Lead and Healthy Homes Division

Indiana Department of Health

2024 Childhood Lead Surveillance Report

Contents

Executive Summary

The Indiana Department of Health (IDOH) Lead and Healthy Homes Division is pleased to present the 2024 Childhood Lead Surveillance Report, highlighting lead poisoning and exposure prevention activities across the state. The information contained in this report is in compliance with IC 16-41-39.4-5. This report provides a description of current trends in blood lead testing, elevated blood lead levels (EBLLs) and case surveillance, as well as environmental surveillance related to lead exposure. It also highlights actions taken by IDOH to increase testing rates, support affected families around the state, provide education on lead sources and impacts, and improve Indiana's ability to manage lead exposure within the residential environment.

Recognizing that lead exposure can lead to negative health outcomes for any child, and that there are no safe levels of lead in a child's body, IDOH collaborated with public health partners and legislators to expand testing requirements in Indiana in 2023. This legislation has since led to increases in the number of Hoosier children tested in 2023 and 2024, particularly among younger children under the age of 3. By increasing Indiana's testing rates, more children with lead exposure are connected with public health resources that provide them with services. Primary prevention techniques and intervention services, both clinical and environmental, have also contributed to a decrease in the percentage of tested children having higher EBLLs. These findings suggest that testing more children and offering services earlier in their exposure may lessen the burden of childhood lead exposure in the state.

Partnerships played a critical role in these efforts. Collaborative initiatives with organizations like the Hoosier Environmental Council, local health departments, and the IDOH Office of Data and Analytics enabled the division to expand its capacity and ability to provide services to families around the state. Specifically related to LHD partnerships, the Health First Indiana (HFI) funding made available through state appropriations to each county, added significant resources at the local level, affording them the ability to prioritize this work. Additionally, direct outreach and collaboration with healthcare providers and local health departments led to an increase in blood lead testing compliance among Medicaid-insured children, a population considered to be at-risk for lead exposure.

The combined impact of expanded testing, early intervention services, strengthened local partnerships with added funding, and targeted outreach highlights Indiana's ongoing commitment to reducing childhood lead exposure and safeguarding the health of future generations.

Background

Why Lead is a Health Concern

There is no safe level of lead in a child's body. Its widespread use has resulted in extensive environmental contamination, human exposure, and significant public health problems in many parts of the world, including in Indiana. Lead has been used as an additive in many products and usually enters the body through inhalation and ingestion. Sources of lead exposure can include residential paint manufactured before 1978, water from lead pipes, soil near busy roads, factories and the exteriors of homes painted with lead-based paint. It can also be found in some imported candies, toys and jewelry, and certain jobs and hobbies. However, the most common source of exposure to lead for children in Indiana comes from lead-based paint and dust.

Today in Indiana, we still see lead coming from a variety of sources including battery recycling plants, leaded ammunition, spices, imported cookware, toy jewelry, and stainless-steel cups.

Lead poisoning can affect anyone, but babies and children under the age of 7 are most at risk because their bodies and brains are still growing and developing, and they can more easily access surfaces where lead can be found such as floors or windowsills. Exposure to lead can damage many parts of a child's body, including their brain, nervous system, blood, digestive organs, and more. Lead poisoning can also lead to severe neurological, learning, and behavioral problems, including brain damage, IQ loss, developmental delays, and long-term intellectual deficits. Most significantly, the impacts and damage that are caused by lead poisoning cannot be reversed. However, there are medical treatments that can be used to reduce the amount of lead in a child's body. There are also other interventions, such as early intervention services, that can be used to identify and address the effects of lead exposure and provide services to mitigate potential developmental delays, learning difficulties, behavioral issues and other health problems.

Testing is key to ensuring treatment is provided, as blood lead testing of children is the only way to identify if a child is experiencing lead poisoning. Protecting children from exposure to lead is important to lifelong positive health outcomes. The most crucial step that parents, healthcare providers, and others can take to keep children safe is to prevent lead exposure before it occurs.

