

2022

Immunization Division



County Immunization Rate Assessment



Indiana
Department
of
Health



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Immunization Division
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CHIRP	Children and Hoosiers Immunization Registry Program, also referred to as the "Indiana Immunization Registry"; the software application used by the Indiana Department of Health Immunization Division for providers to report immunization data for patients.
Registered in CHIRP	A record exists for the patient, regardless of data contained within that record. Many records are imported through Vital Records data, established in 2005, and contain only the patient's name and address, with no immunization data.
Active Immunization Record	A patient record that is marked as "active" in CHIRP and contains two or more vaccinations, excluding influenza.
CDC	Centers for Disease Control and Prevention.
VTrckS	Vaccine Tracking System, maintained by the CDC for use in managing vaccine ordering.
19-35 months of age	Patients born between 04/01/2019 and 08/31/2020.
4:3:1:3:3:1:4	Vaccine series assessed for 19-35 months of age: 4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 HepB, 1 Var, and 4 PCV.
DTaP	Vaccine to prevent diphtheria, tetanus and acellular pertussis.
Polio	Vaccine to prevent poliomyelitis.
MMR	Vaccine to prevent measles mumps and rubella.
Hib	Vaccine to prevent Haemophilus influenzae type B.
HepB	Vaccine to prevent hepatitis B.
Var	Vaccine to prevent varicella (chicken pox).
PCV	Vaccine to prevent pneumococcal disease.
Fully Insured	A patient that has health insurance coverage that covers vaccine.
VFC	Vaccines for Children program, funded through the CDC that provides free vaccine for eligible children in the state of Indiana.
VFC Provider	An immunization provider who is enrolled in the VFC program and therefore granted permission to order and administer vaccines covered under the VFC program to eligible persons.
VFC Eligible	A child aged 0-18 is eligible to receive free vaccine under the VFC program if they are Medicaid eligible, are uninsured or have health insurance that does not cover vaccines. Also, any child who identifies as an American Indian or Alaskan Native, regardless of insurance status. (NOTE: Some of the children who are classified as "underinsured" can be funded with VFC vaccine at approved facilities.*)

*Please refer to the IDOH Immunization Division Eligibility Policy for a detailed definition of underinsured.

BACKGROUND

Each year, the Advisory Committee for Immunization Practices (ACIP) releases a recommended immunization schedule for childhood vaccination. These recommendations are supported by the Centers for Disease Control and Prevention (CDC). For each vaccine-preventable disease, there are particular rules and guidelines in the administration of the vaccine that, if followed, result in the optimal immune response in the patient. If these guidelines are not adhered to, in some cases, a child may be left unprotected. This can include scenarios in which the child was administered a dose of vaccine incorrectly (invalid dose) or those who never receive the vaccine at all.

ACIP recommends children age 19-35 months complete the 4:3:1:3:3:1:4 immunization series comprised of at least four doses of diphtheria-tetanus-acellular pertussis (DTaP), at least three doses of polio, at least one dose of measles-mumps-rubella (MMR), at least three doses of *Haemophilus influenzae* B (Hib) depending on the brand used, at least three doses of hepatitis B, at least one dose of varicella antigens and at least four doses of pneumococcal conjugate vaccine (PCV).

County-level vaccination coverage estimates are important, both because public health issues often originate in small geographic areas and because certain public health actions are most effective at the local level. With the use of the state immunization registry, Children and Hoosier Immunization Registry Program (CHIRP), a methodology has been developed for assessing children by county for completion of the entire ACIP-recommended childhood immunization series (4:3:1:3:3:1:4).

It is increasingly important to measure children for completion of the entire series of childhood vaccines, rather than focusing on one antigen. In assessing the complete series, we can assist in improving immunization rates for at least 10 different vaccine-preventable diseases in one measure. Improving the rate of completion for the entire series of childhood vaccines in those age 19-35 months can protect children from diseases such as diphtheria, pertussis, tetanus, polio, measles, mumps, rubella, varicella, pneumococcal disease and *Haemophilus influenzae*.

Providing a measure of how well protected children are in specific communities assists immunization programs throughout the state to identify areas of greatest need and enable the targeting of resources. This may result in improving immunization rates in Indiana, which ultimately will help reduce the incidence of morbidity and mortality due to vaccine-preventable diseases.

METHODS

Immunization data by county was obtained by extracting raw data for the birth cohort from CHIRP through SAS software. This data was filtered to include only those children who had an active immunization record as defined by this assessment (see Data Dictionary), were born in the define

birth cohort, had a current address listed as an Indiana address and had received a valid vaccine on or before March 31, 2022. The query's output provides the number of patients assessed per county that meets the above criteria and number of each up-to-date (UTD) vaccine given per antigen by county. The rate per each antigen is calculated by dividing the number of UTD vaccines of that antigen by the total number of patients assessed in that county.

For completion rate, a query was used to calculate the total number of patients in that county who are UTD on all vaccines in the 4:3:1:3:3:1:4 immunization series. The 4:3:1:3:3:1:4 immunization completion rate for each county was calculated as the total number of children in that county who had a completed series divided by the total number of children in that county who were assessed. The number of UTD patients on all seven vaccines in the series was then divided by the total number of patients assessed in that county. For state totals, counts were summed from each of the 92 counties. The Indiana state rate was calculated by dividing the summed number of vaccines given for the entire state by the number of summed patients assessed. The number of patients assessed included only those who had an active immunization record and were born within the birth cohort for the corresponding age range.

