

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION**

Committees on Appropriations of the House of Representatives and the Senate

**Report to Congress on
Section 317 Immunization Program - Cost Estimates**

A handwritten signature in black ink that reads "Mandy K. Cohen". The signature is written in a cursive style with a long horizontal flourish at the end.

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Overview

The Joint Explanatory Statement for the Fiscal Year (FY) 2022 appropriation for the Department of Health and Human Services (HHS), Consolidated Appropriations Act, 2022 states the following:

“Unless otherwise noted, the language set forth in House Report 117-96 carries the same weight as language included in this explanatory statement and should be complied with unless specifically addressed to the contrary in this explanatory statement.”
(P.L. 117-103, HR 2471 “Consolidated Appropriations Act, 2022”, Division H, Joint Explanatory Statement, pg. 1)¹

Section 317 Immunization Program Cost Estimates – The Committee looks forward to reviewing the fiscal year 2023 report on estimated funding needs of the Section 317 Immunization Program and urges that the report be updated and submitted not later than February 1, 2022. The updated report should include an estimate of optimum State and local operations funding, as well as a discussion of the role of the 317 Program, as coverage for vaccination under public and private resources continues to evolve. The fiscal year 2023 report should include specific information on the estimated cost to fully address evidence-based public health strategies that could be funded through CDC to improve coverage for human papillomavirus and influenza.
(House Report 117-96, pg. 80)²

In addition, the Joint Explanatory Statement for the Fiscal Year (FY) 2023 appropriation for the Department of Health and Human Services (HHS), Consolidated Appropriations Act, 2023 states the following:

“Unless otherwise noted, the language set forth in House Report 117-403 carries the same weight as language included in this explanatory statement and should be complied with unless specifically addressed to the contrary in this explanatory statement.”
(H.R. 2617, “Consolidated Appropriations Act, 2023”, Division H, Joint Explanatory Statement, pg. 49)³

Cost Estimates – The Committee urges that the report on estimated funding needs of the Section 317 Immunization Program be updated and submitted not later than February 1, 2023. The updated report should include an estimate of optimum State and local operations funding, as well as a discussion of the role of the 317 Program, as coverage for vaccination under public and private resources continues to evolve. It should also include specific information on the estimated cost to fully address evidence-based public health strategies that could be funded through CDC to improve coverage for human papillomavirus (HPV) and influenza.
(House Report 117-403, pg. 71)⁴

¹ https://docs.house.gov/bills/thisweek/20220307/BILLS-117RCP35-JES-DIVISION-H_Part1.pdf

² <https://www.congress.gov/117/crpt/hrpt96/CRPT-117hrpt96.pdf>

³ <https://www.appropriations.senate.gov/imo/media/doc/Division%20H%20-%20LHHS%20Statement%20FY23.pdf>

⁴ <https://www.congress.gov/117/crpt/hrpt403/CRPT-117hrpt403.pdf>

The Centers for Disease Control and Prevention (CDC) prepared this report as a combined response to the FY 2022 and FY 2023 request from the Committees on Appropriations of the House of Representatives and the Senate. The report provides CDC’s FY 2024 professional judgment estimates for a comprehensive immunization program, which includes estimates on the size and scope for a fully implemented Section 317 Immunization Program. This report is not a budget document and is provided without regard to the competing priorities that the CDC Director, the Secretary, and the President must consider when developing the President’s Budget.

Introduction

In preparing this report, CDC acknowledges that the COVID-19 pandemic has had a profound impact on the lives of Americans, with over 104 million⁵ infected with the SARS-CoV-2 virus and the somber milestone of over 1.1 million deaths.⁶ Concurrently, the pandemic severely disrupted the U.S. economy, with the loss of millions of jobs, disruptions to the supply chain, and closure of small and large businesses, adding to the number of people without health insurance.^{7,8} Healthcare use significantly changed as patients were hesitant to visit providers for routine preventive health services, including immunization. CDC released a seminal report, [Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration — United States, 2020](#),⁹ which signaled a decline in routine childhood immunization, including vaccines to prevent measles. For example, among kindergarteners, overall vaccination coverage dropped from 95 percent reported in the 2019-2020 school year to 93 percent in the 2021-2022 school year, which means that there are nearly 250,000 kindergarteners who may not be completely protected against measles alone.¹⁰ Subsequent calls to action were issued by CDC and its partners to address these dangerous declines. In the time since the report’s release and subsequent calls to action, orders for routine childhood immunization have returned to pre-pandemic levels, and vaccine administration has improved, but continues to lag.

Vaccines remain one of the most effective and successful tools for protecting the public’s health against vaccine-preventable diseases (VPDs) across the human lifespan. In the United States, even considering the vaccination declines experienced during the pandemic, there are record-high immunization coverage rates for most childhood vaccines¹¹ and increasing coverage rates for adolescent¹² and adult vaccines.¹³ Americans have benefited from significant reductions in, and in some cases elimination of, once common and deadly diseases such as diphtheria, smallpox, measles, and polio (see Appendix 2). The Section 317 Immunization Program plays an essential role in protecting communities from VPDs, including providing a safety net for uninsured adults, responding to outbreaks of VPDs, and ensuring a scientifically sound and robust immunization infrastructure.

⁵ CDC COVID Data Tracker as of 04/21/23; accessed 4 21, 2023.

⁶ NCHS Deaths due to COVID-19 (underlying and contributing); accessed 05 17, 2023.

⁷ Health Insurance Coverage in the United States: 2020 (census.gov); accessed 05 17, 2023.

⁸ How Many Americans Have Lost Jobs with Employer Health Coverage During the Pandemic?; accessed January 20, 2021.

⁹ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6919e2.htm>

¹⁰ <https://www.cdc.gov/mmwr/volumes/72/wr/mm7202a2.htm>

¹¹ CDC. Vaccination Coverage by Age 24 Months Among Children Born in 2018 and 2019 — National Immunization Survey-Child, United States, 2019–2021. *MMWR* 2023; 72(2): 33-38.

¹² CDC. National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13-17 Years--United States, 2021. *MMWR*. 2022; 71(35):1101-1108.

¹³ CDC. Surveillance of Vaccination Coverage Among Adult Populations - United States, 2018. *MMWR-SS* 2021:70(3); 1:26.

The Section 317 Immunization Program plays an essential role in protecting communities from VPDs. The planning and implementation of the COVID-19 vaccine rollout that began in calendar year 2020 has underscored the importance of this infrastructure for vaccine delivery and administration. To achieve our goal of building a complete immunization program for protection against VPDs across the human lifespan, robust public-private partnerships must exist. These partnerships must work to develop safe and effective vaccines, make national vaccine recommendations, pay for the vaccines, assure equitable access across all populations, vaccinate target populations, monitor vaccine coverage, assess effectiveness and safety, and help providers and the public make informed vaccination decisions.

The Evolving Role of the Section 317 Immunization Program

Enacted in 1962 to protect the American people from VPDs,¹⁴ the Section 317 Immunization Program has evolved throughout its sixty-year history to address our nation's most important vaccination needs. Today, the Section 317 Immunization Program provides most of the financial support for the nation's immunization infrastructure, which consists of public health experts and systems to implement our nation's immunization policies and programs, as well as a flexible federal supply of vaccine that can be used in response to VPD outbreaks and other urgent vaccine needs.

