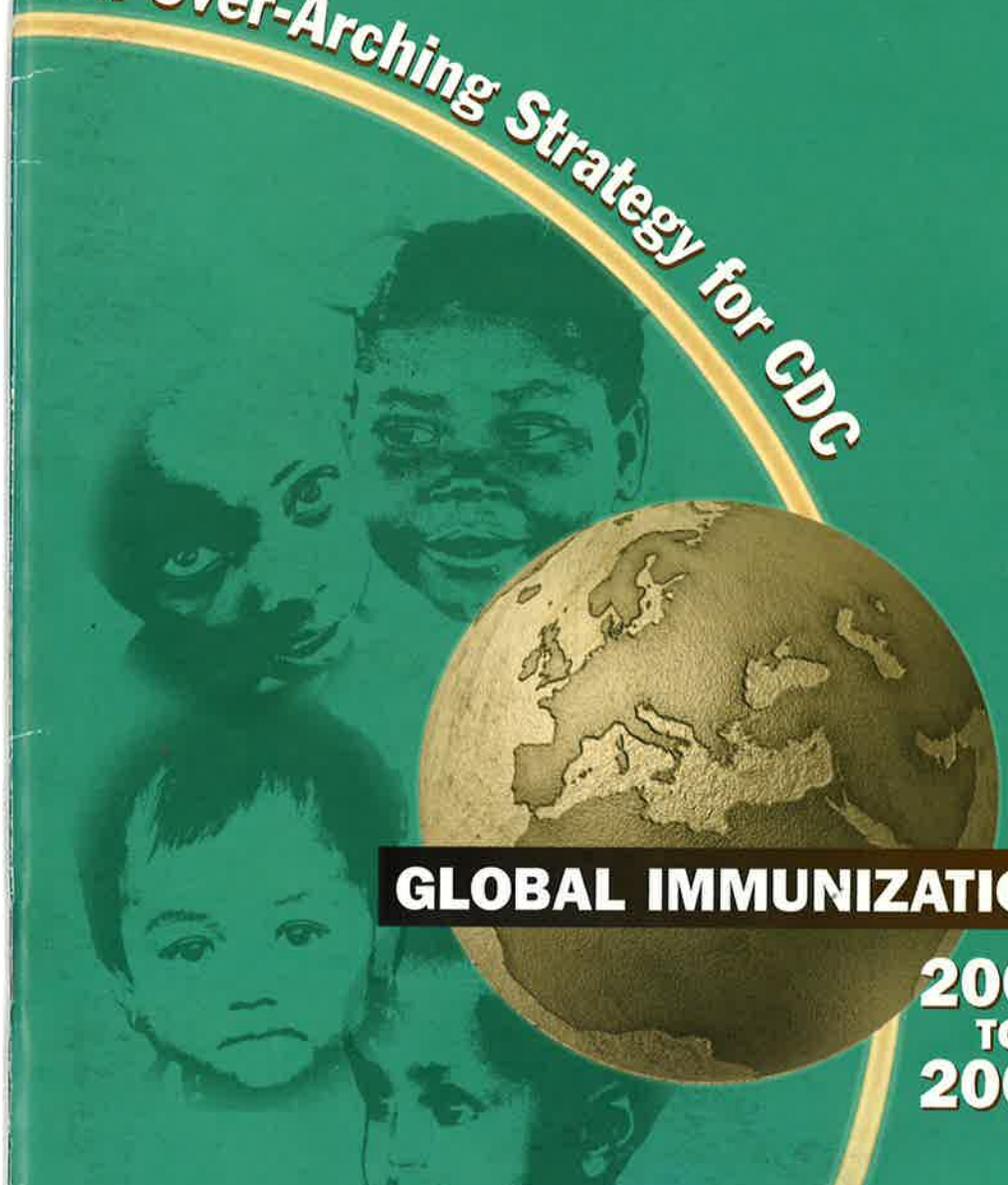


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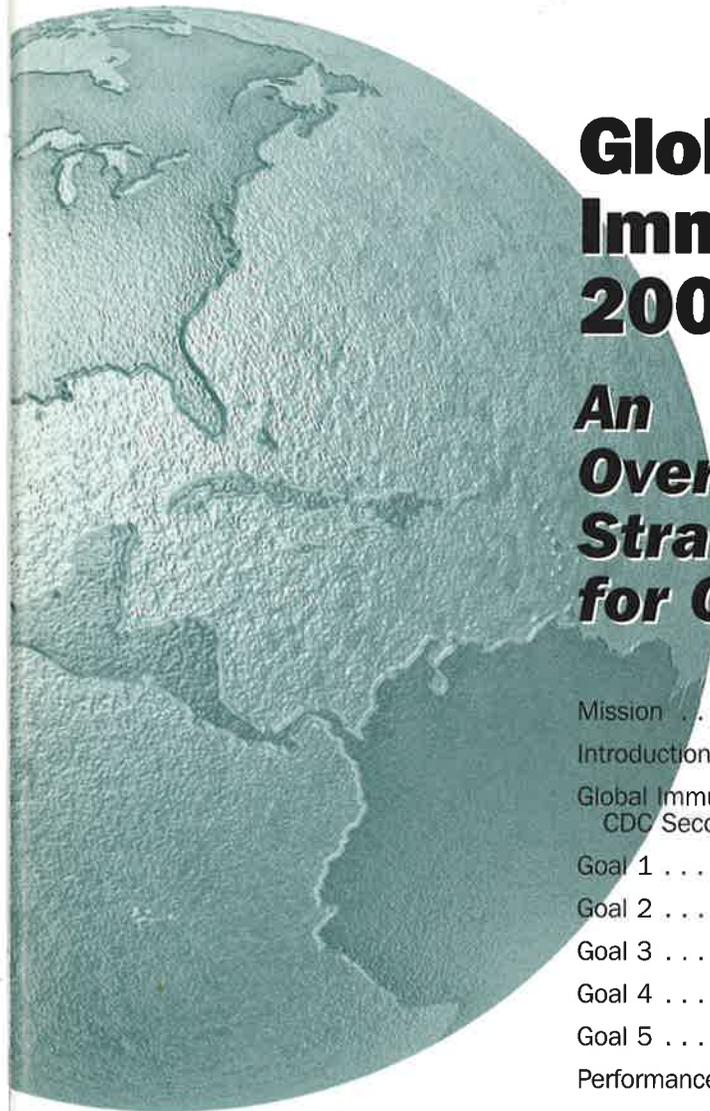


