

CDC Global Immunization



Strategic Framework 2011—2015



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

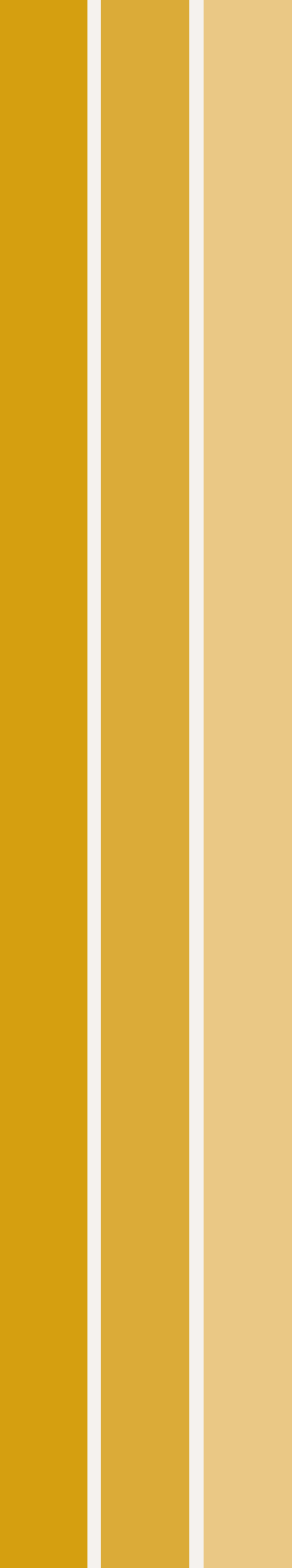


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Abbreviations and Acronyms

Vaccines

BCG: Bacillus Calmette-Guérin vaccine

DTP: diphtheria, tetanus, pertussis vaccine

DTP3: 3rd DTP dose

HepB: hepatitis B vaccine

Hib: *Haemophilus influenzae* type b vaccine

LAIV: live attenuated influenza vaccine

MCV: measles-containing vaccine

MCV1: 1st MCV dose

MenA: meningococcal group A conjugate vaccine

OPV: oral polio vaccine

OPV3: 3rd OPV dose

PCV: pneumococcal conjugate vaccine

TT: tetanus toxoid vaccine

Diseases and pathogens

CRS: congenital rubella syndrome

HBV: hepatitis B virus

HIV: human immunodeficiency virus

HPV: human papillomavirus

JE: Japanese encephalitis

MNT: maternal and neonatal tetanus

NNT: neonatal tetanus

WPV: wild polio virus

WPV1: WPV serotype 1

WPV3: WPV serotype 3

Organizations

CDC: Centers for Disease Control and Prevention

GAVI: GAVI Alliance

HHS: U.S. Department of Health and Human Services

MOH: Ministry of Health

UNICEF: United Nations Children's Fund

USG: U.S. Government

WHO: World Health Organization

WHO IVB: WHO Department of Immunization, Vaccines, and Biologicals

AFRO: WHO Regional Office for Africa

EMRO: WHO Regional Office for the Eastern Mediterranean

EURO: WHO Regional Office for Europe

PAHO: Pan American Health Organization

SEARO: WHO Regional Office for South-East Asia

WPRO: WHO Regional Office for the Western Pacific

Other

AEFI: adverse events following immunization

DOV: Decade of Vaccines

GIVS: Global Immunization Vision and Strategy

GHI: Global Health Initiative

GPEI: Global Polio Eradication Initiative

NITAG: National Immunization Technical Advisory Group

NVP: National Vaccine Plan

RED: Reaching Every District approach

VPD: Vaccine-preventable disease

A world without vaccine-preventable disease, disability, and death



Vision Statement

A world without vaccine-preventable disease, disability, and death

Mission Statement

To protect the health of Americans and global citizens by preventing disease, disability, and death through immunization

Purpose

The purpose of this strategic framework is to articulate CDC's goals, objectives, and strategies for effectively meeting global immunization challenges during 2011–2015. This document is intended to build on and complement CDC's previous 5-year plan: *CDC GLOBAL IMMUNIZATION STRATEGIC FRAMEWORK, 2006–2010*¹ and is linked to the *2010 National Vaccine Plan* of the U.S. Department of Health and Human Services².