This immunization infrastructure supports the nation's public health by:

- Promoting immunization recommendations across the human lifespan
- Fostering convenient access to recommended vaccinations
- Supporting science-based communication efforts to convey the benefits of vaccines to the public to support informed vaccination decisions allowing individuals to protect themselves and their loved ones
- Educating healthcare providers about current immunization policies and clinical best practices that help protect their patients and communities from VPDs
- Providing limited vaccines for those who cannot otherwise access immunization services
- Managing responses to vaccine shortages
- Monitoring the safety and effectiveness of vaccines and vaccine policies
- Limiting disease outbreaks via early and rapid response
- Comprehensive preparedness planning for urgent vaccine-preventable emergencies, such as pandemics

A robust immunization program assures equitable access to vaccines throughout the lifespan. The Section 317 Immunization Program is a critical resource in meeting national immunization priorities, such as maintaining high childhood immunization coverage, increasing influenza vaccination coverage for all people, and supporting Americans in making the decision to vaccinate with confidence. Most of the funding from the Section 317 Immunization Program provides the staff, data systems, and educational materials needed to support implementation of the mandatory Vaccines for Children (VFC) program. A smaller portion of Section 317 Immunization Program resources support purchases for adult immunization initiatives and

¹⁴ 42 U.S.C. § 247b.

providing vaccinations during an infectious disease outbreak or public health emergency. A robust immunization infrastructure, through a combination of discretionary and mandatory funding mechanisms, maintains this essential core public health infrastructure and bridges gaps in access to vaccinations to protect the public's health.

CDC funds 64 cooperative agreements with states, territories, and local jurisdictions to maintain and improve their immunization infrastructure. These immunization program awards support the essential state public health immunization workforce, ensure program effectiveness, and scientifically sound immunization policy. CDC also continues to provide technical assistance and laboratory support to its awardees in response to cases of VPDs, including outbreaks. Most discretionary immunization funding supports essential functions, including data systems to monitor disease trends and outbreaks, vaccine distribution, immunization information systems, vaccine effectiveness studies, and vaccine provider education.

Enacted in 1993, the VFC Program provides vaccines to children who are Medicaid-enrolled, American Indian/Alaska Native, or un- or underinsured. This entitlement mandatory funding program helps ensure that all children have a better chance of getting their recommended vaccinations on schedule. Vaccines available through VFC are those recommended by the Advisory Committee on Immunization Practices (ACIP). Funding for VFC is approved by the Office of Management and Budget (OMB) and allocated through the Centers for Medicare & Medicaid Services (CMS) to CDC. CDC buys vaccines at a discount and distributes them to its 64 immunization grantees, which in turn distribute them at no charge to VFC registered providers, including private physicians' offices and public health clinics.¹⁵ The majority of vaccine doses are purchased with VFC mandatory funds, rather than with the 317 immunization program funding. Given the broad mandate of the Section 317 Immunization Program needs include resources to support adult vaccine purchase for the uninsured IT infrastructure, and for programmatic and communication efforts to build confidence among vulnerable groups.

The Section 317 Immunization Program provides the base funding for program operations to assure equitable access to human papillomavirus (HPV) vaccines. HPV vaccination can prevent more than 90 percent of cancers caused by HPV and prevent cancer precursors. The Healthy People 2030 Objectives set a target that 80 percent of adolescents aged 13 through 15 years receive recommended doses of the HPV vaccine. CDC has been supporting the National HPV Vaccination Roundtable, a coalition of public, private, and voluntary organizations with expertise relevant to increasing HPV vaccination rates in the United States, as a way to reduce illness and death from HPV cancers through coordinated leadership and strategic planning. The FY 2024 President's Budget proposes an increase of \$15,000,000 for CDC to increase vaccine uptake, with most of the funding to support working with professional and other organizations to increase awareness, education, and training on HPV vaccination for cancer prevention. CDC will also enhance collaborations with health systems, health plans, and payors to increase vaccine uptake.

The COVID-19 vaccination campaign that began in 2020 has highlighted the importance of the Section 317 Immunization Program and the expansion needed for vaccine delivery across the nation. A strong state and local immunization infrastructure is essential to assure access to

¹⁵ <https://www.cdc.gov/vaccines/programs/vfc/about/index.html>

vaccines throughout the lifespan and ensures our nation can meet the needs of mass vaccination campaigns during a public health emergency.

The Section 317 Immunization Program is limited to serving only those as its funding allows. Currently, only about three percent of annually appropriated funds are spent on purchasing vaccines for un- or underinsured adults. The limited support for infrastructure to support adult immunization hindered the roll-out of the COVID-19 vaccines. Many of the systems and relationships needed to ensure timely, safe, and equitable distribution of vaccine to adult populations are distinct from the existing pediatric network that implements the VFC program. They were either non-existent or lacking adequate capacity for an adult program at the outset of the COVID-19 vaccination program. The missing infrastructure included vaccine safety systems with the capacity to rapidly monitor a new vaccine recommendation, immunization data tracking systems, adult provider outreach, and community-based partnerships to address vaccine confidence and health equity issues.

Over its more than sixty-year history, the Section 317 Immunization Program has continued to evolve and adapt to meet new challenges and changing needs. The program's flexibility to respond to immunization priorities and urgent needs allows it to support high immunization coverage rates and low occurrence of VPDs.

Professional Judgment Estimates

CDC developed the following professional judgment estimates for program operations and vaccine purchase costs. This Section 317 Immunization Program Report to Congress represents a professional judgment of what is necessary to support a fully implemented, comprehensive immunization program. It is provided without considering competing priorities that the CDC Director, the Secretary, and the President must consider when developing the President’s Budget. The approach estimates the costs of prevention opportunities within the scope of the Section 317 Immunization Program—accounting for changes in the recommended immunization schedules and projecting changes to the immunization financing environment. These estimates cannot account for unanticipated changes in vaccine financing and are based on the best available information at the time of the estimates.

Table 1. CDC FY 2024 Professional Judgment Estimates

| | |
|------------------------------------|-------------------|
| Program Operations | |
| State and Local | \$879.7 million |
| National | \$263.8 million |
| Total | \$1,143.5 million |
| Vaccine Purchase | |
| Uninsured Adults | \$260.8 million |
| Time-Sensitive Public Health Needs | \$214.1 million |
| Total | \$474.9 million |

Program Operations

Total Program Operations (Cost per Dose Methodology): \$1,143.5 million (Tables 2, 3, and 4; Appendix 3)

Table 2. Total Operations

| | |
|---|-------------------|
| State and Local Immunization Operations | \$879.7 million |
| National Program Operations | \$263.8 million |
| Total | \$1,143.5 million |

Methods

In previous reports, CDC used a cost per dose methodology to calculate an overall operations estimate. This report provides updated estimates to fully support immunization program operations conducted at the state, local, and national levels that together support the national immunization program. As in previous reports, FY 2000 was used as a benchmark because it was the last year before the licensure of many new childhood and adult vaccines. Thus, the methodology uses the operations funding available in FY 2000 as a baseline estimate for distributing the doses needed to fulfill the vaccine recommendations in place in 2000. For the state and local immunization program operations estimate, the baseline represents the operations

funding provided in FY 2000 for all state and local activities required to support the number of Immunization Program and VFC vaccine doses distributed in FY 2000. Section 317 Immunization Program operations funding supports the state and local public health workforce that implements the Section 317 immunization Program and the VFC program. For the program operations conducted at the national-level estimate, the baseline represents the operations funding provided in FY 2000 for all national-level activities required to support all vaccine doses (Immunization Program, VFC, state, and private) distributed in FY 2000.

