

## PROTECTING HEALTH THROUGH IMMUNIZATION AND THE PREVENTION OF RESPIRATORY DISEASES

The increase in life expectancy during the 20th century is largely attributable to improvements in child survival, which has been associated with reductions in respiratory infectious disease mortality due in part to immunization. Today in the United States, immunization recommendations target 17 vaccine-preventable diseases across the lifespan. Although some vaccine-preventable diseases continue to place significant burden on the public's health, CDC has tallied the remarkable impact on illness and death that vaccines have had, compared with historical data. More than 99 percent reductions are evident for several of the vaccine-preventable diseases assessed.

Acute respiratory and related infections are a critical public health, humanitarian, and security concern. CDC provides technical expertise in implementing domestic and global immunization programs, preparedness planning for pandemic influenza and other emerging infections, and epidemiology and laboratory capacity to detect, prevent, and respond to respiratory and related infectious disease threats.

### EPIDEMIOLOGY

Vaccine-preventable diseases in the United States are at or near record lows; for the majority of vaccine-preventable diseases, there has been a 90 percent or greater decline in reported cases when compared with the pre-vaccine era. Communities with pockets of unvaccinated and under-vaccinated populations are at greater risk for outbreaks of vaccine-preventable diseases, such as occurred in 2008 when imported measles resulted in 140 reported cases – nearly a threefold increase over the previous year. The emergence of new or replacement strains of a vaccine-preventable disease can result in a significant increase in serious illnesses and death. In addition, duration of immunity varies by vaccine. For example, despite a nearly 95 percent reduction in cases from the pre-vaccination era, 13,278 pertussis cases were reported in 2008 due to waning immunity. This finding led to a new Advisory Committee on Immunization Practices (ACIP) recommendation for a booster dose in adolescents and adults.

Acute respiratory infections, including pneumonia and influenza, are the eighth leading cause of death in the United States accounting for 56,000 deaths in the United States and an estimated annual toll of more than 3.5 million deaths worldwide. Pneumonia mortality in children fell by 97 percent in the last century, but respiratory infectious diseases continue to be leading causes of pediatric hospitalization and outpatient visits in the United States. On average, influenza leads to more than 200,000 hospitalizations and 36,000 deaths each year. The emergence of 2009 H1N1 influenza resulted in a pandemic that caused an estimated 191,000 hospitalizations, 8,000 adult deaths, and 540 pediatric deaths between April and November 2009.

### HEALTH DISPARITIES/SOCIAL DETERMINANTS

While immunization coverage rates among children do not significantly vary by race or ethnicity, racial and ethnic disparities among adults receiving influenza and pneumococcal vaccination have been documented. Certain racial and ethnic populations are also at increased risk for some respiratory infections. For example, rates of pneumococcal infection are higher among Alaska Native, African American, and specific American Indian groups of children. African American, Hispanic, and Native Americans are at higher risk for *Haemophilus influenzae* infections.

Persons of all age groups are impacted by acute respiratory infections, including pneumonia and influenza. However, rates of serious illness and death are greatest among persons aged 65 years and older, children less than two years of age, and persons of any age who have underlying medical conditions that put them at risk for complications from bacterial pneumonia and influenza. For example, young infants less than three months of age are at highest risk for pertussis-related complications, accounting for approximately 85 percent of pertussis-related deaths in 2004-2005.

## ECONOMIC ANALYSIS

Immunization has been one of the most cost-effective public health interventions. For each birth cohort who receives seven of the vaccines<sup>1</sup> given as part of the routine childhood immunization schedule, society saves \$9.9 million in direct health care costs; 33,000 lives are saved; and 14 million cases of disease are prevented.

Even with this success, respiratory illnesses continue to cost society both direct health care costs and indirect economic costs. Annual influenza epidemics are estimated to result in an average of 3.1 million hospitalized days and 31.4 million outpatient visits. Estimated direct healthcare costs average \$10.4 billion annually<sup>2</sup>.

## EVIDENCE-BASED INTERVENTIONS

Creating an effective national immunization program requires investments in infrastructure for vaccine delivery and sound scientific information to inform vaccine policy decisions.

- State-based Immunization Programs and Vaccine Purchase: To support childhood immunization recommendations, CDC has supported the implementation of state-based immunization programs that make vaccines available to financially vulnerable children and adolescents. Since the adoption of this strategy, childhood immunization levels in the United States have resulted in record high vaccination levels and record low levels of vaccine-preventable diseases. In 2008, coverage levels of 90 percent or higher among children 19-35 months of age were met for six of seven routinely recommended childhood vaccines.
- Professional Training and Education: Immunization, screening, diagnosis, and appropriate treatment, as well as counseling and other preventive services are critical to the prevention and control of all forms of infectious disease. Evidence has shown that education for clinicians and public health practitioners can help to foster appropriate and culturally competent provision of services at the clinical and public health level. CDC provides training and education to promote safe and effective use, storage, and handling of vaccines; improve the appropriate use of antibiotics and antivirals; and support provider-patient interactions to enhance patient decision-making for preventive services.
- National Awareness Campaigns: A comprehensive national communication program is necessary to raise public awareness of vaccine availability and address public questions about vaccine benefits and risks. CDC's science-based communications activities are informed by efforts to document and define vaccine acceptance and barriers to immunization, and research to develop and evaluate the messages and methods that are most effective at reaching priority populations. Understanding barriers to immunization and determining these best practices result in a cost-effective and streamlined system.
- Evaluating Vaccine Effectiveness, Impact, and Vaccine Policy: The prevention and control of vaccine-preventable and related diseases requires public health surveillance, research, and laboratory activities to provide critical information on disease burden, vaccination coverage levels, outbreaks of disease, emergence of new infectious pathogens, and prevention strategies. CDC conducts post-licensure evaluation of vaccine performance to ensure that the national vaccine programs and policies have the intended public health impact, and supports long-term monitoring to evaluate duration of vaccine-induced immunity and vaccine performance and disease trends over time. These vaccine effectiveness and impact assessments provide additional information about the return on investments from vaccines and better inform vaccine policy.

---

<sup>1</sup> These vaccines include DTaP, Td, Hib, Polio, MMR, Hepatitis B, and Varicella.

<sup>2</sup> Molinari NA, Ortega-Sanchez IR, Messonnier ML, Thompson WW, Wortley PM, Weintraub E, Bridges CB. The annual impact of seasonal influenza in the US: measuring disease burden and costs. *Vaccine*. 2007 Jun 28;25(27):5086-96. Epub 2007 Apr 20.

PROGRAM ACTIVITIES TABLE

(Dollars in Thousands)	FY 2009 Appropriation	FY 2009 Recovery Act	FY 2010 Appropriation	FY 2011 President's Budget Request	FY 2011 Request +/- FY 2010
<b>Section 317 Immunization Program</b>	<b>\$495,901</b>	<b>\$300,000</b>	<b>\$496,847</b>	<b>\$511,062</b>	<b>+\$14,215</b>
Vaccine Purchase Grants	\$261,977	\$0	\$261,977	\$289,546	+\$27,569
State Infrastructure Grants	\$233,924	\$0	\$234,870	\$221,516	-\$13,354
<b>Program Operations</b>	<b>\$61,458</b>	<b>\$0</b>	<b>\$62,621</b>	<b>\$65,630</b>	<b>+\$3,009</b>
<i>National Immunization Survey (PHS Evaluation Transfers) (non-add)</i>	\$12,794	\$0	\$12,864	\$12,864	\$0
<b>Influenza<sup>1</sup></b>	<b>\$358,689</b>	<b>\$0</b>	<b>\$158,992</b>	<b>\$159,115</b>	<b>+\$123</b>
Pandemic Influenza	\$156,046	\$0	\$156,344	\$0	-\$156,344
PHSSEF – Pandemic Influenza <sup>1</sup>	\$200,000	\$0	\$0	\$156,344	+\$156,344
Seasonal Influenza	\$2,643	\$0	\$2,648	\$2,771	+\$123

<sup>1</sup> In FY 2009, \$200 million was appropriated to CDC for Pandemic Influenza in the Supplemental Appropriations Act, 2009 (P.L. 111-32). The FY 2011 Pandemic Influenza request will be financed with transferred resources from the Supplemental Appropriations Act, 2009 (P.L. 111-32). These amounts are included in the FY 2009 and FY 2011 Influenza totals.

