Indiana State Department of Health

Immunization Division

County Immunization Rate Assessment

2020

Immunization Division

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Contents

Data Dictionary……..3

Background……....5

Methods…….....6

Limitations…….....7

Results…….....9

Table 1: Ten Lowest Rates by County…….....9

Table 2: Ten Highest Rates by County……..10

Table 3: Summary 2019 and 2020 Indiana Assessment…….....10

Discussion……...……..11

Recommendations……11

Conclusions……...……12

Appendix A: Indiana Immunization Rates by County for Series Completion 4:3:1:3:3:1:4 among Children Aged 19-35 Months, 2020…… …….....….13

Appendix B: Indiana Immunization Series Completion Rate For 4:3:1:3:3:1:4 among Children 19-35 Months by County, 2019 & 2020…….....17

Appendix C: Indiana Immunization Antigen Rates by County for Series Completion 4:3:1:3:3:1:4 among Children Aged 19-35 Months, 2020.....21

Appendix D: Standard Operating Procedure (SOP) for Performing County Rate Assessment.....24

References…….……....30

Data Dictionary

CHIRP	Children and Hoosiers Immunization Registry Program, also referred to as the "Indiana Immunization Registry"; the software application used by the Indiana State Department of Health Immunization Division for providers to report immunization data for patients. (Version: CoCASA v2.1 and up)
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
CoCASA	Comprehensive Clinic Assessment Software Application, developed by the CDC for use in assessments. (Version 14.2)
VTrckS	Vaccine Tracking System, maintained by the CDC for use in managing vaccine ordering.
19-35 months of age	Patients born between 04/30/2018 and 08/31/2019.
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 age 0-18 is eligible to receive free vaccine under the VFC program if they are Medicaid eligible, 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*)

Not VFC Eligible	A child age 0-18 who has health insurance that covers vaccines or adults over the age of 18.
Underinsured* (Insurance Does Not Cover Vaccines)	Children who were recorded as "underinsured" by a provider in CHIRP. This should include children who have commercial (private) health insurance but the coverage does not include vaccines, children whose insurance covers only selected vaccines (these children are categorized as underinsured for non-covered vaccines only), or children whose insurance caps vaccine coverage at a certain amount (once that coverage amount is reached, these children are categorized as underinsured).
Eligible for Publicly Funded Vaccines	A child age 0-18 who is eligible for VFC vaccines, or any state-funded vaccines through 317 funds; those who are underinsured and receive non-VFC funded vaccine.
Not Eligible for Publicly Funded Vaccines	A child age 0-18 who is fully insured and therefore not eligible for any publicly funded vaccines or adults over the age of 18.
Valid Dose	A dose of vaccine that was given at the appropriate age and interval from any previous doses of vaccine according to manufacturer and ACIP guidelines.
Invalid Dose	A dose of vaccine that was not given at the appropriate age and interval from any previous doses of vaccine or at a minimum age. A patient is not considered to have immunity to the disease that the vaccine was for unless it was administered as a "valid dose".

*Please refer to the ISDH 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 where 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 to 35 months to 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 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 4 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. Previously in Indiana, it has not been possible to assess childhood vaccination series completion by county with the data available to the program. However, with the use of the state immunization registry, Children and Hoosier Immunization Registry Program (CHIRP), more information is now available and a methodology has been developed for assessing children by county for completion of the complete 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 disease 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 allow 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. This data was filtered to include only those children who had an active immunization record, as defined by this assessment (see Data Dictionary). Additionally, access queries were used to correct any children's records that were missing a county, populating the county based on other fields, such as the city or zip code. When a child's city or zip code could not be used, the facility that administered the most recent vaccine was used to populate the county of residence for the child.

After completing this data "clean-up", the remaining children were assessed in CHIRP using a report that has been embedded in the application to measure the number of records complete for the 4:3:1:3:3:1:4 immunization series for each county. Data exported from CHIRP included the number of patients assessed defined as only those that had an active immunization record and were born within the birth cohort for the corresponding age range (19-35 months as of 3/31/2020). Exported data from CHIRP was then imported into a database and analyzed using a software program provided by the CDC, Comprehensive Clinic Assessment Software Application (CoCASA).

Immunizations were assessed for completion of series based on age range using an algorithm embedded in CoCASA for determining which patients had completed the series with

valid doses of each vaccine. The 19-35 month age range was assessed for completion of the 4:3:1:3:3:1:4 series as of 03/31/2020.

Assessment reports for each county were run using a template in CoCASA based on the imported data from CHIRP that contained the total number of patients assessed and the total number of patients complete for the corresponding vaccine series as of 03/31/2020.

Immunization rates by county were calculated by dividing the total number of patients that were complete for the series by the total number of patients assessed. The number of patients assessed includes only those that have 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 either "VFC-Eligible", "Not VFC-Eligible", or "Underinsured" (see Data Dictionary for definitions of each category). Any child that 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 4:3:1:3:3:1:4 immunization completion rate for the state of Indiana was calculated as a weighted average of the county rates, based on each county's cohort of children assessed (see Appendix C for a detailed standard operating procedure for conducting this assessment).

The total number of VFC providers by county (enrolled as of July 28, 2020) was determined by exporting all provider data out of the Vaccine Tracking System (VTrckS), which is an application provided by CDC used to manage vaccine ordering and accountability.

Limitations

Provider's 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 2019 to 2020 there was a slight approximate decrease of 0.5% immunization records assessed. See Table 3 for a detailed comparison between 2019 and 2020.

Upon breaking out the VFC eligibility categories among the cohort assessed, many were missing a VFC eligibility code from CHIRP. When missing, these children were still included in the county rate, but were not included in any 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 secondary methodology used, any child with a missing VFC eligibility code was included in the analysis for "Not Eligible for Publicly Funded Vaccines" category.

In the most recent NIS (National Immunization Survey) data from 2019, the overall U.S National estimated vaccination coverage rate for the 4:3:1:3:3:1:4 series completion is 72.6% ± 1.6 among 19-35 month old children. The Indiana estimated vaccination coverage rate from the NIS for the 4:3:1:3:3:1:4 series completion is 71.6% ± 6.4 among 19-35 month old children. This estimate is slightly higher than that provided in this report for Indiana, 70.1% that was reported in 2020. 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 of approximately 400 surveys. Subjects are only selected to be included in the survey 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, as 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 2019 and 2020 immunization completion rates by county, number assessed and population represented can be found in Appendix B. Table 1 below summarizes the state average, weighted by county population assessed and lists the 10 counties with 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 below summarizes 2019 and 2020 Indiana assessment overall.

Table 1: Ten Lowest Rates by County 2020

COUNTY	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER OF VFC PROVIDERS ENROLLED
~INDIANA	**70.1%**	**755**
LAGRANGE	49.7%	5
LAKE	56.5%	53
LAPORTE	59.7%	15
MARTIN	60.5%	1
WELLS	63.2%	2
DAVIESS	63.4%	7
STJOSEPH	63.7%	38
ALLEN	63.9%	30
CRAWFORD	64.1%	3
NEWTON	65.0%	1

Table 2: Ten Highest Rates by County 2020

COUNTY	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER OF VFC PROVIDERS ENROLLED
~INDIANA	**70.1%**	**755**
HENRY	84.3%	7
CLINTON	84.1%	4
CASS	83.7%	4
PIKE	83.5%	2
RUSH	83.2%	5
OWEN	83.2%	3
SPENCER	83.1%	2
GREENE	82.6%	7
BENTON	80.5%	1
WARRICK	80.5%	6

Table 3: Summary 2019 and 2020 Indiana Assessment

	2019	2020
Indiana completion rate for 4:3:1:3:3:1:4 series	69.7%	70.1%
Number assessed 19-35 months of age	108,635	108,063
Percentage of population represented	87.3%	86.8%
Number of VFC Providers	742	755
Number/ rate assessed by Not VFC-Eligible	43,527/ 76%	32,591/ 78%
Number/ rate assessed by Underinsured	559/ 73%	690/ 72%
Number/ rate assessed by VFC-Eligible	56,933/ 67%	59,010/ 67%

The average immunization rate in Indiana counties is 72.9%, and the median (or midpoint) is 74.0%. There were 49 out of 92 counties that fell above the average of 72.9% and 44 that were below the average of 72%.