CDC implemented this approach to find a more objective approach to creating the estimates for overall Immunization Program operations. Given that CDC based the calculations on the baseline FY 2000, CDC uses the Consumer Price Index (CPI) for all Urban Consumers (CPI-U) provided by OMB to adjust for current day dollars. CDC has used the same methodology each year to ensure consistency for each year's professional judgement estimate.

In each report, in calculating the projections, CDC has applied the CPI cumulatively to the FY 2000 baseline. Thus, rather than recalculate the baseline from FY 2000 to FY 2024, CDC added in the CPI increase for the new report year, in this case, from FY 2023 to FY 2024. Also, CDC uses the CPI-U medical annual average. CDC has again used this standard methodology in this report to ensure consistency and comparability of the report over time.

State and Local Immunization Program Operations Estimate: \$879.7 million (Table 3)

To derive the state and local immunization program operations estimate, CDC calculated the baseline operations cost per dose by dividing the total amount of Section 317 Immunization Program and VFC program operations funding available in FY 2000 (\$182.6 million) by the number of Section 317 Immunization Program and VFC vaccine doses distributed in FY 2000 (52.3 million doses). The \$3.49 cost per dose rate is equal to \$7.25 when adjusted for FY 2024 dollars using the CPI.¹⁶ CDC then applied the \$7.25 rate to the total amount of doses projected for the Section 317 and VFC programs in FY 2024, which includes total baseline doses (excluding influenza) adjusted for population growth (52.6 million doses) and the number of doses of newly recommended vaccines (including influenza) since FY 2000 for children (59.0 million doses) and adults (9.8 million doses).¹⁷

¹⁶ Based on CPIU provided by OMB (4.0 percent in 2024) and adjusted from \$6.97 in FY 2023.

¹⁷ Between 2000 and 2015, the following new vaccine and/or new vaccine dose recommendations were made for the childhood and adult populations: PCV, influenza, hepatitis A, Tdap, meningococcal, rotavirus, varicella, HPV, and herpes zoster.

Table 3. Federal Contribution to State and Local Immunization Program Operations (Cost per Dose Methodology)

| Fiscal Year | Doses of Section 317 and VFC Vaccine | | State and Local Program Operations Cost per Dose | |
|--------------------|---|---------------------------|---|------------------------|
| 2000 | Baseline Doses, Including Influenza | 52,250,229 ¹ | 317 Operations | \$132.6 million |
| | | | VFC Operations | \$50.0 million |
| | | | Total | \$182.6 million |
| | | | Operations per Dose <i>(\$182.600 million / 52.3 million)</i> | \$3.49 |
| 2024 | Baseline Doses, Excluding Influenza, Adjusted for Population Growth | 52,601,630 ^{2,3} | 2000 Operations per Dose, Adjusted for 2024 Dollars ⁴ | \$7.25 |
| | New Doses, Including Influenza | | | |
| | Children (aged 0-18) | 58,955,615 | | |
| | Adult | 9,783,369 | | |
| | Total New Doses | 68,738,984 | | |
| | Total Doses <i>(Baseline Doses Adjusted for Population Growth + New Doses)</i> | 121,340,614 | Total Federal Contribution <i>(121,340,614 x \$7.25)</i> | \$879.7 million |

¹ Includes 1.6 million influenza doses purchased with VFC and Section 317 funding in FY 2000.

² The projected change in the birth cohort from 2000 to 2023 (3.9 percent, from 4 million to 4.15 million) was used to estimate the growth in baseline doses.

³ Influenza doses distributed in FY 2000 (1.6 million) are excluded to avoid duplication when calculating FY 2024 new doses.

⁴ Adjusted from \$6.97 in FY 2023.

The required activities of the Immunization Programs funding by Section 317 include five key program areas:

1. Stewardship and accountability for publicly purchased vaccines and Immunization Program and VFC operations support
2. Assessment of program performance for program improvement
3. Assurance of access to vaccines
4. Assurance that immunization information technology supports programmatic goals
5. Improvement and maintenance of preparedness readiness

Section 317 Immunization Program operations infrastructure funding is the primary means of support for all these activities. As the number of routinely recommended vaccines increases, the magnitude, and complexity of the challenge to ensure the timely immunization of individuals increases proportionately. It is this increase in magnitude and complexity that drives the professional judgment estimate of operations funding.

National Program Operations Estimate: \$263.8 million (Table 4)

To derive the national program operations estimate, CDC calculated the baseline operations cost per dose by dividing the total amount of national program operations funding available in FY 2000 (\$61.200 million) by the number of Section 317 Immunization Program, VFC, state, and private vaccine doses distributed in FY 2000 (182.8 million doses). The \$0.335 cost per dose rate is equal to \$0.68 when adjusted for FY 2024 dollars using the CPI.¹⁸ CDC then applied the \$0.68 rate to the total number of doses projected for public and private purchase in FY 2024, which includes total baseline doses (excluding influenza) adjusted for population growth (116.7 million doses) and the number of doses of newly recommended vaccines (including influenza) since 2000 for children (102.9 million doses) and adults (168.3 million doses). It is important to note that much of the national program operations activity that supports the immunization program is conducted extramurally through collaboration with external entities.

¹⁸ Based on CPIU provided by OMB (4.0 percent in 2024) and adjusted from \$0.65 in FY 2023.

Table 4. National Program Operations Estimate (Cost per Dose Methodology)

| Fiscal Year | All Doses | National Program Operations Cost per Dose |
|--------------------|--|--|
| 2000 | Baseline Doses, Including Influenza 182,755,410 ¹ | National Program Operations Operations/Dose \$61.2 million (\$61.200 million / 182.8 million) \$0.335 |
| 2024 | Baseline Doses, Excluding Influenza, Adjusted for Population Growth 116,684,127 ^{2,3} | 2000 Operations/Dose, Adjusted for 2024 Dollars ⁴ \$0.68 |
| | New Doses, Including Influenza | |
| | Children (aged 0-18) 102,913,872 Adult 168,308,550 | |
| | Total New Doses 271,222,422 | |
| | Total Doses (Baseline Doses Adjusted for Population Growth + New Doses) 387,906,549 | Total National Program Operations Estimate (\$387,906,549 x \$0.68) \$263.8 million |

¹ Includes 70.4 million influenza doses.

² The projected change in the birth cohort from 2000 to 2024 (3.9 percent, from 4 million to 4.15 million) was used to estimate the growth in baseline doses.

³ Influenza doses distributed in FY 2000 (70.4 million) are excluded to avoid duplication when calculating FY 2024 new doses.

⁴ Adjusted from \$0.65 in FY 2023.

