LEAD POISONING IN CHEMUNG COUNTY: A PREVENTABLE AND COSTLY PUBLIC HEALTH PROBLEM

Adverse Health Effects and Economic Costs

Lead is a toxin that can cause serious damage to children's developing brains. Children less than 6 years old, including fetuses, are especially vulnerable to health problems from lead exposure. Elevated blood lead levels (EBL) are strongly associated with an increase in spontaneous abortions, low birth weight, hearing deficits, and developmental and behavioral problems, including cognitive impairment (as measured by decreased IQ), inattention, hyperactivity, and aggression. Children with EBLs are at an increased risk for learning difficulties, not graduating from high school, decreased lifetime earnings and later incarceration. At very high levels, lead can cause abdominal pain, vomiting, seizures, coma and death.

Childhood lead exposure also has potential consequences for adult health. It is linked to hypertension, kidney disease and increased cardiovascular related mortality. It is estimated that the annual cost of childhood lead exposure in the United States is $50 billion. For every $1 invested to reduce lead hazards in housing units, society would benefit by an estimated $17 to $221, a cost-benefit ratio that is comparable with the cost-benefit ratio for childhood vaccines.

There is No Known Safe Level of Lead

There is no known "safe" level of lead. Adverse neurodevelopmental cognitive impacts occur at blood lead levels (BLL) less than 5 ug/dl (micrograms per deciliter). In 2012 the CDC (Center for Disease Control) established a "reference level" for blood lead levels of greater than 5 ug/dl, thereby lowering the level at which clinical and public health evaluations and interventions are recommended. Children with blood lead levels greater than 5ug/dl are at the top 2.5% of lead levels nationally in children ages 1-5 years. The average blood lead level (BLL) for U.S. children ages 1-5 years is less than 2 ug/dl (1.4ug/dl).

Lead Levels in the Children of Chemung County Are Among the Highest in New York State:

NYS Public Health Law and Regulations require health care providers to:
- Test all children at age 1 year and again at age 2 years with a blood lead test
- Assess all children ages 6 months to 6 years at every well child visit for risk of lead exposure, counsel families on risk reduction, and obtain a blood lead test if a risk factor is identified

Each year between 2013 -2017, 1600 to 1900 lead tests were performed on children in Chemung County. In each of these years, greater than 10% of those tests were elevated above or equal to 5 ug/dl. These levels remain consistently elevated year after year. In 2013 through 2015, the rate per 1,000 tested children less than 6 years of age with confirmed lead levels greater than 10ug/dl in Chemung County was 21.2 (NYS rate = 5.1).

In 2015, all of the referrals from a 9 county region that were made to Golisano Children's Hospital in Rochester for chelation came from the city of Elmira. Chelation is the recommended treatment only for those children with lead levels greater than 45 ug/dl. This alarming rate of lead poisoning in the children of Chemung County prompted a visit to the Chemung County Board of Health in July 2017 by Dr. Stanley Schaffer, a nationally known expert on lead poisoning and director of the Western New York Lead Poisoning Resource Center in Rochester NY.

The Formation of the Chemung County Lead Coalition

The Chemung County Health Department realized the lead problem was too large for one government agency to handle. Therefore, in the fall of 2017 the Chemung County Health Department reached out to numerous local groups, community partners, and government agencies and formed the Chemung County Lead Coalition. The Coalition’s mission is "to work with community partners, leaders,
agencies and residents to reduce lead poisoning in families of Chemung County.” It became apparent through Coalition meetings that housing was the largest contributor to elevated blood lead levels in the children of Chemung County. The Coalition has formed three workgroups to focus on housing issues, public education and grant funding. The coalition is committed to eliminating lead poisoning in families of Chemung County.

**Lead Poisoning is a Disease Children Catch from Housing**

The primary source of childhood lead exposure in the U.S. is from lead in dust and soil from deteriorated paint in housing built before 1978. In the city of Elmira, 97% of the houses were built before 1978, the year the federal government banned the sale of lead based paint. Although unacceptable lead in water has been in the media spotlight, drinking water in the U.S. typically is not the major source of lead exposure.

Our Chemung County statistics reveal that the highest concentrations of elevated lead levels have been found in the zip codes 14901 and 14904. These areas are dense with older homes built prior to 1978 when lead paint was commonly used throughout the nation. More than fifty percent of these homes are rental properties. In these older homes, lead paint is often under layers of newer paint that may rub away on friction or impact surfaces such as windows and doors. Chipping, cracking, peeling, chalking, or otherwise deteriorating lead paint is hazardous and can create lead dust. Even in well maintained homes, lead dust can form when lead based paint is scraped, sanded or heated during home repair activities. Lead dust is the most common way that people are exposed to lead inside the home. Young children ingest the dust when putting their fingers and toys into their mouths or by chewing on surfaces. The lead dust is often not visible to the naked eye, so visual evidence of peeling paint is not an adequate method to assess risk. Homes with no visible dust may still contain lead dust.

