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Department
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Health

Indiana State Department of Health
Immunization Division

County Immunization Rate Assessment
2021

Immunization Division
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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 04/30/2019 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 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 (3/31/2021). 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 3/31/2021. 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 03/31/2021.

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 April 15, 2021) 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 2020 to 2021 there was an approximate increase of 13.5% immunization records assessed. See Table 3 for a detailed comparison between 2020 and 2021.

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% \pm 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% \pm 6.4 among 19-35 month old children. This estimate is higher than that provided in this report for Indiana, 61% that was reported in 2021. 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 2020 and 2021 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 2020 and 2021 Indiana assessment overall.

Table 1: Ten Lowest Rates by County 2021

COUNTY	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER OF VFC PROVIDERS ENROLLED
~INDIANA	61.1%	743
LAGRANGE	36.0%	5
LAKE	46.3%	53
DAVISS	47.6%	7
MARTIN	48.4%	1
STJOSEPH	50.1%	38
LAPORTE	50.7%	13
JACKSON	50.9%	3
SCOTT	54.5%	4
MARION	56.3%	109
JASPER	56.4%	2

Table 2: Ten Highest Rates by County 2021

COUNTY	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER OF VFC PROVIDERS ENROLLED
~INDIANA	61.1%	743
HENRY	79.6%	2
CLINTON	78.4%	1
CASS	77.6%	2
PIKE	77.3%	6
RUSH	76.4%	4
OWEN	76.4%	4
SPENCER	76.2%	4
GREENE	75.8%	3
BENTON	75.3%	5
WARRICK	74.7%	5

Table 3: Summary 2020 and 2021 Indiana Assessment

	2020	2021
Indiana completion rate for 4:3:1:3:3:1:4 series	70%	61%
Number assessed 19-35 months of age	108,063	124,974
Percentage of population represented	87%	98%
Number of VFC Providers	755	743
Number/ rate assessed by Not VFC-Eligible	32,591/ 78%	18,309/ 76%
Number/ rate assessed by Underinsured	690/ 72%	766/ 71%
Number/ rate assessed by VFC-Eligible	59,010/ 67%	64,038/ 65%

The average immunization rate in Indiana counties is 64.8%, and the median (or midpoint) is 65.4%. There were 50 out of 92 counties that fell above the average of 64.8% and 42 that were below the average of 64.8%.

Discussion

The result for Indiana's immunization rate for 2021 is 61.1% coverage among children age 19-35 months which decreased 9% relative to the 2020 rate of 70.1%. 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 US Census data by age, Indiana's population of 19-35 month old children should be approximately 126,979. After excluding any immunization records that were not considered to be "active", there were only 124,974 records assessed in this analysis. This represents 98% of the estimated population. There were a number of counties (36) that the percentage of the population represented exceed 100% and they are highlighted in red in Appendix A. This is thought to be attributable to an increase in children age 19-35 months whom relocated to these counties after 2021 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: 2021 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	2020 (Census) POPULATION 19-35 MONTHS OF AGE	ASSESSED 19-35 MONTHS OF AGE	PERCENTAGE OF POPULATION REPRESENTED	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER NOT FC-ELIGIBLE	RATE AMONG NOT FC-ELIGIBLE	NUMBER UNDERINSURED	RATE AMONG UNDERINSURED	NUMBER FC-ELIGIBLE	RATE AMONG FC-ELIGIBLE
~INDIANA	743	126,979	124,974	98%	61%	18309	76%	766	71%	64038	65%
ADAMS	3	984	703	71%	57%	72	85%	1	100%	449	51%
ALLEN	28	7,978	7,699	97%	60%	663	67%	40	73%	4262	56%
BARTHOLOMEW	6	1,578	1,638	104%	65%	121	74%	3	67%	624	73%
BENTON	1	172	136	79%	59%	13	54%	1	100%	78	67%
BLACKFORD	1	219	219	100%	67%	29	62%	0	0%	136	78%
BOONE	8	1,309	1,367	104%	70%	348	83%	21	57%	298	75%
BROWN	1	167	167	100%	64%	36	86%	0	0%	88	65%
CARROLL	3	315	263	83%	64%	47	79%	7	86%	126	69%
CASS	4	764	628	82%	67%	100	76%	3	67%	394	72%
CLARK	10	2,261	2,097	93%	59%	518	72%	4	75%	941	67%
CLAY	5	504	582	115%	68%	74	81%	6	83%	414	68%
CLINTON	4	696	770	111%	66%	110	92%	9	100%	392	76%
CRAWFORD	2	183	133	73%	58%	25	68%	1	0%	89	56%
DAVISS	7	832	633	76%	48%	119	75%	6	50%	469	40%
DEARBORN	11	806	610	76%	58%	113	72%	3	100%	264	64%
DECATUR	7	505	437	87%	74%	137	82%	10	90%	226	74%
DEKALB	3	874	828	95%	62%	122	77%	3	67%	442	56%
DELAWARE	11	1,723	1,735	101%	66%	116	69%	5	40%	1005	74%
DUBOIS	4	897	781	87%	76%	154	79%	4	100%	335	72%
ELKHART	33	4,705	4,184	89%	63%	502	80%	24	63%	2846	64%
FAYETTE	3	365	366	100%	74%	52	79%	4	50%	284	75%
FLOYD	8	1,315	1,261	96%	65%	298	80%	6	67%	554	70%
FOUNTAIN	2	308	348	113%	59%	55	85%	5	100%	166	70%
FRANKLIN	2	374	208	56%	66%	51	82%	0	0%	121	65%
FULTON	2	369	335	91%	63%	46	72%	8	75%	175	74%
GIBSON	5	631	523	83%	73%	207	83%	2	100%	240	68%
GRANT	7	1,112	1,173	105%	63%	160	74%	14	71%	799	63%
GREENE	3	529	471	89%	75%	135	82%	2	100%	284	75%
HAMILTON	24	6,470	5,898	91%	68%	1679	77%	29	69%	1359	77%
HANCOCK	6	1,316	1,446	110%	68%	83	89%	8	88%	394	72%
HARRISON	4	746	653	88%	60%	193	69%	3	67%	297	61%
HENDRICKS	9	2,860	3,336	117%	60%	345	75%	20	55%	1079	73%
HENRY	6	696	735	106%	73%	154	89%	2	100%	396	78%
HOWARD	10	1,503	1,461	97%	71%	166	89%	11	91%	878	69%
HUNTINGTON	4	618	593	96%	76%	98	84%	7	100%	341	79%
JACKSON	3	848	1,232	145%	51%	212	72%	3	100%	437	69%
JASPER	2	594	647	109%	56%	64	63%	18	83%	293	58%
JAY	4	473	361	76%	66%	46	76%	2	50%	236	69%
JEFFERSON	2	557	571	103%	69%	182	79%	3	33%	330	72%

