

Twelve Ways to Improve Learning

Protect Children from Health Hazards

Definition and Source

Lead poisoning – Elevated blood lead levels are those reading 10 mcg/dL or greater and are reported by laboratories, physicians, hospitals and other health care providers for all children 15 years old or younger. Almost all tests (94 percent) are on children 6 years old or younger. Testing data include children tested for the first time and those who were retested. Data are from the Illinois Department of Public Health.

Asthma – The prevalence and treatment of asthma are measured by the number of children hospitalized for the disease. Due to confidentiality constraints, counties with one to six asthma hospitalizations are denoted as “N/A.” Figures are for children ages birth to 19. Emergency room visits are not included. Cases are based on inpatient status for any length of time, with asthma as the primary diagnosis. Data are from the Illinois Department of Public Health.

Trends and Key Findings

The number of Illinois children tested for lead poisoning has increased 11.9 percent from 1999 to 2003, reaching 267,997 children. During the same period, the percentage of children tested who have elevated blood lead levels has dropped 55.9 percent, from 11.1 percent to 4.9 percent. Early detection is critical because damage from lead poisoning can be minimized or prevented if discovered at a young age; health officials recommend testing at ages 1 and 2. African-American children are more than three times as likely to be affected by lead poisoning than white children, and Hispanic children face nearly twice the risk as white children. Most of this difference is attributed to the fact that minorities are more likely to live in older housing with lead-based paint. Counties with lead poisoning rates more than twice the state average are Adams, Alexander, Edgar and Peoria.

Asthma hospitalizations are more common in counties that have urban areas than those that are primarily rural. Fewer children were hospitalized for asthma in 2003, a drop of 27.8

LEAD POISONING AND ASTHMA

	Children tested for lead poisoning			Children with elevated lead levels (%)			Children hospitalized for asthma		
	1999	2003	% change	1999	2003	% change	2000	2003	% change
Illinois	239,577	267,997	11.9	11.1	4.9	-55.9	9,077	6,550	-27.8
Adams	614	545	-11.2	14.8	10.1	-31.8	28	NA	NA
Alexander	137	110	-19.7	23.4	12.7	-45.7	0	NA	NA
Bond	294	262	-10.9	7.5	2.7	-64.0	9	NA	NA
Boone	361	497	37.7	9.4	3.4	-63.8	17	25	47.1
Brown	12	40	233.3	16.7	5.0	-70.1	NA	NA	NA
Bureau	421	412	-2.1	3.3	3.2	-3.0	21	NA	NA
Calhoun	52	87	67.3	11.5	6.9	-40.0	0	NA	NA
Carroll	227	270	18.9	8.4	5.2	-38.1	NA	NA	NA
Cass	134	267	99.3	11.2	7.1	-36.6	NA	NA	NA
Champaign	962	1,626	69.0	4.3	3.4	-20.9	93	44	-52.7
Christian	394	356	-9.6	6.1	2.2	-63.9	11	NA	NA
Clark	40	34	-15.0	7.5	0.0	-100.0	0	NA	NA
Clay	192	313	63.0	4.7	1.9	-59.6	NA	NA	NA
Clinton	52	185	255.8	3.8	0.0	-100.0	8	NA	NA
Coles	93	389	318.3	15.1	0.8	-94.7	12	19	58.3
Cook	125,197	145,860	16.5	16.1	6.3	-60.9	5,661	3,787	-33.1
Crawford	97	326	236.1	1.0	1.5	50.0	12	NA	NA
Cumberland	42	74	76.2	7.1	4.1	-42.3	NA	NA	NA
De Kalb	378	567	50.0	7.9	3.9	-50.6	31	33	6.5
De Witt	178	343	92.7	15.7	3.5	-77.7	9	NA	NA
Douglas	90	219	143.3	4.4	3.2	-27.3	7	NA	NA
Du Page	2,585	5,101	97.3	5.6	1.5	-73.2	348	320	-8.0
Edgar	226	192	-15.0	12.8	9.9	-22.7	8	NA	NA
Edwards	65	130	100.0	20.0	3.1	-84.5	NA	NA	NA
Effingham	83	216	160.2	4.8	2.3	-52.1	19	14	-26.3
Fayette	280	378	35.0	5.4	5.8	7.4	15	NA	NA
Ford	155	134	-13.5	6.5	3.0	-53.8	NA	NA	NA
Franklin	340	305	-10.3	5.6	4.6	-17.9	13	NA	NA
Fulton	381	412	8.1	11.0	7.0	-36.4	11	NA	NA
Gallatin	105	100	-4.8	6.7	2.0	-70.1	NA	NA	NA
Greene	182	287	57.7	23.1	8.4	-63.6	NA	NA	NA
Grundy	243	258	6.2	4.1	0.8	-80.5	20	15	-25.0
Hamilton	98	90	-8.2	13.3	3.3	-75.2	NA	NA	NA
Hancock	309	342	10.7	15.9	6.7	-57.9	7	NA	NA
Hardin	37	55	48.6	8.1	7.3	-9.9	NA	NA	NA
Henderson	114	111	-2.6	9.6	0.9	-90.6	NA	NA	NA
Henry	224	303	35.3	20.5	7.9	-61.5	30	NA	NA
Iroquois	267	343	28.5	6.0	3.2	-46.7	18	22	22.2
Jackson	611	820	34.2	6.1	3.2	-47.5	20	NA	NA
Jasper	62	72	16.1	8.1	1.4	-82.7	NA	NA	NA
Jefferson	407	233	-42.8	5.2	4.7	-9.6	28	14	-50.0
Jersey	127	237	86.6	3.9	0.4	-89.7	NA	NA	NA
Jo Daviess	156	183	17.3	7.7	3.3	-57.1	NA	NA	NA
Johnson	44	52	18.2	2.3	0.0	-100.0	NA	NA	NA
Kane	5,813	9,020	55.2	10.7	5.6	-47.7	209	187	-10.5
Kankakee	2,321	2,774	19.5	14.7	4.8	-67.3	102	122	19.6
Kendall	187	363	94.1	2.1	1.1	-47.6	39	70	79.5
Knox	801	811	1.2	7.1	8.4	18.3	24	25	4.2
Lake	5,982	7,790	30.2	3.0	1.8	-40.0	257	242	-5.8
LaSalle	1,083	1,331	22.9	6.0	4.1	-31.7	45	26	-42.2
Lawrence	331	286	-13.6	3.9	2.4	-38.5	9	NA	NA

