

Environmental Health Indicators

Whether we consider global warming or water quality, it is clear that our environment affects us both directly and indirectly. While some environmental health issues have existed since the beginning of the human race, most have become evident in the last few centuries. These problems have emerged as a result of our growing and changing population. The industrial revolution has created air and water pollution problems as well as overcrowding and sanitation issues. As of July 2003, over 6.3 billion people inhabited the earth.

The environment plays a role in many health issues previously discussed including birth defects, cancer, respiratory diseases, and many infectious diseases. Other concerns include allergies, fertility, and exposure to animal and insect vectors. In Iowa, public health officials are especially concerned with pesticide toxicity, water quality in rural areas, and nitrate in municipal drinking water.

ISSUES IN IOWA...

- ✓ Pesticide toxicity
- ✓ Rural water quality
- ✓ Nitrate in municipal drinking water

As we attempt to provide food, water, and shelter for the world's population, we must remain aware of how our actions affect our local and global environment. At the same time, we must monitor and attempt to prevent any adverse health conditions that are caused by interactions with the environment.

This is a new section for the Iowa Health Fact Book, and as such, includes only data on childhood lead poisoning. We hope to include other environmental health indicators as well in future editions.

Childhood Blood Lead Poisoning

Childhood lead poisoning has significant effects on the health of children and on community health. Lead has adverse effects on nearly all organ systems in the body. It is especially harmful to the developing brains and nervous systems of children under the age of six years. At very high blood lead levels, children can suffer severe brain damage or even die. At blood lead levels as low as 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$), a child's intelligence, hearing, and growth are affected. In a community, the presence of lead-poisoned children can be associated with an increase in the number of children with developmental deficits and learning disorders. This places an unnecessary and expensive burden on the educational system. The presence of lead-poisoned children also requires substantial community public health resources for medical and environmental case management services.

High blood lead levels have adverse effects on nearly all organ systems in the body, and are especially harmful to children.

Most cases of childhood lead poisoning are caused by lead-based paint, which is found in most homes built before 1960. Young children who live in pre-1960 homes become lead-poisoned when they put paint chips or exterior soil in their mouths or when they get house dust and soil on their hands and put their hands in their mouths.

Although lead poisoning can cause serious health problems – including death – most lead-poisoned children demonstrate no visible symptoms. This makes it much more important to have an effective program to prevent childhood lead poisoning.

Most cases of childhood lead poisoning are caused by lead-based paints found in homes built before 1960.

Since 1992, the Iowa Department of Public Health (IDPH) has recommended that all children in Iowa under the age of six years be tested for lead poisoning. In addition, state and federal laws require that all children under the age of six and covered by Medicaid be tested for lead poisoning. In spite of this, the

statewide testing rates among children covered by Medicaid and children who are not covered by Medicaid are virtually identical.

In Iowa, blood lead testing is conducted by the Title V Child's Health Program, local health departments, and by many private physicians. The IDPH childhood blood lead level surveillance system tracks all testing in the state. Thus, blood lead testing results collected as required by Medicaid, as well as those collected from voluntary testing of non-Medicaid children are reported to IDPH.

In the following tables, data are presented for children who were born in calendar year 1992, 1993, 1994, 1995, and 1996 and who received at least one blood lead test before their sixth birthday. Children followed for blood lead poisoning may be tested multiple times. The test results that are presented in the following tables reflect the highest blood lead level for any particular child.

For each county, the number of children receiving a blood lead test who were identified with blood levels of 10.0 to 14.9 micrograms per deciliter ($\mu\text{g}/\text{dL}$), 15.0 to 19.9 $\mu\text{g}/\text{dL}$, 20.0 to 24.9 $\mu\text{g}/\text{dL}$, and greater than or equal to 25 $\mu\text{g}/\text{dL}$ are presented. A blood level of 10 $\mu\text{g}/\text{dL}$ has been identified by the Centers for Disease Control and Prevention as the threshold for lead poisoning in children and is categorized as "high" for the graphs. Additional data, such as the percent of children in each birth cohort who were tested for lead poisoning, are also presented.

Since 1992, the Iowa Department of Public Health has recommended that all children under the age of six years be tested for lead poisoning.