**IMMUNIZATION AND RESPIRATORY DISEASES**

SUMMARY OF THE REQUEST

In FY 2011, CDC’s programmatic requirement for Immunization and Respiratory Diseases is \$735,807,000, an increase of \$17,347,000 above the FY 2010 Omnibus. This amount includes CDC’s FY 2011 Immunization and Respiratory Diseases budget request of \$579,463,000 and a transfer of \$156,344,000 from the balances of the FY 2009 Supplemental Appropriations for Pandemic Influenza in the Public Health and Social Services Emergency Fund (PHSSEF). FY 2011 funds will support: continuation of CDC’s efforts to plan, develop, and maintain a public health infrastructure that helps assure high immunization coverage levels; prevention of vaccine-preventable diseases; and control of respiratory and related diseases such as influenza.

(Dollars in Thousands)	FY 2009 Appropriation	FY 2009 Recovery Act	FY 2010 Appropriation	FY 2011 President’s Budget Request	FY 2011 +/- FY 2010
<b>Budget Authority</b>	\$703,254	\$300,000	\$705,596	\$566,599	-\$138,997
<i>PHS Evaluation Transfers</i>	\$12,794	\$0	\$12,864	\$12,864	\$0
<b>Subtotal (BA and PHS)</b>	\$716,048	\$300,000	\$718,460	\$579,463	-\$138,997
<b>PHSSEF – Pandemic Influenza<sup>1</sup></b>	\$200,000	\$0	\$0	\$156,344	+\$156,344
<b>Total<sup>1</sup></b>	\$916,048	\$300,000	\$718,460	\$735,807	+\$17,347
<b>FTEs</b>	638	0	644	629	-15

<sup>1</sup> In FY 2009, \$200 million was appropriated to CDC for Pandemic Influenza in the Supplemental Appropriations Act, 2009 (P.L. 111-32). The FY 2011 Pandemic Influenza request will be financed with transferred resources from the Supplemental Appropriations Act, 2009 (P.L. 111-32). These amounts are included in the FY 2009 and FY 2011 Immunization and Respiratory Diseases totals.

AUTHORIZING LEGISLATION

PHSA §§ 301, 307, 310, 311, 317, 317(a), 317(j)(1), 317(k)(1), 319, 319C1, 319E, 319F(2), 327, 340C, 352, 2102(6), 2102(7), 2125, 2126, 2127, Title XXI, Section 1928 of Social Security Act (42 USC 1396s); Immigration and Nationality Act §§ 212 (8 USC Sec. 1182), 232 (8 USC Sec. 1252); Pandemic and All-Hazards Preparedness Act (PAHPA) of 2006

FY 2010 Authorization.....Expired/Indefinite  
 Allocation Method.....Direct Federal/Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; Contracts; and Other

PROGRAM DESCRIPTION

CDC focuses on the prevention of disease, disability, and death of children, adolescents, and adults through immunization and by control of respiratory and related diseases. Childhood vaccination coverage rates are at near record high levels, and as a result, cases of most vaccine-preventable diseases in the United States are at or near record lows. Maintaining and enhancing these program successes in vaccination are critical to prevent recurrent epidemics of diseases that could result in preventable illness, disability, and death. Persons in every age group are also impacted by acute respiratory infections, including pneumonia and influenza. Influenza is a major public health problem in the United States and globally, presenting an ever-evolving threat. FY 2011 funds will advance CDC’s priorities as noted below.

- CDC will fully implement vaccine programs and recommendations by 1) providing national communications campaigns and provider education to raise awareness about vaccine recommendations and support informed decision-making; 2) conducting assessments of vaccine impact and effectiveness and enhanced surveillance to document disease trends; 3) monitoring and

evaluating vaccine safety; 4) improving vaccine coverage monitoring; and 5) providing programmatic support to physicians and healthcare facilities to ensure sufficient vaccine financing and distribution, as well as proper vaccine storage and handling; and 6) purchase of recommended vaccines.

- CDC will reduce deaths from vaccine-preventable diseases, pneumonia, influenza, and other severe respiratory diseases by facilitating the use of known interventions, devising sound approaches to monitor impact, and accelerating research to address key gaps.
- CDC will improve preparedness for global threats by strengthening epidemiologic, laboratory, and public health preparedness and response capacity to combat respiratory microbial threats.

CDC's budget request reflects these priorities and highlights three key areas to maintain low incidence of vaccine-preventable disease and control respiratory diseases: Immunization and Vaccine-Preventable Diseases; Influenza (Seasonal, Novel, and Pandemic); and Respiratory and Related Diseases.

The two primary federal programs that support immunization in the United States are the Section 317 Immunization Program and the mandatory Vaccines for Children (VFC) Program. The VFC Program, established by Section 1928 of the Social Security Act in 1994, serves children through 18 years of age who meet one of the following criteria: those without health insurance, those eligible for Medicaid, American Indian and Alaska Native children, and underinsured children who receive care through Federally Qualified Health Centers (FQHCs) or Rural Health Clinics (RHCs). Through VFC, CDC provides funding to 61 state and local public health immunization programs that include all 50 states, six city/urban areas, and five U.S. territories and protectorates. VFC funding supports the purchase of recommended pediatric and adolescent vaccines, development and management of the pediatric vaccine stockpile, and program operations.

In FY 2011, CDC will receive a nonexpenditure transfer of \$3,651,354,000 from the Centers for Medicare & Medicaid (CMS) for the VFC Program. The slight reduction in the total VFC obligations for FY 2011 is the net result of increases in vaccine purchase and evaluation activities, as well as decreases mainly in program administrative activities such as Vaccine Tracking System (VTrckS) development costs. The table below reflects the sources of VFC funding and estimates of total VFC obligations.

<b>VFC</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>
<b>Actuals</b>	\$3,382.875M	N/A	N/A
<b>Unobligated Balances Brought Forward</b>	N/A	\$15.988M	N/A
<b>Nonexpenditure Transfer from CMS</b>	N/A	\$3,636.201M	\$3,651.354M
<b>Total VFC Obligations</b>	\$3,382.875M	\$3,652.189M	\$3,651.354M

MECHANISMS AND FUNDING HISTORY TABLE

More than 90 percent of the funds CDC receives to support Immunization are provided directly to the 64 Section 317 Immunization Program grantees in the form of federally purchased vaccine and operations grants, while the remaining funds are used to support CDC program operations and accountability, including vaccine coverage monitoring, vaccine impact and effectiveness assessments, vaccine safety, and public awareness and provider education. CDC also provides financial, technical, and direct assistance to state and local health departments to increase capacity to address influenza issues.

<b>Fiscal Year</b>	<b>Section 317</b>
<b>FY 2001</b>	\$446,028,000
<b>FY 2002</b>	\$493,567,000
<b>FY 2003</b>	\$502,765,000
<b>FY 2004</b>	\$468,789,000
<b>FY 2005</b>	\$493,032,000
<b>FY 2006</b>	\$517,199,000
<b>FY 2007</b>	\$512,804,000
<b>FY 2008</b>	\$527,359,000
<b>FY 2009</b>	\$557,359,000
<b>FY 2010</b>	\$559,468,000

<b>Fiscal Year</b>	<b>Immunization and Respiratory Diseases</b>
<b>FY 2006</b>	\$519,858,000
<b>FY 2007</b>	\$585,430,000
<b>FY 2008</b>	\$684,634,000
<b>FY 2009*</b>	\$716,048,000
<b>FY 2010</b>	\$718,460,000

\* Amount does not include \$200M appropriated for Pandemic Influenza from the PHSSEF nor \$300M for Section 317 from the FY 2009 Recovery Act.

**Budget Request: Immunization and Vaccine-Preventable Diseases**

The Section 317 Immunization Grant Program provides vaccines and the necessary program support to reach underinsured children and adolescents not served by the VFC Program, and as resources allow, provides vaccination services for uninsured and underinsured adults. CDC requests \$576,692,000 for the Section 317 Immunization Program in FY 2011, an increase of \$17,224,000 above the FY 2010 Omnibus.