Each county's cohort was assessed by VFC eligibility category, being "VFC-Eligible", "Not VFC-Eligible" or "Underinsured" (see Data Dictionary for a definition of each category). Any child who was missing a VFC eligibility category code from CHIRP was included in the overall rate for the county but was not included in a VFC eligibility category assessment.

The total number of VFC providers by county (enrolled as of April 15, 2022) was determined by exporting a VFC provider list from PEAR, an application provided by CDC.

The total population for 19- to 35-month-olds was calculated based on the CDC Wonder online Database. The population estimates for 1-year-olds and 2-year-olds were collected. One-half of the 1-year-old population estimate was added to the 2-year-old estimate to get a population estimate for 19- to 35-month-olds in Indiana by county.

LIMITATIONS

Providers' participation in the use of CHIRP for reporting immunizations was mandated in Indiana as of July 1, 2015, which means all medical providers in the State of Indiana who are authorized to administer immunizations must submit complete information to CHIRP within seven business days of administering an immunization to any patient 18 years of age and younger. However, we have been notified that all providers are not compliant with entering data into CHIRP for various reasons. The data analyzed from CHIRP are considered to be representative of the entire state; however, the true number of immunizations administered in Indiana remains unknown. Nonetheless, this

assessment showed that from 2021 to 2022 there was an approximate decrease of 2% immunization records assessed. See Table 3 for a detailed comparison between 2021 and 2022.

Upon breaking out the 19 to 35 month old cohort into VFC eligibility categories any child that was missing a VFC eligibility code from CHIRP was still included in the county rate but was not included in any analysis by VFC eligibility category. Therefore, the rate among each VFC eligibility category is only representative of those children who had appropriate documentation of their VFC eligibility status in CHIRP at the time of the most recent vaccination.

In the most recently published National Immunization Survey (NIS) data from 2020, the ChildVaxView reports the overall U.S national estimated vaccination coverage rate for the 4:3:1:3:3:1:4 series completion at 35 months is 75.4% ± 1.9. The Indiana estimated vaccination coverage rate from the NIS for the 4:3:1:3:3:1:4 series completion at 35 months is 66.2% ± 8.9. This estimate is higher than the 58% provided in this report for Indiana. The methodology used to generate the data contained in this report differs greatly from that used for the NIS determination of the immunization rate. NIS uses a random digit dialing survey and contains a total sample size. Subjects are selected to be included in the survey only if they permit the surveyor to obtain medical records and information to verify the survey responses. This presents a selection bias, as many individuals who are not up-to-date with vaccinations may refuse to give permission, so these records would then be excluded from the analysis. Additionally, any child whose immunization history cannot be verified is excluded from the analysis.

RESULTS

The full results of this assessment can be found in the data table in Appendix A, or an antigen breakdown can be found in Appendix C. A comparison between 2021 and 2022 immunization completion rates by county, number assessed and population represented can be found in Appendix B. Table 1 below summarizes the state average and lists the 10 counties with the lowest rates. A summary of the number of VFC providers by county is also provided. Table 2 below displays the state average with the counties with the 10 highest rates. A summary of the number of VFC providers by county is also provided. Table 3 summarizes the 2020 - 2022 Indiana assessment

TABLE 1: TEN LOWEST RATES BY COUNTY 2022

COUNTY	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER OF VFC PROVIDERS ENROLLED
~Indiana	58.0%	799
Lagrange	35%	6
Daviess	38%	7
Lake	43%	56
Martin	46%	1
Jackson	46%	4
St. Joseph	49%	39
Ohio	49%	2
Fountain	49%	2
Laporte	50%	14
Adams	50%	3

TABLE 2: TEN HIGHEST RATES BY COUNTY 2022

COUNTY	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER OF VFC PROVIDERS ENROLLED
~Indiana	58.0%	755
Warrick	77%	7
Whitley	75%	4
Vanderburgh	74%	22
Spencer	74%	2
Gibson	73%	5
Pike	72%	2
Rush	72%	5
Posey	72%	3
Boone	71%	8
Greene	71%	7

TABLE 3: SUMMARY 2020 - 2022 INDIANA ASSESSMENT

	2020	2021	2022
Indiana completion rate for 4:3:1:3:3:1:4 series	70%	61%	58%
Number assessed 19-35 months of age	108,063	124,974	122,568
Percentage of population represented	87%	98%	98%
Number of VFC providers enrolled	755	743	799
Number/completion rate by not VFC-eligible	32,591/ 78%	18,309/ 76%	14,612/ 77%
Number/completion rate by underinsured	690/ 72%	766/ 71%	667/ 66%
Number/completion rate by VFC-eligible	59,010/ 67%	64,038/ 65%	63,025/ 60%

The 2022 average completion rate for Indiana counties is 58%, and the median (or midpoint) is 60%. There were 56 out of 92 counties that are greater than or equal to the state average of 58% and 36 that were below the average of 58%.

DISCUSSION

The result for Indiana’s immunization rate for 2022 is 58% coverage among children aged 19-35 months, which decreased 3% relative to the 2021 rate of 61%. The decrease in the number of children assessed and the percent of population represented could account for the increase in the overall rate.

According to 2020 U.S. Census data by age, Indiana’s population of 19- to 35-month-old children should be approximately 124,595. After excluding any immunization records that were not considered to be “active”, 122,568 records were assessed in this analysis. This represents 98% of the estimated population. For 32 counties, the percentage of the population represented exceed 100%; they are highlighted in red in Appendix A. This is thought to be attributable to an increase in children aged 19-35 months who relocated to these counties after 2022 as well as the one-year difference between the census data and the data extracted from CHIRP for analysis of the rates.