There are important programmatic components of the nation’s immunization system that are most efficiently and effectively implemented at the national level to support Section 317 Immunization Program awardees and public and private providers. This includes vaccine management and inventory that enables rapid response to changes in vaccine supply and demand at the national, state, and local levels, and improvements in health information technology systems for information exchange and meaningful use.

Vaccine programs rest on a foundation of strong science, which is essential for vaccine policy decision making and for evaluating vaccination recommendations after they are implemented. A comprehensive immunization program requires scientific expertise in VPDs at the national level and vaccines, epidemiology and surveillance, statistics, laboratory sciences, health economics, communications, vaccine policy, and applied research. CDC works collaboratively with its state, territorial, and local partners to strengthen the scientific foundation for immunization recommendations, monitors disease rates to track emerging new threats, and supports communication strategies to reach providers and the public.^{19, 20, 21}

Vaccine Confidence and Demand Estimate (\$450 Million)

In response to the continued and increased need for robust vaccine confidence and demand in the United States, CDC has prioritized staff time and resources to support the building and maintaining of vaccine confidence and demand among the public, healthcare personnel, and other external partners. The need to address vaccine confidence was highlighted during the COVID-19 pandemic and was a growing need prior to COVID-19.

Using COVID-19 supplemental funds, CDC has developed Vaccine Confidence and Demand (VCD) partnerships with healthcare and community-based organizations to build vaccine confidence and generate demand. In addition, CDC has launched a number of partnerships with a diverse set of organizations—from large national partners to small community-based organizations—with the goal being to improve uptake and promote health equity across the lifespan.

HHS, CDC, and a wide variety of partners have been working to understand and strengthen the state of vaccine confidence to prevent outbreaks of VPDs in the United States. The lessons learned from the pandemic are already being applied to ongoing work in building VCD for routine immunizations, but the ongoing effort needed is high given the complexities of the work and the impact it has on all VPDs. This work is critical to address VCD in a sustained and long-term way to ensure there is robust vaccine confidence for future outbreaks.

¹⁹ National Immunization Survey: <http://www.cdc.gov/vaccines/imz-managers/nis/index.html>

²⁰ Resources for vaccine management: <http://www.cdc.gov/vaccines/programs/vfc/awardees/vaccine-management/manage.html>

²¹ Science-based communications tools for the public and healthcare providers:

<http://www.cdc.gov/vaccines/hcp/index.html>, <https://www.cdc.gov/vaccines/parents/index.html>, <https://www.cdc.gov/vaccines/adults/index.html>

An optimal system, without consideration of funding would address the following core vaccine confidence efforts:

Strategy 1: Jurisdictional and Stakeholder Engagement

This strategy would promote work with partners and jurisdictions to build VCD in local communities. By providing funding and resources to community partners, this strategy would develop networks and partnerships to ensure critical, accurate, and priority messages to support implementation of strategies, and identify, train, and support partners to engage communities, share messages, and build VCD. This activity would also sustain highest impact partnership from the [Partnering for Vaccine Equity](#)²² initiative begun with COVID-19 supplemental funding.

Strategy 2: Address Communities of Concern

This strategy would provide targeted funding to lowest vaccinated zip codes and geographic areas for intense, multi-disciplinary, and on the ground efforts to improve overall vaccine uptake. These activities would use a focused “team” approach, pulling from within the community and jurisdiction, with technical support from CDC. This activity would be similar to the approach taken with a recent case of polio in New York, which utilized a time-limited but high intensity approach to identify the specific drivers of low vaccine uptake in a community and develop unique approaches that are tailored to individual communities.

Strategy 3: Data for Action

This strategy will use data to strengthen decision-making and identify, implement, and sustain evidence-based interventions. This includes identifying, documenting, evaluating, and disseminating promising practices from the field. In addition, CDC will provide technical assistance for states and local jurisdictions to improve and use their vaccine confidence data sources as well as conduct research to build an evidence base on the integration of vaccine confidence and demand strategies with other chronic and infectious disease prevention activities.

Strategy 4: Identify and Combat Mis- and Dis-information

CDC would utilize this strategy to identify and address trends in mis- and disinformation and gaps in vaccine knowledge. This includes engaging in activities to address the spread of inaccurate information and information voids, as well as building U.S. government capacity to continue to address these challenges. This strategy would employ intra- and extramural research on the information environment that can be useful for improving vaccine confidence and demand. Also critical to this strategy is the development and evaluation of training to build jurisdictional capacity to address infodemic problems.

²² <https://www.cdc.gov/vaccines/health-equity/>

Vaccine Purchase

Total Vaccine Purchase: \$474.9 million (Tables 5, 6, 7, and 8; Appendix 4)

Section 317 Immunization Program funding provides states with federally-purchased vaccine to provide access to immunization services for at-need populations. The program is a national resource that will continue to fill critical public health needs, such as providing routine vaccination for those with no health insurance and responding to outbreaks of VPDs and other urgent public health issues. CDC maintains a policy that it is not appropriate for immunization program funds to be used for routine vaccination of children, adolescents, and adults who are considered fully insured for vaccines.

A significant percentage of the adult population is uninsured with respect to vaccination, meaning they lack a third-party source of payment that provides first-dollar coverage for these important, life-saving preventive services. The number of uninsured adults dropped since the passage of the Affordable Care Act, which requires that all private insurance plans include first-dollar coverage for all ACIP-recommended adult vaccines. More recently, the implementation of provisions of the Inflation Reduction Act has extended the requirement for first-dollar coverage for all adult vaccines to beneficiaries of the Medicaid and Medicare Part D programs. Despite these important advances, there remain approximately 25 million Americans that are uninsured and therefore have no coverage for adult vaccines. This number is expected to grow as pandemic-era protections expire and states resume Medicaid eligibility redeterminations.

In addition to serving financially vulnerable adults, the Immunization Program’s ability to respond to time-sensitive and urgent public health vaccination needs is critical to the prevention of VPDs, when it is often not feasible to bill for immunization services. For example, in calendar year 2017, four states responded to outbreaks of acute hepatitis A virus, with most infections occurring in persons reporting injection or non-injection drug use or homelessness. As part of the response, vaccine clinics were held in a variety of settings including homeless encampments, drug treatment centers, jails, etc.²³ For this reason, CDC is including a professional judgment estimate for vaccine purchase to meet these time-sensitive public health needs.

Table 5. Vaccine Purchase Summary: Uninsured Adult Vaccine and Time-Sensitive Needs

| Vaccine Purchase Category | Total Cost (In millions) | State Funds Used to Purchase Vaccine from Federal Contracts | Total Vaccine Purchase Estimate (In millions) |
|---|--------------------------|---|---|
| Uninsured and Within 200 Percent of Federal Poverty Threshold (F)PT Adults (all vaccines) | \$309.4 | (\$48.5) | \$260.8 |
| Time-Sensitive Vaccine Needs | \$214.1 | N/A | \$214.1 |
| | | Total | \$474.9 |

²³ Hepatitis A Virus Outbreaks Associated with Drug Use and Homelessness — California, Kentucky, Michigan, and Utah, 2017 | MMWR (cdc.gov); accessed March 8, 2021.