APPENDIX A: 2021 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	2020 (Census) POPULATION 19-35 MONTHS OF AGE	ASSESSED 19-35 MONTHS OF AGE	PERCENTAGE OF POPULATION PRESENTED	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER NOT C-ELIGIBLE	RATE AMONG NOT VFC-ELIGIBLE	NUMBER DERINSURED	RATE AMONG DERINSURED	NUMBER C-ELIGIBLE	RATE AMONG C-ELIGIBLE
JENNINGS	2	528	557	105%	59%	82	68%	3	100%	267	73%
JOHNSON	21	3,038	3,143	103%	67%	478	78%	11	82%	1385	75%
KNOX	3	643	599	93%	67%	142	78%	14	79%	383	63%
KOSCIUSKO	6	1,621	1,246	77%	65%	314	77%	12	50%	606	63%
LAGRANGE	5	1,105	630	57%	36%	40	48%	1	100%	488	34%
LAKE	53	8,822	9,311	106%	46%	1125	59%	56	66%	5075	47%
LAPORTE	13	1,994	2,082	104%	51%	456	70%	4	50%	1184	52%
LAWRENCE	9	781	740	95%	74%	185	89%	9	100%	487	70%
MADISON	25	2,218	2,103	95%	74%	152	85%	6	67%	1455	77%
MARION	109	21,030	21,624	103%	56%	1755	70%	97	77%	11480	65%
MARSHALL	10	914	777	85%	58%	89	73%	4	0%	425	61%
MARTIN	1	202	219	108%	48%	35	66%	0	0%	149	41%
MIAMI	3	555	531	96%	61%	70	76%	3	67%	313	64%
MONROE	5	2,028	1,700	84%	75%	666	81%	21	71%	917	72%
MONTGOMERY	6	721	758	105%	63%	166	86%	12	92%	346	73%
MORGAN	8	1,175	1,390	118%	65%	144	78%	4	25%	744	74%
NEWTON	1	234	180	77%	57%	7	86%	3	100%	111	61%
NOBLE	2	991	888	90%	62%	96	75%	16	56%	519	57%
OHIO	2	82	136	166%	67%	25	72%	0	0%	73	68%
ORANGE	3	332	412	124%	57%	64	84%	4	25%	279	54%
OWEN	3	331	298	90%	76%	77	87%	1	0%	190	76%
PARKE	4	317	210	66%	67%	24	75%	1	100%	128	69%
PERRY	2	345	269	78%	72%	97	80%	9	67%	140	71%
PIKE	2	216	299	138%	80%	107	85%	0	0%	156	78%
PORTER	11	2,737	2,485	91%	62%	324	63%	22	59%	986	65%
POSEY	4	438	352	80%	70%	128	86%	0	0%	156	63%
PULASKI	2	206	208	101%	63%	30	77%	3	100%	115	69%
PUTNAM	5	554	570	103%	64%	87	86%	4	25%	276	66%
RANDOLPH	3	452	398	88%	65%	28	75%	6	67%	259	68%
RIPLEY	3	495	528	107%	74%	222	85%	4	25%	217	71%
RUSH	5	287	293	102%	75%	39	92%	0	0%	171	76%
ST JOSEPH	38	5,202	5,947	114%	50%	470	70%	26	73%	2934	60%
SCOTT	4	419	382	91%	54%	76	75%	4	75%	185	64%
SHELBY	2	781	882	113%	69%	49	84%	3	33%	508	77%
SPENCER	2	340	232	68%	78%	70	77%	4	100%	120	82%
STARKE	7	428	358	84%	58%	50	72%	2	100%	208	63%
STEUBEN	4	576	560	97%	61%	143	70%	0	0%	319	53%
SULLIVAN	4	330	342	104%	65%	43	79%	7	71%	215	68%
SWITZERLAND	1	205	138	67%	61%	37	95%	0	0%	71	59%
TIPPECANOE	17	3,514	3,819	109%	58%	544	81%	28	61%	1580	69%

