**Name: ____Teacher Version_____     Date: _____     Class/Period:_____**

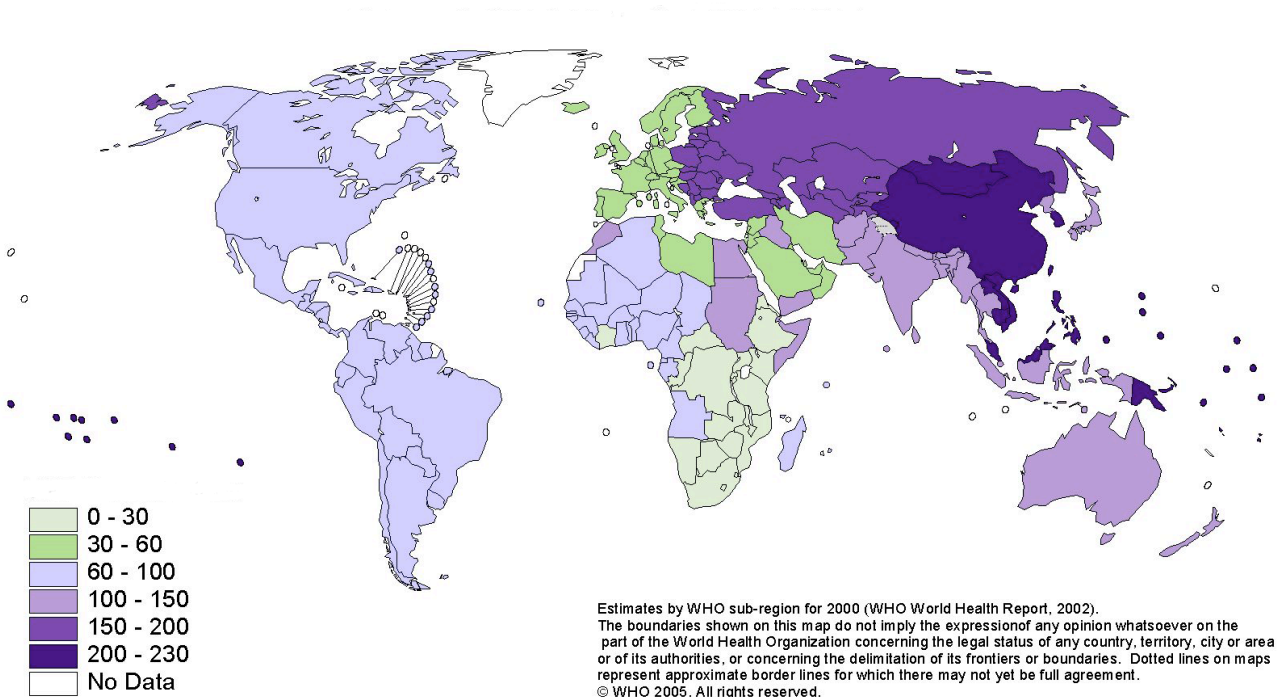<u>**Lesson 1.1 Investigating Public Health Data**</u>

**Objective:**     In this module, you will be investigating the driving question – How can I make my neighborhood a healthier place to live?  Before looking at your neighborhood, you will first look at some health data from across the world to think about what does it mean for an area to be "healthy" and what factors impact public health.

**Directions:**

You will be looking at data for common health threats in cities around the world.  Below are graphs showing data for the incidence of deaths from urban air pollution, child mortality rates and access to basic urban amenities.  The data are provided for global regions as a whole and not just for selected cities.

1.  Investigate each of the graphs below and answer the questions.
2.  Look for recurring trends as you analyze each graph.
3.  At the end of the lesson, you will try to summarize your analysis across all of the data.



## Deaths from urban air pollution

| Legend | |
|---|---|
| | 0 - 30 |
| | 30 - 60 |
| | 60 - 100 |
| | 100 - 150 |
| | 150 - 200 |
| | 200 - 230 |
| | No Data |

Estimates by WHO sub-region for 2000 (WHO World Health Report, 2002).
The boundaries shown on this map do not imply the expressionof any opinion whatsoever on the
 part of the World Health Organization concerning the legal status of any country, territory, city or area
or of its authorities, or concerning the delimitation of its frontiers or boundaries.  Dotted lines on maps
represent approximate border lines for which there may not yet be full agreement.
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The data represent the number of people who die each year from urban air pollution for each million urban residents.

1. Are the death rates from air pollution equal across the world?

*No – certain parts of the world seem to suffer higher death rates*

2. What regions of the world had the highest death rate from urban air pollution? Why do you think this might be the case?

*Eastern Europe and Asia.*

*Students' responses will vary – In general, areas that are densely populated, urbanized, and have less strict environmental regulations have more deaths caused by air pollution.*

3. What regions of the world had the lowest death rate from urban air pollution? Why do you think this might be the case?