Uninsured Adult Vaccine Needs: \$260.8 million (Tables 5 and 6)

The United States has not been as successful in achieving high vaccination coverage among adults as it has been among children. CDC's estimate is based on the following:

- The vaccine purchase estimates for the uninsured adult population are based on the CDC Director-adopted, ACIP-recommended vaccines (influenza, tetanus, diphtheria, pertussis [Tdap], HPV, hepatitis B, Pneumococcal Polysaccharide Vaccine [PPV], Herpes Zoster, and Pneumococcal Conjugate Vaccine [PCV])
- CDC used 2021 U.S. Census data to provide information about population by age and insurance status, adjusted the data for poverty level, and projected the estimate for 2024; the final purchase estimates included uninsured adults aged 19–64 years and living within 200 percent of the federal poverty threshold²⁴
- Data from the 2012-2021 National Health Interview Surveys were used to estimate the number of individuals considered high-risk for pneumococcal disease
- The adult population to vaccinate was calculated separately for each vaccine, based on the age recommendations and high-risk specifications particular for that vaccine, the number of doses required to be fully vaccinated, and estimated uptake (uptake estimates were made to predict the percent of adults who would get vaccinated in FY 2024)
- The vaccine purchase estimate subtotal for each vaccine was calculated by multiplying the population to vaccinate by the cost to fully vaccinate an adult projected for FY 2024
- To determine the final vaccine purchase estimate, the amount of funding contributed by states to purchase adult vaccines from the federal vaccine contracts (\$48.5 million) was removed from the estimated vaccine purchase costs in Tables 4 and 5 to ensure the Section 317 vaccine purchase estimate did not supplant state funding

Note: COVID-19 vaccines have not been included in this report. At the time of drafting, COVID-19 vaccines were federally purchased and distributed, and were provided free of charge under the terms of the federal agreements with providers participating in CDC's COVID-19 Vaccination Program. Announced in April of this year, the Bridge Access Program will continue to ensure access to COVID-19 vaccines and treatments after commercialization of these products in Fall 2023 through December 2024. The program will provide access to 25-30 million adults without insurance, in addition to those whose insurance does not provide cost-free coverage for COVID-19 vaccines and treatments. CDC will include COVID-19 vaccine cost estimates as appropriate in future reports.

²⁴ According to the U.S. Census Bureau, the 2021 federal poverty threshold is \$14,097 for an individual less than 65 years of age.

Table 6. Adult Vaccines: FY 2022/2023 Estimates

| Adults (19–64 years) | Uninsured and Within 200 Percent of the FPT Population, Total | Final Population, One or Five Cohorts¹ | Population to Vaccinate (Uptake) | Vaccine Cost to Fully Vaccinate an Adult | Total Cost |
|--|--|--|---|---|------------------------|
| Influenza for the general adult population (19-64) | 11,363,865 | N/A | 5,909,210 | \$15.21 | 89,879,084 |
| Influenza for pregnant women | 267,493 | N/A | 190,455 | \$15.21 | 2,896,821 |
| Tdap ² for the general adult population (19-64) | 11,363,865 | N/A | 859,701 | \$29.38 | 25,258,015 |
| Tdap for pregnant women | 267,493 | N/A | 178,150 | \$29.38 | 5,234,047 |
| HPV (females, 19-45) ³ | 3,799,914 | N/A | 72,198 | \$522.54 | 37,726,343 |
| HPV (males, 19-45) ³ | 4,339,909 | N/A | 73,778 | \$522.54 | 38,551,956 |
| Hepatitis B ^{3,4} | 10,626,812 | N/A | 624,021 | \$109.35 | 68,236,696 |
| PPV | 3,288,740 | 71,494 | 19,446 | \$80.05 | 1,556,652 |
| PCV | 513,357 | N/A | 77,004 | \$170.89 | 13,159,214 |
| Zoster (50-64) | 2,394,118 | N/A | 119,706 | \$224.40 | 26,862,026 |
| | | | | Total | \$309.4 million |

¹ Population in one cohort = total uninsured population divided by the number of cohorts. (See Appendix 3 for further details)

² Reflects the price of Tdap because CDC recommends that all adults in this population could receive Tdap (instead of Td).

³ Hepatitis B and HPV are each three-dose series.

⁴ In 2022, the ACIP recommends that all adults aged 19-59 years should receive hepatitis B vaccines.

Routine childhood vaccination has prevented an estimated 472 million illnesses and generated a net savings of \$2.2 trillion in societal costs (including \$479 billion in direct costs between 1994 and 2021).²⁵

Time-Sensitive Public Health Needs: \$214.1 million (Tables 7 and 8)

Containment of VPDs is a core mission and responsibility of public health programs. Unlike the VFC program where vaccine that is restricted to certain eligible children, Section 317 Immunization Program vaccine does not have eligibility restrictions in its authorization. This flexibility within the Section 317 Immunization Program can serve a critical role in urgent or time-limited situations which are managed through vaccination campaigns that cannot be accomplished through routine vaccination in the primary care system. The amount of Section 317 Immunization Program vaccine needed for these activities is relatively small, but these activities can have a notable impact on states' abilities to control and prevent VPDs.

To develop an estimate for vaccine costs related to time-sensitive public health needs for this professional judgment, CDC subject matter experts estimated the number of doses of vaccine needed by immunization awardees on an annual basis for outbreak response and the vaccine needs to support increasing vaccination capacity for influenza among school-aged children, especially among children not eligible for the VFC program that attend schools in financially disadvantaged areas.

Time-sensitive public health needs may vary from year to year. It is impossible to predict the number and magnitude of outbreaks or public health emergencies. In addition, support for influenza vaccination capacity reflects a current need that may increase or decrease in the future. New time-sensitive public health needs may also emerge. Having the ability to be flexible and respond to unpredicted vaccination needs will continue to play a critical role in the Section 317 Immunization Program.

²⁵ <https://www.cdc.gov/vaccines/programs/vfc/protecting-children.html>

Table 7. Outbreak Response Vaccines: FY 2022/2023 Estimates

| Vaccine | Doses | | | Vaccine Cost | |
|------------------------------|-----------|---------------------------|---------------------------|------------------------|----------------------------|
| | Total | Adult | Child | Adult | Non-VFC Child ¹ |
| MMR | 55,000 | 40,000 (73%) | 15,000 (27%) | \$2,366,400 | \$190,950 |
| Meningococcal ACWY | 20,000 | 18,000 (90%) | 2,000 (10%) | \$1,490,580 | \$108,850 |
| Meningococcal B ² | 110,000 | 95,000(86%) | 15,000(14%) | \$27,416,050 | \$2,584,650 |
| Tdap/DTaP | 80,000 | 32,000 (40%) ³ | 48,000 (60%) ⁴ | \$940,160 | \$822,684 |
| Varicella | 5,000 | 1,000 (20%) | 4,000 (80%) | \$102,300 | \$270,140 |
| Hepatitis A | 4,104,486 | 4,089,486 (99.6%) | 15,000 (0.4%) | \$166,074,026 | \$177,075 |
| Hepatitis B | 1,650 | 1,650 (100%) | 0 (0%) | \$60,143 | \$0 |
| | | | Sub-Totals | \$198,449,659 | \$4,154,349 |
| | | | Total⁵ | \$202.6 million | |

¹ Doses assumed for VFC-eligible children (50 percent) was deleted from the cost estimate.