An Over-Arching Strategy for CDC



GLOBAL IMMUNIZATION

**2002
TO
2006**



Global Immunization 2002-2006:

An Over-Arching Strategy for CDC

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MISSION

GLOBAL IMMUNIZATION 2002-2006

To prevent disease, disability and death worldwide from vaccine-preventable diseases, and foster the development and introduction of new vaccines for diseases of public health importance.

INTRODUCTION

GLOBAL IMMUNIZATION 2002-2006

Childhood immunizations are among the most cost effective of all health interventions. However, each year, diseases that could be prevented with available vaccines kill three million children worldwide. Vaccines that are now in late stages of development could prevent almost two million additional deaths. Micronutrient deficiency also contributes to high infant mortality globally. Providing one micronutrient, vitamin A, during childhood immunization could reduce deaths by 23% among the 100 million vitamin A deficient children worldwide.

While the United States has greatly reduced its burden of vaccine-preventable diseases (VPDs) through childhood immunization, its children remain at risk due to widespread occurrence of these diseases in other countries. During the last decade, immunization programs in the least developed countries have failed to achieve adequate vaccine coverage, and many countries have been unable to introduce highly effective vaccines to prevent common childhood diseases, including hepatitis B, *Haemophilus influenzae* type b (Hib), rubella and yellow fever. New vaccines are under development. However, these are unlikely to become available in the least developed countries without supporting vaccine research and development, documenting disease burden and vaccine effectiveness in these countries, and ensuring that new vaccines are affordable and sustainable.

To reduce the global burden of VPDs, the Centers for Disease Control and Prevention (CDC) supports a broad range of programmatic and research efforts. Enormous progress has been achieved:

POLIO

The number of global polio cases has been reduced by more than 99.8% since 1988, including prevention of more than four million cases of paralysis and 250,000 deaths.

MEASLES

Endemic measles cases have been eliminated from all but two countries in the Americas. Measles cases Hemisphere-wide have been reduced by 99% since 1990 to a record low 537 cases in 2001, and measles deaths virtually eliminated from the Americas.

OTHER VPDS

With CDC technical support, hepatitis B vaccine is now given routinely in 129 countries, and *Haemophilus influenzae* type b (Hib) vaccine in 71 countries.

MICRONUTRIENT DEFICIENCY

In addition, an estimated 400,000 deaths were prevented during 1999-2000 by administration of vitamin A along with polio vaccine during National Immunization Days (NIDs).

CDC also actively supports the evaluation and introduction of new vaccines to prevent pneumonia, meningitis and diarrheal illness in children, and research to develop new vaccines to protect against the greatest killers in developing countries (HIV, tuberculosis, and malaria). In addition, CDC provides support to strengthen routine immunization programs and to increase the safety of vaccines and injections.

During the last decade, CDC has provided substantial financial and technical support for polio eradication and measles elimination, funded through direct Congressional appropriations. For example, in FY 2002, the CDC budget for these programs totaled more than \$133 million, with more than \$102 million for the polio eradication program and more than \$31 million for the measles mortality reduction/regional elimination program. In addition, the Global Immunization Division at CDC currently has 36 staff seconded to international health organizations, such as WHO, UNICEF, Pan American Health Organization, World Bank, American Red Cross, and the International Federation of Red Cross and Red Crescent Societies, providing full-time operational support to priority countries and regions (see Figure 1). Thirty of these staff serve in overseas posts, with 73% of these positions in polio-endemic or recently endemic countries.

