MAPS◆GIS

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MAPS-GIS: Understanding Mental Health Data and Statistics

Before you begin using this module, you will need to know about using a Web-based GIS viewer. You can do this by watching the tutorial video or working through the tutorial. The tutorial video, student activity, and Web-based GIS Tutorial Viewer can be found at http://gis.lanecc.edu → "Modules" tab → "Tutorial" link. The activity works best with a high speed Internet connection.

Prior Skills: For this activity, you will need to know how to turn on and off layers, make layers active and visible, use the zoom tool, toggle between the legend menu and the layers menu, and use the ID tool.

Objectives: In this lesson you will evaluate data using systematic data queries. You will describe spatial patterns and look for correlations.

- Open the Maps-GIS Mental Health Stats viewer: at http://gis.lanecc.edu → Modules → go down to the Mental Health Link
- Click on the **Mental Health - The U.S. and Oregon**

The Web site opens to a map showing the number of inpatients in state mental health facilities at the end of 2002.

- Make sure inpatient 2002 is both **Visible** and **Active – Refresh the map** (click the radio button)

- Use the "Identify" tool 🛈 and click on the two states with the highest number of inpatients.

1. Name these two states and record their inpatient census.

- The number of inpatients may be related to population. To check out that hypothesis use the "Query" tool:

- Set "Field" POP2000; "Operation" >; "Value" 18976457, "Add query to string"; "Execute" The value reflects the two highest populations in the US for that date.
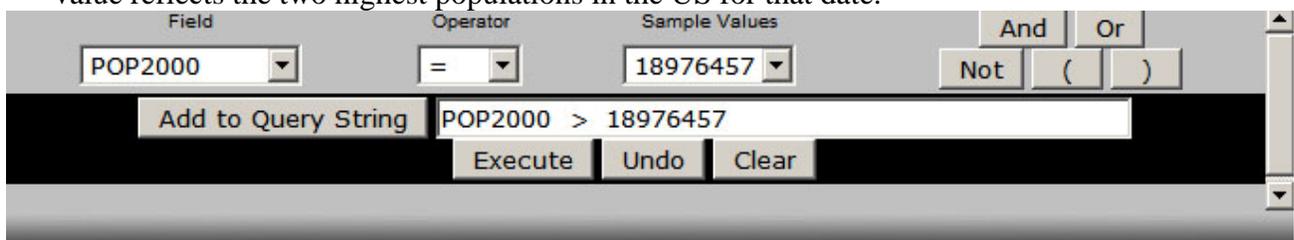
Field	Operator	Sample Values	And	Or
POP2000 ▼	= ▼	18976457 ▼	Not	( )

Add to Query String POP2000 > 18976457

Execute   Undo   Clear

2. Which two states had the highest population in 2000? Were these the two sates with the highest number of inpatients?

- Check the 2004 population. Set "Field" POP2004; "Operation" >=; "Value 22859965: "Add to query string"; "Execute". The value reflects the two highest populations in the US for 2004.

3. Do you think inpatient census is directly correlated with population? Explain your thinking.

- Check to see if the per-capita spending on mental health related? Set "Field"; Spent_MH01; "Operation" >=, "Value" 175; "Add to query string"; "Execute:.

4. Which place spends the most per-capita for mental health?

- Go back to the "Layer" menu and make "18 plus SMI" (seriously emotionally ill) **Visible**

5. Describe the basic spatial pattern across the U.S. of people who have been identified as SMI. Where is the occurrence highest and lowest?

6. Do the same with the "9 to 17 SED" (seriously emotionally disturbed). Describe the basic spatial pattern across the U.S. of people who have been identified as SED. Where is the occurrence highest and lowest?

7. How does Oregon compare to Washington state and California with respect to SED and SMI?

8. How could a state or federal agency use state-level data related to mental health?

Part 2: Zooming in on Oregon – Change the Map Viewer

To get a better picture of the occurrence of mental illness in Oregon, you are going to change map scale (zoom in) and look at Oregon by county-level data. Often exploring existing data can help clarify issues and define important questions and research directions. This portion of the activity is designed to help you frame important questions related to mental health issues and services in Oregon. The observations you make and the questions you generate will be the foundation of a more in-depth research project. Start by exploring the existing data.