² Estimates include outbreaks in college/university-based and community-based settings—average price of 2-dose and 3-dose schedules.

³ All Tdap.

⁴ Assumes 85 percent Tdap and 15 percent DTaP.

⁵ Projected adult vaccine prices (MMR, \$59.16; Meningococcal ACWY, \$82.81; Meningococcal B, \$288.59 (average per series); Tdap, \$29.38; varicella, \$102.3; hepatitis A, \$40.61; hepatitis B, \$36.45; child vaccine prices (MMR, \$25.46; Meningococcal ACWY, \$108.85; Meningococcal B, \$344.62 (average per series); Tdap, \$36.56; single-antigen DTaP, \$21.35; varicella, \$135.07; hepatitis A, \$23.61; hepatitis B, \$15.76).

Table 8. Expanding Capacity for Influenza Vaccine among School-aged Children (ages 5-17 years)

| Number of school-aged children nationwide | Children attending lower SES schools¹ | Children attending lower SES schools where SLV* conducted² | Children vaccinated overall (any location)³ | Children vaccinated at school⁴ | Non-VFC-eligible children vaccinated at school⁵ | Vaccine cost⁶ |
|--|---|--|---|--|---|---------------------------------|
| 53,000,000 | 13,250,000 | 6,625,000 | 3,975,000 | 2,385,000 | 715,500 | \$16.11 |
| Total | | | | | | \$11.5 million |

¹ Approximate number of students nationwide attending lower socioeconomic status (SES) schools, defined as schools where ≥ 70 percent of children are eligible for Free or Reduced-Price Lunch (FRPL) ($0.25 * 53,000,000$).

² Assuming *School-Located Vaccination (SLV) will be conducted in 50 percent of lower SES schools, the estimated number of students attending these schools ($0.50 * 13,250,000$).

³ Assuming 60 percent of students attending lower SES schools where SLV will be conducted will receive influenza vaccination, the projected number of students vaccinated at any location ($0.60 * 6,625,000$).

⁴ Assuming 60 percent of vaccinated students attending lower SES schools where SLV will be conducted will be vaccinated at school, the projected number of students vaccinated at school ($0.60 * 3,975,000$ – This projection is based on a target of 60 percent, which is higher than most previous experiences with school-located vaccination).

⁵ Assuming 30 percent of students attending lower SES schools who are vaccinated at school are not VFC-eligible, the estimated number of non-VFC-eligible students ($0.30 * 2,385,000$ – 30 percent was selected because, among schools where >70 percent of students are eligible for FRPL, the median percent of students eligible for FRPL is about 80-85 percent, so 15-20 percent are not eligible for FRPL. Since the percentage of students eligible for FRPL is greater than the percentage eligible for VFC, the non-VFC eligible percentage was set higher at 30 percent).

⁶ Projected weighted average federal contract price and adjusted to 2024.

The influenza vaccine is universally recommended for all persons over the age of 6 months every year. Achieving immunization coverage goals places a significant burden on the primary care system. School-located vaccination (SLV) campaigns have been shown to have the potential to increase routine influenza vaccination among school-aged children.²⁶ Vaccination of this population in complementary venues, such as schools, has broad support from primary care providers.

The utility of SLV campaigns was demonstrated on a large scale in response to the 2009 H1N1 influenza pandemic. In July 2009, the ACIP recommended that school-aged children be considered among the high-priority groups to receive vaccine when it first became available. In response to this recommendation, public health, educational institutions, and other community organizations joined together to hold school-associated clinics throughout the United States, with several states implementing the clinics statewide. Vaccinating children at school appeared to be a successful approach. An estimated 85 percent of local health departments held at least one 2009 H1N1 school-located influenza clinic in their jurisdiction,²⁷ and approximately one-third of school-aged children (5-17 years of age) vaccinated against the 2009 H1N1 pandemic influenza were vaccinated at school.²⁸

As noted in the introduction, significant declines in routine childhood immunization occurred in the calendar year 2020 due to the pandemic. As of February 9, 2021, VFC data demonstrated that provider ordering declined by approximately 10.9 million doses for all non-flu vaccines, of which approximately 1.4 million were for measles-containing doses for FY 2020 and FY 2021. In order to ensure children who have missed immunizations receive the necessary vaccinations and a protective level of immunization coverage is regained, a multifaceted effort to support catch-up vaccination, could include SLV clinics and public information campaigns at state and local levels.

Conclusion

Immunization continues to be one of the most cost-effective public health interventions. CDC estimates that, among children born during 1994–2021, the routine childhood vaccination will prevent an estimated 472 million illnesses, 29.8 million hospitalizations, and 1,052,000 early deaths over the course of their lifetimes, at a net savings of \$2.2 trillion in total societal costs, including \$479 billion in direct costs.²⁹ The Section 317 Immunization Program plays a critical role in the nation’s immunization system. Targeting vaccines where they are needed, ensuring that vaccines are safe and effective, assessing the impact of expanded immunization programs for children and adults through disease and vaccination coverage surveillance, and detecting and responding to outbreaks of VPDs are all crucial public health functions supported by the Section 317 Immunization Program.

²⁶ Hull HF, Ambrose CS. Current experience with school-located influenza vaccination programs in the United States: a review of the medical literature. *Hum Vaccin*. 2011;7(2):153-160. doi:10.4161/hv.7.2.13668

²⁷ National Association of County and City Health Officials, unpublished data, 2011.

²⁸ CDC, unpublished data, 2011.

²⁹ Data not inclusive of COVID-19 vaccine.

For FY 2024, CDC's priorities for the Section 317 Immunization Program are to:

- Preserve core public health immunization infrastructure at the local, state, and federal levels;
- Maintain an adequate amount of vaccine purchase to provide a vaccination safety net for uninsured adults and to ensure the ability to respond to VPD outbreaks and other vaccine urgent needs; and,
- Make strategic investments to enhance the immunization infrastructure and evidence base to improve efficiency.

As noted above, this Section 317 Immunization Program Report to Congress represents a professional judgment estimate of what is necessary to support a fully implemented, comprehensive immunization program and is provided without considering competing priorities that the CDC Director, the Secretary, and the President must consider when developing the President's Budget.

Program Operations

New vaccines allow for an unprecedented level of protection across the lifespan. New vaccines require the creation or expansion of important vaccine program infrastructure components at the local, state, and national levels. At the same time, the infrastructure for existing vaccines cannot be weakened or new outbreaks of disease can occur. CDC's total operations estimate for a comprehensive immunization program is \$1,143.5 million.

Vaccine Purchase

CDC's estimate is \$474.9 million to address time-sensitive public health needs, such as improving influenza vaccination among school-age children, ensuring catch-up of missed childhood immunizations, responding to outbreaks of VPDs, and implementing the ACIP-recommended, CDC-adopted, immunization schedule for uninsured adults. It is important to note that the methods CDC used in calculating this estimate are conservative and limit the scope of the Section 317 Immunization Program to only serving as a safety net for financially vulnerable adults. These estimates do not include strategies for achieving full coverage in uninsured adults but are based on attaining similar coverage as the general population or a modest increase from current levels.

