

Childhood Immunization Status (NQF 0038)

EMeasure Name	Childhood Immunization Status	EMeasure Id	Pending
Version Number	1	Set Id	Pending
Available Date	No information	Measurement Period	January 1, 20xx through December 31, 20xx
Measure Steward	National Committee for Quality Assurance		
Endorsed by	National Quality Forum		
Description	The percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); two H influenza type B (HiB); three hepatitis B (Hep B), one chicken pox (VZV); four pneumococcal conjugate (PCV); two hepatitis A (Hep A); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The measure calculates a rate for each vaccine and two separate combination rates.		
Measure scoring	Proportion		
Measure type	Process		
Rationale	This measure monitors the appropriate and timely use of vaccines for children prior to their second birthday. Pediatric vaccines are responsible for preventing 10.5 million diseases per birth cohort in the U.S. and are a cost-effective preventive measure. For every dollar spent on immunizations, as many as \$29 can be saved in direct and indirect costs. With the development and use of vaccines, the prevalence of some infectious diseases has dramatically reduced; since the beginning of the 20th century, there has been a 99% decline in vaccine-preventable disease morbidity. Despite the established guidelines and well-known benefits of vaccination, however, in 2007, 22.5% of children 19–35 months of age had not received the recommended immunizations. General clinical consensus notes that if immunization practices ceased, most infectious diseases currently prevented by vaccinations would reemerge as serious health threats. This measure facilitates efforts toward infectious disease prevention among a vulnerable subgroup of the population.		
Clinical Recommendation Statement	Current CDC/ACIP Guidelines recommend infants and toddlers receive the Hepatitis B series, four DTaP vaccinations, four HiB vaccinations, three IPV vaccinations, one MMR vaccination, four pneumococcal conjugate vaccinations, and one varicella vaccination. Some combination products on the market include both the DTaP and HiB vaccines and should only be administered three times. In these cases, children receive three HiB vaccinations instead of the four mentioned above. The recommendation is to receive these vaccinations between birth and 18 months of age. The current HEDIS specifications allow a grace period by measuring compliance with these recommendations between birth and age two.		

Reference	CDC. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2006; 55(RR15);1-48 http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5515a1.htm
Definitions	
Guidance	<p>Measure 0038 lists 12 numerators for reporting. The first ten numerators indicate whether any individual has received the appropriate number of a specific immunization by the age of 2. The 11th and 12th numerators indicate whether any individual has received all of the expected doses of a group (or bundle) of immunizations. Note that each of the first 10 numerators, referring to a single vaccine (or vaccine combination - MMR) has a related (or paired) set of exclusions that apply only to the respective vaccine. The exclusion criteria are numbered identically to their respective numerators (e.g., MMR vaccines in Numerator 3 and MMR exclusions in Exclusion 3). Numerators 11 and 12 contain multiple vaccines. The exclusions for numerators 11 and 12 should be derived from the exclusions specified for the individual vaccines within those bundles.</p> <p>Note that numerator 3 is separated into numerator 3a (MMR vaccine) and numerator 3b (measles, mumps and rubella vaccines individually). Either 3a or 3b must be satisfied to meet the requirements of numerator 3. If there is an exclusion for any of the individual vaccines in numerator 3b, the patient is removed from the denominator. Similarly, for numerators 11 and 12, if there is an exclusion for any of the individual vaccines, the patient is removed from the denominator. Numerators 11 and 12 are intended to show only those patients for whom all of the listed vaccines have been performed.</p>

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Please refer to the spreadsheet for this measure for detail regarding data criteria and code lists.