Discussion

The result for Indiana's immunization rate for 2020 is 70.1% coverage among children age 19-35 months which increased 0.4% relative to the 2019 rate of 69.7%. 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 2019 US Census data by age, Indiana's population of 19-35 month old children should be approximately 124,426. After excluding any immunization records that were not considered to be "active", there were only 108,063 records assessed in this analysis. This represents 86.8% of the estimated population. The percentage of the population represented in Blackford, Clay, Hendricks, Martin, Morgan, Ohio and Pike counties all exceed 100%. This is thought to be attributable to an increase in children age 19-35 months whom relocated to these counties after 2019 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 19-35 months age group series completion, has been seen among many counties. Additional efforts are needed to ensure that health-care 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 towards 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 number of children who are behind.

Conclusions

The results of this analysis demonstrate the need for further investigation into identifying contributing factors which 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 in the county. 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, which prompt the guardians of children missing immunizations to contact their medical providers.

APPENDIX A: 2020 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 ROLLED	2019 (Census) POPULATION 19-35 MONTHS OF AGE	NUMBER ASSESSED 19-35 MONTHS OF :E	PERCENTAGE OF POPULATION PRESENTED	COMPLETION RATE R 4:3:1:3:3:1:4	NUMBER NOT VFC-IGIBLE	RATE AMONG NOT C-ELIGIBLE	NUMBER DERINSURED	RATE AMONG DERINSURED	NUMBER VFC-IGIBLE	RATE AMONG VFC-IGIBLE
~INDIANA	**755**	**124,426**	**108,063**	**87%**	**70%**	**32,591**	**78%**	**690**	**72%**	**59,010**	**67%**
ADAMS	3	995	619	**62%**	67%	127	76%	0	0%	408	62%
ALLEN	30	7988	6,756	**85%**	64%	1,470	72%	53	75%	4,032	59%
BARTHOLOMEW	6	1624	1,462	**90%**	74%	442	81%	4	75%	556	74%
BENTON	1	148	123	**83%**	80%	33	88%	2	50%	69	78%
BLACKFORD	1	180	186	**103%**	74%	38	82%	0	0%	137	74%
BOONE	9	1276	1,170	**92%**	78%	683	83%	15	73%	250	80%
BROWN	1	194	167	**86%**	74%	64	84%	0	0%	90	72%
CARROLL	3	342	269	**79%**	79%	95	87%	3	67%	134	75%
CASS	4	663	520	**78%**	84%	113	85%	3	100%	338	85%
CLARK	11	2182	1,877	**86%**	68%	662	82%	3	100%	895	68%
CLAY	5	502	523	**104%**	78%	159	86%	6	83%	329	76%
CLINTON	4	666	579	**87%**	84%	178	92%	3	100%	328	84%
CRAWFORD	3	185	103	**56%**	64%	38	84%	0	0%	59	54%
DAVIESS	7	810	547	**68%**	63%	133	74%	5	80%	397	59%
DEARBORN	10	756	535	**71%**	66%	197	72%	3	100%	253	67%
DECATUR	7	527	443	**84%**	80%	184	88%	10	100%	209	73%
DEKALB	2	829	710	**86%**	69%	223	76%	5	100%	367	62%
DELAWARE	14	1681	1,523	**91%**	75%	328	83%	6	33%	995	75%
DUBOIS	4	864	696	**81%**	74%	329	81%	2	100%	271	72%
ELKHART	34	4511	3,865	**86%**	69%	933	78%	23	61%	2,705	67%
FAYETTE	3	394	336	**85%**	76%	90	84%	2	100%	233	73%
FLOYD	7	1420	1,153	**81%**	74%	434	82%	8	100%	549	72%
FOUNTAIN	2	261	260	**100%**	74%	82	83%	2	50%	149	72%
FRANKLIN	2	433	233	**54%**	74%	87	76%	3	67%	122	74%
FULTON	2	341	289	**85%**	78%	81	75%	10	100%	175	78%
GIBSON	5	621	546	**88%**	79%	284	88%	2	100%	231	71%
GRANT	8	1101	1,086	**99%**	68%	240	77%	17	53%	726	66%
GREENE	7	509	384	**75%**	83%	134	92%	5	100%	236	77%
HAMILTON	21	6480	5,429	**84%**	75%	2,940	80%	27	85%	1,186	78%
HANCOCK	9	1366	1,325	**97%**	77%	458	87%	9	89%	371	74%
HARRISON	4	690	608	**88%**	69%	223	79%	2	100%	313	64%

APPENDIX A: 2020 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 ROLLED	2019 (Census) POPULATION 19-35 MONTHS OF AGE	NUMBER ASSESSED 19-35 MONTHS OF E	PERCENTAGE OF POPULATION PRESENTED	COMPLETION RATE R 4:3:1:3:3:1:4	NUMBER NOT VFC- IGIBLE	RATE AMONG NOT C-ELIGIBLE	NUMBER DERINSURED	RATE AMONG DERINSURED	NUMBER VFC- IGIBLE	RATE AMONG VFC- IGIBLE
HENDRICKS	9	2880	2,970	**103%**	68%	834	68%	16	94%	969	74%
HENRY	7	708	645	**91%**	84%	198	90%	0	0%	342	85%
HOWARD	11	1470	1,372	**93%**	75%	369	86%	17	94%	829	71%
HUNTINGTON	4	632	536	**85%**	71%	184	77%	6	67%	289	70%
JACKSON	3	929	869	**94%**	70%	265	69%	8	88%	431	68%
JASPER	2	558	525	**94%**	70%	169	77%	14	71%	256	63%
JAY	4	414	330	**80%**	68%	86	80%	1	100%	221	62%
JEFFERSON	2	594	524	**88%**	76%	191	83%	2	100%	310	73%
JENNINGS	2	508	426	**84%**	79%	100	75%	3	33%	258	82%
JOHNSON	21	2915	2,559	**88%**	76%	995	79%	17	88%	1,200	74%
KNOX	3	623	520	**83%**	71%	161	82%	6	67%	334	65%
KOSCIUSKO	5	1557	1,126	**72%**	70%	483	77%	5	40%	551	65%
LAGRANGE	5	1053	567	**54%**	50%	97	71%	1	0%	439	44%
LAKE	53	8390	7,502	**89%**	56%	2,167	67%	30	60%	4,643	51%
LAPORTE	15	1957	1,813	**93%**	60%	569	75%	1	100%	1,144	52%
LAWRENCE	8	754	692	**92%**	74%	220	87%	8	63%	441	69%
MADISON	27	2089	1,932	**92%**	78%	396	82%	5	40%	1,316	79%
MARION	97	20637	18,136	**88%**	68%	3,782	75%	112	67%	10,834	69%
MARSHALL	10	920	709	**77%**	70%	194	75%	6	33%	446	68%
MARTIN	1	175	185	**106%**	61%	47	77%	5	80%	118	56%
MIAMI	3	614	272	**44%**	68%	116	78%	2	100%	272	68%
MONROE	6	1871	1,697	**91%**	78%	862	82%	6	67%	785	73%
MONTGOMERY	7	672	591	**88%**	79%	225	87%	7	86%	308	75%
MORGAN	9	1179	1,187	**101%**	72%	343	81%	9	78%	655	67%
NEWTON	1	234	157	**67%**	65%	39	72%	1	100%	97	61%
NOBLE	2	919	787	**86%**	71%	229	80%	15	67%	466	66%
OHIO	2	96	138	**144%**	69%	42	81%	2	50%	76	66%
ORANGE	3	366	366	**100%**	66%	94	72%	4	75%	253	62%
OWEN	3	311	291	**94%**	83%	106	90%	1	100%	175	79%
PARKE	5	290	177	**61%**	71%	52	77%	1	100%	98	67%
PERRY	2	324	262	**81%**	75%	109	79%	9	56%	130	75%
PIKE	2	202	261	**129%**	84%	102	88%	1	100%	144	81%

