

March 30, 2022

Honorable Douglas A. Ducey
Governor of Arizona
1700 W Washington
Phoenix, Arizona 85007

The Honorable Karen Fann
President
Arizona State Senate
1700 W Washington
Phoenix, Arizona 85007

The Honorable Russell Bowers
Speaker of the House
Arizona House of Representatives
1700 W Washington
Phoenix, Arizona 85007

Dear Governor Ducey, President Fann, and Speaker Bowers:

Pursuant to A.R.S. § 36-2904(N), the Arizona Health Care Cost Containment System (AHCCCS) is required to prepare a biennial report indicating the number of children who by age two and by contractor received immunizations recommended by the National Centers for Disease Control and Prevention while enrolled as members. Do not hesitate to contact me at (602) 417-4711 if you have any questions or would like additional information.

Sincerely,



Jami Snyder
Director

cc: Christina Corieri, Governor's Office Senior Policy Advisor
Matthew Gress, Director, Governor's Office of Strategic Planning and Budgeting
Richard Stavneak, Director, Joint Legislative Budget Committee



CHILDHOOD IMMUNIZATION COMPLETION RATES

April 1, 2022



Childhood Immunization Completion Rates

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Childhood Immunization Completion Rates

Executive Summary

Since 1993, AHCCCS has regularly measured the immunization status of children two years old. AHCCCS has established performance measure performance standards that are based on national benchmarks which are used to evaluate AHCCCS contracted health plan (Contractor) performance. Contractors must meet the performance standard for each vaccine and vaccine series; if a Contractor performs lower than the associated benchmark, it may be required to implement a Corrective Action Plan (CAP) and may be subject to regulatory action [which may include a sanction(s), if the Contractor fails to improve its rate(s)].

This report is presented in accordance with state law (ARS §36-2904), which requires a biennial status of 24-month immunization completion rates for children two years of age served by AHCCCS. This report evaluates the performance of Contractors, individually and overall.

Methodology

AHCCCS utilized the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS)[®] technical specifications. A random sample of child members who turned 24 months of age on or between January 1, 2020, and December 31, 2020, and who were continuously enrolled twelve months prior to the child's second birthday were included in this study^{1, 2}.

AHCCCS contracted with its External Quality Review Organization (EQRO) as part of its Performance Measure Validation (PMV) activities to determine the extent to which the Contractor performance measure rates were calculated following the applicable technical specifications.

Overall Results and Analysis

Since the last report, AHCCCS transitioned from utilizing EQRO calculated rates to measure and report Contractor level data to utilizing Contractor-calculated performance measure rates that have undergone EQRO validation starting with its 2020 performance measures. Additionally, performance measures are now calculated on a calendar year (CY) versus Contract Year Ending (CYE) basis in efforts to align with national performance measure standards and practices for calculating performance measure rates in alignment with the associated technical specifications. As such, the CY 2020 performance measure rates are not comparable to previous year reporting.

The CY 2020 AHCCCS statewide aggregate rates for individual and combination immunizations are shown in Table 1.

¹ Rates reflective of hybrid (administrative and medical record) calculation methodologies, except where indicated

² Based on the methodology utilized to calculate this measure (including administrative calculations, hybrid data collection, and associated performance measure validation activities), included rates are reflective of the most current data available at the time of publishing this report

Childhood Immunization Completion Rates

**Table 1. Aggregate Individual/Combination Immunization Completion Rates by 24 Months of Age
Measurement Period: CY 2020**

	DTaP (4 doses)	IPV (3 doses)	MMR (1 dose)	HiB (3 doses)	Hep B (3 doses)	VZV (1 dose)	PCV (4 doses)	Hep A (1 dose)	RV (2-3 doses)	Flu (2 doses)	Combo 3
CY 2020 AHCCCS Rate^{1,2}	72.2%	86.3%	85.7%	85.2%	85.9%	85.0%	73.7%	84.2%	69.7%	41.8%	67.1%
MY 2020 Medicaid Mean	73.9%	87.7%	87.6%	85.9%	87.3%	87.0%	75.6%	84.1%	71.2%	50.7%	67.6%

