Activity 5.1.2: Infectious Disease Agents

Introduction

In the last activity, you were presented with an incomplete piece of Anna’s medical history documenting an unknown illness. In this activity you will begin your detective work by exploring the different types of pathogens as well as examining specific examples of each type in order to identify what is plaguing Anna. There are six major types of infectious agents: bacteria, viruses, fungi, protozoa, helminthes, and prions. You will investigate a variety of diseases caused by infectious agents and use this information to determine the tests you will need to perform in the subsequent activities to fill in the missing pieces from Anna’s medical history.

Procedure

1. Complete the following graphic organizer.

<table>
<thead>
<tr>
<th>Type of Infectious Agent</th>
<th>Disease Examples</th>
<th>Modes of Transmission</th>
<th>Does the Agent Require a Host for Reproduction?</th>
<th>How the Agent is Treated?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viruses</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Fungus</td>
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<tr>
<td>Protozoa</td>
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<td></td>
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<td></td>
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<tr>
<td>Helminthes (Parasite)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prions</td>
<td></td>
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</tr>
</tbody>
</table>

2. Work with a partner and read through each Disease Card. As you read, highlight key information on each disease. If necessary, research the types of infectious agents on the internet.

3. Note any similarities between the diseases caused by the same type of infectious agent.
Conclusion

1. Why is it useful for epidemiologists, scientists who study disease, to categorize diseases based on different factors, such as modes of transmission?

2. Based on what you know about the six types of infectious agents, what type of agent do you think was plaguing Anna? Explain your reasoning.

3. How would the infection simulation you performed in the last activity have been different if you had performed it for syphilis? What about for malaria? (Hint: Think about disease transmission.)

4. Using your completed graphic organizer, what can be done to prevent the transmission of each infectious agent?
   - Bacteria:
   - Viruses:
   - Fungus:
   - Protozoa:
   - Helminthes:
   - Prions:

5. What should your next steps be as medical detectives in order to fill in the missing pieces of Anna’s medical history? Refer to your Activity 5.1.1 Medical History Resource Sheet for ideas.