1 <http://www.cdc.gov/vaccines/programs/global/downloads/gisf-2006-2010.pdf>

2 http://www.hhs.gov/nvpo/vacc_plan/2010%20Plan/nationalvaccineplan.pdf



Background and Introduction

The burden of vaccine-preventable diseases (VPDs) in the United States has been greatly reduced due to childhood immunization. However, even as VPDs such as polio, measles, and rubella have been eliminated in this country, the United States remains vulnerable to disease importations as long as they persist elsewhere. In an era of mass travel and global epidemics, the health of U.S. citizens is closely related to disease occurrence in other countries. Thus, support for immunization programs worldwide contributes toward providing an “umbrella of protection” for the United States, as well as fulfilling the U.S. government’s broader commitment to global health.

Childhood immunization is one of the most cost-effective public health interventions. Basic immunizations are estimated to prevent more than 2.5 million annual child deaths globally, primarily due to prevention of measles, pertussis, and tetanus. Vaccines also prevent severe morbidity from other devastating diseases such as polio for millions more children. Vaccination of children also is expected to avert adult deaths by preventing hepatitis B virus (HBV)-related cirrhosis and liver cancer and human papillomavirus (HPV)-related cervical cancer. However, immunization can potentially do much more. The World Health Organization has estimated that about 1.5 million children under age 5 years continue to die annually from VPDs (approximately 20% of overall childhood mortality). In particular, pneumococcal conjugate vaccine (PCV), *Haemophilus influenzae* type B (Hib) vaccine, and rotavirus vaccine prevent pneumonia and diarrhea, the two leading causes of death among children under age 5 years in the developing world; the expanded use of these vaccines will be critical for achieving UN Millennium Goal 4—to reduce 1990 child mortality levels by two-thirds by 2015.

An estimated 130 million infants are born around the world each year. Protecting each new birth cohort from VPDs requires a well-functioning and accessible immunization service delivery system as a cornerstone of national public health systems. Routine immunization service delivery at fixed posts or through periodic outreach activities (e.g., child health days, immunization weeks) provides at least three contacts per year to more than 100 million infants and their caretakers. In addition, supplemental

immunization campaigns play key roles in making progress toward meeting targeted disease control goals such as polio eradication and measles mortality reduction. However, these achievements are temporal because large outbreaks are probable, and cases and deaths are likely to increase, without further improvements in immunization service delivery.

As a well-accepted and demanded community health program, the immunization service delivery platform is key in ensuring equitable distribution of other essential health services and decreasing morbidity and mortality from other diseases.

Through either routine immunization services or supplemental immunization campaigns, immunization service delivery is the backbone upon which multiple additional services are added, including delivery of de-worming medicine, vitamin A, long-lasting insecticide-treated bed nets, safe water systems, and other health commodities. Also, the infant immunization contact provides opportunities to screen mothers for HIV/AIDS and provide health education on a variety of topics. The integrated service delivery process must be coordinated and rational so that health care workers are not overburdened. However, if done effectively, integrated service delivery offers the potential to efficiently expand outreach for multiple health care services to previously unreached populations.

Strategic Principles

This immunization framework is based on key elements of CDC's overall global health strategy:

- Assist ministries of health in planning and managing health programs effectively.
- Eradicate and eliminate disease where possible and feasible.
- Strengthen the ability of governments and multilateral organizations to achieve major global health goals.
- Create a flexible and responsive portfolio of global health programs at CDC to reflect the changing burden and distribution of disease globally.
- Acquire new knowledge to improve achievement of global health goals.
- Improve the effectiveness and efficiency of health systems globally.
- Promote equal access and equitable delivery to all people of needed vaccines and other health interventions.

Progress, Aims, and Challenges

Although progress was made during 2006–2010 in reducing global morbidity and mortality from VPDs, key overarching aims and challenges in global immunization remain for CDC to address during 2011–2015.

Polio: Since the Global Polio Eradication Initiative (GPEI) began in 1988, the number of polio cases around the world has fallen by more than 99%, from more than 350,000 cases that year to 1979 cases in 2005 and to fewer than 1300 cases in 2010. Transmission of wild poliovirus (WPV) type 2 has been eliminated since 1999, and indigenous transmission of WPV types 1 (WPV1) and 3 (WPV3) has been eliminated from all but four countries (Afghanistan, India, Nigeria, and Pakistan) since 2005. However, progress slowed since 2005, with ongoing WPV1 and WPV3 transmission in all endemic countries and the re-establishment of transmission in four previously polio-free countries (Angola, Chad, Democratic Republic of the Congo, and Sudan). This led to the development of a new GPEI strategic plan for 2010–2012, which incorporates lessons learned and introduces specific new strategies, milestones for monitoring progress, and

enhanced oversight mechanisms for taking corrective actions. The objectives are to interrupt WPV transmission by the end of 2012 and to certify global polio eradication by the end of 2015. CDC has been a key partner in the GPEI since 1988, providing critical technical and financial support for polio immunization activities to interrupt WPV transmission, maintain and enhance laboratory surveillance for polioviruses, monitor progress toward reaching epidemiological targets, and support development and implementation of a polio eradication research agenda with the long-term aim of stopping all global use of oral polio vaccine.