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	1999	2003	% change	1999	2003	% change	2000	2003	% change
Lee	248	186	-25.0	4.0	6.5	62.5	15	12	-20.0
Livingston	836	804	-3.8	6.5	5.5	-15.4	13	NA	NA
Logan	295	329	11.5	8.1	3.3	-59.3	16	NA	NA
Macon	1,905	3,001	57.5	19.5	8.1	-58.5	119	83	-30.3
Macoupin	485	588	21.2	6.2	3.6	-41.9	19	25	31.6
Madison	1,559	2,205	41.4	10.7	3.4	-68.2	7	22	214.3
Marion	350	718	105.1	6.0	3.5	-41.7	35	13	-62.9
Marshall	113	103	-8.8	13.3	2.9	-78.2	NA	NA	NA
Mason	239	186	-22.2	5.9	5.4	-8.5	NA	NA	NA
Massac	68	67	-1.5	8.8	3.0	-65.9	NA	NA	NA
McDonough	204	252	23.5	11.3	3.2	-71.7	9	NA	NA
McHenry	925	1,600	73.0	4.8	2.6	-45.8	96	85	-11.5
McLean	1,847	1,863	0.9	4.2	2.7	-35.7	70	35	-50.0
Menard	67	139	107.5	3.0	5.8	93.3	NA	NA	NA
Mercer	239	256	7.1	9.2	9.0	-2.2	12	NA	NA
Monroe	62	168	171.0	4.8	5.4	12.5	NA	NA	NA
Montgomery	434	409	-5.8	7.6	2.9	-61.8	8	NA	NA
Morgan	271	649	139.5	11.8	5.9	-50.0	NA	NA	NA
Moultrie	74	103	39.2	0.0	1.0	NA	NA	NA	NA
Ogle	419	440	5.0	5.0	4.1	-18.0	34	50	47.1
Peoria	2,144	2,041	-4.8	17.1	14.6	-14.6	153	86	-43.8
Perry	60	211	251.7	15.0	8.1	-46.0	7	NA	NA
Piatt	91	198	117.6	8.8	6.6	-25.0	8	NA	NA
Pike	323	295	-8.7	8.4	5.1	-39.3	9	NA	NA
Pope	14	24	71.4	0.0	0.0	NA	0	NA	NA
Pulaski	67	94	40.3	23.9	7.4	-69.0	NA	NA	NA
Putnam	71	71	0.0	0.0	0.0	NA	NA	NA	NA
Randolph	308	412	33.8	6.5	6.1	-6.2	9	NA	NA
Richland	102	177	73.5	10.8	3.4	-68.5	NA	NA	NA
Rock Island	2,382	3,703	55.5	15.0	9.7	-35.3	84	48	-42.9
St. Clair	4,871	4,080	-16.2	14.3	6.3	-55.9	226	91	-59.7
Saline	448	516	15.2	5.1	2.5	-51.0	7	NA	NA
Sangamon	2,023	2,904	43.5	11.3	4.1	-63.7	74	52	-29.7
Schuyler	23	44	91.3	8.7	9.1	4.6	NA	NA	NA
Scott	42	85	102.4	4.8	3.5	-27.1	NA	NA	NA
Shelby	103	247	139.8	6.8	3.6	-47.1	NA	NA	NA
Stark	49	34	-30.6	20.4	5.9	-71.1	NA	NA	NA
Stephenson	668	1,186	77.5	26.2	7.1	-72.9	37	26	-29.7
Tazewell	1,338	999	-25.3	2.2	2.4	9.1	63	42	-33.3
Union	133	182	36.8	9.0	6.6	-26.7	NA	NA	NA
Vermilion	800	950	18.8	10.8	7.1	-34.3	32	29	-9.4
Wabash	158	236	49.4	10.8	6.8	-37.0	0	NA	NA
Warren	227	304	33.9	7.9	9.5	20.3	16	NA	NA
Washington	21	62	195.2	9.5	4.8	-49.5	12	14	16.7
Wayne	409	407	-0.5	2.4	2.7	12.5	NA	NA	NA
White	229	259	13.1	7.9	4.6	-41.8	0	NA	NA
Whiteside	867	1,280	47.6	6.1	2.3	-62.3	22	NA	NA
Will	2,441	3,356	37.5	7.9	4.0	-49.4	315	350	11.1
Williamson	295	279	-5.4	2.4	1.4	-41.7	20	12	-40.0
Winnebago	3,463	4,450	28.5	7.2	4.7	-34.7	156	152	-2.6
Woodford	116	102	-12.1	2.6	0.0	-100.0	17	NA	NA
Chicago	105,641	113,023	7.0	17.8	7.4	-58.4	3,862	2,510	-35.0