Recent History of the Division

The Lead and Healthy Homes Division exists to track the prevalence of lead exposure in children throughout Indiana, create policy, program and funding changes which support lead elimination, and support local health departments (LHDs) in taking the necessary steps to minimize that exposure and the resulting health risks. This is done through proactive screening, treatment, case management, and identification of environmental lead hazards.

In 2022, Indiana lowered the elevated blood lead threshold from 10µg/dL to 3.5µg/dL, and in 2023 passed legislation requiring lead screening by physicians for all children below the age of 7.

In 2024, for the first time, IDOH received dedicated funding through the state for the purpose of expanding its work on lead poisoning prevention. Through this funding, IDOH has been able to:

- Broadly promote lead testing to families throughout the state via the Indiana Lead Free initiative
- Support local healthy child advocates in high-risk communities across the state to help parents and caregivers get info on, and access to lead testing
- Increase the number of children tested who have never been tested for lead
- Work with local health departments and providers to close the gaps on children not being tested and lead tests not being reported

Indiana Statute and Recommendations

The Lead and Healthy Homes Division's work is guided by regulations in Indiana Code (IC 16-41-39.4) and Administrative Code (410 IAC 29, and 410 IAC 32). In terms of blood lead testing:

- Children should receive a blood lead test between the ages of 9 and 13 months, or as close as reasonably possible to the patient's appointment
- Children should have another blood lead test between the ages of 21 and 27 months, or as close as reasonably possible to the patient's appointment
- Any child between 28 and 72 months that does not have a record of any prior blood lead test must have a blood lead test performed as soon as possible
    - If a provider can verify, via the Children's Health and Immunization registry Program (CHIRP), or the records from another provider, that blood lead testing has occurred at the required interval(s), they are not obligated to repeat the procedure
    - If a parent or guardian refuses to allow their child to be tested, providers are encouraged to document the refusal in writing and have the parent or guardian sign an attestation of refusal

Additionally, Indiana statue 410 IAC 29-3-1 requires that all blood lead tests, regardless of result, are required to be reported to IDOH by the entity examining the specimen (i.e. laboratory, clinic, physician, etc.) no later than one week after completing the test.

Any child with a confirmed elevated blood lead level of 5.0 µg/dL or higher is placed into case management with their local health department. Services provided through this are outlined in Indiana Administrative code and families are encouraged to take advantage of both clinical and environmental resources provided at no cost.

2024 Highlights

Testing

In 2024, IDOH received 119,313 lead test results for children younger than age 7 from medical providers, laboratories, and other public health partners. Eighty one percent of these results came from capillary finger or heel-prick tests and 19% came from venous blood draw tests.

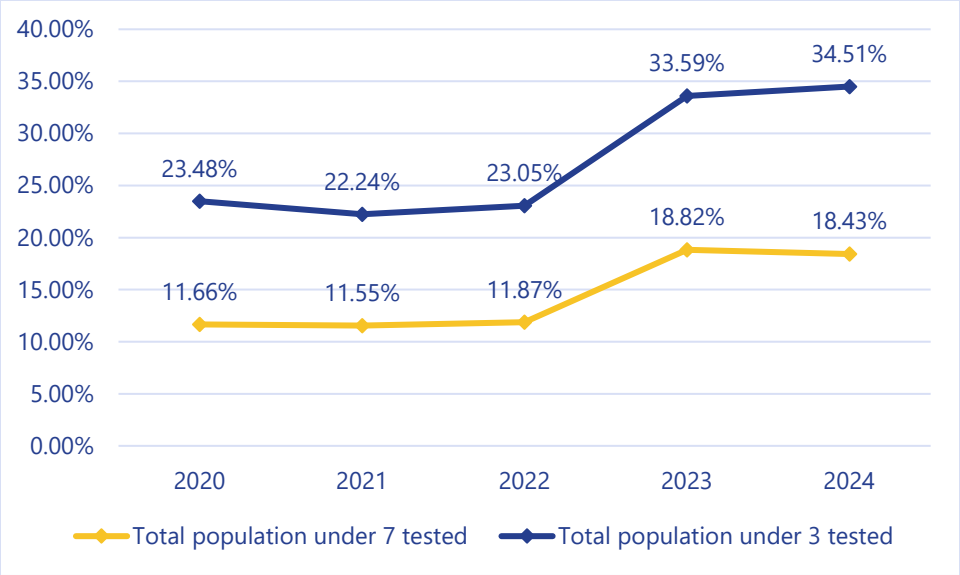
These results included tests from 106,277 unique children who were living in Indiana. From 2023 to 2024, there was a 2% decrease in the number of children younger than age 7 who were tested for lead. However, testing rates among younger children, younger than age 3, increased by 3% in 2024 compared to 2023. Additionally, counts and rates of lead tested children continued to surpass those observed prior to universal testing, which started in 2023.