Measles and rubella: Endemic measles and rubella have been eliminated from the Western Hemisphere. To sustain and build on this achievement, CDC is working to control and eliminate measles and rubella in parts of the world responsible for disease importations into the United States. CDC is a founding member of the Measles Initiative, which has helped cut measles deaths globally by 78%, down from an estimated 733,000 deaths in 2000 to 345,000 deaths in 2005 and to 164,000 deaths in 2008. This decline played a major role in overall declines in child mortality during the past decade. However, gains in reducing measles mortality are fragile. Since 2009, more than 30 African countries have experienced measles outbreaks resulting from gaps in routine measles vaccination coverage and a failure to continue with timely, high-quality follow-up measles campaigns. Substantial ongoing technical and financial support will be required to attain and sustain further mortality reduction and to reach regional elimination goals that have the potential to eventually result in measles eradication. Measles-related efforts are closely linked with efforts to increase use of rubella-containing vaccines to prevent congenital rubella syndrome, which affects an estimated 110,000 infants born each year in developing countries, and to monitor progress toward achieving and maintaining rubella control and elimination goals.

Hepatitis B: In the United States, use of hepatitis B vaccine (HepB) in childhood immunization programs has decreased hepatitis B incidence more than 90%; however, approximately 40,000 immigrants with chronic hepatitis B virus (HBV) infection are admitted each year to the United States from other countries. Globally, chronic HBV infections cause an estimated 620,000

deaths annually from cirrhosis and liver cancer. CDC provides technical assistance designed to increase the number of countries using HepB in childhood immunization programs, including use of a birth dose to prevent HBV transmission from mother to infant and ultimately reduce the burden of chronic HBV infections among immigrants in the United States. In addition, CDC provides technical assistance to WHO regions and countries on monitoring progress toward achieving hepatitis B control goals.

Maternal and neonatal tetanus: Maternal and neonatal tetanus (MNT) was eliminated in the United States. Substantial progress has been made toward achieving the MNT elimination goal globally, and neonatal tetanus (NNT) deaths declined from approximately 787,000 in 1988 to 59,000 in 2008. However, as of 2010, 40 countries had yet to achieve MNT elimination in all districts. CDC provides technical assistance to many of these countries on improving tetanus immunization of pregnant women, maintaining and strengthening tetanus surveillance, and conducting country assessments to validate tetanus elimination.

Routine immunization: The *WHO/UNICEF Global Immunization Vision and Strategy, 2006–2015* (GIVS)³ provides guidance to countries in strengthening routine immunization programs and vaccinating more people. GIVS aims to achieve 90% national 3-dose diphtheria-tetanus-pertussis vaccine (DTP3) coverage by age 12 months in all countries and 80% coverage in every district or equivalent administrative unit by 2010, and to sustain these levels through 2015. Estimated global DTP3 coverage in the 193 WHO member states increased from 74% in 2000 to 78% in 2005 and to 82% in 2009; DTP3 coverage in 2009 reflects vaccination of 107.1 million infants with three doses of DTP vaccine (14.6 million more than in 2000). However, an estimated 23.2 million children worldwide—almost 20% of the children born each year—did not receive three doses of DTP vaccine during the first year of life in 2009; 70% of these infants live in 10 countries, with approximately half in India (37%) and Nigeria (14%). A recent review of published literature found that immunization program weakness was the leading reason that children did not complete the 3-dose DTP vaccination series.

3 http://www.who.int/vaccines-documents/DocsPDF05/GIVS_Final_EN.pdf

VPD surveillance and information systems: Well-functioning laboratory-based VPD surveillance systems and VPD information systems are critical for managing, monitoring, and evaluating immunization programs and assessing program impact on VPD disease burden. CDC provides technical and financial support to multiple global VPD surveillance and laboratory networks, including the Global Polio Laboratory Network, the Global Measles and Rubella Laboratory Network, the Global Influenza Surveillance Network, the Global Rotavirus Surveillance Network, and the Global Invasive Bacterial Disease Surveillance Network, as well as regional surveillance and laboratory networks for yellow fever (PAHO, AFRO), Japanese encephalitis (SEARO), and pediatric bacterial meningitis (AFRO). CDC also provides technical and operational research support to strengthen the quality and use of data from VPD surveillance and information systems.