Rates in bold met or exceeded the NCQA Measurement Year (MY) 2020 Medicaid Mean

¹ Rates reflective of measures calculated at the Contractor level utilizing administrative or hybrid methodologies

² Rates reflective of AHCCCS Complete Care (ACC); Arizona Department of Child Safety Comprehensive Health Plan (DCS CHP); Arizona Department of Economic Security, Division of Developmental Disabilities (DES/DDD); and Arizona Long Term Care and Services, Elderly and Physical Disabilities (ALTCS-EPD) Contractor performance

NCQA produces a State of Health Care Quality Report that is produced annually, focuses on quality issues the country faces, and assists in driving improvement in the delivery of evidence-based medicine and care. The report trends performance over time, tracks variations in care, and recommends quality improvement.

AHCCCS rates were compared with the most recent national means for Medicaid health plans as reported within the NCQA State of Health Care Quality Report. When compared to the national mean for Medicaid on a national level, Arizona met or exceeded the national mean for one childhood immunization (Hep A).

Conclusion

AHCCCS and its Contractors continue to promote completion and timely immunizations for all populations served with a specific focus on childhood and adolescent immunizations. Contractors continue comprehensive outreach efforts to encourage parents to complete immunizations for their children and to providers to schedule appointments necessary to administer vaccines. AHCCCS, its Contractors, and relevant stakeholders work collaboratively to develop interventions and education initiatives between measurement periods, which include monitoring local, state, and national trends that could potentially impact immunization rates such as the COVID-19 public health emergency (PHE).

AHCCCS Contractors are expected to conduct additional analysis of their data so they may identify barriers and develop interventions to improve their performance. AHCCCS will continue to work with and monitor Contractors, especially those with lower compliance, to assist them in making progress toward reaching state and national goals.

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Overview

According to the Centers for Disease Control and Prevention (CDC), babies are born with immune systems that are capable of defending the body against germs, but not strong enough to handle some deadly diseases. Vaccination is proven to be one of the most effective ways for the immune system to recognize and learn to fight against these diseases. As HealthyChildren.org reports on their web page, vaccines are one of public health's greatest successes and shows that most childhood vaccines are 90 percent to 99 percent effective in preventing disease.

Vaccination is important not only to the individual, but also to those living in their communities. According to Lee et al., "When a sufficiently high proportion of a population is vaccinated against communicable diseases, the entire population can obtain protection." A study by Briss et al., reports that within the United States, childhood diseases have decreased by 95 percent due to immunizations since the end of the 20th century. However, recent reports document that due to the COVID-19 public health emergency, there has been a decline in providers ordering and administering pediatric vaccination, which increases the rate for non-vaccinated children. According to Children's Action Alliance, the CDC reported that providers ordering non-influenza vaccines through the Vaccines for Children (VFC) program decreased by about 11.7 million doses during the COVID-19 pandemic. Monitoring of immunization completion rates is critical in identifying under-vaccinated populations, increasing coverage levels in order to prevent outbreaks of disease, and save health care costs.

Background

Since 1993, AHCCCS has regularly measured the immunization rates of children 24 months of age. Arizona Revised Statute §36-2904 requires that AHCCCS submit a report to the Governor and Legislature that represents a statistically valid sample evaluating the number of AHCCCS enrolled children who received immunizations recommended by the CDC by age two.

This biennial report evaluates childhood immunization compliance for each of the AHCCCS Complete Care (ACC) health plans (Contractors); the Arizona Department of Child Safety, Comprehensive Health Plan (DCS CHP); and the Department of Economic Security, Division of Developmental Disabilities (DES/DDD). This report includes CY 2020 measurement results for ten individual vaccines and one combination vaccine that protect against fourteen different diseases and viruses: diphtheria, tetanus and acellular pertussis (DTaP); inactivated poliovirus (IPV); measles, mumps and rubella (MMR); haemophilus influenzae type b (HiB); hepatitis B (Hep B); varicella zoster (VZV); pneumococcal conjugate (PCV); hepatitis A (Hep A); rotavirus (RV) and influenza. The recommended vaccination schedule can be found in Appendix A.