Number of children tested for lead

The percentage of Indiana-residing children younger than age 7 who were tested for lead remained largely consistent between the two years, decreasing slightly from 18.8% in 2023 to 18.4% in 2024. In contrast, the percentage of children younger than age 3 tested for lead rose from 33.6% in 2023 to 34.5% in 2024. These observed differences suggest that universal testing policies had a greater impact on younger children. This outcome is particularly encouraging, as exposure to lead in earlier stages of life can have more pronounced and long-lasting effects.

The percentage of tested population groups found in the graph below was calculated by dividing the number of Indiana-residing children tested for lead in 2024 by the total number of Indiana-residing children in each age group in 2024.

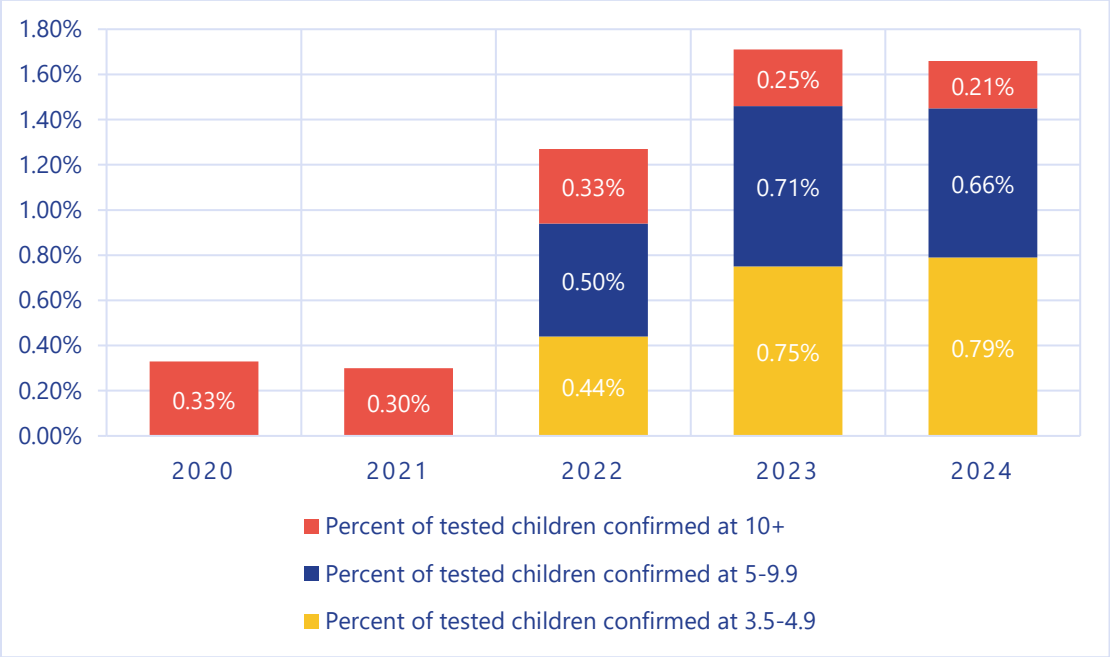
Percentage of the population groups younger than 7 tested for lead