New and underused vaccines: Despite the extraordinary progress made in reducing VPD morbidity and mortality during the past decade, the immunization agenda is unfinished. CDC actively supports the evaluation and introduction of available and underused vaccines—Hib, PCV, rotavirus, HPV, meningococcal group A, HepB birth dose, rubella, Japanese encephalitis, typhoid, cholera, and yellow fever—which have the potential to greatly reduce global VPD morbidity and mortality. CDC also actively supports research to develop new vaccines to protect against leading killers in developing countries (e.g., HIV, malaria, tuberculosis).

The time is now optimal to accelerate the introduction of Hib, PCV, and rotavirus vaccines, which can reduce the 2.9 million annual deaths due to pneumonia and diarrhea among children under age 5 years by 40%–60%. WHO has recommended introduction of these vaccines in childhood immunization programs in all countries, and the GAVI Alliance (GAVI) is committed to provide funding support for their introduction in the poorest countries. As of December 2010, Hib vaccine has been introduced in 171 countries, rotavirus vaccine in 26 countries, and PCV in 58 countries. HPV vaccine, which prevents cervical cancer caused by HPV, has been introduced in 31 countries. A new meningococcal group A vaccine was introduced in Burkina Faso in 2010. Plans are underway to introduce the vaccine in

25 African countries to eliminate epidemics of meningitis and prevent up to 123,000 deaths and 237,000 cases of disability in the Africa meningitis belt within 10 years.

Widespread introduction of new and underused vaccines still depends on addressing key challenges, including inadequate vaccine supply, low immunization system capacity, creation of sustainable partnerships to maximize synergy in reaching global goals, and high cost of newer vaccines. In addition, although WHO has recommended that countries introduce new and underused vaccines, public health officials in each country must make their own decisions based on national priorities and capacity. To facilitate country decision-making processes, CDC provides direct technical assistance on evaluating the disease burden, developing surveillance capacity, performing economic analysis, and understanding program implications and vaccine impact, and indirect assistance through participation in partnerships including GAVI and the GAVI-funded Accelerated Vaccine Initiative. CDC also provides technical support on the development of national immunization technical advisory groups.

U.S. Government and Global Health Context

Although CDC is committed to targeted efforts to strengthen immunization systems and achieve time-bound impacts on VPDs, these aims must be implemented in the context of other global public health programs in collaboration with U.S. Government (USG) and other partners.

Global Health Initiative (GHI)⁴: The USG launched this new 6-year (FY 2009–FY 2014) initiative in May 2009 to focus attention on broader global health challenges—maternal and child health, family planning, and neglected tropical diseases—while maintaining robust funding for and strong commitment to the fight against high-profile communicable diseases such as HIV/AIDS. The GHI also emphasizes the need to adopt a more integrated approach to improving health and strengthening health systems. Immunization remains a cornerstone program within GHI, especially in the target area of maternal and child health. CDC’s immunization strategies will reinforce the GHI principles and emphasize the importance of linking closely with other USG agency health programs at the country level.

⁴ <http://www.theglobalhealthinitiative.org/>

2010 National Vaccine Plan (NVP)⁵: The *2010 National Vaccine Plan* developed by the U.S. Department of Health and Human Services (HHS) lays out key strategies and objectives for 2011–2020. Although it focuses primarily on domestic issues, the NVP includes a specific goal area on global immunization in recognition of the close synergies between USG and international programs. This goal area includes objectives for all HHS agencies and provides a broad framework for potential contributions by U.S. academic and other relevant partners to global efforts. The *CDC Global Immunization Strategic Framework 2011–2015* contributes to the NVP and is consistent with the overall HHS plan.

Decade of Vaccines (DOV)⁶: Spurred by the Bill and Melinda Gates Foundation’s January 2010 commitment of \$10 billion over 10 years for global immunization, WHO, UNICEF, and other global immunization partners have called for a Decade of Vaccines (2011–2020). This effort is designed to build on the achievements of the GIVS and scale up previous strategic targets. Key components of the DOV will be strengthening public support for vaccine use and financing, expanding the reach of delivery programs, maintaining a strong pipeline for vaccine research and development, and exploring strategies that can ensure global access to sufficient supplies of affordable vaccines. CDC is a key contributor to developing the DOV strategic document and global plan of action.

