Combining Data Systems to Better Study Associated Factors in Children's Health

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Introduction

Sponsored by

Health Resources and Services Administration's Maternal and Child Health Bureau (HRSA MCHB)

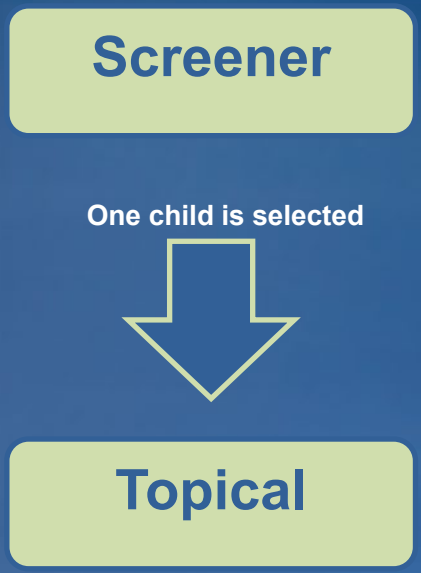
Type of Data

National and state-based estimates on the health and well-being of children, their families, and their communities as well as prevalence and impact of children with special health care needs (or CSHCN)

Data Products

Annual estimates published in SAS and STATA

Data Collection

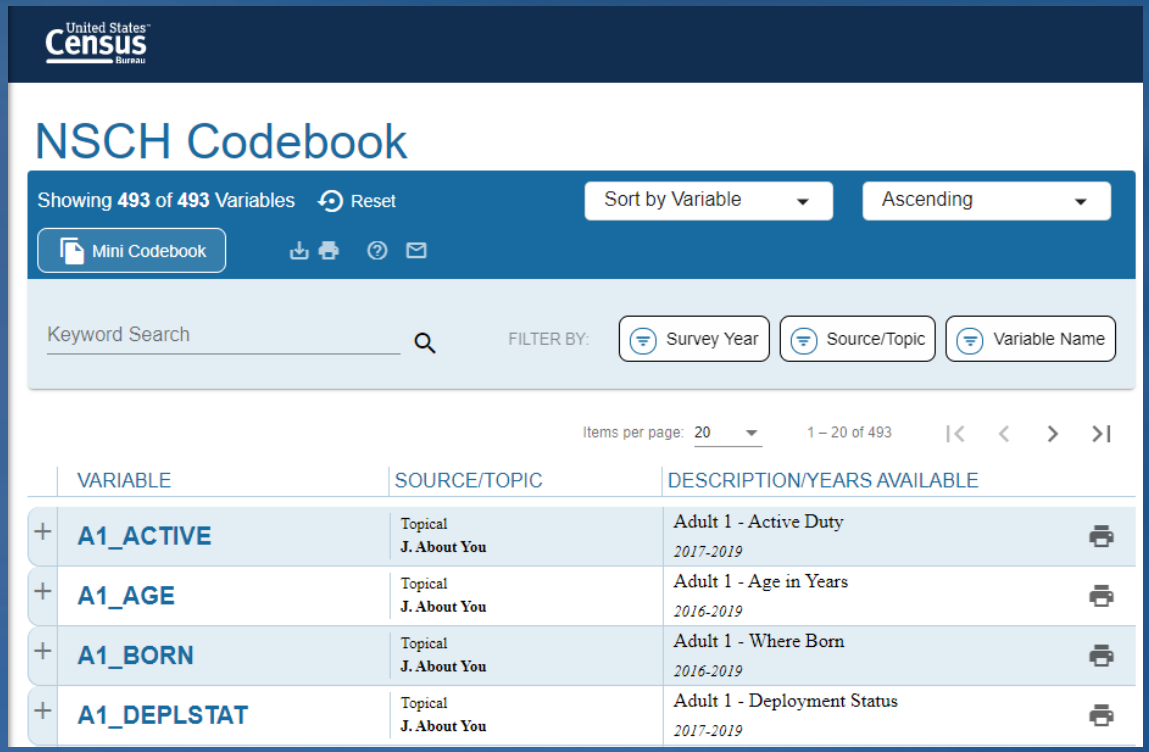


Survey Topics

- Child and family demographics
- Physical and mental health status
- Health insurance
- Health care services
- Family health and activities
- Parent's perceptions of neighborhood characteristics
- Access to community-based services