APPENDIX A: 2020 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 ROLLED	2019 (Census) POPULATION 19-35 MONTHS OF AGE	NUMBER ASSESSED 19-35 MONTHS OF E	PERCENTAGE OF POPULATION PRESENTED	COMPLETION RATE R 4:3:1:3:3:1:4	NUMBER NOT VFC- IGIBLE	RATE AMONG NOT C-ELIGIBLE	NUMBER DERINSURED	RATE AMONG DERINSURED	NUMBER VFC- IGIBLE	RATE AMONG VFC- IGIBLE
PORTER	12	2640	2,251	**85%**	65%	770	61%	11	55%	914	63%
POSEY	3	365	357	**98%**	78%	171	87%	0	0%	159	68%
PULASKI	2	198	182	**92%**	69%	45	80%	1	100%	111	65%
PUTNAM	5	546	454	**83%**	72%	84	73%	4	100%	254	69%
RANDOLPH	3	430	336	**78%**	71%	87	79%	8	75%	205	70%
RIPLEY	4	514	492	**96%**	78%	232	87%	5	60%	204	71%
RUSH	5	289	250	**87%**	83%	46	80%	2	100%	149	84%
SCOTT	4	405	341	**84%**	68%	100	89%	4	50%	200	61%
SHELBY	2	792	758	**96%**	79%	125	86%	4	50%	451	78%
SPENCER	2	298	207	**69%**	83%	77	88%	5	100%	111	78%
STARKE	7	380	333	**88%**	66%	79	77%	1	0%	206	62%
STEUBEN	3	546	474	**87%**	65%	156	76%	0	0%	284	58%
STJOSEPH	38	5188	4,500	**87%**	64%	1,246	73%	24	71%	2,727	61%
SULLIVAN	4	317	307	**97%**	74%	81	84%	8	63%	199	72%
SWITZERLAND	2	181	110	**61%**	75%	46	80%	0	0%	56	70%
TIPPECANOE	17	3404	3,184	**94%**	75%	1,073	84%	14	71%	1,512	73%
TIPTON	1	258	191	**74%**	77%	55	76%	1	100%	101	80%
UNION	1	106	64	**60%**	77%	12	92%	0	0%	47	81%
VANDERBURGH	20	3313	2,859	**86%**	79%	984	86%	7	29%	1,680	76%
VERMILLION	5	255	225	**88%**	72%	53	83%	1	0%	144	70%
VIGO	18	1800	1,500	**83%**	72%	352	79%	13	46%	1,025	72%
WABASH	3	501	429	**86%**	72%	136	79%	0	0%	259	71%
WARREN	2	144	118	**82%**	75%	39	87%	0	0%	58	69%
WARRICK	6	984	902	**92%**	80%	449	89%	9	89%	371	75%
WASHINGTON	4	469	371	**79%**	72%	99	80%	1	100%	237	70%
WAYNE	8	1139	1,026	**90%**	80%	211	90%	3	100%	693	79%
WELLS	2	536	427	**80%**	63%	138	72%	4	50%	230	61%
WHITE	5	441	424	**96%**	77%	131	86%	3	100%	241	73%
WHITLEY	4	607	545	**90%**	77%	206	84%	3	67%	239	74%

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, 2019 & 2020

			Number Assessed 19-35 Months of Age			Percentage of Population Represented			Completion Rate for 4:3:1:3:3:1:4	
COUNTY	(2019 Census) POPULATION 19-35 MONTHS OF		2020	2019		2020	2019		2020	2019
~INDIANA	**124,426**		**108,063**	**108,635**		**87%**	**87%**		**70%**	**70%**
ADAMS	995		619	631		62%	63%		67%	66%
ALLEN	7,988		6,756	6,774		85%	85%		64%	60%
BARTHOLOMEW	1,624		1,462	1,525		90%	94%		74%	74%
BENTON	148		123	119		83%	80%		80%	78%
BLACKFORD	180		186	162		103%	90%		74%	69%
BOONE	1,276		1,170	1,175		92%	92%		78%	78%
BROWN	194		167	182		86%	94%		74%	73%
CARROLL	342		269	271		79%	79%		79%	75%
CASS	663		520	597		78%	90%		84%	82%
CLARK	2,182		1,877	1,903		86%	87%		68%	68%
CLAY	502		523	487		104%	97%		78%	78%
CLINTON	666		579	626		87%	94%		84%	78%
CRAWFORD	185		103	131		56%	71%		64%	66%
DAVIESS	810		547	660		68%	81%		63%	49%
DEARBORN	756		535	566		71%	75%		66%	58%
DECATUR	527		443	467		84%	89%		80%	79%
DEKALB	829		710	716		86%	86%		69%	70%
DELAWARE	1,681		1,523	1,551		91%	92%		75%	75%
DUBOIS	864		696	774		81%	90%		74%	70%
ELKHART	4,511		3,865	3,854		86%	85%		69%	67%
FAYETTE	394		336	316		85%	80%		76%	73%
FLOYD	1,420		1,153	1,130		81%	80%		74%	73%
FOUNTAIN	261		260	259		100%	99%		74%	74%
FRANKLIN	433		233	235		54%	54%		74%	75%
FULTON	341		289	268		85%	79%		78%	79%
GIBSON	621		546	528		88%	85%		79%	82%
GRANT	1,101		1,086	976		99%	89%		68%	64%
GREENE	509		384	376		75%	74%		83%	83%
HAMILTON	6,480		5,429	5,701		84%	88%		75%	73%
HANCOCK	1,366		1,325	1,329		97%	97%		77%	77%
HARRISON	690		608	654		88%	95%		69%	72%
HENDRICKS	2,880		2,970	2,880		103%	100%		68%	65%
HENRY	708		645	664		91%	94%		84%	80%
HOWARD	1,470		1,372	1,332		93%	91%		75%	71%
HUNTINGTON	632		536	595		85%	94%		71%	64%