Of the 106,277 children under age 7 tested for lead, 1,769 (1.7%) were confirmed to have an elevated blood lead level (EBLL). Among these, 47.5% received results between 3.5 and 4.9 µg/dL, while 52.5% received results of 5µg/dL or greater, meeting the eligibility criteria for case management services. As illustrated in the graph below, the percentage of tested children with a confirmed EBLL at lower elevation levels (3.5–4.9 µg/dL) increased from 2023 to 2024. In contrast, the percentage of tested children with a confirmed EBLL at higher elevations declined compared to 2023 and earlier years, following the implementation of policies that reduced the threshold for case management services. This observation suggests that lowering the threshold for case management services likely improved early intervention and preventive measures, preventing higher levels of lead poisoning overall.

Indiana also identified a large gap in children who received an initial elevated test result but were never re-tested to confirm their elevated result. In 2024, 6,423 children received an elevated test, and 3,001 of these children were never re-tested. Unconfirmed tests are the results of providers not pushing for re-test and/or not being able to contact parents because of change of addresses and phone numbers. Without a confirmatory test, these children remain at risk for developmental delays, cognitive impairments, and ongoing lead exposure. Closing this gap will require stronger provider engagement and local outreach efforts to ensure timely interventions that work to prevent and reduce the burden of lead exposure.

Percentage of tested children with a confirmed EBLL



IDOH also collected demographic information on sex, age, race, and ethnicity with blood lead test results, detailed in the tables below. Race and ethnicity data are often incomplete and reported as "Unknown", which limits the assessment of racial disparities in lead testing and exposure.

Summary of the reported demographic characteristics of children aged <7 years

Sex	Children tested, n (%)	Children who received a confirmed EBLL	Percent of tested children who received a confirmed EBLL
Female	51,448 (48.41%)	821	1.60%
Male	54,749 (51.52%)	945	1.73%
Unknown	80 (0.08%)	3	3.75%
Grand Total	106,277	1,769	1.66%

Age in years	Children tested, n (%)	Children who received a confirmed EBLL	Percent of tested children who received a confirmed EBLL
<1	10,417 (9.80%)	71	0.68%
1 - <2	41,566 (39.11%)	691	1.66%
2 - <3	33,247 (31.28%)	489	1.47%
3 - <4	6,720 (6.32%)	220	3.27%
4 - <5	6,558 (6.17%)	146	2.23%
5 - <6	5,297 (4.98%)	97	1.83%
6 - <7	2,472 (2.33%)	55	2.22%
Grand Total	106,277	1,769	1.66%

Race	Children tested, n (%)	Children who received a confirmed EBLL	Percent of tested children who received a confirmed EBLL
American Indian	6,299 (5.93%)	166	2.64%
Asian Pacific	327 (0.31%)	12	3.67%
Black	40,040 (37.68%)	677	1.69%
White	32,020 (30.13%)	423	1.32%
Multiracial	1,188 (1.12%)	8	0.67%
Other	1,153 (1.08%)	36	3.12%
Unknown	25,250 (23.76%)	447	1.77%
Grand Total	106,277	1,769	1.66%

Ethnicity	Children tested, n (%)	Children who received a confirmed EBLL	Percent of tested children who received a confirmed EBLL
Hispanic	9,223 (8.68%)	231	2.50%
Non-Hispanic	66,763 (62.82%)	995	1.49%
Unknown	30,229 (28.4%)	543	4.98%
Grand Total	106,277	1,769	1.66%

Education

Childhood lead poisoning can be prevented by identifying and eliminating lead hazards in the environment before children are exposed. Commonly known as primary prevention, this approach includes a range of activities, including education. IDOH health education staff continued to focus efforts on providing quality, comprehensive training on the procedures and practices of lead case management. Training was provided to LHD staff throughout the state who were assigned to provide those services to the children in their counties who were found to have an EBLL. In 2024, IDOH trained LHD staff from 41 of Indiana's 95 local health departments. This impacts capacity to provide quality lead case management services in 43% of the LHDs in Indiana.

