

Environmental Health Department

March 30, 1973

To: The Members of the Lead Industries Association, Inc.

From: Jerome F. Cole, Sc.D.

Subject: Sources of Childhood Lead Poisoning

Gentlemen:

As you know, there has been a great deal of effort recently among environmentalists attempting to relate elevated lead levels in children to environmental exposures such as lead in air and lead in dirt. Many products containing lead have also come under attack as potential contributions to pediatric lead poisoning. Examples would be lead alkyl antiknock additives, lead foil Christmas tree icicles, printing ink pigments, etc.

It is, therefore, particularly revealing to note in the enclosed document, "Childhood Lead Poisoning - A Summary Report of a Survey for Undue Lead Absorption and Lead Based Paint Hazard in 27 Cities," that the U.S. Public Health Service found in 95% of the 999 homes tested, at least one accessible paint surface containing relatively high concentrations of lead.

There is no doubt that high lead levels in old paint in poor communities constitute a public health threat. However, we should recognize old lead paint as the true source. Efforts should be made to attack this source and eliminate it. If this could be accomplished, elevated blood lead levels in children and pediatric lead poisoning would be very rare.

Sincerely,

Jerome F. Cole, Sc.D.
Director, Environmental Health

Enclosure

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

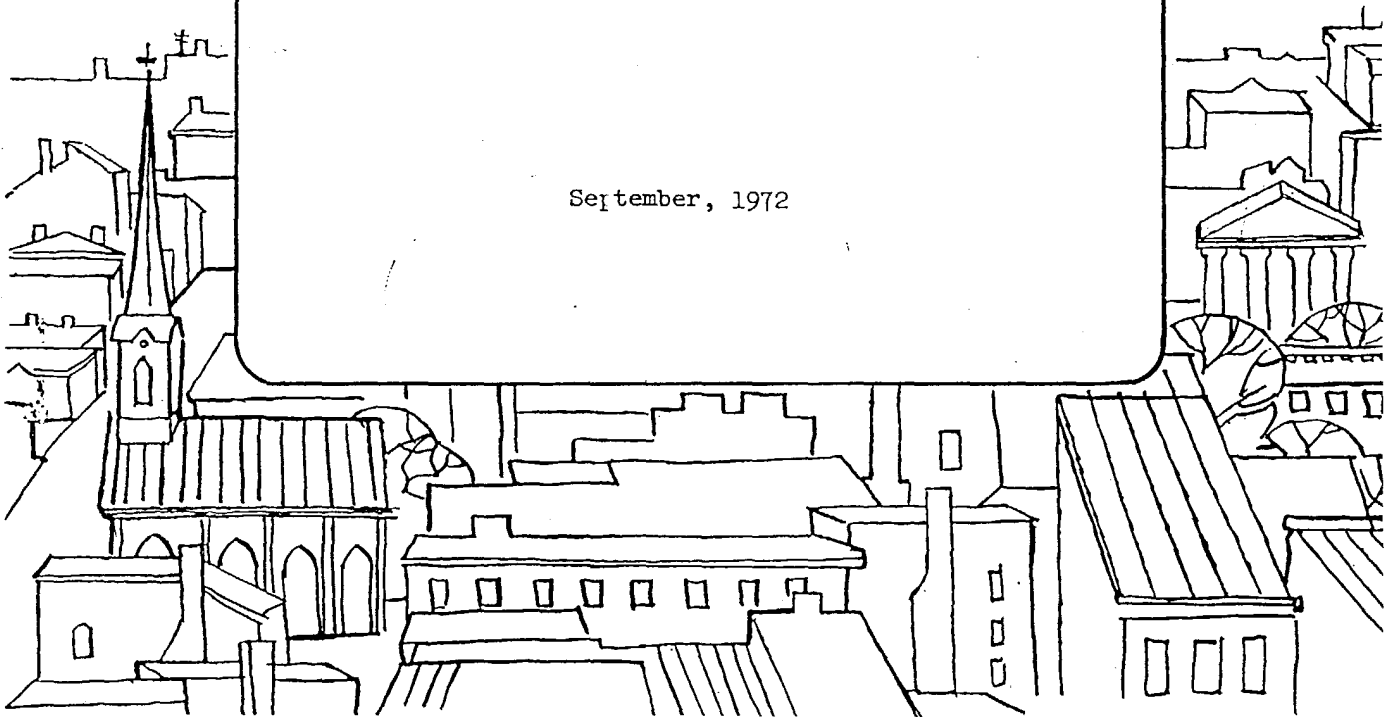
PUBLIC HEALTH SERVICE

HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION

CHILDHOOD LEAD POISONING

A SUMMARY REPORT OF A SURVEY FOR UNDUE LEAD
ABSORPTION AND LEAD-BASED PAINT HAZARD IN 27 CITIES

September, 1972



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CHILDHOOD LEAD POISONING

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION
BUREAU OF COMMUNITY ENVIRONMENTAL MANAGEMENT
DIVISION OF COMMUNITY INJURY CONTROL
CHILDHOOD LEAD POISONING CONTROL BRANCH
CINCINNATI, OHIO 45202
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THE BCEM CHILDHOOD LEAD POISONING SURVEY

