the following objectives:

#### Chapter 1 Overview

- A. Locate the FloridaCHARTS web site, use "search" to locate an indicator, provide feedback or ask a question.
- B. Understand what types of information and reports are available.

# Chapter 2 Health Profile Reports

- A. Understand how to obtain and interpret a County Health Profile Report.
- B. Understand how to obtain and interpret County, State, and National Comparison Reports
- C. Recommend indicators for additional review and understand where to locate additional information.

#### Chapter 3 Health Indicators

- A. Understand health indicators, how to run a report for select indicators, and select a display type.
- B. Use technical features of FloridaCHARTS: sorting, exporting data, producing trend graphs, maps and data tables; copy and paste into other applications.
- C. Use the Florida Birth Query System to obtain reports on childbirth related indicators.

# Chapter 4 Comparison, Population, and Behavioral Risk Reports

A. Use and interpret reports about population, behavioral risks, causes of death and other indicators which compare counties.

# Chapter 5 Census Tract Maps

A. Use and interpret interactive maps depicting health or population information.

### Chapter 6 Statistical Guide

- A. Understand types of rates, confidence intervals, quartiles, and population information.
- B. Understand the sources of data in FloridaCHARTS
- C. Recommend best report types for counties with small populations or health events with small numbers.
- D. Locate the FloridaCHARTS statistical guide.

# FloridaCHARTS provides easy access to health indicators

Whether you are a researcher applying for a grant, a student of a health program, or a citizen interested in the health of your community, health indicators can be an incredible tool for understanding health status. Health indicators provide insight for community planning, research and program evaluation. Deaths, reported diseases, mental health and hospitalization indicators provide information about opportunities to reduce morbidity and premature death.



# Available on CHARTS

- · Births, Deaths and Fetal Deaths
- County Population Estimates, Census and Economic Information
- Behavioral Risk Factors (e.g. Obesity and Diabetes Prevalence)
- Health Resources Availability (licensed physicians, hospital beds)
- · Communicable and Chronic Diseases
- Environmental Health (Food-borne illness)
- · Social & Mental Health (Crime, Suicide)

Birth indicators (infant mortality, birth weight) provide general indicators of economic conditions, nutrition, education, sanitation and health care. Population and social information provide a contextual background for understanding health issues.

# FloridaCHARTS provides ongoing, accurate, and comparable data about health and health-related indicators.

#### **Indicators are Updated Annually**

Most indicators in FloridaCHARTS are updated annually, with timing of the update based on the availability from each particular data source. A small number of data are updated less than annually due to the nature of their periodicity. The census, for example, is updated every 10 years, and some health indicators, such as tuberculosis patients completing therapy, are updated less frequently.

# FloridaCHARTS is Continually Improved

In response to feedback and requests for information, FloridaCHARTS continues to grow and evolve. For this reason, some parts of this printed guide may differ from the current version of the web site. However, the basic information and technical instruction will not change.

#### FloridaCHARTS is best viewed with the following settings:

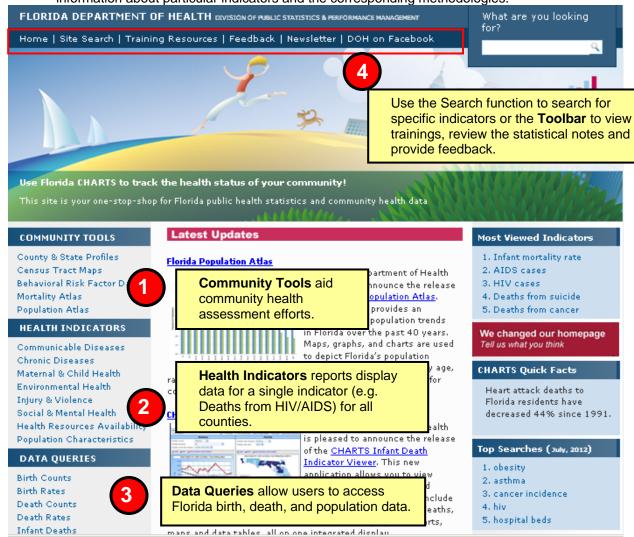
- Internet Explorer 6.0 and above. (Internet Explorer window > Help > About Internet Explorer > Version #?)
- Video display of 1024 x 768. (Right click on Desktop > Properties > Settings > Screen resolution)

- **Pop-up blockers should be disabled** because they may negatively impact displays of reports, trend graphs and mapping functions.
- Although not required, some parts of FloridaCHARTS provide downloads in Microsoft excel and word format. Portable document format (pdf) is also provided as a print option.

# **Navigating FloridaCHARTS**

FloridaCHARTS is organized into sections to provide convenient and intuitive ways to locate information.

- 1. **Community Tools** aid health assessment efforts. **County Health Profile Reports** for each county display a summary of health indicators with data tables and graphs. Census Tract maps show health and population profiles at census tract levels and provide an opportunity to observe health status in specific areas of interest.
- 2. **Health Indicators** provide data to assess the health status of a county or community. By selecting an area of interest and a specific disease or condition, trends, maps and data tables are made available showing state and county comparisons at a glance.
- 3. **Data Queries** allow users to access Florida death and population data
- 4. **Search** functions and the **Toolbar** at the top of the page provide convenient access to several features. Return to the homepage with a single click, search for a particular indicator, access the statistical guide and trainings or submit feedback. The statistical notes describe in detail the data sources and special information about particular indicators and the corresponding methodologies.



# **Data Display Options**

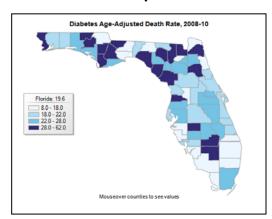
FloridaCHARTS allows you to view information about health events in several ways.

## **Data Tables**

Diabetes Age-Adjusted Death Rate, 3-Year Rolling Rates				
	Alaci	ıua	Flor	ida
Years	Count	Rate	Count	Rate
1989-91	100	25.4	8,621	17.9
1990-92	108	26.9	8,883	19.0
1991-93	108	26.7	9,182	18.1
1992-94	126	30.1	9,637	19.5
1993-95	121	27.7	10,231	19.1
1994-96	140	31.2	10,777	19.6
1995-97	136	29.2	11,277	20.0
1996-98	145	30.5	11,643	20.1
1997-99	142	29.1	12,260	20.7
1998-00	154	30.8	12,895	21.3
1999-01	151	29.2	13,460	21.7
2000-02	146	27.3	13,620	21.3
2001-03	130	23.8	13,911	21.1
2002-04	128	22.6	14,118	20.8
2003-05	133	23.1	14,725	21.2
2004-06	152	25.6	15,108	21.2
2005-07	164	27.3	15.410	21.1

Data tables display both rates and actual numbers of events.

# Maps



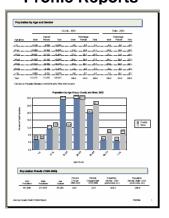
County and community maps provide comparisons with a geographic view. Using shading, maps illustrate quantities by location of health events or populations selected.

# **Trend Graphs**



Trend graphs show a historical view with many years of information so that, at a glance, you can see trends.

# **Profile Reports**



The County Health Profile report is a quick and simple way to get key health indicators for a selected county. The results of the reports provide communities with an understanding of local health status and promote data-driven policy and priorities.

# **Chapter 1 Exercises**

Your responses to the practice exercises are a personal interpretation of how FloridaCHARTS might apply to your business practices. Some discussion follows to illustrate possible answers.

- 1. Review each of the Community Tools. Can you identify when you might use each of them?
- 2. Why would population characteristics and behavioral risks be important to understanding health status?
- 3. View each of the options in the Health Indicators and Data Queries sections. Identify when you might use each of them.
- 4. Search for a particular health indicator you are interested in using the search box on the home page. (Hint: You may also use the "site search" link in the upper right corner of any page.)
- 5. Click the "user guide" and review Chapter 6: Statistical Guide. How would this section be helpful to vou?

#### **Responses:**

1. The County Health Profile Report provides a report comparing a county's key indicators with other counties (quartile rankings) and with the state as a whole. The graphs show how a county compares to the state level data. It is an ideal starting point from which to begin reviewing indicators and prioritizing them for action.

Census Tract Maps promote community comparisons with other areas of the county and state in terms of health outcomes. For example, a community with a large number of repeat births to mothers age 15-19 might use these data to illustrate need and expand family planning services in a particular neighborhood.

*Population* reports provide quick access to data about county demographics. These contextual indicators contribute to understanding the health indicator data.

County Behavioral Risk Factor Reports allow comparisons between state and other counties as well as provide detailed information by race, sex, age, education and other factors. This information points the way toward possible, focused health interventions. In Dade County, for example, the race/ethnic breakdown of of adults who reported being obese (body mass index (BMI)  $\geq$  30) was White: 20.6%, Black: 33.9%, Hispanic 15.4%. Using this information, Dade County might focus efforts on reaching a larger percentage of the at-risk Black population.

- 2. Population and behavioral risks are important to understanding health status. Population-based factors such as age, education, and income impact the health care needs of communities. For example, an older population may require more health care services than a younger one and may also have higher rates of disease. Behaviors such as exercise or alcohol and tobacco use indicate potential for health-based interventions that can ultimately influence the health status indicators.
- 3. Within each of the following sections of FloridaCHARTS, a wealth of indicators and reports including data tables, maps, trend graphs and more are available.

## **Health Indicators:**

- a. Communicable Disease: Reportable diseases including HIV/AIDS, sexually transmitted diseases, tuberculosis, zoonosis, and more.
- b. Chronic Disease: Cardiovascular diseases, Alzheimer's disease, cancer, diabetes, and more.
- c. Maternal and Child Health and the Florida Birth Query: Live births, infant deaths, low birthweight, prenatal care and delivery and more.
- d. Environmental Health: Animal rabies, enteric diseases, lead poisoning and more.
- e. Injury: Drownings, falls, homicide, suicide and more.
- f. Social and Mental Health: Crime and domestic violence indicators and more.

- g. Health Resources Availability: Hospital and nursing home beds, health care provider numbers, county health department expenditures and more.
- h. Population Characteristics: Population, economic, education, poverty and housing indicators.