Population criteria

- **Initial Patient Population =**
 - AND: "Patient characteristic: birth date" (age) ≥ 1 year and < 2 years to capture all patients who will reach 2 years during the "measurement period";
- **Denominator =**

- AND: All patients in the initial patient population;
- AND: "Encounter: encounter outpatient w/ PCP & obgyn";

- **Numerator 1=**

- AND:
 - OR: ≥ 4 count(s) of "Medication administered: DTaP vaccine", different dates, occurring ≥ 42 days and < 2 years after "Patient characteristic: birth date";
 - OR: ≥ 4 count(s) of "Procedure performed: DTaP vaccination", different dates, occurring ≥ 42 days and < 2 years after "Patient characteristic: birth date";

- **Numerator 2 =**

- AND:
 - OR: ≥ 3 count(s) of "Medication administered: IPV", different dates, occurring ≥ 42 days and < 2 years after "Patient characteristic: birth date";
 - OR: ≥ 3 count(s) of "Procedure performed: IPV vaccination", different dates, occurring ≥ 42 days and < 2 years after "Patient characteristic: birth date";

- **Numerator 3 =**

- AND:
 - OR Numerator 3a:
 - AND:
 - OR: ≥ 1 count(s) of "Medication administered: MMR", occurring < 2 years after the "Patient characteristic: birth date";
 - OR: ≥ 1 count(s) "Procedure performed: MMR vaccination", occurring < 2 years after the "Patient characteristic: birth date";
 - OR Numerator 3b:
 - AND:
 - OR: ≥ 1 count(s) of "Medication administered: rubella vaccine", occurring < 2 years after "Patient characteristic: birth date";
 - OR: ≥ 1 count(s) of "Procedure performed: rubella vaccination", occurring < 2 years after "Patient characteristic: birth date";
 - OR: "Diagnosis resolved: rubella";
 - AND:
 - OR: ≥ 1 count(s) of "Medication administered: measles vaccine", occurring < 2 years after "Patient characteristic: birth date";
 - OR: ≥ 1 count(s) of "Procedure performed: measles vaccination", occurring < 2 years after "Patient characteristic: birth date";
 - OR: "Diagnosis resolved: measles";
 - AND:

- OR: ≥ 1 count(s) of “Medication administered: mumps vaccine”, occurring < 2 years after “Patient characteristic: birth date”;
- OR: ≥ 1 count(s) of “Procedure performed: mumps vaccination”, occurring < 2 years after “Patient characteristic: birth date”;
- OR: “Diagnosis resolved: mumps”;

- **Numerator 4 =**

- AND:
 - OR: ≥ 2 count(s) of “Medication administered: HiB”, occurring ≥ 42 days and < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 2 count(s) of “Procedure performed: HiB vaccination”, occurring ≥ 42 days and < 2 years after “Patient characteristic: birth date”;

- **Numerator 5 =**

- AND:
 - OR: ≥ 3 count(s) of “Medication administered: hepatitis B vaccine”, occurring < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 3 count(s) of “Procedure performed: hepatitis B vaccination”, occurring < 2 years after “Patient characteristic: birth date”;
 - OR: “Diagnosis resolved: hepatitis B diagnosis”;
 - OR: “Diagnosis active: hepatitis B diagnosis”;

- **Numerator 6 =**

- AND:
 - OR: ≥ 1 count(s) of “Medication administered: VZV vaccine”, occurring < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 1 count(s) of “Procedure performed: VZV vaccination”, occurring < 2 years after “Patient characteristic: birth date”;
 - OR: “Diagnosis resolved: VZV”;

- **Numerator 7 =**

- AND:
 - OR: ≥ 4 count(s) of “Medication administered: pneumococcal vaccine”, occurring ≥ 42 days and < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 4 count(s) of “Procedure performed: pneumococcal vaccination”, occurring ≥ 42 days and < 2 years after “Patient characteristic: birth date”;