APPENDIX A: 2021 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	2020 (Census) POPULATION 19-35 MONTHS OF AGE	ASSESSED 19-35 MONTHS OF AGE	PERCENTAGE OF POPULATION PRESENTED	COMPLETION RATE FOR 4:3:1:3:3:1:4	NUMBER NOT C-ELIGIBLE	RATE AMONG NOT VFC-ELIGIBLE	NUMBER DERINSURED	RATE AMONG DERINSURED	NUMBER C-ELIGIBLE	RATE AMONG C-ELIGIBLE
TIPTON	1	234	231	99%	71%	41	80%	0	0%	121	71%
UNION	1	129	74	57%	78%	7	86%	0	0%	49	88%
VANDEBURGH	20	3,208	2,998	93%	74%	788	87%	4	75%	1769	70%
VERMILLION	4	235	250	106%	66%	18	78%	1	0%	170	66%
VIGO	17	1,862	1,852	99%	62%	137	71%	24	58%	1262	65%
WABASH	3	498	483	97%	71%	106	83%	3	67%	279	68%
WARREN	2	133	146	110%	60%	17	88%	1	100%	58	74%
WARRICK	6	1,132	985	87%	77%	414	86%	7	100%	411	77%
WASHINGTON	5	483	427	88%	69%	50	84%	2	100%	276	72%
WAYNE	6	1,170	1,134	97%	71%	111	84%	3	67%	728	76%
WELLS	2	497	497	100%	69%	94	82%	9	67%	244	68%
WHITE	5	446	509	114%	61%	72	85%	7	57%	255	65%
WHITLEY	4	609	564	93%	76%	73	78%	3	100%	255	76%

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, 2020 & 2021

COUNTY	(2017 Census) POPULATION 19-35 MONTHS OF	Number Assessed 19-35 Months of Age		Percentage of Population Represented		Completion Rate for 4:3:1:3:3:1:4	
		2020	2021	2020	2021	2020	2021
~INDIANA	126,979	108,063	124,974	85%	98%	70%	61%
ADAMS	984	619	703	63%	71%	67%	57%
ALLEN	7978	6756	7699	85%	97%	64%	60%
BARTHOLOMEW	1578	1462	1638	93%	104%	74%	65%
BENTON	172	123	136	72%	79%	80%	59%
BLACKFORD	219	186	219	85%	100%	74%	67%
BOONE	1309	1170	1367	89%	104%	78%	70%
BROWN	167	167	167	100%	100%	74%	64%
CARROLL	315	269	263	85%	83%	79%	64%
CASS	764	520	628	68%	82%	84%	67%
CLARK	2261	1877	2097	83%	93%	68%	59%
CLAY	504	523	582	104%	115%	78%	68%
CLINTON	696	579	770	83%	111%	84%	66%
CRAWFORD	183	103	133	56%	73%	64%	58%
DAVISS	832	547	633	66%	76%	63%	48%
DEARBORN	806	535	610	66%	76%	66%	58%
DECATUR	505	443	437	88%	87%	80%	74%
DEKALB	874	710	828	81%	95%	69%	62%
DELAWARE	1723	1523	1735	88%	101%	75%	66%
DUBOIS	897	696	781	78%	87%	74%	76%
ELKHART	4705	3865	4184	82%	89%	69%	63%
FAYETTE	365	336	366	92%	100%	76%	74%
FLOYD	1315	1153	1261	88%	96%	74%	65%
FOUNTAIN	308	260	348	84%	113%	74%	59%
FRANKLIN	374	233	208	62%	56%	74%	66%
FULTON	369	289	335	78%	91%	78%	63%
GIBSON	631	546	523	87%	83%	79%	73%
GRANT	1112	1086	1173	98%	105%	68%	63%
GREENE	529	384	471	73%	89%	83%	75%
HAMILTON	6470	5429	5898	84%	91%	75%	68%
HANCOCK	1316	1325	1446	101%	110%	77%	68%
HARRISON	746	608	653	82%	88%	69%	60%
HENDRICKS	2860	2970	3336	104%	117%	68%	60%
HENRY	696	645	735	93%	106%	84%	73%
HOWARD	1503	1372	1461	91%	97%	75%	71%
HUNTINGTON	618	536	593	87%	96%	71%	76%
JACKSON	848	869	1232	102%	145%	70%	51%
JASPER	594	525	647	88%	109%	70%	56%
JAY	473	330	361	70%	76%	68%	66%
JEFFERSON	557	524	571	94%	103%	76%	69%
JENNINGS	528	426	557	81%	105%	79%	59%
JOHNSON	3038	2559	3143	84%	103%	76%	67%
KNOX	643	520	599	81%	93%	71%	67%