RECOMMENDATIONS

Achieving high vaccination rates is attainable, and progress among the 19- to 35-months age group series completion has been seen in many counties. Additional efforts are needed to ensure that

healthcare providers administer recommended vaccinations and use each visit as an opportunity to ensure each child is fully vaccinated on time with every recommended vaccine. Also, rather than targeting efforts toward children already past due, health departments need to implement targeted provider education to confirm kids are vaccinated before they fall within 19-35 months of age. Reducing the number of missed opportunities and vaccinating at the 15-month appointment would greatly improve vaccination rates as well as reduce the number of children who are behind.

CONCLUSIONS

The results of this analysis demonstrate the need for further investigation into identifying contributing factors that might explain why children are not completing the childhood vaccination series by 19 months of age. Further details of each county's data should be assessed on a case-by-case basis to find pockets of need.

It can be observed that the counties with the highest immunization rates also have some of the lowest numbers of VFC providers. One reason for this may be that a fewer number of providers have more control over maintaining patient records and performing activities to increase the number of children who complete the immunization series. It should be noted, however, that there may be many disadvantages to limiting immunization services to few providers in an isolated area as this could create potential barriers to accessing healthcare.

Evidence-based approaches to increasing immunization should be utilized, such as targeting populations in need and reminder-recall activities that prompt the guardians of children missing immunizations to contact their medical providers.

- Centers for Disease Control and Prevention (CDC). (2015) Epidemiology and Prevention of Vaccine-Preventable Diseases. 13th ed. May 2015.
- Indiana Immunization Registry, CHIRP. Data obtained April 13, 2022.
- The output for this paper was generated using SAS software, Version 9.4 of the SAS System for Windows. Copyright © 2021 SAS Institute, Inc. SAS and all other SAS Institute, Inc., product or service names are registered trademarks or trademarks of SAS Institute, Inc., Cary, NC, USA.
- U.S. Department of Health and Human Services (DHHS). National Center for Immunization and Respiratory Diseases. The 2020 National Immunization Survey - Child. Atlanta, GA: Centers for Disease Control and Prevention, 2021.
- Vaccination Coverage among Young Children (0 – 35 Months) ChildVaxView: <https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/interactive-reports/index.html>
- U.S. Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Bridged-Race
- Population Estimates, United States, July 1st resident population by state, county, age, sex, bridged-race, and Hispanic origin, on CDC WONDER Online Database

**APPENDIX A: 2022 Data Summary. Completion rate of 4:3:1:3:3:1:4 immunization series
among children 19-35 month with an active immunization record in CHIRP**

COUNTY	NUMBER OF VFC PROVIDERS ENROLLED	2020 (Census) POPULATION 19-35 MONTHS OF AGE	TOTAL PATIENTS ASSESSED	PERCENTAGE OF POPULATION REPRESENTED	TOTAL COMPLETION RATE FOR 4:3:1:3:3:1:4	TOTAL PATIENTS ASSESSED NOT VFC-ELIGIBLE	COMPLETION RATE: NOT VFC-ELIGIBLE	TOTAL PATIENTS ASSESSED UNDERINSURED	COMPLETION RATE: UNDERINSURED	TOTAL PATIENTS ASSESSED VFC-ELIGIBLE	COMPLETION RATE: VFC-ELIGIBLE
~INDIANA	799	124,595	122,568	98%	58%	14,612	77%	667	66%	63,025	60%
ADAMS	3	963	649	67%	50%	33	82%	0	0%	424	42%
ALLEN	34	7989	7543	94%	58%	377	72%	28	54%	4236	54%
BARTHOLOMEW	7	1592	1687	106%	54%	132	63%	4	25%	590	59%
BENTON	1	165	144	87%	51%	11	82%	0	0%	78	59%
BLACKFORD	1	209	203	97%	59%	12	67%	0	0%	132	64%
BOONE	8	1313	1372	104%	71%	264	83%	21	67%	317	76%
BROWN	1	193	158	82%	63%	37	84%	1	0%	80	66%
CARROLL	3	376	280	74%	60%	48	81%	7	86%	149	58%
CASS	3	633	643	102%	57%	125	73%	3	33%	419	56%
CLARK	11	2191	2092	95%	56%	408	73%	5	80%	883	68%
CLAY	5	476	530	111%	66%	69	78%	3	100%	351	64%
CLINTON	3	639	782	122%	64%	93	90%	27	78%	421	75%
CRAWFORD	3	186	114	61%	54%	26	73%	0	0%	71	51%
DAVIESS	7	878	623	71%	38%	126	71%	3	33%	429	27%
DEARBORN	10	834	665	80%	53%	86	64%	2	50%	311	58%
DECATUR	6	495	457	92%	70%	144	79%	10	90%	242	72%
DEKALB	6	849	812	96%	60%	94	73%	3	33%	451	54%
DELAWARE	14	1620	1808	112%	60%	63	78%	5	100%	1091	68%
DUBOIS	4	803	765	95%	68%	135	76%	7	43%	334	66%
ELKHART	32	4647	4061	87%	58%	382	77%	14	36%	2764	60%
FAYETTE	3	424	353	83%	71%	27	67%	2	50%	274	76%
FLOYD	7	1390	1200	86%	62%	225	80%	6	50%	530	69%
FOUNTAIN	2	315	327	104%	49%	51	84%	6	67%	144	56%
FRANKLIN	3	458	224	49%	70%	76	79%	2	100%	116	65%
FULTON	2	376	299	80%	56%	56	77%	8	50%	179	49%
GIBSON	5	635	544	86%	73%	213	85%	2	100%	219	69%
GRANT	8	1182	1093	92%	60%	133	72%	13	46%	798	59%
GREENE	7	553	429	78%	71%	116	81%	0	0%	268	72%
HAMILTON	35	6229	5682	91%	67%	1318	77%	21	81%	1402	73%
HANCOCK	8	1343	1303	97%	71%	94	86%	2	100%	416	73%
HARRISON	4	664	625	94%	55%	167	63%	2	50%	256	55%
HENDRICKS	13	2795	3430	123%	56%	200	81%	11	55%	1090	67%
HENRY	6	755	686	91%	70%	85	84%	3	100%	348	76%
HOWARD	9	1535	1500	98%	65%	128	83%	10	70%	950	65%
HUNTINGTON	5	601	592	99%	69%	75	79%	3	67%	338	69%
JACKSON	4	891	1360	153%	46%	184	70%	6	67%	586	64%
JASPER	1	522	624	120%	55%	48	63%	6	83%	276	61%
JAY	5	437	369	84%	60%	52	90%	1	0%	230	60%
JEFFERSON	2	546	591	108%	67%	162	81%	2	100%	289	70%
JENNINGS	2	518	572	110%	53%	73	70%	4	50%	297	67%
JOHNSON	19	2915	3187	109%	59%	376	82%	12	67%	1312	69%
KNOX	4	630	555	88%	68%	145	80%	13	62%	338	63%
KOSCIUSKO	7	1511	1274	84%	56%	234	69%	11	82%	619	50%
LAGRANGE	6	1094	557	51%	35%	30	73%	4	50%	415	29%