Performance Goals

AHCCCS has established performance measure performance standards that are based on national benchmarks which are used to evaluate Contractor performance. AHCCCS aggregate, ACC Contractors, DCS CHP, and DES/DDD rates were compared to the most recent national means for Medicaid health plans as reported within the NCQA State of Health Care Quality Report.

Contractors must meet the performance standard for each vaccine and vaccine series. If a Contractor performs lower than the associated benchmark, it may be required to implement a Corrective Action Plan (CAP) and may be subject to regulatory action [which may include a sanction(s) if the Contractor

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fails to improve its rate(s)]. It is important to note that a Contractor may not meet the performance standard for an individual immunization but may meet the performance standard for a particular combination as the performance standard set for combinations is lower than those set for individual immunizations.

Purpose of Measurement

This study was conducted to determine the immunization rates of AHCCCS members who turned age two by December 30, 2020, as required by state law (ARS §36-2904) and to evaluate Contractor performance. Aggregate rates are reported to determine the compliance rates of children enrolled in AHCCCS statewide. Individual Contractor rates are reported separately to evaluate the performance of each Contractor.

Quality Indicators

In alignment with the Centers for Medicaid and CHIP Services, Centers for Medicare and Medicaid Services (CMS), Technical Specifications and Resource Manual for Federal Fiscal Year 2021 Reporting, the study indicators included the percent of children in the denominator who met the following, on or before the child’s second birthday (unless otherwise noted):

Immunization	Description
DTaP	<ul style="list-style-type: none"> At least four DTaP (diphtheria, tetanus and acellular pertussis) vaccinations with different dates of service
IPV	<ul style="list-style-type: none"> At least three IPV (inactivated poliovirus) vaccinations with different dates of service
MMR	<ul style="list-style-type: none"> At least one MMR (measles, mumps and rubella) vaccination, At least one measles and rubella vaccination and either at least one mumps vaccination or history of mumps illness, or At least one measles vaccination or history of the illness and at least one mumps vaccination or history of the illness and at least one rubella vaccination or history of the illness on the same date of service or on different dates of service
Hib	<ul style="list-style-type: none"> At least three HiB (haemophilus influenzae type b) vaccinations with different dates of service
Hep B	<ul style="list-style-type: none"> At least three hepatitis B vaccinations with different dates of service, or History of hepatitis illness
VZV	<ul style="list-style-type: none"> At least one VZV (varicella) vaccination on or between the child’s first and second birthday, or History of varicella zoster illness
PCV	<ul style="list-style-type: none"> At least four PCV (pneumococcal conjugate) vaccinations with different dates of service
Hep A	<ul style="list-style-type: none"> At least one hepatitis A vaccination with a date of service on or between the child’s first and second birthday, or History of hepatitis A illness

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Immunization	Description
RV	<ul style="list-style-type: none"> • At least two doses of the two-dose rotavirus vaccine on different dates of service, • At least three doses of the three-dose rotavirus vaccine on different dates of service, or • At least one dose of the two-dose rotavirus vaccine and at least two doses of the three-dose rotavirus vaccine, all on different dates of service
Influenza	<ul style="list-style-type: none"> • At least two influenza vaccinations with different dates of service
Combination #3	<ul style="list-style-type: none"> • Four DTaP vaccinations, three IPV vaccinations, one MMR vaccination, three HiB vaccinations, three Hep B vaccinations, one VZV vaccination, and four PCV vaccinations.

For further information related to the associated criteria, please refer to the CMS *Core Set of Children’s Health Care Quality Measures for Medicaid and CHIP (Child Core Set) Technical Specifications and Resource Manual*.

Methodology

The measurement included children who turned two years of age during CY 2020, who were eligible under Medicaid (Title XIX and Title XXI of the Social Security Act) and who were continuously enrolled with one of the ACC, DCS CHP, or DES/DDD Contractors during CY 2020.

Eligible Population

The study’s eligible population included children who:

- Turned two years old during the measurement year,
- Were continuously enrolled 12 months prior to the child’s second birthday,
- Had no more than one gap in enrollment of up to 45 days during the 12 months prior to the child’s second birthday, and
- Were enrolled on their second birthday.