NSCH Variables

NSCH Codebook: https://www.census.gov/data-tools/demo/uccb/nschdict



NSCH Geography

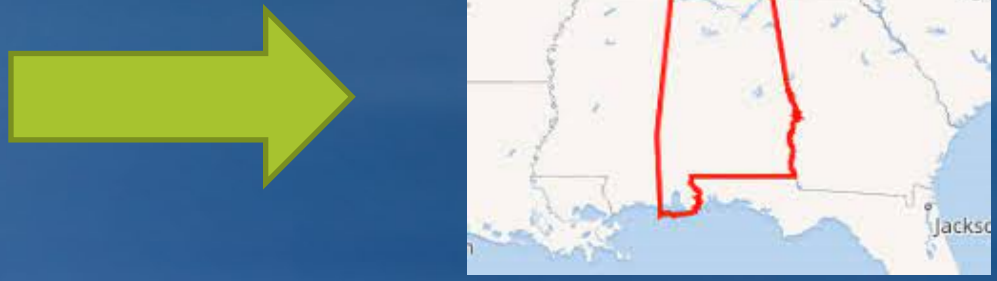
- Every observation has a state location

Flags

- Core Based Statistical Area Status (CBSA)
- Metropolitan Statistical Area Status (MSA)
- Metropolitan Principal City Status (MPC)

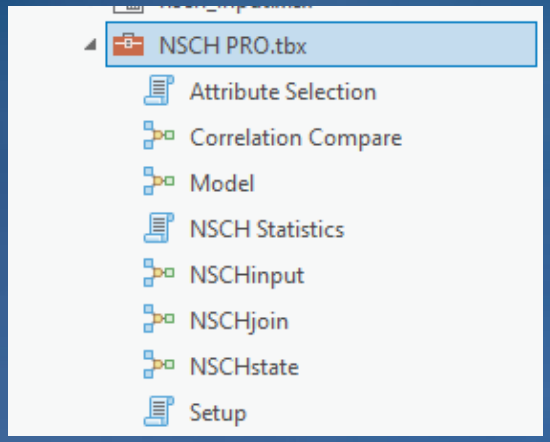
NSCH Data

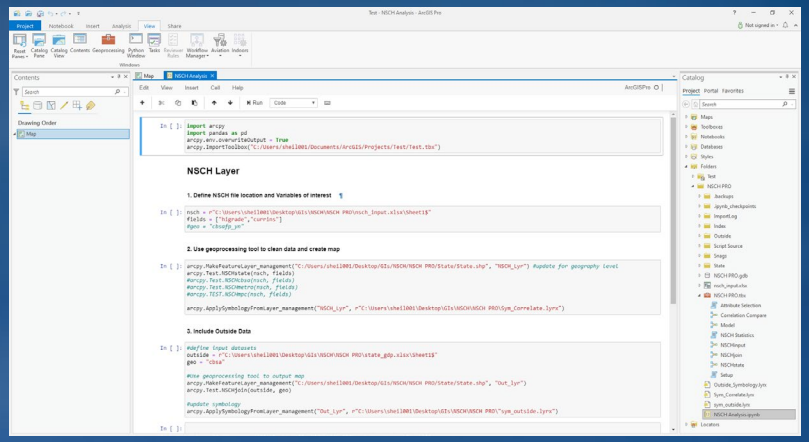
Household	State
Household1	1
Household2	1
Household3	1
Household4	1



Automation

- Geoprocessing tool to ArcPro notebook





NSCH Input

- Create Shapefiles from NSCH tables

Map | NSCH Analysis

Edit View Insert Cell Help ArcGISPro

Run Code

Geoprocessing

In [ ]:
```
import arcpy
import pandas as pd
arcpy.env.overwriteOutput = True
arcpy.ImportToolbox("C:/Users/sheil001/Documents/ArcGIS/Projects/Test/Test.tbx")
```

