

Table IMA-CH. Percentage of Adolescents Up to Date on Recommended Immunizations (Human Papillomavirus Vaccine and Combination 1) by their 13th Birthday, as Submitted by States for the FFY 2018 Child Core Set Report (n = 44 states)

State	Population	Methodology	Denominator	Rate	
				Human Papillomavirus (HPV) Vaccine	Combination 1
State Mean				32.3	71.7
State Median				32.3	77.3
Alabama	Medicaid only	Administrative	22,644	39.4	79.8
Alabama	CHIP only	Administrative	2,775	25.5	71.2
Arizona	Medicaid only	Hybrid	3,943	40.4	86.2
California	Medicaid & CHIP	Hybrid	23,254	41.3	NR
Connecticut	Medicaid & CHIP	Hybrid	411	36.7	89.5
Delaware	Medicaid & CHIP	Hybrid	411	47.2	82.0
Dist. of Col.	Medicaid & CHIP	Hybrid	881	58.6	78.2
Florida	Medicaid & CHIP	Administrative & Hybrid	93,458	33.1	71.7
Georgia	Medicaid & CHIP	Administrative	54,618	31.9	87.3
Hawaii	Medicaid & CHIP	Administrative & Hybrid	6,427	28.1	58.9
Illinois	Medicaid & CHIP	Administrative	68,305	33.5	83.8
Indiana	Medicaid & CHIP	Administrative & Hybrid	23,131	32.6	81.9
Iowa	Medicaid only	Administrative	8,983	7.5	46.9
Iowa	CHIP only	Administrative	2,119	9.0	51.5
Kansas	Medicaid & CHIP	Hybrid	1,233	31.9	72.0
Kentucky	Medicaid & CHIP	Hybrid	2,055	23.0	77.3
Louisiana	Medicaid & CHIP	Administrative	34,578	41.1	88.9
Maryland	Medicaid & CHIP	Hybrid	3,031	45.1	87.1
Massachusetts	Medicaid & CHIP	Hybrid	2,442	35.8	83.3
Michigan	Medicaid only	Administrative & Hybrid	30,896	37.7	85.1
Minnesota	Medicaid & CHIP	Administrative	20,905	56.1	78.8
Mississippi	Medicaid only	Hybrid	822	19.3	49.5
Mississippi	CHIP only	Hybrid	822	18.0	46.6
Missouri	Medicaid & CHIP	Hybrid	2,477	20.9	49.2
Montana	CHIP only	Administrative	996	16.5	51.3
Nebraska	Medicaid & CHIP	Administrative	6,848	21.6	64.3
Nevada	Medicaid only	Hybrid	822	40.1	83.4
Nevada	CHIP only	Hybrid	764	54.4	88.0
New Hampshire	Medicaid & CHIP	Hybrid	822	29.1	72.3
New Jersey	Medicaid & CHIP	Hybrid	1,792	31.3	86.5
New Mexico	Medicaid & CHIP	Hybrid	1,644	29.0	65.2
New York	Medicaid & CHIP	Hybrid	7,795	45.7	84.4
North Carolina	Medicaid only	Administrative	49,331	25.6	70.5
North Carolina	CHIP only	Administrative	7,019	26.2	70.9
Oklahoma	Medicaid & CHIP	Administrative	20,623	12.6	22.5
Oregon	Medicaid & CHIP	Administrative	12,061	22.7	66.3
Pennsylvania	Medicaid & CHIP	Hybrid	7,631	36.8	86.4
Rhode Island	Medicaid & CHIP	Hybrid	822	50.9	86.9
South Carolina	Medicaid & CHIP	Administrative	26,064	12.3	40.4
South Dakota	Medicaid & CHIP	Administrative	3,573	26.0	57.6
Tennessee	Medicaid only	Hybrid	4,100	24.6	70.6
Tennessee	CHIP only	Hybrid	411	15.1	64.9
Texas	Medicaid only	Administrative	123,812	30.1	77.4
Texas	CHIP only	Administrative	9,504	30.4	79.8
Utah	Medicaid only	Administrative & Hybrid	5,455	32.9	85.3
Utah	CHIP only	Administrative & Hybrid	696	39.2	89.5
Vermont	Medicaid & CHIP	Administrative	3,054	21.5	57.8

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State	Population	Methodology	Denominator	Rate	
				Human Papillomavirus (HPV) Vaccine	Combination 1
Virginia	Medicaid & CHIP	Hybrid	NR	60.3	73.0
Washington	Medicaid & CHIP	Administrative & Hybrid	32,165	40.6	75.9
West Virginia	Medicaid only	Hybrid	1,113	25.2	83.4
West Virginia	CHIP only	Administrative	717	8.9	39.1
Wisconsin	Medicaid & CHIP	Administrative & Hybrid	NR	35.2	75.4
Wyoming	Medicaid only	Administrative	1,397	8.7	28.2

Source: Mathematica analysis of MACPro reports for the FFY 2018 reporting cycle. More information on the Child Core Set is available at <https://www.medicaid.gov/medicaid/quality-of-care/performance-measurement/adult-and-child-health-care-quality-measures/child-core-set/index.html>.