Appendix 1: Morbidity Associated with Vaccine-Preventable Diseases, United States

| Comparison of 20th Century Annual Morbidity and Current Morbidity: Vaccine-Preventable Diseases | | | |
|--|--|--|-----------------------------|
| Disease | 20th Century Annual Morbidity[†] | 2019 Reported Cases^{† †} | Percent Decrease |
| Smallpox | 29,005 | 0 | 100% |
| Diphtheria | 21,053 | 1 | > 99% |
| Measles | 530,217 | 1274 | > 99% |
| Mumps | 162,344 | 3780 | 98% |
| Pertussis | 200,752 | 18,617 | 91% |
| Polio (paralytic) | 16,316 | 0 | 100% |
| Rubella | 47,745 | 2 | > 99% |
| Congenital Rubella Syndrome | 152 | 0 | 100% |
| Tetanus | 580 | 26 | 96% |
| <i>Haemophilus influenzae</i> | 20,000 | 18* | > 99% |

[†] JAMA. [†] JAMA. 2007;298(18):2155-2163

^{† †} https://wonder.cdc.gov/nndss/nndss_annual_tables_menu.asp?mmwr_year=2019

* *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 11 cases of Hib are estimated to have occurred among the 221 reports of Hib (< 5 years of age) with unknown serotype.

Appendix 2: Operations Cost per Dose Methodology

In previous reports, CDC used a cost per dose methodology to calculate an overall operations estimate. This report includes separate estimates for state and local immunization program operations and CDC program operations that support the national immunization program. As in previous reports, FY 2000 was used as a benchmark because it was the last year before the licensure of many new childhood and adult vaccines. Thus, the methodology uses the operations funding available in FY 2000 as a baseline estimate for distributing the doses needed to fulfill the vaccine recommendations in place in 2000. For the state and local immunization program operations estimate, the baseline represents the operations funding provided in FY 2000 for all state and local activities required to support the number of Section 317 and VFC vaccine doses distributed in FY 2000. For the CDC program operations estimate, the baseline represents the operations funding provided in the calendar year 2000 for all national-level activities required to support all vaccine doses (Section 317, VFC, state, and private) distributed in calendar 2000.

CDC used the following approach to calculate the state and local immunization program operations estimate:

- The funding appropriated to Section 317 state infrastructure/operations in FY 2000 was \$132.6 million.
- Because the VFC program was implemented in the context of the Section 317 Program, we see this as an integrated public program. CDC has included VFC doses with Section 317 doses in the operations estimates.
- When combined with VFC operations funding (\$50.0 million), the total operations budget available in FY 2000 was \$182.6 million.
- The cost per dose ratio was calculated by dividing the total amount of operations funding available for the year (\$182.6 million) by the number of Section 317 and VFC vaccine doses distributed in 2000 (52.3 million doses). $\$182.6 \text{ million} \div 52.3 \text{ million doses} = \3.49 in state and local immunization program operations costs per dose of Section 317 and VFC vaccine distributed.
- The \$3.49 cost per dose rate is equal to \$7.25 when adjusted for FY 2024 dollars using the CPI provided by OMB.³⁰
- The \$7.25 rate was then applied to the total amount of doses projected for the VFC and 317 programs in FY 2024. The determination of doses needed for FY 2024 was calculated by adding the baseline number of doses delivered in FY 2000 (adjusted for population changes from FY 2000 to FY 2024) to the number of doses of newly recommended vaccines since FY 2000.³¹ Because the influenza vaccine was distributed in FY 2000, the number of influenza doses was included in the baseline cost per dose calculation but excluded from the adjustment for population changes to avoid duplication in calculating the total amount of doses projected for FY 2024. CDC estimated the number of newly recommended doses using National Immunization Survey (NIS) data for children and Census and National Health Interview Survey (NHIS) data for adults. CDC used actual coverage estimates from the 2017-2021 NIS for childhood vaccines at

³⁰ Based on CPIU provided by OMB(4.0 percent in 2024) and adjusted from \$6.97 in FY 2023.

³¹ Between 2000 and 2015, the following new vaccine or new vaccine dose recommendations were made for childhood and adult populations: PCV, influenza, hepatitis A, Tdap, meningococcal, rotavirus, varicella, HPV, and herpes zoster.

or above 90 percent coverage and 2021-2022 influenza vaccination coverage estimates. For childhood vaccines where uptake was less than 90 percent, CDC estimated uptake by adding 5 percent to the coverage estimate available for that vaccine. CDC used professional judgment to estimate hepatitis B vaccine uptake because universal Hepatitis B vaccination for all adults aged 19–59 years was first recommended in 2022.³²

- As a result of these new vaccine recommendations, an additional 68.7 million doses of VFC and Section 317 vaccine will need to be distributed along with the 52.6 million baseline doses (adjusted for population changes from FY 2000 to FY 2024).
- The adjusted cost per dose rate of \$7.25 was applied to the projected number of VFC and Section 317 doses needed for FY 2024 (121.3 million) for a total state and local immunization program operations budget of \$879.7 million.

CDC used the following approach to calculate the National Program operations estimate:

- The funding appropriated to Section 317 National Program operations in FY 2000 was \$61.2 million.
- The cost per dose ratio was calculated by dividing the total amount of operations funding available for the year (\$61.2 million) by the number of Section 317, VFC, state, and private vaccine doses distributed in FY 2000 (182.8 million). $\$61.2 \text{ million} \div 182.8 \text{ million doses} = \0.335 in National Program operations costs per dose of Section 317, VFC, state, and private vaccine distributed.
- The \$0.335 cost per dose rate is equal to \$0.68 when adjusted for FY 2024 dollars using the CPI provided by OMB.³³
- The \$0.68 rate was then applied to the total amount of Section 317, VFC, state, and private doses projected for FY 2024. The determination of doses needed for FY 2024 was calculated by adding the baseline number of doses delivered in FY 2000 (adjusted for population changes from FY 2000 to FY 2024) to the number of doses of newly recommended vaccines since FY 2000. Because the influenza vaccine was distributed in FY 2000, the number of influenza doses was included in the baseline cost per dose calculation but excluded from the adjustment for population changes to avoid duplication in calculating the total amount of doses projected for FY 2024. CDC calculated the number of newly recommended doses using NIS data for children and Census and NHIS data for adults. CDC used actual coverage estimates from the 2018-2021 NIS for childhood vaccines at or above 90 percent coverage and 2021-2022 influenza vaccination coverage estimates. For childhood vaccines where uptake was less than 90 percent, CDC estimated uptake by adding 5 percent to the most recent coverage estimate available for that vaccine. CDC used professional judgment to estimate hepatitis B vaccine uptake because universal Hepatitis B vaccination for all adults aged 19–59 years was first recommended in FY 2022.³⁴
- As a result of new vaccine recommendations for PCV, influenza, hepatitis A, Tdap, meningococcal, rotavirus, varicella, HPV, and herpes zoster vaccines, an additional 271.2 million doses of Section 317, VFC, state, and private vaccine will need to be distributed along with the 116.7 million baseline doses (adjusted for population changes from FY

³² <https://www.cdc.gov/mmwr/volumes/71/wr/mm7113a1.htm>

³³ Based on CPIU provided by the Office of Management and Budget (4.0 percent in 2024) and adjusted from \$0.65 in FY 2023.