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, 2019 & 2020

			Number Assessed 19-35 Months of Age			Percentage of Population Represented			Completion Rate for 4:3:1:3:3:1:4	
COUNTY	(2019 Census) POPULATION 19-35 MONTHS OF		2020	2019		2020	2019		2020	2019
JACKSON	929		869	853		94%	92%		70%	67%
JASPER	558		525	507		94%	91%		70%	73%
JAY	414		330	317		80%	77%		68%	68%
JEFFERSON	594		524	541		88%	91%		76%	77%
JENNINGS	508		426	407		84%	80%		79%	77%
JOHNSON	2,915		2,559	2,648		88%	91%		76%	76%
KNOX	623		520	384		83%	62%		71%	59%
KOSCIUSKO	1,557		1,126	1,204		72%	77%		70%	65%
LAGRANGE	1,053		567	548		54%	52%		50%	55%
LAKE	8,390		7,502	7,334		89%	87%		56%	58%
LAPORTE	1,957		1,813	1,820		93%	93%		60%	59%
LAWRENCE	754		692	661		92%	88%		74%	82%
MADISON	2,089		1,932	1,977		92%	95%		78%	79%
MARION	20,637		18,136	18,120		88%	88%		68%	69%
MARSHALL	920		709	739		77%	80%		70%	68%
MARTIN	175		185	193		106%	110%		61%	52%
MIAMI	614		272	455		44%	74%		68%	73%
MONROE	1,871		1,697	1,663		91%	89%		78%	83%
MONTGOMERY	672		591	604		88%	90%		79%	79%
MORGAN	1,179		1,187	1,242		101%	105%		72%	76%
NEWTON	234		157	159		67%	68%		65%	71%
NOBLE	919		787	758		86%	82%		71%	69%
OHIO	96		138	80		144%	83%		69%	66%
ORANGE	366		366	331		100%	90%		66%	66%
OWEN	311		291	245		94%	79%		83%	83%
PARKE	290		177	181		61%	62%		71%	70%
PERRY	324		262	239		81%	74%		75%	69%
PIKE	202		261	231		129%	114%		84%	84%
PORTER	2,640		2,251	2,272		85%	86%		65%	70%
POSEY	365		357	323		98%	88%		78%	78%
PULASKI	198		182	181		92%	91%		69%	70%
PUTNAM	546		454	450		83%	82%		72%	73%
RANDOLPH	430		336	377		78%	88%		71%	68%
RIPLEY	514		492	448		96%	87%		78%	77%
RUSH	289		250	247		87%	85%		83%	79%

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, 2019 & 2020

			Number Assessed 19-35 Months of Age			Percentage of Population Represented			Completion Rate for 4:3:1:3:3:1:4	
COUNTY	(2019 Census) POPULATION 19-35 MONTHS OF		2020	2019		2020	2019		2020	2019
STJOSEPH	5,188		4,500	4,728		87%	91%		64%	65%
SCOTT	405		341	351		84%	87%		68%	74%
SHELBY	792		758	753		96%	95%		79%	81%
SPENCER	298		207	214		69%	72%		83%	85%
STARKE	380		333	323		88%	85%		66%	64%
STEUBEN	546		474	450		87%	82%		65%	67%
SULLIVAN	317		307	299		97%	94%		74%	69%
SWITZERLAND	181		110	113		61%	62%		75%	64%
TIPPECANOE	3,404		3,184	3,122		94%	92%		75%	76%
TIPTON	258		191	199		74%	77%		77%	76%
UNION	106		64	62		60%	58%		77%	76%
VANDERBURGH	3,313		2,859	2,874		86%	87%		79%	79%
VERMILLION	255		225	210		88%	82%		72%	76%
VIGO	1,800		1,500	1,621		83%	90%		72%	72%
WABASH	501		429	418		86%	83%		72%	69%
WARREN	144		118	121		82%	84%		75%	79%
WARRICK	984		902	879		92%	89%		80%	81%
WASHINGTON	469		371	371		79%	79%		72%	75%
WAYNE	1,139		1,026	970		90%	85%		80%	77%
WELLS	536		427	452		80%	84%		63%	56%
WHITE	441		424	437		96%	99%		77%	78%
WHITLEY	607		545	515		90%	85%		77%	75%

APPENDIX C: 2020 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	NUMBER ASSESSED 19-35 MONTHS OF AGE	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	**108,231**	**82,342**	**76%**	**97,961**	**91%**	**96,543**	**89%**	**99,040**	**92%**	**94,707**	**88%**	**95,482**	**88%**	**91,243**	**84%**	**75,929**	**70%**
ADAMS	619	473	76%	571	92%	562	91%	568	92%	514	83%	538	87%	506	82%	412	67%
ALLEN	6,756	4,763	71%	5,860	87%	5,900	87%	6,032	89%	5,615	83%	5,848	87%	5,529	82%	4,315	64%
BARTHOLOMEW	1,462	1,181	81%	1,357	93%	1,325	91%	1,401	96%	1,282	88%	1,298	89%	1,291	88%	1,078	74%
BENTON	123	102	83%	118	96%	111	90%	117	95%	115	93%	109	89%	108	88%	99	80%
BLACKFORD	186	145	78%	174	94%	175	94%	172	92%	174	94%	175	94%	164	88%	138	74%
BOONE	1,170	974	83%	1,062	91%	1,061	91%	1,083	93%	1,034	88%	1,063	91%	1,023	87%	914	78%
BROWN	167	134	80%	156	93%	151	90%	157	94%	149	89%	148	89%	145	87%	124	74%
CARROLL	269	222	83%	254	94%	250	93%	250	93%	247	92%	247	92%	240	89%	212	79%
CASS	520	442	85%	500	96%	489	94%	502	97%	496	95%	487	94%	475	91%	435	84%
CLARK	1,877	1,473	78%	1,699	91%	1,708	91%	1,762	94%	1,495	80%	1,681	90%	1,591	85%	1,269	68%
CLAY	523	422	81%	486	93%	473	90%	491	94%	494	94%	470	90%	461	88%	407	78%
CLINTON	579	512	88%	551	95%	548	95%	545	94%	540	93%	548	95%	543	94%	487	84%
CRAWFORD	103	71	69%	93	90%	92	89%	94	91%	89	86%	92	89%	82	80%	66	64%
DAVIESS	547	403	74%	502	92%	505	92%	492	90%	503	92%	442	81%	436	80%	347	63%
DEARBORN	535	382	71%	460	86%	446	83%	481	90%	444	83%	455	85%	438	82%	354	66%
DECATUR	443	366	83%	421	95%	416	94%	417	94%	420	95%	410	93%	403	91%	356	80%
DEKALB	710	524	74%	640	90%	645	91%	650	92%	629	89%	631	89%	600	85%	493	69%
DELAWARE	1,523	1,207	79%	1,409	93%	1,404	92%	1,397	92%	1,396	92%	1,402	92%	1,318	87%	1,144	75%
DUBOIS	696	558	80%	665	96%	642	92%	673	97%	648	93%	633	91%	620	89%	517	74%
ELKHART	3,865	2,862	74%	3,514	91%	3,525	91%	3,609	93%	3,349	87%	3,438	89%	3,245	84%	2,660	69%
FAYETTE	336	264	79%	319	95%	303	90%	306	91%	326	97%	303	90%	290	86%	257	76%
FLOYD	1,153	950	82%	1,087	94%	1,057	92%	1,100	95%	1,000	87%	1,056	92%	1,023	89%	848	74%
FOUNTAIN	260	204	78%	241	93%	236	91%	234	90%	236	91%	234	90%	225	87%	192	74%
FRANKLIN	233	177	76%	210	90%	212	91%	215	92%	214	92%	211	91%	200	86%	173	74%
FULTON	289	232	80%	271	94%	263	91%	274	95%	270	93%	263	91%	251	87%	224	78%
GIBSON	546	444	81%	508	93%	506	93%	511	94%	515	94%	503	92%	488	89%	434	79%
GRANT	1,086	786	72%	969	89%	960	88%	1,011	93%	965	89%	959	88%	885	81%	736	68%
GREENE	384	321	84%	361	94%	363	95%	357	93%	371	97%	362	94%	339	88%	317	83%
HAMILTON	5,429	4,565	84%	5,087	94%	4,919	91%	5,141	95%	4,904	90%	4,872	90%	4,799	88%	4,078	75%
HANCOCK	1,325	1,117	84%	1,253	95%	1,231	93%	1,279	97%	1,200	91%	1,229	93%	1,209	91%	1,014	77%
HARRISON	608	469	77%	570	94%	557	92%	570	94%	520	86%	554	91%	517	85%	417	69%
HENDRICKS	2,970	2,172	73%	2,586	87%	2,462	83%	2,602	88%	2,554	86%	2,438	82%	2,299	77%	2,013	68%
HENRY	645	567	88%	613	95%	617	96%	619	96%	608	94%	609	94%	591	92%	544	84%
HOWARD	1,372	1,082	79%	1,278	93%	1,255	91%	1,256	92%	1,260	92%	1,254	91%	1,220	89%	1,035	75%
HUNTINGTON	536	428	80%	496	93%	495	92%	506	94%	453	85%	496	93%	479	89%	382	71%
JACKSON	869	690	79%	802	92%	792	91%	820	94%	745	86%	778	90%	755	87%	609	70%

