Health Indicators Warehouse: Web Access to Population Health Indicators

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Objectives

By the end of today's workshop, you should:

- Understand the website's general benefits and limitations
- Know how to navigate to and through the Health Indicators Warehouse website
- Be able to locate indicators of interest
- Be able to download indicator data

Definition: HEALTH INDICATOR

- > A measurable characteristic that describes:
 - the health of a population (e.g., life expectancy, mortality, disease incidence or prevalence, or other health states);
 - determinants of health (e.g., health behaviors, health risk factors, physical environments, and socioeconomic environments);
 - health care access, cost, quality, and use
- Depending on the measure, a health indicator may be defined for a specific population, place, political jurisdiction, or geographic area

Emerging Health Data Trends & Issues

- Many data sources, old and new
 - Surveys (national, state, local), government/administrative records, Electronic Health Records, Health Information Exchange
 - Varying degrees of rigor and compatibility

Emerging Health Data Trends & Issues Continued

- Growing demand for more and better community-level measures of health and health determinants: HEALTH INDICATORS
 - Census, vital statistics, state-collected surveillance data, Behavioral Risk Factor Surveillance Survey (BRFSS) data
 - Small sample survey sizes; large standard errors; limited subgroup information; comparability issues

What is the Health Indicators Warehouse (HIW)?

- Contains preconstructed national, state, and county level indicators
 - no individual-level data
- Allows users to map, chart, tabulate, and download indicators
- Provides links from indicators to evidence-based interventions

HIW origins: Community Health Data Initiative

Objectives:

- Enhance understanding of health and health care system performance in communities
- Spark and facilitate action to improve performance and value

HIW origins: Community Health Data Initiative Continued

> Approach

- Catalyze evolving network of community health data suppliers, application developers, and end users
- Recruit early adopters across an array of potential uses
- Increase awareness of community performance to facilitate and inform actions
- ➤ HIW is a flagship initiative in the HHS Open Government Plan

Development

- > Design, development, pilot, release
 - From mid 2009 to early 2011
 - First public release: 02/2011
- Collaboration and contributions partners
 - ASA; ASFR; ASPE; HRSA; OAH; OBSSR; OMH; SAMHSA
- Current monthly usage stats
 - July 2015: 8166 Users
 - January-July 2015 average: 9967 Users

Key features and functions

Structured database of high quality, curated data and metadata-national, state, and local level indicator data

- Ability to graph and map data (if data permit)
- Many indicators are linked to evidence-based interventions

Key features and functions Continued

- Accessible user interface for rapidly locating data and browsing indicators
- API / web services making the database open and machine readable

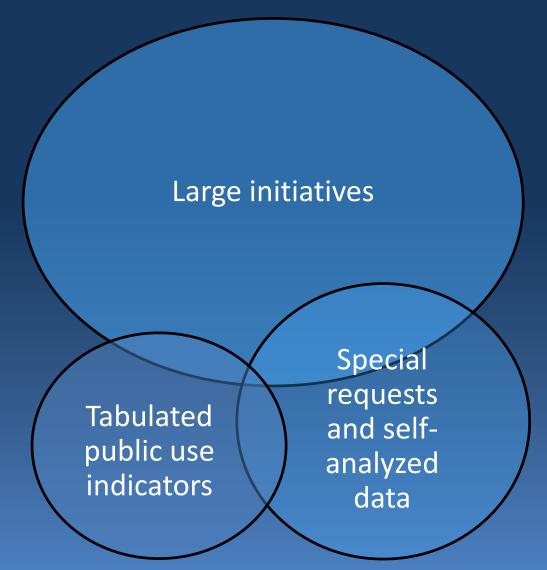
HIW benefits

- Allows developers and users to examine, select and download indicator data and metadata either through the interface (in Excel or CSV) or through web services
- Descriptions of methodology and data sources helps users understand strengths and weaknesses of indicators
- Represents a response to OMB M-13-13

HIW benefits Continued

- Facilitates the process of comparing or harmonizing across sources and methodologies
- Links to original data sources encourages users to obtain more information from the original source
- "One stop shopping"; indicators on many topics can be located in one place, rather than requiring users to go to multiple sites or systems

Indicator suppliers



About the data

- Over 1,200 indicators
- Over 180 data sources
 - Federal: Census data, CMS, Other HHS, ED, Agriculture and other Federal Surveys, Surveillance Data, Medicare Administrative Data, EPA modeled data
 - State: BRFSS, Surveillance System Data
 - Trade Associations: AMA, AHA, other health professions data
 - NGOs: ASTHO, NACCHO, other member surveys

About the data Continued

- Representing 5 Initiatives/Programs
 - CMS Community Utilization & Quality Indicators
 - Community Health Status Indicators
 - County Health Rankings
 - Health, United States
 - Healthy People

Selected metadata fields

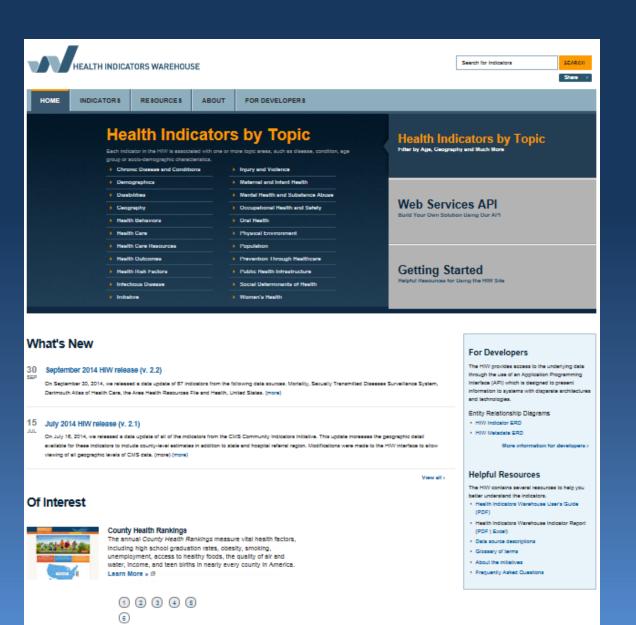
- Indicator Number
- Topic Area(s)
- Short Description
- Keyword List
- Full Description
- Methodology Notes
- Value Label
- Caveats and Limitations
- Initiative

- Trend Issues
- Numerator Description
- References
- Numerator Data Source
- More Info Text
- Denominator Description
- Intervention(s) Text
- Denominator Data Source

Demonstration

www.healthindicators.gov

Homepage



Exercise 1

> Find the User's Guide

Overview of Homepage

- Getting Started
 - Indicators
 - Indicator Report
 - Resources
 - User's Guide
 - Glossary
 - FAQ