Notes: This measure identifies the percentage of adolescents who turned 13 years old during the measurement year and had one dose of meningococcal vaccine, one tetanus, diphtheria toxoids and acellular pertussis (Tdap) vaccine, and completed the human papillomavirus (HPV) vaccine series by their 13th birthday. The measure calculates a rate for each vaccine and two combination rates. This table shows state reporting for the HPV vaccine rate and the Combination 1 rate (percentage receiving both meningococcal and Tdap vaccines). Specifications for the HPV Vaccine rate changed substantially for FFY 2018 and rates are not comparable with rates reported for previous years.

The term “states” includes the 50 states and the District of Columbia.

Means are calculated as the unweighted average of all state rates. When a state reported separate rates for its Medicaid and CHIP populations, the mean and median rates were calculated using the rate for the larger measure-eligible population.

Unless otherwise specified, states used Child Core Set specifications, based on National Committee for Quality Assurance 2018 specifications. The following states used National Committee for Quality Assurance 2017 specifications: NV and OR.

Unless otherwise specified, the measurement period for this measure was January 1, 2017 to December 31, 2017. AZ reported data for FFY 2016.

The Child Core Set specifications include guidance for calculating this measure using the administrative method or the hybrid method. The hybrid method uses a combination of administrative and medical records data to identify services included in the numerator or to determine exclusions from the denominator based on diagnoses or other criteria. Unless otherwise specified, administrative data sources are the state’s MMIS and/or data submitted by managed care plans; medical record data sources are paper and/or electronic health records.

Denominators are assumed to be the measure-eligible population for states using the administrative method; states using the hybrid method often reported the sample size for the medical chart review rather than the measure-eligible population. Some states reported exclusions from the denominator, as noted in the state-specific comments below.

ADHD = Attention-Deficit/Hyperactivity Disorder; CCO = Coordinated Care Organization; CHIP = Children’s Health Insurance Program; CMS = Centers for Medicare & Medicaid Services; CPT = Current Procedural Terminology; CY = Calendar Year; ED = Emergency Department; EPSDT = Early and Periodic Screening, Diagnostic, and Treatment; EQRO = External Quality Review Organization; FFS = Fee for Service; FFY = Federal Fiscal Year; HEDIS = Healthcare Effectiveness Data and Information Set; HMO = Health Maintenance Organization; ICD = International Classification of Diseases; LOINC = Logical Observation Identifiers Names and Codes; MACPro = Medicaid and CHIP Program System; MCO = Managed Care Organization; MMIS = Medicaid Management Information System; NCQA = National Committee for Quality Assurance; NR = Not Reported; PCCM = Primary Care Case Management; PCP = Primary Care Practitioner.

State-Specific Comments:

AL: Medicaid rates include FFS and PCCM populations.

AL: CHIP rates include separate CHIP population. Rates exclude children enrolled in Medicaid-expansion CHIP; these children are included in the state’s Medicaid rates.

AZ: Rates include managed care population (9 MCOs), representing 92 percent of the population. Rates exclude FFS population and state long-term care elderly, physically, or developmentally disabled