NSCH Layer

1. Define NSCH file location and Variables of interest

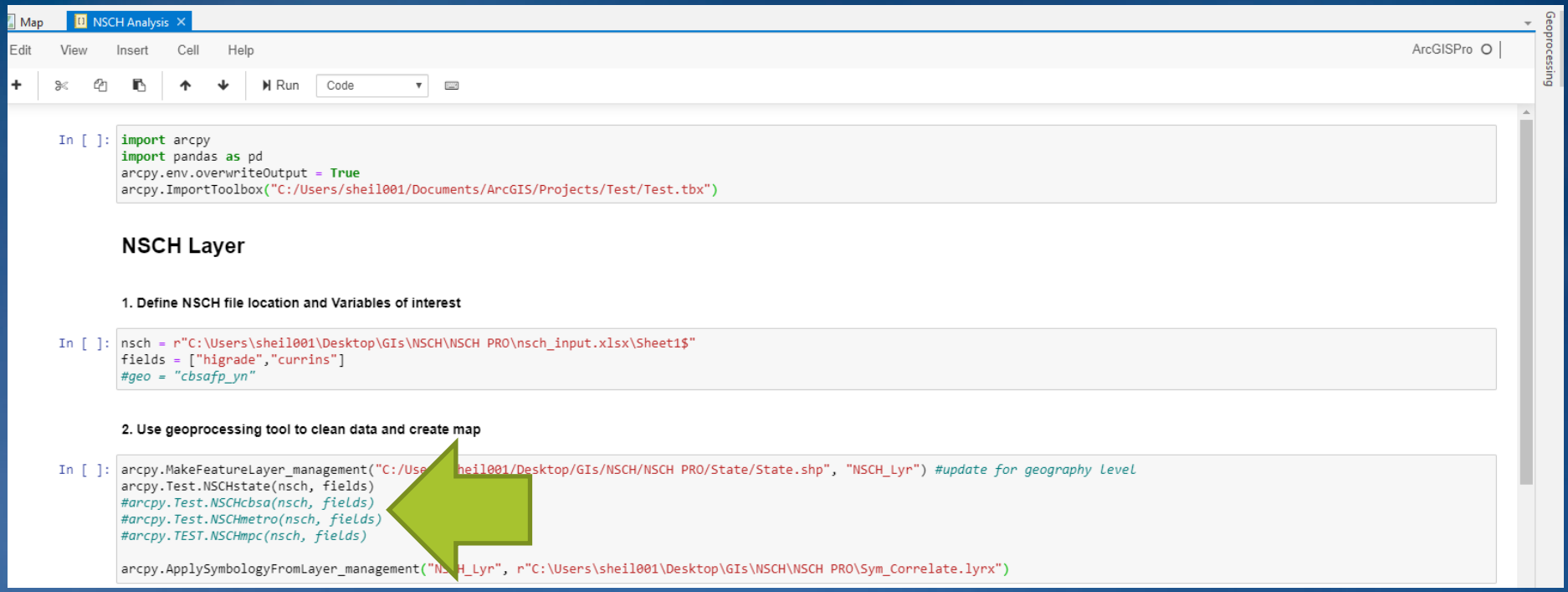
In [ ]:
```
nsch = r"C:\Users\sheil001\Desktop\GIs\NSCH\NSCH PRO\nsch_input.xlsx\Sheet1$"
fields = ["higrade","currins"]
#geo = "cbsafp_yn"
```