Collaborating with a variety of partners is crucial for effectively educating the community about lead poisoning and its impact. In 2024, the LHHD partnered with HeadStart by supplying their facilities with materials and resources covering when and how they must test for lead in water and paint in their facilities. A FAQ document containing information regarding the new requirements for the testing of water fixtures was developed and distributed to HeadStart facilities across the state. An example of another effective collaboration pursued in 2024 includes the LHHD's association with the Indiana Academy of Family Physicians (IAFP). To increase awareness among healthcare providers in Indiana regarding the mandated lead testing and reporting requirements, LHHD staff participated in the IAFP Research Day conference and submitted an article to the IAFP Frontline journal on the same topic.

Improving the lead knowledge of the public, partners, and public health professionals through digital media was also a focus of 2024, as IDOH continued to update and modify the Lead and Healthy Homes Division webpage and provided key lead-related information on IDOH platforms including Facebook, X (formerly known as Twitter), and Instagram. Information was shared throughout 2024 on these platforms, specifically during National Healthy Homes Month and National Lead Poisoning Prevention Week. Efforts were made to ensure that all individuals received the important messages about lead poisoning and prevention by sharing posts in Spanish and collaborating with representatives from the Center for Deaf and Hard of Hearing Education. Information was provided to the Center to assist them in their efforts to share the messages with the families of the deaf or hard of hearing children, birth to age 3, whom they serve.

Lead Case Surveillance

In Indiana, a case investigation must be opened when a child receives a confirmed EBLL at 5 µg/dL or above, though counties may choose to initiate investigations earlier or at lower BLLs. The reduction of the EBLL threshold and introduction of universal screening in 2023 led to a roughly 250% increase in lead case investigations when compared to 2022. The case count dropped by 10% in 2024 to 5,020. Of the investigations opened in 2024, 2,067 were classified as

confirmed, probable, or suspect cases, while 2,953 were either marked as unknown or later determined not to be cases.

IDOH staff actively work with LHDs to ensure that the family of every lead-poisoned child is offered and provided with services and care needed to help reduce their child's lead level. In addition to serving the families of children with elevated lead levels, Indiana continues to push for increased access to lead testing across the state, increasing the number of local health departments that offer blood lead testing from 68 to 75 in 2024. Information on testing locations can be found on the interactive map available at www.in.gov/health/leadsafe.

Environmental Surveillance

Licensed lead risk assessors from IDOH, local health departments, and private firms completed 818 lead risk assessments in Indiana in 2024. In total, 6,244 hazards were identified, and 657 homes were reported to have at least one hazard, making up 80% of the total assessed homes. The table below represents the number of buildings with each type of hazard as well as the total number of each hazard that was identified. The total number of buildings with each type of hazard identified as well as the total number of hazards identified. The number of hazards identified is larger than the number of risk assessments conducted, due to buildings having multiple hazards and hazard types.

Lead hazards assessed and identified during Lead risk assessments, 2024

Types of lead hazard	Number of buildings with lead hazard(s) identified	Total number of hazards identified	Average number of hazards identified per home
Dust	424	1,990	5
Exterior paint	359	1,758	5
Interior paint	334	2,303	7
Soil	108	139	1
Other	40	57	1

Indiana law requires that any person who engages in lead-based paint activities must first obtain a license from the IDOH for each activity. Indiana also requires that any lead abatement work be done by a certified lead contractor. Contractors must employ licensed staff and stand responsible for ensuring that abatement work meets the state standards for workmanship, safety, and cleanliness. Indiana saw an increase in the number of individuals licensed in 2024 (719) when compared to 2023 (589). This increase in the number of licensed individuals may be partially attributed to the HFI dollars received from the local health departments to hire county risk assessors.

