

Katrina's Troubled Waters: The Rescue Worker's Dilemma

Lynn M. Diener, Biology Department, Mount Mary College, Milwaukee, WI



Part I – Concerns

As a rescue worker in post-Hurricane Katrina New Orleans, Patty was expected to go from house to house looking for stranded flood survivors. She was part of a boat rescue team and spent much of her time on the boat, but also had to wade through the water from time to time to assist people who had trouble walking or were afraid of crossing through the water on their own to get to the boat. Patty had some concerns about being a rescue worker and was considering quitting her job.

Questions

1. If you were Patty, what concerns would you have about being a rescue worker?
2. Are any of your concerns health-related? Order your health-related concerns from highest concern to lowest.
3. How many of these concerns exist only in the flood conditions present in New Orleans right after Hurricane Katrina?

Part II – Lead

Patty's boss told her that scientists had done tests and a number of toxins and pathogenic bacteria were found in the flood waters. Exposure to any of the toxins or bacteria has the potential to lead to illness in the stranded New Orleans residents or the rescue workers trying to transport them to safer locations. One toxin found at levels higher in the flood water than those deemed safe for drinking water was lead (Pb). Lead (Pb), a heavy metal with a molecular weight of 207 g/mole, is a central nervous system toxin. Especially dangerous for young children, it can cause learning disabilities. It also has been linked to nausea, abdominal pain, irritability, insomnia, excess lethargy or hyperactivity, headache, gastrointestinal problems, and anemia. More serious symptoms include seizure and coma. Current uses of lead include batteries, ceramic glazes, projectiles for firearms, radiation shielding, solder, electrodes, etc. Past uses include paint pigment, plumbing pipes, and leaded gasoline

Questions

1. What are some possible sources for the lead in the flood water?
2. How could you determine where the lead comes from?
3. What populations/individuals are at the highest risk from the lead in the flood waters and why?

Part III – Soil

Patty found research suggesting that the main source of lead was from the soil. Concentrations of lead were found to be 150 to 800 times more concentrated in the top 0.025 mm of soil than acceptable based on guidelines set out by the U.S. Environmental Protection Agency (EPA). She also discovered that the primary route of exposure for lead is oral, with small contributions from inhalation and skin absorption.

Questions

1. What are some reasons why the concentration of lead is so high in New Orleans soil?
2. Would you expect a difference between New Orleans and New York City soil?
3. Would you expect a difference between New Orleans and the soil in a very small, rural town?
4. What precautions could Patty take to minimize her exposure to lead?
5. Should Patty stay and help the rescue effort or should she quit her job?

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