Lead based paint risk assessments are particularly helpful in determining potential sources of lead exposure and in designing possible solutions. A risk assessment is an on-site investigation to determine the presence, type, severity and location of lead hazards and provides suggested methods to control them. It provides the owner or tenant with the knowledge of where lead paint exists in the home. Ideally, after the assessment is completed, lead hazards are remediated or eliminated and lead poisoning is prevented.

**The Current Efforts to Address the Lead Poisoning of the Children of Chemung County Are Not Working: It is Too Little, Too Late**

In every year from 2013 through 2017, greater than 10% of the lead tests of the children of Chemung County have been elevated. These numbers are not going down. Our children are only identified AFTER the poisoning has occurred. This is too little, too late. No treatments have been shown to be effective in ameliorating the permanent developmental effects of lead toxicity once it occurs.

Presently, an environmental investigation of the home to identify the source of lead is only done in children with blood lead levels (BLL) greater than 15 ug/dl. Current scientific evidence has shown that lead poisoning prevention education directed at avoidance of exposure by hand washing or controlling lead dust by certain housecleaning techniques fails to reduce children’s blood lead concentrations.

Health Department sanitarians inspect the interior and exterior painted surfaces of homes using an X-ray fluorescence machine, which provides instantaneous results indicating whether lead paint is present. When lead hazards are detected, the owner is required to correct the conditions by using an appropriate risk reduction method, either interim controls or abatement. Interim controls could include techniques such as wet scraping the paint and repainting or covering with carpet. Abatement is complete removal of the components containing lead paint. If interim controls are used, there must be proper maintenance and ongoing monitoring, whereas abatement permanently eliminates the lead.

As previously mentioned, the inspection occurs only after the child has already been identified as having an EBL greater than 15mcg/dl. Our goal is to identify and correct the lead hazards before a child is exposed to lead. Funding to assist landlords and homeowners with the costs of interim controls or lead abatement can reduce the lead in housing and thereby reduce lead exposure in children.
What Works and How to Achieve It: Primary Prevention

Primary prevention, identifying and eliminating the major sources of lead in the environment before exposure occurs, is now widely recognized as the most reliable and cost effective way to prevent lead poisoning and its irreversible harmful effects. Recognizing this, many communities have enacted legislation to ensure that rental properties are lead safe before occupancy. This is coupled with rent withholdings through enforcement of the Spiegel Act which prevents tax dollars from being used for rent assistance in buildings whose conditions are deemed “dangerous, hazardous or detrimental to life and health.”

The City of Rochester, together with Monroe County Department of Public Health, provides one example of this very successful approach and has provided a model for successful reduction in childhood lead poisoning. In 2001, the City of Rochester and the Monroe County Dept. of Health collaborated to form the Coalition to Prevent Lead Poisoning. The Coalition consisted of government officials, health care providers, housing agencies, educators, community leaders and child advocates. The Coalition worked to raise community awareness of the lead issue and used the best available science to develop a low cost, targeted local housing policy solution.

In 2005, the Rochester City Council passed the Lead Based Paint Poisoning Prevention Ordinance which targeted the highest risk housing in Rochester and promoted interim controls. Using local geographic data analysis, the Coalition identified the neighborhoods with the highest risk housing, then analyzed cost effective approaches to lead hazard control. Research indicated that interim controls could effectively control lead hazards if combined with proper maintenance and monitoring. Lead inspections were incorporated into already required Certificate of Occupancy inspections of rental properties. A HUD Lead Hazard Control grant provides funding for interim controls and abatement. If interim controls are used to remediate identified lead hazards, a lead dust clearance test must be passed and a Certificate of Occupancy must be renewed every 2-3 years. The City and County share data on health and safety violations. Rent withholding notices are sent to owners of properties with violations if their tenants receive rent assistance.

Working Together Our Community Can Eliminate Lead Poisoning in Chemung County

Lead poisoning of our children is not a "city" or "county" problem. It is not a "code enforcement" or "public health" problem. It is an urgent community problem and requires an immediate community response. The Chemung County Lead Coalition recommends the enactment of a City of Elmira Ordinance, which would require rental properties within the City, be certified lead safe before occupancy. The Chemung County Executive and Legislature should follow the City in requiring that rental housing in the towns also be lead safe before occupancy. The Chemung County Lead Coalition also supports efforts to enforce the Spiegel Act. Taxpayer dollars should not be used pay for housing that is responsible for poisoning our children.

Lead poisoning is a preventable and costly problem for our community. The solution, primary prevention, is achievable and cost effective. Working together, we can eliminate lead poisoning in Chemung County and help create a better future for our children and our community.