APPENDIX A: 2022 Data Summary. Completion rate of 4:3:1:3:3:1:4 immunization series among children 19-35 month with an active immunization record in CHIRP

COUNTY	NUMBER OF VFC PROVIDERS ENROLLED	2020 (Census) POPULATION 19-35 MONTHS OF AGE	TOTAL PATIENTS ASSESSED	PERCENTAGE OF POPULATION REPRESENTED	TOTAL COMPLETION RATE FOR 4:3:1:3:3:1:4	TOTAL PATIENTS ASSESSED NOT VFC-ELIGIBLE	COMPLETION RATE: NOT VFC-ELIGIBLE	TOTAL PATIENTS ASSESSED UNDERINSURED	COMPLETION RATE: UNDERINSURED	TOTAL PATIENTS ASSESSED VFC-ELIGIBLE	COMPLETION RATE: VFC-ELIGIBLE
LAKE	56	8753	8776	100%	43%	718	58%	40	73%	4741	41%
LAPORTE	14	1906	1759	92%	50%	371	64%	3	100%	1081	46%
LAWRENCE	9	769	720	94%	69%	143	80%	12	58%	496	66%
MADISON	25	2123	2221	105%	69%	125	86%	4	100%	1500	74%
MARION	104	20739	21398	103%	53%	1345	74%	105	65%	11144	61%
MARSHALL	10	850	810	95%	51%	67	72%	5	60%	462	49%
MARTIN	1	180	208	116%	46%	38	74%	1	0%	141	35%
MIAMI	3	534	548	103%	55%	54	72%	3	33%	372	55%
MONROE	6	1924	1645	85%	69%	665	75%	13	77%	886	65%
MONTGOMERY	6	651	741	114%	63%	126	84%	9	78%	353	75%
MORGAN	8	1144	1391	122%	59%	115	81%	8	50%	739	66%
NEWTON	1	226	193	85%	51%	7	86%	0	0%	109	59%
NOBLE	4	954	845	89%	58%	58	74%	12	25%	498	51%
OHIO	2	95	122	128%	49%	6	83%	0	0%	65	52%
ORANGE	3	370	383	104%	55%	48	67%	4	75%	258	54%
OWEN	2	358	289	81%	69%	74	76%	1	0%	191	70%
PARKE	6	294	180	61%	62%	8	88%	1	100%	114	58%
PERRY	4	310	264	85%	67%	77	82%	2	100%	158	65%
PIKE	2	239	245	103%	72%	73	78%	1	100%	134	73%
PORTER	15	2659	2474	93%	63%	272	65%	21	67%	1004	55%
POSEY	3	422	335	79%	72%	135	87%	1	0%	125	60%
PULASKI	1	195	181	93%	57%	24	71%	2	100%	98	62%
PUTNAM	5	561	557	99%	58%	66	80%	1	0%	275	60%
RANDOLPH	3	384	405	105%	60%	19	74%	1	0%	266	62%
RIPLEY	5	553	475	86%	69%	203	80%	5	100%	178	65%
RUSH	5	273	290	106%	72%	39	82%	4	25%	178	71%
ST JOSEPH	39	5116	5730	112%	49%	231	75%	17	65%	2911	56%
SCOTT	3	403	442	110%	50%	66	68%	4	75%	219	67%
SHELBY	2	750	809	108%	68%	72	85%	4	75%	488	76%
SPENCER	2	295	239	81%	74%	80	80%	3	100%	119	73%
STARKE	7	414	352	85%	54%	46	76%	4	75%	191	52%
STEUBEN	4	558	473	85%	57%	96	76%	0	0%	288	49%
SULLIVAN	4	317	305	96%	64%	43	81%	6	83%	195	61%
SWITZERLAND	2	182	131	72%	53%	18	83%	0	0%	79	54%
TIPPECANOE	18	3311	3791	114%	52%	398	85%	37	76%	1644	63%
TIPTON	1	249	216	87%	67%	21	76%	1	100%	108	68%
UNION	1	112	72	64%	69%	5	80%	0	0%	50	68%
VANDEBURGH	22	3219	3063	95%	74%	808	89%	6	67%	1770	71%
VERMILLION	6	256	227	89%	69%	19	74%	1	0%	148	68%
VIGO	19	1746	1812	104%	63%	122	80%	11	45%	1250	63%
WABASH	4	482	461	96%	67%	76	82%	2	50%	279	65%
WARREN	1	124	164	132%	54%	14	86%	2	50%	70	71%
WARRICK	7	972	966	99%	77%	417	85%	3	100%	355	74%
WASHINGTON	4	471	432	92%	67%	36	89%	3	33%	278	70%
WAYNE	10	1237	1135	92%	67%	104	84%	3	100%	758	71%