The increase in Section 317 funding for FY 2011 will be used to build on the gains made in increasing vaccination coverage achieved with the 2009 Recovery Act funding. The funding will be used for vaccine purchase and state operations with a focus on adult and recently recommended vaccines for adolescents and children. The budget increase will allow CDC to continue making immunization available to more Americans, continue identifying and implementing strategies to increase influenza vaccination coverage among young and school-age children, and continue addressing barriers to access for adolescents and adults, such as increasing the number of providers offering immunization services, and providing immunization in community and alternative venues.

Specifically, FY 2011 funds will be used to support the following activities.

- CDC will improve immunization coverage for all ages by:
  - Increasing the number of providers offering federally-purchased vaccines to eligible adolescents;
  - Increasing access to immunization services for adults and older children by partnering with non-traditional venues, such as pharmacies, retail-based clinics, and school-based settings, to promote and offer vaccinations;
  - Continuing to provide funding and technical assistance to immunization grantees to develop, enhance, and maintain immunization information systems capable of identifying individuals in

- need of immunization, measuring vaccination coverage rates, producing reminder and recall notices, and interfacing with electronic medical records;
- Increasing national public awareness and provider knowledge about vaccine-preventable diseases and immunization recommendations using an array of media and culturally-appropriate tools and resources to support informed decision-making about vaccination;
  - Improving methods to assess vaccination coverage levels across the lifespan in order to identify groups at risk of vaccine-preventable diseases, monitor racial and ethnic disparities in vaccine coverage, evaluate the effectiveness of programs designed to increase coverage levels, monitor uptake of new vaccines, assess differential impact of vaccine shortages, measure performance by various types of providers, and provide greater understanding of socio-demographic and attitudinal factors associated with vaccination; and
  - Supporting the systems required for ordering and distributing all public sector vaccines through the Vaccine Management Business Improvement Project (VMBIP).
- CDC will provide the evidence-base for immunization through surveillance, epidemiology, and laboratory services and research. This effort includes providing technical assistance and expertise for the development of vaccine recommendations and other programmatic decisions, monitoring changes in vaccine-preventable diseases, identifying outbreaks of vaccine-preventable diseases and providing guidance for prevention and control measures in outbreaks, assisting and training state public health laboratories, and providing training to states on surveillance and epidemiology.
  - CDC will provide grants to immunization programs to conduct needs assessments and develop plans that will enable health departments to bill private insurance programs for immunization services provided to covered patients. This effort is based on a billing project in Oregon where billing private insurance resulted in a significant savings in Section 317 funds. These savings were used to enhance efforts to vaccinate more high-need individuals, including: hepatitis B birth dose for all children born in Oregon birthing hospitals; hepatitis A and B vaccines for high-risk adults; and Tdap vaccine for adolescents and adults. In addition, the savings from this new billing system allowed Oregon to implement pilot projects for hospital standing orders for pneumococcal and influenza vaccination; hepatitis A and B vaccination at family planning clinics; and influenza vaccine to fill community gaps. Health Department Clinics (HDCs) mainly serve underinsured children with Section 317 or state-purchased vaccines. However, some fully insured children are also seen at HDCs, yet 70 percent of HDCs do not bill these recipients' insurance but use Section 317 instead. Savings from these projects can be used to immunize more children and adults. The National Vaccine Advisory Committee (NVAC) recently recommended that "states and localities develop mechanisms for billing insured children and adolescents served in the public sector". NVAC also recommends that CDC provide support to states and localities by disseminating best practices and providing technical assistance to develop these billing mechanisms. CDC's FY 2011 budget includes \$4,847,000 for these activities.

**Rationale and Recent Accomplishments:** The childhood vaccination program is one of the most successful and cost effective public health tools for preventing disease and death. CDC's immunization programs have achieved substantial reductions in vaccine-preventable diseases through routine immunization of young children. Maintaining and enhancing these successes across the lifespan are critical to preventing unnecessary illness, disability, and death from vaccine-preventable diseases.

<b>COST-EFFECTIVENESS OF CHILDHOOD VACCINES</b>	
For every \$1.00 spent on an individual vaccine:	
○	Diphtheria-Tetanus-acellular Pertussis (DTaP) saves \$27.00
○	Measles, Mumps, and Rubella (MMR) saves \$26.00
○	Perinatal Hepatitis B saves \$14.70
○	Varicella saves \$5.40
○	Inactivated Polio (IPV) saves \$5.45
For every \$1.00 spent:	
○	Childhood Series (7 vaccines) saves \$16.50 <sup>1</sup>

<sup>1</sup> Series includes DTaP, Td, Hib, IPV, MMR, Hep B and Varicella  
Source: various peer reviewed publications. Direct and indirect savings included.

FY 2010 funding supported the local and state immunization program activities necessary to ensure high immunization coverage levels and low incidence of vaccine-preventable diseases, as well as the purchase of vaccines for underinsured children and adolescents not served by the VFC Program and to uninsured and underinsured adults. FY 2010 funding also supported activities critical to the success of national immunization programs and policies: documenting trends in vaccine-preventable diseases; assessing vaccine effectiveness and impact; and implementing national public awareness campaigns and provider education to support informed vaccine decision-making. CDC's recent accomplishments include those described below.

- Centralized vaccine distribution, a cornerstone of VMBIP, allows CDC to distribute vaccine using a fully integrated, centrally-managed vaccine inventory that provides complete visibility to vaccine in CDC's control and allows tight management as needed for accountability and rationing in times of vaccine shortage. During the recent *Haemophilus influenzae* type b (Hib) vaccine shortage in 2009, centralized distribution allowed CDC to track ordering patterns at the provider level for the first time, enabling proactive management of the national shortage.
- CDC met the target of 90 percent coverage (most recent data available) for all routinely-recommended pediatric vaccines with the exception of pneumococcal conjugate vaccine (PCV7) and the fourth dose of Diphtheria-Tetanus-acellular Pertussis (DTaP) in 2008. Five of the routinely-recommended vaccines exceeded the 90 percent coverage target: Hib, measles-mumps-rubella (MMR), hepatitis B, polio, and varicella.
- CDC expanded the scope of the National Immunization Survey (NIS) to include new vaccine recommendations for young children. The 2008 NIS marks the first time that coverage estimates are routinely reported for the hepatitis B birth dose (55.3 percent) and for the hepatitis A vaccination recommendation (40.4 percent) among children aged 19-35 months of age.
- Vaccination coverage for the three most recently recommended adolescent vaccinations and one childhood vaccination increased from 2007 to 2008: meningococcal conjugate vaccine (MCV4) (from 32.4 percent to 41.8 percent); tetanus, diphtheria, acellular pertussis (Tdap) (from 30.4 percent to 40.8 percent); >1 dose of quadrivalent human papillomavirus vaccine (HPV4) (from 25.1 percent to 37.2 percent); and >2 doses of varicella among those without disease history (from 18.8 percent to 34.1 percent). For the first time, the 2008 NIS-Teen survey included estimates for each of the 50 states and selected local areas.

**Health Impact:** CDC's efforts have resulted in the reduction of several vaccine-preventable diseases, increased immunization coverage rates, and improved vaccine safety surveillance and research. The reduction in the number of indigenous case targets have been met or exceeded for five out of nine diseases for which there are routinely recommended childhood vaccines (paralytic polio, measles, diphtheria, congenital rubella syndrome, and tetanus). CDC has made significant progress in meeting the performance measure that monitors progress in achieving or sustaining immunization coverage of at least 90 percent in children 19-



35-months of age with appropriate vaccinations. For the past six years, the 90 percent coverage target has been exceeded for four of the seven routinely recommended childhood vaccines (Hib, MMR, hepatitis B, and polio) and reached the 90 percent target for varicella in 2007. To sustain current high coverage rates and increase coverage rates for vaccines that have not yet reached the 90 percent target, in FY 2011 CDC will provide funding, guidance, and technical assistance to state and local immunization programs for activities such as conducting provider assessments and providing education and training to both public and private immunization providers.