Glossary

HOME	INDICATORS	RESOURCES	ABOUT	FOR DEVELOPERS					
Reso	urces								
Initiatives	Data Sources	Glossary FAQ	Additional I	Resources					
			•						
Glos	sary								
16	e the drop-down below if y	ou already know which t	erm you're looking						
Jump To:				~	Questions about the HIW?				
					For more information about the purpose of the HIW, the data that it contains or how to access the				
 D-1		data, please visit the Frequently Asked Questions.							
Data n	ot collected, not analyzed,	Visit the Frequently Asked Questions >							
Α					Indicator Benert				
Age a	djustment	Indicator Report							
Age a	djustment is used to con	To view a list of all of the indicators in the warehouse, please see our Health Indicators							
	ed rates are computed b	Warehouse Indicator Report							
CAST 10.	eliminate differences in observed rates that result from age differences in population composition. Age-adjusted rates should be viewed as relative indexes rather than actual measures of risk.								
120000011111111	United States, 2013, Appe								
A total a total									
1000	Ambulatory surgical center A place other than a hospital that does outpatient surgery. At an ambulatory (in and out) surgery center, you may stay for only a few hours or for one night.								
100000000000000000000000000000000000000	ov Glossary	does outpatient surgery.	ric arramountory	in and only surgery center, you may stay to only a tew nodes or for one night.					
В									
	Basic actions difficulty								
	Basic actions difficulty captures limitations or difficulties in movement, emotional, sensory, or cognitive functioning associated with a health problem. Persons with more than one of these difficulties are counted only once in the estimates. The full range of functional areas cannot be assessed on the								
60000000000000000000000000000000000000	basis of National Health Interview Survey (NHIS) questions; however, the available questions can identify difficulty in the following core areas of								
function				,					
			na consultation and a second	Land to the state of the state					



Initiatives Data Sources Glossary FAQ Additional Resources

FAQ

Warehouse Description

Q. How should the Health Indicators Warehouse be cited?

A. The suggested citation is: Centers for Disease Control and Prevention. National Center for Health Statistics. Health Indicators Warehouse, www.healthindicators.gov. [Date of access].

Q. What is the Health Indicators Warehouse?

A. The Health Indicators Warehouse (HIW) is a user-friendly web-accessible database of pre-tabulated national, state, and local health indicators, reflecting multiple dimensions of population health, health care, and health determinants. The HIW also contains supporting descriptive data to facilitate understanding and appropriate use of the indicators, as well as links to evidence-based interventions.

Q. What data does the Warehouse contain?

A. The HIW includes indicators from:

- · RWJF/UWPHI County Health Rankings (CHR);
- · Community Health Status Indicators (CHSI);
- · Healthy People 2020;
- · Centers for Medicare & Medicaid Services (CMS) indicators (a set of community-level, Medicare utilization, sociodemographic, patient safety and quality indicators);
- · Health, United States
- · Additional indicators as determined by the HHS Interagency Governance Group

All indicators in the CHSI and County Health Rankings are at the county level, Additional indicators are being added periodically.

Q. How can I access the indicator data in the Warehouse?

A. There are two major ways to access the indicator data: you can to go to the HIW website and select topic areas and specific indicators to display or print as tables, charts, or maps (when possible) OR you may download the indicator data into a spreadsheet for use in your own application. Business services are also available so that indicator data and metadata can be exposed and directly accessed by other computing systems.

Q. Does the HIW include individual level data, such as data on individual survey respondents, Medicare enrollees, health care providers, etc.?

A. No, the warehouse does not contain any individual level data. The warehouse is designed to provide summary health indicator data at a variety of geographic levels and for different populations. The indicators are constructed from individual-level data obtained from other governmental and private initiatives, and are presented at an aggregate level.

Q. What if I want to get access to the underlying data from which you created the indicators?

A. The warehouse provides users with details on the data sources for every indicator. Users can apply to those agencies and organizations through their standard approaches for requesting data access. Many micro-data sets are also available on Health.Data.gov Health Data Community.

Q. Will the warehouse include Medicare data sets like Hospital Compare?

HIW User Guide

As a user of the HIW site you can quickly access information related to health indicators through multiple specific methods. On the homepage you can navigate around to find indicators by topic area, geographic location, the initiative behind the data or by simply searching. Other items on the page will let you view information about the Health Indicators Warehouse, about the data utilized to build this site and other important information. The User Guide will help you become accustomed to using the site and it's rich feature set.

Health Indicators Warehouse User's Guide (PDF) - 933 KB

Propose an Indicator

We're interested in hearing about possible additions to the HIW. Let us know if there are specific indicators you would like us to consider including in future updates. Follow the link below for more information on the process and criteria we're using for reviewing proposed indicators.

Propose an indicator >

For Developers

The HIW provides access to the underlying data through the use of an Application Programming Interface (API) which is designed to present information to systems with disparate architectures and technologies.

Entity Relationship Diagrams

- HIW Indicator ERD (PDF) 189 KB
- HIW Metadata ERD (PDF) 190 KB

Overview of Homepage Continued

> Helpful Resources

- User's Guide
- Health Indicators Warehouse Indicator Report
- Data source descriptions
- Glossary of terms
- About the initiatives
- Frequently Asked Questions

Of Interest Sections

- Of Interest Sections
 - Contains Information on related websites and organizations that have used data off of HIW
- HIW recognized as a Health Data All-Star by Health Data Consortium

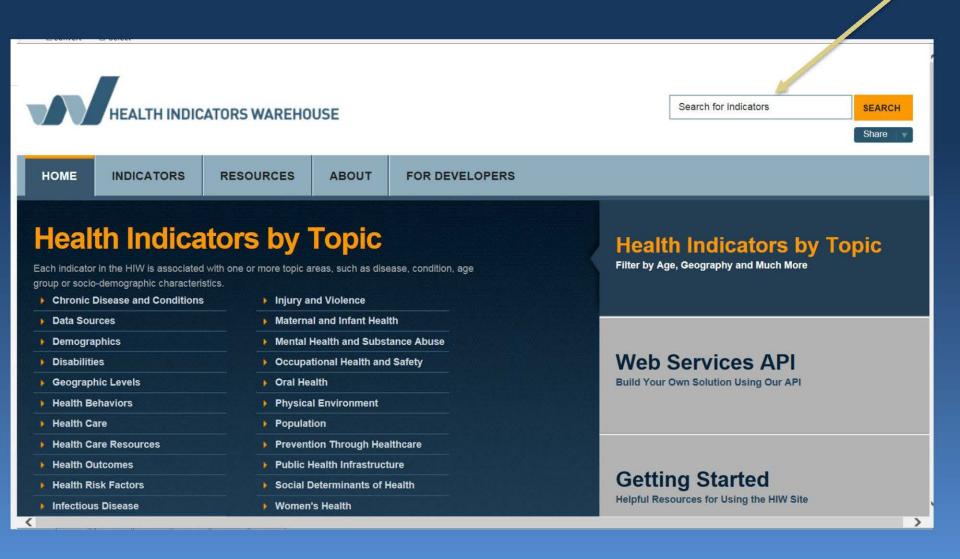
Overview of Homepage — Health Indicators