Percent of Children Tested For Blood Lead Poisoning, 1992-1996¹

		1992	1993	1994	1995	1996
Counties with Average Population < 10,000	County					
	Adair	12.4%	44.6%	65.6%	62.5%	36.1%
	Adams	9.8%	31.4%	23.4%	63.9%	56.3%
	Audubon	38.6%	33.3%	45.5%	58.7%	57.1%
	Clarke	18.1%	32.1%	24.4%	41.2%	44.8%
	Davis	35.5%	37.3%	44.1%	43.6%	46.1%
	Decatur	20.5%	27.3%	25.7%	36.1%	35.1%
	Fremont	1.9%	7.8%	5.1%	20.0%	21.7%
	Howard	30.2%	50.0%	44.8%	53.4%	62.0%
	Ida	25.5%	34.4%	46.5%	43.8%	50.5%
	Lucas	60.0%	78.6%	78.3%	89.0%	80.5%
	Monroe	38.8%	49.6%	59.8%	58.4%	56.7%
	Osceola	4.7%	9.9%	7.1%	7.8%	15.2%
	Pocahontas	10.1%	19.3%	16.7%	28.8%	32.4%
	Ringgold	26.3%	36.8%	66.7%	63.6%	67.4%
	Taylor	26.7%	31.4%	34.6%	52.6%	60.0%
	Van Buren	27.5%	33.3%	27.9%	46.1%	38.4%
	Wayne	40.5%	62.0%	74.4%	60.0%	60.9%
Worth	14.3%	26.6%	50.5%	58.4%	58.8%	
	County Grp %	24.7%	37.0%	41.8%	48.9%	49.6%
Counties with Average Population 10,000 to 20,000	Allamakee	13.6%	25.0%	38.0%	38.2%	59.0%
	Appanoose	39.7%	43.9%	55.3%	36.1%	27.4%
	Butler	23.3%	42.6%	46.6%	56.0%	66.2%
	Calhoun	22.5%	25.6%	29.2%	36.8%	30.4%
	Cass	42.0%	53.9%	49.3%	63.2%	64.5%
	Cedar	40.6%	33.0%	36.8%	40.2%	44.1%
	Cherokee	21.5%	43.3%	34.4%	48.5%	53.9%
	Chickasaw	8.4%	11.7%	19.5%	23.7%	37.4%
	Clay	8.1%	16.3%	26.9%	27.2%	32.4%
	Clayton	16.2%	20.7%	34.3%	41.3%	50.0%
	Crawford	13.8%	21.2%	46.0%	35.4%	40.5%
	Delaware	10.3%	14.5%	21.3%	16.4%	22.7%
	Dickinson	3.9%	7.9%	7.4%	8.0%	9.5%
	Emmet	10.4%	7.8%	9.2%	7.4%	3.7%
	Floyd	16.7%	27.5%	41.9%	50.2%	61.3%
	Franklin	32.5%	40.8%	44.4%	59.5%	77.0%
	Greene	45.5%	45.0%	64.8%	76.8%	70.0%
	Grundy	38.9%	63.1%	69.4%	74.5%	60.5%
	Guthrie	29.7%	36.2%	31.7%	36.4%	36.9%
	Hamilton	19.9%	31.6%	35.5%	45.6%	72.0%
	Hancock	22.5%	22.4%	42.4%	56.6%	77.7%
	Hardin	63.5%	63.7%	53.2%	65.6%	76.9%
	Harrison	11.0%	19.6%	25.1%	24.1%	27.2%
	Humboldt	23.0%	47.3%	57.6%	66.4%	62.2%
	Iowa	35.2%	40.4%	36.3%	44.8%	43.6%
	Jefferson	20.0%	24.9%	30.8%	41.2%	33.3%
	Keokuk	35.4%	56.6%	48.1%	49.0%	45.5%
	Kossuth	20.6%	36.5%	49.5%	53.4%	63.2%
Louisa	45.5%	44.6%	52.8%	39.7%	52.2%	
Lyon	14.4%	22.8%	28.5%	25.7%	26.7%	
Madison	22.6%	19.1%	21.9%	26.4%	40.1%	
Mills	2.6%	8.8%	6.0%	10.8%	15.3%	
Mitchell	16.7%	14.3%	26.8%	44.2%	30.0%	

Percentage of Children Tested for Blood Lead Poisoning, 1992-1996 (continued)

		County	1992	1993	1994	1995	1996
Counties with Average Population 10,000 to 20,000		Monona	17.9%	30.2%	33.1%	38.9%	44.9%
		Montgomery	19.4%	19.9%	28.8%	26.1%	35.0%
		O'Brien	18.1%	23.0%	13.8%	19.5%	22.1%
		Page	6.0%	8.5%	12.7%	21.8%	24.1%
		Palo Alto	8.0%	11.9%	15.9%	21.1%	29.6%
		Poweshiek	23.7%	24.9%	31.3%	34.9%	28.9%
		Sac	20.0%	27.3%	20.6%	24.3%	25.8%
		Shelby	7.8%	16.6%	34.2%	32.7%	46.1%
		Tama	42.9%	40.4%	47.5%	59.3%	58.3%
		Union	19.5%	24.3%	41.2%	40.3%	49.7%
		Winnebago	15.6%	31.4%	44.4%	53.7%	61.1%
		Wright	17.5%	24.4%	41.4%	64.0%	66.3%
		County Grp %	22.2%	29.1%	34.8%	39.8%	44.2%
Non-MSA Counties with Average Population > 20,000		Benton	24.7%	26.9%	19.5%	27.9%	29.9%
		Boone	36.0%	49.3%	47.3%	50.5%	57.2%
		Bremer	36.3%	49.6%	59.3%	58.2%	48.7%
		Buchanan	15.9%	22.7%	25.8%	26.9%	40.2%
		Buena Vista	16.4%	20.2%	20.6%	22.4%	26.8%
		Carroll	29.2%	34.9%	27.9%	23.7%	25.4%
		Cerro Gordo	21.3%	27.9%	42.4%	51.1%	62.2%
		Clinton	74.3%	72.9%	76.3%	78.7%	77.4%
		Des Moines	72.5%	76.7%	68.5%	81.3%	83.7%
		Fayette	15.1%	13.7%	20.2%	29.9%	35.7%
		Henry	49.6%	32.5%	33.9%	37.7%	41.4%
		Jackson	72.1%	79.1%	87.1%	82.8%	73.3%
		Jasper	17.1%	21.5%	37.1%	29.1%	29.8%
		Jones	30.0%	37.0%	35.6%	41.3%	45.1%
		Lee	62.6%	54.2%	57.9%	61.8%	49.9%
		Mahaska	44.7%	55.6%	55.9%	46.0%	58.1%
		Marion	13.1%	16.4%	25.5%	32.2%	47.4%
		Marshall	60.3%	62.3%	64.8%	76.0%	86.8%
		Muscatine	34.0%	38.3%	40.7%	43.7%	44.8%
		Plymouth	23.3%	21.2%	28.0%	30.1%	34.9%
	Sioux	19.9%	27.2%	27.9%	31.0%	35.6%	
	Story	37.4%	48.4%	49.8%	46.3%	50.9%	
	Wapello	80.8%	88.6%	85.5%	84.9%	83.2%	
	Washington	42.0%	49.5%	49.8%	45.5%	37.3%	
	Webster	14.3%	20.4%	32.4%	48.8%	53.8%	
	Winneshiek	18.8%	36.7%	43.4%	56.3%	59.0%	
	County Grp %	38.8%	44.0%	46.7%	50.4%	53.9%	
MSA Counties		Black Hawk	64.8%	56.4%	63.9%	66.5%	66.3%
		Dallas	26.5%	34.1%	36.8%	39.6%	42.9%
		Dubuque	83.6%	84.4%	79.3%	73.2%	68.2%
		Johnson	9.8%	15.6%	17.2%	18.5%	22.2%
		Linn	54.0%	52.6%	41.0%	39.4%	48.3%
		Polk	11.7%	19.6%	31.4%	35.5%	40.9%
		Pottawattamie	4.5%	3.9%	4.2%	7.5%	15.2%
		Scott	58.6%	63.2%	67.7%	70.3%	72.5%
		Warren	12.2%	18.4%	25.8%	34.1%	33.9%
		Woodbury	26.3%	29.9%	28.1%	28.7%	28.7%
	County Grp %	34.1%	37.6%	40.2%	41.9%	45.7%	

¹Children born in years 1992 through 1996.