5 http://www.hhs.gov/nvpo/vacc_plan/2010%20Plan/nationalvaccineplan.pdf

6 http://www.who.int/immunization/newsroom/press/news_release_decade_vaccines/en/

Framework Format

CDC is committed to work with global partners toward achieving six overarching goals proposed in the framework during the next 5 years:

- Goal 1: Control, eliminate, or eradicate targeted VPD disability and death globally (NVP Goal 5/Objective 5.2)
- Goal 2: Strengthen capacity and enhance performance of health systems to sustainably deliver routine immunization services (NVP Goal 5/Objective 5.2)
- Goal 3: Strengthen VPD health information and surveillance systems to enhance decision-making capacity for immunization programs (NVP Goal 5/Objective 5.1)
- Goal 4: Increase the appropriate development, introduction, and use of new and underutilized vaccines (e.g., Hib, pneumococcal, rotavirus, HPV, MenA, HepB birth dose, rubella, JE, cholera, typhoid, malaria, yellow fever) to prevent diseases of global and regional public health importance (NVP Goal 5/Objective 5.3)
- Goal 5: Promote synergies between immunization and other public health interventions to strengthen health systems and contribute to decreased maternal and child mortality and morbidity (NVP Goal 5/Objective 5.2)
- Goal 6: Build and strengthen partnerships that maximize coordination and synergy in meeting immunization goals (NVP Goal 5/Objective 5.6)

Specific objectives provide realistic targets that measure the accomplishment of each goal. To help monitor progress over time, every objective also includes at least one key measure of success. Achievement of these goals and objectives will require inputs by multiple partners, national governments, and CDC. The strategies articulated in the framework outline broad activity areas where CDC can make specific contributions.



Goal 1

Control, eliminate, or eradicate targeted VPD disability and death globally (NVP Goal 5/Objective 5.2)

Objectives

1. Achieve, certify, and maintain polio eradication

Key measures of success:

Cessation of all wild poliovirus transmission by end 2012

Certification of global polio eradication by end 2015

Strategies:

- i. Conduct technical assessment and epidemiologic analysis to monitor the progress in reaching global eradication goals outlined in the *Strategic Plan for Global Polio Eradication 2010–2012*.¹
- ii. Provide technical and financial support for supplemental immunization activities to interrupt indigenous and re-established poliovirus transmission, limit international spread, and stop new outbreaks.
- iii. Provide technical and financial support to maintain and enhance epidemiologic and laboratory-based surveillance for polioviruses and integrate with surveillance for other VPDs and communicable diseases as appropriate. (See also Goal 3, Objectives 1 and 2.)
- iv. Contribute to the development and implementation of a research agenda to accelerate polio eradication, identify and evaluate new immunization and surveillance strategies, and identify safeguards to minimize poliovirus risks in the post-eradication period.

2. Decrease global measles mortality and morbidity

Key measure of success:

By 2015, reduce estimated global measles mortality by 95% or more in comparison with 2000

Strategies:

- i. Provide technical and financial support to achieve and sustain measles mortality reduction and elimination goals by achieving and sustaining high 2-dose measles vaccination coverage.
- ii. Provide technical and financial support to maintain and enhance case-based, laboratory-supported measles surveillance. (See also Goal 3, objectives 1 and 2.)

¹ <http://www.polioeradication.org/content/publications/gpei.strategicplan.2010-2012.eng.may.2010.pdf>

- iii. Contribute to the development and implementation of a research agenda to strengthen the scientific basis for achieving and maintaining measles mortality reduction and elimination goals, identify optimal measles immunization and surveillance strategies, identify and aid in the development of new laboratory methods to support global measles control programs, and address scientific questions regarding the feasibility of measles eradication.

3. Accelerate global rubella control and congenital rubella syndrome (CRS) prevention

Key measure of success:

By 2015, at least two of six WHO regions achieve and sustain rubella/CRS elimination

Strategies:

- i. Provide technical and financial support to develop and implement rubella immunization plans, monitor rubella/CRS disease burden, and achieve and sustain control/elimination goals.
- ii. Provide technical and financial support to establish, maintain, and enhance case-based, laboratory-supported rubella and CRS surveillance that is appropriately integrated with measles surveillance when possible. (See also Goal 3, Objectives 1 and 2.)
- iii. Contribute to the development and implementation of a research agenda to strengthen the scientific basis for achieving rubella and CRS control and elimination goals, identify optimal rubella immunization and surveillance strategies, and identify and aid in the development of new laboratory methods to support global rubella control programs.

4. Decrease global burden of hepatitis B

Key measure of success:

By 2015, all countries in at least two of six WHO regions have reduced hepatitis B surface antigen prevalence to less than 2% among children under 5 years of age.