Health Indicators by Topic

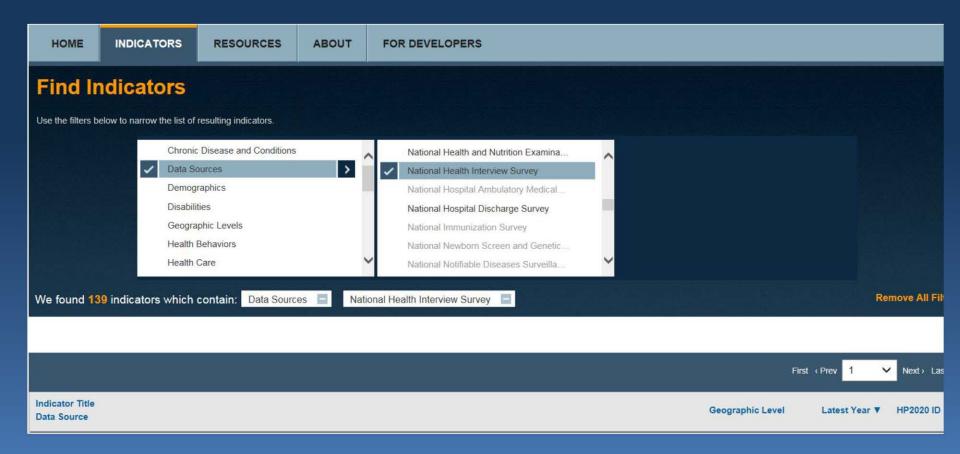
Health Indicators by Topic

HOME RESOURCES **INDICATORS** ABOUT FOR DEVELOPERS **Health Indicators by Topic Health Indicators by Topic** Filter by Age, Geography and Much More Each indicator in the HIW is associated with one or more topic areas, such as disease, condition, age group or socio-demographic characteristics. Chronic Disease and Conditions Injury and Violence Data Sources Maternal and Infant Health Demographics Mental Health and Substance Abuse Web Services API Disabilities Occupational Health and Safety Geographic Levels Oral Health **Build Your Own Solution Using Our API** Health Behaviors Physical Environment Health Care Population Health Care Resources Prevention Through Healthcare Health Outcomes Public Health Infrastructure **Getting Started** Health Risk Factors Social Determinants of Health Helpful Resources for Using the HIW Site Infectious Disease Women's Health Initiative

Health Indicators Search



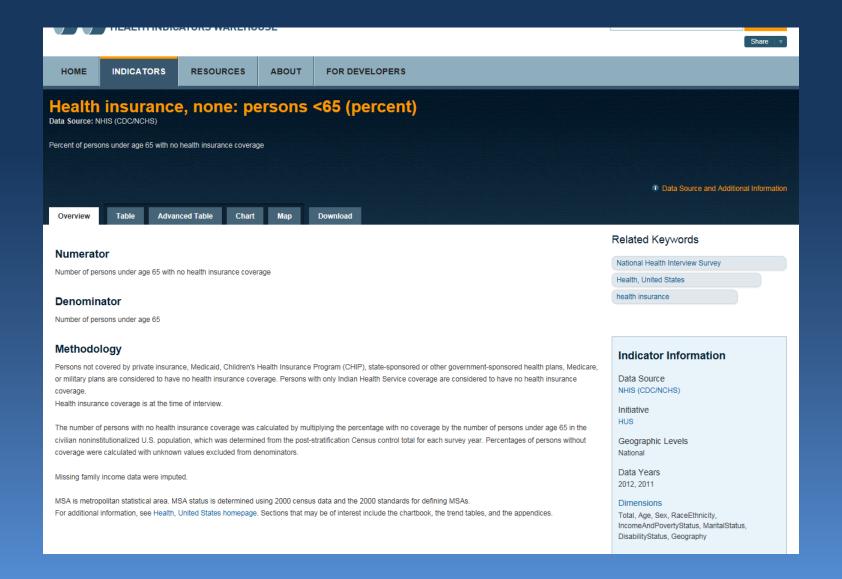
Exercise 2-Search



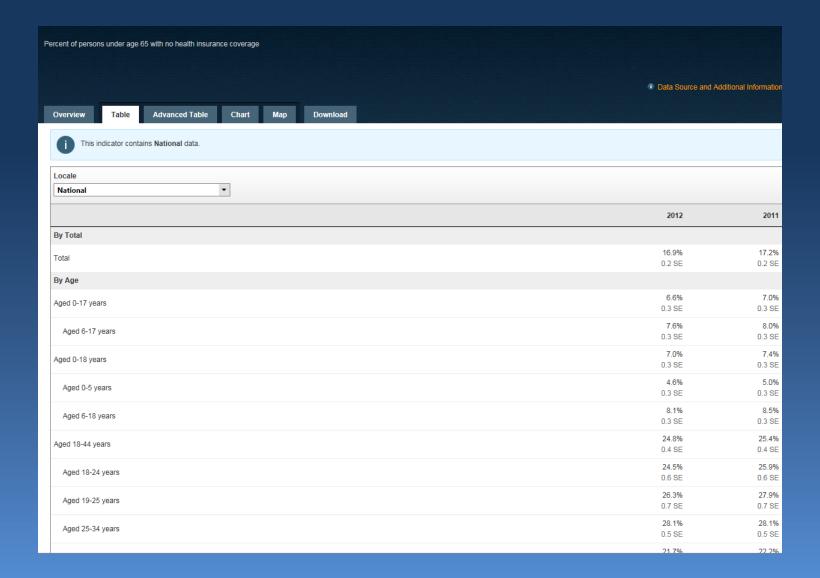
Example of Search

We found 139 indicators which contain: Data Sources National Health Interview Survey		R	temove All Filters
	Firs	st ‹Prev 1	∨ Next > Last
Indicator Title ▲ Data Source	Geographic Level	Latest Year	HP2020 ID
Activity limitation due to chronic back conditions: adults (per 1,000) NHIS	N	2011	AOCBC-12
Activity limitations: adults 45+ years with COPD (percent) Population Estimates; NHIS	N	2012	RD-9
Activity limitations: persons with asthma (percent) NHIS	N	2012	RD-4
ADHD: children (percent) NHIS	N	2012	
Aerobic physical activity meeting guidelines: adults (percent) NHIS	N	2011	PA-2.1
Aerobic physical activity meeting high guidelines: adults (percent) NHIS	N	2011	PA-2.2
Aerobic physical and muscle-strengthening activity: adults (percent) NHIS	N	2011	PA-2.4
Appropriate treatment use: adults with tinnitus (percent) NHIS	N	2007	ENT-VSL-10
Appropriate treatment use: balance/dizziness problems adults (percent) NHIS	N	2008	ENT-VSL-13.2

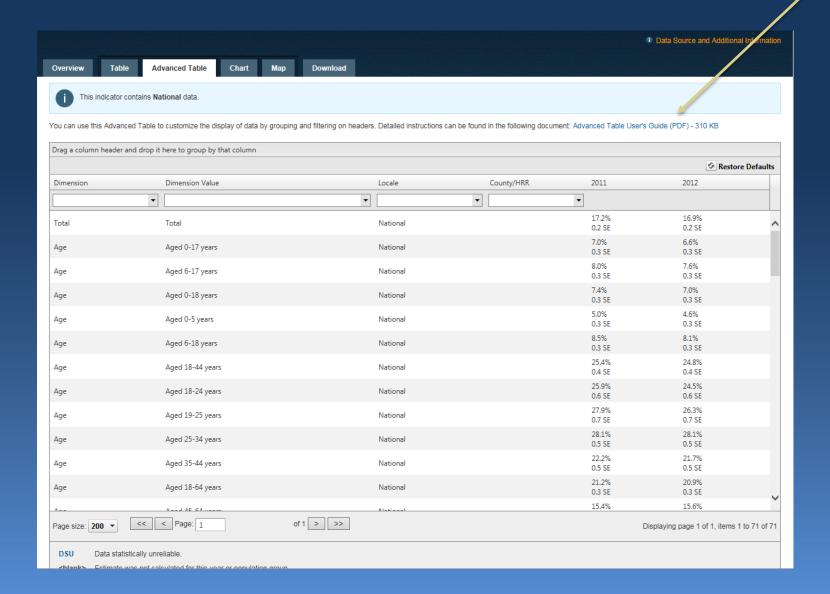
Health insurance, none: persons <65 (percent)



Health insurance, none: persons < 65 (percent)-Table



Health insurance, none: persons <65 (percent)-Advanced Table



Advanced Table User's Guide

Advanced Table User's Guide

Health Indicators Warehouse

The Advanced Table data view can be customized to display data in which you are most interested by applying different enabling grouping.