Partnerships

IDOH works with an array of partners in efforts to increase the rates of blood lead testing, manage those with EBLLs, and address lead hazards in all forms. Some of the partners include:

- Housing and Urban Development (HUD)
- Indiana Professional Licensing Agency (IPLA)
- Indiana Occupational Safety and Health Administration (IOSHA)
- Children and Hoosier Immunization Registry Program (CHIRP)
- Family and Social Services Administration (FSSA) offices of Medicaid and Early Childhood and Out of School Learning
- Medicaid Managed Care Entities
- HeadStart
- Hoosier Environmental Council
- Universities such as Notre Dame, Indiana University, Purdue University, and Marian University.

A couple of noteworthy collaborations in 2024:

Health First Indiana: Health First Indiana (HFI) is an investment the state legislature made in 2023 aimed at improving the health of Hoosiers by providing funding directly to local health departments. One of the core service areas supported by the funding was lead poisoning testing and prevention. IDOH staff worked closely with local health department leaders to help grow the number of local health departments offering blood lead testing, increase the number of personnel trained and available to handle management of lead cases, and develop local lead risk assessors.

Hoosier Environmental Council: Taking over the Lead Health Services Initiative focused on abatement for Medicaid-covered families in 2024, the Hoosier Environmental Council worked with IDOH to abate lead in 10 homes in 2024. This program offers grant funding to qualified homeowners, rental occupants, and rental property owners for free lead testing and lead hazard control services. The program is slated to grow in 2025 with increasing program outreach by HEC and referrals both from IDOH and Indiana Housing and Community Development Authority staff.

IDOH Office of Data Analytics: The partnership of the Lead and Healthy Homes Division with the Office of Data Analytics led to the creation of the Indiana Lead Surveillance Dashboard available at www.in.gov/health/leadsafe. This interactive dashboard is a tool comprised of data that illustrates both case and environmental surveillance efforts within the state. An additional dashboard aimed at tracking workforce capacity and lead case management services is in development.

Medicaid Engagement

Children who are insured by Medicaid are one of the population groups considered to be at-risk for lead exposure in Indiana. According to the February 2025 Medicaid Eligibility file, there are 321,874 children younger than age 7 enrolled in Medicaid. Of those children, 157,433 (48.91%) have received at least one blood lead test.

In 2023 and 2024, IDOH met with all 95 LHDs to share information about how local family practice and pediatric offices who serve Medicaid-covered children are doing in terms of testing those kids for lead. LHDs worked with providers in their counties to walk through reports detailing the breakdown of their Medicaid patients, allowing them to easily identify which have received a blood lead test and which patients have not.

As a follow-up to this outreach project, LHDs and select provider offices requested a quarterly and/or monthly data distribution of updated patient records identifying which Medicaid members are still in need of receiving a blood lead test. These standing data requests have continued into 2025.

2024 County Data

Data listed in the table below is broken down by county, with the following limitations:

- County results only include children whose test results identified a county
- Children with and without a county listing are included in the state of Indiana totals
- A test result is elevated in Indiana at or above 3.5 µg/dL
- A child becomes a confirmed case when he or she receives either a single venous blood test or two consecutive capillary blood tests with an EBLL
- The number of risk assessments and identified hazards is included by county. However, risk assessments can be conducted for children who do not have an EBLL, and the number of hazards identified may be larger than the number of risk assessments done due to homes having multiple lead hazards.
- If fewer than five results for any given county data point were identified, the values were suppressed to maintain confidentiality. Suppressed values are identified with an asterisk (*).