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	population, representing 8 percent of the population. Denominator is the sample size; measure-eligible population is 24,708. State conducted an internal validation of the data.
CA:	Rate includes managed care population (26 MCOs) continuously enrolled in the same plan the entire continuous enrollment period, representing 88 percent of the population. Rate excludes FFS population and managed care enrollees who were not in the same MCO for the entire continuous enrollment period, representing 12 percent of the population. State was not able to report the Combination 1 rate for this measure for FFY 2018. Denominator is the sample size; measure-eligible population is 206,638. Administrative data sources are MCO data systems and immunization registry. MCO rates were audited by certified HEDIS auditors.
CT:	Rates include FFS population. Denominator is the sample size; measure-eligible population is 13,640. Rates were audited by a certified HEDIS auditor.
DE:	Rates include managed care population (1 MCO), representing 86 percent of the population. Rates exclude FFS population and enrollees in one MCO, representing 14 percent of the population. Denominator is the sample size; measure-eligible population is 2,787.
DC:	Rates include managed care population (3 MCOs), representing 66 percent of the population. Rates exclude FFS population and one MCO, representing 34 percent of the population. Denominator is the sample size; measure-eligible population is 2,403. MCO rates were audited by certified HEDIS auditors.
FL:	Rates include FFS, PCCM, and managed care populations (21 MCOs). Rates were derived using both administrative and hybrid method data. Rates for the FFS population and two MCOs were calculated using the administrative method, while rates for 19 MCOs were calculated using the hybrid method. Denominator is the measure-eligible population. MCO rates were audited by a certified HEDIS auditor.
GA:	Rates include FFS and managed care populations (4 MCOs). Rates were validated by the state's EQRO.
HI:	Rates include managed care population (5 MCOs). Rates were derived using both administrative and hybrid method data. One MCO used the administrative method and four MCOs used the hybrid method. Denominator is the measure-eligible population. Rates were validated by the state's EQRO.
IL:	Rates include FFS, PCCM, and managed care populations (13 MCOs). Data sources are registry data and immunization data from the state Departments of Public Health and Human Services. Rates were validated by the state's EQRO.
IN:	Rates include managed care population (3 MCOs), representing more than 90 percent of the population. Rates exclude FFS population, representing less than 10 percent of the population. Rate was derived using both hybrid and administrative data. One MCO used the administrative method and two MCOs used the hybrid method. Denominator is the measure-eligible population. MCO rates were audited by certified HEDIS auditors.
IA:	Medicaid rates include FFS and managed care populations (3 MCOs). State applied optional exclusions.
IA:	CHIP rates include managed care population (3 MCOs). State applied optional exclusions.
KS:	Rates include managed care population (3 MCOs). Denominator is the sample size; measure-eligible population is 11,526. Rates were validated by the state's EQRO.
KY:	Rates include managed care population (5 MCOs), representing 95 percent of the population. Rates exclude FFS population, representing 5 percent of the population. Denominator is the sample size; measure-eligible population is 22,388. Rates were validated by certified HEDIS auditors.
LA:	Rates include FFS and managed care populations (5 MCOs). Rates were calculated using HEDIS-certified code and the state conducted an internal validation of the data.
MD:	Rates include managed care population (8 MCOs), representing 95 percent of the population. Rates exclude FFS population, representing 5 percent of the population. Denominator is the sample size; measure-eligible population is 22,446. Rates were audited by certified HEDIS auditors.
MA:	Rates include PCCM and managed care populations (5 MCOs), representing 74 percent of the population. Rates exclude FFS population, representing 26 percent of the Medicaid population and 18 percent of the CHIP population, but the majority of these children would not have been measure-eligible, including children who have other primary insurance, children with limited Medicaid benefits, children in premium assistance programs, new enrollees who have not yet enrolled in an MCO, and children in state custody. Denominator is the sample size; measure-eligible population is 20,851.
MI:	Rates include managed care population (11 MCOs), representing 80 percent of the population. Rates exclude FFS population, representing 20 percent of the population. Rates were derived using both administrative and hybrid method data. One MCO used the administrative method and ten MCOs used the hybrid method. Denominator is the measure-eligible population. MCO rates were validated by the state's EQRO.