Quick Tips

- 1. If no Dimension/Value filter is selected, all dimension values will be displayed.
- 2. In order to filter the data by County, you must first select a State.

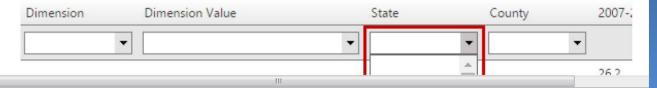
Data Years

Data is displayed per-year; each year of data is displayed in its own column. All years for which data exists are shown ascending order (from left to right). Multi-year data is displayed alongside single-year data, ordered by the end year. note that the table displays the most recent years first. Use the scrollbar at the bottom of the table to scroll left and years.

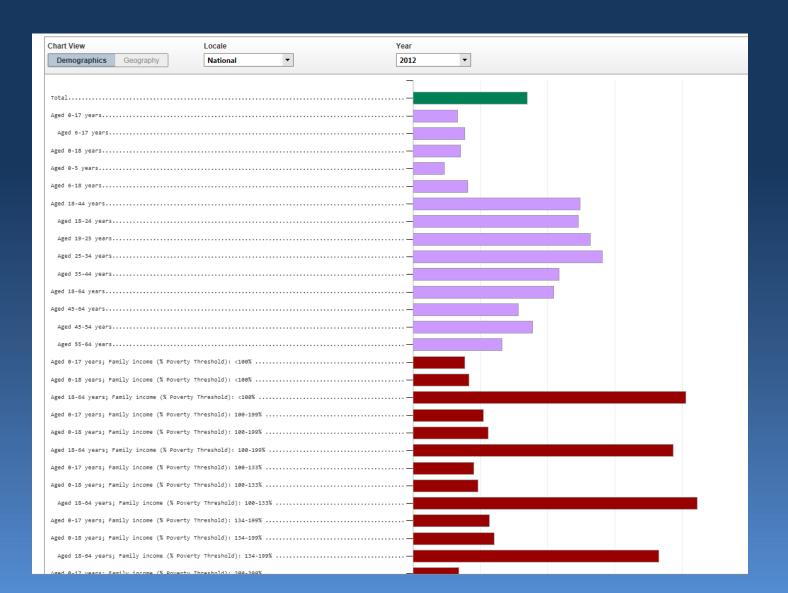
Filtering

8.50 x 11.00 in

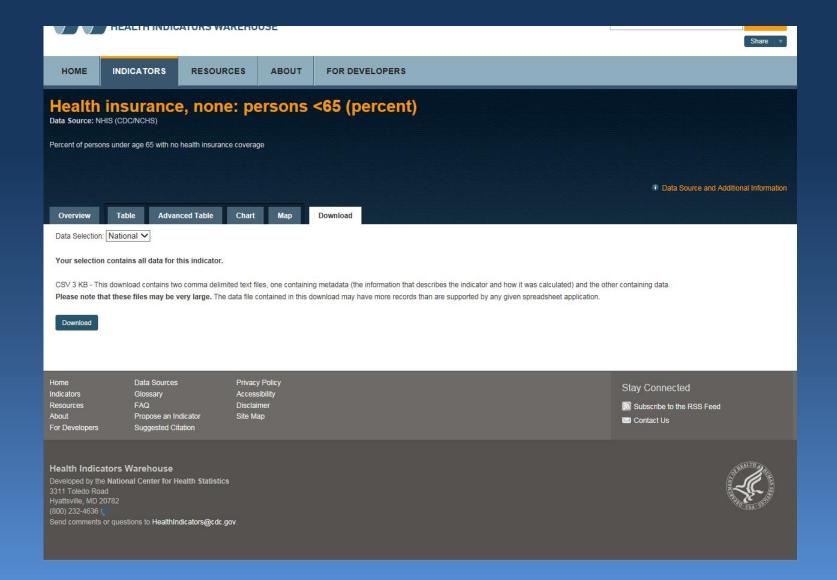
To filter the data, simply click the drop down menu below a category and select the filter which you would like to app table will be refreshed with the filter applied to the data.



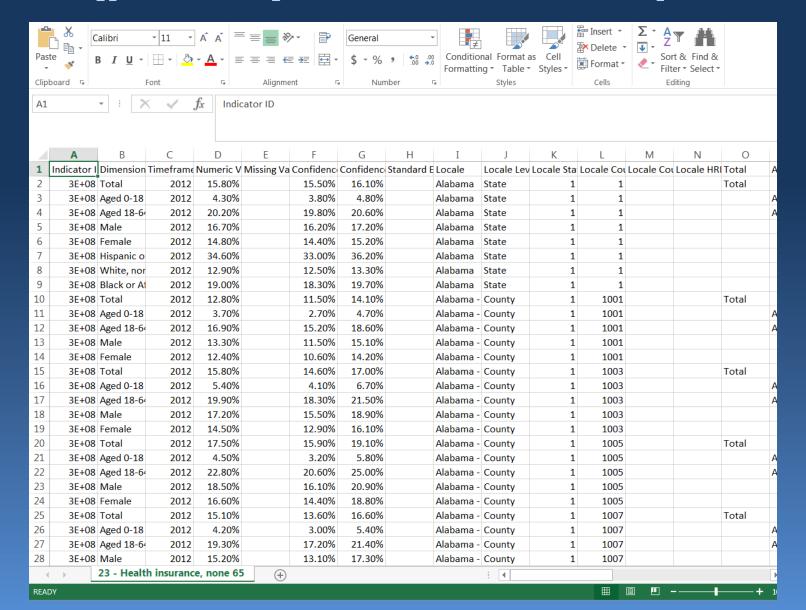
Health insurance, none: persons <65 (percent)-Chart



Health insurance, none: persons < 65 (percent)-Download



Health insurance, none: persons <65 (percent)-Download Example



Some considerations

- > Estimates may be single-year or multiple-year
 - Pooled years for greater precision in some cases
 - Ability to show estimates for demographic sub-groups
- Some tables will have time trends
- Data suppression
 - Some estimates may be suppressed based on small sizes or on the basis of confidentiality, as defined by the data provider.

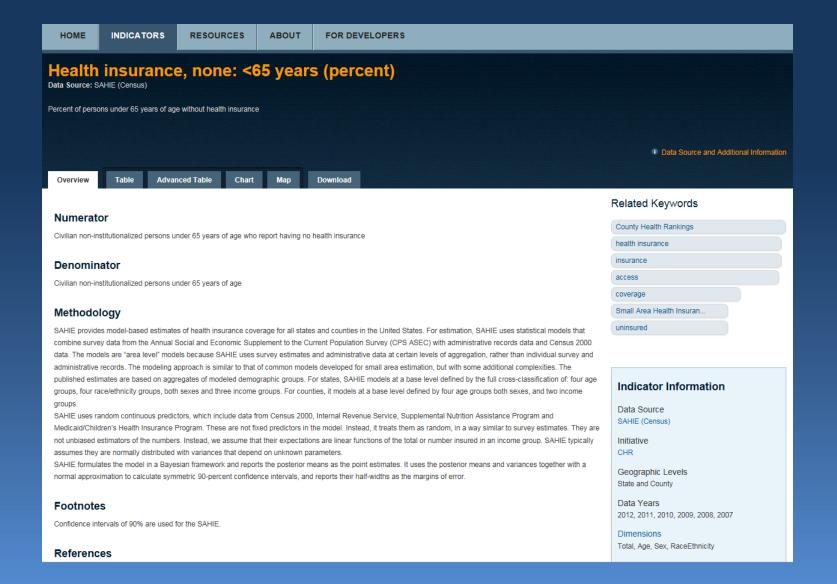
Exercise 3-Where Can I Find Answers?

