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Early Childhood Lead Exposure: Benefits of Prevention Far Outweigh Costs of Abatement

Executive Summary

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As a society, we should celebrate the drop in lead exposure among American children over the past few decades, and the major decline in the number of children with elevated blood lead levels – from 13.5 million in 1976 to under 200,000 in 2006. Nonetheless, for a small but targeted group, lead exposure remains a hazard with serious societal consequences. This paper demonstrates that, while lead abatement must be done on a unit-by-unit basis, the economic benefits of removal of the hazard far outweigh the costs, even under the most conservative estimate. More moderate estimates suggest even larger returns on the public investment.

While public health initiatives, combined with laws limiting lead content in gasoline, household paint, food canning, and industrial emissions has substantially reduced lead exposure among children, lead poisoning poses a threat to some at-risk groups. Recent research also indicates that significant neurological damage to children occurs even at very low levels of exposure. This can lead not only to impaired cognitive and behavioral development, but to later health problems and to criminal activity. Preventing exposure in young children will require controlling a significant and persistent cause of lead poisoning: lead paint used in housing prior to its ban in 1978, with higher concentrations in paint produced prior to 1950. Poor, urban minorities disproportionately reside in these housing units, creating significant inequity in health and neurological outcomes by ethnicity and socioeconomic status. Since the costs of lead paint abatement are nontrivial and the removal must be done on a unit by unit basis (rather than imposed at an industry level), there must be substantial commitment to further reduce lead poisoning among vulnerable children.

A growing body of literature has detailed the economic costs and risks of lead poisoning, including several analyses summarizing these costs and setting them against the estimated costs of lead paint hazard control. However, recent research has broadened still the scope of our understanding of the societal costs of lead poisoning. For example, new studies have begun to analyze the correlation of lead poisoning to crime rates and their associated costs, as well as linking early lead exposure to adult-onset health problems. This paper comprehensively addresses the costs and benefits of household lead hazard control vis-à-vis new discoveries in the medical, psychological, and economic literature. The focus is on children six and under, because lead exposure is the highest for this age group. This is also the period when lead exposure produces the most significant damage.

In this analysis, an upper and lower bound is constructed on the cost-effectiveness of strategies to reduce lead exposure. The reasoning behind this methodology is that there is no single estimate that accurately reflects either the costs or benefits to lead hazard control. On the costs side, the actual expense of reducing lead-based paint hazards in affected homes varies with the extent of interventions required. On the benefits side, the number of children with lead exposure ranges from those reported in state child blood lead surveillance data to those determined from weighted estimates of national surveys. Even under the most conservative analysis, for every dollar spent on controlling lead hazards, between $17 to $221 would be returned in health benefits, increased IQ, higher lifetime earnings, tax revenue, less spending on special education, and reduced criminal activity. While several factors could make one extreme or another more credible, it is likely that the truth lies in this interval.