THE ATTRIBUTABLE COSTS OF US OCCUPATIONAL LEAD POISONING

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Background: Occupational standards for lead in the US have not been changed for decades, during which the knowledge about lead's health effects has grown substantially, and new health outcomes and lower exposures associated with those outcomes are a general pattern.

Objective: We estimated the health and economic benefits that would accrue from a reduction in occupational lead levels in the United States.

Methods: We reviewed the literature on both occupational and general population studies of the effects of lead, and found substantial evidence for multiple health endpoints. We took data from the cost of illness literature to estimate avoided costs by reducing these effects and estimated the benefits that might be expected. To estimate exposure, we used US government data on the number of workers exposed; this is likely to be a significant underestimate of actual exposures.

Results: Payer and private medical costs alone are estimated at $40 million (09US$) per year, and total direct and indirect costs are estimated at $117-142 million (09US$) per year for the 11,000 or so workers with occupational lead exposures. This does not include increased mortality, a valuation of all health effects associated with lead exposures and quality of life decrements.

Conclusions: Reducing allowable lead limits would result in benefits of approximately $10,000 per worker per year, suggesting that cost effective reductions are likely to be possible. Given underreporting of actual exposures and the omission of important health effects, this is likely a significant underestimate of the true benefits of reducing occupational lead exposures in the US.