- What does DSU mean?
- > What is NVSS-N?

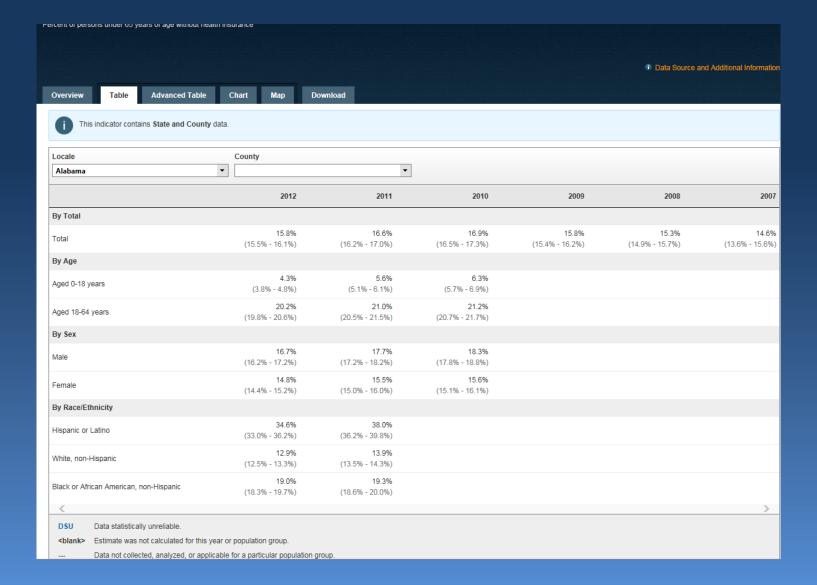
Exercise 4-Using Search Tool

We found 26 indicators which contain: health insurance			
Indicator Title ▲ Data Source	Geographic Level	Latest Year	HP2020 ID
African American Medicare beneficiaries (percent) CCW	N S C H	2012	
Ambulatory surgery center Medicare users (count) CCW; Medicare Administrative Data	N S C H	2012	
Ambulatory surgery center Medicare utilization (percent) CCW, Medicare Administrative Data	N S C H	2012	
Average age of Medicare beneficiaries (mean) © CCW	N S C H	2012	
Chlamydia screening: females 16-20 years private health insurance (percent) HEDIS	N	2011	STD-4.1
Chlamydia screening: females 21-24 years private health insurance (percent) HEDIS	N	2011	STD-4.2
Female Medicare beneficiaries (percent) CCW	N S C H	2012	
Health insurance coverage, through workplace: persons <65 (percent) NHIS	N	2012	
Health insurance, none: <65 years (percent) SAHIE	s	2012	
Health insurance, none: persons <65 (percent) NHIS	N	2012	
Health insurance: <65 years (percent) NHIS	N	2011	AHS-1.1
Hispanic Medicare beneficiaries (percent) CCW	N S C H	2012	
Home health Medicare users (count) CCW; Medicare Administrative Data	N S C H	2012	

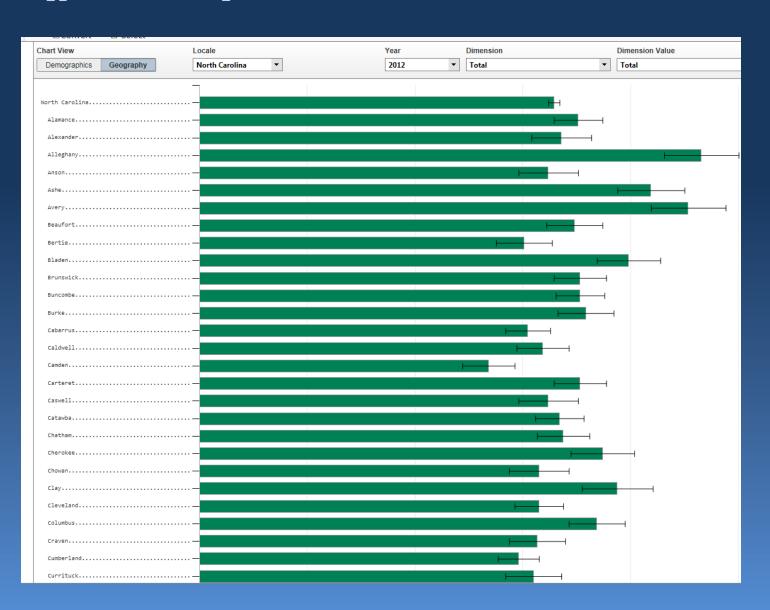
Health insurance, none<65 years (percent)-SAHIE



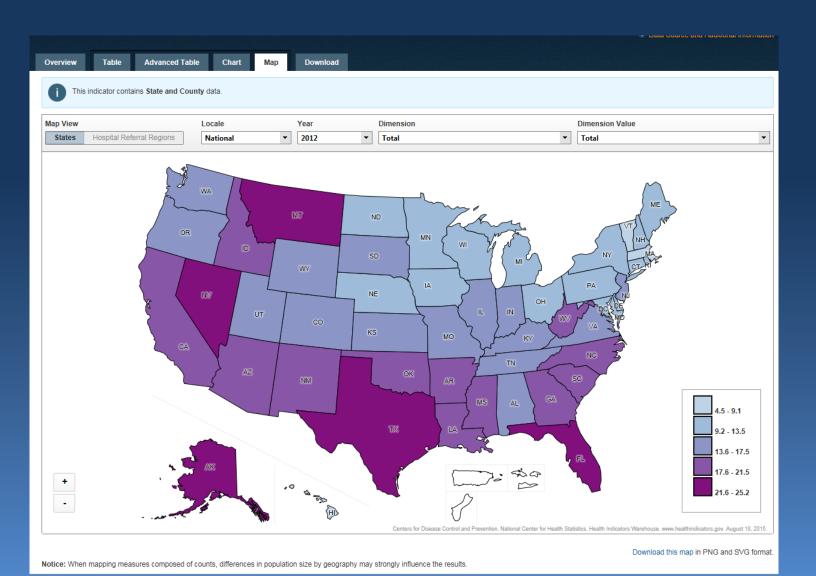
Health insurance, none<65 years (percent)-SAHIE-table



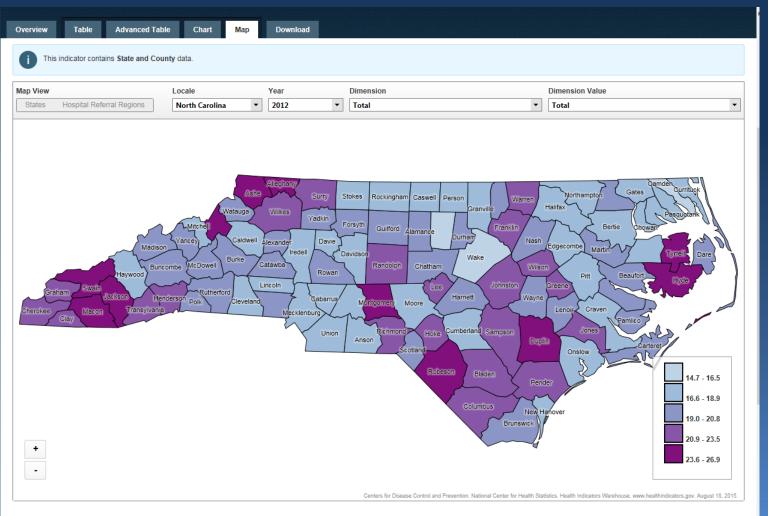
Health insurance, none<65 years (percent)-SAHIE-North Carolina