County	Total tests	Total number of children tested	Number of children who received a confirmed EBLL (≥3.5 µg/dL)	Children who received a confirmed EBLL at ≥5 µg/dL	Number of risk assessments completed
Adams	427	379	14	5	2
Allen	6,296	5,692	12	*	39

Bartholomew	2,083	1,892	129	74	9
Benton	212	198	27	17	0
Blackford	148	136	*	*	0
Boone	1,196	1,095	*	*	2
Brown	215	199	*	*	1
Carroll	451	425	7	*	0
Cass	890	769	*	*	11
Clark	2,521	2,333	59	29	4
Clay	331	301	19	9	4
Clinton	788	683	8	5	9
Crawford	91	85	*	*	0
Daviess	398	339	24	10	11
Dearborn	627	520	21	13	3
Decatur	334	293	7	*	7
Dekalb	751	648	11	6	5
Delaware	1,341	1,155	15	5	16
Dubois	529	388	37	30	5
Elkhart	4,425	4,002	8	5	16
Fayette	414	367	82	37	4
Floyd	1,365	1,239	8	*	9
Fountain	267	235	12	6	3
Franklin	132	119	5	*	1
Fulton	205	176	*	*	0
Gibson	710	510	6	*	2
Grant	873	767	*	*	19
Greene	563	517	19	12	5
Hamilton	5,794	5,274	14	8	7
Hancock	1,490	1,367	19	10	1
Harrison	497	467	6	*	1

Hendricks	2,671	2,499	5	*	5
Henry	652	577	14	7	4
Howard	1,651	1,420	14	9	17
Huntington	702	591	20	13	8
Jackson	1,100	1,013	23	13	5
Jasper	440	369	16	12	1
Jay	300	257	5	*	3
Jefferson	268	250	8	6	4
Jennings	584	554	8	*	1
Johnson	3,526	3,149	*	*	5
Knox	429	366	8	*	7
Kosciusko	1,214	1,115	12	8	1
Lagrange	213	183	12	*	0
Lake	5,031	4,660	*	*	84
Laporte	495	468	106	55	25
Lawrence	931	869	27	16	7
Madison	2,805	2,203	12	5	17
Marion	24,886	22,136	30	15	108
Marshall	559	489	283	138	3
Martin	113	102	21	*	1
Miami	432	380	*	12	4
Monroe	1,976	1,881	9	5	7
Montgomery	581	535	15	6	0
Morgan	1,325	1,221	9	5	2
Newton	178	157	*	*	1
Noble	609	554	*	*	3
Ohio	82	65	9	6	0
Orange	279	267	*	*	1
Owen	360	345	*	*	1

Parke	189	173	*	*	3
Perry	257	233	*	*	1
Pike	157	133	*	*	1
Porter	1821	1,768	*	*	5
Posey	356	285	6	*	3
Pulaski	146	127	*	*	1
Putnam	489	448	*	*	2
Randolph	370	325	9	5	2
Ripley	233	201	11	7	1
Rush	346	285	7	*	2
Scott	398	356	14	8	2
Shelby	1,047	895	*	*	7
Spencer	226	208	*	*	0
Starke	152	145	*	*	1
Steuben	564	502	21	*	0
St Joseph	4,711	4,062	*	11	168
Sullivan	226	211	142	68	1
Switzerland	179	128	10	5	4
Tippecanoe	3,751	3,483	*	*	14
Tipton	244	216	43	22	1
Union	85	59	*	*	0
Vanderburgh	3,635	3,160	*	*	27
Vermillion	273	243	53	30	5
Vigo	1,848	1,668	10	*	21
Wabash	580	502	64	31	4
Warren	174	141	14	7	1
Warrick	1,047	940	7	5	1
Washington	411	383	6	*	4
Wayne	1,701	1,011	9	*	8

Wells	368	333	40	*	0
White	639	578	*	27	2
Whitley	518	474	9	*	2
Unknown	1,416	1,356	5	*	3
State total	**119,313**	**106,277**	**1,769**	**928**	**818**