*Southern Africa. Western Europe is also low.*

*Students' responses will vary – Southern Africa is not as densely populated or urbanized.*
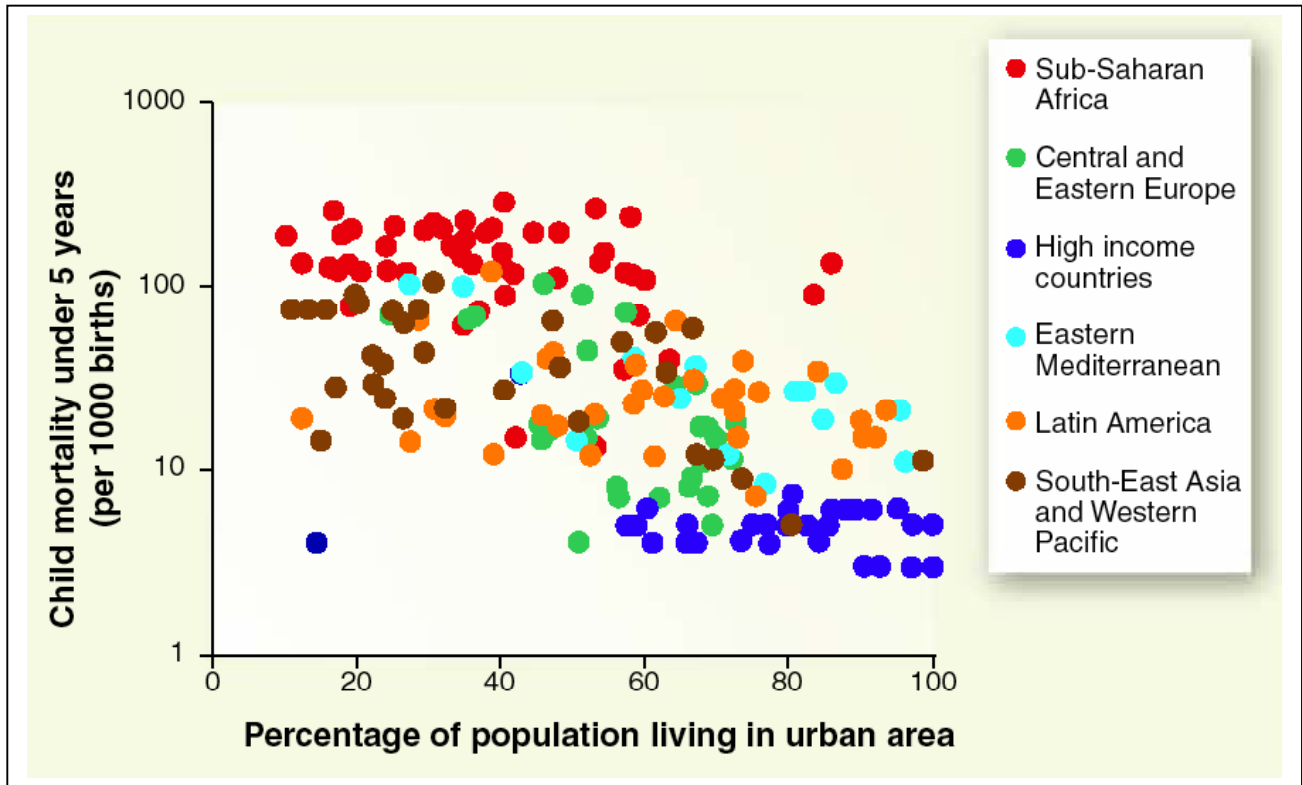
These data are the mortality rates of children under the age of five years per 1000 births in urban populations around the world. In addition, data from the wealthiest cities are provided for comparison