Health insurance, none<65 years (percent)-SAHIE-National-Map



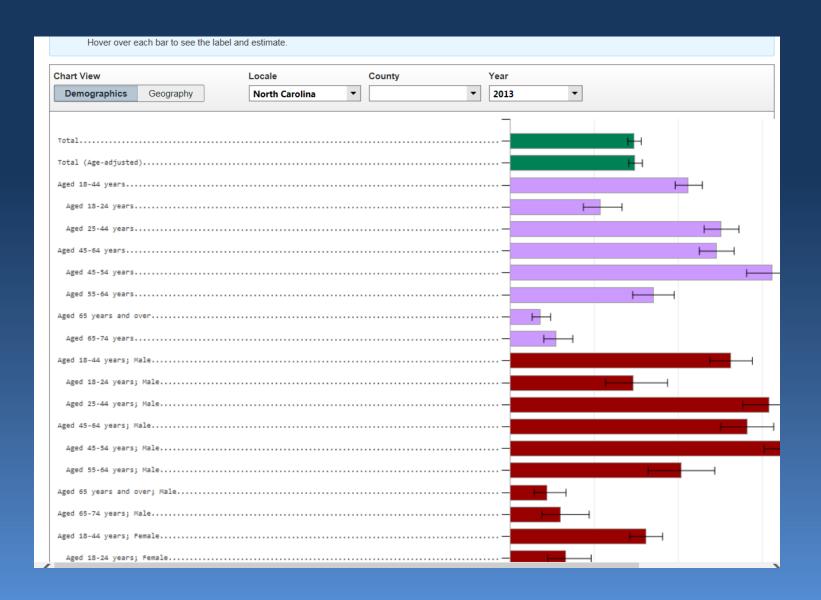
Health insurance, none<65 years (percent)-SAHIE-Map



Exercise 5-Drug poisoning deaths 2013

- Choose a state
 - Is there a difference between age groups, sex, race/ethnicity?

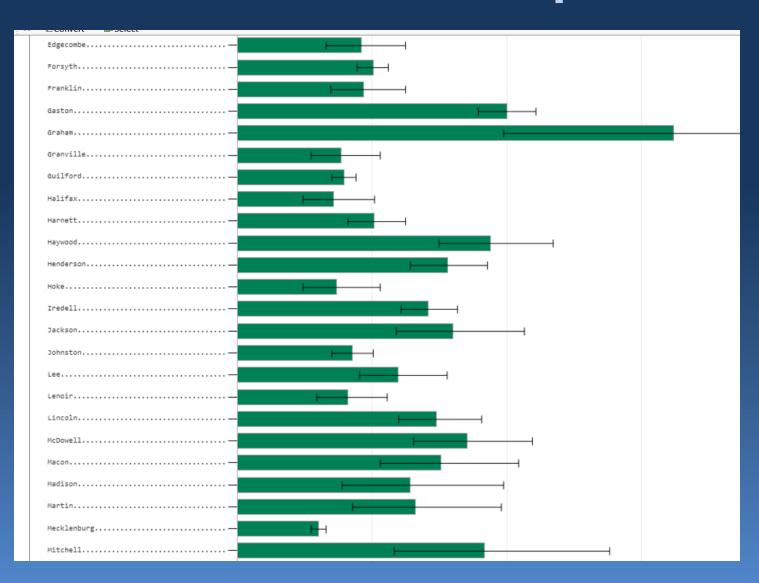
Exercise 5-Drug poisoning deaths 2013 Example: North Carolina



Exercise 6-Drug poisoning deaths 2007-2013

- Choose two counties within a state
 - Compare drug poisoning deaths
 - Show this information using a bar chart

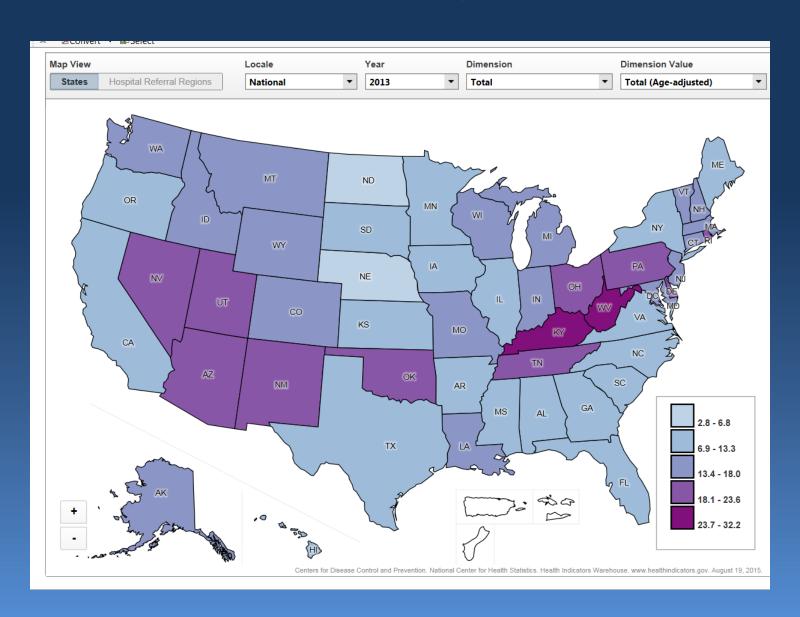
Exercise 6-Drug poisoning deaths 2007-2013 Example



Exercise 7-Drug poisoning deaths 2013

- Choose two states
 - Compare drug-poisoning deaths
 - Show the information using a map

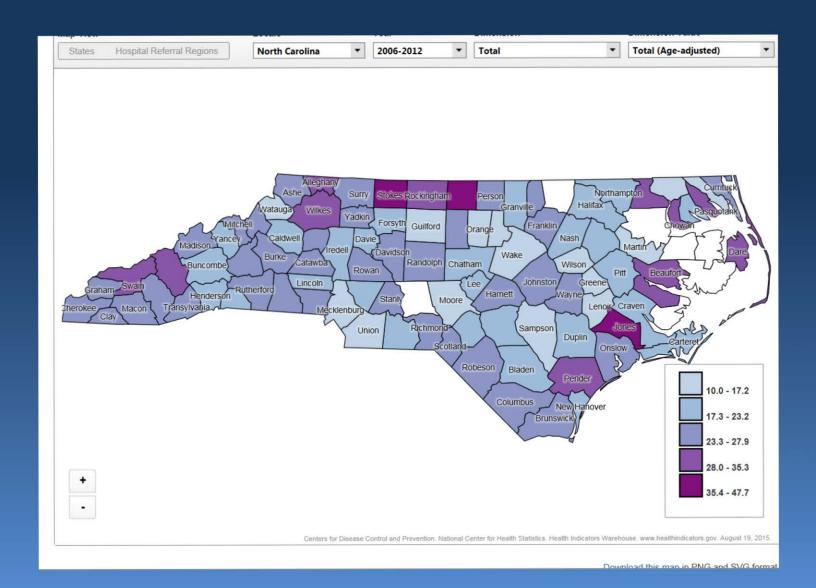
Exercise 7-Mapping Drug Poisoning Deaths