However, available resources to improve routine immunization and introduce and develop new and underutilized vaccines have been more limited. For example, in FY 2002, the CDC budget for the Global Alliance for Vaccines and Immunization (GAVI) was \$300,000, with additional contributions for in-kind costs of travel and per-diem for expert consultants. NCID/CDC has three staff assigned overseas to full-time immunization positions focusing on introduction of new or underutilized vaccines including hepatitis B and Hib vaccines. In 1999, the Global Alliance for Vaccines and Immunization (GAVI) was formed to strengthen routine immunization services, introduce new and underutilized vaccines, and to speed development of vaccines to prevent major diseases (e.g., malaria, tuberculosis, and AIDS) in less-developed countries. The Vaccine Fund, now capitalized at over \$1.2 billion,

including a \$750 million contribution by the Bill and Melinda Gates Foundation, supports the 74 poorest countries to purchase new vaccines and safe injection equipment to strengthen immunization programs. In addition, the Gates Foundation and other international donors have greatly increased funding to accelerate research to develop and introduce meningococcal, pneumococcal, and rotavirus vaccines, and to develop HIV, malaria and tuberculosis vaccines.

To fully realize the benefits of this increased support for global immunization, there is an urgent need to provide expertise in immunization and epidemiology of VPDS and technical support to strengthen childhood immunization programs and develop and evaluate new vaccines. CDC shares the established goals of reducing the burden of VPDS in all countries, and has substantial technical expertise to support all aspects of global immunization. Currently, however, CDC has limited resources to devote specifically to these activities.

Support for global immunization requires close partnership with other international agencies and donors engaged in global immunization, including WHO, UNICEF, World Bank, Rotary International, American Red Cross, International Federation of Red Cross and Red Crescent Societies, UN Foundation, and the Bill and Melinda Gates Foundation. CDC will continue to support and expand these partnerships to assure the greatest impact of its technical and scientific resources on reducing the burden of VPDS.

The most immediate challenges include:

- Ensuring adequate financial resources to complete polio eradication. CDC, Rotary International, WHO, and UNICEF are the major partner organizations spearheading this initiative. The G8 countries, at their June 2002 meeting, committed to provide sufficient resources to eradicate polio by 2005.
- Ensuring adequate financial support for the new 5-year strategic plan to avert at least 50% of the 800,000 childhood deaths caused by measles each year.
- Developing technical and operational capacity to support GAVI goals to improve routine immunization services and introduce new and underutilized vaccines (hepatitis B, Hib, and yellow fever).
- Supporting research to complete the evaluation and introduction of new vaccines to prevent childhood respiratory and diarrheal diseases (meningococcal, pneumococcal, and rotavirus vaccines) in the least developed countries.
- Supporting research to develop, and evaluate new vaccines for

diseases causing the greatest global burden in the least developed countries (HIV, malaria, and tuberculosis).

- Achieving convergence between GAVI goals and ongoing polio eradication, measles control/elimination, and maternal and neonatal tetanus elimination activities.
- Integrating rubella vaccination and surveillance with measles activities, where appropriate, to sharply reduce the burden of blindness, and hearing and heart defects due to congenital rubella syndrome.
- Developing international surveillance and laboratory capacity to diagnose, conduct research, and evaluate the impact of vaccination on measles, rubella, *H. influenzae* type b, meningococcal and pneumococcal disease, hepatitis B, rotavirus and other VPDs through international consultation and training programs.
- Building immunization expertise of international public health staff, CDC staff, and U.S. public health professionals through international consultation and training, collaboration with international training programs, and development of distance learning strategies in international immunization.
- Conducting evaluations, assessments and operations research, including vaccine efficacy trials, to improve childhood immunization and to facilitate introduction of new vaccines in developing countries.