- Go back to the main page and click on the second map viewer http://gis.laencc.edu → Modules—Mental Health→
- http://arcgis.lanecc.edu/website/mhealth_or/viewer.htm to evaluate Oregon County Data

- This map opens to the estimated 2006 population by county. Describe the general population distribution in Oregon. Where do most people live? Where is it the least populated?

- Now uncheck the population data layer and make SED Visible and Refresh the Map.

9. Describe the general spatial pattern of SED in Oregon.

- Now uncheck SED and make SMI **Visible** and **Refresh**.

10. Describe the general spatial pattern of SMI in Oregon.

- Look at the map showing the % of the population that received drug and alcohol treatment.

- Make D&A TRMT **Visible** and **Active**.

11. List the four counties that have the highest (> 2.3%) percentage of the population receiving drug and alcohol treatment.

This map does not tell you anything about the need for treatment or the availability of treatment. But there is a hypothesis that the pattern of D&A treatment could be related to ethnicity. We can run some queries to see if there are spatial correlations (similar patterns).

Run the following queries and note the relationships to D&A treatment. Make sure only Drug and Alcohol treatment is **Active** and **Visible** - **Refresh** - you can leave

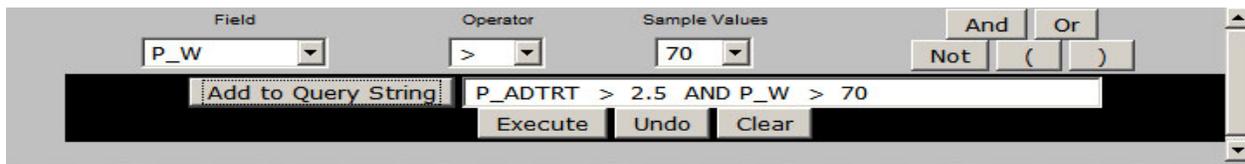First identify all the counties with over 2.5 % of people receiving treatment.
a) "Field" P_ADTRT (percent drug and alcohol); "Operation" > "Value" 2
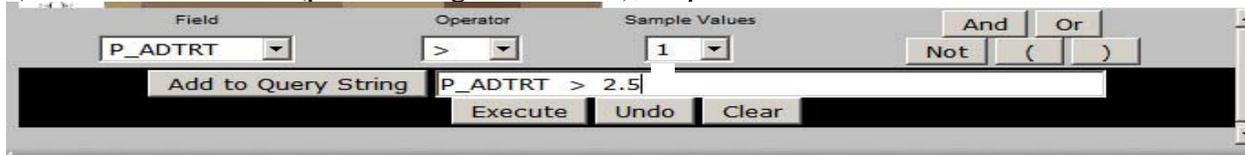
12. How many counties are selected?

b) Now evaluate this percent receiving treatment and the various ethnic identifications.
Field = P_ADTRT > 2.5 AND P_W (percent white) > 70

c) "Field" P_AA (African American); "Operation >"; "Value" 2

d) "Field" P_AI_AN (American Indian or Alaskan Native); "Operation" >; "Value" >3

e) "Field" P_AS (Asian); "Operation" >; "Value" 3

f) "Field" P_HL (Hispanic or Latino); "Operation" >; "Value"20,

12. Summarize your search results

- The final exploration is to look at the spatial patterns of youth between the ages of 10 and 17 who show "signs" of drug and/or alcohol abuse or mental illness. These data are shown as a percentage of the population in that age range. Make % Youth Symptoms Active and Visible – Refresh the map. Describe this pattern.

- Polk and Benton counties are two counties that have the lowest percentage of youth in the Youth Symptom categories. Use the "Identify" tool and look at the data table for each county. Then use the "Identify" tool to look at their neighboring counties. What might account for the fact that these two counties are anomalies (different)?

13. Develop a list of questions you would ask to help you understand why the number of youth in these two counties showing signs of mental illness and drug and alcohol abuse is so different from the number of youth showing symptoms in nearby western Oregon counties?