Source: Iowa Department of Public Health, Bureau of Lead Poisoning Prevention

Elevated Levels of Blood Lead: Children Born in 1992¹

		Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population < 10,000	Adair	105	13	1	0	0	0	7.7%
	Adams	41	4	1	0	0	0	25.0%
	Audubon	70	27	2	1	0	0	11.1%
	Clarke	105	19	3	0	0	0	15.8%
	Davis	107	38	4	1	0	0	13.2%
	Decatur	88	18	1	1	1	0	16.7%
	Fremont	103	2	0	0	0	0	0.0%
	Howard	126	38	5	1	1	1	21.1%
	Ida	94	24	3	1	1	1	25.0%
	Lucas	100	60	8	8	3	7	43.3%
	Monroe	98	38	4	2	0	1	18.4%
	Osceola	86	4	0	1	0	0	25.0%
	Pocahontas	99	10	0	1	0	0	10.0%
	Ringgold	57	15	2	0	1	0	20.0%
	Taylor	75	20	3	2	0	1	30.0%
	Van Buren	91	25	3	1	1	2	28.0%
	Wayne	74	30	2	4	2	2	33.3%
	Worth	91	13	1	1	0	0	15.4%
Counties with Average Population 10,000 to 20,000	Allamakee	199	27	2	2	0	1	18.5%
	Appanoose	174	69	7	7	2	0	23.2%
	Butler	159	37	4	2	0	2	21.6%
	Calhoun	120	27	2	1	1	0	14.8%
	Cass	169	71	4	2	0	2	11.3%
	Cedar	197	80	13	3	2	2	25.0%
	Cherokee	158	34	5	0	2	1	23.5%
	Chickasaw	166	14	2	0	0	0	14.3%
	Clay	235	19	2	0	0	0	10.5%
	Clayton	228	37	4	0	1	1	16.2%
	Crawford	196	27	3	1	0	0	14.8%
	Delaware	261	27	2	1	0	0	11.1%
	Dickinson	152	6	1	0	0	0	16.7%
	Emmet	135	14	1	3	0	0	28.6%
	Floyd	204	34	3	0	0	0	8.8%
	Franklin	126	41	5	3	0	2	24.4%
	Greene	123	56	4	0	0	1	8.9%
	Grundy	113	44	4	2	1	0	15.9%
	Guthrie	155	46	6	1	0	0	15.2%
	Hamilton	206	41	1	0	0	0	2.4%
	Hancock	142	32	3	1	2	0	18.8%
	Hardin	192	122	13	7	3	2	20.5%
	Harrison	200	22	1	1	0	0	9.1%
	Humboldt	100	23	2	0	0	1	13.0%
	Iowa	196	69	7	2	0	2	15.9%
	Jefferson	185	37	2	2	0	0	10.8%
	Keokuk	147	52	6	1	2	2	21.2%
	Kossuth	199	41	6	2	1	0	22.0%
	Louisa	143	65	4	1	3	2	15.4%
	Lyon	180	26	1	1	0	0	7.7%
Madison	155	35	0	1	2	1	11.4%	
Mills	151	4	0	0	0	0	0.0%	
Mitchell	126	21	3	0	0	1	19.0%	

Elevated Levels of Blood Lead: Children Born in 1992 (continued)

	County	Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population 10,000 to 20,000	Monona	145	26	4	1	0	1	23.1%
	Montgomery	165	32	3	0	0	0	9.4%
	O'Brien	199	36	4	0	2	0	16.7%
	Page	166	10	2	0	0	0	20.0%
	Palo Alto	112	9	0	1	0	0	11.1%
	Poweshiek	215	51	5	3	2	2	23.5%
	Sac	140	28	4	0	1	0	17.9%
	Shelby	154	12	1	1	0	0	16.7%
	Tama	226	97	18	7	6	2	34.0%
	Union	149	29	5	0	0	0	17.2%
	Winnebago	141	22	1	0	0	0	4.5%
	Wright	171	30	3	0	2	1	20.0%
Non-MSA Counties with Average Population > 20,000	Benton	304	75	3	1	0	1	6.7%
	Boone	289	104	12	3	1	3	18.3%
	Bremer	259	94	3	3	1	2	9.6%
	Buchanan	327	52	10	2	2	0	26.9%
	Buena Vista	274	45	2	1	1	0	8.9%
	Carroll	271	79	7	2	0	1	12.7%
	Cerro Gordo	600	128	5	1	1	0	5.5%
	Clinton	680	505	44	14	6	4	13.5%
	Des Moines	568	412	51	17	5	8	19.7%
	Fayette	278	42	6	0	1	1	19.0%
	Henry	256	127	13	2	2	2	15.0%
	Jackson	258	186	6	4	5	1	8.6%
	Jasper	455	78	14	1	1	0	20.5%
	Jones	243	73	10	1	1	1	17.8%
	Lee	540	338	36	5	5	7	15.7%
	Mahaska	264	118	11	8	2	2	19.5%
	Marion	412	54	4	0	0	2	11.1%
	Marshall	471	284	44	21	9	10	29.6%
	Muscatine	656	223	29	8	1	9	21.1%
	Plymouth	317	74	9	4	1	1	20.3%
Sioux	433	86	14	0	2	0	18.6%	
Story	878	328	11	2	0	0	4.0%	
Wapello	422	341	39	9	8	5	17.9%	
Washington	269	113	11	5	3	3	19.5%	
Webster	566	81	3	4	0	3	12.3%	
Winneshiek	255	48	8	2	0	0	20.8%	
MSA Counties	Black Hawk	1,651	1,070	114	35	33	42	20.9%
	Dallas	422	112	7	1	2	1	9.8%
	Dubuque	1,168	976	71	23	13	8	11.8%
	Johnson	1,359	133	6	0	0	3	6.8%
	Linn	2,644	1,427	87	43	10	26	11.6%
	Polk	5,560	651	24	7	2	4	5.7%
	Pottawattamie	1,261	57	4	3	0	0	12.3%
	Scott	2,483	1,456	160	64	26	64	21.6%
	Warren	516	63	0	0	0	0	0.0%
Woodbury	1,665	438	59	14	9	7	20.3%	

