

Scientists develop more effective method of predicting lead-poisoning risk (w/ Video)

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Stan Kaplowitz, sociology professor at Michigan State University, and colleagues have created a new method of determining which children should be tested for lead poisoning. Credit: Michigan State University

As health departments across the United States seek a better way to determine which children should be tested for lead poisoning, a method created by Michigan State University scientists has proven to be more accurate and cost-effective than current strategies.

In 2009, the [Centers for Disease Control and Prevention](#) recommended an end to universal testing for [children](#) on Medicaid as long as state and local health departments are pursuing other methods of assessing the risk of elevated blood lead levels. The existing strategy relies primarily on Medicaid status and classifying ZIP codes as high or low risk.

The MSU [risk assessment](#) - based on a decade of research - is considerably better, according to an article in the March-April issue of the journal *Public Health Reports* by Stan Kaplowitz and Harry Perlstadt, MSU professors of sociology, and Lori Post, a former MSU researcher now at Yale University.

"The key benefit of our method is that it identifies even more of those children who need testing and will lead to fewer unnecessary tests," said Kaplowitz, principal investigator on the project. "Hence it will improve the health of children and families at less cost to the taxpayers."

The researchers created risk scores for more than 500,000 children in Michigan who were tested for [lead poisoning](#) from 1998 to 2005. The scores are based on race, Medicaid eligibility and statistics about the socio-demographic characteristics and age of the housing in the child's neighborhood. The researchers found that their scores would have been better predictors of whether a child should be tested than the criteria used by the universal testing method.

If Michigan [health officials](#) had used the researchers' risk assessment, the method would have saved about \$153,000 between 2002 and 2005 by not administering thousands of tests that came up negative, the researchers say. At the same time, the new method would have suggested testing even more of those who had elevated blood lead levels than did the old method.

To implement the method, parents or medical providers in Michigan use a specialized Web site. They input a child's address, Medicaid eligibility and race, and immediately are provided with a highly reliable assessment of whether the child's lead-poisoning risk is high enough to merit a blood test. The Web site was developed in cooperation with the Michigan Department of Community Health and funded by the CDC. The site currently is being updated and should be operational again this summer,

Kaplowitz said.

Under the 2009 regulations, states may continue to test all [Medicaid](#) children or develop objective criteria to determine which populations should be tested.

"We believe our method could be used by other states," Perlstadt said. "We already had one inquiry about the feasibility of doing this, and our article was widely distributed to public health employees in another."

Some 250,000 U.S. children under the age of 6 have blood lead levels greater than 10 micrograms of lead per deciliter of blood, the level at which CDC recommends public health actions be initiated. If undetected, lead poisoning can cause permanent developmental disabilities, brain damage and even death.

Children in the United States absorb lead primarily by ingesting chips or dust from lead paint. This occurs either when the paint deteriorates or from household remodeling projects. Another source is lead contamination found in water and soil.

Provided by Michigan State University

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