**APPENDIX A: 2022 Data Summary. Completion rate of 4:3:1:3:3:1:4 immunization series
among children 19-35 month with an active immunization record in CHIRP**

COUNTY	NUMBER OF VFC PROVIDERS ENROLLED	2020 (Census) POPULATION 19-35 MONTHS OF AGE	TOTAL PATIENTS ASSESSED	PERCENTAGE OF POPULATION REPRESENTED	TOTAL COMPLETION RATE FOR 4:3:1:3:3:1:4	TOTAL PATIENTS ASSESSED NOT VFC-ELIGIBLE	COMPLETION RATE: NOT VFC-ELIGIBLE	TOTAL PATIENTS ASSESSED UNDERINSURED	COMPLETION RATE: UNDERINSURED	TOTAL PATIENTS ASSESSED VFC-ELIGIBLE	COMPLETION RATE: VFC-ELIGIBLE
WELLS	2	498	489	98%	67%	34	62%	5	80%	283	67%
WHITE	5	442	496	112%	60%	59	86%	3	33%	265	69%
WHITLEY	4	605	544	90%	75%	38	79%	0	0%	248	69%

APPENDIX B. Immunization series completion rate for 4:3:1:3:3:1:4 among children aged 19-35 months, by county, number assessed, population represented, 2021 and 2022

COUNTY	(2020 Census) POPULATION 19-35 MONTHS OF AGE	Number Assessed 19- 35 Months of Age		Percentage of Population Represented		Completion Rate for 4:3:1:3:3:1:4	
		2021	2022	2021	2022	2021	2022
~INDIANA	124,595	124,974	122,568	100%	98%	61%	58%
Adams	963	703	649	73%	67%	57%	50%
Allen	7989	7699	7543	96%	94%	60%	58%
Bartholomew	1592	1638	1687	103%	106%	65%	54%
Benton	165	136	144	82%	87%	59%	51%
Blackford	209	219	203	105%	97%	67%	59%
Boone	1313	1367	1372	104%	104%	70%	71%
Brown	193	167	158	87%	82%	64%	63%
Carroll	376	263	280	70%	74%	64%	60%
Cass	633	628	643	99%	102%	67%	57%
Clark	2191	2097	2092	96%	95%	59%	56%
Clay	476	582	530	122%	111%	68%	66%
Clinton	639	770	782	121%	122%	66%	64%
Crawford	186	133	114	72%	61%	58%	54%
Daviess	878	633	623	72%	71%	48%	38%
Dearborn	834	610	665	73%	80%	58%	53%
Decatur	495	437	457	88%	92%	74%	70%
Dekalb	849	828	812	98%	96%	62%	60%
Delaware	1620	1735	1808	107%	112%	66%	60%
Dubois	803	781	765	97%	95%	76%	68%
Elkhart	4647	4184	4061	90%	87%	63%	58%
Fayette	424	366	353	86%	83%	74%	71%
Floyd	1390	1261	1200	91%	86%	65%	62%
Fountain	315	348	327	110%	104%	59%	49%
Franklin	458	208	224	45%	49%	66%	70%
Fulton	376	335	299	89%	80%	63%	56%
Gibson	635	523	544	82%	86%	73%	73%
Grant	1182	1173	1093	99%	92%	63%	60%
Greene	553	471	429	85%	78%	75%	71%
Hamilton	6229	5898	5682	95%	91%	68%	67%
Hancock	1343	1446	1303	108%	97%	68%	71%
Harrison	664	653	625	98%	94%	60%	55%
Hendricks	2795	3336	3430	119%	123%	60%	56%
Henry	755	735	686	97%	91%	73%	70%
Howard	1535	1461	1500	95%	98%	71%	65%
Huntington	601	593	592	99%	99%	76%	69%
Jackson	891	1232	1360	138%	153%	51%	46%
Jasper	522	647	624	124%	120%	56%	55%
Jay	437	361	369	83%	84%	66%	60%
Jefferson	546	571	591	105%	108%	69%	67%
Jennings	518	557	572	108%	110%	59%	53%
Johnson	2915	3143	3187	108%	109%	67%	59%
Knox	630	599	555	95%	88%	67%	68%
Kosciusko	1511	1246	1274	82%	84%	65%	56%
Lagrange	1094	630	557	58%	51%	36%	35%
Lake	8753	9311	8776	106%	100%	46%	43%
LaPorte	1906	2082	1759	109%	92%	51%	50%
Lawrence	769	740	720	96%	94%	74%	69%
Madison	2123	2103	2221	99%	105%	74%	69%
Marion	20739	21624	21398	104%	103%	56%	53%