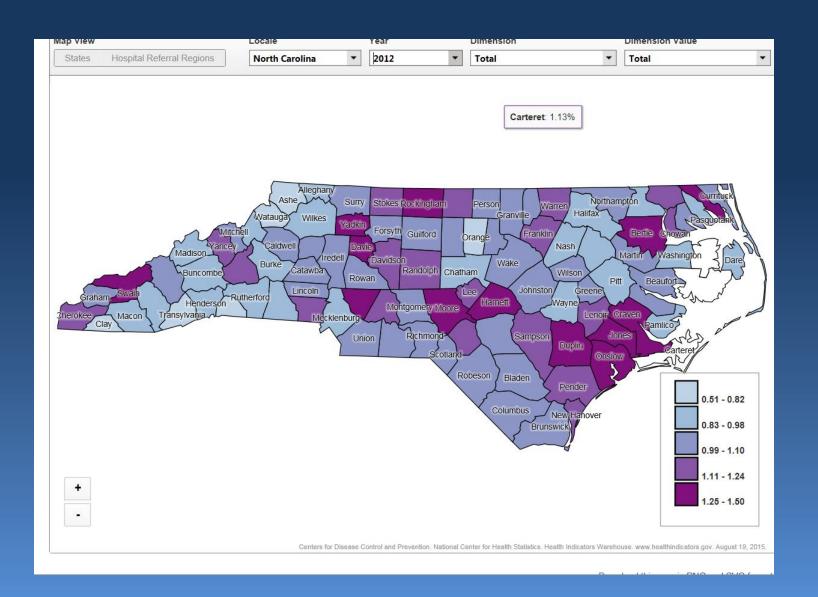
Exercise 8-Mapping and Comparing with in an Indicator

- Choose one of the following pairs of indicators for a state:
 - Cigarette smoking: adults (BRFSS) and Lung cancer Medicare beneficiaries (percent)
 - Heart disease deaths and obesity: adults (BRFSS)
- Do they look similar for your state?
- For one of the indicators, are there differences in county, sex, age, gender, race?

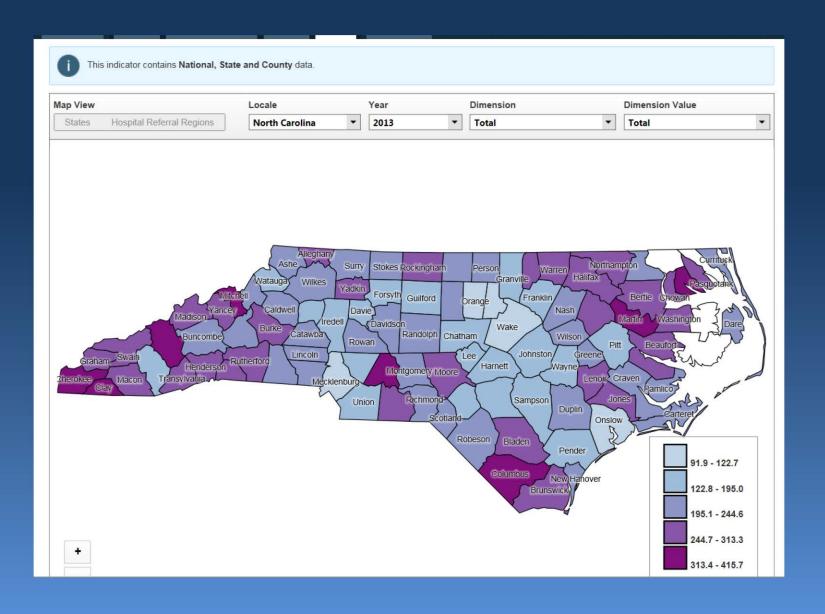
Cigarette smoking: adults (BRFSS)



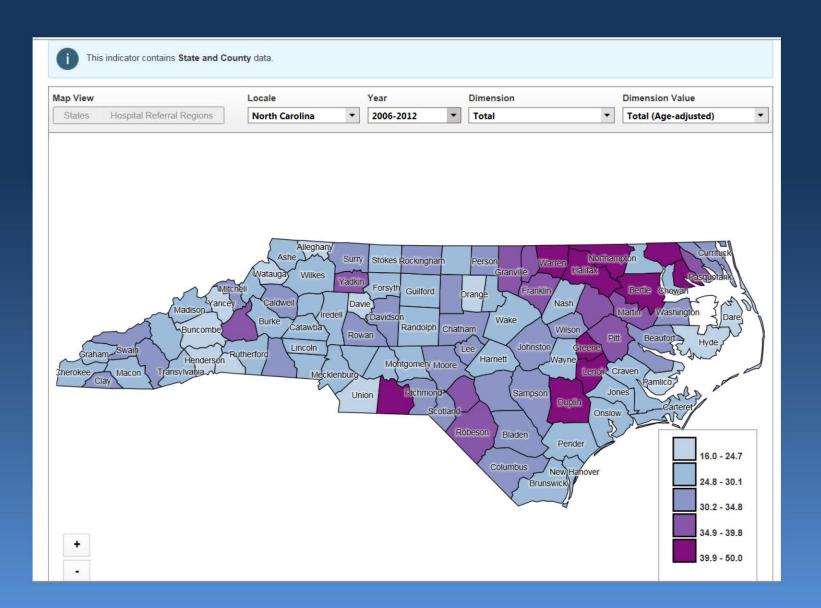
Lung cancer Medicare beneficiaries (percent)



Heart disease deaths



Obesity: adults (BRFSS)



Exercise 9-Hospital Referral Regions

- Find the difference in acute hospital readmissions (percent)
 - Is there a difference between two hospital referral regions in your state?

Initiatives

Initiatives Data Sources Glossary FAQ Additional Resources

Initiatives

CMS Community Utilization & Quality Indicators (CMS)

→ See Indicators

CMS has assembled measures from Medicare claims data at the state level and for 306 Hospital Referral Regions. The measures encompass a range of data for 2008, including: Utilization measures (e.g., Emergency Department Visits and Hospital Readmissions), Quality measures (e.g.,

Indicators Warehouse: A Methodological Overview (PDF) - 149 KB

Medicare Data for the Health

Hospital Compare, Agency for Health Research and Quality

(AHRQ) Prevention Quality Indicator (PQI), and AHRQ Patient Safety Indicators (PSI)).

CMS Reports | Select a Report...

Community Health Status Indicators (HRSA, CDC, NLM, PHF)

→ See Indicators

This web-based tool provides local public health agencies access to county health status profiles for improving community health by identifying resources and setting priorities. Visit the Community Health Status Indicators home page to read about the data sources, definitions, and notes, and then explore the CHSI dataset file.

County Health Rankings @ (RWJF and University of WI)

→ See Indicators

This interactive website provides access to 50 state reports with rankings of each county within each state according to its health outcomes and health determinants. The County Health Rankings are a

Explore Indicators

Indicators in the HIW are categorized by the associated levels of data by topic, by geography and by initiative.