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, 2020 & 2021

COUNTY	(2017 Census) POPULATION 19-35 MONTHS OF	Number Assessed 19-35 Months of Age		Percentage of Population Represented		Completion Rate for 4:3:1:3:3:1:4	
		2020	2021	2020	2021	2020	2021
KOSCIUSKO	1621	1126	1246	69%	77%	70%	65%
LAGRANGE	1105	567	630	51%	57%	50%	36%
LAKE	8822	7502	9311	85%	106%	56%	46%
LAPORTE	1994	1813	2082	91%	104%	60%	51%
LAWRENCE	781	692	740	89%	95%	74%	74%
MADISON	2218	1932	2103	87%	95%	78%	74%
MARION	21030	18136	21624	86%	103%	68%	56%
MARSHALL	914	709	777	78%	85%	70%	58%
MARTIN	202	185	219	92%	108%	61%	48%
MIAMI	555	272	531	49%	96%	68%	61%
MONROE	2028	1697	1700	84%	84%	78%	75%
MONTGOMERY	721	591	758	82%	105%	79%	63%
MORGAN	1175	1187	1390	101%	118%	72%	65%
NEWTON	234	157	180	67%	77%	65%	57%
NOBLE	991	787	888	79%	90%	71%	62%
OHIO	82	138	136	168%	166%	69%	67%
ORANGE	332	366	412	110%	124%	66%	57%
OWEN	331	291	298	88%	90%	83%	76%
PARKE	317	177	210	56%	66%	71%	67%
PERRY	345	262	269	76%	78%	75%	72%
PIKE	216	261	299	121%	138%	84%	80%
PORTER	2737	2251	2485	82%	91%	65%	62%
POSEY	438	357	352	82%	80%	78%	70%
PULASKI	206	182	208	88%	101%	69%	63%
PUTNAM	554	454	570	82%	103%	72%	64%
RANDOLPH	452	336	398	74%	88%	71%	65%
RIPLEY	495	492	528	99%	107%	78%	74%
RUSH	287	250	293	87%	102%	83%	75%
STJOSEPH	5202	4500	5947	87%	114%	64%	50%
SCOTT	419	341	382	81%	91%	68%	54%
SHELBY	781	758	882	97%	113%	79%	69%
SPENCER	340	207	232	61%	68%	83%	78%
STARKE	428	333	358	78%	84%	66%	58%
STEUBEN	576	474	560	82%	97%	65%	61%
SULLIVAN	330	307	342	93%	104%	74%	65%

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, 2020 & 2021

COUNTY	(2017 Census) POPULATION 19-35 MONTHS OF	Number Assessed 19-35 Months of Age		Percentage of Population Represented		Completion Rate for 4:3:1:3:3:1:4	
		2020	2021	2020	2021	2020	2021
SWITZERLAND	205	110	138	54%	67%	75%	61%
TIPPECANOE	3514	3184	3819	91%	109%	75%	58%
TIPTON	234	191	231	82%	99%	77%	71%
UNION	129	64	74	50%	57%	77%	78%
VANDERBURGH	3208	2859	2998	89%	93%	79%	74%
VERMILLION	235	225	250	96%	106%	72%	66%
VIGO	1862	1500	1852	81%	99%	72%	62%
WABASH	498	429	483	86%	97%	72%	71%
WARREN	133	118	146	89%	110%	75%	60%
WARRICK	1132	902	985	80%	87%	80%	77%
WASHINGTON	483	371	427	77%	88%	72%	69%
WAYNE	1170	1026	1134	88%	97%	80%	71%
WELLS	497	427	497	86%	100%	63%	69%
WHITE	446	424	509	95%	114%	77%	61%
WHITLEY	609	545	564	89%	93%	77%	76%