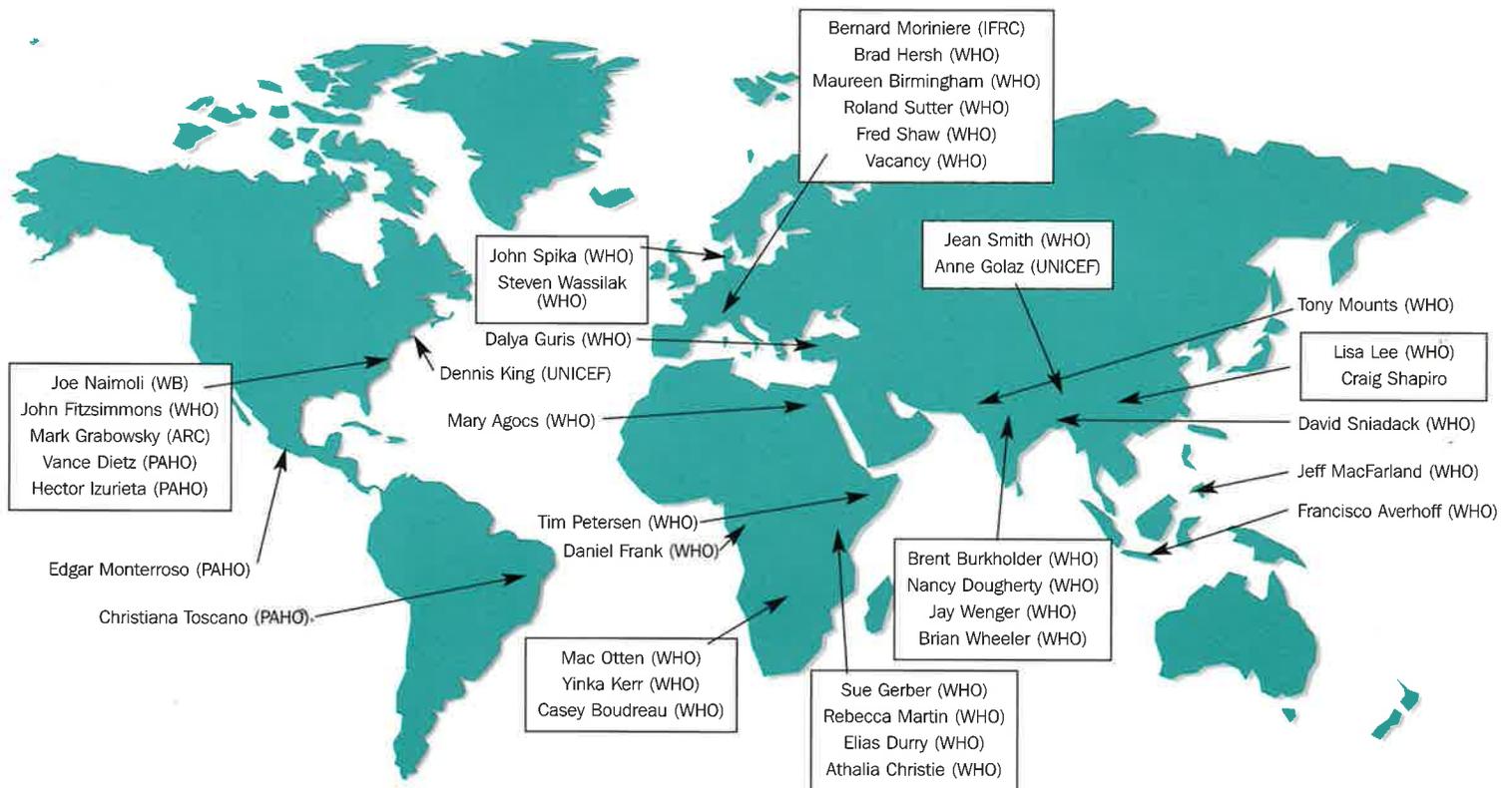
Our strategic plan provides a blueprint to expand CDC's support for global polio eradication, accelerated measles control and mortality reduction, and improve global childhood immunization through strengthening of immunization systems, expanded use of underutilized vaccines, and the development and introduction of new vaccines. This plan also recognizes the opportunity to fully integrate other primary care interventions, such as the provision of vitamin A, into childhood immunization programs, helping to reduce the burden of disability and mortality due to micronutrient deficiency.

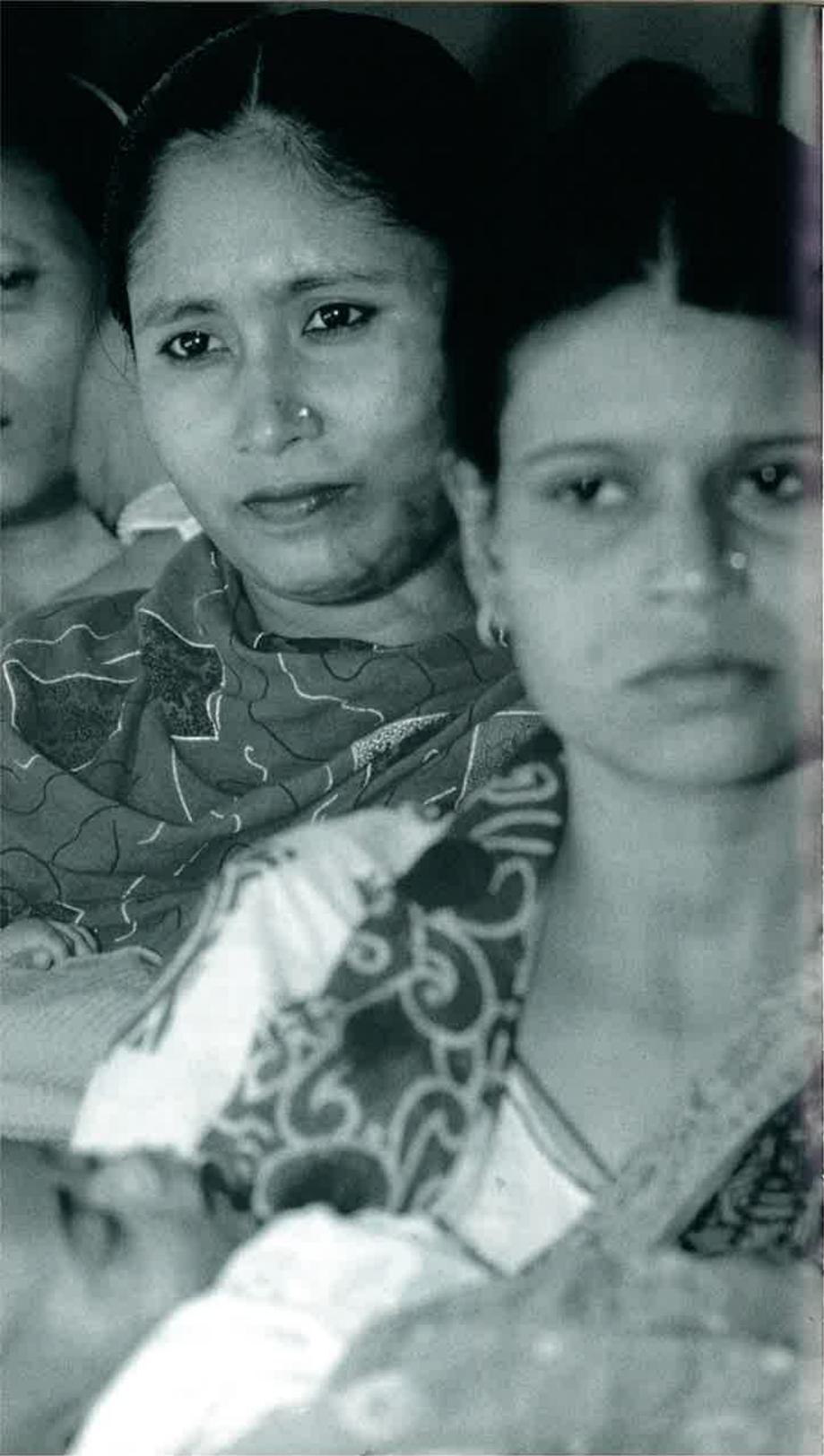
This strategy document is intended to complement the current CDC Global Health Strategy document, *Working with Partners to Improve Global Health: A Strategy for CDC and ATSDR* (September 2000), by providing specific information on how CDC proposes to pursue its global health strategy in the area of global immunization. Each of our Centers, Institute, and Offices involved in global immunization activities at CDC helped develop this plan.