¹Children tested before six years of age.Source: Iowa Department of Public Health
Bureau of Lead Poisoning Prevention

Elevated Levels of Blood Lead: Children Born in 1993¹

	County	Number Born	Number Tested	10.0-14.9	15.0-19.9	20.0-24.9	≥ 25.0	Total % High
				μg/dL	μg/dL	μg/dL	μg/dL	
Counties with Average Population < 10,000	Adair	74	33	2	0	0	0	6.1%
	Adams	51	16	4	0	0	0	25.0%
	Audubon	72	24	1	0	1	1	12.5%
	Clarke	81	26	2	2	0	0	15.4%
	Davis	118	44	4	2	1	0	15.9%
	Decatur	88	24	0	0	2	1	12.5%
	Fremont	90	7	1	0	0	0	14.3%
	Howard	112	56	7	2	1	2	21.4%
	Ida	93	32	5	0	1	1	21.9%
	Lucas	117	92	13	6	4	9	34.8%
	Monroe	119	59	6	3	0	0	15.3%
	Osceola	81	8	1	0	0	0	12.5%
	Pocahontas	88	17	2	0	0	0	11.8%
	Ringgold	38	14	0	2	0	0	14.3%
	Taylor	70	22	1	0	0	0	4.5%
	Van Buren	108	36	4	1	0	1	16.7%
	Wayne	71	44	6	3	0	3	27.3%
	Worth	94	25	2	1	1	1	20.0%
Counties with Average Population 10,000 to 20,000	Allamakee	176	44	2	1	1	0	9.1%
	Appanoose	164	72	13	2	0	0	20.8%
	Butler	169	72	6	1	0	0	9.7%
	Calhoun	90	23	5	1	0	0	26.1%
	Cass	178	96	8	1	1	0	10.4%
	Cedar	203	67	11	4	1	1	25.4%
	Cherokee	141	61	8	5	2	0	24.6%
	Chickasaw	179	21	1	1	0	0	9.5%
	Clay	190	31	3	1	0	0	12.9%
	Clayton	242	50	1	1	1	0	6.0%
	Crawford	208	44	1	1	0	1	6.8%
	Delaware	262	38	2	2	2	0	15.8%
	Dickinson	127	10	0	1	0	0	10.0%
	Emmet	141	11	1	1	0	0	18.2%
	Floyd	200	55	3	2	0	1	10.9%
	Franklin	120	49	8	1	1	1	22.4%
	Greene	129	58	4	2	2	2	17.2%
	Grundy	141	89	11	0	0	3	15.7%
	Guthrie	105	38	5	2	0	0	18.4%
	Hamilton	193	61	7	0	1	0	13.1%
	Hancock	125	28	1	0	0	0	3.6%
	Hardin	204	130	8	6	2	4	15.4%
	Harrison	179	35	2	1	1	0	11.4%
	Humboldt	110	52	2	1	0	0	5.8%
	Iowa	213	86	9	4	0	0	15.1%
	Jefferson	177	44	5	4	1	1	25.0%
	Keokuk	143	81	9	4	1	4	22.2%
	Kossuth	219	80	8	0	1	0	11.3%
Louisa	184	82	10	3	1	1	18.3%	
Lyon	162	37	3	3	0	1	18.9%	
Madison	162	31	2	0	0	0	6.5%	
Mills	159	14	1	0	0	0	7.1%	
Mitchell	154	22	4	1	0	0	22.7%	

Elevated Levels of Blood Lead: Children Born in 1993 (continued)

	County	Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population 10,000 to 20,000	Monona	106	32	0	0	0	2	6.3%
	Montgomery	141	28	3	1	0	0	14.3%
	O'Brien	191	44	2	1	0	0	6.8%
	Page	164	14	0	1	0	1	14.3%
	Palo Alto	109	13	1	0	0	0	7.7%
	Poweshiek	205	51	5	2	0	1	15.7%
	Sac	139	38	4	2	0	1	18.4%
	Shelby	163	27	2	0	0	0	7.4%
	Tama	225	91	17	6	2	2	29.7%
	Union	152	37	9	0	0	1	27.0%
	Winnebago	121	38	3	0	0	0	7.9%
	Wright	156	38	5	0	0	0	13.2%
Non-MSA Counties with Average Population > 20,000	Benton	308	83	3	0	0	0	3.6%
	Boone	274	135	12	4	4	1	15.6%
	Bremer	272	135	7	7	2	0	11.9%
	Buchanan	277	63	4	3	0	0	11.1%
	Buena Vista	238	48	5	2	1	1	18.8%
	Carroll	258	90	2	3	2	0	7.8%
	Cerro Gordo	592	165	10	1	0	1	7.3%
	Clinton	680	496	30	8	10	10	11.7%
	Des Moines	558	428	50	18	6	9	19.4%
	Fayette	255	35	4	0	0	1	14.3%
	Henry	252	82	6	0	2	2	12.2%
	Jackson	258	204	8	1	2	2	6.4%
	Jasper	423	91	7	1	0	0	8.8%
	Jones	235	87	7	5	1	2	17.2%
	Lee	526	285	24	14	4	5	16.5%
	Mahaska	277	154	21	3	0	2	16.9%
	Marion	391	64	3	3	0	0	9.4%
	Marshall	523	326	44	21	5	12	25.2%
	Muscatine	642	246	34	10	6	3	21.5%
	Plymouth	307	65	5	0	1	1	10.8%
Sioux	437	119	11	1	1	3	13.4%	
Story	785	380	15	6	0	0	5.5%	
Wapello	465	412	48	15	4	5	17.5%	
Washington	273	135	16	5	1	2	17.8%	
Webster	534	109	10	2	1	0	11.9%	
Winneshiek	229	84	11	1	0	2	16.7%	
MSA Counties	Black Hawk	1,774	1,001	121	38	17	21	19.7%
	Dallas	425	145	16	3	1	1	14.5%
	Dubuque	1,252	1,057	47	20	12	14	8.8%
	Johnson	1,337	209	8	2	1	4	7.2%
	Linn	2,551	1,341	79	40	14	19	11.3%
	Polk	5,460	1,068	42	10	3	10	6.1%
	Pottawattamie	1,193	46	4	1	1	0	13.0%
	Scott	2,408	1,522	149	64	28	46	18.9%
	Warren	499	92	3	1	0	0	4.3%
Woodbury	1,651	493	64	14	7	8	18.9%	

¹Children tested before six years of age.