# **Special Reports**

- a. County Health Status Comparison: For a set of key health indicators, this report compares four selected counties and the state totals for the year identified.
- b. County Death Data Comparison: For a set of key death indicators, this report compares four selected counties and the state totals for the year identified.
- c. County Birth Data Comparison: Using a set of key birth indicators, this report compares four selected counties and the state totals for the year identified.
- d. Major Causes of Death: For the county and year selected, a report is provided displaying the leading causes of death. The number and several rate types are displayed.
- e. User Selected Indicators: Provides the option to create your own report by choosing the desired indicators.
- 4. The indicator search allows you to type in the search phrase you are looking for (heart disease, births, etc.). If results are found, a hyperlink will be returned so that you easily click and go to the indicators. The search box has a suggestions feature that should show any related hits as you type.
- 5. Statistical notes provide more definitions, calculations used, and reference documents including the following: CHARTS Statistical Guide in Chapter 6

The CHARTS Statistical Guidebook provides useful information about CHARTS data sources, rate calculations, ICD-10 codes and rate reliability.

#### Vital Statistics Rates and Formulae

Vital Statistics Rates and Formulae details calculations used in the Vital Statistics Annual Report and in this system.

# ICD-10 - International Statistical Classification of Diseases, tenth revision

The International Classification of Diseases (ICD) is designed to promote international comparability in the collection, processing, classification, and presentation of mortality statistics. This includes providing a format for reporting causes of death on the death certificate. Codes in this documentation are used with the death data reports on FloridaCHARTS.

# **Chapter 2: The Health Profile Reports**

# **Learning Objectives**

- Understand how to obtain and interpret a County Health Profile Report.
- Understand how to obtain and interpret state and county comparison reports.
- Recommend indicators for additional review and understand where to locate additional information.

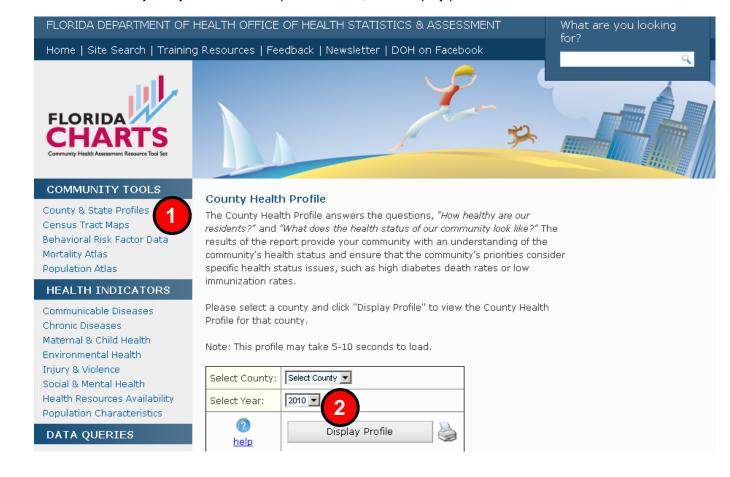
County Health Profile Reports provide a prepared and ready-to-print document with key indicators at a glance. Data tables display numbers of events and rankings versus other counties (by quartiles) and graphs display how a county compares to state-level data. Health indicators in the County Health Profile Report are based on indicators recommended by the National Association of County and City Health Official's (NACCHO) strategic planning process called Mobilizing for Action through Planning and Partnership (MAPP). Used as the basis for discussion and action planning with community groups, this report brings a wealth of information into one document and simplifies information-gathering and interpretation. County Health Profile reports also serve as a guide for communities as they formulate a strategic view of their population's health status and factors that influence health and quality of life. For example, reports might reveal high diabetes death rates, low immunization rates, or high crime rates.

The County Health Profile Report serves in the following ways:

- Motivate communities to address specific health issues.
- Serve as a reference document for coalitions and agencies as to present priority issues.
- Assist community partnerships with decisions on allocation of resources and grant applications for funding for interventions.
- Provide information to assist with the development of community action plans.

# **How to Request a County Health Profile Report**

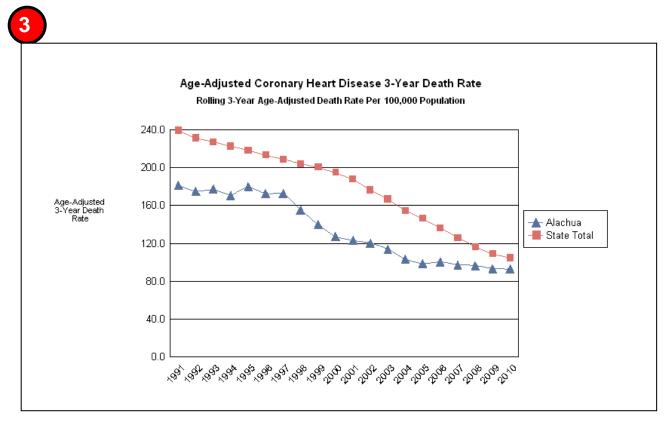
- 1. County Health Profile Reports are found in the "Community Tools" section of FloridaCHARTS. Click on "County & State Profiles," then "County Health Profile" under single county reports.
- 2. Select a county and year from the drop down boxes, then "display profile."



## **Features of the County Health Profile Report**

- 1. Data tables with the actual counts or rates with both county and state level data.
- 2. Quartile rankings that provide comparison to other counties in the state. (See the next page and also Chapter 6 for more information about quartiles.)
- 3. Trend graphs that compare the county and state data.

1		Avg. Annual Number of	Age- Adjusted	2	State Age- Adjusted	U.S. Healthy People 2020
Indicator	Year(s)	Events	Rate <sup>1</sup>	Quartile <sup>2</sup>	Rate	Goal <sup>3</sup>
Coronary Heart Disease						
Deaths	2008-10	211	<u>92.5</u>	1	104.5	100.8
Hospitalizations	2008-10	817	<u>363.1</u>	1	406.7	
Stroke						
Deaths	2008-10	87	<u>38.4</u>	3	30.5	33.8
Hospitalizations	2008-10	539	243.1	2	265.5	
Heart Failure						
Deaths	2008-10	26	10.9	3	7.6	
Hospitalizations from congestive heart failure	2008-10	238	105.6	2	149.1	
Lung Cancer						
Deaths	2008-10	112	<u>51.3</u>	2	46.6	45.5
Incidence	2006-08	154	<u>75.3</u>	NA	65.9	
Percentage of adults who are current smokers	2010		14.4	1	17.1	12%



# **Using the County Health Profile Report**

The County Health Profile Report contains information about the population and the status of health for the selected county for the most current period available. It provides a snapshot of what are considered to be important measures of community health. For purposes of discussion in this document, we will refer to these measures as indicators.

# 1. Review each section of the *County Health Profile Report* for significant events, strengths, or areas for improvement.

# Population and Socioeconomic Data, pages 1-4 of the County Health Profile Report

- Consider the importance of population and socioeconomic data that offers crucial insight into
  characteristics of the community. These contextual variables are important for understanding current
  or potential health concerns. For example, particularly young or old populations have different health
  care needs. Insightful information is also contained in factors such as economic resources and
  education levels that influence health outcomes.
- Compare the county and state data. Note any differences and similarities.
- Compare the data by race and ethnicity. Observe how the county measures compare to the state's.

#### Health Indicators, pages 5-16 of the County Health Profile Report

- Review the health indicators. Note the quartile rankings for the health indicators and make observations about their significance.
- Quartiles provide a relative ranking among the Florida counties because they are calculated using data from all 67 counties. Quartiles are calculated as follows: first, data for a given health indicator for all 67 counties (i.e. diabetes death rate) are ranked from lowest to highest. Next, the counties are divided into four groups. Each group is assigned a number from 1 to 4. The lowest numbers are in the first quartile (1), while the highest numbers are in the fourth quartile (4). It is important when analyzing this data to consider the indicator. In some cases a high quartile number (4) may be a positive indicator (i.e. median income) and in others it may be a negative indicator (i.e. infant mortality). Because quartiles are calculated using data from all of the counties, you can use them to compare one county to another. Look for quartile rankings of 1 and 4 and make observations about their significance.
- Compare the county and state data. Note any differences and similarities.
- Compare the data by race and ethnicity. Observe how the county measures compare to the state's.

#### 2. Use the Statistical Information as a Reference Tool of the County Health Profile Report

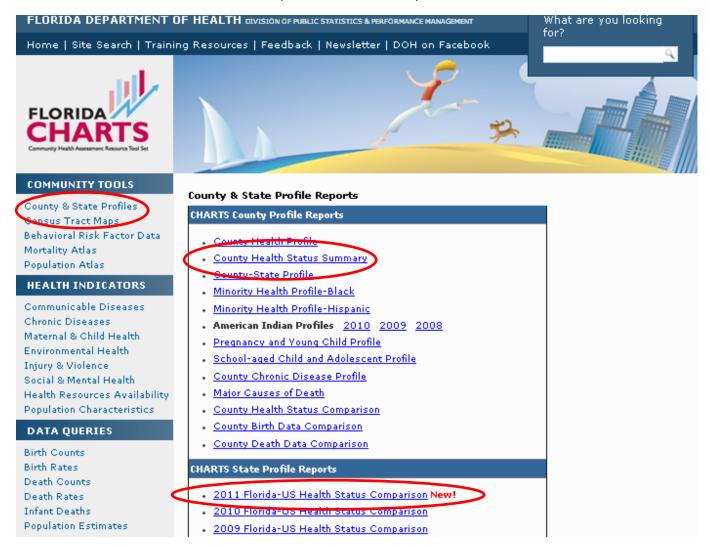
 The last page of the County Health Profile Report contains statistical information that serves as a reference with definitions and explanations of terms such as quartiles, confidence intervals, ageadjusted rates, crude rates and three-year rates.

After a thorough review of the County Health Profile Report, more questions may emerge about particular health issues. Other sections of FloridaCHARTS provide opportunities for an in-depth review. Use the "Health Indicators" section for additional information including data tables, trends, and maps. In the "County Comparison Reports" section, users can compare up to four counties on birth, death or other key indicators. Special reports can be generated that include your own-selected indicators.

# **County and State Comparison Data**

FloridaCHARTS also provides similar summary data with the Health Status Reports. The County Health Status Summary and Florida-US Health Status Comparison are reports that allow you to compare either county or state health data with state and nationwide data. County trends (which are tested for statistical significance), state rankings for individual indicators, Healthy People 2020 goals, and county quartiles are also included. Data categories include actual causes of death, socioeconomics, health status and access to care, and chronic diseases.

- 1. The health status reports are located with the County and State Health Profiles, under the Community Tools section. Click "County and State Profiles."
- 2. Click "Florida-US Health Status Comparison" to view that report.



3. Or, click "County Health Status Summary" to go to the next screen and select your county and year of interest.



- 4. The report will look like the image below. Where there is sufficient data, the County Trend column will display a trend graph when the user clicks on the "better," "worse," or "no trend" label in the column.
- 5. User's may also print the chart by clicking on the print icon in the top left-hand corner.