While many of these activities can be achieved with existing resources, additional resources would be necessary to meet all the objectives outlined in this strategic plan.

FIGURE 1

Global Immunization CDC Seconded Staff (n=39) – August 2002





GOAL 1

GLOBAL IMMUNIZATION 2002-2006

Build and sustain safe and effective immunization services as a component of health delivery systems

OBJECTIVE 1.1

Support GAVI objective to ensure that 80% of developing countries should have routine immunization coverage of at least 80% in all districts (e.g., as measured by DTP3) by 2005.

► Strategy 1.1.1

Provide support to countries and partners to strengthen key components of VPD program management (i.e. vaccine delivery and immunization practices, vaccine management, safe injection practices, and disease and safety surveillance).

► Strategy 1.1.2

Provide support to partners and countries to develop and implement systems to monitor and evaluate key components of VPD programs.

► Strategy 1.1.3

Collaborate with global and regional partners to transfer model country experiences to other countries.

► Strategy 1.1.4

Provide technical support to assess health and economic impacts of vaccination, and of vaccination programs (including other primary health care and prevention programs that can be linked with the vaccination program).

► Strategy 1.1.5

Collaborate with regions and countries on technical support and policy development for the incorporation of new or under-utilized vaccines and appropriate disease surveillance and disease impact assessment into VPD programs.

► **Strategy 1.1.6**

Assist countries to increase sustainability of immunization programs by developing strategies to communicate the value of vaccination programs with policy makers, medical care providers, and the public.

► **Strategy 1.1.7**

Participate with global, regional and country partners to develop and provide educational materials and training.

OBJECTIVE 1.2

By 2005, vaccines in 80% of countries are given consistent with safe injection practices.

► **Strategy 1.2.1**

Provide technical support to countries to implement recommended safe injection practices for all vaccinations, to develop and evaluate safe injection tools for mass vaccination and safe disposal of injection equipment, and incorporate healthcare worker protection into these practices.

OBJECTIVE 1.3

Support research efforts to strengthen routine immunization delivery and vaccine safety in three or more countries by 2005.

► **Strategy 1.3.1**

Conduct epidemiologic and operational research to strengthen routine immunization and lay groundwork for introduction of new vaccines for developing countries.

► **Strategy 1.3.2**

Conduct collaborative research on immunization safety questions of global interest.

OBJECTIVE 1.4

Support efforts to incorporate administration of micronutrients and other appropriate public health preventions into routine childhood immunization programs.

► **Strategy 1.4.1**

Support programs to incorporate vitamin A administration into routine childhood immunization and supplementary immunization campaigns in vitamin A deficient countries, and to evaluate impact of these programs.

► **Strategy 1.4.2**

Support research to evaluate the feasibility of incorporating other micronutrients into routine childhood immunization programs.

OBJECTIVE 1.5

Assure a supply of safe new, combination and traditional vaccines sufficient to meet increasing global demand in an era of declining supply.

► **Strategy 1.5.1**

Partner with UNICEF, WHO and GAVI to address vaccine procurement and supply as a global issue.

► **Strategy 1.5.2**

In collaboration with partners, work to ensure an adequate supply of polio vaccines through the end-stage of polio eradication.

► **Strategy 1.5.3**

Provide technical support to the WHO in efforts to evaluate the possible role of vaccine additives and other components of vaccines in vaccine safety (e.g. thimerosal).



GOAL 2

GLOBAL IMMUNIZATION 2002-2006

**Control, eliminate,
and/or eradicate
vaccine-preventable disease,
disability and death globally**

OBJECTIVE 2.1

Achieve global poliomyelitis eradication by 2005 and certify the world as polio-free.

► Strategy 2.1.1

Provide technical and financial support to countries and partners to implement key eradication strategies, including surveillance and vaccination campaigns, and evaluate the results.