- **Numerator 8 =**

- AND:
 - OR: ≥ 2 count(s) of “Medication administered: hepatitis A vaccine”, occurring < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 2 count(s) of “Procedure performed: hepatitis A vaccination”, occurring < 2 years after “Patient characteristic: birth date”;
 - OR: “Diagnosis resolved: hepatitis A diagnosis”;
- **Numerator 9 =**
 - AND:
 - OR: ≥ 2 count(s) of “Medication administered: rotavirus vaccine”, occurring ≥ 42 days and < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 2 count(s) of “Procedure performed: rotavirus vaccination”, occurring ≥ 42 days and < 2 years after “Patient characteristic: birth date”;
- **Numerator 10 =**
 - AND:
 - OR: ≥ 2 count(s) of “Medication administered: influenza vaccine”, occurring ≥ 180 days and < 2 years after “Patient characteristic: birth date”;
 - OR: ≥ 2 count(s) of “Procedure performed: influenza vaccination”, occurring ≥ 180 days and < 2 years after “Patient characteristic: birth date”;
- **Numerator 11 =**
 - AND: All patients in numerator 1;
 - AND: All patients in numerator 2;
 - AND: All patients in numerator 3;
 - AND: All patients in numerator 4;
 - AND: All patients in numerator 5;
 - AND: All patients in numerator 6;
- **Numerator 12 =**
 - AND: All patients in numerator 1;
 - AND: All patients in numerator 2;
 - AND: All patients in numerator 3;
 - AND: All patients in numerator 4;
 - AND: All patients in numerator 5;
 - AND: All patients in numerator 6;
 - AND: All patients in numerator 7;
- **Exclusion 1=**
 - AND: :

- OR: “Medication allergy: DTaP vaccine”;
 - OR: “Diagnosis active: encephalopathy”;
 - OR: “Diagnosis active: progressive neurological disorder”;
- **Exclusion 2=**
 - AND:
 - OR: “Medication allergy: IPV”;
 - OR: “Medication allergy: neomycin”;
 - OR: “Medication allergy: streptomycin”;
 - OR: “Medication allergy: polymyxin”;
- **Exclusion 3a=**
 - AND :
 - OR: “Medication allergy: MMR vaccine”;
 - OR: “Medication allergy: mumps vaccine”;
 - OR: “Medication allergy: measles vaccine”;
 - OR: “Medication allergy: rubella vaccine”;
 - OR: “Diagnosis active: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis inactive: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis active: HIV disease”;
 - OR: “Diagnosis active: multiple myeloma”;
 - OR: “Diagnosis active: leukemia”;
 - OR: “Diagnosis active: immunodeficiency”;
- **Exclusion 3b=**
 - AND:
 - OR: “Medication allergy: mumps vaccine”;
 - OR: “Medication allergy: measles vaccine”;
 - OR: “Medication allergy: rubella vaccine”;
 - OR: “Diagnosis active: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis inactive: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis active: HIV disease”;
 - OR: “Diagnosis active: multiple myeloma”;
 - OR: “Diagnosis active: leukemia”;
 - OR: “Diagnosis active: immunodeficiency”;
- **Exclusion 4=**
 - AND: “Medication allergy: HiB”;
- **Exclusion 5=**
 - AND:
 - OR: “Medication allergy: Baker’s yeast”;
 - OR: “Substance allergy: Baker’s yeast substance”;
 - OR: “Medication allergy: hepatitis B vaccine”;

- **Exclusion 6=**
 - AND:
 - OR: “Diagnosis active: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis inactive: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis active: HIV disease”;
 - OR: “Diagnosis active: multiple myeloma”;
 - OR: “Diagnosis active: leukemia”;
 - OR: “Medication allergy: VZV vaccine”;
 - OR: “Diagnosis active: immunodeficiency”;
- **Exclusion 7=**
 - AND: “Medication allergy: pneumococcal vaccination”;
- **Exclusion 8=**
 - AND: “Medication allergy: hepatitis A vaccine”;
- **Exclusion 9=**
 - AND: “Medication allergy: rotavirus vaccine”;
- **Exclusion 10=**
 - AND:
 - OR: “Diagnosis active: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis inactive: cancer of lymphoreticular or histiocytic tissue”;
 - OR: “Diagnosis active: HIV disease”;
 - OR: “Diagnosis active: multiple myeloma”;
 - OR: “Diagnosis active: leukemia”;
 - OR: “Medication allergy: influenza vaccine”;
 - OR: “Diagnosis active: immunodeficiency”;
- **Exclusion 11=**
 - AND:
 - OR: Exclusion 1;
 - OR: Exclusion 2;
 - OR: Exclusion 3;
 - OR: Exclusion 4;
 - OR: Exclusion 5;
 - OR: Exclusion 6;
- **Exclusion 12=**
 - AND:
 - OR: Exclusion 1;
 - OR: Exclusion 2;
 - OR: Exclusion 3;
 - OR: Exclusion 4;
 - OR: Exclusion 5;