Strategies:

- i. Provide technical assistance on developing and implementing hepatitis B immunization plans.
- ii. Provide technical assistance on developing and monitoring progress toward achieving hepatitis B control goals.
- iii. Contribute to the development and implementation of a research agenda to identify optimal hepatitis B immunization strategies,

strengthen the scientific basis for achieving hepatitis B control and elimination goals, and identify laboratory methods to support global hepatitis B control programs.

5. Achieve neonatal tetanus (NNT) elimination in all countries

Key measure of success:

By 2015, NNT elimination (<1 case per 1000 live births in all districts) is achieved in all countries

Strategies:

- i. Provide technical assistance to countries and partners to improve TT coverage by strengthening routine immunization programs and improving the quality of supplemental immunization activities.
- ii. Provide technical assistance to countries and partners to strengthen and maintain quality tetanus surveillance and conduct assessments to validate elimination. (See also Goal 3, Objectives 1 and 2.)

6. Decrease morbidity and mortality of other VPDs of global or regional importance

Key measure of success:

By 2015, epidemics of serogroup A meningitis are eliminated in the Africa meningitis belt

Strategies:

- i. Provide technical assistance and financial support for planning, implementing, and monitoring SIAs, enhancing surveillance, and monitoring impact and effectiveness for MenA in appropriate countries to prevent serogroup A meningitis outbreaks.
- ii. Provide technical assistance and financial support for planning, implementing, and monitoring influenza SIAs.
- iii. Evaluate the impact of JE vaccination and provide technical assistance to strengthen JE surveillance and control programs.
- iv. Provide technical assistance designed to strengthen pertussis surveillance and control programs.
- v. Provide technical assistance on evaluating HPV vaccine introduction among adolescent girls.
- vi. Evaluate the effectiveness of implementing cholera and typhoid SIAs to prevent or control diarrheal disease outbreaks.



Goal 2

Strengthen capacity and enhance performance of health systems to sustain delivery of routine immunization services (NVP Goal 5/Objective 5.2)

Objectives

1. Increase percentage of fully immunized children² by 12 months of age

Key measure of success:

By 2015, all countries achieve 90% coverage for fully immunized children nationally and at least 80% coverage in every district

Strategies:

- i. Provide technical and financial support for building and strengthening capacity to plan, implement, and evaluate immunization programs at national, regional, and global levels.
- ii. Support countries in increasing community involvement in immunization services, and work with partners to identify and implement strategies for increasing demand for vaccines and addressing issues related to vaccine refusal.
- iii. Identify, evaluate, and facilitate implementation of existing and new technologies that are designed to strengthen immunization systems and approaches to enhancing vaccine supply and delivery.
- iv. Contribute to the development and implementation of a research agenda to strengthen the scientific basis for vaccination strategies to reach more children, identify populations with low coverage, and develop new strategies to improve coverage, including strengthening links between routine immunization and supplemental immunization activities.

² Fully immunized child = child who has received at least BCG, HepB birthdose + Hep3, DTP3, OPV3, MCV1

2. Increase immunization coverage with appropriate traditional and new vaccines among older-age children (>1 yr), adolescents, and adults

Key measure of success:

By 2015, all countries that routinely provide a second dose of measles vaccine achieve 90% 2-dose MCV coverage nationally and at least 80% coverage in every district

Strategies:

- i. Develop standardized process indicators and reporting tools for measuring program performance in reaching children older than 1 year of age.
- ii. Provide technical assistance that supports country efforts in defining appropriate target populations, developing policies, and implementing plans for vaccination of older children, adolescents, and adults.
- iii. Contribute to the development and implementation of a research agenda to establish the scientific basis for vaccination strategies for reaching children beyond infancy, and conduct operations research to assess feasibility of implementing new vaccination strategies.

3. Increase the percentage of countries with a well-functioning (based on WHO criteria) National Immunization Technical Advisory Group (NITAG) with capacity to make evidence-based decisions on immunization policy and programs, including epidemiologically appropriate introduction of new and underused vaccines.

Key measure of success:

By 2015, 50% of countries have a well-functioning NITAG

Strategies:

- i. Provide training for NITAG members and opportunities for them to develop appropriate knowledge and experience.
- ii. Partner with WHO IVB and WHO Regional Offices to provide balanced policy advice and information to national decision makers to foster priority setting on new and underused vaccines.
- iii. Establish evidence-based mechanisms to evaluate the functioning of NITAGs and to gather and share country experiences on national decision making.