► Strategy 2.1.2

Ensure that all countries have access to an accredited laboratory that efficiently provides accurate virologic data in support of the PEI.

► Strategy 2.1.3

In cooperation with NVPO and NVAC, implement in the US the WHO "Global Plan of Action for Containment of Wild Polioviruses."

► Strategy 2.1.4

Complete the research agenda to establish the scientific basis for stopping polio vaccination.

► Strategy 2.1.5

Work with partners to assure sufficient funding to complete polio eradication efforts.

OBJECTIVE 2.2

Eliminate measles in all countries of PAHO by 2002, EURO by 2010, EMRO by 2010, and phasing in measles elimination in polio-free countries.

By 2005, reduce by 50% the annual global measles-related mortality compared with 1999 estimates (875,000 deaths).

► Strategy 2.2.1

Provide technical and financial support to partners and countries to develop, implement and evaluate disease reduction and elimination strategies.

► Strategy 2.2.2

Participate in development and implementation of revised 5-year Plans of Action for each WHO Region.

► Strategy 2.2.3

Integrate into any targeted measles control program the activities aimed at strengthening components of the routine immunization system, (e.g. injection safety, safe disposal of used injection equipment, cold chain, etc.), as needed or appropriate.

► Strategy 2.2.4

Expand the global measles/rubella laboratory network and institute an accreditation process.

► Strategy 2.2.5

Partner with WHO, UNICEF, USAID, American Red Cross, and other partners (e.g., IFRC, and UN Foundation) in developing/maintaining a consensus about global measles objectives.

OBJECTIVE 2.3

Assist in the control and prevention of rubella and congenital rubella syndrome (CRS).

► Strategy 2.3.1

Partner and develop consensus with WHO headquarters and regional offices, UNICEF, March of Dimes, and other partners about rubella control objectives, strategies and timetables.

► Strategy 2.3.2

Where appropriate, integrate rubella vaccination and surveillance activities with those of measles vaccination and surveillance (as described in the Global Measles Mortality Reduction and Regional Elimination Strategic Plan, 2001 – 2005).

► Strategy 2.3.3

Develop and refine methods to assess the burden of rubella and CRS in developing countries.

► Strategy 2.3.4

Evaluate optimal strategies for introduction of and/or enhancement of rubella control and CRS prevention activities.

► Strategy 2.3.5

Develop rubella surveillance (epidemiology and laboratory) as part of integrated rash-illness surveillance.

OBJECTIVE 2.4

Eliminate neonatal tetanus (NNT) (< 1 case per 1000 live births) in all districts of all countries by 2005.

► Strategy 2.4.1

Integrate NNT surveillance into ongoing surveillance systems, particularly active surveillance for polio and measles.

► Strategy 2.4.2

Provide technical and programmatic support to countries and partners (UNICEF, WHO) to improve NNT surveillance, assess NNT disease burden and TT coverage among women of childbearing age, and assess the impact of NNT elimination programs.

OBJECTIVE 2.5

Introduce hepatitis B vaccine into 80% percent of all countries with adequate delivery systems, i.e., having routine coverage >50%, by 2002, and all countries by 2007. Achieve hepatitis B coverage equal to DTP3 coverage in these countries within two years of vaccine introduction.

Strategy 2.5.1

Collaborate with countries and partners to assess hepatitis B disease burden, develop vaccine introduction plans, and develop laboratory capacity to evaluate the impact of vaccination programs.

Strategy 2.5.2

Provide technical support to countries to implement hepatitis B vaccinations and achieve coverage objectives.

Strategy 2.5.3

Provide technical support to countries and partners to develop and implement methods to improve the timeliness of administration of the first dose of hepatitis B vaccine to prevent perinatal HBV transmission.

Strategy 2.5.4

Provide technical support to countries and partners to develop and implement methods to assure timely delivery of hepatitis B vaccinations to healthcare workers.

OBJECTIVE 2.6

Support GAVI objective to introduce Hib vaccine to 50% of the poorest countries with high burden of disease and adequate delivery systems by 2005. In these countries, achieve Hib coverage equal to P3 coverage within two years of vaccine introduction.

Strategy 2.6.1

Provide technical support to countries to develop and implement Hib vaccine introduction plans, evaluate the effectiveness of implementation, and achieve coverage objectives.

Strategy 2.6.2

Collaborate with countries and partners to develop and implement surveillance and methods to evaluate disease burden and impact of vaccination.

Strategy 2.6.3

Support the development of laboratory capacity to monitor Hib disease burden and impact of vaccination programs.

OBJECTIVE 2.7

Assist in the control and prevention of pertussis.

Strategy 2.7.1

Provide technical support to countries and partners to assess burden of disease (morbidity and mortality) due to pertussis.

Strategy 2.7.2

Collaborate with countries and partners to enhance surveillance for pertussis, and support the development of laboratory capacity for pertussis surveillance.

Strategy 2.7.3

Collaborate with countries to assess the effectiveness of the vaccination program to decrease morbidity and mortality from pertussis.

OBJECTIVE 2.8

Support routine yellow fever vaccination in all countries where substantial disease burden is present, and assure vaccine coverage is equal to measles coverage in these countries within two years of vaccine introduction.