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MN:	Rates include FFS and managed care populations (8 MCOs). Rates include paid claims only. Data sources are MMIS and state immunization registry. Rates were audited by a certified HEDIS auditor.
MS:	Medicaid rates include managed care population (2 MCOs), representing 64 percent of the population. Rates exclude FFS population, representing 36 percent of the population. Denominator is the sample size; measure-eligible population is 15,276.
MS:	CHIP rates include managed care population (2 MCOs). Denominator is the sample size; measure-eligible population is 2,213.
MO:	Rates include managed care population (3 MCOs), representing 72 percent of the Medicaid population and 49 percent of the CHIP population. Rate excludes FFS population as well as enrollees who did not meet continuous enrollment requirements for an MCO, representing 28 percent of the Medicaid population and 51 percent of the CHIP population. Denominator is the sample size; measure-eligible population is 6,554. MCO rates were audited by a HEDIS certified vendor.
MT:	Rates include FFS population. Rates exclude services provided by Federally Qualified Health Centers and Rural Health Clinics because claims for these services are processed separately.
NE:	Rates include FFS and managed care populations (3 MCOs).
NV:	Medicaid rates include managed care population (3 MCOs). Rates exclude FFS population. Denominator is the sample size; measure-eligible population is 7,971.
NV:	CHIP rates include managed care population (3 MCOs). Rates exclude FFS population. Denominator is the sample size; measure-eligible population is 1,112.
NH:	Rates include managed care population (2 MCOs), representing 88 percent of the population. Rates exclude FFS population, representing 12 percent of the population. Denominator is the sample size; measure-eligible population is 3,809. MCO rates were audited by certified HEDIS auditors.
NJ:	Rates include managed care population (5 MCOs), representing 93 percent of the population. Rates exclude FFS population, representing 7 percent of the population. Denominator is the sample size; measure-eligible population is 31,767.
NM:	Rates include managed care population (4 MCOs). Denominator is the sample size; measure-eligible population is 14,201. MCO rates were audited by certified HEDIS auditors.
NY:	Rates include managed care population (19 MCOs), representing more than 90 percent of the population. Rates exclude FFS population, representing less than 10 percent of the population. Denominator is the sample size; measure-eligible population is 85,853. State conducted an internal validation of the data.
NC:	Medicaid rates include FFS and PCCM populations. Rates were validated by an NCQA-certified vendor.
NC:	CHIP rates include FFS and PCCM populations. Rates were validated by an NCQA-certified vendor.
OK:	Rates include FFS and PCCM populations. Rates exclude enrollees in home- and community-based services waivers. State attributes lower performance to services being under-reported due to providers not using immunization codes during well-care visits.
OR:	Rates include managed care population (16 CCOs), representing 88 percent of the population. Rates exclude FFS population, representing 12 percent of the population. State used CVX codes to identify vaccines based on state analysis of coding practices for immunizations in the state. Data source is state immunization registry.
PA:	Rates include managed care population (19 MCOs). Denominator is the sample size; measure-eligible population is 47,437. Data were submitted by MCOs and compiled by the state's EQRO.
RI:	Rates include managed care population (2 MCOs), representing 85 percent of the population. Rates exclude FFS population, representing 15 percent of the population. Denominator is the sample size; measure-eligible population is 4,817.
SC:	Rates include managed care population (5 MCOs).
SD:	Rates include FFS population. Data sources are MMIS and state immunization registry.
TN:	Medicaid rates include managed care population (4 MCOs). Denominator is the sample size; measure-eligible population is 33,299. Rates were validated by the state's EQRO.
TN:	CHIP rates include the CHIP Health Plan Administrators and Medical Benefits Managers population. Denominator is the sample size; measure-eligible population is 4,356. Rates were validated by the state's EQRO.
TX:	Medicaid rates include FFS and managed care populations (29 MCOs). Rates were validated by the state's EQRO.
TX:	CHIP rates include managed care population (17 MCOs). Rates were validated by the state's EQRO.

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UT:	Medicaid rates include managed care population (4 MCOs), representing 85 percent of the population. Rates exclude FFS population, representing 15 percent of the population. Rates were derived using both administrative and hybrid method data. One MCO used the administrative method and three MCOs used the hybrid method. Denominator is the measure-eligible population. MCO rates were audited by certified HEDIS auditors.
UT:	CHIP rates include managed care population (2 MCOs). Rates were derived using both administrative and hybrid method data. One MCO used the administrative method and one MCO used the hybrid method. Denominator is the measure-eligible population. MCO rates were audited by certified HEDIS auditors.
VT:	Rates include statewide 1115 waiver population enrolled in a public non-risk prepaid inpatient health plan population, representing the total Medicaid population. Data sources are MMIS and state immunization registry.
VA:	Rates include managed care population (6 MCOs). State obtained rates from the NCQA Quality Compass and denominator is not available.
WA:	Rates include managed care population (5 MCOs), representing 97 percent of the population. Rates exclude FFS and PCCM populations, representing 3 percent of the population. Rates also exclude managed care populations who met the continuous eligibility requirement for Medicaid or CHIP but who were not enrolled in a single plan during the continuous enrollment period. State-level rate is based on a mix of administrative and hybrid method data. Four MCOs used the hybrid method and one MCO used the administrative method. Denominator is the measure-eligible population. Rates were audited by the state's EQRO.
WV:	Medicaid rates include managed care population (4 MCOs), representing 86 percent of the population. Rates exclude FFS population, representing 14 percent of the population. State applied optional exclusions. Rates include paid claims only. Denominator is the sample size; measure-eligible population is 6,364.
WV:	CHIP rates include FFS population. State attributes lower rate to transition in data systems, which resulted in incomplete claims data.
WI:	Rates include managed care population (18 MCOs), representing 80 percent of the population. Rates exclude FFS population, representing 20 percent of the population. Rates were derived using administrative and hybrid method data. Eight MCOs used the administrative method and 10 MCOs used the hybrid method. Measure-eligible population is not available.
WY:	Rates include FFS population.