2. Use geoprocessing tool to clean data and create map

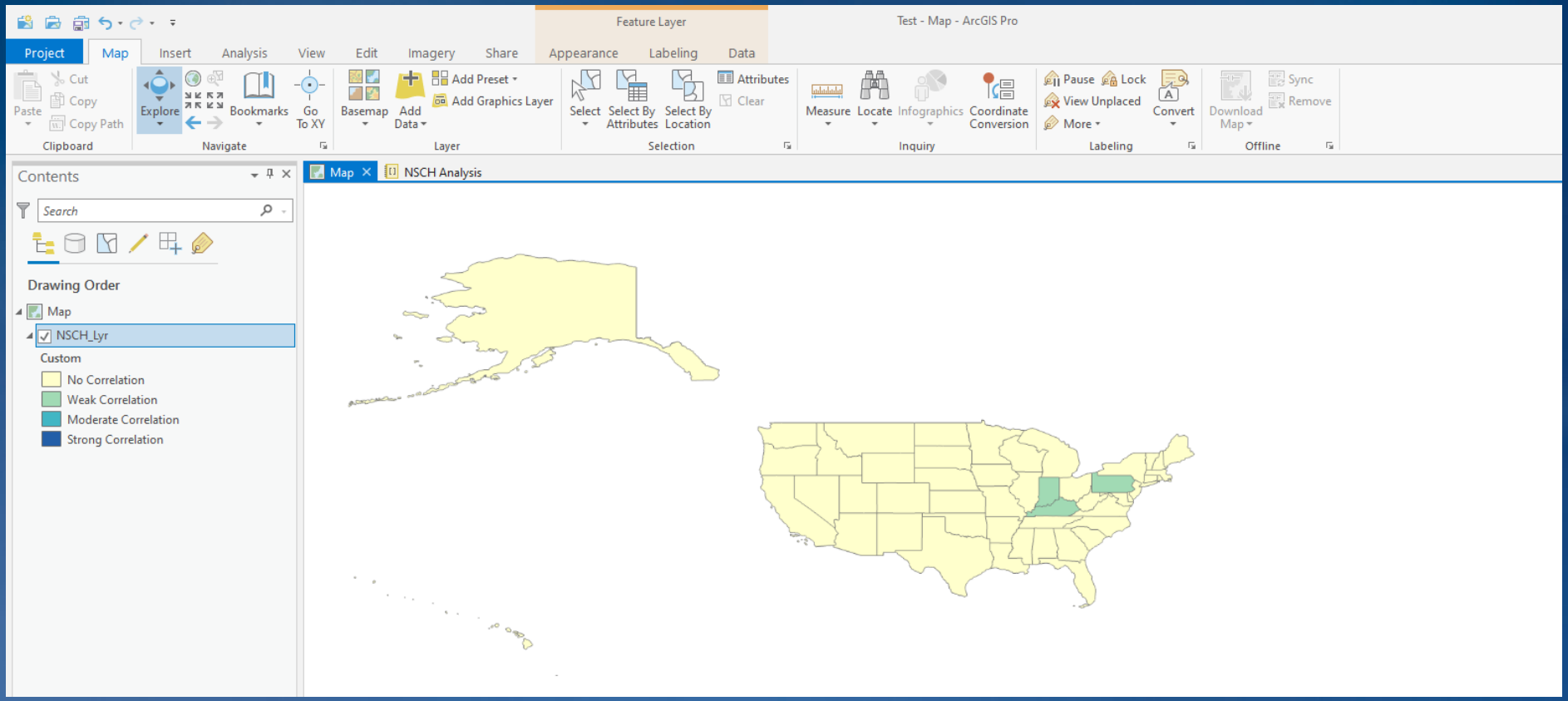
In [ ]:
```
arcpy.MakeFeatureLayer_management("C:/Users/sheil001/Desktop/GIs/NSCH/NSCH PRO/State/State.shp", "NSCH_Lyr") #update for geography level
arcpy.Test.NSCHstate(nsch, fields)
#arcpy.Test.NSCHcbsa(nsch, fields)
#arcpy.Test.NSCHmetro(nsch, fields)
#arcpy.TEST.NSCHmpc(nsch, fields)

arcpy.ApplySymbologyFromLayer_management("NSCH_Lyr", r"C:\Users\sheil001\Desktop\GIs\NSCH\NSCH PRO\Sym_Correlate.lyrx")
```