4. Promote safe immunization injection practices and develop country capacity to monitor and effectively investigate adverse events following immunization (AEFI)

Key measure of success:

By 2015, 50% of middle- and lower-income countries will conduct a National Regulatory Assessment to guide implementation of post-marketing surveillance for AEFI

Strategies:

- i. Provide technical assistance designed to introduce, evaluate, and improve vaccine safety monitoring and surveillance programs.
- ii. Provide technical assistance in responding to and evaluating vaccine safety signals arising from monitoring systems or other sources.
- iii. Provide technical assistance on conducting ad hoc vaccine safety studies to evaluate vaccine safety concerns.
- iv. Provide technical assistance on addressing emerging vaccine safety issues and communicating vaccine risks effectively and transparently to the public, health care providers, and other stakeholders.
- v. Provide technical assistance to countries on introducing, sustaining, and monitoring recommended safe injection practices for all vaccinations, including vaccines administered during routine immunization and supplemental immunization activities.

5. Support the development of sustainable vaccine financing and procurement mechanisms to maintain adequate supplies of vaccines at global, regional, and national levels

Key measure of success:

By 2015, 75% of low- and low-middle income countries have a specific national budget line allocated to vaccine purchase and immunization program support

Strategies:

- i. Provide technical assistance to regions and countries on developing sustainable vaccine procurement and financing mechanisms.
- ii. Collaborate with partners to analyze global trends and conduct economic analysis on vaccine pricing and immunization program financing.



Goal 3

Strengthen VPD health information and surveillance systems to enhance decision-making capacity for immunization programs (NVP Goal 5/Objective 5.1)

Objectives

1. Increase the number of countries with access to proficient laboratory networks for vaccine-preventable diseases

Key measure of success:

By 2015, all countries have access to a high-quality (e.g., WHO accredited) national or regional laboratory that can accurately diagnose viral and bacterial VPDs

Strategies:

- i. Strengthen national and regional public health laboratories in target countries by providing the training, equipment, reagents, and quality control procedures needed to sustain high-quality diagnostics for VPDs, with the objectives of monitoring disease burden, detecting outbreaks, detecting emerging variants, and monitoring impact of new vaccines.
- ii. Conduct operational research to evaluate and improve diagnostic and specimen-handling processes critical to functional laboratory networks, and to develop and introduce new diagnostic and specimen-handling technologies to meet evolving VPD surveillance needs.
- iii. Serve as global reference laboratory for selected VPDs, and provide technical assistance and funding support for global and regional VPD laboratory network coordination.

2. Increase the number of countries with VPD surveillance systems that meet the minimum quality criteria required for program impact

Key measure of success:

By 2015, all countries have case-based measles surveillance and report at least 2 non-measles cases per 100,000 population

Strategies:

- i. Provide technical assistance on developing global, regional, and national VPD surveillance policies and guidelines, including quality standards.
- ii. Provide technical assistance on developing national capacity for VPD surveillance systems linked to VPD laboratory networks, including capacity to interpret and use information generated.
- iii. Conduct national and sub-national reviews of VPD surveillance systems.

3. Increase the number of countries with information systems meeting the minimum quality criteria required to effectively monitor and manage immunization programs

Key measure of success:

By 2015, 75% of countries have published information system policies and guidelines pertaining to the immunization program

Strategies:

- i. Provide technical assistance on developing global, regional, and national immunization program information system policies and guidelines, including quality standards.
- ii. Build national and regional capacity to sustain, improve, and monitor immunization program information systems that will ensure high-quality data collection, data management, information exchange, and use of standard operating procedures.
- iii. Develop tools and methods for tracking immunization program targets and performance and for validating performance (e.g., improved methods for vaccine coverage surveys).
- iv. Provide technical assistance on monitoring and evaluating national immunization programs, to include linking VPD surveillance reviews where appropriate.





Goal 4

Increase the appropriate development, introduction, and use of new and underused vaccines (NUVs) (e.g., Hib, pneumococcal, rotavirus, HPV, MenA, HepB birth dose, rubella, JE vaccine, cholera, typhoid, influenza, malaria, yellow fever) to prevent diseases of global and regional public health importance (NVP Goal 5/Objective 5.3)

Objectives

1. Increase the percentage of the global birth cohort that has access to NUVs as part of a national immunization schedule and, within 5 years of introduction, achieve the same vaccination coverage level for NUVs as for other vaccines given at the same age

Key measures of success:

By 2015, 45 GAVI-eligible countries have introduced PCV

By 2015, 33 GAVI-eligible countries have introduced rotavirus vaccine

Strategies:

- i. Support national decision making on NUV introduction by providing technical assistance on evaluation of disease burden, surveillance capacity, economic analysis methods, program implications, and vaccine impact.
- ii. Integrate the introduction of NUVs into each country's comprehensive multiyear plan, and provide the technical assistance necessary for successfully incorporating NUVs into routine immunization programs; link routine immunization programs with disease-specific control programs.
- iii. Provide technical assistance to countries on assessing NUV effectiveness, impact on reducing childhood morbidity and mortality, and impact on immunization programs, and on evaluating barriers to achieving full coverage.

