**NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Activity 2.1 Populations at risk**

This activity is designed to allow you to compare data for childhood lead screening and lead poisoning incidence at multiple scales. You will explore state level data quality and availability then examine one state at a finer scale, comparing county-level data accessibility and caliber. Your goal is to use the data to identify trends and regions or populations at high risk for lead exposure.

**Part 1: Evaluation of County Data**

We just explored the challenge of data quality at the state level, but there is also variability within states. This exercise will use one state to explore the high variability that can occur.

1. Using data for California broken down by county, reply to the following:
   1. Provide some possible explanations for why screening rates are so variable between counties.
   2. California showcases high variability in screening rates between counties. For example, counties with low screening rates include:

* Alameda County (urban)
* Kings County (rural, agricultural)
* Placer County (rural, mountainous)

In contrast, counties with higher screening rates include:

* Imperial (rural, agricultural)
* Orange (dense urban)
* San Joaquin (rural, agricultural)

Given the high variability in data availability and quality, how accurate are the comparisons of rates of lead poisoning between high screening and low screening counties?

1. We have provided maps at the county level for three states from different parts of the country: California, Pennsylvania and Louisiana. Federal guidelines authorize and fund each state to develop programs to support lead poisoning prevention efforts. We have mapped each CLPPP (Childhood Lead Poisoning Prevention Program) within each state with a star.
   1. What trends do you see between urban and rural?
   2. Discuss the likelihood of screening effectiveness in certain areas.

**NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Part 2: Class discussion questions**

The following questions are designed to allow you (the student) to explore data at the county level within a state in greater detail, and to reflect upon data quality when you look beyond national and / or state averages.

*Specific about data sets*

1. In Arizona, from 2004 to 2005, the number of children tested increased by 520%. What are possible reasons for this dramatic improvement in screening?
2. From 1997 to 1999 in New Jersey, the percent of children with confirmed eBLLs is greater than 20, however in the following years, it drops significantly to only 2%. Can you provide possible explanations for this difference?
3. These state data are not all-inclusive. Why might certain states be omitted?

*Interpretation*

1. Migrant workers, the homeless, and undocumented Americans are not typically captured in the census data. Refer to Supplementary Maps 1-4 to get a sense of how these issues may be influencing your data quality. Are these individuals included in lead screening data? If they are, where? How do we know?
2. Take a look at Supplementary Map 5, a map of the average age of housing stock in the US by state. Describe how these patterns might influence the number of children at risk for lead poisoning in a particular state. How might these differences affect screening rates? (Hint: Remember: lead was banned from paint in 1978)
3. How might the overall health system performance impact the reported incidence of lead poisoning?
4. How do you deal with gaps in reporting and variations in screening quality? Why are these disparities present?