- I THE PICTOR							
Alachua County, Florida  CHARTS  County Health Status Summary  County Health Status Summary							
Indicator	Year(s)	Rate Type	County Quartile <sup>A</sup> 1=most favorable 4=least favorable	County Rate	State Rate	County Trend <sup>B</sup> (click to view)	Healthy People 2020 Goals <sup>C</sup>
Actual Causes of Death*							
Physical Activity							
Adults who meet moderate physical activity recommendations <sup>1</sup>	2007	Percent	2	39.2%	34.6%		
Adults who meet vigorous physical activity recommendations <sup>1</sup>	2007	Percent	1	31.3%	26.0%		
Adults who engage in no leisure-time physical activity <sup>1</sup>	2002	Percent	1	16.9%	26.4%		32.6%
Overweight and Obesity							
Adults who consume at least five servings of fruits and vegetables a day <sup>1</sup>	2007	Percent	1	29.2%	26.2%		
Adults who are overweight <sup>1</sup>	2010	Percent	3	38.5%	37.8%		
Adults who are obese <sup>1</sup>	2010	Percent	1	21.6%	27.2%		30.6%
Tobacco Use							
Adults who are current smokers <sup>1</sup>	2010	Percent	1	14.4%	17.1%		12%
Socio-Demographics							
Median income (in dollars) <sup>2</sup>	2006-10	Dollars	3	\$40,644	\$47,661		
Residents below 100% poverty <sup>2</sup>	2006-10	Percent	4	23.6%	13.8%		
Unemployment rate <sup>3</sup>	2010	Percent	1	8.2%	11.5%	Worse	

# **Chapter 2 Practice Exercises**

Use the County Health Profile Report for Alachua County to find the answers to the following questions.

- 1. In Alachua County in 2010, the percentage of the total population >74 years of age differed from the state percentage by how much?
- 2. TRUE or FALSE. In Alachua County from 2006-2010 the percent of families below the poverty level was lower than the state percent.
- 3. What is the 3-year age-adjusted death rate (AADR) for all races for AIDS/HIV in Alachua County? How does it compare to the state rate?
- 4. Did Alachua County have any communicable diseases with 4<sup>th</sup> quartile rankings? If so, list these diseases.
- 5. What is the three-year annual average number of births in Alachua County?
- 6. According to the behavior risk factor survey, what percent of adults in Alachua County are obese? Overweight?
- 7. In Alachua County, what is the 3-year rate per 100,000 for alcohol-related motor vehicle crash fatalities? How does it compare to the state rate?
- 8. Are there any health care provider groups for which Alachua County is in the fourth quartile? If yes, please list them.

#### Responses:

- 1. Total population >74 years of age: Alachua County = 4.9% State= 9.0% Difference=4.1%
- 2. False. In 2000, in Alachua County, the percent of families below the poverty level was 11.6. Statewide it was 9.9.
- 3. The AADR in Alachua County was 5.5 cases per 100,000 and the state rate was greater at 6.5 cases per 100,000 people.
- 4. Yes. There were seven: 1) Total Gonorrhea, Chlamydia and Infectious Syphilis, 2) Infectious Syphilis, 3) Gonorrhea, 4) Chlamydia, 5) Mumps, 6) Pertussis, and 7) Hepatitis A.
- 5. 2,923.7 is the average number of births per year over the three year period 2008-2010.
- 6. In 2010, 21.6% of adults were obese and 38.5% were overweight in Alachua County.
- 7. The 3-year rate for alcohol-related motor vehicle crash deaths in Alachua County is 3.8 per 100,000 compared to 5.3 per 100,000 for the state.
- 8. Alachua County falls in the fourth quartile for all providers listed: dentists, physicians, family physicians, internists, OB/GYNs and pediatricians. The fourth quartile means there is a large number of providers per 100,000 people in the county, indicating there is a greater supply of health care providers per population here than in other counties in the state.

# **Chapter 3: Health Indicators**

#### **Learning Objectives**

- A. Understand health indicators and how to run a report for select indicators.
- B. Use the Florida Birth Query System for reports on certain indicators.

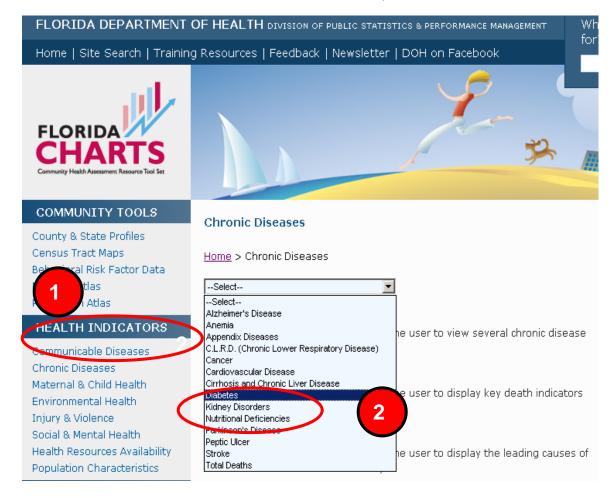
#### What is a Health Indicator?

A health indicator is a characteristic of an individual, population, or environment which is subject to measurement (directly or indirectly) and can be used to describe one or more aspects of the health of an individual or population. Indicators are usually expressed as rates, such as crude or age-adjusted rates. FloridaCHARTS provides data tables, maps, and trend graphs as options for viewing health indicator information. One of the most well known health indicators is the infant mortality rate. This rate is the number of infant deaths per 1,000 live births (this is an example of a crude rate). Other familiar indicators are the STD infection rate and the diabetes death rate. **See Chapter 6 of this guide for more information on rates and statistics.** 

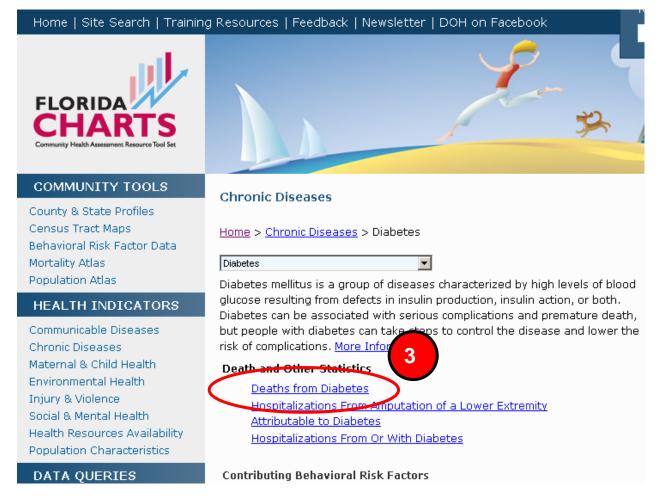
# Running a Report for a Health Indicator

This section walks you step-by-step through the process of running a report for a health indicator.

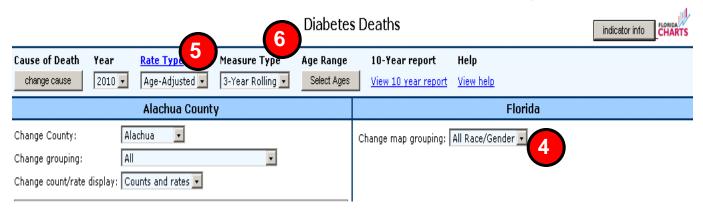
- 1. Choose from a category in the "**Health Indicators**" section of the left side menu. These categories (or "Domains") represent broad areas of health data. For this example, we will select "Chronic Diseases".
- 2. Next, select "Diabetes" from the Chronic Disease dropdown menu.



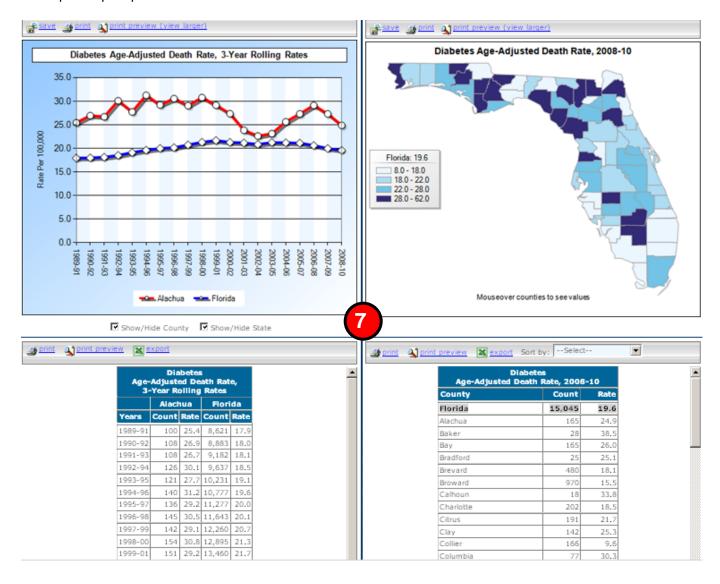
3. On the next page select "Deaths from Diabetes."

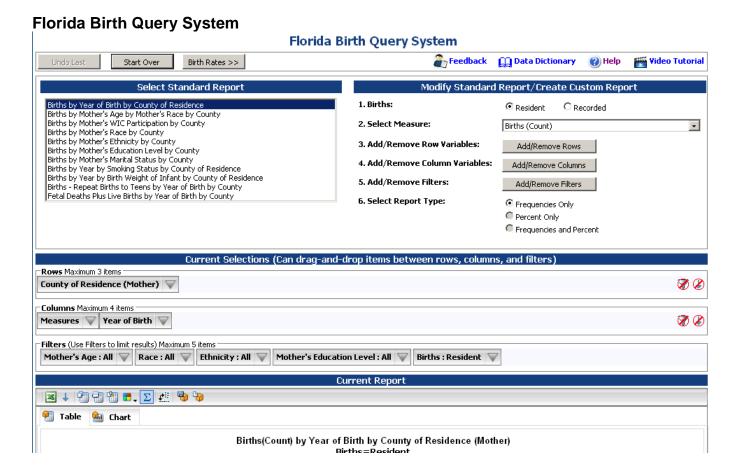


- 4. If you want to make changes, select a different race, ethnicity, or year. You can choose from all (total for all races and ethnicities), white, nonwhite black, nonwhite other, or total nonwhite. Also, if you select "Hispanic", the race selection will automatically be set to "All". This will total all results for persons who have indicated Hispanic as their ethnicity whether they are white, black, or another race. All reports start from the selected year and work backwards.
- 5. Select the rate type. If you are not sure which rate type you need, click "rate type" for a description of each. Also Chapter 6 includes descriptions of the rate types. For this example, we are selecting Age-Adjusted Death Rate (AADR).
- 6. Select the report type. For a description of report types, click the on "Measure type". For this example, we are selecting the "3-year rolling."