2. Increase the number of new vaccines, improved vaccines, and combination vaccines that are prequalified by WHO for use in national immunization programs

Key measure of success:

By 2015, one cell-based influenza vaccine and one additional LAIV vaccine will be prequalified by WHO

Strategies:

- i. Support development of vaccine reference strains and candidate vaccines against diseases of public health importance, especially to aid in response to emerging infections.
- ii. Conduct studies on, and develop surveillance and laboratory capacity for, determining the disease and economic burden of targeted VPDs.
- iii. Conduct and support research to evaluate efficacy and effectiveness of new formulations, dosing schedules, and alternative routes of administration for available vaccines.
- iv. Develop laboratory methods and standards for evaluating immunogenicity and correlates of immunity for existing and new vaccines.





Goal 5

Promote synergies between immunization programs and other public health interventions to strengthen health systems and contribute to decreased maternal and child mortality and morbidity (NVP Goal 5/Objective 5.2)

Objectives

1. Increase the number of countries that have developed, implemented, and evaluated comprehensive national maternal and child health plans of action that appropriately integrate immunization with other priority health interventions

Key measure of success:

By 2012, at least three GHI countries integrate immunization services with at least one other priority health intervention

Strategies:

- i. Provide technical assistance on developing guidelines and standards for global and national plans of action for integrated disease control programs that address diarrhea, pneumonia, and other major causes of VPD-related mortality.
- ii. Provide technical assistance at the national and sub-national level on appropriately using routine childhood immunization programs as a platform for the delivery of other priority health services.
- iii. Develop standardized methods and tools for monitoring and evaluating the efficiency, effectiveness, and impact of combined public health interventions.
- iv. Contribute to the development and implementation of a research agenda to strengthen the scientific basis for integration of immunization with other priority health interventions.

2. Increase the number of countries that use immunization system capacity to provide information needed to make sound decisions on other priority health interventions

Key measure of success:

By 2012, at least two GHI countries integrate monitoring of immunization services with at least one other monitoring system for a priority health intervention

Strategies:

- i. Develop tools and methods for linking the monitoring of immunization program performance and vaccine delivery with monitoring of programs that deliver other priority health interventions.
- ii. Provide technical assistance on creating and enhancing integrated VPD surveillance and laboratory systems as a part of comprehensive communicable disease surveillance capacity.
- iii. Build national and sub-national capacity for data analysis and program management by linking epidemiology, outbreak control, and management training for immunization program staff and other public health decision makers.
- iv. Contribute to the development and implementation of a research agenda to strengthen the scientific basis for integration of immunization monitoring with monitoring of other priority non-vaccine health interventions.





Goal 6

Build and strengthen partnerships that maximize coordination and synergy in meeting immunization goals (NVP Goal 5/ Objective 5.6)

Objectives

1. Increase the capacity of global, regional, and national partnerships to effectively plan, coordinate, fund, and implement strategies for reaching global immunization goals

Key measures of success:

By 2012, build and sustain the operation of a global partnership that has a concrete plan of action and champions the strengthening of routine immunization programs and achieving priority global immunization targets

By 2012, develop a Meningitis Initiative partnership to ensure coordination, sufficient funding, and technical resources to implement MenA campaigns in all countries in the Africa meningitis belt by 2017 and to monitor the elimination of serogroup A meningitis epidemics

Strategies:

- i. Participate in and provide technical assistance at global, regional, and national forums on establishing global immunization goals, objectives, priorities, and policy.
- ii. Support development and sustainability of external partnerships to reach key global immunization goals.
- iii. Provide appropriate economic analyses and program evaluations to determine financial resource requirements, identify funding gaps, and develop plans for meeting resource requirements and successfully implementing global immunization programs.
- iv. Develop key communication messages and implement advocacy measures to gain political and financial support for meeting immunization objectives.
- v. Work with global partners to rapidly detect and respond to emerging infections and global VPD outbreaks, including securing and maintaining adequate stockpiles or strategic reserves of appropriate vaccines.
- vi. Strengthen partnerships within the USG to support global immunization goals as part of a comprehensive plan for enhancing maternal and child health.