NSCH Input

- Create Shapefiles from NSCH tables

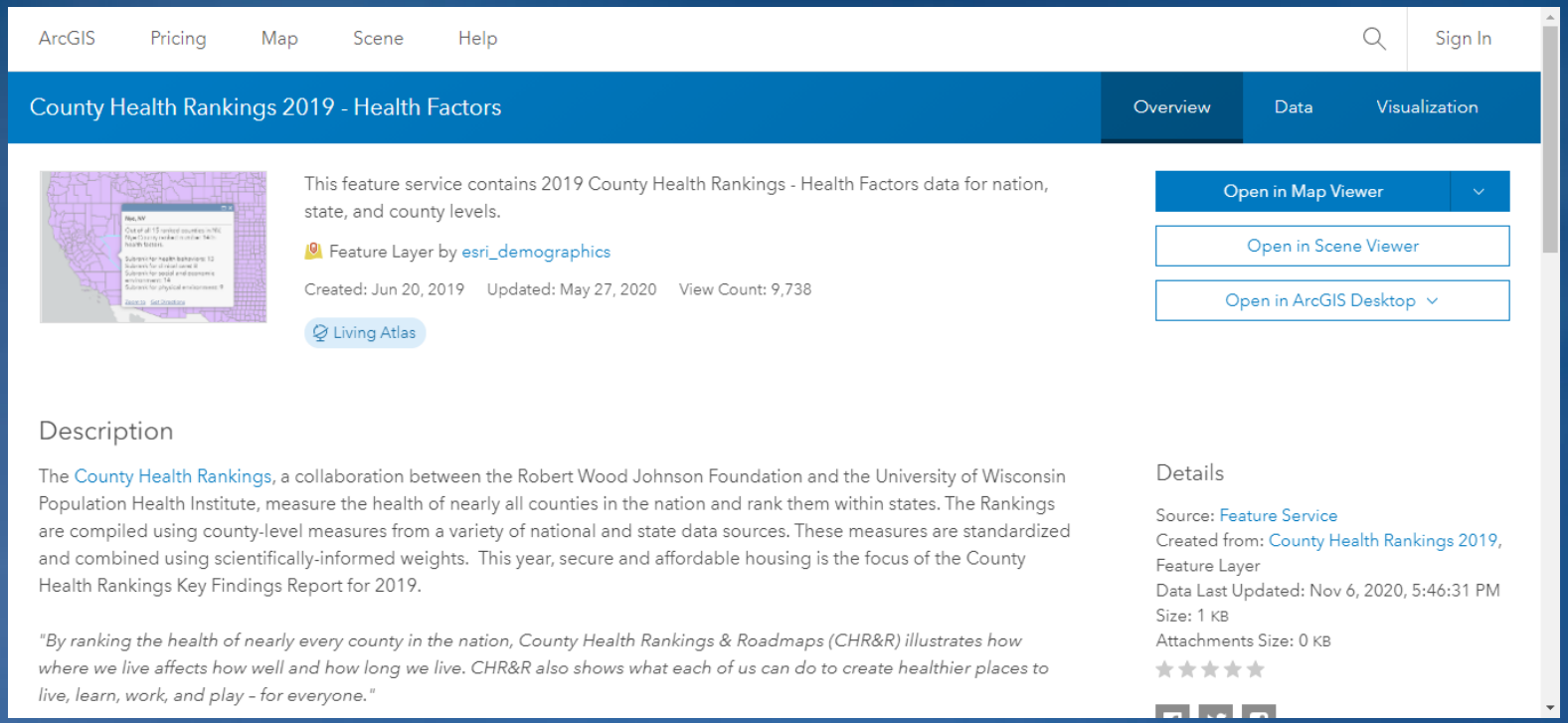


NSCH Output

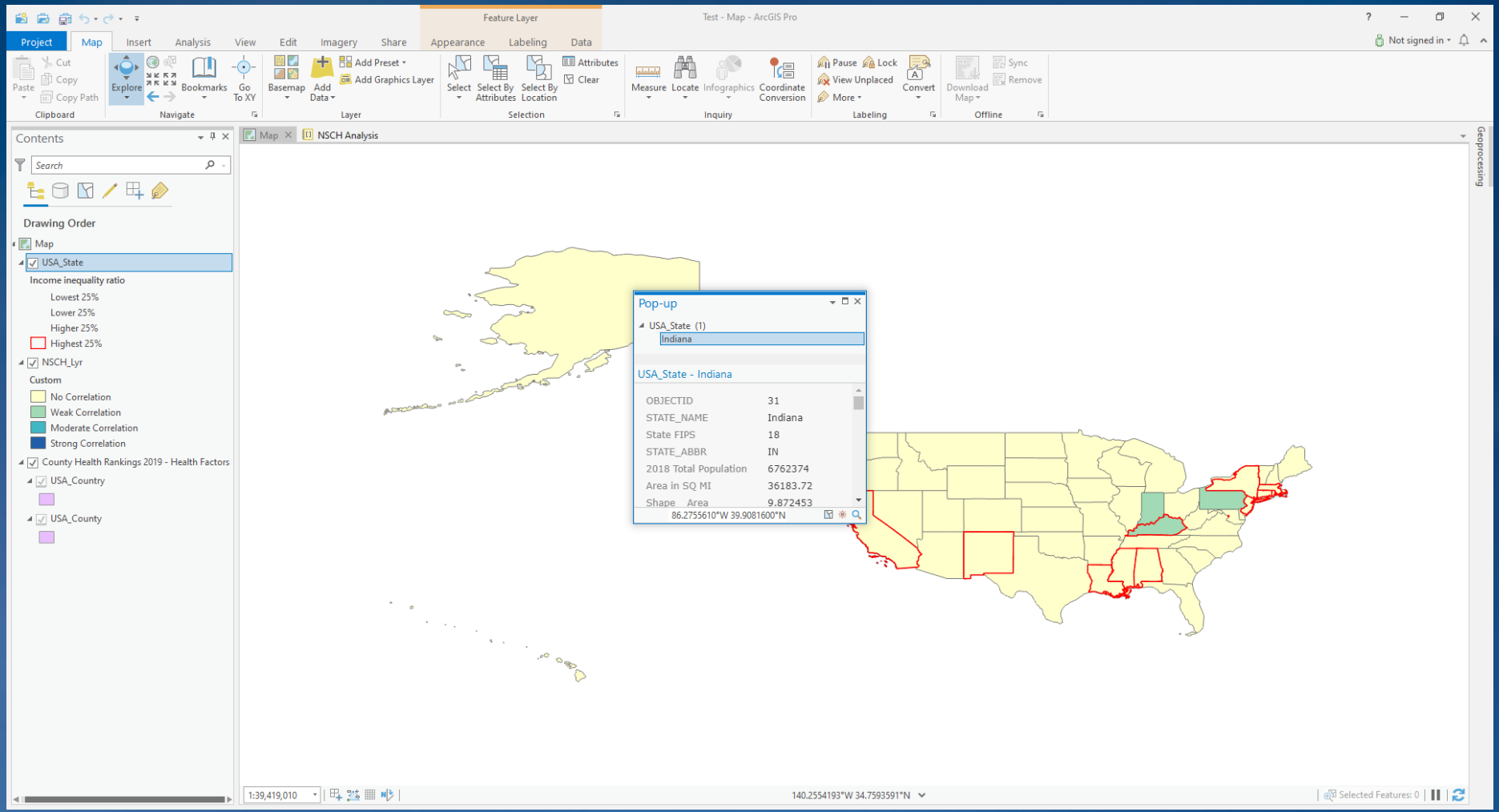

Feature Layer
Test - Map - ArcGIS Pro
Project
Map
Insert
Analysis
View
Edit
Imagery
Share
Appearance
Labeling
Data
Paste
Cut
Copy
Copy Path
Clipboard
Explore
Bookmarks
Go To XY
Navigate
Basemap
Add Data
Add Preset
Add Graphics Layer
Layer
Select
Select By Attributes
Select By Location
Attributes
Clear
Selection
Measure
Locate
Infographics
Coordinate Conversion
Inquiry
Pause
Lock
View Unplaced
More
Convert
Labeling
Download Map
Sync
Remove
Offline
Contents
Search
Drawing Order
Map
NSCH_Lyr
Custom
No Correlation
Weak Correlation
Moderate Correlation
Strong Correlation
Map
NSCH Analysis