Source: Iowa Department of Public Health
Bureau of Lead Poisoning Prevention

Elevated Levels of Blood Lead: Children Born in 1994¹

		Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population < 10,000	Adair	93	61	4	2	3	0	14.8%
	Adams	64	15	2	1	1	0	26.7%
	Audubon	88	40	4	0	2	0	15.0%
	Clarke	82	20	2	0	0	0	10.0%
	Davis	127	56	4	0	2	1	12.5%
	Decatur	113	29	2	2	1	0	17.2%
	Fremont	79	4	1	1	0	0	50.0%
	Howard	96	43	4	1	0	0	11.6%
	Ida	86	40	7	2	2	1	30.0%
	Lucas	129	101	15	6	5	9	34.7%
	Monroe	87	52	5	1	0	0	11.5%
	Osceola	70	5	0	0	0	0	0.0%
	Pocahontas	84	14	1	0	0	0	7.1%
	Ringgold	30	20	1	1	0	0	10.0%
	Taylor	78	27	3	1	1	0	18.5%
	Van Buren	104	29	5	0	0	1	20.7%
	Wayne	78	58	7	4	0	3	24.1%
	Worth	91	46	1	1	0	1	6.5%
Counties with Average Population 10,000 to 20,000	Allamakee	158	60	5	3	1	1	16.7%
	Appanoose	152	84	10	2	0	1	15.5%
	Butler	163	76	4	0	1	1	7.9%
	Calhoun	106	31	2	3	0	1	19.4%
	Cass	150	74	6	4	2	1	17.6%
	Cedar	193	71	15	1	0	4	28.2%
	Cherokee	157	54	7	2	2	0	20.4%
	Chickasaw	169	33	2	3	0	0	15.2%
	Clay	219	59	6	2	1	0	15.3%
	Clayton	207	71	7	2	0	0	12.7%
	Crawford	176	81	3	0	1	2	7.4%
	Delaware	268	57	2	1	1	0	7.0%
	Dickinson	148	11	0	1	0	0	9.1%
	Emmet	109	10	1	1	0	0	20.0%
	Floyd	186	78	6	2	0	0	10.3%
	Franklin	133	59	8	0	0	2	16.9%
	Greene	108	70	6	2	1	0	12.9%
	Grundy	111	77	5	1	1	2	11.7%
	Guthrie	126	40	2	2	1	1	15.0%
	Hamilton	203	72	4	1	0	0	6.9%
	Hancock	125	53	2	1	0	0	5.7%
	Hardin	218	116	16	8	3	2	25.0%
	Harrison	175	44	5	0	0	0	11.4%
	Humboldt	118	68	5	4	0	0	13.2%
	Iowa	212	77	8	2	1	1	15.6%
	Jefferson	172	53	2	1	0	0	5.7%
	Keokuk	129	62	5	2	2	2	17.7%
	Kossuth	196	97	6	1	0	0	7.2%
	Louisa	161	85	11	1	1	2	17.6%
	Lyon	165	47	4	1	2	1	17.0%
Madison	160	35	2	1	1	0	11.4%	
Mills	183	11	0	0	1	1	18.2%	
Mitchell	142	38	4	0	0	0	10.5%	

Elevated Levels of Blood Lead: Children Born in 1994 (continued)

	County	Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population 10,000 to 20,000	Monona	124	41	8	0	0	0	19.5%
	Montgomery	160	46	4	1	0	1	13.0%
	O'Brien	174	24	7	0	0	0	29.2%
	Page	181	23	3	1	0	0	17.4%
	Palo Alto	107	17	1	1	0	0	11.8%
	Poweshiek	211	66	9	0	0	1	15.2%
	Sac	126	26	3	2	0	1	23.1%
	Shelby	146	50	0	0	0	0	0.0%
	Tama	236	112	14	6	3	6	25.9%
	Union	119	49	5	0	1	1	14.3%
	Winnebago	135	60	2	0	1	0	5.0%
	Wright	157	65	5	2	0	1	12.3%
Non-MSA Counties with Average Population > 20,000	Benton	292	57	1	0	1	2	7.0%
	Boone	313	148	13	5	2	0	13.5%
	Bremer	243	144	17	5	1	1	16.7%
	Buchanan	314	81	4	2	2	3	13.6%
	Buena Vista	243	50	3	2	0	1	12.0%
	Carroll	269	75	7	1	1	2	14.7%
	Cerro Gordo	587	249	17	1	0	2	8.0%
	Clinton	645	492	32	17	7	6	12.6%
	Des Moines	524	359	38	8	6	5	15.9%
	Fayette	302	61	3	4	1	1	14.8%
	Henry	239	81	6	2	0	0	9.9%
	Jackson	241	210	22	4	2	2	14.3%
	Jasper	439	163	10	4	1	4	11.7%
	Jones	253	90	11	4	2	2	21.1%
	Lee	435	252	26	7	4	5	16.7%
	Mahaska	272	152	14	4	0	2	13.2%
	Marion	419	107	4	2	0	0	5.6%
	Marshall	523	339	50	14	6	15	25.1%
	Muscatine	626	255	19	9	3	7	14.9%
	Plymouth	311	87	4	0	1	1	6.9%
Sioux	380	106	6	2	2	4	13.2%	
Story	844	420	16	5	3	1	6.0%	
Wapello	428	366	45	12	3	8	18.6%	
Washington	279	139	9	3	0	1	9.4%	
Webster	525	170	13	4	2	2	12.4%	
Winneshiek	242	105	6	3	1	0	9.5%	
MSA Counties	Black Hawk	1,605	1,026	92	33	20	23	16.4%
	Dallas	440	162	13	3	1	1	11.1%
	Dubuque	1,176	932	39	19	9	11	8.4%
	Johnson	1,288	221	2	2	0	4	3.6%
	Linn	2,550	1,045	58	14	9	16	9.3%
	Polk	5,458	1,714	51	22	3	10	5.0%
	Pottawattamie	1,156	49	3	1	3	0	14.3%
	Scott	2,243	1,519	125	56	23	41	16.1%
	Warren	449	116	3	0	0	0	2.6%
Woodbury	1,651	464	88	18	6	14	19.0%	