- OR: Exclusion 6;
- OR: Exclusion 7;

Data criteria (QDS Data Elements)

- **Initial Patient Population =**

- "Patient characteristic: Birth date" using "birth date code list" before the beginning of the "measurement period";

- **Denominator =**

- All patients in the initial patient population;
- "Encounter: encounter outpatient w/ PCP & obgyn" using "encounter outpatient w/ PCP & obgyn code list grouping" before or simultaneously to "measurement end date";

- **Numerator =**

- "Medication administered: DTaP vaccine" using "DTaP vaccine code list" before the "measurement end date";
- "Medication administered: IPV" using "IPV code list" before the "measurement end date";
- "Medication administered: MMR vaccine" using "MMR vaccine code list" before the "measurement end date";
- "Medication administered: mumps vaccine" using "mumps vaccine code list" before the "measurement end date";
- "Medication administered: measles vaccine" using "measles vaccine code list" before the "measurement end date";
- "Medication administered: rubella vaccine" using "rubella vaccine code list" before the "measurement end date";
- "Medication administered: HiB" using "HiB code list" before the "measurement end date";
- "Medication administered: hepatitis B vaccine" using "hepatitis B vaccine code list" before the "measurement end date";
- "Medication administered: VZV vaccine" using "VZV vaccine code list" before the "measurement end date";
- "Medication administered: influenza vaccine" using "influenza vaccine code list" before the "measurement end date";
- "Medication administered: hepatitis A vaccine" using "hepatitis A vaccine code list" before the "measurement end date";
- "Medication administered: rotavirus vaccine" using "rotavirus vaccine code list" before the "measurement end date";
- "Medication administered: pneumococcal vaccination" using "pneumococcal vaccination code list" before the "measurement end date";
- "Procedure performed: Dtap vaccination" using "DtaP vaccination code list grouping" before the "measurement end date";
- "Procedure performed: hepatitis B vaccination" using "hepatitis B vaccination code list grouping" before the "measurement end date";

- "Procedure performed: hepatitis A vaccination" using "hepatitis A vaccination code list grouping" before the "measurement end date";
- "Procedure performed: HiB vaccination" using "HiB vaccination code list grouping" before the "measurement end date";
- "Procedure performed: Influenza vaccination" using "Influenza vaccination code list grouping" before the "measurement end date";
- "Procedure performed: IPV vaccination" using "IPV vaccination code list grouping" before the "measurement end date";
- "Procedure performed: MMR vaccination" using "MMR vaccination code list grouping" before the "measurement end date";
- "Procedure performed: measles vaccination" using "measles vaccination code list grouping" before the "measurement end date";
- "Procedure performed: mumps vaccination" using "mumps vaccination code list grouping" before the "measurement end date";
- "Procedure performed: pneumococcal vaccination" using "pneumococcal vaccination code list grouping" before the "measurement end date";
- "Procedure performed: rotavirus vaccination" using "rotavirus vaccination code list grouping" before the "measurement end date";
- "Procedure performed: rubella vaccination" using "rubella vaccination code list grouping" before the "measurement end date";
- "Procedure performed: VZV vaccination" using "VZV vaccination code list grouping" before the "measurement end date";
- "Diagnosis resolved: measles" using "measles code list grouping" before "measurement end date";
- "Diagnosis resolved: mumps" using "mumps code list grouping" before "measurement end date";
- "Diagnosis resolved: rubella" using "rubella code list grouping" before "measurement end date";
- "Diagnosis resolved: hepatitis A diagnosis" using "hepatitis A diagnosis code list grouping" before "measurement end date";
- "Diagnosis resolved: VZV" using "VZV code list grouping" before the "measurement end date";
- "Diagnosis resolved: hepatitis B diagnosis" using "hepatitis B code list grouping" before "measurement end date";
- "Diagnosis active: hepatitis B diagnosis" using "hepatitis B diagnosis code list grouping" before "measurement end date";