Study Sample

The Contractor rates are reflective of hybrid calculation methodologies (inclusive of administrative and medical record data), except where indicated. For those measures calculated utilizing hybrid methodology, the Contractor’s methods for pulling a sample of eligible members aligned with the associated measure steward’s technical specification criteria and guidelines.

The AHCCCS aggregate rates are reflective of measures calculated at the Contractor level utilizing administrative or hybrid methodologies, as indicated below. The aggregate rate was calculated in alignment with CMS’ methodology for calculating weighted averages as reported by the AHCCCS EQRO.

Data Collection

Data collection was conducted by the Contractors and was to align with the associated measure steward’s technical specification criteria and guidelines.

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Data Validation

The Contractor-calculated rates underwent EQRO validation to assess the accuracy of rates reported by Contractors, which included review of the Contractor sampling and data collection methods.

Data Analysis

Upon completion of the EQRO validation activities, the Childhood Immunization Status aggregate rates were calculated in alignment with CMS’ methodology for calculating weighted averages as reported by the AHCCCS EQRO. The primary analysis provided results on the percentage of members who were age-appropriately immunized by two years of age for each quality indicator overall and by individual Contractor.

Data Limitations

Due to changes in the approach to calculate rates (including the transition to Contractor-calculated and ERQO-validated rates and the transition to calendar year as the basis for calculating rates), the CY 2020 performance measure rates are not comparable to previous year reporting.

Results

AHCCCS Aggregate Results

The CY 2020 AHCCCS statewide aggregate rates for individual and combination immunizations are shown in Table 2.

**Table 2. Aggregate Individual/Combination Immunization Completion Rates by 24 Months of Age
Measurement Period: CY 2020**

	DTaP (4 doses)	IPV (3 doses)	MMR (1 dose)	HiB (3 doses)	Hep B (3 doses)	VZV (1 dose)	PCV (4 doses)	Hep A (1 dose)	RV (2-3 doses)	Flu (2 doses)	Combo 3
CY 2020 AHCCCS Rate ^{1,2}	72.2%	86.3%	85.7%	85.2%	85.9%	85.0%	73.7%	84.2%	69.7%	41.8%	67.1%
MY 2020 Medicaid Mean	73.9%	87.7%	87.6%	85.9%	87.3%	87.0%	75.6%	84.1%	71.2%	50.7%	67.6%

Rates in bold met or exceeded the NCQA MY 2020 Medicaid Mean

¹ Rates reflective of measures calculated at the Contractor level utilizing administrative or hybrid methodologies

² Rates reflective of ACC, DCS CHP, DES/DDD, and ALTCS-EPD Contractor performance

AHCCCS rates were compared with the most recent national means for Medicaid health plans as reported within the NCQA State of Health Care Quality Report. When compared to the national mean for Medicaid on a national level, Arizona met or exceeded the national mean for one childhood immunization (Hep A).

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AHCCCS Contractor Results

The CY 2020 ACC, DCS CHP, and DES/DDD Contractors' rates for individual and combination immunizations are shown in Table 3.

**Table 3. Contractor Individual/Combination Immunization Completion Rates by 24 Months of Age
Measurement Period: CY 2020^{1,2}**

