

BLOOD LEAD POISONING

ENVIRONMENTAL HEALTH ISSUE PROFILE

Community Action for a Renewed Environment (CARE)
Environmental Sustainability for the Salina Community

Issue: Exposure to lead from sources in the home

Background: Lead is a toxic heavy metal that produces many diverse health effects, particularly in young developing children. It can enter the body through ingestion or inhalation, and is dangerous because it interferes with normal body functions. It can change the way the blood-forming cells work, alter the way nerve cells signal each other, and can disturb or destroy the way the brain makes connections for thought processes. At very high levels, lead has been known to cause serious physical and mental developmental problems, coma, and even death. Even at low levels, lead poisoning can cause impaired hearing and speech, learning disabilities, slowed growth, reduced attention spans, hyperactivity, and other behavior problems

The single largest source of home lead exposure is lead paint. Lead was commonly added to residential paint to add durability and strength. When this paint is being scraped, chipping, peeling, or otherwise disturbed, this lead becomes available to the residents of the home, usually in the form of dust. The dust is then ingested or inhaled.

In 1978, the Consumer Product Safety Commission banned the use of lead in residential paint. This action removed harmful lead from any home built after this time, but did nothing for the large percentage of homes built before this regulation.

The secretary of the U.S. Department of Health and Human Services has called lead poisoning a “major environmental threat to our nation’s children,” but the Centers for Disease Control and Prevention consider lead poisoning to be a “preventable” environmental issue.

Standards: According to the Centers for Disease Control and Prevention, blood lead levels in children less than six years old are considered “elevated” if over 10 µg/dl. Children under the age of six are considered the highest priority because most of the development that occurs during this time, and high lead levels can have a permanent affect on the rest of a child’s life. Children between the ages of one to three years are the most commonly lead poisoned, due to the hand-to-mouth action that occurs during these years. Many toddlers put everything in their mouth, including any lead dust that may be present.

Community-specific indicators:

What does the data say? Since the major cause of lead poisoning in children from homes is linked to lead-based paint, the focus in this issue would be in older housing. Salina has 16,374 homes, with about 13,059 built prior to 1978, or 80%. This means that there is a large potential for many homes to have lead-based paint hazards.

According to the 2000 Census data, Saline county has approximately 4500 children six years of age or younger. CDC estimates that approximately 2.8% of all children in the at-risk category (six years old or younger) have lead levels above the standard of 10 µg/dl at any one time. Saline County may have as many as 126 children with elevated blood lead levels. The

Salina-Saline County Health Department is the local agency that case manages children with high lead levels. When a case is found, the health department employs state and nationally certified staff to inspect the home for lead hazards and make recommendations to remove those hazards. During 2009, only eight children were identified and case managed, a little over 6% of the potential children who could be lead poisoned.

Who is affected? The main focus is on children under the age of six due to the development that is going on during this time period, but adults can also have negative health effects from elevated blood lead levels.

How is the community affected? Lead poisoning causes irreparable damage to many of the body's systems that can become a drain on the healthcare system. It can also inhibit the mental development of children, possibly resulting in reduced IQ, ADHD, and other problems.

What are the environmental conditions? Salina has a lot of older homes that were painted with lead-based paint. In many instances, the lead-based paint is covered by one or more coat(s) of latex paint, but can still be a hazard if disturbed. Many times children are in housing in which regular maintenance is not performed, and there is chipping and peeling paint contaminating the living space with lead dust.

What are the contributing factors and behaviors of the community? Contributing factors include the public's lack of knowledge regarding this issue, the inability to recognize a lead hazard, improper home maintenance, and lack of funds to handle the lead paint properly.

How does the community protect itself? Lead poisoning is a serious threat to our children and the next generation, but this disease is preventable. Only 6% of the potential lead-poisoned cases have been identified and investigated, an unbelievably low number. Through public education, targeted home inspections, and addressing maintenance issues in the city, we can do a much better job of protecting the children of this community.

Data sources:

Where did the data come from?

Consumer Product Safety Commission

Saline County Appraiser

2000 Census Data

Centers for disease Control and Prevention (<http://www.cdc.gov/lead/>)

Salina-Saline County Health Department

Kansas Healthy Homes and Lead Hazard Prevention Program

(<http://www.kshealthyhomes.org/>)

Age of data? 1-10 years old

Additional data needed? Additional data would include an increase in testing of children under six years of age and a thorough screening of homes with maintenance issues. These homes can be selected through complaints or by request through public education.

Paper prepared by Bronson Farmer, January 2010.