³⁴ <https://www.cdc.gov/mmwr/volumes/71/wr/mm7113a1.htm>

2000 to FY 2024).

- The adjusted cost per dose rate of \$0.68 was applied to the projected number of Section 317, VFC, state, and private doses needed for FY 2023 (387.9 million), for a total National Program operations budget of \$263.8 million.

Appendix 3: Vaccine Purchase for Adult Populations

CDC estimated the uptake of PPV and Tdap by adding 5 percent to the coverage estimate from the 2019 and 2021 NHIS. CDC used professional judgment to estimate hepatitis B vaccine uptake because universal hepatitis B vaccination for all adults aged 19–59 years was first recommended in FY 2022.

Influenza for the general adult population

- 11,363,865 individuals in the United States are aged 19 to 64 years, uninsured, and living within 200 percent of the federal poverty level who are recommended for influenza vaccine (the ACIP now recommends everyone 6 months and older receive an annual influenza vaccine).
- Projected uptake for influenza vaccine in FY 2024 is 52.0 percent. $11,363,865 \times 0.52 = 5,909,210$ adults.
- Based on 2023-2024 flu prebook data (projected orders prior to the start of the influenza season), the projected weighted average federal contract price for one dose of adult influenza vaccine in FY 2024 is \$15.21.
- $5,909,210 \times \$15.21 = \$89,879,084$.

Influenza for pregnant women

- 267,493 pregnant women in the United States are uninsured who are recommended to receive the influenza vaccine.
- Projected uptake for influenza vaccination in pregnant women in FY 2024 is 71.2 percent. $267,493 \times 0.712 = 190,455$ pregnant women.
- Projected average federal contract price for one dose of influenza vaccine in FY 2024 is \$15.21.
- $190,455 \times \$15.21 = \$2,896,821$.

Tdap for the general adult population

- 11,363,865 individuals in the United States are aged 19 to 64 years, uninsured, and living within 200 percent of the federal poverty level who are recommended for the Tdap vaccine.
- Because one dose of the Td/Tdap vaccine should be given every 10 years, we adjusted the number of adults recommended for the Tdap vaccine that could be vaccinated in FY 2024. $11,363,865 \div 46$ (number of cohorts of persons aged 19 to 64 years) * 5 (5 cohorts are eligible every year) = 1,235,203 adults.
- Projected uptake for Tdap vaccine in 2023, is 69.6 percent. $1,235,203 \times 0.696 = 859,701$ adults.
- Projected average federal contract price for one dose of Tdap vaccine in FY 2024 is \$29.38.
- $859,701 \times \$29.38 = \$25,258,015$.

Tdap for pregnant women

- 267,493 pregnant women in the U.S. are uninsured who are recommended to receive Tdap vaccine.
- Projected uptake for Tdap vaccination in pregnant women in FY 2024 is 66.6 percent.

$267,493 \times 0.666 = 178,150$ pregnant women.

- Projected average federal contract price for one dose of Tdap vaccine in FY 2024 is \$29.38.
- $178,150 \times \$29.38 = \$5,234,047$.

HPV

- 3,799,914 females in the United States are aged 19 to 45 years, uninsured, and living within 200 percent of the federal poverty level who are recommended to receive the HPV vaccine. 4,339,909 males in the U.S. are aged 19 to 45 years, uninsured, and living within 200 percent of the federal poverty level who are recommended to receive the HPV vaccine. HPV vaccine is not recommended by ACIP for females and males older than age 45 years.
- Projected catch-up for HPV vaccine in FY 2023 is 1.9 percent for females and 1.7 percent for males. $3,799,914 \times 0.019 = 72,198$ females and $4,339,909 \times 0.017 = 73,778$ males.
- Projected federal contract price for one dose of HPV vaccine in FY 2024 is \$174.18 (price for Gardasil 9) and \$522.54 for the three doses a person could receive between 19 and 45 years of age.
- $72,198 \times \$522.54 = \$37,726,343$ for females, and $73,778 \times \$522.54 = \$38,551,956$ for males.
- $\$37,726,343 + \$38,551,956 = \$76,278,299$.

Hepatitis B

- 10,626,812 individuals in the United States are aged 19 to 59 years (8,969,747 for aged 19-49 years, and 1,657,065 for 50-59 years), uninsured, and living within 200 percent of the federal poverty level who are recommended to receive the hepatitis B vaccine.
- In 2021, self-reported hepatitis B vaccination coverage (at least 1 dose) was 44.6 percent for adults aged 19–49 years and 23.3 percent for adults aged ≥ 50 years.
- $8,969,747 \times (1-0.446) = 4,969,240$, $1,657,065 \times (1-0.233) = 1,270,969$.
- $4,969,240 + 1,270,969 = 6,240,209$ adults eligible for hepatitis B vaccination.
- Projected uptake for hepatitis B vaccine for these populations in FY 2024 is 10 percent. $6,240,209 \times 0.1 = 624,021$ adults.
- Projected average federal contract price for one dose of hepatitis B vaccine in FY 2024 is \$36.45 and \$109.35 for the full three-dose series.
- $624,021 \times \$109.35 = \$68,236,696$.

Pneumococcal Polysaccharide Vaccine (PPV)

- 3,288,740 individuals in the United States 19 to 64 years of age are considered high-risk for pneumococcal vaccination, are uninsured, and are living within 200 percent of the federal poverty level.
- Because only one dose of the PPV vaccine is recommended for these high-risk populations, we adjusted the number of adults recommended for the PPV vaccine that could be vaccinated in FY 2024. $3,288,740 \div 46$ (number of cohorts of persons aged 19 to 64 years) = 71,494 adults.
- Projected uptake for PPV vaccine in FY 2024 is 27.2 percent. $71,494 \times 0.272 = 19,446$

adults.

- Projected federal contract price for one dose of PPV vaccine in FY 2024 is \$80.05.
- $19,446 \times \$80.05 = \$1,556,652$.

Pneumococcal Conjugate (PCV)

- 513,357 individuals in the United States 19 to 64 years of age are considered high-risk for pneumococcal conjugate vaccination, are uninsured, and are living within 200 percent of the federal poverty level.
- Projected uptake for PCV (PCV15 or PCV20) vaccine in FY 2024 is 15.0 percent.
 $513,357 \times 0.15 = 77,004$ adults.
- Projected federal contract price for one dose of PCV vaccine (average price of PCV15 and PCV20) in FY 2024 is \$170.89.
- $77,004 \times \$170.89 = \$13,159,214$.

Herpes Zoster

- 2,394,118 adults in the United States aged 50 to 64 years are uninsured and living within 200 percent of the federal poverty level (most adults 65 years of age and older are eligible for Medicare).
- Projected uptake for the new Herpes Zoster vaccine (Shingrix) in FY 2024 is 5 percent.
 $2,394,118 \times 0.05 = 119,706$ adults.
- Projected federal contract price for one dose of Herpes Zoster vaccine in FY 2024 is \$112.20 (price for Shingrix) and \$224.40 for the full two-dose series.
- $119,706 \times \$224.40 = \$26,862,026$.