



Childhood Vaccination is one of twenty Maternal and Child Health (MCH) **National Performance Measures (NPMs)** for the Title V MCH Services Block Grant to States Program. This NPM is focused on increasing the percent of children who have completed the combined 7-vaccine series by age 24 months.

There are three related **Standardized Measures (SMs)** focused on specific vaccinations: 1) **Measles, Mumps, Rubella (MMR) Vaccination** (percent of children in kindergarten who have received at least two doses of the MMR vaccine); 2) **Influenza (Flu) Vaccination** (percent of children, 6 months through 17 years, who are vaccinated annually against seasonal influenza); and 3) **Human Papillomavirus (HPV) Vaccination** (percent of adolescents, ages 13 through 17, who have received at least one dose of the HPV vaccine).

The [What Works Evidence Accelerators](#) provide background information and a summary of effective strategies to advance each of the topic areas. The strategies support increased adherence to vaccination requirements and uptake of recommended vaccines as well as policy changes that facilitate increased access to childhood vaccines.

Overview. Childhood vaccination is defined as “injections (shots), liquids, pills, or nasal sprays that you take to teach the immune system to recognize and defend against harmful germs” taken before the age of adulthood and is considered one of the most cost-effective preventive services available.^{1,2} The Advisory Committee on Immunization Practices (ACIP) recommends that children receive timely vaccinations against 14 potentially serious illnesses during the first 24 months of life.³

Children who receive vaccinations before adulthood decrease their risk of illness, morbidity, or mortality from childhood diseases, such as measles.⁴ They also provide community protection for those who cannot get vaccinated due to age or weakened immune systems. Vaccinations can cut down health and childcare costs for families by decreasing the costs associated with lost time at work or long-term disability care due to illness.⁵

Vaccines are safe for children; they must undergo extensive safety testing and evaluation before they are approved in the U.S.³ Children typically receive vaccines during well-child visits according to an immunization schedule.³ Many of the vaccines require multiple doses to be effective and boosters to sustain immunity.⁶

The [American Academy of Pediatrics \(AAP\)/Bright Futures immunization schedule](#) is applicable for all children and youth unless specific health conditions or exemptions indicate the contrary.^{6,7,8}

For [Childhood Vaccination](#), there are 26 evidence-based strategies from [MCHbest](#) and 8 field-based practices from [Innovation Hub](#) (see page 3)

The combined 7-vaccine series (4:3:1:3*:3:1:4). This consists of ≥4 doses of diphtheria and tetanus toxoids and acellular pertussis vaccine; ≥3 doses of poliovirus vaccine; ≥1 dose of measles-containing vaccine; ≥3 or ≥4 doses (depending upon product type) of Haemophilus influenzae type b conjugate vaccine; ≥3 doses of hepatitis B vaccine; ≥1 dose of varicella vaccine; and ≥4 doses of pneumococcal conjugate vaccine.

Data. This NPM is measured through data from the [National Immunization Surveys \(NIS\)](#). For the combined 7-vaccine series, the vaccination coverage by age 24 months among children born during 2016-2017 was 69.8% and for 2018-2019 was 70.1%.⁹ In 2020 and 2021, while there was no significant decline in overall vaccination coverage for the combined 7-vaccine series for children aged 24 months, coverage declined by 4-5% for children living below the federal poverty line or in rural areas during the COVID-19 pandemic.⁹

For the SMs, vaccination data is as follows:

- For the 2021-2022 school year, 93% of children enrolled in kindergarten received 2 or more doses of MMR, a 0.8-0.9% decrease from the 2020-2021 school year.^{2,10,11}
- For the 2020-2021 flu season, 58.6% of children ages 6 months-17 years were vaccinated against seasonal flu, a decrease of 5.1% from the 2019-2020 flu season.^{12,13}
- From 2020 to 2021, HPV vaccination coverage for youth increased from 75.1% to 76.9%.¹⁴

Social Determinants of Health (SDOH).