APPENDIX B. Immunization series completion rate for 4:3:1:3:3:1:4 among children aged 19-35 months, by county, number assessed, population represented, 2021 and 2022

COUNTY	(2020 Census) POPULATION 19-35 MONTHS OF AGE	Number Assessed 19- 35 Months of Age		Percentage of Population Represented		Completion Rate for 4:3:1:3:3:1:4	
		2021	2022	2021	2022	2021	2022
Marshall	850	777	810	91%	95%	58%	51%
Martin	180	219	208	122%	116%	48%	46%
Miami	534	531	548	99%	103%	61%	55%
Monroe	1924	1700	1645	88%	85%	75%	69%
Montgomery	651	758	741	116%	114%	63%	63%
Morgan	1144	1390	1391	122%	122%	65%	59%
Newton	226	180	193	80%	85%	57%	51%
Noble	954	888	845	93%	89%	62%	58%
Ohio	95	136	122	143%	128%	67%	49%
Orange	370	412	383	111%	104%	57%	55%
Owen	358	298	289	83%	81%	76%	69%
Parke	294	210	180	71%	61%	67%	62%
Perry	310	269	264	87%	85%	72%	67%
Pike	239	299	245	125%	103%	80%	72%
Porter	2659	2485	2474	93%	93%	62%	63%
Posey	422	352	335	83%	79%	70%	72%
Pulaski	195	208	181	107%	93%	63%	57%
Putnam	561	570	557	102%	99%	64%	58%
Randolph	384	398	405	104%	105%	65%	60%
Ripley	553	528	475	95%	86%	74%	69%
Rush	273	293	290	107%	106%	75%	72%
St. Joseph	5116	5947	5730	116%	112%	50%	49%
Scott	403	382	442	95%	110%	54%	50%
Shelby	750	882	809	118%	108%	69%	68%
Spencer	295	232	239	79%	81%	78%	74%
Starke	414	358	352	86%	85%	58%	54%
Steuben	558	560	473	100%	85%	61%	57%
Sullivan	317	342	305	108%	96%	65%	64%
Switzerland	182	138	131	76%	72%	61%	53%
Tippecanoe	3311	3819	3791	115%	114%	58%	52%
Tipton	249	231	216	93%	87%	71%	67%
Union	112	74	72	66%	64%	78%	69%
Vanderburgh	3219	2998	3063	93%	95%	74%	74%
Vermillion	256	250	227	98%	89%	66%	69%
Vigo	1746	1852	1812	106%	104%	62%	63%
Wabash	482	483	461	100%	96%	71%	67%
Warren	124	146	164	118%	132%	60%	54%
Warrick	972	985	966	101%	99%	77%	77%
Washington	471	427	432	91%	92%	69%	67%
Wayne	1237	1134	1135	92%	92%	71%	67%
Wells	498	497	489	100%	98%	69%	67%
White	442	509	496	115%	112%	61%	60%
Whitley	605	564	544	93%	90%	76%	75%

**APPENDIX C: 2022 Data Summary. Antigen completion rate of 4:3:1:3:3:1:4 immunization series
among children 19-35 month with an active immunization record in CHIRP**