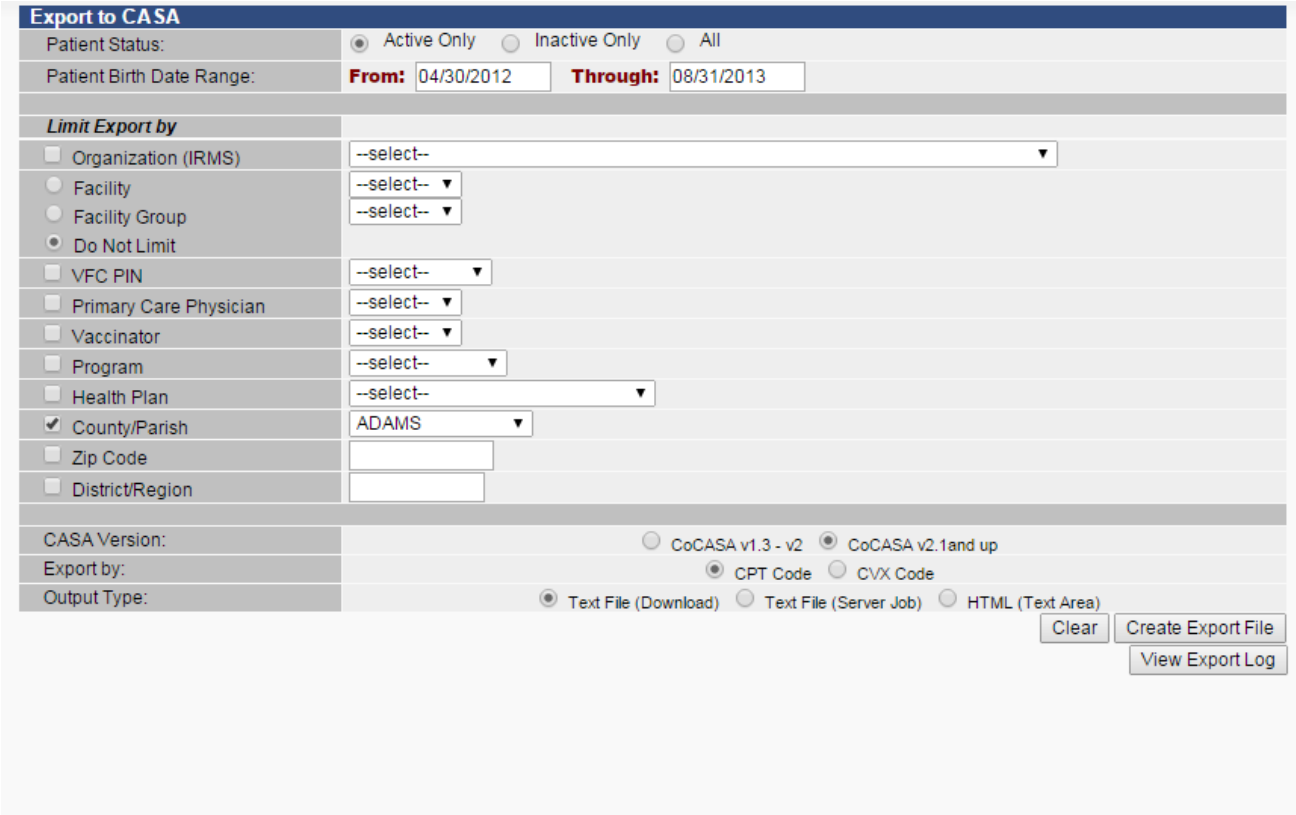
APPENDIX C: 2020 Data Summary. Antigen completion rate of 4:3:1:3:3:1:4 immunization series among children 19-35 month with an active immunization record in CHIRP