percent from 9,077 in 2000 to 6,550 in 2003. Asthma is related to the presence of air pollutants, rodents, mold, cockroaches, dust mites, pets and indoor cigarette smoke.

Action Steps

Lead poisoning and asthma contribute to poor health and decreased learning ability, especially among children who must miss school. Unlike many childhood diseases, both conditions are controllable through environmental changes and proper health care. Recommended action steps include:

- Test children beginning at an early age to identify those at risk of lead poisoning or already suffering from elevated blood lead levels. Illinois law requires children between 6 months and 7 years old who live in high-risk areas be tested before entering licensed child care or starting school.
- Provide grants and loans to residential property owners so they can reduce lead paint hazards by replacing old windows and other home features.
- Alleviate the sources of childhood asthma by controlling the release of air pollutants and conducting educational efforts to focus on ways to reduce exposure to indoor allergens such as secondhand smoke.
- Ensure children are covered by health insurance so they can receive regular medical care for both the effects of lead poisoning and asthma.

Approach Child Health Comprehensively to Strengthen Families

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Kids are best prepared to learn when they're healthy. Other essays in this "Illinois Kids Count" report discuss the importance of access to health care and mental health services as well as proper nutrition. Other challenges to children's health and development can come from the environment—both in the home and in the community—in which children live.

Asthma is the most common chronic disease of childhood. It is associated with missed days of school (as well as missed days of work for parents), restrictions in physical activity, emergency room visits, hospital stays and premature death. While the causes of asthma are diverse, it can be exacerbated by the child's environment. Exposure to

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secondhand smoke and other sources of air pollution, dust mites and cockroach dander can make it harder to manage. Long-term exposure to lead, now caused most frequently by paint chips or lead dust in older homes, can result in permanent brain damage. Homes, playgrounds and child care settings can present hazards for injury.

We now have evidence that we can address these health problems by changing children's home and community environments. We have successful model programs that use peer educators to help the parents better manage their children's asthma. The State of Illinois has made a substantial commitment to screening children for lead poisoning and removing the source of lead from their environments. Through a unique collaboration, the Department of Human Services supports a statewide network of nurse-consultants who work to improve the health and safety of child care settings through training and technical assistance. We must continue to approach child health comprehensively—emphasizing preventive health care, primary care, mental health, nutrition and other services—in order to strengthen families, improve our communities and help children achieve their full potential.

Stephen E. Saunders, M.D., M.P.H., F.A.A.P., has been associate director for the Office of Family Health at the Illinois Department of Human Services since 1988. He is President of the Illinois Chapter of the American Academy of Pediatrics and has worked with the Chapter on a number of child



health issues including metabolic screening, lead screening and treatment, immunizations, newborn hearing screening and early intervention. Saunders is a Board-certified pediatrician and has been a member of the American Academy of Pediatrics since 1977.