7. The CHARTS Indicator Window will contain four panels that display a trend graph, map and data tables. Panels on the left are specific to the county selected. Panels on the right display information about all counties in Florida. If you want to see an individual window in a larger format, click on the save, print, export or print preview icons.





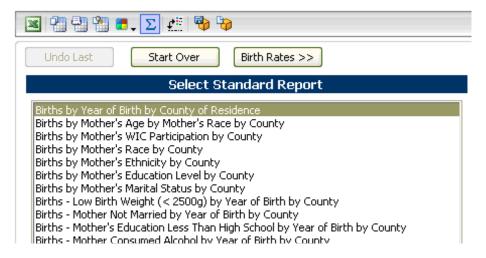
The Florida Birth Query System works the same as most sections of FloridaCHARTS. Pull-down menus, radio buttons, and explanations of features are all available here. The advantage of the birth query is in its flexibility and variety of data.

To get to the Florida Birth Query System, click on "Birth Counts or Birth Rates" under the Data Queries section of the left hand menu in FloridaCHARTS.



# **Standard Reports**

Prepared reports that are commonly needed have been created as defaults and are available near the top left of the page. Click a report title and that report will be displayed in the results section.



#### **Undo Last and Start Over**

These buttons clear or undo your work. The undo last will only remove the last change you have made. The start over button will return you to the report that you originally started with.



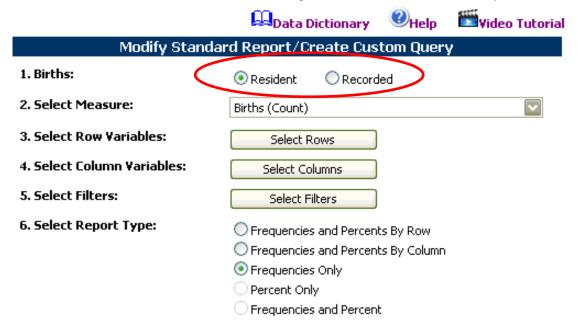
# **Birth Counts and Birth Rates**

This button will switch between the Birth Rates and Birth Counts applications. If you are looking for rates of any kind, you must switch to the rates application.



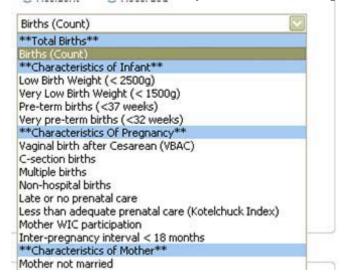
# **Modify Standard Report/Create Custom Query**

Select 'resident' or 'recorded'. Resident birth data deal only with mothers who reside in Florida. Recorded birth data are based on all births that occurred in Florida, regardless of the mother's residency.



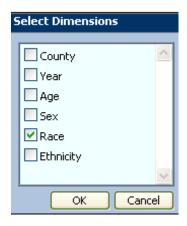
#### Measure

Click on 'select measure' to choose what you will count. Statistically, the measure would be the denominator. For example, the default is total births, but you may want to limit your query to only low birth weight births or C-section births. Measures are essentially short cuts to obtaining specific data elements.



# Selecting row and columns

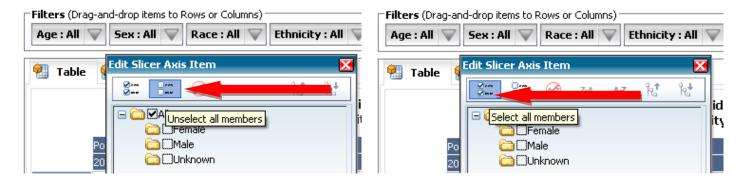
'Select rows', 'select columns', or 'select filters' will modify what is displayed in the report table at the bottom of the screen or to create your own new report. Each button (select rows, columns, filters) will provide a selection box. Check one or more of the dimensions from the box. Then click OK to apply your selections.



# Rows, Columns, and Filters

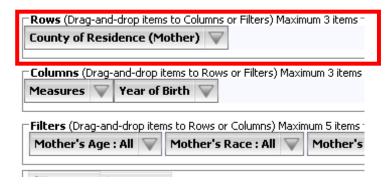


Buttons in the row, column and filter sections are interactive. Clicking the down arrow will open a window showing the available data. The check boxes turn data on and off and the icons at the top can uncheck all options or check all options as seen below.



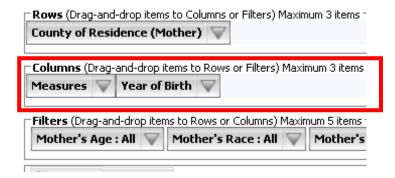
#### Rows

Items in this area control what data will be displayed horizontally or in rows. It is best to place items in this area that have several types – counties, single age years, etc. When changing your tables, it is best to drag unwanted items out of the area before adding new ones. You may drag and drop items from the columns or filters section to the rows section if you like.



#### **Columns**

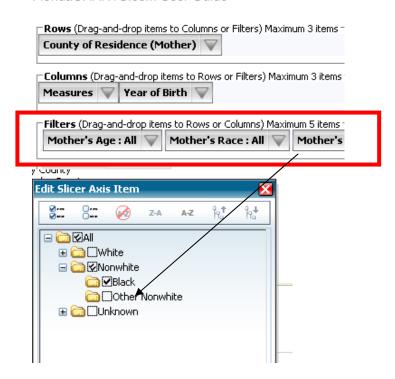
Items in this area control what data will be displayed vertically or in columns. It is best to place items in this area that have only a few types – sex, race, ethnicity, etc. You may drag and drop items to put them in the order you would like. You may also drag and drop items from the columns or filters section to the rows section if you like. As with rows, it is best to remove unwanted items out of the area before adding new ones.



#### **Filters**

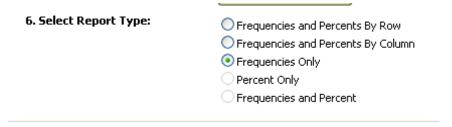
These buttons will not appear as a column or row in reports, but they will control what sectors of the information will make it into the report. For instance, a row variable of counties and a column variable of births and year of birth=2008 will give total births for all counties for 2008.

Making changes to a filter variable will change what is included in the report. Using the "Mother's Race" filter, you may include only white or only black in the counts, depending on the selection. You may also use this feature to select certain ages of mothers, ethnicities, educational levels, etc.



# Report Type

The report type options allow you to choose the type of information that will be displayed in the report. Frequencies (counts) and percents are available for the Birth Counts section of the application. Frequencies and rates are available in the Birth Rates section.



Certain options may be 'grayed out' depending upon your selections.



#### **Table and Chart tabs**

These tabs will toggle between showing the results of the query as a data table or a chart. If the chart tab is selected, the toolbar at the top of the page will also change to show new buttons for formatting the chart. Pie and column charts are both available and the charts can be exported or saved like the data tables



#### **Toolbar**

These buttons control the format of the report table and allow saving and loading reports. Reports can also be exported to Microsoft Excel from the toolbar. NOTE: When exporting a report that has a column or row with a "+" symbol, remember to expand the section before exporting or the sub-categories will not appear in Excel.



# **Chapter 3 Exercises**

- 1. Run the report for the Diabetes Age-Adjusted Death Rate (3-Year Rolling Rate) with 2005 as the selected year. What is the rate in Hillsborough County for 2003-05?
- 2. Now sort the data based on the Age-Adjusted 3-Year Death Rate for 2003-05 column. Is Hillsborough County's rate higher or lower than the state rate? Which counties have the highest and lowest rates?
- 3. Produce a county-level map of this indicator. What are the rates for the counties surrounding Hillsborough? What quartile is Hillsborough in?
- 4. Produce a trend graph for Hillsborough County. What is the general direction of the trend line? Has this rate increased or decreased over the last 20 years? Is the county rate consistently above or below the state rate? Practice producing MS Excel versions of this report.
- 5. Using the Florida Birth Query, were there any counties in 2010 that had more births to mothers with LESS THAN a high school education than births to mothers that were high school graduates?
- 6. Using the Florida Birth Query, how many births involved mothers who were overweight or obese for 2010?

#### **Responses:**

- 1. The 3-year rolling rate diabetes age-adjusted death rate for Hillsborough County for 2003-05 is 29.3 per 100,000 people.
- 2. Hillsborough County's rate is higher than the state rate (Hillsborough = 29.3; State = 21.2). Highest = Baker (56.4), Lowest = Collier (9.3).
- 3. You can view the data for each county by putting the mouse on that area of the map. The following rates are displayed for counties near Hillsborough: Pasco = 28.5, Pinellas = 22.0, Polk = 20.4, Hardee = 34.7, Manatee = 13.6.
  - Hillsborough is in the 3<sup>rd</sup> quartile for this indicator. You can tell this is so when looking at the map because of the color coding. Hillsborough County is the same color as the third color in the map legend. Note that clicking the "legend" link on the map provides in in-depth description of quartile calculations.
- 4. General trend for this indicator is in an upward direction; over the last 20 years this rate has increased, and Hillsborough County's rate is consistently above the state's rate.
- 5. No, in 2010, there were not any counties that had more births to mothers with less than a high school education than births to mothers who were high school graduates.
- 6. In 2010, 92.811 births involved mothers who were either overweight (50.480) or obese (42.331).

# Chapter 4: Population, Risk, and Comparison Reports

# **Learning Objective**

Use and interpret reports about population, behavioral risks, causes of death and other indicators which compare counties.

# Florida Population Estimates

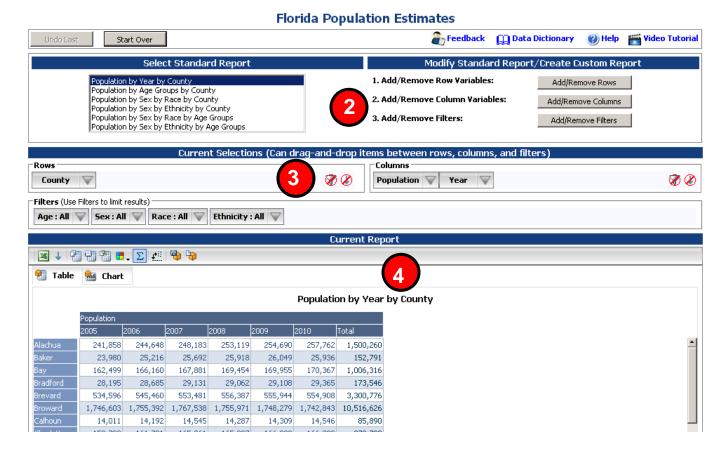
Use the Population Estimates to get county population counts from 1970 through 5 years of future projection. Reports are available in .pdf format for printing and can be easily exported into Excel. **REMINDER: Pop-up blockers should be disabled** because they may negatively impact displays of reports, trend graphs and mapping functions.