COUNTY	NUMBER ASSESSED 19-35 MONTHS OF AGE	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
JASPER	525	408	78%	470	90%	458	87%	483	92%	457	87%	465	89%	437	83%	365	70%
JAY	330	247	75%	307	93%	302	92%	300	91%	302	92%	298	90%	281	85%	223	68%
JEFFERSON	524	425	81%	495	94%	478	91%	498	95%	487	93%	477	91%	443	85%	400	76%
JENNINGS	426	353	83%	403	95%	399	94%	398	93%	400	94%	393	92%	377	88%	335	79%
JOHNSON	2,559	2,156	84%	2,394	94%	2,379	93%	2,457	96%	2,216	87%	2,356	92%	2,311	90%	1,944	76%
KNOX	520	384	74%	481	93%	469	90%	488	94%	489	94%	467	90%	438	84%	367	71%
KOSCIUSKO	1,126	842	75%	1,021	91%	1,045	93%	1,062	94%	989	88%	1,026	91%	965	86%	790	70%
LAGRANGE	567	307	54%	468	83%	482	85%	506	89%	410	72%	451	80%	398	70%	282	50%
LAKE	7,502	4,898	65%	6,335	84%	6,270	84%	6,570	88%	5,890	79%	6,152	82%	5,661	75%	4,236	56%
LAPORTE	1,813	1,200	66%	1,567	86%	1,563	86%	1,626	90%	1,456	80%	1,471	81%	1,476	81%	1,082	60%
LAWRENCE	692	535	77%	646	93%	623	90%	629	91%	652	94%	615	89%	612	88%	515	74%
MADISON	1,932	1,577	82%	1,813	94%	1,767	91%	1,806	93%	1,802	93%	1,762	91%	1,703	88%	1,501	78%
MARION	18,136	13,537	75%	16,227	89%	16,022	88%	16,209	89%	15,773	87%	15,910	88%	14,997	83%	12,394	68%
MARSHALL	709	529	75%	645	91%	640	90%	663	94%	626	88%	630	89%	590	83%	493	70%
MARTIN	185	135	73%	174	94%	170	92%	166	90%	169	91%	144	78%	149	81%	112	61%
MIAMI	440	330	75%	399	91%	389	88%	405	92%	397	90%	384	87%	365	83%	313	71%
MONROE	1,697	1,353	80%	1,585	93%	1,512	89%	1,504	89%	1,576	93%	1,500	88%	1,487	88%	1,316	78%
MONTGOMERY	591	494	84%	562	95%	552	93%	548	93%	547	93%	548	93%	514	87%	465	79%
MORGAN	1,187	937	79%	1,094	92%	1,069	90%	1,097	92%	1,018	86%	1,059	89%	1,032	87%	851	72%
NEWTON	157	110	70%	140	89%	142	90%	144	92%	135	86%	140	89%	131	83%	102	65%
NOBLE	787	584	74%	720	91%	703	89%	732	93%	714	91%	697	89%	670	85%	559	71%
OHIO	138	98	71%	121	88%	118	86%	128	93%	122	88%	116	84%	113	82%	95	69%
ORANGE	366	258	70%	327	89%	326	89%	330	90%	329	90%	322	88%	296	81%	242	66%
OWEN	291	249	86%	276	95%	271	93%	274	94%	281	97%	268	92%	270	93%	242	83%
PARKE	177	131	74%	161	91%	157	89%	161	91%	159	90%	156	88%	151	85%	125	71%
PERRY	262	200	76%	244	93%	242	92%	230	88%	249	95%	242	92%	222	85%	197	75%
PIKE	261	223	85%	247	95%	249	95%	255	98%	248	95%	250	96%	240	92%	218	84%
PORTER	2,251	1,628	72%	2,052	91%	1,947	86%	2,091	93%	1,940	86%	1,905	85%	1,825	81%	1,466	65%
POSEY	357	289	81%	330	92%	329	92%	334	94%	322	90%	329	92%	310	87%	277	78%
PULASKI	182	130	71%	162	89%	164	90%	164	90%	167	92%	160	88%	147	81%	125	69%
PUTNAM	454	342	75%	418	92%	400	88%	413	91%	417	92%	396	87%	385	85%	328	72%
RANDOLPH	336	260	77%	306	91%	300	89%	293	87%	315	94%	299	89%	278	83%	240	71%
RIPLEY	492	400	81%	469	95%	449	91%	472	96%	464	94%	450	91%	444	90%	385	78%
RUSH	250	222	89%	241	96%	241	96%	243	97%	238	95%	240	96%	233	93%	208	83%
STJOSEPH	4,500	3,131	70%	3,876	86%	3,899	87%	3,967	88%	3,805	85%	3,873	86%	3,647	81%	2,867	64%
SCOTT	341	257	75%	316	93%	305	89%	319	94%	297	87%	297	87%	286	84%	232	68%
SHELBY	758	641	85%	716	94%	716	94%	731	96%	684	90%	708	93%	710	94%	600	79%
SPENCER	207	178	86%	195	94%	196	95%	198	96%	196	95%	195	94%	190	92%	172	83%
STARKE	333	234	70%	288	86%	278	83%	298	89%	292	88%	278	83%	266	80%	220	66%
STEUBEN	474	315	66%	419	88%	405	85%	429	91%	414	87%	401	85%	383	81%	308	65%
SULLIVAN	307	233	76%	281	92%	280	91%	284	93%	282	92%	281	92%	251	82%	228	74%
SWITZERLAND	110	85	77%	100	91%	94	85%	100	91%	101	92%	97	88%	95	86%	82	75%
TIPPECANOE	3,184	2,513	79%	2,921	92%	2,806	88%	2,931	92%	2,854	90%	2,779	87%	2,753	86%	2,393	75%
TIPTON	191	159	83%	180	94%	175	92%	179	94%	175	92%	171	90%	168	88%	148	77%
UNION	64	49	77%	58	91%	61	95%	57	89%	58	91%	62	97%	55	86%	49	77%
VANDERBURGH	2,859	2,355	82%	2,659	93%	2,631	92%	2,638	92%	2,649	93%	2,637	92%	2,526	88%	2,263	79%
VERMILLION	225	166	74%	208	92%	204	91%	209	93%	210	93%	204	91%	194	86%	163	72%
VIGO	1,500	1,138	76%	1,380	92%	1,348	90%	1,383	92%	1,352	90%	1,347	90%	1,311	87%	1,083	72%
WABASH	429	327	76%	393	92%	389	91%	398	93%	389	91%	386	90%	355	83%	308	72%
WARREN	118	94	80%	110	93%	105	89%	107	91%	106	90%	104	88%	102	86%	89	75%
WARRICK	902	757	84%	842	93%	822	91%	853	95%	827	92%	822	91%	785	87%	726	80%
WASHINGTON	371	294	79%	347	94%	343	92%	344	93%	339	91%	330	89%	320	86%	268	72%
WAYNE	1,026	837	82%	937	91%	931	91%	927	90%	943	92%	930	91%	892	87%	818	80%
WELLS	427	324	76%	391	92%	390	91%	404	95%	334	78%	389	91%	362	85%	270	63%
WHITE	424	350	83%	400	94%	384	91%	398	94%	387	91%	383	90%	369	87%	328	77%
WHITLEY	545	450	83%	501	92%	498	91%	513	94%	483	89%	494	91%	484	89%	421	77%

APPENDIX D: Standard Operating Procedure (SOP) for Performing County Rate Assessment

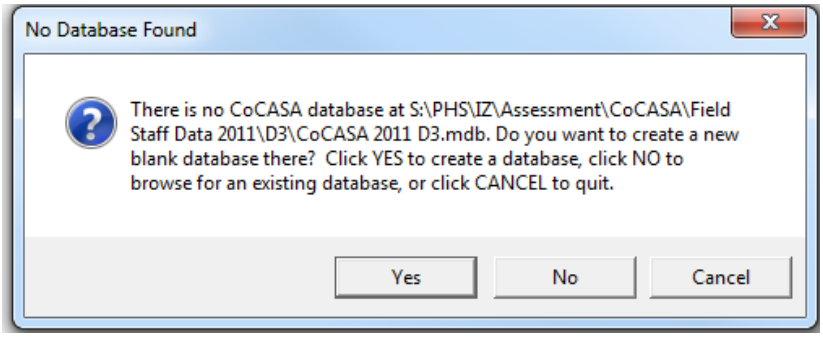
1. Create and save a 'CoCASA Export File' from CHIRP for each county.
    a. Login to CHIRP, click "CASA Export" from the left sidebar.
    b. Enter the patient date of birth range.
    c. Select the county.
    d. Leave all other settings at their default state, and click "Create Export File".
        i. The default settings should be:
            1. CoCASA Version: CoCASA v2.1 and up,
            2. Export by: CPT code,
            3. Output Type: Text File (Download)
    e. After export file has generated, save the file named for the county exported.

Figure 1



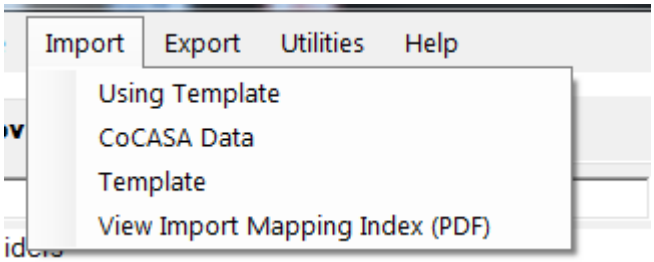
2. Import each export file into a new, blank CoCASA database.
    a. Rename an existing CoCASA database. Then, open CoCASA. A message will appear as shown below:

Figure 2



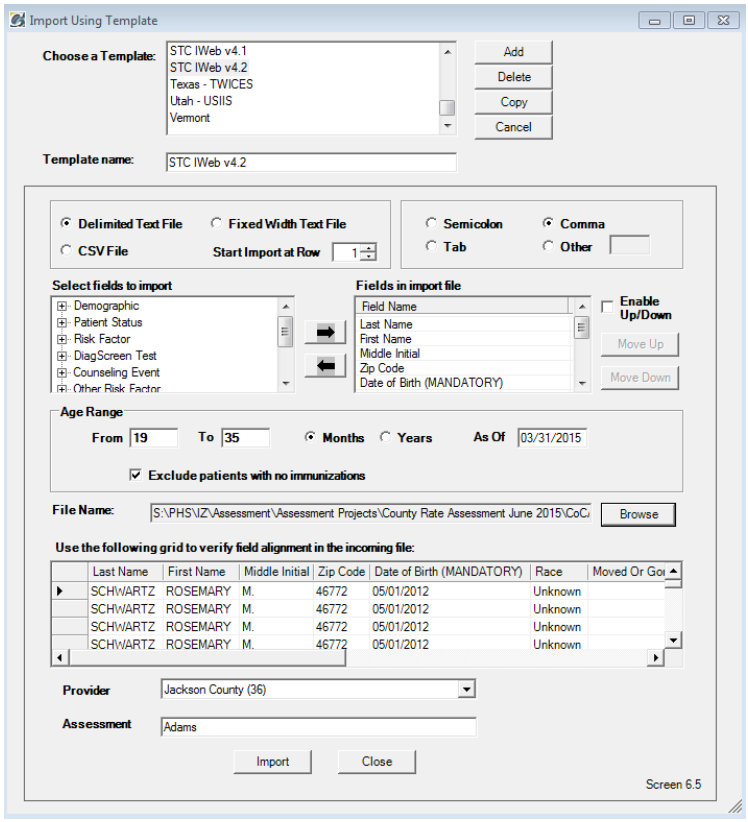
b. Click "Yes" on the dialog box to create a new blank database. Name the new database for the assessment it is being created for.
c. Open CoCASA, directing it toward the new database created for the assessment.
d. Set up a provider named "County Rate Assessment" with the address and phone number for ISDH.
e. Click on File, Import, Using Template.