¹Children tested before six years of age.Source: Iowa Department of Public Health
Bureau of Lead Poisoning Prevention

Elevated Levels of Blood Lead: Children Born in 1995¹

		Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population < 10,000	Adair	80	50	2	1	0	0	6.0%
	Adams	36	23	2	0	0	1	13.0%
	Audubon	75	44	1	2	0	0	6.8%
	Clarke	102	42	4	0	0	0	9.5%
	Davis	94	41	4	0	1	0	12.2%
	Decatur	97	35	1	1	0	1	8.6%
	Fremont	85	17	1	0	1	0	11.8%
	Howard	118	63	7	1	0	2	15.9%
	Ida	73	32	5	0	1	2	25.0%
	Lucas	100	89	14	6	3	4	30.3%
	Monroe	89	52	2	3	0	2	13.5%
	Osceola	90	7	2	0	0	0	28.6%
	Pocahontas	66	19	1	1	0	0	10.5%
	Ringgold	55	35	3	2	0	0	14.3%
	Taylor	76	40	5	0	1	1	17.5%
	Van Buren	76	35	2	1	0	1	11.4%
	Wayne	80	48	6	2	0	3	22.9%
	Worth	89	52	9	0	1	1	21.2%
Counties with Average Population 10,000 to 20,000	Allamakee	157	60	6	2	1	2	18.3%
	Appanoose	147	53	2	2	0	1	9.4%
	Butler	166	93	5	2	0	0	7.5%
	Calhoun	114	42	1	0	0	0	2.4%
	Cass	152	96	15	5	3	1	25.0%
	Cedar	204	82	8	4	3	4	23.2%
	Cherokee	134	65	3	3	1	2	13.8%
	Chickasaw	152	36	1	2	1	0	11.1%
	Clay	206	56	1	0	0	2	5.4%
	Clayton	206	85	9	0	0	1	11.8%
	Crawford	178	63	6	3	1	0	15.9%
	Delaware	213	35	1	0	0	0	2.9%
	Dickinson	137	11	2	1	0	0	27.3%
	Emmet	108	8	1	0	0	0	12.5%
	Floyd	203	102	7	0	1	0	7.8%
	Franklin	116	69	7	1	1	0	13.0%
	Greene	112	86	2	2	0	1	5.8%
	Grundy	98	73	2	2	0	1	6.8%
	Guthrie	121	44	2	0	2	0	9.1%
	Hamilton	193	88	6	1	1	0	9.1%
	Hancock	122	69	3	0	0	0	4.3%
	Hardin	244	160	18	4	4	1	16.9%
	Harrison	174	42	4	1	0	1	14.3%
	Humboldt	107	71	5	1	0	0	8.5%
	Iowa	192	86	8	1	0	1	11.6%
	Jefferson	153	63	4	1	0	0	7.9%
	Keokuk	145	71	4	6	2	1	18.3%
	Kossuth	174	93	6	1	1	2	10.8%
	Louisa	174	69	4	1	1	1	10.1%
	Lyon	136	35	5	0	0	0	14.3%
Madison	159	42	1	0	1	0	4.8%	
Mills	158	17	0	1	0	0	5.9%	
Mitchell	129	57	6	2	0	1	15.8%	

Elevated Levels of Blood Lead: Children Born in 1995 (continued)

	County	Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population 10,000 to 20,000	Monona	126	49	5	1	1	2	18.4%
	Montgomery	161	42	6	4	0	0	23.8%
	O'Brien	200	39	2	1	1	0	10.3%
	Page	174	38	6	3	0	0	23.7%
	Palo Alto	95	20	2	0	1	0	15.0%
	Poweshiek	215	75	3	2	0	4	12.0%
	Sac	136	33	4	1	1	1	21.2%
	Shelby	156	51	1	2	0	0	5.9%
	Tama	236	140	19	5	1	3	20.0%
	Union	154	62	4	2	1	1	12.9%
	Winnebago	134	72	5	0	1	0	8.3%
	Wright	139	89	7	3	1	2	14.6%
Non-MSA Counties with Average Population > 20,000	Benton	298	83	4	1	0	2	8.4%
	Boone	309	156	7	3	2	4	10.3%
	Bremer	249	145	8	2	3	2	10.3%
	Buchanan	283	76	5	1	1	0	9.2%
	Buena Vista	219	49	2	2	1	1	12.2%
	Carroll	283	67	5	3	0	2	14.9%
	Cerro Gordo	591	302	7	5	0	1	4.3%
	Clinton	657	517	25	9	2	10	8.9%
	Des Moines	523	425	33	16	5	8	14.6%
	Fayette	271	81	3	2	0	0	6.2%
	Henry	276	104	2	3	0	2	6.7%
	Jackson	261	216	18	6	1	2	12.5%
	Jasper	416	121	4	2	0	1	5.8%
	Jones	196	81	10	1	0	2	16.0%
	Lee	479	296	20	9	4	3	12.2%
	Mahaska	291	134	13	5	0	1	14.2%
	Marion	363	117	3	0	0	0	2.6%
	Marshall	516	392	40	15	4	6	16.6%
	Muscatine	629	275	26	10	5	7	17.5%
	Plymouth	316	95	9	0	0	0	9.5%
Sioux	410	127	3	1	4	0	6.3%	
Story	856	396	10	8	4	4	6.6%	
Wapello	403	342	31	8	3	9	14.9%	
Washington	308	140	20	3	4	7	24.3%	
Webster	498	243	22	4	2	2	12.3%	
Winneshiek	240	135	11	3	1	1	11.9%	
MSA Counties	Black Hawk	1,509	1,004	76	23	11	22	13.1%
	Dallas	477	189	13	2	3	2	10.6%
	Dubuque	1,188	870	41	12	11	7	8.2%
	Johnson	1,258	233	9	4	2	2	7.3%
	Linn	2,597	1,024	60	25	11	14	10.7%
	Polk	5,455	1,935	54	21	9	13	5.0%
	Pottawattamie	1,142	86	4	3	0	1	9.3%
	Scott	2,251	1,582	100	44	14	23	11.4%
	Warren	481	164	2	2	1	1	3.7%
Woodbury	1,700	488	37	17	5	6	13.3%	

¹Children tested before six years of age.