Despite increases in influenza vaccination coverage, the performance targets have not been met. Coverage remains well below the 2010 target of 90 percent coverage. To reach these ambitious targets, in FY 2011 CDC and its partners will continue to aggressively promote vaccination. Efforts will encourage health care providers to recommend influenza vaccine to their patients and will focus on getting health care providers vaccinated, a recommended group with consistently low vaccine coverage. *(Please see outcomes 1.1.1a-1.1.1g, 1.1.2, 1.1.3, 1.1.4, 1.4.1a, 1.4.1b and outputs 1.2.1a-1.2.1g, 1.2.2, 1.3.1a, 1.3.1b, 1.3.2a, 1.3.2b, and 1.A-1.I for specific information.)*

Budget Request: Influenza (Seasonal, Novel, and Pandemic)

In FY 2011, CDC's programmatic requirement for the Influenza Program is \$159,115,000, an increase of \$123,000 above the FY 2010 Omnibus. This amount includes CDC's FY 2011 Influenza budget request of \$2,771,000 and a transfer of \$156,344,000 from the balances of the FY 2009 Supplemental Appropriations for Pandemic Influenza in the Public Health and Social Services Emergency Fund (PHSSEF).

CDC's influenza program works to control and prevent influenza infections; minimize domestic and global illness, suffering, and death from seasonal, pandemic, and animal-origin novel influenza; and maintain preparedness for minimizing the illness and death that occurs during influenza pandemics and severe seasons.

Influenza viruses are constantly changing. As new influenza viruses emerge and circulate, CDC responds quickly, as needed, to: 1) detect the threat (via epidemiologic and viral surveillance); 2) control outbreaks (through technical advice and outbreak responses); 3) collect and isolate the virus (via partnerships and state-of-the-art laboratory techniques); 4) develop a vaccine strain; 5) develop policies and guidance; and 6) implement a vaccination campaign. Strengthening any one of these processes uniformly increases our capability to respond to influenza viruses of any origin: human, animal, or novel. For example, a single seasonal influenza test that gives an unsubtypable result could give advance warning of an outbreak of a novel or animal-origin strain of influenza. Laboratorians trained in the technique for one type of flu can be easily supplied with different materials and perform the technique for another type of flu. Building seasonal influenza capacity improves ability to prepare for animal-origin threats, which also helps prepare for pandemic threats—and the same is true in reverse.

Working together with international partners, policy makers, tribal leaders, state and local health departments, the medical community, private sector partners, and other parts of the federal government, CDC will use FY 2011 funds for the following influenza preparedness and response activities.

Surveillance and Epidemiology

- CDC will improve the early detection of novel influenza virus infections and enhance and expand surveillance for seasonal, pandemic, and novel influenza infections. For example, CDC will continue to develop point-of-care diagnostic devices to detect novel influenza viruses. One such test, which was undergoing clinical trial in FY 2009, was the first to detect 2009 H1N1 influenza in the United States.
- CDC will build and maintain surveillance, diagnostic, and clinical capacity by training and supporting state and local health departments to detect and respond to influenza in the United States and around the world. For example, CDC will continue to provide expert consultation and training on molecular virology and risk assessment within CDC and HHS as well as for WHO, the private sector, or other stakeholders and partners.

- Epidemiologic studies will be conducted to understand the burden of influenza, the effectiveness of interventions designed to reduce that burden, and impact of the influenza program.

#### Laboratory

- CDC will conduct ongoing evaluation of transmission and immune responses to influenza viruses.
- Virus surveillance will be conducted to identify vaccine virus strains, monitor for optimal vaccine match and antiviral resistance, and identify emerging viruses with pandemic potential.
- CDC will conduct public health laboratory studies to develop new diagnostic tests and to better understand the evolution and characteristics of influenza viruses for developing better tools for the prevention and control of influenza.
- CDC will prepare and characterize seasonal, pre-pandemic and pandemic influenza viruses for vaccine manufacturing and support development of cell-based vaccines.

#### International

- International technical assistance will be provided for outbreak investigations, expansion of laboratory and epidemiologic capacity, and international training, including establishment of National Influenza Center laboratories and surveillance for severe influenza infections at sentinel sites.
- CDC will provide grant support and assist grantees in developing, conducting, and evaluating projects in enhanced surveillance and laboratory capacity for influenza virus detection and control. In FY 2009, CDC's Developing Influenza Surveillance Networks Cooperative Agreement with the Pan American Health Organization (PAHO) provided 22 countries in the region with the purchase of laboratory equipment, reagents, and supplies. The number of laboratories in the region participating in the Global Influenza Surveillance Network has steadily increased, as well as the region's virological surveillance capacity.

#### Vaccination

- CDC will monitor vaccine doses distributed and administered in order to target communications, education, and community mobilization.
- CDC will strengthen existing systems to monitor seasonal vaccine effectiveness and initiate studies to address identified gaps. CDC will continue measuring effectiveness of influenza vaccines in preventing hospitalizations through the Emerging Infections Program collaboration, and CDC has established a multi-group collaboration that allows understanding the effectiveness of vaccine to prevent healthcare visits. In addition, CDC is tracking the effectiveness of vaccine in preventing influenza among pregnant women.

#### Communication

- CDC will respond rapidly to emerging influenza-associated issues through development and dissemination of urgent alerts for outbreaks, public health research findings, policy changes, vaccine shortages, and other issues.
- A comprehensive communication strategy will be implemented to improve influenza vaccination coverage by increasing public awareness and provider knowledge about the influenza vaccination recommendations and the benefits and risks of influenza vaccination and the influenza virus.

Community and Medical Countermeasures

- CDC will enhance monitoring of antiviral use, effectiveness, and safety to inform clinician guidance and use of strategic national stockpile assets.
- Infection control recommendations will be improved through studies of influenza transmission and evaluation of personal protective equipment.
- CDC will monitor the use of non-pharmacologic interventions, such as school closures, and evaluate their effectiveness.

Rationale and Recent Accomplishments: FY 2009 appropriated funds for preparedness and response were used to establish a robust laboratory, epidemiology, and response infrastructure which allowed for detection of, and rapid interventions to, the 2009 H1N1 influenza pandemic strain. FY 2009 appropriated funds included funding from the FY 2009 supplemental for H1N1 response.

- **Earlier Detection:** The first case of 2009 H1N1 infection identified in the United States was detected by an investigational device supported by CDC influenza funds. The second case was found in a child enrolled in a CDC surveillance network along the U.S.-Mexico border supported with CDC influenza funds.
- **Earlier Recognition:** The first cases were identified as a novel influenza virus at state health departments using a new polymerase chain reaction (PCR) diagnostic test developed as part of pandemic preparedness and deployed for use in seasonal influenza surveillance. CDC influenza funds supported the purchase of equipment and test reagents which were in place at the time the pandemic was recognized. Rapid sequencing at CDC quickly identified a swine-origin virus never reported before.
- **Rapid Communication:** CDC posted genetic information on the virus on the web within 24 hours of completion, allowing international public health officials to connect the Mexico and Southern California infections as both due to the 2009 H1N1 influenza virus.
- **Rapid Response:** State and local planning funded by FY 2009 funds allowed officials to implement activities that had been tested during exercises and refined to maximize state responses, including plans for vaccine distribution, administration, and adverse event monitoring. Preparedness planning facilitated by CDC and executed at the federal, state, and local levels was critical in preparing for the 2009 H1N1 response.
- **Rapid Vaccine Strain Development:** Improved laboratory capability allowed for rapid preparation of viruses shared with vaccine manufacturers in the United States and internationally for making 2009 H1N1 pandemic vaccines. Vaccine candidates for avian influenza were also prepared for pre-pandemic vaccines in FY 2009.
- **Coordinated International Response:**
  - Established surveillance for severe influenza in sentinel sites and to support new National Influenza Centers in various countries. These assets were invaluable for countries responding to the 2009 H1N1 pandemic.
  - Research platforms were established for studies in nine countries in Asia, Africa, and South America to test new prevention strategies and vaccines, understand how influenza affects diverse populations, establish disease burden estimates, and validate surveillance case definitions.
  - Technical assistance was provided to develop international capacity in 43 countries and WHO Headquarters and Regional Offices.

