

Noah Wilkins  
Practice Lab – MPH 613  
Dr. Becker  
4/23/22

1. Lead sources can be seen in many aspects of life; for Happytown, USA, potential lead sources are also present in the resident's daily lives. These lead sources stretch from food to the homes within Happytown. The first two potential lead sources that are present in Happytown come from the older homes. Many of the Happytown's low cost apartments were built in the 1940s and 50s, while many of the single family homes were built in the 1930s. During these eras, leaded paint was used to coat both the outside and inside of the homes. When this paint chips or cracks, small amounts of leaded dust or small paint chips can accumulate on interior surfaces such as window sills, floors, or children's toys. It was not until 1978 that the sale of lead paint was prohibited in the US. Of the homes built and constructed before this period, 87% of the homes built before 1940 contain lead based paint, and 69% of the homes built in the 1940s and 1950s contain lead based paint. This is perhaps the source of lead that could affect the most individuals in Happytown. The leaded dust may not be apparent or could go unnoticed and many children could inadvertently poison themselves. Also, lead can accumulate and spread when the residents choose to renovate their homes, which has recently become a new fad within the community. Likewise, another source of lead stems from homes built before 1986, which are likely to contain a potable water system that features leaded pipes, fixtures, and solder. The water treatment facilities of Happytown should account for this by adding a corrosion inhibitor. However, mistakes and mishaps in this system are eventually inevitable. To reduce exposure to this source, the people of Happytown can use certified water filters that will filter out lead and flush the pipes by running the water for a few minutes before drinking, washing, or using. In addition to the sources that the older homes of Happytown produce, some of the cuisine in Happytown has been shown to contain lead. Both the Buford's Restaurant and the Arturo's Place offer meals that could contain excess amounts of lead. The venison and small game meat offered at Buford's Restaurant is received and hunted by Happytown's Buckshot Buddies, which could contain lead from the ammunition used to kill the animals. Additionally, Arturo's Place offers chapulines from Oaxaca, Mexico which have been shown by the LA county department of public health to have up to 2,300 micrograms of lead – a number overwhelmingly exceeding the limit the FDA suggests for children. Members of the Happytown community should be advised before consumption, and the public health department of Happytown should take action. Similarly, some of the popular toys used in Happytown may not be safe for children and may contain excess amounts of lead. The free science kit that each child receives on the New Residents Day has been recalled due to excess levels of lead paint. Additionally, the three toys given to children of Happytown at the annual Fun Fair (the 18-piece Musical Instrument Set, the Rubber Critter Toys, and the Fishing Hero set) have all been recalled due to dangerous levels of lead found within the toys. Another source of lead that the people of Happytown are exposed to comes from the festival beads used during the New Residents Day. High levels of lead and other hazardous materials have been found in the production and coating of the festival beads. These beads are very colorful and inviting, which invoke the residents (mainly children) to wear, handle, and possibly chew the necklaces. Lastly, one of the many sources of lead that is found within Happytown is the facepaint used during the New Resident's Day. The particular facepaint used – Tiro – contains high, detrimental levels of lead. This facepaint is particularly used in the ocular region and has been shown to contain 82.6% lead.

2. In addition to the numerous lead sources that have been identified in the Happytown community, some actions, practices, and characteristics of the community further promote the

risk of lead poisoning in the community. First, the newly adopted idea for the families of Happytown to self-renovate their older homes is becoming very popular within Happytown. These renovations include removing the exterior and interior paints and replacing the older windows of the homes. These processes can (and will) produce leaded dust that if not properly handled can be deleterious to the residents. Therefore, initiatives to educate the community on the risks associated with renovations of older homes and the effects that the mishandling can induce, should be thoroughly discussed and presented. This educational program can be instituted within the semi-annual “renovate it yourself” program the community sponsors. Additionally, the culturally robust food products the community provides could also be a possibly harmful characteristic. Although beneficial to the diversity of the community, some of the imported products – such as the meats from Buford’s and the chapulines from Arturo’s – can contain undue amounts of lead. In order to inform the community on these risks, an educational program designed for the industries that import products from outside sources should be advised. Likewise, the community should be encouraged to understand the risks associated with some products that are imported to this culturally diverse food community. Finally, the New Resident’s Day is an opportunity to collectively grow as a community, but certain activities within the event can be harmful to the residents of Happytown (especially young children). These activities include the festival beads that are handed out that contain lead, the Tiro eyeshadow that contains lead, and the 10 in 1 invention science kit that contains lead. Although thoughtful and helpful for promoting civic pride, these activities and items that are used / distributed can be very harmful. To reduce the negative effects that can correlate with the distribution of goods at the New Resident’s Day, city officials who organize the event should be educated on the effects that some of these items can have on the community and its citizens.