Source: Iowa Department of Public Health
Bureau of Lead Poisoning Prevention

Elevated Levels of Blood Lead: Children Born in 1996¹

		Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population < 10,000	Adair	61	22	2	0	0	0	9.1%
	Adams	48	27	5	0	0	0	18.5%
	Audubon	63	36	2	2	1	1	16.7%
	Clarke	87	39	5	2	0	0	17.9%
	Davis	128	59	4	1	1	1	11.9%
	Decatur	97	34	5	0	1	0	17.6%
	Fremont	60	13	0	0	0	1	7.7%
	Howard	92	57	1	1	1	1	7.0%
	Ida	99	50	8	1	2	1	24.0%
	Lucas	123	99	24	4	0	4	32.3%
	Monroe	97	55	2	2	0	0	7.3%
	Osceola	79	12	1	0	1	0	16.7%
	Pocahontas	68	22	1	0	0	0	4.5%
	Ringgold	43	29	2	1	0	1	13.8%
	Taylor	75	45	4	2	0	1	15.6%
	Van Buren	86	33	0	0	2	0	6.1%
	Wayne	64	39	6	2	1	0	23.1%
	Worth	85	50	1	1	0	1	6.0%
Counties with Average Population 10,000 to 20,000	Allamakee	173	102	3	1	2	3	8.8%
	Appanoose	168	46	2	0	2	0	8.7%
	Butler	148	98	6	2	0	0	8.2%
	Calhoun	115	35	4	0	0	0	11.4%
	Cass	152	98	8	3	3	1	15.3%
	Cedar	195	86	9	1	2	1	15.1%
	Cherokee	115	62	7	4	0	0	17.7%
	Chickasaw	123	46	2	0	0	0	4.3%
	Clay	188	61	0	1	0	0	1.6%
	Clayton	176	88	5	5	3	1	15.9%
	Crawford	232	94	7	1	1	2	11.7%
	Delaware	233	53	2	0	1	0	5.7%
	Dickinson	148	14	0	0	0	0	0.0%
	Emmet	134	5	0	0	0	0	0.0%
	Floyd	194	119	13	4	0	2	16.0%
	Franklin	126	97	7	3	1	2	13.4%
	Greene	120	84	1	2	2	1	7.1%
	Grundy	124	75	3	1	0	0	5.3%
	Guthrie	130	48	3	0	1	3	14.6%
	Hamilton	182	131	5	7	2	0	10.7%
	Hancock	121	94	3	0	0	0	3.2%
	Hardin	216	166	8	6	3	5	13.3%
	Harrison	173	47	1	1	0	1	6.4%
	Humboldt	111	69	4	1	0	0	7.2%
	Iowa	227	99	7	1	0	2	10.1%
	Jefferson	171	57	4	1	0	3	14.0%
	Keokuk	134	61	5	0	2	2	14.8%
	Kossuth	163	103	7	1	1	1	9.7%
	Louisa	161	84	8	1	1	1	13.1%
	Lyon	150	40	5	0	0	1	15.0%
Madison	152	61	2	0	1	1	6.6%	
Mills	177	27	2	0	0	0	7.4%	
Mitchell	130	39	5	1	0	1	17.9%	

Elevated Levels of Blood Lead: Children Born in 1996 (continued)

	County	Number Born	Number Tested	10.0-14.9 µg/dL	15.0-19.9 µg/dL	20.0-24.9 µg/dL	≥ 25.0 µg/dL	Total % High
Counties with Average Population 10,000 to 20,000	Monona	98	44	5	2	0	0	15.9%
	Montgomery	160	56	4	0	0	0	7.1%
	O'Brien	190	42	5	2	0	0	16.7%
	Page	191	46	5	1	0	0	13.0%
	Palo Alto	98	29	0	0	0	0	0.0%
	Poweshiek	194	56	4	1	1	0	10.7%
	Sac	159	41	4	1	1	1	17.1%
	Shelby	115	53	3	0	0	0	5.7%
	Tama	230	134	16	10	1	3	22.4%
	Union	163	81	5	2	2	1	12.3%
	Winnebago	144	88	3	0	1	0	4.5%
	Wright	172	114	8	4	2	5	16.7%
Non-MSA Counties with Average Population > 20,000	Benton	264	79	4	3	0	0	8.9%
	Boone	299	171	8	2	1	3	8.2%
	Bremer	234	114	3	3	1	0	6.1%
	Buchanan	286	115	5	1	1	1	7.0%
	Buena Vista	228	61	1	0	0	2	4.9%
	Carroll	260	66	2	2	0	0	6.1%
	Cerro Gordo	600	373	18	3	1	1	6.2%
	Clinton	602	466	30	19	5	4	12.4%
	Des Moines	565	473	39	10	8	9	14.0%
	Fayette	249	89	6	3	1	0	11.2%
	Henry	203	84	6	0	0	1	8.3%
	Jackson	236	173	8	1	2	1	6.9%
	Jasper	426	127	2	2	0	1	3.9%
	Jones	224	101	7	3	1	3	13.9%
	Lee	477	238	19	6	3	4	13.4%
	Mahaska	260	151	11	1	3	1	10.6%
	Marion	378	179	5	1	0	1	3.9%
	Marshall	553	480	58	18	6	5	18.1%
	Muscatine	591	265	25	3	5	3	13.6%
	Plymouth	312	109	5	3	2	0	9.2%
Sioux	376	134	9	5	1	1	11.9%	
Story	904	460	9	5	0	3	3.7%	
Wapello	459	382	41	12	5	4	16.2%	
Washington	327	122	9	3	0	0	9.8%	
Webster	496	267	12	7	2	0	7.9%	
Winneshiek	212	125	5	2	3	1	8.8%	
MSA Counties	Black Hawk	1,601	1,061	60	31	14	21	11.9%
	Dallas	501	215	10	3	1	3	7.9%
	Dubuque	1,197	816	35	16	7	5	7.7%
	Johnson	1,272	283	7	0	1	0	2.8%
	Linn	2,540	1,226	63	23	12	23	9.9%
	Polk	5,782	2,362	86	24	10	9	5.5%
	Pottawattamie	1,102	168	9	0	0	3	7.1%
	Scott	2,303	1,670	92	30	14	17	9.2%
	Warren	481	163	3	1	0	0	2.5%
Woodbury	1,699	487	57	18	7	6	18.1%	