Health Impact: The efforts of CDC's influenza program are focused on reducing illness, hospitalization, and death from seasonal and pandemic influenza. Expanding influenza surveillance to inform composition of influenza vaccines for maximum effectiveness and to maximize use of influenza vaccines and antiviral

medications are central to this effort. Further efforts to improve influenza surveillance systems domestically and globally will allow earlier detection of the emergence and spread of influenza viruses with pandemic potential. Earlier detection will save lives by allowing the maximum time possible for public health responses including vaccine production. Monitoring burden of disease and vaccine effectiveness in the United States and in resource-poor settings abroad will assist other countries to have evidence-based recommendations on influenza prevention and control measures. CDC's monitoring and evaluation of its international efforts to build capacity will allow it to build on those activities that have been successful and continue to improve pandemic preparedness globally. Rapid sharing of accurate influenza-related information, guidance documents, and use of all forms of communication fosters a convergence of action across all levels of government, the private sector, the entire healthcare sector, faith-based and community-based organizations, and individuals. *(Please see output 1.6.2 for specific information.)*

**Budget Request: Respiratory and Related Diseases**

CDC collaborates with state and local public health departments, academic institutions, and other domestic and global partners to improve detection, prevention, and control of respiratory and related diseases. CDC supports disease surveillance, provides critical laboratory capacity, ensures capacity to rapidly respond to disease outbreaks, and facilitates use of evidence-based strategies for reducing infections, including the development, introduction, and monitoring of vaccines. These activities also support preparedness for emerging or reemerging infectious diseases.

These activities are supported with funding from the global immunization program, emerging infectious diseases, and Section 317 immunization program budget lines.

FY 2011 funds will be used to achieve the following:

- Diagnose and characterize polio and measles viruses to inform the programmatic direction of the polio eradication campaign and global measles mortality reduction efforts;
- Isolate new rotavirus vaccine strains in developing countries and then transfer the appropriate knowledge and technology needed to develop the vaccines locally in order to reduce rotavirus infection which results in about 600,000 deaths each year, primarily in developing countries;
- Provide outbreak response to respiratory pathogens such as pertussis, Mycoplasma, group A streptococcus, pneumococcus, adenovirus, respiratory syncytial virus, and Legionnaires' disease;
- Enhance epidemiologic and laboratory surveillance for respiratory bacterial pathogens, through activities such as population-based Active Bacterial Core Surveillance system (ABCs) in 10 states (including group A and Group B streptococcus), and detection and monitoring for antibiotic resistance;
- Develop, enhance, and implement programs to prevent or reduce burden of respiratory diseases, including perinatal screening to prevent Group B Streptococcal disease, Get Smart Campaign to reduce antibiotic use in uncomplicated upper respiratory infections, and environmental detection and remediation of Legionellosis; and
- Optimize opportunities to prevent cytomegalovirus (CMV) and respiratory syncytial virus (RSV) through the development of new diagnostic tools, better understanding of the disease burden, and prevention opportunities.

**Rationale and Recent Accomplishments:** Respiratory and related diseases continue to place a significant burden on the public's health. Vaccines have been an effective tool in reducing the occurrence of some of these diseases and CDC continues to support the development, introduction and monitoring of new vaccines, especially in global communities. Establishing and maintaining disease surveillance for vaccine-preventable diseases is critical for detecting changes in the epidemiology of the diseases, emergence of new strains, and changes in the duration of immunity. As the nation's lead public health agency, CDC continues to be

responsible for ensuring a rapid and effective response to current and emerging infectious disease threats, including respiratory and related diseases. Examples of recent accomplishments are described below.

- ABCs project has demonstrated the sustained impact of pneumococcal conjugate vaccine (PCV7) in reducing the risk of invasive bacterial diseases caused by vaccine serotypes by 99 percent in children targeted by vaccine, and by over 90 percent among older age groups (> 18 years) who are protected by herd immunity.
- Since 2000, the Get Smart Campaign funds states and works with public and private partners to promote appropriate use of antibiotics to treat respiratory infections and to increase awareness in the general public. This work has helped to lead to a reduction in antibiotic use for acute respiratory tract infections among both children and adults. The Campaign has helped to lead to a 17 percent reduction in antibiotic prescriptions for acute respiratory tract infections (ARTIs) in the United States in children <5 from 1995-2006. During the same period, antibiotic prescriptions for ARTIs in those ≥ 5 decreased by 18 percent.
- CDC developed a diagnostic test for novel adenovirus currently being validated by the Department of Defense Lackland Air Force Base Advanced Diagnostic Laboratory and Naval Health Research Center. This work is in response to adenovirus outbreaks in military recruits.
- CDC licensed new rotavirus vaccine candidates and technology to vaccine manufacturers in emerging developing countries, trained scientists from developing countries, and transferred appropriate knowledge and technology needed for ongoing clinical trials. Developing countries, which have the greatest burden of rotavirus disease, face large difficulties in securing the technologies and resources needed to make and use existing vaccines.

Health Impact: Millions of lives have been saved by vaccines, but adults and especially children continue to die from vaccine-preventable diseases in developing countries. There also continue to be deaths in the United States from vaccine-preventable diseases. The global toll of childhood deaths can be reduced by continuing CDC's technical assistance and expertise to support the introductions of new vaccines globally and to guide the direction of the polio eradication and measles mortality reduction campaigns. In the United States, support is needed to continue to assure the safety and effectiveness of vaccines. To reduce the impact of respiratory and related diseases, CDC is improving global and domestic surveillance; rapidly responding to outbreaks; monitoring the impact of vaccines; developing new tests to diagnose and characterize respiratory pathogens; making the new tests available, providing training on them to other public health laboratories; and conducting research to improve current preventive and programmatic measures and develop new measures.

#### IT INVESTMENTS

VMBIP was initiated to enhance the efficiency and accountability of public sector vaccine ordering, distribution and management systems. VMBIP is partially supported by the Immunization and Vaccine-Preventable Diseases funding, with additional support provided through VFC. A critical component of VMBIP is the development and introduction of a new vaccine management technology system, the Vaccine Tracking System (VTrckS). VTrckS is a Web-based system for provider ordering and automated approvals that will improve operational efficiency and internal controls. It is a comprehensive IT solution that eliminates current legacy system limitations, provides a scalable platform, and facilitates central administration of vaccine management. VTrckS will allow providers to order directly from the Internet, improve internal controls, significantly reduce manual processes, and provide transparency into provider usage patterns improving data analysis capability. This real-time inventory visibility will improve preparedness, allow for a greater focus on public health, and reduce time and resources devoted to managing vaccines and funding. Development of VTrckS Release 1 will begin in January 2010, with implementation beginning in June 2010.

**OUTCOME TABLE**

Measure	Most Recent Result	FY 2010 Target	FY 2011 Target	FY 2011 +/- FY 2010
<b>Long Term Objective 1.1: Reduce the number of indigenous cases of vaccine-preventable diseases.</b>				
<b>1.1.1: Reduce or maintain the number of indigenous<sup>1</sup> cases at 0 by 2010 for the following: (Outcome)</b>				
<b>1.1.1a: Paralytic Polio<sup>2</sup> (Outcome)</b>	FY 2008: 0 (all ages) (Met)	0	0	Maintain
<b>1.1.1b: Rubella<sup>2</sup> (Outcome)</b>	FY 2008: 8 (all ages) (Met)	0	10	+10
<b>1.1.1c: Measles<sup>2,7</sup> (Outcome)</b>	FY 2008: 115 (all ages) (Not Met)	0	100	+100
<b>1.1.1d: Haemophilus influenzae<sup>3</sup> (Outcome)</b>	FY 2008: 193 (b + unknown) (children under 5) (Not Met but Improved)	0	0	Maintain
<b>1.1.1e: Diphtheria<sup>4</sup> (Outcome)</b>	FY 2008: 0 (persons under 35 years of age) (Exceeded)	0	0	Maintain
<b>1.1.1f: Congenital rubella Syndrome<sup>5,6</sup> (Outcome)</b>	FY 2008: 0 (children under one) (Exceeded)	0	0	Maintain
<b>1.1.1g: Tetanus<sup>4</sup> (Outcome)</b>	FY 2008: 6 cases (persons under 35 years of age) (Exceeded)	0	0	Maintain
<b>1.1.2: Reduce the number of indigenous cases of mumps in persons of all ages from 666 (1998 baseline) to 0 by 2010.<sup>6,8</sup> (Outcome)</b>	FY 2008: 418 (Not Met but Improved)	0	350	+350
<b>1.1.3: Reduce the number of indigenous cases of pertussis among children under 7 years of age. (Outcome)</b>	FY 2008: 4,166 (Not Met)	2,000	2,000	Maintain
<b>1.1.4: Reduce or eliminate indigenous cases of Varicella (persons 17 years of age and under)</b>	FY 2007: 582,535 (Baseline)	223,000	200,000	- 23,000
<b>Long Term Objective 1.4: Protect Americans from infectious disease – pneumococcal.</b>				
<b>1.4.1: By 2010, reduce the rates of invasive pneumococcal disease in children under 5 years of age to 46 per 100,000 and in adults 65 years and older to 42 per 100,000 (Outcome)</b>				
<b>1.4.1a: Children under 5 years of age (Outcome)</b>	FY 2008: 20.9 (Exceeded)	46	35	-11
<b>1.4.1b: Adults 65 years and older (Outcome)</b>	FY 2008: 37.6 (Exceeded)	42	35	-7