Figure 3



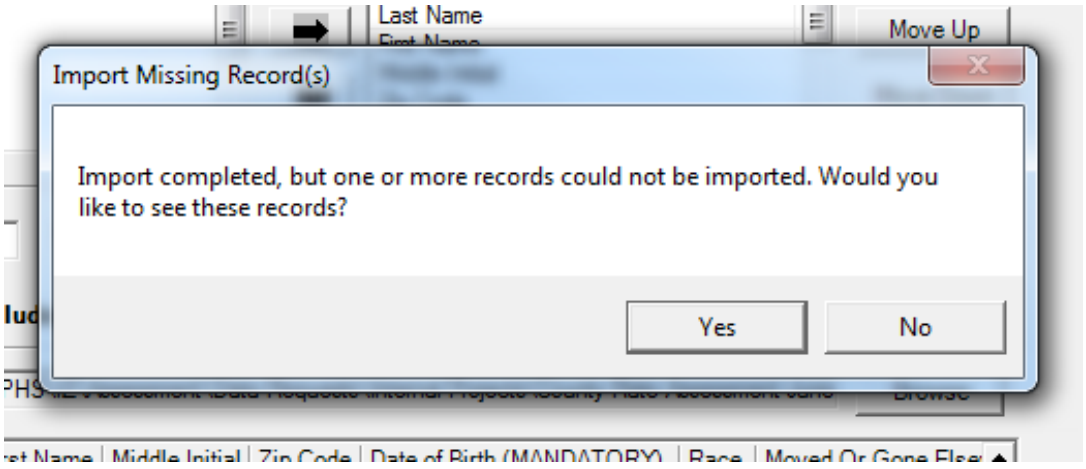
f. Choose the template to import from, STC IWeb v4.2.
g. Enter the date of birth range for the cohort, including the "as of" date, indicating what age the subjects should be at the time of assessment.
h. Click on "Exclude patients with no immunizations".
i. Click "Browse" and select the file saved for the county being imported.
j. Choose the provider "County Rate Assessment", and enter the county name for "Assessment".
k. Click "Import".

Figure 4



l. After the records have finished importing, if there was at least one record excluded, the following message will display:

Figure 4



m. Click Yes, then save the text file for later reference. This can be used in working with CHIRP staff to "clean up" the data.
n. Complete all steps for each county in the state.

3. Make a copy of the complete database after importing all county export files.
4. Open the Access database that contains the county assessment data.
   a. Double click the file in Windows Explorer.

b. Upon opening, you will be prompted to enter a password, enter “COCASAnip”. This is case-sensitive.

5. Exclude patients from the patient table that do not have 2 or more vaccines excluding influenza.
    a. First, run a query to create a new “tblDoses” table containing all doses excluding influenza. (copy and paste the SQL script shown in Figure 6)
        i. The vaccine code for the influenza family is “11”.
        ii. Run the query, naming the table “tblDosesNoFlu”.

Figure 6

```
SELECT tblDoses.AntigenID, tblDoses.DateGiven, tblDoses.DoseNumber, tblDoses.Location,
tblDoses.LotNumber, tblDoses.ManufacturerID, tblDoses.PatientID, tblDoses.TradeNameID INTO
tblDosesNoFlu
FROM tblDoses
GROUP BY tblDoses.AntigenID, tblDoses.DateGiven, tblDoses.DoseNumber, tblDoses.Location,
tblDoses.LotNumber, tblDoses.ManufacturerID, tblDoses.PatientID, tblDoses.TradeNameID
HAVING (((tblDoses.AntigenID) Not Like "11"));
```

    b. Next, run another query to create a new “tblDoses” table containing all doses excluding those for patients with fewer than 2 vaccines (excluding flu). (copy and paste the SQL script shown in Figure 7)
    c. Run the query, naming the table “tblDosesNoFlu2ormore”

NOTE: THIS QUERY WILL TAKE APPROXIMATELY 48 HOURS TO RUN

Figure 7

```
SELECT tblDosesNoFlu.AntigenID, tblDosesNoFlu.DateGiven, tblDosesNoFlu.DoseNumber,
tblDosesNoFlu.Location, tblDosesNoFlu.LotNumber, tblDosesNoFlu.ManufacturerID,
tblDosesNoFlu.PatientID, tblDosesNoFlu.TradeNameID INTO tblDosesNoFlu2ormore
FROM tblDosesNoFlu
GROUP BY tblDosesNoFlu.AntigenID, tblDosesNoFlu.DateGiven, tblDosesNoFlu.DoseNumber,
tblDosesNoFlu.Location, tblDosesNoFlu.LotNumber, tblDosesNoFlu.ManufacturerID,
tblDosesNoFlu.PatientID, tblDosesNoFlu.TradeNameID
HAVING (((tblDosesNoFlu.PatientID) In (SELECT [PatientID] FROM [tblDoses] As Tmp GROUP
BY [PatientID] HAVING Count(*)>1 )));
```

    d. Now create a new table for unique patient IDs contained in the “tblDosesNoFlu2ormore” table.
        i. Copy and paste the SQL script shown in Figure 8.
        ii. Run the query, naming the table “tblUniquePatients”

Figure 8

```
SELECT DISTINCTROW tblDosesNoFlu2ormore.PatientID INTO tblUniquePatients
FROM tblDosesNoFlu2ormore
GROUP BY tblDosesNoFlu2ormore.PatientID;
```

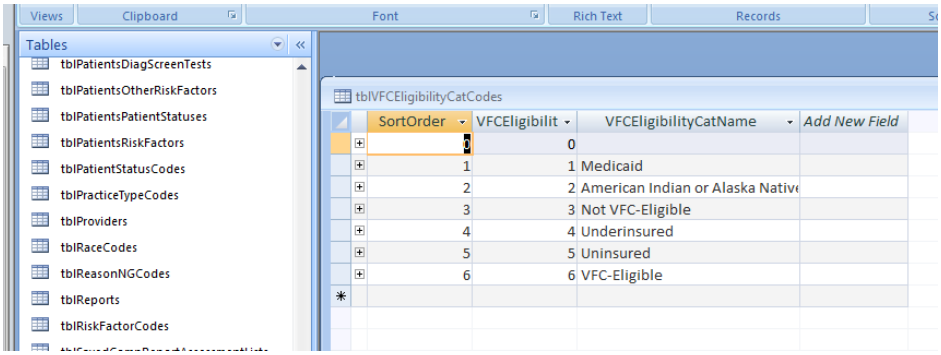
e. Finally, run a delete query to delete the patient records from the "tblPatients" table that are not contained in the unique patients table.
   i. Copy and paste the SQL script shown in Figure 9.
   ii. Run the query, this will update the "tblPatients" table by deleting those not contained in tblUniquePatients.