Strategy 2.8.1

Provide technical support to countries and partners to evaluate burden of yellow fever and develop and implement routine vaccination plans for children.

Strategy 2.8.2

Provide technical support to develop high-quality case-based yellow fever surveillance with laboratory support and implement mass vaccination campaigns as requested.



GOAL 3

GLOBAL IMMUNIZATION 2002-2006

Improve vaccine safety and global surveillance for vaccine-preventable diseases (VPDs), including the development and strengthening of laboratory surveillance

OBJECTIVE 3.1

Enhance surveillance infrastructure, training, and quality improvement mechanisms for selected VPDs.

- ▶ **Strategy 3.1.1**
Promote integration of VPD surveillance with other international and regional initiatives for surveillance and laboratory support, particularly with the African regional strategy for integrated disease surveillance and response (IDS).
- ▶ **Strategy 3.1.2**
Develop surveillance modules that can facilitate standardization of vaccine preventable disease reporting among regional disease surveillance networks.
- ▶ **Strategy 3.1.3**
Strengthen national public health laboratories in developing countries by providing diagnostic reference reagents, laboratory manuals, and training for laboratory scientists.
- ▶ **Strategy 3.1.4**
Use surveillance and vaccine coverage monitoring data to improve program quality and increase vaccine impact.
- ▶ **Strategy 3.1.5**
Develop and assess indicators for surveillance quality and utilize these to strengthen VPD surveillance.

► **Strategy 3.1.6**

Provide and/or support opportunities that bring the leaders of regional surveillance networks together to exchange experiences and methodologies and propose new methods of collaboration.

► **Strategy 3.1.7**

Expand the global influenza surveillance network.

► **Strategy 3.1.8**

Promote the development of the Hib-Pediatric Bacterial Meningitis Network and the National Bacteriology Lab network in the WHO African Region as a method of assessing burden, providing surveillance and evaluation, and advocacy for Hib, pneumococcal, and meningococcal vaccines.

OBJECTIVE 3.2

Ensure that all immunization programs have effective surveillance systems and technical support to monitor immunization safety.

► **Strategy 3.2.1**

Provide technical support and build capacity for immunization safety surveillance, adverse event reporting, and investigations as part of integrated VPD surveillance.

► **Strategy 3.2.2**

Provide support to assess current knowledge, attitudes, and beliefs regarding immunization and vaccine safety at national and regional levels through interviews and focus groups with program staff and by reviewing national plans and other program documents.

► **Strategy 3.2.3**

Provide technical support and build capacity for communicating the risks and benefits of immunizations to the public.



**Work in partnership with others
to develop, evaluate and support
introduction of new vaccines
to prevent diseases of
global public health importance**

OBJECTIVE 4.1

Support WHO/CVP Meningitis Vaccine Project to develop, evaluate and produce a conjugate A/C meningococcal vaccine to prevent epidemics in Africa by 2010.

► **Strategy 4.1.1**

As primary technical advisor to the project, provide technical assistance to the design and clinical testing of the conjugate vaccine.

► **Strategy 4.1.2**

Provide laboratory support for evaluating the immunogenicity of the vaccine and generating appropriate data for licensure.

► **Strategy 4.1.3**

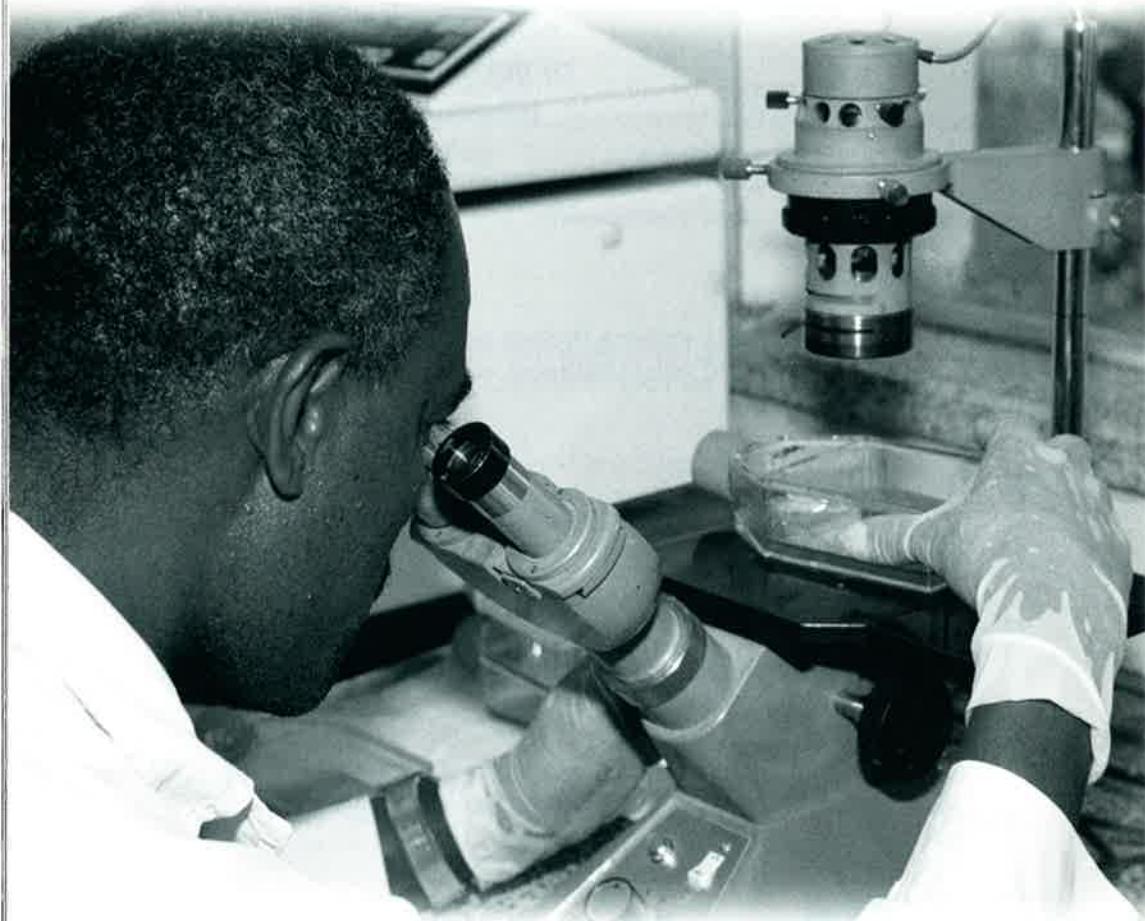
Assist with pilot introduction and evaluation of impact of conjugate vaccine in at least three countries in the meningitis belt in Africa.