COUNTY	TOTAL PATIENTS ASSESSED	4 Dtap	4 Dtap RATE	3 Polio	3 Polio RATE	1 MMR	1 MMR RATE	3 Hib	3 Hib RATE	3 Hep B	3 Hep B RATE	1 VAR	1 VAR RATE	4 PCV	4 PCV RATE	COMPLETION 4:3:1:3:3:1:4	COMPLETION RATE FOR 4:3:1:3:3:1:4
~INDIANA	122,568	81,252	66%	97,120	79%	96,123	78%	94,389	77%	94,248	77%	95,400	78%	80,349	66%	70,746	58%
Adams	649	407	63%	515	79%	520	80%	475	73%	497	77%	504	78%	368	57%	327	50%
Allen	7543	4898	65%	6029	80%	6020	80%	5894	78%	6111	81%	6001	80%	4915	65%	4394	58%
Bartholomew	1687	1242	74%	1429	85%	1412	84%	1431	85%	1135	67%	1349	80%	1267	75%	907	54%
Benton	144	83	58%	100	69%	96	67%	101	70%	98	68%	97	67%	85	59%	73	51%
Blackford	203	130	64%	169	83%	163	80%	159	78%	172	85%	161	79%	128	63%	119	59%
Boone	1372	1059	77%	1164	85%	1145	83%	1127	82%	1130	82%	1138	83%	1041	76%	977	71%
Brown	158	117	74%	130	82%	130	82%	129	82%	122	77%	126	80%	115	73%	99	63%
Carroll	280	188	67%	224	80%	220	79%	218	78%	223	80%	217	78%	184	66%	169	60%
Cass	643	435	68%	523	81%	536	83%	501	78%	544	85%	535	83%	394	61%	368	57%
Clark	2092	1479	71%	1700	81%	1709	82%	1704	81%	1432	68%	1699	81%	1480	71%	1162	56%
Clay	530	373	70%	439	83%	426	80%	428	81%	444	84%	428	81%	378	71%	350	66%
Clinton	782	552	71%	604	77%	600	77%	582	74%	601	77%	599	77%	537	69%	503	64%
Crawford	114	72	63%	88	77%	92	81%	87	76%	86	75%	92	81%	70	61%	62	54%
Daviess	623	319	51%	479	77%	481	77%	435	70%	484	78%	367	59%	307	49%	235	38%
Dearborn	665	437	66%	536	81%	535	80%	556	84%	501	75%	539	81%	442	66%	354	53%
Decatur	457	355	78%	409	89%	394	86%	400	88%	405	89%	392	86%	357	78%	322	70%
Dekalb	812	552	68%	655	81%	653	80%	641	79%	652	80%	650	80%	547	67%	484	60%
Delaware	1808	1179	65%	1400	77%	1399	77%	1372	76%	1426	79%	1396	77%	1178	65%	1087	60%
Dubois	765	562	73%	711	93%	691	90%	707	92%	707	92%	685	90%	609	80%	518	68%
Elkhart	4061	2771	68%	3343	82%	3310	82%	3281	81%	3248	80%	3293	81%	2628	65%	2364	58%
Fayette	353	267	76%	308	87%	304	86%	293	83%	317	90%	301	85%	258	73%	249	71%
Floyd	1200	864	72%	999	83%	1004	84%	1010	84%	912	76%	997	83%	881	73%	739	62%
Fountain	327	177	54%	227	69%	213	65%	217	66%	223	68%	214	65%	191	58%	161	49%
Franklin	224	170	76%	200	89%	192	86%	199	89%	205	92%	194	87%	163	73%	157	70%
Fulton	299	194	65%	252	84%	254	85%	248	83%	255	85%	254	85%	195	65%	167	56%
Gibson	544	428	79%	474	87%	474	87%	477	88%	474	87%	473	87%	420	77%	396	73%
Grant	1093	730	67%	908	83%	891	82%	911	83%	932	85%	899	82%	725	66%	655	60%
Greene	429	320	75%	371	86%	367	86%	363	85%	380	89%	363	85%	328	76%	304	71%
Hamilton	5682	4324	76%	4956	87%	4882	86%	4856	85%	4770	84%	4864	86%	4320	76%	3825	67%
Hancock	1303	1026	79%	1167	90%	1124	86%	1153	88%	1119	86%	1130	87%	1044	80%	923	71%
Harrison	625	435	70%	539	86%	537	86%	543	87%	476	76%	535	86%	436	70%	341	55%
Hendricks	3430	2193	64%	2683	78%	2548	74%	2572	75%	2627	77%	2540	74%	2154	63%	1926	56%
Henry	686	521	76%	602	88%	593	86%	595	87%	592	86%	586	85%	510	74%	480	70%
Howard	1500	1063	71%	1281	85%	1273	85%	1242	83%	1292	86%	1275	85%	1075	72%	975	65%
Huntington	592	450	76%	516	87%	510	86%	514	87%	506	85%	510	86%	438	74%	406	69%
Jackson	1360	747	55%	880	65%	879	65%	874	64%	830	61%	867	64%	698	51%	632	46%
Jasper	624	410	66%	470	75%	460	74%	471	75%	435	70%	459	74%	404	65%	346	55%
Jay	369	254	69%	301	82%	303	82%	293	79%	306	83%	301	82%	247	67%	222	60%
Jefferson	591	418	71%	492	83%	483	82%	495	84%	503	85%	482	82%	409	69%	397	67%
Jennings	572	368	64%	424	74%	413	72%	403	70%	401	70%	411	72%	345	60%	303	53%
Johnson	3187	2198	69%	2514	79%	2458	77%	2487	78%	2281	72%	2438	76%	2204	69%	1881	59%
Knox	555	395	71%	491	88%	473	85%	478	86%	503	91%	471	85%	398	72%	376	68%
Kosciusko	1274	823	65%	1039	82%	1029	81%	1029	81%	1037	81%	1021	80%	788	62%	710	56%

**APPENDIX C: 2022 Data Summary. Antigen completion rate of 4:3:1:3:3:1:4 immunization series
among children 19-35 month with an active immunization record in CHIRP**