Figure 9

```
DELETE Delete AS Expr1, tblPatients.[PatientID]
FROM tblPatients
WHERE (((tblPatients.[PatientID]) Not In (Select PatientID from tblUniquePatients)));
```

6. Create a variable for "VFC-Eligible" in the "tblVFCEligibilityCatCodes" table
   a. Click underneath the record for 5-Uninsured to create a new record
   b. Enter 6 for Sort Order, 6 for VFCEligibilityCatID, and "VFC-Eligible" under VFCEligibilityCatName. (see Figure 10)

Figure 10



7. Update patient eligibility codes in the "tblPatientsPatientStatuses" to VFC-Eligible for all relevant categories.
   a. Find all values in the "VFCEligibilityCatID" field that are "1", "2", or "5" and replace with "6". This will put all VFC-Eligible categories into one category.
   b. Be sure to save the database after making these changes, then close it.

8. Open CoCASA and begin running a "Diagnostic Report Childhood" (see Figure 11) for each county, for each VFC eligibility category to be assessed.
   a. Select the assessment to run the report for; these should be named for the county the data came from. Click on the "Reports" tab. Select "Diagnostic Report Childhood", then enter the report criteria.
      i. Age Range: 19-35 Months as of 03/31/2019
      ii. Antigens-Series: 4:3:1:3:3:1:4
      iii. Compliance: by date: 03/31/2019

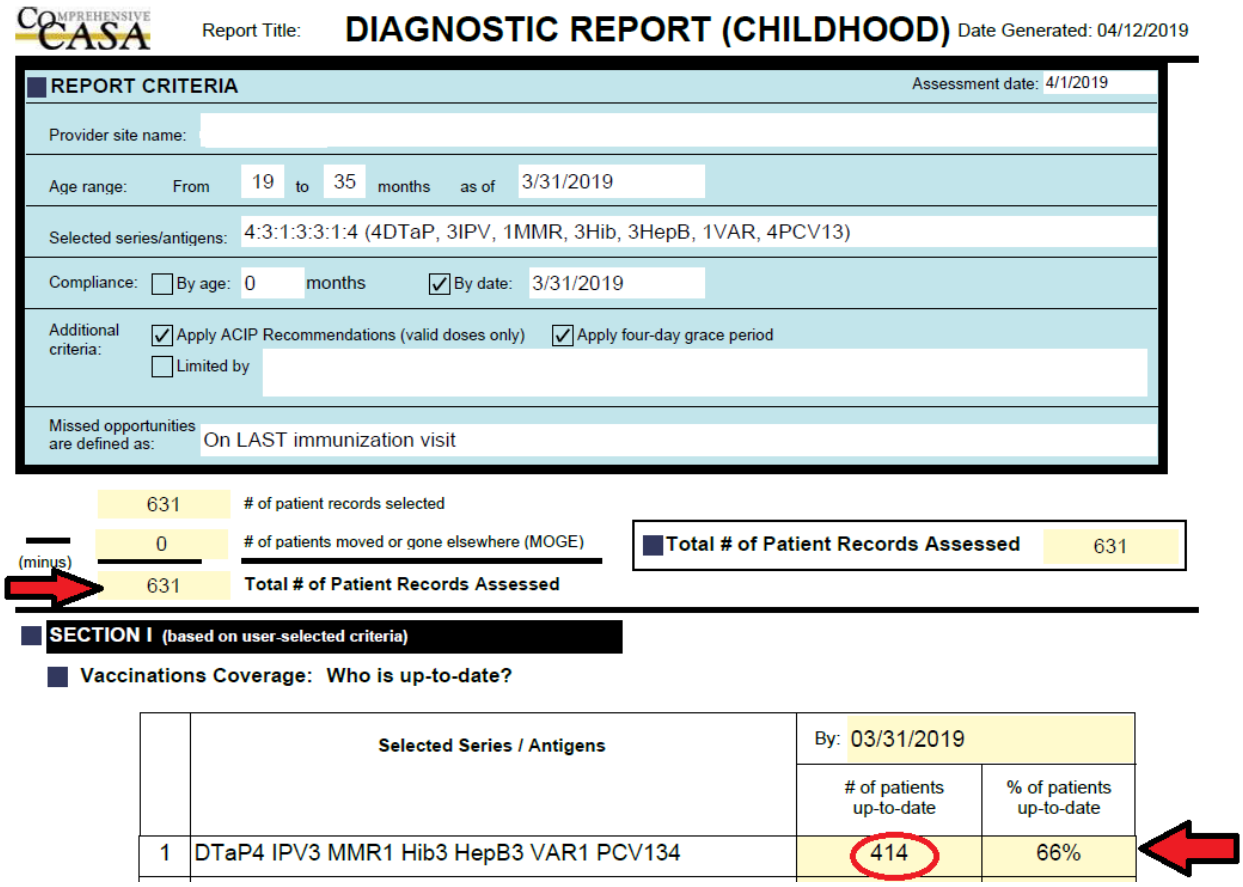
iv. Limit by a user-selected variable: after checking this box, click the button to open up the choices of variables. Choose the VFC Eligibility category you are running the report for.
v. Click "Run Report". When report is complete, click on "Export" and save the report.

b. In most cases, you will run 4 different reports for each county. One without choosing the user selected variable (to capture all children), one with "VFC-Eligible" as a choice, one with "Not VFC-Eligible", and one with "Underinsured".

9. Use the data provided on the county reports to manually populate a spreadsheet of values for each county (shown in Figure 11). Key fields to include are:
   a. Number of children included in the assessment
   b. Number of children who were up to date
   c. Percentage of children who are up to date

10. These fields should be populated for each eligibility category assessed.

Figure 11



COMPREHENSIVE CASA

Report Title: **DIAGNOSTIC REPORT (CHILDHOOD)** Date Generated: 04/12/2019

REPORT CRITERIA Assessment date: 4/1/2019

Provider site name:

Age range: From 19 to 35 months as of 3/31/2019

Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3IPV, 1MMR, 3Hib, 3HepB, 1VAR, 4PCV13)

Compliance: ☐ By age: 0 months ☑ By date: 3/31/2019

Additional criteria: ☑ Apply ACIP Recommendations (valid doses only) ☑ Apply four-day grace period
☐ Limited by

Missed opportunities are defined as: On LAST immunization visit

631 # of patient records selected

(minus) 0 # of patients moved or gone elsewhere (MOGE)

631 **Total # of Patient Records Assessed**

Total # of Patient Records Assessed 631

SECTION I (based on user-selected criteria)

Vaccinations Coverage: Who is up-to-date?

	Selected Series / Antigens	By: 03/31/2019	
		# of patients up-to-date	% of patients up-to-date
1	DTaP4 IPV3 MMR1 Hib3 HepB3 VAR1 PCV134	414	66%

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Centers for Disease Control and Prevention (CDC). (2015) Epidemiology and Prevention of Vaccine-Preventable Diseases. 13th ed. May 2015.

Centers for Disease Control and Prevention (CDC) Comprehensive Clinic Assessment Software Application (CoCASA), Version 14.1

Indiana Immunization Registry, CHIRP. Data obtained April 1, 2019.

U.S. Department of Health and Human Services (DHHS). National Center for Immunization and Respiratory Diseases. A User's Guide for the 2019 Public-Use Data File. Atlanta, GA: Centers for Disease Control and Prevention, 2017. https://www.cdc.gov/vaccines/imz-managers/nis/downloads/NIS-PUF19-DUG.pdf