Immunization disparities are a result of underlying systemic barriers and biases that persist due to lack of access to immunization, unaffordability, and other system, policy, and environmental barriers that lead to differential receipt of childhood vaccines.¹⁵

[Vaccines for Children \(VFC\)](#), a federally funded program that provides no cost vaccines to children who might not otherwise be vaccinated, and the Affordable Care Act have improved access to recommended vaccines and positively impacted rates to help close the gap in immunization inequities.¹⁵

Recommendations to further close the gap include:

- Increased collaboration between state and jurisdiction immunization programs, who are responsible for the VFC program, and pharmacies to participate in the VFC program, especially in rural areas where pharmacists are among the few accessible immunization providers.¹⁵
- Targeted communication strategies to promote tested messages about the benefits of childhood vaccination to reach underserved groups.¹⁵

Health Equity. [Health equity](#) necessitates that all people should have a fair opportunity to attain their full health potential, including access to and receipt of vaccinations.¹⁵ However, significant disparities in childhood vaccination rates persist.¹⁶ African American infants, infants born to mothers with less than high school education, and infants in families with an income below poverty were less likely to get the complete 7-vaccine series.¹⁶

Strategies to combat these disparities include:

- Free vaccination coupled with no additional fees, linked with programs frequently accessed by low-income families is a potential solution.¹⁶
- School-based programs are effective in improving immunizations among children from socioeconomically disadvantaged groups when they are embedded in academic and extra-curricular regulations and mandates.^{17, 18, 19}
- Collaborative work with families and community centers is critical to improving vaccination rates and decreasing barriers, such as insurance costs and location accessibility, for underserved groups.^{2, 18}

Exemptions. It is important to understand factors that influence the exemption needs and desires of some families.²⁰ Health care exemptions exist in all 50 states for immunocompromised children and those with a severe allergy or prior serious adverse event due to a vaccine ingredient.²¹ As of April 2022, six states did not allow a non-medical exemption (a religious or personal belief exemption) to vaccination.^{21, 22} Strategies to address vaccine hesitancy include health education, engaging trusted community leaders to counter vaccine disinformation, provider prompts, financial incentives, and provider-parent interventions.^{10, 19}

Key Resources. Systematic reviews showcase how interventions, like tightening rules around exemptions in school-based requirements, are associated with increased vaccination uptake and completion.¹⁰ Strategies such as reducing costs, linking immunizations to Women Infant and Children (WIC) services, and home visiting, have been impactful for increasing vaccinations among groups with low access to immunization services.¹³

Search the [Established Evidence database](#) for peer-reviewed research articles related to strategies for improving childhood vaccination rates.

Find [field-based resources](#) focused on improving childhood vaccination rates relevant to Title V programs in the [MCH Digital Library](#).

Partnership and the Role of Title V. Title V agencies can help increase childhood vaccinations by:

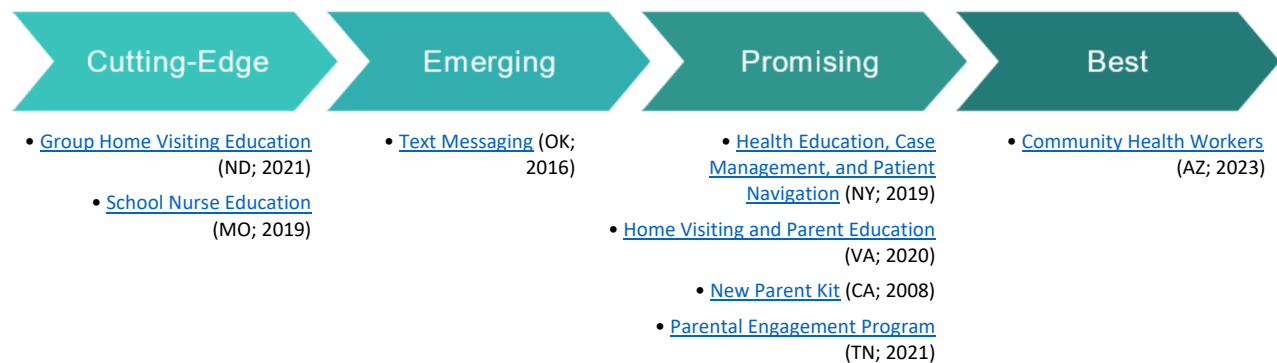
- **Supporting School-Based Efforts.** Enhancing school-based accessibility by supporting the tightening of requirements for entry in school districts, such as additional requirements around exemptions, and supporting vaccine care in schools through immunization clinics in partnership with health care providers and local health departments.^{7, 13, 15, 16}
- **Decreasing Economic Barriers.** Providing legislative support to decrease financial barriers around vaccines, such as offering home visits to reduce transportation burden, providing family incentives, and increasing reimbursement for childhood vaccinations.^{3, 13}