	DTaP	IPV	MMR	HiB	Hep B	VZV	PCV	Hep A	RV	Flu	Combo 3
	(4 doses)	(3 doses)	(1 dose)	(3 doses)	(3 doses)	(1 dose)	(4 doses)	(1 dose)	(2-3 doses)	(2 doses)	
AzCH	75.4%	88.8%	89.1%	89.1%	90.5%	88.1%	76.2%	88.8%	74.2%	47.7%	71.3%
BUFC	66.4%	80.3%	82.1%	79.2%	78.6%	81.3%	66.6%	81.2%	64.6%	43.5%	58.7%
Care 1st	72.5%	85.5%	85.5%	84.4%	82.5%	84.6%	72.7%	83.8%	68.4%	39.3%	64.5%
HCA	66.9%	82.2%	82.2%	80.3%	82.7%	80.5%	67.2%	77.9%	64.0%	32.6%	61.1%
MCC	61.1%	74.3%	79.6%	72.1%	73.5%	79.2%	62.4%	78.3%	58.0%	31.4%	55.3%
Mercy Care	71.5%	86.4%	84.4%	85.6%	87.1%	84.2%	74.7%	84.2%	70.8%	37.2%	68.4%
UHCCP	77.9%	91.5%	89.8%	90.0%	90.8%	89.3%	80.3%	87.6%	74.2%	47.7%	73.7%
DCS CHP	84.1%	97.2%	93.5%	97.2%	97.2%	93.5%	85.8%	90.7%	81.7%	52.8%	79.7%
DES/DDD	80.6%	88.1%	88.1%	91.3%	84.4%	87.5%	74.4%	87.5%	48.1%	70.0%	70.6%
CY 2020 AHCCCS Rate^{3,4}	72.2%	86.3%	85.7%	85.2%	85.9%	85.0%	73.7%	84.2%	69.7%	41.8%	67.1%
MY 2020 Medicaid Mean	73.9%	87.7%	87.6%	85.9%	87.3%	87.0%	75.6%	84.1%	71.2%	50.7%	67.6%

¹Rates reflective of hybrid (administrative and medical record) calculation methodologies, except for Care1st and BUFC who utilized administrative methodology

²Rates in **bold** met or exceeded the NCQA MY 2020 Medicaid Mean

³Rates reflective of measures calculated at the Contractor level utilizing administrative or hybrid methodologies, as indicated in footnote 1.

⁴ Rates reflective of ACC, DCS CHP, DES/DDD, and ALTCS-EPD Contractor performance

Discussion and Conclusions

One barrier for receiving childhood immunizations that continues since the previous measurement period is the concern and miseducation by parents regarding complications and risks associated with vaccinating children. Many of these parents are choosing to refuse or delay vaccinating their child. These decisions put not only their children at risk from vaccine preventable disease (VPD) outbreaks, but also those within their communities, especially those who cannot be vaccinated due to illness or other medical reasons; for example, those who experience vaccine failure and children too young to be vaccinated. A national survey conducted in 2019 demonstrated a result that approximately one in 15 parents were showing vaccine hesitancy towards routine childhood vaccines, whereas approximately one in four parents showing hesitancy towards influenza vaccine (Kemp et al., "Parental Hesitancy").

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Another barrier to getting children vaccinated is the gradual increase in nonmedical exemption to school vaccination requirements for children entering kindergarten (United States, Dept. of Health and Human Services 8). According to the Arizona Department of Health Services (ADHS), there has been a decrease in vaccine coverage rates followed by an increase in the use of immunization exemptions for children entering school.

Arizona law requires children to receive certain vaccines to attend school with exceptions only for medical, religious, or personal belief reasons. The ADHS evaluated exemption rates and reported a greater exemption for kindergarten and 6th grade children. The exemption rate increased from 5.4 percent to 5.9 percent for kindergarten and from 5.4 percent to 6.1 percent for 6th grade during the 2018-2019 school year. This rate also contributed to the decrease in immunization coverage for the 2018-2019 school year leaving more children unprotected from VPD.

The following recommendations to improve or maintain immunization completion rates among two-year-old members enrolled in AHCCCS were compiled from evidence-based research and identified best practices. Many AHCCCS Contractors have implemented several of these strategies, and their continued use should help sustain or further improve performance.

Contractors should continue using a variety of means to reach parents/guardians and encourage them to complete their children's immunizations. According to the CDC, mail and telephone reminders to parents and providers have been found to be effective in improving immunization-completion rates. In addition, increasing the use of technology within member communication efforts, including the use of social media platforms and text messaging campaigns should also be considered. Recent studies show that text messages used for vaccination reminders have been very successful (Cataldi, et al. 151). Contractors may also consider offering incentives to parents of children who complete all immunizations by 24 months.