A Summary Report

The Bureau of Community Environmental Management conducted small-scale neighborhood surveys in 27 cities during the summer, fall and winter of 1971-1972 to screen young children aged 1 to 6 years who were living in pre-1949, sub-standard housing. The purpose of these surveys was to obtain some assessment of the occurrence of elevated blood lead levels in children in the specific neighborhoods of the cities surveyed and to determine the presence and availability to children of lead-based paint in their dwellings.

Only cities that were not conducting a program at the time and which represented a national geographic distribution were selected. These included cities in the Midwest, South, West, North, and East which did not have the resources, or the level of suspicion, or the technical expertise to look for childhood lead poisoning.

Each child was initially tested by a micro analytical technique capable of analyzing a small sample of blood (one-tenth of a milliliter) by Anodic Stripping Voltammetry (ASV).

The ASV technique is an electrochemical procedure in which, after acid digestion of the blood sample, the lead ion is plated by negative voltage to the electrode. By rapidly reversing the polarity, the lead is stripped off, giving a current peak proportional to the concentration.

Five to ten percent of the children randomly selected had a 10cc heparinized venipuncture drawn and analyzed by a macro atomic absorption spectroscopic or dithizone technique.

If exterior surfaces were included, over 95% of the houses tested had at least one accessible surface with hazardous amounts of lead. (Table III)

To date, as a direct result of the survey, at least 30 children have been treated by chelation. An additional 13 children are known to have been diagnosed as having lead poisoning and treated by chelation as an indirect result of the survey. These cases have been attributed to an increased level of suspicion by parents and physicians as a result of publicity associated with the survey activity in the community. Also, 30 families have had the sources of lead-based paint made unavailable to children by renovation or relocation as a direct result of the survey. The communities have been advised to continue surveillance of the other 181 children having blood lead levels above 40 ug/100 ml.

Table II

SELECTED DATA ON CHILDREN SCREENED AND WITH
 CONFIRMED ELEVATED BLOOD LEADS BY CITY

CITY	NUMBER SCREENED	NUMBER ASV > 40 ug	NUMBER AAS TOTAL ¹	NUMBER AAS > 40 ug	AAS > 40 ug % CONFIRMED
Chester, Pa	58	14	1	1	1.7
Des Moines, Iowa	64	16	4	3	4.7
San Antonio, Tex.	57	4	2	0	0
Trenton, N. J.	52	11	6	3	5.8
Nashua, N. H.	92	25	17	5	5.4
Denver, Col.	73	9	12	4	5.5
Nashville, Tenn.	95	5	12	1	1.0
Pasadena, Ca.	46	25	27	1	2.0
Toledo, Ohio	118	15	17	4	3.4
Sacramento, Ca.	78	12	14	6	7.7
Portland, Ore.	82	3	6	1	1.2
Wilmington, Del.	89	40	41	24	27.0
Spokane, Wash.	75	0	--	--	--
Lexington, Ky.	66	13	12	3	4.5

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Table III

HOMES WITH POTENTIALLY HAZARDOUS LEAD CONCENTRATIONS
(AT LEAST ONE ACCESSIBLE INTERIOR SURFACE
≥ 2 MG/CM² by X-R-F ANALYSIS)

CITY	HOMES TESTED	WITH SURFACE ≥ 2 MG/CM ²	PERCENT
Indianapolis	43	38	88.4
Wichita	29	14	48.3
Portland	37	34	91.9
Lexington	19	15	78.9
Nashua	60	33	55.0
Denver	52	48	92.3
Des Moines	22	18	81.8
Charleston	39	26	66.7
Dayton	30	22	73.3
Nashville	58	43	74.1
San Antonio	31	16	51.6
Chester	39	29	74.4
Binghampton	24	19	79.2
Albuquerque	15	11	73.3
Trenton	37	30	81.1
Toledo	60	54	90.0
Pensacola	33	16	48.5
Pasadena	49	37	75.5
Sacramento	37	21	56.8
Wilmington	25	16	84.0
Salt Lake City	36	27	75.0
Hoboken	20	20	100.0
Spokane	42	35	83.3
Stamford	32	25	78.1
Flint	30	18	60.0
Harrisburg	51	40	78.4
Tulsa	49	25	51.0
TOTALS	999	730	73.1

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