Mapping Public Health – Student Instructions

Map Lung Cancer Mortality

Below is a ranked list by state of age-adjusted deaths from lung cancer per 100,000 people. Make a **public health** map using the data below to visually show rates of lung cancer deaths. Divide the states into four quartiles by rank as follows:

1. New York through Utah (rank #39-50) ← Lightest color
2. Florida through Connecticut (rank #26-38)
3. Missouri through Pennsylvania (rank #13-25)
4. Kentucky through Oklahoma (rank #1-12) ← Darkest color

Assign a color or shade to each quartile and color in the states on the map provided in the data collection sheet. It is common practice to use lighter shades for the lower numbers and darker or more intense shades for the higher numbers. Make sure to shade in the color key at the top left of the map, too.

Table 4.13 Age-adjusted Lung Cancer Death Rates per 100,000 population, in Rank Order by State — United States, 2000

Rank	State	Rate per 100,000	Rank	State	Rate per 100,000
1	Kentucky	116.1	26	Florida	75.3
2	Mississippi	111.7	27	Kansas	74.5
3	West Virginia	104.1	28	Massachusetts	73.6
4	Tennessee	103.4	29	Alaska	72.9
5	Alabama	100.8	30	Oregon	72.7
6	Louisiana	99.2	31	New Hampshire	71.2
7	Arkansas	99.1	32	New Jersey	71.2
8	North Carolina	94.6	33	Washington	71.2
9	Georgia	93.2	34	Vermont	70.2
10	South Carolina	92.4	35	South Dakota	68.1
11	Indiana	91.6	36	Wisconsin	67.0
12	Oklahoma	89.4	37	Montana	66.5
13	Missouri	88.5	38	Connecticut	66.4
14	Ohio	85.6	39	New York	66.2
15	Virginia	83.0	40	Nebraska	65.6
16	Maine	80.2	41	North Dakota	64.9
17	Illinois	80.0	42	Wyoming	64.4
18	Texas	79.3	43	Arizona	62.0
19	Maryland	79.2	44	Minnesota	60.7
20	Nevada	78.7	45	California	60.1
21	Delaware	78.2	46	Idaho	59.7
22	Rhode Island	77.9	47	New Mexico	52.3
23	Iowa	77.0	48	Colorado	52.1
24	Michigan	76.7	49	Hawaii	49.8
25	Pennsylvania	76.5	50	Utah	39.7
			Total	**United States**	**76.9**

Data Source: Stewart SL, King JB, Thompson TD, Friedman C, Wingo PA. Cancer Mortality–United States, 1990-2000. In: Surveillance Summaries, June 4, 2004. MMWR 2004;53 (No. SS-3):23–30.

Analyze Public Health Maps

Maps make visualization of data easier and allow scientists to see trends over time or by location. Complete the activities below to explore three different applications of maps. Answer the map analysis questions that are available on the data collection sheet.

Map 1: Influenza
One use of maps is to make the comparison of data from different time periods easier. CDC's National Center for Immunization and Respiratory Diseases (NCIRD) tracks cases of influenza-like illness nationwide. This map will allow you to view a week-by-week progression of influenza-like illness across the United States. The weekly influenza surveillance report is prepared by the Influenza Division and is available here: https://www.cdc.gov/flu/weekly/usmap.htm

For more detailed data about influenza-like illnesses, check out the FluView dashboard. https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html

Map 2: Heart disease and stroke
Maps can be used to compare health information from different places. Use CDC's Interactive Atlas of Heart Disease and Stroke to examine health data. Choose any topic from the menu to explore. You can use county or state data for any factor. https://nccd.cdc.gov/DHDSPAtlas

Map 3: Heart disease and stroke comparison
Maps can also be used to compare different health factors for the same place. Using the same map tool, click the "View 2nd Map" option on the top toolbar to add a second map window. Now you can easily compare maps for two different diseases or demographics side by side.

Think of a question you want to investigate. Here are a few examples:

- Which is more common: heart attacks or stroke?
- Do men or women have more heart attacks?
- How do maps of risk factors like obesity or smoking compare to maps of heart attacks?
- How does the map of heart attack hospitalizations compare to the map of deaths?

Design an intervention

Choose one of the three mapping activities and think about what you could do with the data provided. Use the **public health** approach (see page 4) to design an intervention. What risk factor has the data led you to explore? What intervention is appropriate to address this health issue? What barriers will you need to address for your intervention to be successful?

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