Since all childhood vaccines can be completed at approximately 15 months of age, Contractors should begin checking the immunization status of members at 12 months of age. If members are lacking doses, this could give parents time to get immunizations completed by the time their children turn two years of age. Contractors should utilize the CDC's "catch up" immunization schedule, to help plan for completion of vaccinations. When children are overdue, Contractors should consider the additional step of assisting parents/guardians with making appointments with their Primary Care Physicians (PCPs) and making arrangements for transportation assistance, if needed.

In addition to ongoing monitoring of completion of all childhood vaccinations, Contractors should focus on rates of DTaP and PCV completion, particularly those children who have received only three doses. Given the effect that missing the fourth dose has on completion rates for the full series of immunizations, Contractors and providers should focus on ensuring that children receive all the necessary doses of these vaccines.

Contractors should target outreach for specific racial/ethnic groups, as needed. Contractors should conduct an internal analysis of results and work to bring rates up for populations with an identified disparity by conducting a needs analysis and developing culturally competent interventions.

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Contractors should target outreach activities in specific geographic areas, as needed. Contractors should conduct an internal analysis of results and work to bring rates up in areas where there is an identified disparity, including working with providers and possibly county health departments to identify barriers to immunizations and resources to address those barriers. Education in vaccine management and delivery for providers serving some areas of the state may be helpful.

Contractors should continue to analyze and research any obstacles to childhood vaccination, including but not limited to physical and psychological, and implement interventions to address identified obstacles. An example of physical barriers can include inconvenient clinical hours. Psychological barriers can include fear and unpleasant experiences related to vaccinations.

Physical

Contractors should continue to ensure that vaccination services are readily available to accommodate parents' working hours as well as inclusion of non-traditional working times.

Transportation issues have been identified as one of the barriers to receiving recommended vaccinations. The CDC encourages providers to take appropriate actions for this issue, such as holding childhood vaccination events.

Psychological

Contractors should encourage providers to utilize patient-focused strategies to increase childhood vaccination. According to the CDC, vaccine recommendation continues to be the number one reason for parents to get their children vaccinated. One study showed parents are more likely to get their children vaccinated when using a presumptive approach versus participatory approach. "When providers use a presumptive approach (one that assumes parents will choose to vaccinate), parents are more likely to accept vaccines than when a participatory approach (one that presents parents with a decision to make) is used (Bjork and Morelli 33)."

Contractors should continue or enhance member education to overcome parental fears regarding vaccination. This includes direct communication with members and working with providers to ensure that parents and guardians understand the potential consequences of not having children fully immunized - including seizures, meningitis, hearing impairment, and even death due to infectious diseases. Contractors should use and encourage their network providers to utilize resources from the CDC's National Immunization Program (NIP) such as Vaccine Information Statements (VIS), which provide easy-to-understand information on the benefits and risks of specific vaccines. A VIS must be provided to the recipient of any vaccine covered by the National Childhood Vaccine Injury Act (NCVIA) of 1986, which includes most immunizations given in childhood. These statements are available for all vaccines licensed in the U.S. Copies of VISs are available from state health authorities responsible for immunization. They can also be obtained from the CDC's website (www.cdc.gov) or from the Immunization Action Coalition (www.immunize.org). Translations of VISs into languages other than English also are available

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from the Immunization Action Coalition website and may be available from state immunization programs.

One approach to overcoming unwarranted parental refusal that is seeing some success nationally is provider education in regard to a parent's refusal at one visit and assisting them to understand that initial refusal may not mean that unnecessary fears and objections cannot be overcome in the future. Providers should continue attempts to educate parents that have previously refused vaccines, focusing on those that are the subject of the least amount of misinformation. Parent education is a strong factor that positively reinforces the notion of childhood vaccines. An article by Marotta and McNally shows that educational intervention methods can change a third of parents' minds who initially refused for their children to receive vaccines.

Contractors should encourage providers to identify families with missed vaccination and contact them to schedule appointments. The CDC has put up a call to action for health care providers, schools, state and local governments to assist children to catch up on their required vaccination. Due to the COVID-19 public health emergency, there has been a drop of children receiving recommended vaccines leading to more children unvaccinated. According to the CDC's public sector, there has been a 14 percent drop of vaccine ordering in 2020-2021 compared to orders in 2019, and the measles vaccine is down by more than 20 percent during the same time. The CDC's call to action recommends contacting families to schedule appointments, sending reminders to families, and encouraging vaccination scheduling to families who are not in compliance.