APPENDIX C: 2021 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 Diap	4 Diap 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	124974	83144	67%	99957	80%	97511	78%	100632	81%	96007	77%	96627	77%	91993	74%	76319	61%
ADAMS	703	442	63%	590	84%	559	80%	561	80%	544	77%	554	79%	489	70%	404	57%
ALLEN	7699	4965	64%	6155	80%	6069	79%	6336	82%	5993	78%	6058	79%	5727	74%	4586	60%
BARTHOLOMEW	1638	1224	75%	1396	85%	1369	84%	1428	87%	1254	77%	1334	81%	1319	81%	1065	65%
BENTON	136	82	60%	104	76%	96	71%	105	77%	104	76%	96	71%	96	71%	80	59%
BLACKFORD	219	150	68%	183	84%	179	82%	178	81%	180	82%	180	82%	165	75%	147	67%
BOONE	1367	1036	76%	1157	85%	1150	84%	1171	86%	1111	81%	1145	84%	1099	80%	957	70%
BROWN	167	118	71%	135	81%	133	80%	133	80%	130	78%	130	78%	129	77%	107	64%
CARROLL	263	175	67%	206	78%	208	79%	205	78%	198	75%	206	78%	196	75%	168	64%
CASS	628	426	68%	518	82%	489	78%	507	81%	519	83%	489	78%	457	73%	418	67%
CLARK	2097	1492	71%	1738	83%	1739	83%	1806	86%	1471	70%	1720	82%	1627	78%	1234	59%
CLAY	582	408	70%	485	83%	470	81%	486	84%	487	84%	466	80%	455	78%	397	68%
CLINTON	770	533	69%	596	77%	588	76%	584	76%	589	76%	591	77%	569	74%	508	66%
CRAWFORD	133	85	64%	111	83%	112	84%	118	89%	111	83%	110	83%	94	71%	77	58%
DAVISS	633	385	61%	526	83%	527	83%	523	83%	522	82%	410	65%	430	68%	301	48%
DEARBORN	610	411	67%	496	81%	496	81%	524	86%	465	76%	492	81%	475	78%	356	58%
DECATUR	437	339	78%	388	89%	380	87%	389	89%	386	88%	374	86%	370	85%	323	74%
DEKALB	828	551	67%	667	81%	654	79%	684	83%	654	79%	647	89%	628	76%	517	62%
DELAWARE	1735	1186	68%	1371	79%	1373	79%	1376	79%	1361	78%	1361	78%	1293	75%	1137	66%
DUBOIS	781	621	80%	722	92%	695	89%	732	94%	714	91%	692	89%	667	85%	595	76%
ELKHART	4184	2862	68%	3507	84%	3426	82%	3568	85%	3320	79%	3342	80%	3185	76%	2616	63%
FAYETTE	366	275	75%	331	90%	314	86%	320	87%	335	92%	315	86%	300	82%	272	74%
FLOYD	1261	932	74%	1056	84%	1045	83%	1095	87%	960	76%	1040	82%	1008	80%	825	65%
FOUNTAIN	348	213	61%	248	71%	238	68%	243	70%	246	71%	235	68%	231	66%	204	59%
FRANKLIN	208	145	70%	179	86%	164	79%	180	87%	178	86%	165	79%	160	77%	138	66%
FULTON	335	219	65%	269	80%	261	78%	272	81%	269	80%	260	78%	250	75%	212	63%
GIBSON	523	413	79%	470	90%	469	90%	470	90%	456	87%	466	89%	438	84%	380	73%
GRANT	1173	781	67%	987	84%	954	81%	1007	86%	991	84%	959	82%	882	75%	737	63%
GREENE	471	354	75%	411	87%	397	84%	404	86%	415	88%	395	84%	378	80%	351	75%
HAMILTON	5898	4586	78%	5184	88%	5069	86%	5274	89%	4880	83%	5050	86%	4899	83%	4002	68%
HANCOCK	1446	1105	76%	1268	88%	1242	86%	1292	89%	1186	82%	1239	86%	1221	84%	979	68%
HARRISON	653	454	70%	558	85%	550	84%	575	88%	505	77%	545	83%	506	77%	391	60%
HENDRICKS	3336	2162	65%	2618	78%	2486	75%	2618	78%	2558	77%	2473	74%	2333	70%	2000	60%
HENRY	735	569	77%	648	88%	635	86%	643	87%	643	87%	628	85%	592	81%	540	73%
HOWARD	1461	1066	73%	1276	87%	1235	85%	1253	86%	1271	87%	1233	84%	1204	82%	1034	71%
HUNTINGTON	593	482	81%	534	90%	539	91%	553	93%	511	86%	532	90%	523	88%	453	76%
JACKSON	1232	706	57%	833	68%	800	65%	845	69%	783	64%	799	65%	747	61%	627	51%
JASPER	647	407	63%	495	77%	467	72%	511	79%	466	72%	479	74%	456	70%	365	56%
JAY	361	253	70%	306	85%	303	84%	295	82%	307	85%	299	83%	288	80%	238	66%
JEFFERSON	571	408	71%	498	87%	474	83%	499	87%	492	86%	473	83%	433	76%	392	69%
JENNINGS	557	360	65%	414	74%	403	72%	403	72%	396	71%	397	71%	383	69%	326	59%
JOHNSON	3143	2284	73%	2554	81%	2513	80%	2596	83%	2404	76%	2495	79%	2442	78%	2101	67%
KNOX	599	418	70%	532	89%	506	84%	532	89%	540	90%	506	84%	459	77%	404	67%
KOSCIUSKO	1246	856	69%	1054	85%	1050	84%	1097	88%	1049	84%	1032	83%	957	77%	815	65%
LAGRANGE	630	259	41%	420	67%	398	63%	461	73%	355	56%	383	61%	330	52%	227	36%
LAKE	9311	5070	54%	6577	71%	6323	68%	6744	72%	5990	64%	6227	67%	5758	62%	4307	46%
LAPORTE	2082	1185	57%	1550	74%	1526	73%	1595	77%	1384	66%	1462	70%	1436	69%	1055	51%
LAWRENCE	740	570	77%	653	88%	642	87%	640	86%	665	90%	635	86%	617	83%	548	74%
MADISON	2103	1634	78%	1893	90%	1841	88%	1872	89%	1888	90%	1831	87%	1750	83%	1558	74%
MARION	21624	13306	62%	16344	76%	15893	73%	16085	74%	15871	73%	15837	73%	14892	69%	12175	56%