3. Happytown is a culturally diverse community that encompasses many different beliefs and cultures. Therefore, to properly communicate and promote lead awareness, cultural competence within each group of the community is paramount. Public health professionals must recognize the differences in the Happytown community, respect these differences, and be responsive in the program designs / implementation / communication. First, Happytown is a widely racially diverse community. With nearly a quarter of Happytown’s population Hispanic, a multilingual approach should be used in all educational lead prevention programs (and other public health programs as well), in order to provide and reach the most of the community. In addition to being culturally diverse, Happytown has a large distribution of household income. This should also be understood and recognized when drafting a lead prevention educational program. The financially stable families should receive more information regarding how renovating older homes can have a negative effect if the leaded dust is not cared for properly, while the less affluent families that may not be renovating should receive a broader educational program that covers all of the lead risks present within the community. Lastly, Happytown has a large population of children within its community. Since children are the most vulnerable population to lead poisoning, multiple programs should be crafted to address both the adult populations and the child populations of Happytown. When crafting the children’s program, a couple key points should be remembered in order to create an effective program – the information should be accurate, simple in language, and age appropriate. With these three strategies, more of the diverse community of Happytown can be reached.

## References:

- Anker play products recalls 10-in-1 Incredible Inventions Science Kit due to violation of the federal lead paint ban.* U.S. Consumer Product Safety Commission. (n.d.). Retrieved April 25, 2022, from <https://www.cpsc.gov/Recalls/2021/Anker-Play-Products-Recalls-10-in-1-Incredible-Inventions-Science-Kit-Due-to-Violation-of-the-Federal-Lead-Paint-Ban>
- Blue Star Trading recalls children's Fishing Toy Games due to violation of federal lead content ban; lead poisoning hazard; sold exclusively on Amazon.com (recall alert).* U.S. Consumer Product Safety Commission. (n.d.). Retrieved April 25, 2022, from <https://www.cpsc.gov/Recalls/2021/Blue-Star-Trading-Recalls-Childrens-Fishing-Toy-Games-Due-to-Violation-of-Federal-Lead-Content-Ban-Lead-Poisoning-Hazard-Sold-Exclusively-on-Amazon-com-Recall-Alert>
- BSN sports recalls Rubber Critter Toys due to violation of federal lead paint ban (recall alert).* U.S. Consumer Product Safety Commission. (n.d.). Retrieved April 25, 2022, from <https://www.cpsc.gov/Recalls/2018/BSN-SPORTS-Recalls-Rubber-Critter-Toys-Due-to-Violation-of-Federal-Lead-Paint-Ban-Recall-Alert>
- Centers for Disease Control and Prevention. (2013, July 10). *Drinking water pipe systems.* Centers for Disease Control and Prevention. Retrieved April 25, 2022, from <https://www.cdc.gov/fluoridation/engineering/corrosion.htm#:~:text=Corrosion%20inhibitors%20are%20commonly%20used,fluorosilicic%20acid%20or%20sodium%20fluorosilicate>
- Centers for Disease Control and Prevention. (n.d.). *Infant lead poisoning associated with use of Tiro, an eye cosmetic from Nigeria - Boston, Massachusetts, 2011.* Centers for Disease Control and Prevention. Retrieved April 25, 2022, from <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6130a3.htm>
- Children's toy instrument sets recalled due to violation of the federal lead paint ban; made by Creative Sto and sold exclusively at Amazon.com (recall alert).* U.S. Consumer Product Safety Commission. (n.d.). Retrieved April 25, 2022, from <https://www.cpsc.gov/Recalls/2019/Childrens-Toy-Instrument-Sets-Recalled-Due-to-Violation-of-the-Federal-Lead-Paint-Ban-Made-by-Creative-Sto-and-Sold-Exclusively-at-Amazon-com-Recall-Alert>
- Class Slides.
- Redmon, D. (2017, March 8). *The toxic truth behind Mardi Gras beads.* Smithsonian.com. Retrieved April 25, 2022, from <https://www.smithsonianmag.com/science-nature/toxic-truth-mardi-gras-beads-180962431/>