Contractors should continue to ensure that health care professionals who provide immunizations report all vaccinations to the Arizona State Immunization Information System (ASIS). With complete reporting, an automated registry is a valuable tool in helping providers determine the immunization status of children they are seeing at each visit, so that opportunities to vaccinate are not missed. This is especially important when children receive immunizations at multiple sites and parents do not have current immunization records. Use of ASIS to check patients' immunization status should prevent the need for them to return for vaccinations.

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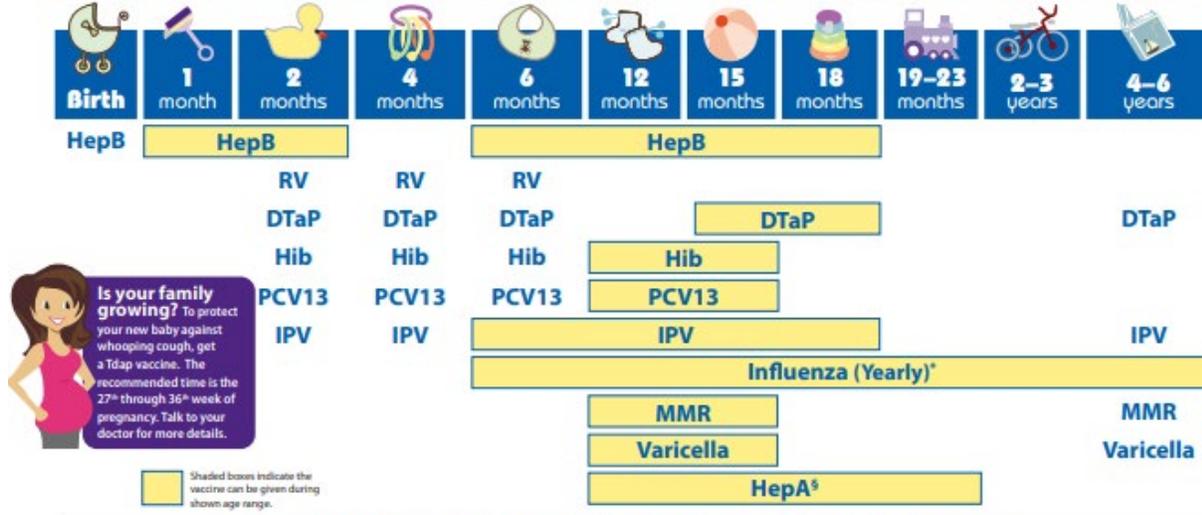
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Childhood Immunization Completion Rates

Appendix A

The recommended immunizations for children schedule can be found at the CDC Recommended Vaccinations for Infants and Children web page.

2022 Recommended Immunizations for Children from Birth Through 6 Years Old



COVID-19 VACCINATION IS RECOMMENDED FOR AGES 5 YEARS AND OLDER.

NOTE: If your child misses a shot, you don't need to start over. Just go back to your child's doctor for the next shot. Talk with your child's doctor if you have questions about vaccines.

FOOTNOTES:

- * Two doses given at least four weeks apart are recommended for children age 6 months through 8 years of age who are getting an influenza (flu) vaccine for the first time and for some other children in this age group.
- § Two doses of HepA vaccine are needed for lasting protection. The first dose of HepA vaccine should be given between 12 months and 23 months of age. The second dose should be given 6 months after the first dose. All children and adolescents over 24 months of age who have not been vaccinated should also receive 2 doses of HepA vaccine.

If your child has any medical conditions that put him at risk for infection or is traveling outside the United States, talk to your child's doctor about additional vaccines that he or she may need.



For more information, call toll-free **1-800-CDC-INFO** (1-800-232-4636) or visit www.cdc.gov/vaccines/parents



U.S. Department of Health and Human Services
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