<sup>1</sup> An indigenous case is defined as a case of measles within a state unrelated to an imported case or with onset occurring more than two generations after an imported case to which it is epidemiologically linked. Any case that cannot be proven as imported or spread from an imported case should be classified as indigenous.

<sup>2</sup> All ages.

<sup>3</sup> Children under five years of age.

<sup>4</sup> Persons under 35 years of age.

<sup>5</sup> Children under one year of age. Result column indicates all cases – indigenous and imported.

<sup>6</sup> Result column indicates all cases – indigenous and imported.

<sup>7</sup> Explanation for change in measles target: Although the United States has maintained measles elimination (defined as the absence of endemic disease transmission) since 2000 when elimination was declared by an expert panel, in 2008, the United States had 140 reported cases of measles, the most reported cases since 1996. Of the 140 cases, 116 were classified as US-acquired. The 2010 target for indigenous measles cases was 0, a target that was unlikely to be achieved due to the large outbreaks of measles occurring in highly traveled developed countries, such as the United Kingdom and Switzerland, and communities of susceptible persons where immunization levels have dropped enough that herd immunity has not been maintained.

<sup>8</sup> Explanation for change in mumps target: Studies conducted during a mumps outbreak in Maine in 2005 and during the large 2006 mumps outbreak showed that 2 doses of mumps or MMR vaccine was 88%-95% effective in preventing mumps with lower effectiveness in settings of high exposure and transmission (i.e. college campuses). Thus, given the effectiveness of 2 doses of mumps vaccine, issue of vaccine hesitancy, and the continued risk of mumps importations meeting the 2010 goal of zero indigenous cases is not feasible. Even, if the United States was successful in achieving elimination of endemic transmission of mumps, importations of mumps will continue into the United States because only 58% of countries around the world use mumps vaccines and it is expected that some spread will occur from these cases. In summary, the reasons for not meeting the different targets may be attributed to various factors such as continuation of importations, increase in the number of vaccine hesitators, the possible issue of waning immunity, and unknown vaccine effectiveness in two-dose vaccinated individuals. Given the continued risk of mumps transmission in the United States, CDC subject matter experts have considered the above mentioned issues when setting the FY 2011 target 2020 goal for mumps.

**OUTPUT TABLE**

Measure	Most Recent Result	FY 2010 Target	FY 2011 Target	FY 2011 +/- FY 2010
<u>1.E.1</u> : Make vaccine distribution more efficient and improve availability of vaccine inventory by reducing the number of vaccine inventory depots in the U.S. ( <i>Efficiency</i> )	FY 2008: 98% reduction (Exceeded)	Maintain 98% reduction in inventory depots	Maintain 98% reduction in inventory depots	Maintain
<b>Long Term Objective 1.2: Ensure that children and adolescents are appropriately vaccinated.</b>				
<u>1.2.1</u> : Achieve or sustain immunization coverage of at least 90% in children 19- to 35-months of age for: ( <i>Output</i> )				
<u>1.2.1a</u> : 4 doses DTaP vaccine ( <i>Output</i> )	FY 2008: 85% (Not Met)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.1b</u> : 3 doses Hib vaccine ( <i>Output</i> )	FY 2008: 91% (Exceeded)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.1c</u> : 1 dose MMR vaccine ( <i>Output</i> )	FY 2008: 92% (Exceeded)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.1d</u> : 3 doses hepatitis B vaccine ( <i>Output</i> )	FY 2008: 94% (Exceeded)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.1e</u> : 3 doses polio vaccine ( <i>Output</i> )	FY 2008: 94% (Exceeded)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.1f</u> : 1 dose varicella vaccine ( <i>Output</i> )	FY 2008: 91% (Exceeded)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.1g</u> : 4 doses pneumococcal conjugate vaccine (PCV7) ( <i>Output</i> )	FY 2008: 80% (Not Met but Improved)	At least 90% coverage	At least 90% coverage	Maintain
<u>1.2.2</u> : Achieve or sustain immunization coverage of at least 90% in adolescents 13 to 15 years of age for 1 dose of Td containing vaccine ( <i>Output</i> )	FY 2008: 71% (Not Met but Improved)	90% coverage	90% coverage	Maintain

<b>Long Term Objective 1.3: Increase the proportion of adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease.</b>				
<u>1.3.1:</u> Increase the rate of influenza and pneumococcal vaccination in persons 65 years of age and older to 90% by 2010. <i>(Output)</i>				
<u>1.3.1a:</u> influenza <i>(Output)</i>	FY 2008: 67% (Not Met)	90%	90%	Maintain
<u>1.3.1b:</u> pneumococcal <i>(Output)</i>	FY 2008: 60% (Not Met but Improved)	90%	90%	Maintain
<u>1.3.2:</u> Increase the rate of vaccination among non-institutionalized high-risk adults aged 18 to 64 years to 60% by 2010 for: <i>(Output)</i>				
<u>1.3.2a:</u> influenza <i>(Output)</i>	FY 2008: 39% (Not Met but Improved)	60%	60%	Maintain
<u>1.3.2b:</u> pneumococcal <i>(Output)</i>	FY 2008: 25% (Not Met but Improved)	60%	60%	Maintain
<b>Long Term Objective 1.5: Improve vaccine safety surveillance.</b>				
<u>1.5.1:</u> Improve capacity to conduct immunization safety studies by increasing the total population of managed care organization members from which the Vaccine Safety Datalink (VSD) data are derived annually to 13 million by 2010. <i>(Output)</i>	FY 2008: 9.1 million (Not Met but Improved)	10 million	10 million	Maintain
<b>Long Term Objective 1.6: Protect Americans from infectious diseases – Influenza.</b>				
<u>1.6.2:</u> Increase the percentage of Pandemic Influenza Cooperative Agreement grantees (SLTTs) that meet the standard for surveillance and laboratory capability criteria. <i>(Output)</i>	FY 2008: 67% (Exceeded)	80%	90%	Increase

**OTHER OUTPUTS**

<b>Outputs</b>	<b>Most Recent Result<sup>4</sup></b>	<b>FY 2010 Target</b>	<b>FY 2011 Target</b>	<b>FY 2011 +/- FY 2010</b>
<u>1.A:</u> Number of grantees with 95% of the children participating in fully operational, population-based registries	22	27	32	+5
<u>1.B:</u> Number of grantees achieving 45% coverage for ≥2 doses hepatitis A vaccine (19-35 months of age). <sup>1</sup>	14	21	28	+7
<u>1.C:</u> Number of grantees achieving 65% coverage for 1 birth dose hepatitis B vaccine (19-35 months of age). <sup>1</sup>	25	30	35	+5
<u>1.D:</u> Number of grantees achieving 30% coverage for influenza vaccine (6-23 months of age). <sup>1</sup>	10	18	26	+8
<u>1.E:</u> Number of grantees achieving 25% coverage for ≥3 doses human papillomavirus vaccine (13-17 years of age). <sup>2</sup>	8	16	24	+8