#### Generating a Report:

1. Begin by clicking "Population Estimates" on the left menu of FloridaCHARTS. A new tab will open.



- 2. Select options for the report:
  - Select type of report: select "standard report" from available options OR "modify standard report/create custom report" by making a selection from the drop down menu in "add/remove row variable", "add/remove column variables" or "add/remove filters".
- 3. Verify selections for rows, columns and filter under the "current selections" menu.
- 4. The report will be automatically generated under "current reports".

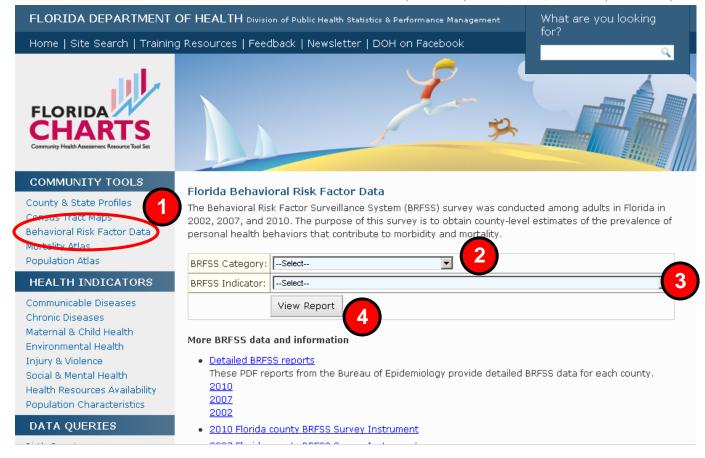


#### Florida Behavioral Risk Factors

The 2002, 2007, and 2010 County Behavioral Risk Factor Surveillance System (BRFSS) survey was conducted among adults. Adults were randomly selected and interviewed for the survey with the goal of obtaining county-level estimates of the prevalence of personal health behaviors that contribute to morbidity and mortality.

## Generating a Report:

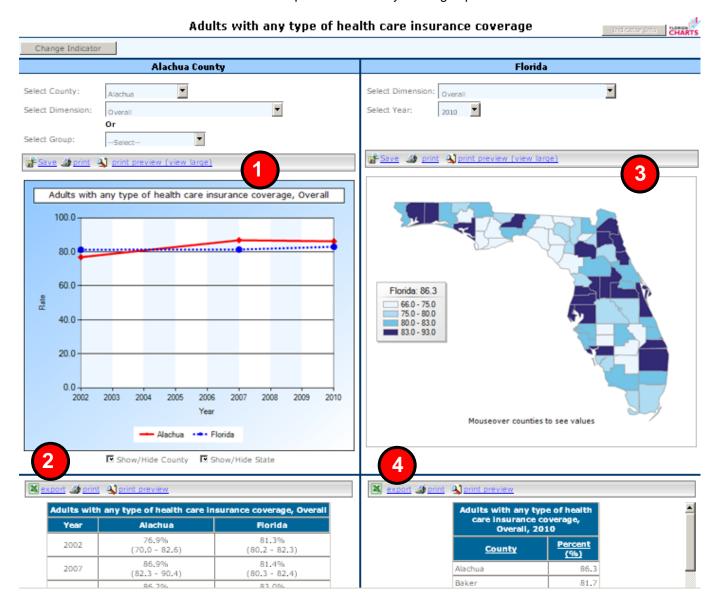
- 1. Click "County Behavioral Risk Factor Data" from the left menu under Community Tools of FloridaCHARTS.
- Select "BRFSS Category." These include health topics such as alcohol and tobacco use, diabetes, nutrition and many others.
- 3. Select "BRFSS Indicator." BRFSS indicators are the specific health-related behaviors that were asked about on the survey (for example, adults who consume less than five fruits and vegetables per day).
- 4. Click "View Report."



#### Report Features: Example: Percentage of Adults with any type of health care insurance coverage

This is an example of a BRFSS report. This report shows data for specific counties in graph and table format and for Florida in map and table format.

- 1. Data can be displayed for select counties by choosing the county from the "select county" drop down menu. The will automatically display the county data in a graph and a table on the left side of the screen. Specific dimensions OR groups can also be selected to sort the data.
- 2. Data from the tables can be exported to excel by clicking the export button.
- 3. Data for the state of Florida is displayed on the right side of the screen. Specific dimension and years can be selected from the drop down menu to sort the data. The data for Florida is displayed in the form of a map and a table. The values for each county on the map can be viewed by moussing over the county.
- 4. The data from the table can also be exported to excel by clicking export.

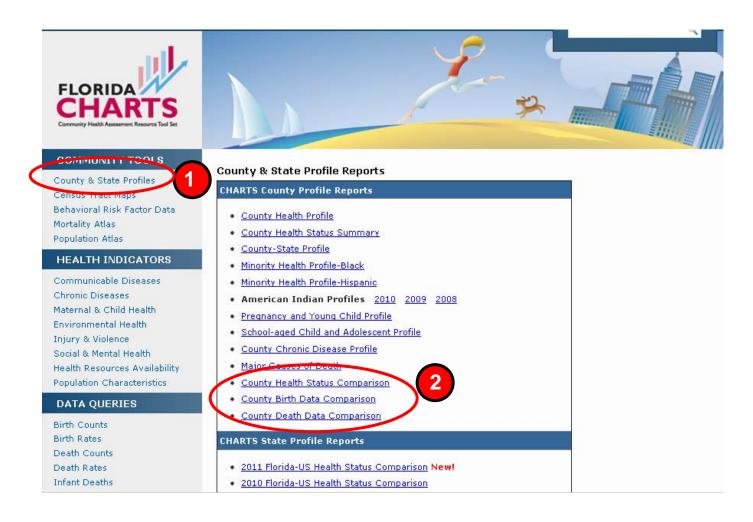


# **County Comparison Reports (Births, Deaths, Health Status)**

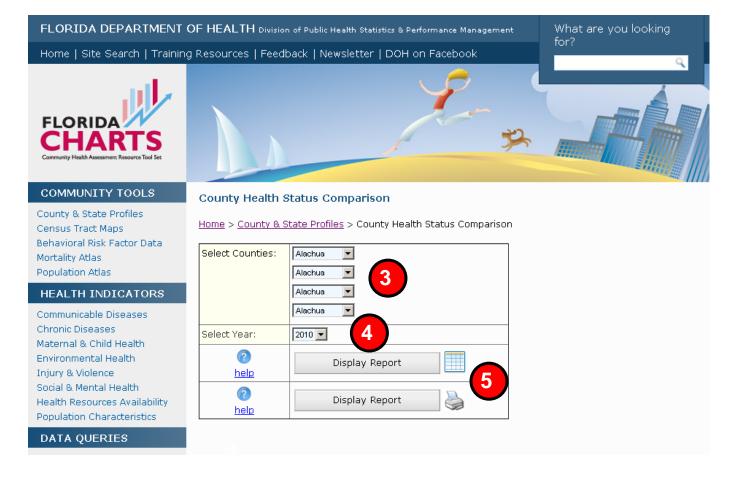
There are three comparison reports available on FloridaCHARTS, the Birth Comparison, the Death Comparison and the Health Status Comparison. Each of the reports uses selected health indicators for county-to-county and county-to-state comparisons. For each type of county comparison report, you can select four counties.

# **Generating a Report**

- 1. Begin by clicking any of the "County and State Profiles" on the left menu under Community tools of FloridaCHARTS.
- 2. Additional options will be displayed, select county health status comparison, county birth data comparison or county death data comparison.



- 3. Select the four counties that you are interested in comparing.
- 4. Select a Year: Choose data from 1970 to the most recent year available.
- 5. Choose your display type. The printable version opens in the Crystal Report Viewer.



### County Comparison Report Features: Example: Community Health Status Comparison

- 1. Select "County and State profiles" from the left menu under "Community Tools".
- 2. Select "County Health Status Comparison"
- 3. Choose the counties you would like to compare. For this example, Alachua, Baker, Bay and Bradford counties were chosen.
- 4. Select year. For this example 2010 was selected.
- 5. Click "Display Report"
- 6. The data can be exported to excel by clicking "Export to Excel" or printed by clicking "Print".
- 7. Use the "Help" feature to get online information about viewing, printing and exporting. (this is a partial report, for illustration only)

				6			
			Name : Print	Export to E	xcel 🕜 Help		
County Health Status Comparison For 2010							
· ·		-					
Heath Status Indicators	Alachua	Baker	Bay	Bradford	State		
Mid-Year Population	257,762	25,936	170,367	29,365	18,788,795		
Percent of Population Below Poverty, 2000	23.6	17	12.4	16	13.8		
Resident Live Births	2,866	350	2,207	342	214,519		
Percent of Births Under 2500 Grams	7.8	11.1	8.2	10.2	8.7		
Percent of Births Under 1500 Grams	2	2.9	1.6	.3	1.6		
Neonatal Deaths	23	2	5	0.0	929		
Infant Mortality Rate per 1,000 Live Births	10.1	11.4	3.6	0.0	6.5		
Births per 1,000 Females 10-14 (SE)	.5	0.0	.4	2.8	.5		
Births per 1,000 Females 15-19	20.5	78.5	60.6	66.8	32.8		
Percent of Repeat Births to Mothers 15-19	15	20.6	17.3	17.6	17.8		
Enteric Diseases Rate per 100,000	59	77.1	103.9	51.1	61.7		
Enteric Diseases Rate per 1,000 Children Under 6	2.4	3.6	6.9	2	3		
AIDS Cases per 100,000	14	23.1	10.6	6.8	18.4		
Chlamydia Rate per 100,000	656.8	443.4	429.1	504	397.6		
Congenital Syphilis Cases (SE)	0.0	0.0	0.0	0.0	19		
Tuberculosis Rate per 100,000	3.1	0.0	2.3	3.4	4.4		
Percent of Tuberculosis Patients Completing Therapy*	75	0.0	100	100	70.4		
Percent of Low Income Persons With Access to Preventive and Restorative Dental Care*	20.9	53.4	27.5	30.4	36.4		
Smoking Attributable Mortality Over Age 35, per 100,000	0.0	0.0	0.0	0.0	0.0		
Years of Potential Life Lost per 100,000 Under 75 Years of Age	6,300	10,752.4	9,182.3	10,065.7	7,486.1		

# **Chapter 4 Exercises**

- 1. Run a Population Estimate Report. Select white males, aged 15 to 34 for in 1995. How many white males, aged 15-34 were in Alachua County in 1995?
- 2. Run a BRFSS report for Diabetes and select the 'Adults with diagnosed diabetes'. What is the state percentage? Sort the data based on the 'Total' column. Which counties have the highest and lowest percentages?
- 3. Run a BRFSS report for overweight/obesity and select 'Adults who are overweight or obese'. Produce a county-level map of this indicator. What are the percentages for the counties surrounding Gadsden? Compared to other counties in the state, does Gadsden have a relatively higher or lower percentage?
- 4. Produce a Birth Comparison Report for Jackson, Washington, Liberty and Calhoun Counties for 2010. Compare and contrast the state and county rates in the report. Which county has the highest rate of births to mothers 15-19? How does this compare to the state rate?
- 5. Practice producing PDF and MS Excel versions of these reports. Copy the results into a Word document.