Outside Data: Esri

Living Atlas: https://livingatlas.arcgis.com/en/home/

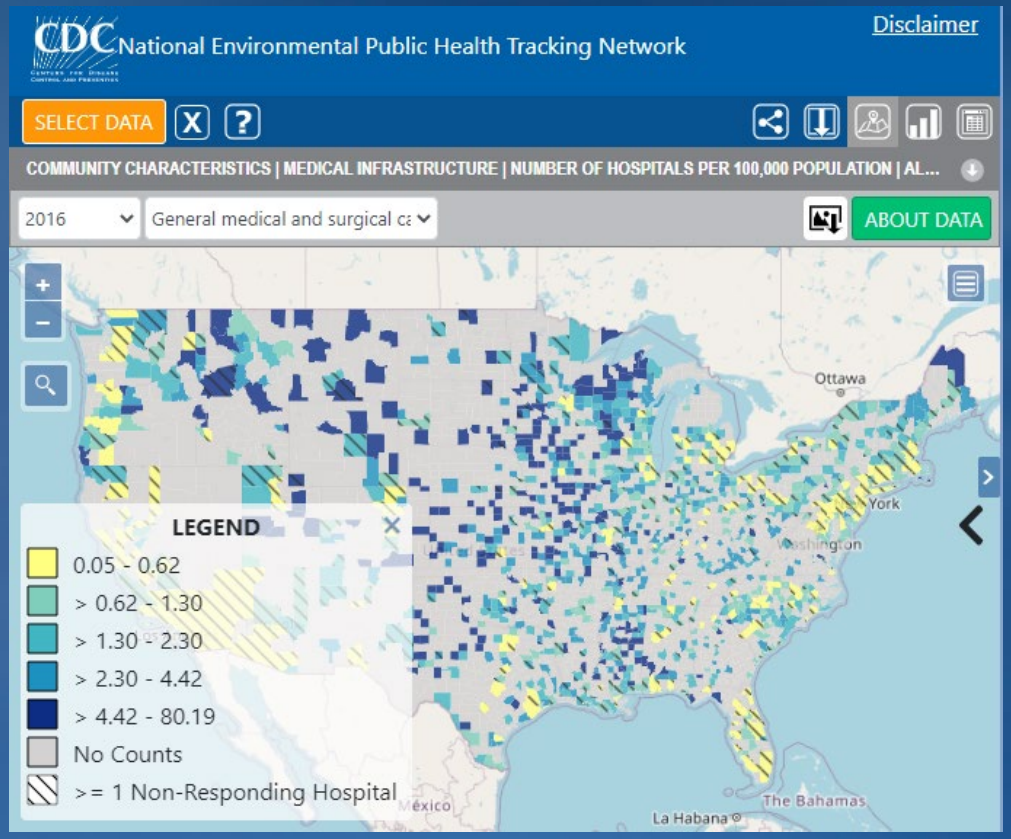


Combined Data



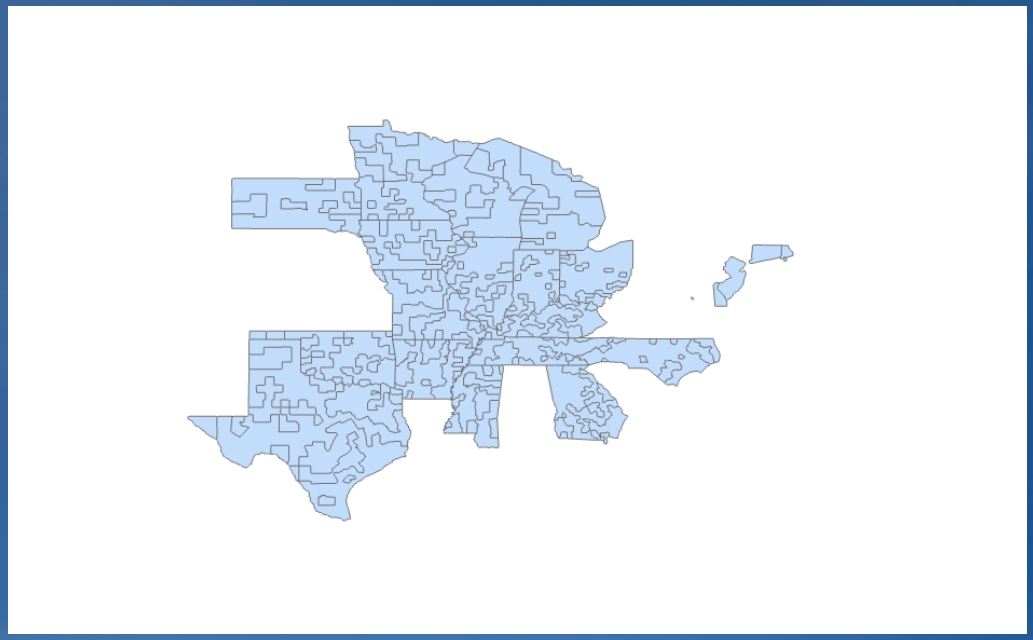
Outside Data: Tables

CDC Data Explorer: https://ephtracking.cdc.gov/DataExplorer



Outside Data Source

```
#define input datasets
outside = r"C:\Users\sheil001\Desktop\GIs\NSCH\NSCH PRO\state_gdp.xlsx\Sheet1$"
geo = "cbsa"

#Use geoprocessing tool to output map
arcpy.MakeFeatureLayer_management("C:/Users/sheil001/Desktop/GIs/NSCH/NSCH PRO/State/State.shp", "Out_lyr")
arcpy.Test.NSCHjoin(outside, geo)

#update symbology
arcpy.ApplySymbologyFromLayer_management("Out_Lyr", r"C:\Users\sheil001\Desktop\GIs\NSCH\NSCH PRO\"sym_outside.lyrx")
```



