PRACTICE LAB: THE INTEGRATED LEAD POISONING PREVENTION ASSIGNMENT

ANDREW WILSON

OLD DOMINION UNIVERSITY

MPH 613 ENVIRONMENT, SOCIETY, AND HEALTH

DR. S.M. BECKER

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Potential Sources of Lead Poisoning

There are multiple potential sources of lead in the Happytown community. While there are more obvious sources, some potential sources are a bit less known. For example, a potential source of lead poisoning is the sweet Chapulines from Oaxaca, Mexico. According to a news release from the County of Los Angeles Public Health Department, chapulines from Oaxaca may contain as much as 2,300 micrograms of lead per gram of product (County of Los Angeles Public Health, n.d.). That is a massive amount of lead that is potentially available for an individual to ingest. Another potential lead poisoning source is Tiro face paint. The FDA (2022) reports that tiro and other traditional eye cosmetics contain high levels of lead, usually in the form of lead sulfide. It was also reported that a tiro product was linked to lead poisoning in an infant where 82.6% of the substance consisted of lead (FDA, 2022). Children could ingest tiro particles in a myriad of ways, especially by rubbing their faces with their hands.

Furthermore, the toys from the Happytown Fun Fair event are a potential source of lead poisoning. The 18-piece INNOCHEER musical instrument set had paint on the maracas, xylophone, and carrying case that contained lead levels that exceed the US federal lead paint ban (U.S. Consumer Product Safety Commission, 2019). The U.S. Consumer Product Safety Commission issued a safety recall of this product in 2019 and no incidents or injuries have been reported. It is unfortunate that Happytown's efforts to provide children with toys and educational kits also put children at risk for lead poisoning. The 10-in-1 Incredible Inventions science kit due to the magnets in the kit containing lead that exceeds the federal allowable limit (Kiner, 2021). The U.S. Consumer Product Safety Commission issued a safety recall of this product in 2021.

A potential source of lead poisoning that affects more than just children is the housing makeup in Happytown. In Happytown, there are plenty of low-cost apartments from the 1940s and 50s as well as many single-family homes from the 1930s. A significant amount of white house paint made before 1955 was 50% lead and 50% linseed oil. Lead-based paint, before 1950, was used on interior and exterior applications in most homes. The danger of lead-based paint is that it can chip and when painted surfaces rub together, it can create dust. The chips can be ingested by children and pets. The lead paint dust can be suspended in the air close to the ground making it easy to be inhaled. It can also contaminate the soil around the house making any disturbance of the soil a hazardous undertaking. Like lead-based paint on the inside and outside of the housing, the semi-annual "renovate-it-yourself" event is an additional source of lead poisoning.

The semi-annual renovation event is the most likely to affect the most people. Deteriorating lead-based paint is a very significant source of lead exposure and poisoning in the US. The home is where most people spend their time as well. The renovations are also happening in historic homes which are very likely to have lead-based paint. The renovations can create chips and or dust and can cover furniture, toys, and other objects in the home further increasing the likelihood of ingesting lead. The removal of lead-based paint should be handled by trained individuals with the proper protective equipment.

Characteristics that Affect Risk

Three characteristics of Happytown that affect people's risk of lead poisoning are that it is diverse, has strong civic pride, and is a historic community. These factors intersect to influence risk. Diversity is a wonderful thing to have in a community, Happytown is very welcoming to all. With

diversity comes the need to be culturally competent and understand the differences between various groups. Whether it is explicit or implicit, racial bias happens across the US. Not everyone is affected by problems the same in the US. If you were vulnerable before an emergency, you're more likely to be even more vulnerable after it. Marginalized groups in the US have long suffered inadequate and often hazardous housing conditions. In addition to racial bias, not everyone speaks, reads, and or understands English. How can someone understand the risk of lead exposure if they cannot understand you? To design an effective lead poisoning education program, it needs to be culturally competent and available in multiple languages.

The strong civic pride aspect of Happytown is a beautiful characteristic that any community aspires to. However, how Happytown seems to celebrate its civic pride is troubling. They hand out science kits and toys which contain excessive amounts of lead. Renovations of historic homes and buildings are encouraged by people who may be unaware of the risks or how to properly remove lead. The community also would be better off by including a focus on lead in their food safety programs. Happytown should not be ashamed of its civic pride, but rather celebrate in ways that do not increase lead exposure. The lead education program should be designed with the fact that Happytown is proud of its community and have it guide future celebrations. One way can be to celebrate with updates on lead removal in the community

The historic nature of Happytown affects lead exposure because of the likelihood of lead-based paints used on all housing built before the 1960s. The HUD and EPA require the disclosure of known information on lead-based paint and paint hazards before the sale or lease of most housing built before 1978 (U.S. Department of Housing and Urban Development, n.d.). However, renovations of historic housing still occur in the community. An effective lead education program would help people understand the risks and the next steps to take. It would be even better to get the community medical professionals to participate in communicating the risks of lead in the development of this program.

Cultural Factors

Cultural factors are important for effectively communicating lead poisoning information because you cannot assume that one approach used by the dominant culture is universally applicable. There can be differences in language, technological competency, and health literacy across socioeconomic and racial groups. Furthermore, if you are not culturally competent in your town, then you are not in touch with your town. If you are not in touch, how effective can your educational programs even be? You must include the public as a partner. A risk communication strategy for reaching older adults and elderly members is potentially sending pamphlets in the mail and running TV commercials that talk about lead exposure and include a hotline and link to refer to. Older adults and the elderly are less likely to use the internet and information spread solely over the web may not reach them. Therefore, other forms of communication are needed to reach them. Another risk communication strategy would be to provide all information on lead exposure and poisoning in as many of the languages spoken and understood in Happytown as possible. Happytown, much like the rest of the US, is a diverse society and Happytown is welcoming to all including new immigrants. A third risk communication strategy to reach younger people would be to have a social media presence for the lead education program. People use their phones to stay in touch with friends and family on social media, it would be perfect to partner with the community and have them involved through social media. You can also get feedback and hear concerns from the community as well.

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