APPENDIX C: 2021 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
MARSHALL	777	495	64%	607	78%	595	77%	619	80%	577	74%	589	76%	557	72%	453	58%
MARTIN	219	149	68%	186	85%	176	80%	184	84%	179	82%	136	62%	147	67%	106	48%
MIAMI	531	344	65%	427	80%	409	77%	425	80%	426	80%	406	76%	383	72%	324	61%
MONROE	1700	1319	78%	1514	89%	1471	87%	1444	85%	1508	89%	1462	86%	1425	84%	1280	75%
MONTGOMERY	758	502	66%	576	76%	563	74%	560	74%	558	74%	564	74%	537	71%	476	63%
MORGAN	1390	1006	72%	1160	83%	1120	81%	1147	83%	1083	78%	1104	79%	1082	78%	910	65%
NEWTON	180	109	61%	138	77%	137	76%	142	79%	136	76%	139	77%	129	72%	103	57%
NOBLE	888	577	65%	723	81%	689	78%	736	83%	713	80%	687	77%	659	74%	551	62%
OHIO	136	101	74%	118	87%	116	85%	120	88%	108	79%	117	86%	113	83%	91	67%
ORANGE	412	249	60%	325	79%	317	77%	325	79%	325	79%	314	76%	290	70%	235	57%
OWEN	298	240	81%	265	89%	258	87%	255	86%	261	88%	255	86%	249	84%	226	76%
PARKE	210	147	70%	175	83%	172	82%	176	84%	170	81%	169	80%	167	80%	141	67%
PERRY	269	196	73%	232	86%	232	86%	222	83%	238	88%	232	86%	218	81%	194	72%
PIKE	299	247	83%	286	96%	273	91%	283	95%	281	94%	273	91%	256	86%	238	80%
PORTER	2485	1686	68%	2061	83%	2048	82%	2162	87%	1897	76%	2018	81%	1889	76%	1545	62%
POSEY	352	274	78%	327	93%	316	90%	328	93%	306	87%	321	91%	294	84%	248	70%
PULASKI	208	136	65%	167	80%	166	80%	161	77%	170	82%	162	78%	153	74%	132	63%
PUTNAM	570	380	67%	467	82%	440	77%	466	82%	466	82%	432	76%	434	76%	367	64%
RANDOLPH	398	268	67%	336	84%	326	82%	313	79%	347	87%	326	82%	304	76%	258	65%
RIPLEY	528	405	77%	468	89%	447	85%	470	89%	470	89%	448	85%	437	83%	391	74%
RUSH	293	236	81%	263	90%	259	88%	269	92%	255	87%	260	89%	255	87%	219	75%
STJOSEPH	5947	3290	55%	4088	69%	4080	69%	4133	69%	3903	66%	4054	68%	3755	63%	2982	50%
SCOTT	382	229	60%	280	73%	269	70%	283	74%	269	70%	262	69%	258	68%	208	54%
SHELBY	882	658	75%	740	84%	721	82%	751	85%	709	80%	713	81%	711	81%	609	69%
SPENCER	232	193	83%	215	93%	213	92%	219	94%	207	89%	213	92%	207	89%	180	78%
STARKE	358	217	61%	280	78%	276	77%	294	82%	284	79%	275	77%	254	71%	209	58%
STEUBEN	560	353	63%	454	81%	430	77%	469	84%	459	82%	426	76%	407	73%	342	61%
SULLIVAN	342	232	68%	272	80%	264	77%	275	80%	268	78%	265	77%	242	71%	223	65%
SWITZERLAND	138	89	64%	112	81%	106	77%	114	83%	105	76%	105	76%	100	72%	84	61%
TIPPECANOE	3819	2347	61%	2798	73%	2692	70%	2825	74%	2725	71%	2664	70%	2617	69%	2223	58%
TIPTON	231	169	73%	201	87%	194	84%	196	85%	197	85%	191	83%	186	88%	163	71%
UNION	74	58	78%	65	88%	69	93%	65	88%	67	91%	69	93%	61	82%	58	78%
VANDERBURGH	2998	2361	79%	2713	90%	2622	87%	2659	89%	2610	87%	2625	88%	2513	84%	2206	74%
VERMILLION	250	171	68%	197	79%	190	76%	197	79%	201	80%	190	76%	179	72%	165	66%
VIGO	1852	1204	65%	1462	79%	1431	77%	1481	80%	1443	78%	1428	77%	1387	75%	1154	62%
WABASH	483	360	75%	420	87%	410	85%	427	88%	418	87%	405	84%	391	81%	343	71%
WARREN	146	92	63%	101	69%	102	70%	103	71%	100	68%	100	68%	99	68%	87	60%
WARRICK	985	802	81%	894	91%	878	89%	911	92%	856	87%	876	89%	832	84%	761	77%
WASHINGTON	427	313	73%	355	83%	349	82%	357	84%	351	82%	342	80%	342	80%	296	69%
WAYNE	1134	829	73%	948	84%	936	83%	923	81%	965	85%	933	82%	888	78%	807	71%
WELLS	497	364	73%	434	87%	414	83%	442	89%	419	84%	413	83%	396	80%	342	69%
WHITE	509	325	64%	389	76%	384	75%	396	78%	377	74%	383	75%	364	72%	309	61%
WHITLEY	564	459	81%	507	90%	502	89%	517	92%	493	87%	494	88%	483	86%	431	76%