Potential Use

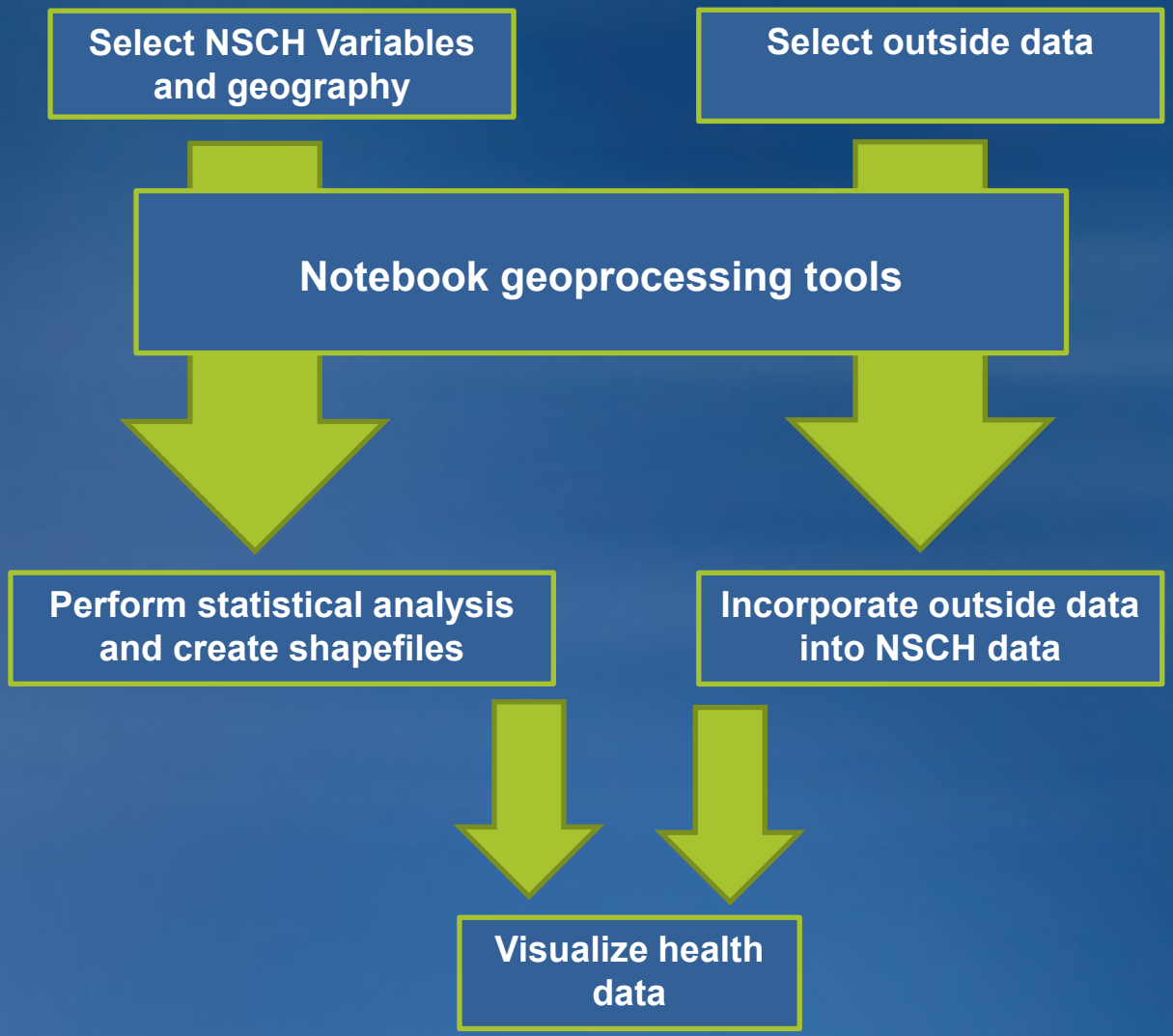
Subgroup Analysis:

- Age Group
- Gender
- Race

Statistical Analysis:

- Component Analysis
- Factor Analysis
- Linear Regression
- Time Series Trend

Summary


Select NSCH Variables and geography
Select outside data
Notebook geoprocessing tools
Perform statistical analysis and create shapefiles
Incorporate outside data into NSCH data
Visualize health data