Childhood Vaccination Strategies. This page summarizes the latest strategies and practices that have emerged as potential approaches for increasing the percent of children, ages 0-17, who have completed recommended vaccination series for combined 7-vaccine series, MMR, Influenza, and HPV. It provides a framework to identify, understand, and implement “what works” in creating new Evidence-based/informed Strategy Measures (ESMs). Use the links below to access strategy and practice details, approaches, supporting evidence, outcomes, and examples of how Title V agencies are either using these strategies directly or adopting components of the intervention that address this NPM.

Evidence-Based/Informed Strategies. 26 strategies have emerged from studies in the scientific literature as being effective in advancing the NPM. They can be adopted or adapted to meet your program needs. More information on these strategies can be found in the MCH Evidence Center’s [MCHbest](#) database.



Field-Based Practices. 8 practices from state-/community-based programs have emerged as potential approaches for advancing the NPM for specific communities or populations. They can be used as models to meet your program needs. More information can be found in the Association of Maternal and Child Health Program’s (AMCHP’s) [Innovation Hub](#).



Key Findings. The following are key findings emerging from the literature:

1. There were no major differences in the strategies used to increase immunization rates for the combined 7-vaccine series versus specific vaccines (MMR, influenza, and HPV).
2. Policy interventions that require vaccinations for integral aspects of community participation have led to a consistent and significant uptake of vaccines in communities without facing hurdles like vaccine hesitancy.²³⁻²⁸
3. Provider training and education uses virtual modules or in-person sessions to educate providers. These interventions create an increase in understanding vaccination needs and provider confidence in sharing information with parents.²⁹⁻³⁵
4. There has been emerging success with equitable care efforts in community outreach and community-based events reaching populations that are less often vaccinated.^{36, 37}
5. Utilizing hospital and care facility data systems has shown success in increasing vaccination uptake. Using Electronic Medical Record data to find eligibility then auto-generating vaccination orders and reminders on appointments for those eligible has created significant vaccination increase.³⁸⁻⁴⁰

Discussion: Research, Practice, Partnership.

Research. Multiple strategies are emerging as potential approaches to advance this NPM, but they have not been studied with enough rigor to be included in the evidence-based continuum or have had varying significance in increasing uptake. Additional research is needed to verify outcomes, but initial studies have shown promise of these strategies in MCH settings:

- Reducing financial barriers through free/funded vaccination efforts.⁴¹
- Parent-based interventions centering active and inclusive efforts like parent-child dyads and involved motivational interviewing.⁴²⁻⁴⁵
- School-based vaccination programs with student education opportunities.⁴⁶⁻⁴⁸

- Vaccination education and awareness campaigns through social media and technology.^{49, 50}

Practice. The following tools can be used to translate evidence to action to advance this NPM:

- [BeSD Tools and Practical Guidance](#) (WHO). This guidebook supports the use of tools around behavioral and social drivers of vaccination.
- [Immunization Services Checklist](#) (CDC). CDC's checklist for clear-cut ways to improve a practice's efficiency and increase coverage rates.

Partnership. The following organizations focus efforts on increasing childhood vaccinations:

- [The National Center for Health Research](#) focuses on vaccination efforts through the Vaccines for Children Program.
- [Community Preventive Services Task Force](#) provides snapshots, recommendations, and considerations for vaccination implementation.



Frameworks and Tools for “What Works.”

Use this accelerator to strengthen current or new programs that align with multiple MCH frameworks across domains and settings. Access toolkits related to these frameworks for additional resources:

- [MCH Evidence Framework](#)
- [Blueprint for Change for CYSHCN](#)
- [Maternal Health Toolkit](#)
- [Life Course and Social Determinants Brief](#)

Need More Help? [Contact us for training and technical assistance](#) customized to your needs.

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