● **Exclusions =**

- "Medication allergy: DTaP vaccine" using "DTaP vaccine code list" before or simultaneously to the "measurement end date";
- "Medication allergy: neomycin" using "neomycin code list" before "measurement end date";
- "Medication allergy: streptomycin" using "streptomycin code list" before "measurement end date";
- "Medication allergy: polymyxin" using "polymyxin code list" before "measurement end date";

- "Medication allergy: MMR vaccine" using "MMR vaccine code list" <=2 years before "measurement end date";
- "Medication allergy: mumps vaccine" using "mumps vaccine code list" before "measurement end date";
- "Medication allergy: measles vaccine" using "measles vaccine code list" before "measurement end date";
- "Medication allergy: VZV vaccine" using "VZV vaccine code list" before "measurement end date";
- "Medication allergy: influenza vaccine" using "influenza vaccine code list" before "measurement end date";
- "Medication allergy: Baker's yeast" using "Baker's yeast code list" before "measurement end date";
- "Substance allergy: Baker's yeast substance" using "Baker's yeast substance code list" before "measurement end date";
- "Medication allergy: hepatitis B vaccine" using "hepatitis B vaccine code list" before "measurement end date";
- "Medication allergy: hepatitis A vaccine" using "hepatitis A vaccine code list" before "measurement end date";
- "Medication allergy: rotavirus vaccine" using "rotavirus vaccine code list" before "measurement end date";
- "Medication allergy: pneumococcal vaccination" using "pneumococcal vaccination code list" before "measurement end date";
- "Medication allergy: HiB" using "HiB code list" before "measurement end date";
- "Medication allergy: rubella vaccine" using "rubella vaccine code list" before "measurement end date";
- "Medication allergy: IPV" using "IPV code list" before "measurement end date";
- "Diagnosis active: encephalopathy" using "encephalopathy code list grouping" before "measurement end date";
- "Diagnosis active: progressive neurological disorder" using "progressive neurological disorder code list" before "measurement end date";
- "Diagnosis active: cancer of lymphoreticular or histiocytic tissue" using "cancer of lymphoreticular or histiocytic tissue code list grouping" before "measurement end date";
- "Diagnosis inactive: cancer of lymphoreticular or histiocytic disease" using "cancer of lymphoreticular or histiocytic tissue code list grouping" before "measurement end date";
- "Diagnosis active: HIV disease" using "HIV disease code list grouping" before "measurement end date";
- "Diagnosis active: multiple myeloma" using "multiple myeloma code list grouping" before "measurement end date";
- "Diagnosis active: leukemia" using "leukemia code list grouping" before "measurement end date";
- "Diagnosis active: immunodeficiency" using "immunodeficiency code list grouping" before or simultaneously to "measurement end date";

Summary calculation

Calculation is generic to all measures:

- Calculate the final denominator by adding all that meet denominator criteria.

- Subtract from the final denominator all that do not meet numerator criteria yet also meet exclusion criteria. Note some measures do not have exclusion criteria.
- The performance calculation is the number meeting numerator criteria divided by the final denominator.
- For measures with multiple patient populations, repeat this process for each patient population and report each result separately.
- For measures with multiple numerators, calculate each numerator separately within each population using the paired exclusion.

Measure set	CLINICAL QUALITY MEASURE SET 2011-2012
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