#### Responses:

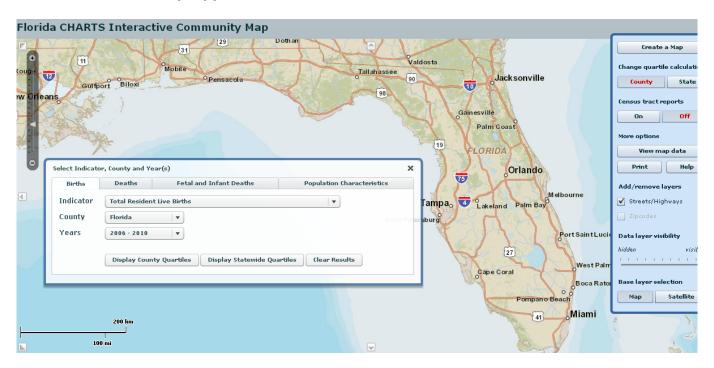
- 1. There were 32,451 white males ages 15-34 in Alachua County in 1995.
- 2. In Florida, the percent of adults who have been diagnosed with diabetes is 4.9%. The county with the greatest percent is Hardee = 16.9%. Alachua reported the lowest at 4.9%.
- 3. To view the percentages from the map, hold your mouse over the county and the numbers will be displayed. Leon 62.52%, Liberty 81.25%, Calhoun 70.85%, Jackson 72.25% In Gadsden county, 76.17% reported being obese. Looking at the map legend, observe that Gadsden County has the darkest color blue, so it is in the group of counties with the largest percent of people reporting obesity (4<sup>th</sup> quartile).
- 4. For the counties in this report selection, the highest rate of births to mothers age 15-19 is in Calhoun County with 57.4 per 1,000 births. This contrasts with the other counties: Jackson County: 42.7 per 1,000; Washington county: 45.3 per 1,000; and Liberty County: 36.4 per 1,000. Calhoun is well above the state rate of 32.8 per 1,000.

# **Chapter 5 : Census Tract Maps**

The FloridaCHARTS Census Tract Maps display an area's geography overlaid with health and socio-economic characteristics by census tract. These maps support health problem analysis and decision-making for communities conducting health assessment and improvement activities.

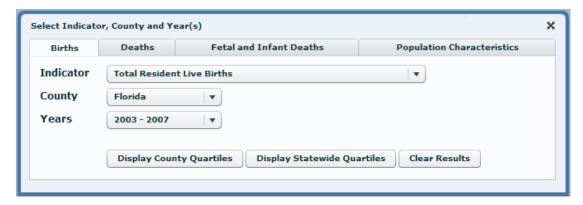
U.S. Census Bureau establishes census tracts, and the Florida Department of Health uses them to aggregate health and population data. The primary purpose of census tracts is to provide a stable set of geographic units for the presentation of decennial census data. Census tracts generally have between 1,500 and 8,000 people, with an optimum size of 4,000 people. Counties with fewer people have fewer census tracts. When first delineated, census tracts are designed to be homogeneous with respect to population characteristics, economic status, and living conditions. Census tract boundaries are intended to be maintained over many decades so that statistical comparisons can be made from decennial census to decennial census. However, physical changes in street patterns caused by highway construction, new developments, and so forth, require occasional boundary revisions. In addition, census tracts occasionally may be split due to population growth or combined as a result of substantial population decline.

# The Census Tract Map Application



The Census Tract Maps can be reached by the "Census tract maps" in the left hand menu under "Community Tools". The maps provide public health and census data at the census tract level, dating back to 1995. To ensure the majority of census tracts have enough data, the application uses five-year periods of data summed together. When the application first opens, the map will show the state of Florida, a select indicator window and a map toolbox. The select indicator window will open by default and is where users will query the data. The map window contains the current level of geography and includes a zoom bar to change the area contained within the window. The map toolbox contains other functions and controls for controlling the map and exporting data. The map also provides a legend once the user constructs a query.

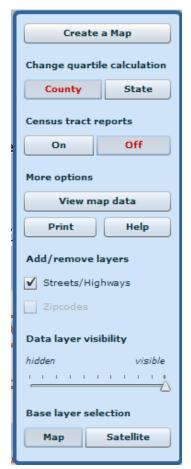
#### **Select Indicator Window**



The select indicator window is the most important component of the census tract maps. The window contains tabs across the top for each of the available subject areas. Each tab requires that you select a level of geography, time period, indicator and a level of analysis. Choosing "display county quartiles" will calculate the values using only your county's census tracts and data. Selecting "display statewide quartiles" will compute the values using all census tracts in the state.

Once you have made these selections, click the display results button. After the results have been displayed, you may clear the map by clicking the "clear results" button. If you want to move the query window around the screen, click the top title bar and drag the window to a new position. You may also close this window at any time using the "x" in the top right-hand corner. To open the window again, click "select indicator" in the map toolbox. While this window is open, you may zoom to specific counties by selecting them in the county pull-down menu.

#### Map toolbox



This component contains additional functionality for the application.

Create a map – this button opens up the select indicator window.

**Change quartile calculation** – selecting the "county" button will calculate the quartiles based on only the selected county's census tracts. Selecting the "state" button will calculate the quartiles based on all 3,154 census tracts using 2000 U.S. Census data or 4,245 census tracts using 2010 U.S. Census data.

Census tract reports – These buttons activate the census data reports for census tracts. As a default, these reports are off. After selecting "on," you can click on a census tract in the map to view a summary of data from the 2000 or 2010 U.S. Census. While navigating around the map, we recommend leaving these reports off. View map data – After you have selected an indicator and displayed the data, click this button to see your data displayed in a table. If you selected a single county, you see only that county's census tracts and values displayed. If you selected "statewide" for your geography, you will see all census tracts for the state. Use the

You may also print or export the results from the table window. **Print** – Clicking this button will open a print dialog where you may select your print size and format. We recommend "landscape" as the print format.

pull down menu in the window to see the same indicator data for a different county.

**Help** – This button will open a new window describing the application, its features, and how to use each feature. You may print or save this PDF document for future reference.

**Add or remove layers** – this selection contains additional features that may be turned on and off. The ability to select and view these layers depends on your zoom level

**Data layer visibility** – once you have selected an indicator and displayed the census tract data, the transparency slider will control the visibility of the thematic data. You may click and drag the slider or simply click on a desired level.

**Base layer selection** – these two buttons will toggle between a road map view and a satellite imagery view. The results of all queries will be visible in either view.

**Legend** – the legend displays the color scheme shown on the map with its corresponding ranges and values. This legend will appear after you have displayed results from the "select indicator" window. The legend will also indicate whether you have selected county results or statewide results. The default classification for this application is quartiles, however in some instances you may see fewer classes based on smaller geographies or less data variation.

**Identify (mouse hover function)** – After querying the data, you may find out the values for individual census tracts within the selected county. Simply place your cursor on the census tract of interest and a small window will appear showing information specific to the tract you selected.

• **Note:** Pop-up blockers may affect mapping functions and should be disabled before launching the maps on FloridaCHARTS. A video display set on 1024 x 768 will provide the best view of maps without scrolling. (Right click on Desktop > Properties > Settings > Screen resolution)

### **Navigation**

**Pan** – There are four methods to move the map within the window:

- 1. Left click & drag re-centers the map to the position where you release the mouse button.
- 2. Arrow icons around the edges of the map you will see small arrow icons that that will move the view in the selected direction.
- 3. Keyboard use the four arrow keys or disable number lock on your keypad and use all numbers except 5 to move the map.
- 4. SHIFT & click holding down SHIFT while clicking once re-centers the map to the position of the mouse cursor at the time of click.

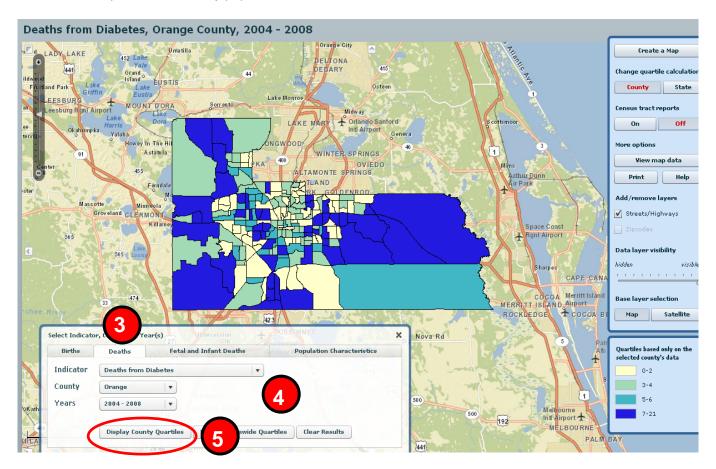
**Zoom** – There are four different methods for zooming in and out on the map:

- 1. Scroll wheel scroll forward to zoom in at the cursor location, scroll backward to zoom out.
- 2. Shift & drag press SHIFT & the left mouse button while dragging will select an area for zoom- in.
- 3. Zoom slider This tool is located in the top left corner of the window. Clicking on the "+" icon zooms in, to zoom out click the "-" icon.
- 4. Keyboard use the "+" key to zoom in at center of map -or the "-" key to zoom out.

#### **Thematic Maps Display Health Indicator Information**

Beginning at the FloridaCHARTS homepage, follow these steps to launch a thematic map. For this example, we will view diabetes deaths in Wakulla County.

- 1. Click "Census Tract Maps" in the upper left menu under Community Tools.
- 2. When the map appears, you can choose the tab for "births", "deaths", "fetal and infant deaths" or "population characteristics" in the select indicator window.
- 3. For this example, we will select the "deaths" tab.
- 4. In the drop down menu for "indicator", select the indicator you want to get data for. For this example, we will select "Death from Diabetes". You can then select the county and years. For this example we will select "Orange" as the county, and select the years "2004-2008".
- Click "Display County Quartiles"
- 6. The map will automatically populate.