NARRATIVE BY ACTIVITY  
 IMMUNIZATION AND RESPIRATORY DISEASES  
 BUDGET REQUEST

Outputs	Most Recent Result <sup>4</sup>	FY 2010 Target	FY 2011 Target	FY 2011 +/- FY 2010
<u>1.F:</u> Number of grantees achieving 45% coverage for ≥1 dose Tdap vaccine (13-17 years of age). <sup>2</sup>	15	22	29	+7
<u>1.G:</u> Number of grantees achieving 45% coverage for ≥1 dose meningococcal conjugate vaccine (13-17 years of age). <sup>2</sup>	15	22	29	+7
<u>1.H:</u> Number of grantees achieving 70% coverage for annual influenza vaccine (65 years of age and older). <sup>3</sup>	37	39	42	+3
<u>1.I:</u> Number of influenza networks established globally. <sup>5</sup>	44 networks	45 networks	45 networks	Maintain
<b>Appropriated Amount (\$ in millions)</b>		<b>\$595.3</b>	<b>\$616.7</b>	<b>+\$21.4</b>

<sup>1</sup> National Immunization Survey (2008)

<sup>2</sup> National Immunization Survey-Teen (2008)

<sup>3</sup> Behavioral Risk Factor Surveillance System (2008)

<sup>4</sup> Based on the 50 state grantees and the District of Columbia

<sup>5</sup> The FY 2010 estimate of \$35.8 million is the planning amount and does not include any funds that CDC may receive from HHS/OGHA. The FY 2011 estimate of \$40.0 million is a draft planning estimate.

GRANTEE TABLES

<b>FY 2011 BUDGET SUBMISSION CENTERS FOR DISEASE CONTROL AND PREVENTION FY 2011 DISCRETIONARY STATE/FORMULA GRANTS Section 317</b>				
State/Territory/Grantee	FY 2009 Actual	FY 2010 Appropriation	FY 2011 President's Budget Request	FY 2011 +/- FY 2010
Alabama	\$7,373,692	\$7,386,962	\$7,630,295	\$243,333
Alaska	\$5,473,299	\$5,479,266	\$5,815,739	\$336,474
Arizona	\$8,333,641	\$8,350,201	\$8,562,487	\$212,286
Arkansas	\$4,466,141	\$4,475,131	\$4,584,279	\$109,149
California	\$48,893,757	\$48,980,073	\$50,660,812	\$1,680,739
Colorado	\$7,720,388	\$7,735,652	\$7,935,439	\$199,787
Connecticut	\$5,670,751	\$5,682,289	\$5,815,945	\$133,656
Delaware	\$1,245,733	\$1,249,939	\$1,212,239	-\$37,700
District of Columbia (DC)	\$2,263,004	\$2,266,857	\$2,350,338	\$83,481
Florida	\$23,612,118	\$23,652,094	\$24,532,321	\$880,227
Georgia	\$10,579,845	\$10,600,880	\$10,869,962	\$269,082
Hawaii	\$3,416,959	\$3,423,770	\$3,509,987	\$86,218
Idaho	\$3,404,453	\$3,410,105	\$3,541,532	\$131,427
Illinois	\$5,603,568	\$5,615,504	\$5,726,117	\$110,613
Indiana	\$5,148,727	\$5,153,607	\$5,499,526	\$345,919
Iowa	\$4,789,123	\$4,798,615	\$4,921,605	\$122,990
Kansas	\$4,576,586	\$4,585,328	\$4,716,060	\$130,732
Kentucky	\$4,792,022	\$4,802,585	\$4,882,863	\$80,278
Louisiana	\$6,918,787	\$6,923,487	\$7,462,936	\$539,449
Maine	\$2,857,588	\$2,864,534	\$2,886,450	\$21,915
Maryland	\$5,497,609	\$5,511,375	\$5,537,332	\$25,956
Massachusetts	\$8,998,013	\$9,013,872	\$9,324,233	\$310,361
Michigan	\$11,855,643	\$11,881,301	\$12,099,076	\$217,775
Minnesota	\$7,185,716	\$7,201,929	\$7,307,346	\$105,417
Mississippi	\$3,843,292	\$3,851,291	\$3,934,666	\$83,375
Missouri	\$6,733,567	\$6,743,650	\$7,047,525	\$303,875
Montana	\$1,635,397	\$1,638,451	\$1,687,993	\$49,542
Nebraska	\$2,871,086	\$2,877,759	\$2,912,040	\$34,281
Nevada	\$3,879,306	\$3,887,329	\$3,973,524	\$86,195
New Hampshire	\$3,028,543	\$3,033,418	\$3,156,480	\$123,063
New Jersey	\$8,266,220	\$8,286,206	\$8,353,892	\$67,686
New Mexico	\$3,715,927	\$3,725,014	\$3,751,299	\$26,284
New York	\$13,708,307	\$13,742,802	\$13,800,800	\$57,997

<b>FY 2011 BUDGET SUBMISSION CENTERS FOR DISEASE CONTROL AND PREVENTION FY 2011 DISCRETIONARY STATE/FORMULA GRANTS Section 317</b>				
North Carolina	\$12,810,321	\$12,834,562	\$13,209,671	\$375,109
North Dakota	\$2,501,139	\$2,504,567	\$2,630,174	\$125,607
Ohio	\$15,743,711	\$15,767,644	\$16,463,762	\$696,117
Oklahoma	\$5,218,959	\$5,230,242	\$5,326,585	\$96,343
Oregon	\$5,889,919	\$5,901,424	\$6,059,447	\$158,023
Pennsylvania	\$11,979,476	\$12,004,774	\$12,250,021	\$245,247
Rhode Island	\$1,452,538	\$1,456,761	\$1,440,120	-\$16,641
South Carolina	\$5,864,964	\$5,877,380	\$5,996,186	\$118,806
South Dakota	\$2,698,288	\$2,701,163	\$2,869,702	\$168,539
Tennessee	\$6,211,590	\$6,221,233	\$6,487,850	\$266,617
Texas	\$27,634,276	\$27,690,331	\$28,348,470	\$658,139
Utah	\$4,384,816	\$4,393,887	\$4,491,206	\$97,318
Vermont	\$2,524,121	\$2,527,973	\$2,638,974	\$111,000
Virginia	\$10,913,922	\$10,932,197	\$11,347,199	\$415,002
Washington	\$9,394,443	\$9,411,571	\$9,712,686	\$301,114
West Virginia	\$2,832,172	\$2,837,213	\$2,932,939	\$95,727
Wisconsin	\$8,554,308	\$8,570,140	\$8,834,869	\$264,729
Wyoming	\$1,141,905	\$1,144,651	\$1,154,572	\$9,920
Chicago	\$5,574,560	\$5,589,845	\$5,562,936	-\$26,910
Houston	\$1,829,392	\$1,836,790	\$1,732,357	-\$104,433
New York City	\$12,056,972	\$12,082,535	\$12,325,273	\$242,738
Philadelphia	\$2,503,182	\$2,509,949	\$2,501,725	-\$8,224
San Antonio	\$2,240,651	\$2,247,323	\$2,215,312	-\$32,010
American Samoa	\$568,790	\$570,228	\$572,370	\$2,142
Guam	\$836,295	\$838,503	\$837,883	-\$620
Marshall Islands	\$2,544,570	\$2,548,228	\$2,669,160	\$120,932
Micronesia	\$3,968,048	\$3,971,896	\$4,235,036	\$263,141
Northern Mariana Islands	\$595,304	\$596,831	\$598,198	\$1,367
Puerto Rico	\$3,775,186	\$3,779,818	\$3,991,162	\$211,344
Republic Of Palau	\$676,451	\$677,215	\$717,739	\$40,524
Virgin Islands	\$401,703	\$402,972	\$394,296	-\$8,676
<b>Total States/Cities/Territories</b>	<b>\$423,680,777</b>	<b>\$424,491,122</b>	<b>\$436,551,016</b>	<b>\$12,059,894</b>
<b>Other Adjustments<sup>1</sup></b>	<b>\$72,220,223</b>	<b>\$72,355,878</b>	<b>\$74,510,984</b>	<b>\$2,155,106</b>
<b>Total Resources<sup>2</sup></b>	<b>\$495,901,000</b>	<b>\$496,847,000</b>	<b>\$511,062,000</b>	<b>\$14,215,000</b>

<sup>1</sup> Other adjustments include vaccine that is in inventory at the centralized distribution center but has not been ordered by immunization providers, funds for centralized vaccine distribution activities, vaccine data link, PHS evaluation, special projects, and program support services.

