

Practice Lab: The Integrated Lead Poisoning Prevention Assignment

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Potential Lead Sources and Who is Most Affected

Five potential sources of lead that may affect Happytown community members are:

- Tiro: Used by the Yoruba ethnic group in Nigeria, this eye cosmetic is used in other parts of the world and goes by names such as kohl, kajal, al-Kahal, Surma, Tozali, and Kwalli.
- Lead paint: Before the 1970's people used lead paint to cover the interior and exterior of homes because it is more durable and lasts longer.
- Wild game: The flesh of venison and the small game may contain lead due to the buckshot used to kill the animals.
- Chapulines: A traditional Mexican snack food, the grasshoppers from Oaxaca, Mexico, contains high amounts of lead.
- 18-piece instrument set and rubber critter toys: The 18-piece instrument set may contain lead as the lead makes up part of the alloy in some metal toys. Lead is also mixed with plastics to provide flexibility. An increased risk of lead poisoning is possible depending on the storage method. The breakdown of bonds between lead and plastic from sunlight, air, and lead dust when washing these toys with detergent creates a hazard. (National Center for Environmental Health [NCEH], 2020).

Determining which source of lead will affect most people in the community depends on if we are attempting to determine the overall number of potentially exposed people or the population most at risk for adverse outcomes from lead exposure. The most significant number of people at risk for potential lead exposure would be families and individuals living in the homes built in the '30s and the apartments built in the '40s and '50s. Since house maintenance is a point of civic pride, the remodeling activities would expose the families to lead dust. Furthermore, individuals

and families who do not maintain their living spaces may have deteriorating lead paint and lead dust, which increases exposure. When reviewing the magnitude of lead dust and lead poisoning, the most at-risk population for long-term, adverse outcomes would be the children that play with the donated toys. Young children are most at risk from lead poisoning due to lower levels of exposure in which toxicity occurs, the lack of the blood-brain barrier, and because young bodies require more nutrients to grow. The body will store lead in bones like calcium (The National Institute for Occupational Safety and Health [NIOSH], 2018). The stored lead is released into the child's body if there is a decline in healthy dietary habits.

Characteristics, Practices, and Activities that Affect People's Lead Poisoning Risks

Three conditions, characteristics, practices, or activities that can affect Happytown community member's risk of lead poisoning is

- The use of Tiro is a practice in which powder is applied around the eyes to enhance attractiveness, stimulate visual development, and defend against the evil eye. Other Eastern cultures utilize the powder to relieve eyestrain, soreness, avoid sun glare, and prevent infections at the umbilical cord and circumcision sites (Centers for Disease Control and Prevention [CDC] 2012). Regardless of the name, this cosmetic is known to contain significant amounts of lead and, due to the potential for lead poisoning, is illegal in the United States. Unfortunately, these cosmetics still are present in the U.S. due to purchasing on the internet and personal importation from origin countries (U.S. Food and Drug Administration [FDA], 2020). Cultural factors are an integral part of a person's identity. These are traditions, beliefs, attitudes, and behaviors passed down through the generations that provide a sense of belonging to a group.

- The consumption of Chapulines from Oaxaca, Mexico . Analysis of Chapulines from Oaxaca may contain as much as 2,300 micrograms of lead per gram (Los Angeles County Department of Public Health, n.d.). Foodways are an important cultural tradition and behavior in terms of preparation, in which immigrants can continue to identify with their ethnic group.
- DIY home renovations of removing old paint and replacing window frames. Happytown reports many apartments built in the '40s and '50s in addition to single-family homes built in the '30s, which likely contain primary layers of lead-based paint. Home renovations are an activity that develops civic pride and is a symbol of financial and social status.

These factors are essential when developing a lead poisoning education program because these factors will play a part in how the public health professional delivers the message and how the community members receive and act upon the message.

The Importance of Considering Cultural Factors When Developing Community Interventions

To develop relevant, worthwhile community interventions, cultural factors must be considered when approaching community members about lead poisoning prevention. Essential risk communication strategies that can help tailor effective public health communications include using the native language/ multi-language approach, include action messages, and utilizing multiple communication methods to deliver the message. To use a multi-language approach, the public health professional will need to identify community leaders to assist in the translation and dissemination of the public health message about the lead poisoning risks. Developing action messages to provide alternatives that can reach all community subpopulations to assist in preventing lead poisoning is an essential strategy in building a sense of agency. For example,

when informing community members about the risk of lead poisoning and the adverse health effects of using Tiro, the health message should include information on Tiro alternatives. When developing a community health message about the potential of lead poisoning from old paint, the community could replace the DIY workshops on remodeling with workshops that assist the community members in applying for federal funding to cover the cost of certified contractors to remove the leaded paint. Public health professionals could also set up a booth at the Happytown funfair and provide lead testing kits to the community. Finally, to reach most people, the health message will need to be delivered through many communication avenues due to the community's diversity in terms of language, ethnicity, age, and income. The probability that all community members will have access to or use the same communication technology is not likely. The lead poisoning education program must include verbal, visual, and written messages delivered via flyers, brochures, television, telephone, radio, internet.

References

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