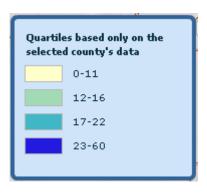
# **Special Features of Census Tract Maps**



Clicking "View Map Table" in the map toolbox will display the health indicator information currently being viewed in table format. If you have calculated county quartiles, the table contains a list of all census tracts in a county, sorted by census tract key. If you have calculated statewide quartiles, the table contains a listing of all 3,154 census tracts for 2000 U.S. Census data (or 4,245 census tracts for 2010 U.S. Census data) in Florida sorted by tract key. The table includes the following elements per the above example.

## Legend

The legend includes the data ranges and corresponding colors for the census tracts. The legend will also state which calculation method was used for the map.



# **Census tract reports**



The interactive community maps also provide census data reports for all census tracts in Florida. The control for the census data reports is located in the map toolbox. By default, the census tract report is set to "off." When you turn the control on, you can click on any census tract in the map and receive a compilation of 2000 or 2010 U.S. Census data. A small square grid next to the pointer will indicate when this feature is "on". The report contains demographic and socioeconomic data for the census tract, its county and Florida. Similar to other products, you can print or export and there is a help link should you need assistance.

		🍃 <u>Print</u> 💌	Export ? Help				
<b>2000 US Census Data</b> Orange County, Florida Census Tract 167.19							
Indicator	Tract Value	County Value	State Value				
General Characteristics							
Total population	24,506	896,344	15,982,378				
Male population	12,054	442,441	7,797,715				
Female population	12,452	453,903	8,184,663				
Population under 5	2,080	61,057	945,823				
Population over 18	17,352	670,765	12,336,038				
Population 65 and over	1,207	89,985	2,807,597				
Median age	34.0	35.5	38.7				
Race and Ethnicity							
Percent White alone	78.3%	68.7%	78.0%				
Percent Black or African American alone	6.4%	18.0%	14.6%				
Percent Hispanic or Latino (all races)	20.8%	18.8%	16.8%				
Social and Housing Characteristics							
Percent of population over 25 without high school diploma	9.1%	18.2%	20.0%				
Unemployment rate	4.0%	5.0%	5.6%				
Population that is linguistically isolated	3.9%	5.7%	5.9%				
Percent of housing units owner-occupied	75.3%	60.7%	70.0%				
Percent of housing units renter-occupied	24.7%	39.3%	30.0%				
Economic Characteristics							
Median household income	\$58,909	\$41,311	\$38,819				
Percent of population below poverty level	5.4%	12.1%	12.5%				
Median value for owner-occupied housing	\$144,000	\$107,500	\$105,500				

# **Chapter 5 Practice Exercises**

- 1. Produce a thematic map of Leon County's Low Birth Weight Birth Frequencies from the years 2004 to 2008. Practice printing and copy/pasting into a Word document.
  - a) Select a Birth Indicator from the Select Indicator window. Then select "percent of births under 2500 grams (low birth weight)" from the indicator drop down menu.
  - b) Select Leon County, and Year: 2004 to 2008, from the county and years drop down menus
  - c) Click Display County Quartiles
  - d) Click "print" in the map toolbox
- 2. Use the Census Tract Maps to locate three census tracts in your county. Use the map's zoom and pan features to view the census tract. Use the Census tract reports tool to get reports about these census tracts. Do the demographic profiles match your view of the population in those areas?
  - a) Select an Indicator from the Select Indicator, County and Years window.
  - b) Use the zoom slider or "shift+click and drag" too zoom into an area with high values
  - c) Turn on the census data reports. Click on the census tract you have been investigating. Does the census data reveal any clues about the value for the indicator?
- 3. Practice using the map tools to investigate results from your data requests.
  - a) Select the Births tab, "total resident live births" for Miami-Dade County and 2004-08 as the year.
  - b) Select display County Quartiles and use the zoom tool and mouse-over to find tract 48 (tract key: 12086004800).
  - c) Notice the number of births in comparison to the surrounding tracts.



- d) Use the Data Layer Visibility slider to increase the transparency of the data layer.
- e) Why does it appear that there are so few births in comparison?

# **Chapter 6: Statistical Guide**

This chapter will explain how the various rates displayed on FloridaCHARTS are calculated and how to interpret the results. These rates include crude, age-adjusted and years of potential life lost. Also explained are confidence intervals used with the Behavioral Risk Factor Surveillance Survey data.

# **Learning Objectives**

- A. Understand types of rates, confidence intervals, quartiles, and population information.
- B. Understand the sources of data in FloridaCHARTS
- C. Recommend best report types for counties with small populations or health events with small numbers.
- D. Locate the FloridaCHARTS statistical guide.

#### Rates

A rate consists of a numerator and a denominator. The two numbers are divided, then multiplied by a constant. For example, multiplying by 100,000 to provide the number of events per 100,000 population.

The **numerator** is the **number** of health events. This is often the same as the number of people who experience an event, but for some health conditions, one person may experience the event more than once. For example, one individual may have multiple hospitalizations for the same condition in a given year.

To measure incidence or prevalence of the condition, you usually want to count people. To measure the public health burden, you may want to count events. Actions based on the data may be different depending on whether the rate represents many individuals with only one event or a smaller number of individuals who have had many events.

It is customary to count only events that occur among the population at risk.

The **denominator** is also known as the population at risk. Everyone in the population at risk must be eligible to be counted in the denominator if they have the event of interest. For example, in looking at female breast cancer, we cannot include men in the population at risk, because men with breast cancer would not be included in the numerator.

Once the numerator and denominator are established, how do we decide which rate is the most appropriate to use?

#### Rates commonly used in public health assessment

Much of community health assessment involves describing the health status of a defined community by looking at changes in the community over time, by comparing health events in that community to events occurring in other communities, or comparing the community to the state as a whole. In making these comparisons, we need to account for the fact that the number of health events depends in part on the number of people in the community. To account for growth in a community or to compare communities of different sizes, we usually develop rates to provide the number of events per population unit.

Also, the frequency with which health events occur is almost always related to age. For example, acute respiratory infections are more common in children of school age because of their immunologic susceptibility and exposure to other children in schools. Chronic conditions, such as arthritis and atherosclerosis, occur more frequently in older adults because of a variety of physiologic consequences of aging. Mortality tends to increase after the age of 40. In fact, the relationship of age to risk often dwarfs other important risk factors. Because the relationship of age to risk is often resistant or impervious to interventions, analysts often remove the effects of differences in age structure when comparing rates across populations by calculating age-adjusted and age-specific rates.

#### 1. Crude rates

A crude rate is calculated by dividing the total number of events in a specified time period by the total number of individuals in the population who are at risk for these events and multiplying by a constant, such as 1,000 or 100,000 [e.g., (numerator/denominator) x constant].

Crude rates are recommended when a summary measure is needed and it is not necessary or desirable to adjust for other factors. For example, rates of infectious diseases, such as tuberculosis and hepatitis, are usually not age adjusted, because public health officials are interested in the overall burden of disease in the total population regardless of age.

**Example:** The total crude death rate in Orange County for 2002 is the number of total deaths in Orange County (numerator) divided by the population of Orange County in 2002 (denominator). The result of this calculation is multiplied by 100,000 (constant) to arrive at the 2002 crude death rate per 100,000 population for Orange County.

(6,469 (total deaths) / 962,531 (total population)) X 100,000 = 672.1 deaths per 100,000 population

#### 2. Age-adjusted rates

Adjusted rates are used when comparing rates of health events affected by confounding factors. They are used when comparing different populations or for comparing trends in a given population over time. Because the occurrence of many health conditions is related to age, the most common adjustment for public health data is age-adjustment.

The age-adjustment process removes differences in the age composition of two or more populations to allow comparisons between these populations independent of their age structure. For example, a county's age-adjusted death rate is the weighted average of the age-specific death rates observed in that county, with the weights derived from the age distribution in an external population standard, such as the U.S. population. Different standard populations have different age distributions and the choice will affect the resulting age-adjusted rate. If the age-adjusted rates for different counties are calculated with the same weights (i.e., using the same population standard), the effect of any differences in the counties' age distributions is removed.

In the past, the National Center for Health Statistics (NCHS) age-adjusted rates using the US 1940 standard population. Other agencies used the US 1970 Standard. Beginning with 1999 data, federal agencies began age-adjusting to the US 2000 Standard Population.

Age-adjusted rates should be presented when a single, summary measure is needed, but data analysts should inspect age-specific rates first.

**Example: Age-Adjusted Death Rate (AADR)** This is the standard 2000 US population proportion which FloridaCHARTS uses to calculate AADRs.

To calculate the Age-Adjusted Death Rate, follow these steps:

- 1. Calculate the death rates per 100,000 for each age group.
- 2. Multiply this rate by the 2000 Population proportion.
- 3. Sum values for all age groups to arrive at the Age-Adjusted Death Rate.

Age	2000 Proportion
0-14 years	0.021470
15 - 24 years	0.138646
25 - 34 years	0.135573
35 - 44 years	0.162613
45 - 54 years	0.134834
55 - 64 years	0.087247
65 - 74 years	0.066037
75 - 84 years	0.044842
85 and over	0.015508
All ages	1.000000

Age Groups	Deaths	Population	Crude Rate Per 100,000	Population Proportion (2000)	Age-Specific Rate
0-14	62	1,950,000	3.2	0.021470	0.68704
15-24	82	1,210,000	6.8	0.138646	0.9427928
25-34	303	1,480,000	20.9	0.135573	2.8334757
35-44	686	1,400,000	49	0.162613	7.968037
45-54	1,630	1,020,000	159.8	0.134834	21.5464732
55-64	3,457	730,000	475.9	0.087247	41.5208473
65-74	6,352	580,000	1,093.4	0.066037	72.2048558
75-84	5,443	290,000	1,878.3	0.044842	84.2267286
85 +	2,050	70,000	2,841.5	0.015508	44.065982
All Ages	20,065	8,730,000	229.8	1.000000	276.0

# Some Considerations about Age-Adjusted Rates

**Age-adjusted rates are recalculated measurements**. Therefore they cannot be compared with other types of rates or be used to calculate the actual number of events. Age-adjusted rates answer the question: "What **would the rate be** if a county had the same age structure as the 2000 US population?"

**Age-adjusted rates may mask important trends**. For instance, while recent trends in cancer mortality show decreasing death rates for people under 24 and increasing rates for people over 65, the age-adjusted rates changed very little.