**Questions about the Child Mortality Data**

1. What regions of the world have the highest child mortality rates?
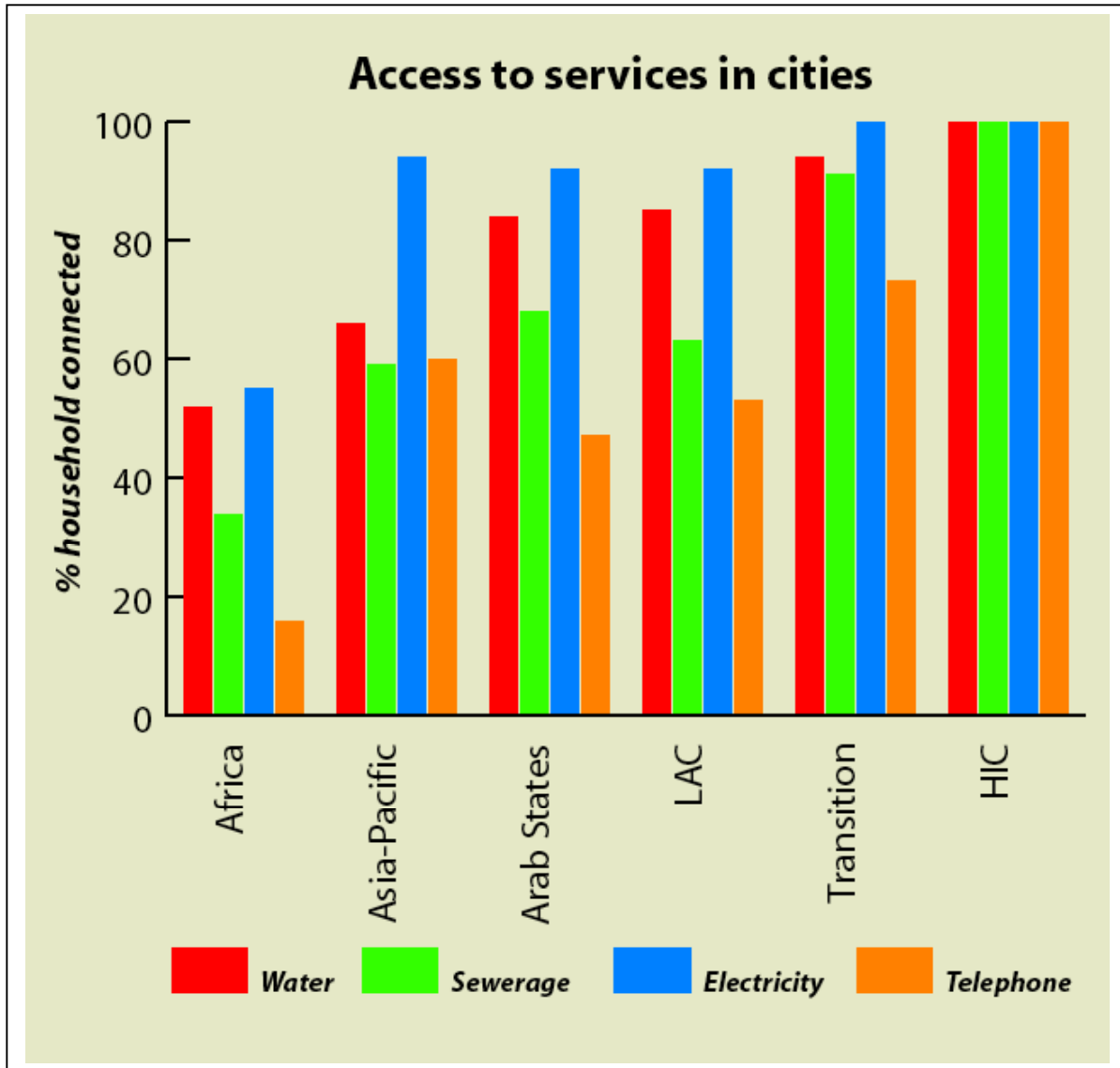*Sub-Saharan Africa had the highest mortality rates.*

2. What was the highest, and lowest rates of mortality in the dataset?

*Approximately 400 deaths per 1000 births; Approximately 3 deaths per 1000 births*

3. What general trends did you observe?

*As populations become more urban and wealthy, the mortality rate drops*

Thes data from the United Nations track the access to to critical services that promote public health in urban areas. The data are shown geographically for Africa, the Asia-Pacific Region and Latin America (LAC). In addition, the data are provided developing cities worldwide that are in transition to becoming fully modern (Transition) and for wealthy cities with relatively high incomes (HIC).

**Questions about the Access to Services Data**

1. What region has the lowest rates of access clean water and seweage?

*Africa*

2. Which regions have at least 50% access to electricity for their urban dwellers?

*All of them achieve at least a 50% access rate.*

**Summary Across Data Sets**
*Now that you have had a chance to review and analyze some of the data, please answer a few questions.*

1. What trends were you able to uncover? Were the regions of highest risk the same for the three graphs?

   *There was some variation across the graphs in terms of highest risk. Africa had the highest risk for child mortality and was lacking services, but did not have a high risk for urban pollution.*

   *The areas with lowest risk seemed to be the same – countries that have high incomes, particularly western Europe (The U.S. does not do quite as well for urban air).*

2. How would you define a "healthy" country or city? What would you look for to determine whether your city was healthy?

   *Students' answers will vary – The point is to get them to brainstorm and access their prior ideas before starting the module. The may come up with ideas such as – mortality rates, life span, different diseases or health problems, obesity, violence, happiness, etc.*

3. Besides air pollution and access to services (e.g. water, sewage, electricity and telephone) what other characteristics of countries or cities do you think impacts the health of the people living there? Why?

   *Students' answers will vary – Again, the purpose is to get them to brainstorm before starting the unit. If they have a hard time coming up with ideas, you might suggest that they think about what areas of their city they think are "healthier" than others. What makes those areas healthier. Possible ideas include – air quality, water quality, access to healthy foods, access to green space to exercise, etc.*