¹Children tested before six years of age.Source: Iowa Department of Public Health
Bureau of Lead Poisoning Prevention

Elevated Levels of Blood Lead: Children Born in 1992-1996¹

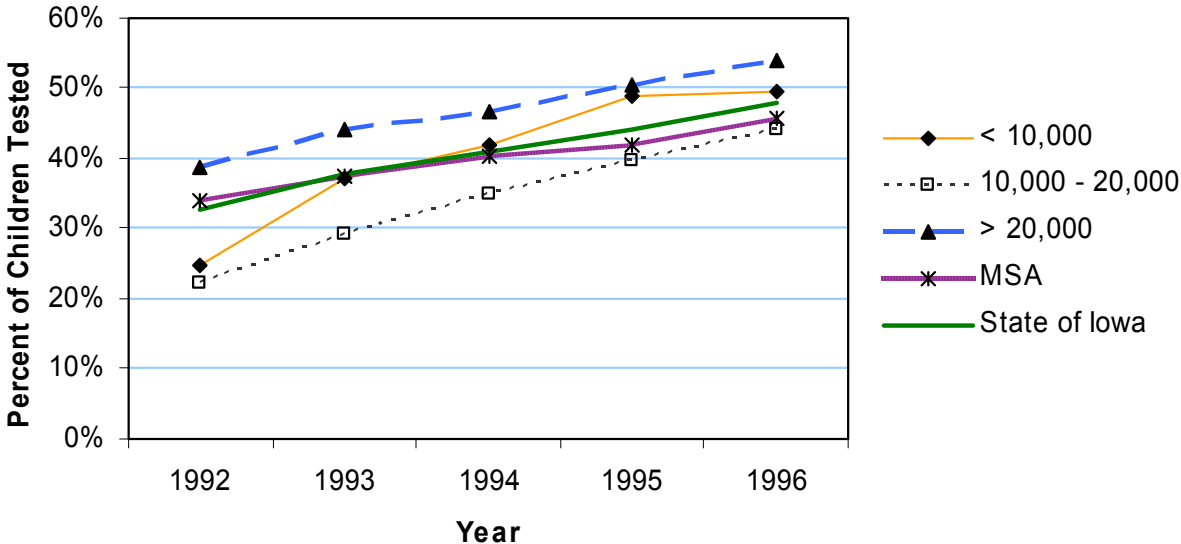
	County	Number Tested	% with High Levels	County	Number Tested	% with High Levels
	Countries with Average Population < 10,000	Adair	179	9.5%	Lucas	441
	Adams	85	20.0%	Monroe	256	12.9%
	Audubon	171	12.3%	Osceola	36	16.7%
	Clarke	146	13.7%	Pocahontas	82	8.5%
	Davis	238	13.0%	Ringgold	113	14.2%
	Decatur	140	14.3%	Taylor	154	16.9%
	Fremont	43	14.0%	Van Buren	158	15.8%
	Howard	257	15.2%	Wayne	219	25.6%
	Ida	178	25.3%	Worth	186	12.9%
				Total	3,082	18.2%
Countries with Average Population 10,000 to 20,000	Allamakee	293	13.3%	Humboldt	283	9.2%
	Appanoose	324	16.4%	Iowa	417	13.4%
	Butler	376	9.6%	Jefferson	254	12.2%
	Calhoun	158	13.3%	Keokuk	327	19.0%
	Cass	435	16.1%	Kossuth	414	10.9%
	Cedar	386	23.1%	Louisa	385	15.1%
	Cherokee	276	19.6%	Lyon	185	15.1%
	Chickasaw	150	10.0%	Madison	204	7.8%
	Clay	226	8.4%	Mills	73	8.2%
	Clayton	331	12.7%	Mitchell	177	16.4%
	Crawford	309	11.0%	Monona	192	16.7%
	Delaware	210	8.1%	Montgomery	204	13.2%
	Dickinson	52	11.5%	O'Brien	185	14.6%
	Emmet	48	18.8%	Page	131	17.6%
	Floyd	388	11.3%	Palo Alto	88	8.0%
	Franklin	315	16.8%	Poweshiek	299	15.1%
	Greene	354	9.9%	Sac	166	19.3%
	Grundy	358	10.9%	Shelby	193	5.2%
	Guthrie	216	14.4%	Tama	574	25.6%
	Hamilton	393	9.2%	Union	258	15.5%
	Hancock	276	5.8%	Winnebago	280	6.1%
	Hardin	694	17.7%	Wright	336	15.2%
	Harrison	190	10.5%	Total	12,383	13.9%
Countries with Average Population > 20,000	Benton	377	6.9%	Jones	432	17.1%
	Boone	714	12.6%	Lee	1,409	14.9%
	Bremer	632	11.2%	Mahaska	709	14.7%
	Buchanan	387	12.1%	Marion	521	5.4%
	Buena Vista	253	11.1%	Marshall	1,821	22.1%
	Carroll	377	11.1%	Muscatine	1,264	17.6%
	Cerro Gordo	1,217	6.2%	Plymouth	430	10.9%
	Clinton	2,476	11.8%	Sioux	572	12.2%
	Des Moines	2,097	16.6%	Story	1,984	5.1%
	Fayette	308	12.0%	Wapello	1,843	17.0%
	Henry	478	10.7%	Washington	649	16.2%
	Jackson	989	9.9%	Webster	870	10.9%
	Jasper	580	9.5%	Winneshiek	497	12.3%
				Total	23,886	13.0%
MSA Counties	Black Hawk	5,162	16.4%	Polk	7,730	5.4%
	Dallas	823	10.6%	Pottawattamie	406	9.9%
	Dubuque	4,651	9.0%	Scott	7,749	15.2%
	Johnson	1,079	5.3%	Warren	598	2.8%
	Linn	6,063	10.7%	Woodbury	2,370	17.8%
				Total	36,631	11.3%
State Totals		75,982	12.5%			

¹Children tested before six years of age.

Source: Iowa Department of Public Health, Bureau of Lead Poisoning Prevention

Tested for Blood Lead: Children Born in 1992-1996

Crude Rates



Elevated Levels of Blood Lead: Children Born in 1992-1996

Crude Rates