Age-adjusted rates can over- or under-estimate differences. For instance, when age-specific rates of the populations being compared do not show a consistent relationship (i.e., the trend is not in the same direction for all age-specific rates or the ratio of age-specific rates is different for different age groups), the relationship of age-adjusted rates can vary with the choice of a standard population. If the pattern is not consistent, the use of age-specific rates, rather than age-adjusted rates, is recommended.

When the number of events is relatively small, the age-specific rates needed to calculate an age-adjusted rate by the direct method are unstable. This may result in unstable age-adjusted rates when using the direct method of age-adjustment. Additionally, since the age-adjusted rate calculated by the direct method provides a somewhat arbitrary summary statistic that depends on the choice of a standard, it may not provide the best summary measure in explaining health status to communities. An alternative approach is the development of ratios developed using indirect adjustment.

#### 3. Age-specific rates

Because age-adjusted rates can mask important trends or over- or under-estimate differences, age-specific rates are used for comparing age-defined subgroups when rates are strongly age-dependent. Age-specific rates are also used when specific causal or protective factors or the prevalence of risk exposures are different at different ages. For example, at highest risk for head injury are males 15-24 years of age (related to motor vehicle occupant injuries) and those 75 or older (mainly due to falls). Restricting the age range in the development of a rate is sometimes called an age-limited rate.

#### 4. Years of Potential Life Lost (YPLL)

YPLL is an estimate of **premature mortality** that has been defined as the number of years of life lost among persons who die before a predetermined age. In the case of FloridaCHARTS, that age is 75. This YPLL rate is calculated in the following manner:

- 1. Calculate 75 age at death for all deaths that occurred for a specific cause in a certain county
- 2. Add the results of this calculation and calculate a rate per 100,000 population.

NOTE: Deaths that occur at age 75 or greater are excluded from this calculation.

#### 5. Multi-year rates

Rates based on small numbers of events can fluctuate widely from year to year for reasons other than a true change in the underlying frequency of occurrence of the event. This is especially true in counties with small populations. To alleviate this problem, a multi-year rate should be used instead of a single-year rate.

A multi-year rate combines several years of data in a single rate. On FloridaCHARTS, the multi-year rate available is a 3-year rate. This is calculated by 1) Adding three years of numerators and dividing the result by three, 2) Adding three years of denominators and dividing the result by three, 3) Dividing the numerator by the denominator and multiplying by a constant (1,000 or 100,000).

Example: 3-Year Rate

Total Deaths in Orange County					
Year	Number of Deaths				
2000	6,292				
2001	6,384				
2002	6,469				

3-Year rate: 19,145/3 = 6,381

#### **Total Population in Orange County**

Year	Population
2000	906,000
2001	936,749
2002	962,531

3-Year Average: 2,805,280 / 3 = **935.093** 

3-Year Rate:  $(6,381 / 935,093) \times 100,000 = 682.4$  deaths per 100,000 population

# **Confidence Intervals with Survey Data**

A confidence interval is a range around a measurement that conveys how precise the measurement is. For most chronic disease and injury programs, the measurement in question is a proportion or a rate (the percent of Floridians who exercise regularly or the lung cancer incidence rate). Confidence intervals are often seen on the news when the results of polls are released.

**Example**: A survey showed that 30% of adults eat five or more fruits and vegetables each day. This survey had a margin of error of plus or minus 3.5 percentage points.

Although it is not stated, the margin of error presented here was probably the 95 percent confidence interval. In the simplest terms, this means that there is a 95 percent chance that between 26.5 percent and 33.5 percent of adults actually eat five or more fruits and vegetables each day (30 percent plus or minus 3.5 percent). Conversely, there is only a 5 percent chance that fewer than 26.5 percent or more than 33.5 percent eat five or more fruits and vegetables per day.

The precise statistical definition of the 95 percent confidence interval is that if the survey were conducted 100 times, 95 times the percent of respondents would answer within the calculated confidence intervals and five times the percent would be either higher or lower than the range of the confidence intervals.

The confidence interval tells you more than just the possible range around the estimate. It also tells you about how stable the estimate is. A stable estimate is one that would be close to the same value if the survey were repeated. Wider confidence intervals in relation to the estimate itself indicate instability. For example, if 5 percent of voters are undecided, but the margin of error of your survey is plus or minus 3.5 percent, then the estimate is relatively unstable. In one sample, you might have 2 percent say they are undecided, and in the next sample, 8 percent are undecided. This is four times more undecided, but both values are still within the margin of error of the initial survey sample.

When comparing health data using confidence intervals, understanding if there is a significant difference is an important distinction. If using the calculated data range with confidence intervals includes the range of the comparison data, it cannot be assumed that there is a significant difference between the two.

# **Quartiles**

Quartile calculations are used throughout FloridaCHARTS. You can find them on the County Health Profile Report and on the various mapping applications. This measure allows you to see where a particular county ranks within the distribution of all counties for a particular indicator. Quartiles are calculated this way:

- 1. Data for all 67 counties (or 3,154 census tracts) for an indicator (i.e. Diabetes death rate) are ranked from lowest to highest rate.
- The counties are then divided into four (4) groups of equal size and each group is assigned a number. Ones represent lower rates while fours represent higher rates. On a map, the ones are shaded light blue whereas the fours are shaded dark blue. Note that census tract level maps of vital statistics data display only event frequencies, not rates.

#### **Map Legend Limits**

The legend limits are defined as an average between the highest value in the first classes and the lowest value in the following class.

#### Example:

Highest Class One Value = 25.9 Lowest Class Two Value = 30.2 Class One Upper Limit = (25.9+30.2)/2 = 28.1 Class Two Lower Limit = 28.1+0.1 = 28.2

An example using the 67 county values are ordered low to high and an equal number (17) are allocated to each class, except that the last category usually has 16. When there are ties at the bounds of any class the tie values go into the lower class. Thus, for example, when there are 35 counties with zero values, then the first class will have 35 zeroes. The lower bound of the first class and the upper bound of the last class will always be the exact value. In most cases, the bounds between classes are calculated to be points approximately half way between the actual class values and the upper bound of the first class will be one tenth (.1) less than the lower bound of the second class. Exceptions to this occurs when the difference between actual values of classes is less than four tenths (.4) or all values in a class are equal. When all values in a class are equal or there is only one value for the class, only one value is printed in the legend for that class. All values are rounded to tenths. The State value is the actual value rounded to tenths.

#### **Classing Frequencies Notes**

The mapping of certain health indicators at the census tract level can be deceiving. The user must use caution when making inferences using maps where the data are not shown as a ratio or a portion.

In the case of death frequencies, the number of occurrences are rank ordered and classed the same as any census indicator. Since the specific death frequencies have not been normalized by the population at risk, normalized by number the of total deaths, age adjusted, or converted to a rate per 1,000 the assumption cannot be made that a census tract has a better or worse health status than another census tract.

# FloridaCHARTS Report Types

There are several report types used in the Health Indicators section of FloridaCHARTS. These reports are explained below.

#### 3-Year Discrete Rate

This report displays three discrete 3-year averaged rates. Discrete means the periods DO NOT overlap. For example, if you chose 2002 as the report year selection, the 3-Year discrete report would display data for the following periods: 1994-96, 1997-1999 and 2000-02.

#### 3-Year Rolling Rate

This report displays three rolling 3-year averaged rates. Rolling means the periods DO overlap. For example, if you chose 2002 as the report year selection, the 3-Year rolling report would display data for the following periods: 1998-2000, 1999-2001 and 2000-02.

#### 3 Single-Year Rates

This report displays three single year rates. For example, if you chose 2002 as the report year selection, the 3 single-year report would display data for the following periods: 2000, 2001 and 2002.

#### 10-Year Rates

This report displays 10 single-year rates. For example, if you chose 2002 as the report year selection, the 10 single-year rates report would display data for the following period: 1993-2002.

#### 10-Year Counts

This report displays 10 single-year counts (numerator only). For example, if you chose 2002 as the report year selection, the 10 single-year counts report would display data for the following period: 1993-2002.

#### All Death Rates (mortality only)

This report displays crude, Age-Adjusted and Years Potential Life Lost rates for the year selected.

#### FloridaCHARTS Data Sources

FloridaCHARTS contains data from a wide variety of sources. These include: the Florida Department of Health, the Florida Agency for Health Care Administration (AHCA), and the Florida Department of Law Enforcement (FDLE). Below is a list of all data sources used in FloridaCHARTS.com.

- 1) Births, Deaths and Fetal Deaths Florida Department of Health, Office of Vital Statistics
- Population estimates and socioeconomic data US Census Bureau and Florida Executive Office of the Governor
- 3) Behavioral Risk Factors Florida's Behavioral Risk Factor Surveillance Survey, Florida Department of Health, Division of Disease Control
- 4) Hospital discharges, hospital and nursing home beds Agency for Health Care Administration
- 5) Crime and Domestic Violence data Florida Department of Law Enforcement
- 7) Alcohol-related motor vehicle crash data Department of Highway Safety and Motor Vehicles
- 8) Licensed health professional data Florida Department of Health, Division of Medical Quality Assurance
- 9) Reportable communicable diseases Florida Department of Health, Division of Disease Control
- 10) Facilities health inspection data Florida Department of Health, Division of Environmental Health
- 11) Cancer Incidence data University of Miami (FL) Medical School, Florida Cancer Data System

# Locating this Guide on FloridaCHARTS

This guide can be found by clicking on "user guide" in the upper right hand corner of the FloridaCHARTS home page.

# **Chapter 6 Practice Exercises**

1.	In a rate calculation, the number of health events is th	e
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- 2. In a rate calculation, the population at risk is the \_\_\_\_\_\_.
- 3. Why are rates important in public health?
- 4. Describe a crude rate?
- 5. Calculate the crude death rate per 100,000 population given the following data:

Number of deaths: 1,962 Population at risk: 249,658

- 6. What is the purpose of an age-adjusted rate?
- 7. Why is a multi-year rate useful?
- 8. What is a YPLL (Years of Potential Life Lost) rate an indicator of?
- 9. A confidence interval is analogous to the \_\_\_\_\_\_ in a poll.
- 10. In a quartile calculation, which number represents the highest values?

## Responses:

- 1. Numerator
- 2. Denominator
- 3. Rates allow you to observe the impact of a health condition in a particular population and also allow you to compare areas of different population sizes.
- 4. A rate which measures the relative risk in a population and is not adjusted for other factors (i.e. age).
- 5. 785.9
- 6. The age-adjustment process removes differences in the age composition of two or more populations to allow comparisons between these populations independent of their age structure.
- 7. Multi-year rates are useful when analyzing data from areas with relatively small numbers of health events.
- 8. Premature mortality
- 9. Margin of error
- 10. 4