<sup>2</sup> FY 2011 request includes travel and contract reductions.

<b>FY 2011 BUDGET SUBMISSION CENTERS FOR DISEASE CONTROL AND PREVENTION FY 2011 MANDATORY STATE/FORMULA GRANTS Vaccines for Children Program (VFC)</b>				
<b>State/Territory/Grantee</b>	<b>FY 2009 Actual</b>	<b>FY 2010 Appropriation<sup>3</sup></b>	<b>FY 2011 President's Budget Request</b>	<b>FY 2011 +/- FY 2010</b>
Alabama	\$44,239,475	\$48,743,310	\$49,049,807	\$306,498
Alaska	\$11,268,821	\$12,508,146	\$12,601,256	\$93,110
Arizona	\$73,806,472	\$81,322,220	\$81,832,546	\$510,326
Arkansas	\$36,241,024	\$39,934,667	\$40,183,466	\$248,799
California	\$313,738,428	\$345,699,483	\$347,861,588	\$2,162,105
Colorado	\$36,105,709	\$39,773,626	\$40,028,148	\$254,522
Connecticut	\$28,402,490	\$31,282,263	\$31,485,596	\$203,333
Delaware	\$8,079,055	\$8,894,245	\$8,954,289	\$60,044
District of Columbia (DC)	\$10,793,065	\$11,883,541	\$11,962,954	\$79,413
Florida	\$175,167,952	\$193,017,859	\$194,222,086	\$1,204,227
Georgia	\$94,204,664	\$103,794,044	\$104,447,376	\$653,331
Hawaii	\$10,935,616	\$12,030,832	\$12,116,679	\$85,847
Idaho	\$18,339,267	\$20,204,261	\$20,332,461	\$128,199
Illinois	\$83,208,211	\$91,678,574	\$92,255,450	\$576,876
Indiana	\$51,630,280	\$56,880,799	\$57,241,701	\$360,902
Iowa	\$18,355,349	\$20,217,410	\$20,348,267	\$130,858
Kansas	\$20,701,068	\$22,802,636	\$22,949,356	\$146,720
Kentucky	\$33,778,482	\$37,217,899	\$37,451,602	\$233,703
Louisiana	\$66,600,423	\$73,392,818	\$73,847,499	\$454,681
Maine	\$9,187,257	\$10,107,902	\$10,179,729	\$71,827
Maryland	\$44,954,207	\$49,535,284	\$49,844,237	\$308,953
Massachusetts	\$49,286,698	\$54,298,131	\$54,643,072	\$344,942
Michigan	\$70,805,881	\$78,009,561	\$78,502,772	\$493,210
Minnesota	\$30,653,596	\$33,768,144	\$33,983,953	\$215,809
Mississippi	\$36,640,419	\$40,374,139	\$40,626,031	\$251,892
Missouri	\$45,111,994	\$49,703,365	\$50,016,627	\$313,262
Montana	\$6,546,067	\$7,206,812	\$7,255,331	\$48,519
Nebraska	\$14,390,342	\$15,852,774	\$15,953,915	\$101,141
Nevada	\$24,311,127	\$26,779,896	\$26,951,807	\$171,911
New Hampshire	\$9,344,405	\$10,288,326	\$10,357,186	\$68,860
New Jersey	\$63,994,514	\$70,504,898	\$70,950,840	\$445,942
New Mexico	\$31,958,086	\$35,205,133	\$35,430,149	\$225,016
New York	\$68,618,311	\$75,573,421	\$76,065,890	\$492,469
North Carolina	\$107,478,969	\$118,431,581	\$119,170,285	\$738,704

<b>FY 2011 BUDGET SUBMISSION CENTERS FOR DISEASE CONTROL AND PREVENTION FY 2011 MANDATORY STATE/FORMULA GRANTS Vaccines for Children Program (VFC)</b>				
<b>North Dakota</b>	\$4,232,782	\$4,659,813	\$4,691,307	\$31,493
<b>Ohio</b>	\$71,944,007	\$79,281,260	\$79,772,488	\$491,228
<b>Oklahoma</b>	\$42,082,483	\$46,359,209	\$46,654,950	\$295,741
<b>Oregon</b>	\$25,607,672	\$28,199,093	\$28,385,194	\$186,101
<b>Pennsylvania</b>	\$66,948,682	\$73,742,189	\$74,218,423	\$476,234
<b>Rhode Island</b>	\$13,835,549	\$15,239,229	\$15,337,792	\$98,563
<b>South Carolina</b>	\$47,274,306	\$52,079,658	\$52,411,331	\$331,673
<b>South Dakota</b>	\$7,681,675	\$8,459,873	\$8,515,233	\$55,361
<b>Tennessee</b>	\$57,058,689	\$62,869,280	\$63,263,651	\$394,371
<b>Texas</b>	\$338,141,578	\$372,614,421	\$374,930,321	\$2,315,900
<b>Utah</b>	\$19,263,061	\$21,215,057	\$21,353,583	\$138,526
<b>Vermont</b>	\$6,121,133	\$6,733,966	\$6,782,133	\$48,167
<b>Virginia</b>	\$39,503,863	\$43,528,844	\$43,800,716	\$271,872
<b>Washington</b>	\$76,497,269	\$84,263,667	\$84,805,614	\$541,947
<b>West Virginia</b>	\$15,899,960	\$17,516,121	\$17,627,698	\$111,576
<b>Wisconsin</b>	\$39,267,128	\$43,263,986	\$43,536,459	\$272,473
<b>Wyoming</b>	\$6,438,581	\$7,089,764	\$7,136,769	\$47,005
<b>Chicago</b>	\$41,234,497	\$45,419,443	\$45,712,346	\$292,904
<b>Houston 1</b>	\$693,655	\$751,391	\$763,376	\$11,985
<b>New York City</b>	\$115,689,853	\$127,467,615	\$128,269,205	\$801,590
<b>Philadelphia</b>	\$21,084,984	\$23,217,173	\$23,371,270	\$154,096
<b>San Antonio</b>	\$22,667,649	\$24,971,883	\$25,130,859	\$158,975
<b>American Samoa</b>	\$941,507	\$1,040,599	\$1,048,104	\$7,505
<b>Guam</b>	\$2,166,799	\$2,397,580	\$2,417,138	\$19,558
<b>Northern Mariana Islands</b>	\$1,348,467	\$1,490,301	\$1,501,382	\$11,081
<b>Puerto Rico</b>	\$45,240,119	\$49,840,586	\$50,156,936	\$316,350
<b>Virgin Islands</b>	\$2,033,879	\$2,226,344	\$2,248,569	\$22,226
<b>Total States/Cities/Territories</b>	<b>\$2,879,777,553</b>	<b>\$3,172,856,343</b>	<b>\$3,192,946,797</b>	<b>\$20,090,454</b>
<b>Other Adjustments<sup>2</sup></b>	\$503,097,447	\$479,332,657	\$458,407,203	-\$20,925,454
<b>Total Resources</b>	<b>\$3,382,875,000</b>	<b>\$3,652,189,000</b>	<b>\$3,651,354,000</b>	<b>-\$835,000</b>

<sup>1</sup> Funding for Houston only includes funding for operations, not the cost of vaccines. Funding for Texas includes the cost of vaccines for Houston.

<sup>2</sup> Other adjustments include vaccine that is in inventory at the centralized distribution center but has not been ordered by immunization providers, funds for centralized vaccine distribution activities, developing a new centralized vaccine ordering system, pediatric stockpile, influenza stockpile, stockpile storage and rotation, and program support services.

<sup>3</sup> The FY 2010 level for VFC represents estimated total obligations, including \$15.988 million in FY 2009 unobligated balances brought forward and \$3,636.201 million in transfer from CMS.