Explore Indicators

Helpful Resources

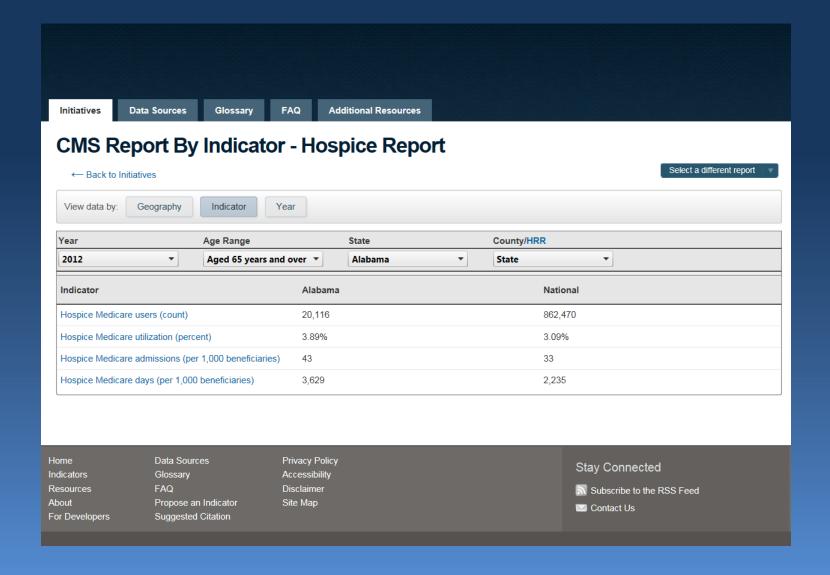
The HIW contains several resources to help you better understand the indicators.

- Health Indicators Warehouse User's Guide (PDF) - 933 KB
- Health Indicators Warehouse Indicator Report (PDF - 371 KB | Excel - 100 KB)
- Data source descriptions
- Glossary of terms
- · About the initiatives
- · Frequently Asked Questions

Propose an Indicator

We're interested in hearing about possible additions to the HIW. Let us know if there are

CMS Report by Indicator-Hospice Report



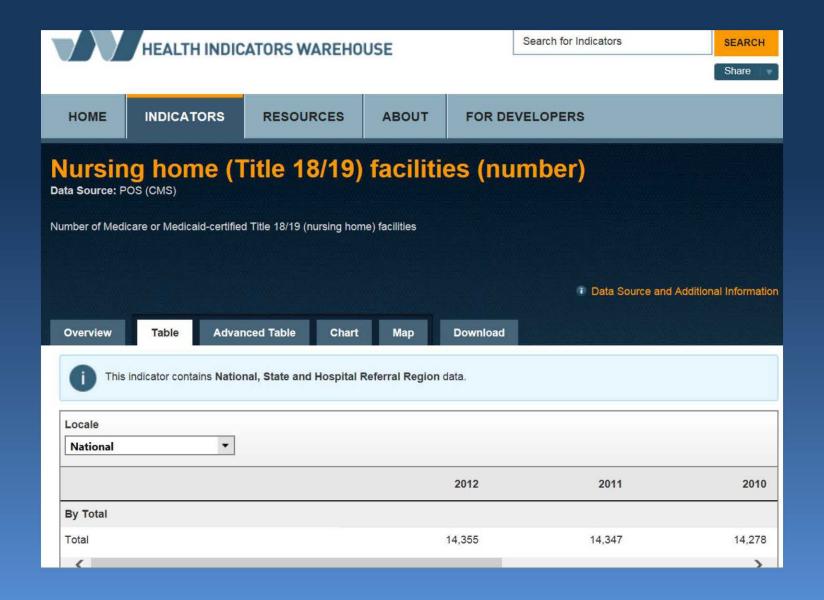
Exercise 10-Data Source

- What is the response rate and sample size for?
 - National Health and Nutrition Examination Survey
 - National Survey of Family Growth

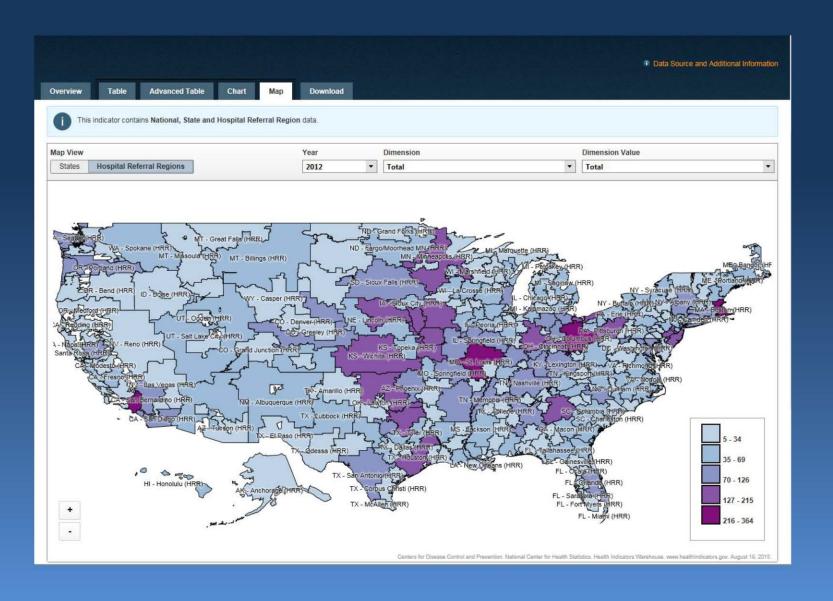
Exercise 11-Nursing Home Facilities

- Using an indicator table, find the state which had the greatest number of Medicare or Medicaid-certified Nursing home (Title 18/19) facilities in 2012
 - Show this same information for 2012 using a bar chart, by state
- For that particular state, what are the top two hospital referral regions containing the highest number of facilities?
 - Show this information for 2012 using a map, by hospital referral region

Nursing Home (Title 18/19) facilities



Nursing Home Facilities



Additional Homepage Features

- What's New Section
 - Shows data release and feature updates
- For Developer's
 - HIW Indicator Entity Relationship Diagrams (ERD)
 - HIW Metadata ERD

Additional Features

- Web Services API
 - Learn More
 - View Examples
 - View Documentation
 - Get an API Key

HIW Developers

HIW DEVELOPERS

HOME

GET AN API KEY

GET STARTED

TRY IT

DOCUMENTATION



Welcome, Developers

Overview of the HIW Web Services

API

The Health Indicators Warehouse provides access to the underlying data through the use of an Application Programming Interface (API) which is designed to present information to systems with disparate architectures and technologies.

The Health Indicators Warehouse API exposes two distinct web services; a RESTful service and a SOAP-based service to provide access to the data. Detailed information required to access the underlying services can be found in the documentation section.

Access to the HIW web services API requires the use of an API key. Please request an API key if you haven't done so already.

Current Version Information

The current service version is **5**; to view changes present in this version of the services, please view the service changes.

Prior versions of the services (v4 and earlier) have been deprecated and are no longer accessible.

For information regarding the relationships between the objects which make up the HIW data-model, please see the following documents:

- HIW Indicator ERD
- HIW Metadata ERD

REST services

Users can access the REST-based web services through the following URI: http://services.healthindicators.gov/v5/REST.svc/

SOAP Services

JavaScript API

The HIW now has an official JavaScript API (JS API) which can be used to access all of the data within the HIW via JavaScript. While this was already possible, the new JS API should make it much easier to do so.

More Info & Download

Questions?



For Further Information

http://www.healthindicators.gov/

https://github.com/HealthIndicators

Twitter: @Health Indicator

HealthIndicators@cdc.gov