COUNTY	TOTAL PATIENTS ASSESSED	4 Dtap	4 Dtap RATE	3 Polio	3 Polio RATE	1 MMR	1 MMR RATE	3 Hib	3 Hib RATE	3 Hep B	3 Hep B RATE	1 VAR	1 VAR RATE	4 PCV	4 PCV RATE	COMPLETION 4:3:1:3:3:1:4	COMPLETION RATE FOR 4:3:1:3:3:1:4
Lagrange	557	241	43%	360	65%	371	67%	334	60%	332	60%	348	62%	227	41%	193	35%
Lake	8776	4833	55%	6090	69%	6113	70%	5997	68%	5504	63%	6027	69%	4686	53%	3733	43%
La Porte	1759	1067	61%	1372	78%	1360	77%	1354	77%	1272	72%	1327	75%	1092	62%	883	50%
Lawrence	720	531	74%	635	88%	623	87%	598	83%	654	91%	620	86%	543	75%	495	69%
Madison	2221	1675	75%	1914	86%	1882	85%	1861	84%	1915	86%	1869	84%	1626	73%	1539	69%
Marion	21398	13092	61%	15866	74%	15876	74%	15089	71%	15621	73%	15818	74%	12760	60%	11261	53%
Marshall	810	495	61%	631	78%	621	77%	616	76%	593	73%	621	77%	489	60%	411	51%
Martin	208	129	62%	170	82%	168	81%	162	78%	174	84%	131	63%	123	59%	95	46%
Miami	548	363	66%	453	83%	437	80%	432	79%	457	83%	438	80%	329	60%	302	55%
Monroe	1645	1209	73%	1447	88%	1395	85%	1299	79%	1476	90%	1391	85%	1229	75%	1131	69%
Montgomery	741	501	68%	563	76%	551	74%	553	75%	550	74%	550	74%	494	67%	470	63%
Morgan	1391	976	70%	1131	81%	1115	80%	1090	78%	1043	75%	1102	79%	969	70%	826	59%
Newton	193	113	59%	131	68%	129	67%	132	68%	125	65%	130	67%	109	56%	98	51%
Noble	845	564	67%	678	80%	688	81%	664	79%	692	82%	685	81%	525	62%	487	58%
Ohio	122	77	63%	95	78%	96	79%	97	80%	85	70%	96	79%	79	65%	60	49%
Orange	383	237	62%	311	81%	304	79%	306	80%	315	82%	301	79%	250	65%	209	55%
Owen	289	217	75%	260	90%	252	87%	246	85%	260	90%	252	87%	230	80%	198	69%
Parke	180	127	71%	151	84%	146	81%	146	81%	149	83%	145	81%	123	68%	112	62%
Perry	264	197	75%	228	86%	230	87%	213	81%	235	89%	231	88%	186	70%	177	67%
Pike	245	192	78%	227	93%	222	91%	224	91%	222	91%	222	91%	188	77%	177	72%
Porter	2474	1806	73%	2119	86%	2075	84%	2073	84%	2014	81%	2040	82%	1817	73%	1568	63%
Posey	335	261	78%	310	93%	301	90%	309	92%	299	89%	302	90%	261	78%	240	72%
Pulaski	181	113	62%	140	77%	135	75%	129	71%	146	81%	132	73%	112	62%	103	57%
Putnam	557	361	65%	454	82%	432	78%	427	77%	460	83%	431	77%	361	65%	325	58%
Randolph	405	286	71%	337	83%	335	83%	312	77%	354	87%	338	83%	266	66%	243	60%
Ripley	475	358	75%	425	89%	414	87%	421	89%	436	92%	414	87%	373	79%	327	69%
Rush	290	228	79%	258	89%	256	88%	258	89%	255	88%	255	88%	223	77%	208	72%
St. Joseph	5730	3272	57%	4037	70%	4018	70%	3833	67%	3879	68%	4001	70%	3295	58%	2799	49%
Scott	442	255	58%	314	71%	304	69%	315	71%	298	67%	301	68%	254	57%	223	50%
Shelby	809	617	76%	676	84%	664	82%	673	83%	658	81%	663	82%	619	77%	554	68%
Spencer	239	193	81%	224	94%	221	92%	217	91%	221	92%	219	92%	196	82%	176	74%
Starke	352	233	66%	283	80%	274	78%	280	80%	277	79%	274	78%	214	61%	191	54%
Steuben	473	315	67%	401	85%	374	79%	393	83%	405	86%	372	79%	306	65%	268	57%
Sullivan	305	209	69%	247	81%	239	78%	244	80%	246	81%	240	79%	207	68%	195	64%
Switzerland	131	80	61%	103	79%	93	71%	105	80%	103	79%	95	73%	77	59%	70	53%
Tippecanoe	3791	2258	60%	2643	70%	2629	69%	2595	68%	2479	65%	2609	69%	2288	60%	1969	52%
Tipton	216	161	75%	191	88%	187	87%	183	85%	189	88%	185	86%	160	74%	144	67%
Union	72	55	76%	66	92%	67	93%	62	86%	67	93%	66	92%	54	75%	50	69%
Vanderburgh	3063	2421	79%	2729	89%	2694	88%	2634	86%	2717	89%	2700	88%	2415	79%	2265	74%
Vermillion	227	160	70%	188	83%	189	83%	185	81%	192	85%	189	83%	166	73%	156	69%
Vigo	1812	1245	69%	1488	82%	1473	81%	1453	80%	1485	82%	1469	81%	1273	70%	1142	63%
Wabash	461	352	76%	401	87%	397	86%	396	86%	402	87%	393	85%	336	73%	311	67%
Warren	164	106	65%	122	74%	120	73%	120	73%	109	66%	119	73%	112	68%	89	54%
Warrick	966	801	83%	869	90%	865	90%	861	89%	847	88%	863	89%	796	82%	742	77%
Washington	432	317	73%	364	84%	360	83%	360	83%	362	84%	357	83%	315	73%	290	67%

**APPENDIX C: 2022 Data Summary. Antigen completion rate of 4:3:1:3:3:1:4 immunization series
among children 19-35 month with an active immunization record in CHIRP**

COUNTY	TOTAL PATIENTS ASSESSED	4 Dtap	4 Dtap RATE	3 Polio	3 Polio RATE	1 MMR	1 MMR RATE	3 Hib	3 Hib RATE	3 Hep B	3 Hep B RATE	1 VAR	1 VAR RATE	4 PCV	4 PCV RATE	COMPLETION 4:3:1:3:3:1:4	COMPLETION RATE FOR 4:3:1:3:3:1:4
Wayne	1135	829	73%	974	86%	955	84%	891	79%	998	88%	952	84%	804	71%	762	67%
Wells	489	361	74%	423	87%	409	84%	416	85%	423	87%	404	83%	355	73%	326	67%
White	496	340	69%	392	79%	388	78%	390	79%	371	75%	380	77%	339	68%	299	60%
Whitley	544	438	81%	488	90%	480	88%	490	90%	488	90%	480	88%	437	80%	409	75%