Student Resource 8.5

Diagrams: Health Determinants and Environmental Risk Factors

Student Names:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_

Directions: The scenarios in this resource describe links between health determinants, environmental risk factors, and diseases. For each scenario, fill in the chart describing what health determinants are linked to the environmental risk factor, and what diseases or conditions are associated with them. Next, draw a diagram that shows how the determinants, environmental risk factors, and diseases are connected.

To begin, go over the example to get some ideas about how the different parts of the scenario might be linked. Your diagram may look similar to the example, but each diagram will likely be different. There are a number of ways to create the diagram to show the links. Use arrows to show how the elements in the scenario connect to each other. If you need to, refer to your notes from Lesson 7 about health determinants.

**Example**

A couple in Colorado Springs owns an auto repair shop located on a frontage road by the side of a highway. The family lives in a small old house behind the shop. The couple has a 7-year-old son. He hangs around the shop while his parents work or he plays outside in the dirt with his dog. The child has shown serious attention problems at school. His IQ is also much lower than average, and he has problems with his hearing. Doctors believe that his problems are related to his exposure to lead. The primary sources of environmental exposure to lead are leaded paint, auto emissions, and drinking water. Living on the side of the highway, the child inhales the lead from auto emissions and is exposed to contaminated soil. He has also been exposed to lead because of his parents’ work. Auto repairers, along with printers, plumbers, and steel welders, are at a greater risk for lead exposure. In addition, the boy lives in a deteriorating house that was built before 1970 and contains lead-painted surfaces.

Scenario 1

In Eleme, an oil-rich area of Nigeria, there is a lot of industry. Petroleum companies excavate oil. The oil industrial work takes place close to the area where people live. Researchers wanted to study the health outcomes associated with industrial pollution in Eleme. They used lab experiments, community health surveys, and hospital records. They took air, soil, and water samples, and they found that various toxins in the air were much higher than the guideline limit. They found that the contaminants were associated with respiratory health problems among community members. They also found that the air pollution was associated with painful skin disorders. The hospital records showed that people who lived in the community had much higher proportions of respiratory disorders and skin disorders than other communities in the region.

|  |  |
| --- | --- |
| **Determinant(s)** |  |
| **Environmental Risk Factor(s)** |  |
| **Diseases and Condition(s)** |  |

**My diagram:**

Scenario 2

Almost half of the world’s population uses coal and biomass fuels for domestic energy, to warm their homes, and to cook food. Researchers went to six villages in Yunnan, a rural area of China, to study the effect of this type of indoor air pollution on blood pressure. They focused on 280 women from 235 households who ranged in age from 25 to 92 years old. Fifty-two percent of the women had a primary education. None of the women were current or former smokers and none were pregnant.

The researchers found that there was a connection between exposure to air pollutants from indoor biomass combustion and elevated blood pressure. They also found that the average exposure to the pollutants was higher in the winter than in the summer, presumably because during the winter the women spent more time indoors cooking. The researchers found that seasonal weather was related to the exposure women had to indoor air pollutants.

|  |  |
| --- | --- |
| **Determinant(s)** |  |
| **Environmental Risk Factor(s)** |  |
| **Diseases and Condition(s)** |  |

**My diagram:**

Student Resource 8.6

Global Health Detective: Environmental Statistics

Student Names:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_

Directions: Look at the information listed in the What to Find column of the chart below. You will search through charts and graphs online to find this information. This is the type of research that a global health worker might do.

First, make sure that you understand what information you are being asked to find. Then look for the information, using the web pages listed on the next page in the Where to Look for Information section of this resource. Write your response in the Answer column. Then describe how you know your answer is correct in the last column, and include the name of the chart or graph where you found your answer.

Notice that for some of the charts and graphs, information is revealed when you roll your mouse over certain areas. Also notice that the important information is often given in the legend of a chart or graph. You can often use this information to understand abbreviations. Study the example before you begin work.

| What to Find | Answer | Where I Found the Answer and How I Know |
| --- | --- | --- |
| Example: The proportion of the population in Cambodia that is using improved water sources | 67% | “Water and Sanitation: Proportion of Population Using Improved Drinking-Water Sources”  I scrolled over Cambodia on the map to see the percentage. |
| Region of the world in 2008 that had the most deaths attributed to outdoor air pollution |  |  |
| Continent that had most reported cholera outbreaks in 2010–2011 |  |  |
| Number of deaths in Brazil attributed to outdoor air pollution in 2008 |  |  |
| If proportion of the population with improved water sources is higher in Angola or Paraguay |  |  |

Where to Look for Information

* Burden of Disease Associated with Urban Outdoor Air Pollution for 2008  
  <http://www.who.int/phe/health_topics/outdoorair/databases/burden_disease/en/index.html>
* Cholera, areas reporting outbreaks, 2010–2011  
  <http://gamapserver.who.int/mapLibrary/Files/Maps/Global_Cholera_ITHRisk_20120118.png>
* Public Health and Environment (PHE): Outdoor air pollution, Number of deaths, 2008  
  <http://gamapserver.who.int/gho/interactive_charts/phe/oap_mbd/atlas.html>

Proportion of population using improved drinking-water sources (%), 2012  
<http://gamapserver.who.int/gho/interactive_charts/mdg7/atlas.html>