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

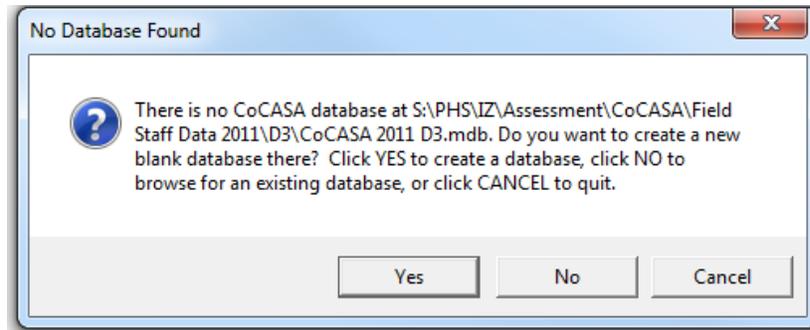
1. Create and save a 'CoCASA Export File' from CHIRP for each county.
 - a. Login to CHIRP, click "CASA Export" from the left sidebar.
 - b. Enter the patient date of birth range.
 - c. Select the county.
 - d. Leave all other settings at their default state, and click "Create Export File".
 - i. The 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

Export to CASA	
Patient Status:	<input checked="" type="radio"/> Active Only <input type="radio"/> Inactive Only <input type="radio"/> All
Patient Birth Date Range:	From: <input type="text" value="04/30/2012"/> Through: <input type="text" value="08/31/2013"/>
Limit Export by	
<input type="checkbox"/> Organization (IRMS)	--select--
<input type="radio"/> Facility	--select--
<input type="radio"/> Facility Group	--select--
<input checked="" type="radio"/> Do Not Limit	
<input type="checkbox"/> VFC PIN	--select--
<input type="checkbox"/> Primary Care Physician	--select--
<input type="checkbox"/> Vaccinator	--select--
<input type="checkbox"/> Program	--select--
<input type="checkbox"/> Health Plan	--select--
<input checked="" type="checkbox"/> County/Parish	ADAMS
<input type="checkbox"/> Zip Code	<input type="text"/>
<input type="checkbox"/> District/Region	<input type="text"/>
CASA Version:	<input type="radio"/> CoCASA v1.3 - v2 <input checked="" type="radio"/> CoCASA v2.1 and up
Export by:	<input checked="" type="radio"/> CPT Code <input type="radio"/> CVX Code
Output Type:	<input checked="" type="radio"/> Text File (Download) <input type="radio"/> Text File (Server Job) <input type="radio"/> HTML (Text Area)
<input type="button" value="Clear"/> <input type="button" value="Create Export File"/> <input type="button" value="View Export Log"/>	

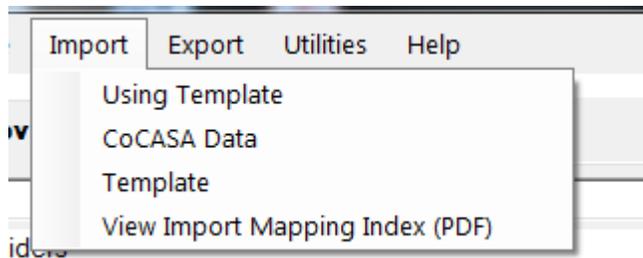
2. Import each export file into a new, blank CoCASA database.
 - a. Rename an existing CoCASA database. Then, open CoCASA. A message will appear as shown below:

Figure 2



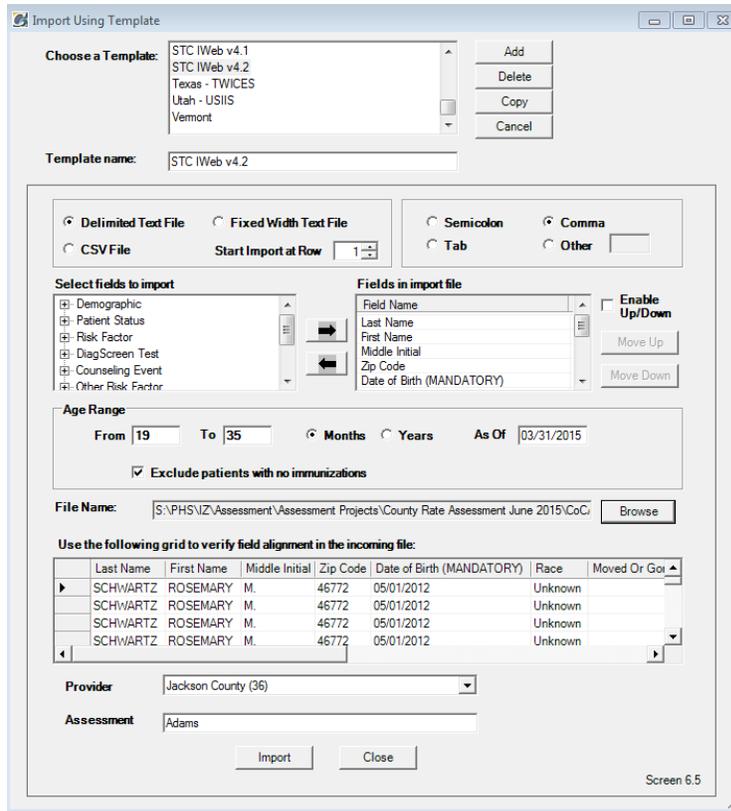
- b. Click “Yes” on the dialog box to create a new blank database. Name the new database for the assessment it is being created for.
- c. Open CoCASA, directing it toward the new database created for the assessment.
- d. Set up a provider named “County Rate Assessment” with the address and phone number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

Figure 3



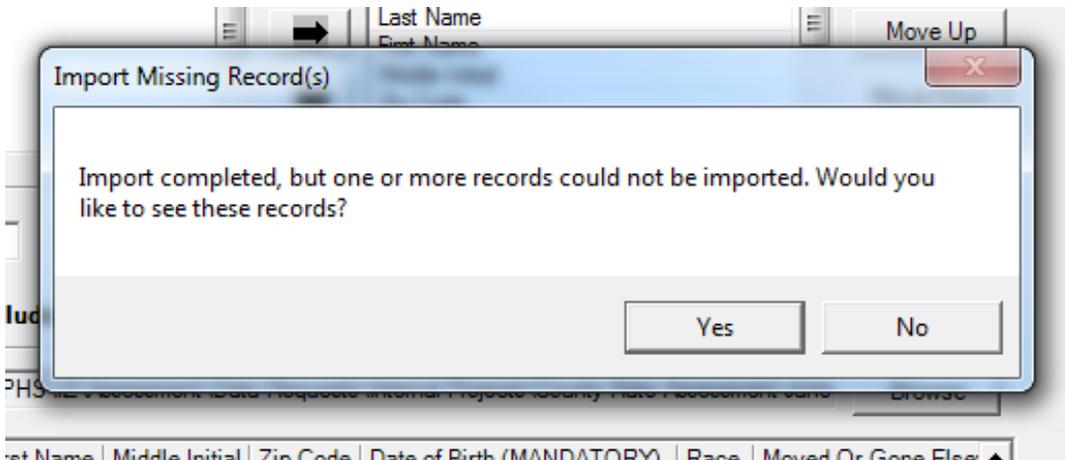
- f. Choose the template to import from, STC IWeb v4.2.
- g. Enter the date of birth range for the cohort, including the “as of” date, indicating what age the subjects should be at the time of assessment.
- h. Click on “Exclude patients with no immunizations”.
- i. Click “Browse” and select the file 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



1. 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

SortOrder	VFCEligibilit	VFCEligibilityCatName	Add New Field
0			
1	1	Medicaid	
2	2	American Indian or Alaska Native	
3	3	Not VFC-Eligible	
4	4	Underinsured	
5	5	Uninsured	
6	6	VFC-Eligible	
*			

- 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

REPORT CRITERIA		Assessment date: 4/1/2019
Provider site name: <input type="text"/>		
Age range:	From <input type="text" value="19"/> to <input type="text" value="35"/> months	as of <input type="text" value="3/31/2019"/>
Selected series/antigens: 4:3:1:3:3:1:4 (4DTaP, 3IPV, 1MMR, 3Hib, 3HepB, 1VAR, 4PCV13)		
Compliance: <input type="checkbox"/> By age: <input type="text" value="0"/> months <input checked="" type="checkbox"/> By date: <input type="text" value="3/31/2019"/>		
Additional criteria: <input checked="" type="checkbox"/> Apply ACIP Recommendations (valid doses only) <input checked="" type="checkbox"/> Apply four-day grace period		
<input type="checkbox"/> Limited by <input type="text"/>		
Missed opportunities are defined as: <input type="text" value="On LAST immunization visit"/>		

<input type="text" value="631"/>	# of patient records selected	
<input type="text" value="0"/>	# of patients moved or gone elsewhere (MOGE)	
(minus)		
<input type="text" value="631"/>	Total # of Patient Records Assessed	<input type="text" value="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	<input type="text" value="414"/>	<input type="text" value="66%"/>

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