OBJECTIVE 4.2

Support the development of safe and effective live, oral rotavirus vaccines intended for use primarily in the developing world.

► **Strategy 4.2.1**

Develop generic protocol for assessing rotavirus disease burden in developing countries, and establish regional networks for surveillance and disease burden estimates of rotavirus disease.



► **Strategy 4.2.2**

Provide technical assistance for conducting phase III clinical trials of rotavirus vaccine in developing countries.

► **Strategy 4.2.3**

Develop standard methods to estimate the incidence and epidemiology of intussusception in developing countries.

► **Strategy 4.2.4**

Conduct laboratory studies to better define immune correlates of protection.

OBJECTIVE 4.3

Accelerate the introduction of pneumococcal conjugate vaccine use in developing countries.

► **Strategy 4.3.1**

Support and develop methods to assess key disease burden measures in developing countries.

► **Strategy 4.3.2**

Expand surveillance for laboratory-confirmed pneumococcal disease in developing countries and provide laboratory training in good laboratory methods, to monitor disease reduction and the possible effects of pneumococcal serotype replacement.

► **Strategy 4.3.3**

Support ongoing efficacy studies in developing countries and conduct demonstration projects to assess the effectiveness of pneumococcal vaccination in non-industrialized settings.

► **Strategy 4.3.4**

Support and evaluate immunization strategies designed to protect very young infants (<3months).

► **Strategy 4.3.5**

Support, develop and evaluate other vaccine approaches (such as common protein antigen), which may be more effective or economical for global production than conjugate vaccines.

OBJECTIVE 4.4

Work with the Malaria Vaccine Initiative to support the development and clinical evaluation of candidate malaria vaccines.

- ▶ **Strategy 4.4.1**
Work with the Malaria Vaccine Initiative and National Institutes of Health to develop and move *P. falciparum* candidate vaccine antigen into clinical trials.
- ▶ **Strategy 4.4.2**
Continue research on immune correlates of protection and genetic diversity of parasites in malaria endemic areas.
- ▶ **Strategy 4.4.3**
Support and develop non-human primate models for testing candidate malaria vaccines.
- ▶ **Strategy 4.4.4**
Support and develop suitable cohorts for clinical trials of candidate malaria vaccines.

OBJECTIVE 4.5

Work with partners to develop and evaluate candidate vaccines for HIV, to identify a safe and effective vaccine.

- ▶ **Strategy 4.5.1**
Complete on-going epidemiologic, laboratory, and behavioral studies associated with the US and Thai phase III efficacy trials of Vaxgen's AIDSVAX vaccine.
- ▶ **Strategy 4.5.2**
Collaborate with the Emory Vaccine Center on evaluation of HIV vaccines in non-human primates, and in phase I clinical trials in humans.
- ▶ **Strategy 4.5.3**
Collaborate with scientific and community partners in the U.S., Africa, and Asia to develop suitable cohorts for phase II and III HIV trials.
- ▶ **Strategy 4.5.4**
Continue research on immune correlates of protection from infection and disease progression among cohorts of

seroconverters, long-term non-progressors and highly exposed, uninfected persons.

- ▶ **Strategy 4.5.5**
Continue planning and development of infrastructure and community participation for eventual implementation of future HIV vaccines.

OBJECTIVE 4.6

Develop a safe and effective TB vaccine by assisting NIH, FDA and other national and international partners.

- ▶ **Strategy 4.6.1**
Establish a consensus among public and private funding agencies, vaccine manufacturers and professional organizations that a new TB vaccine is an urgent public health priority, and identify a long-term commitment of private and public sector funds to support vaccine research.
- ▶ **Strategy 4.6.2**
Develop a comprehensive vaccine development strategy that builds on the *Blueprint for Tuberculosis Vaccine Development* (NIH 1998): <http://www.cdc.gov/nchstp/tb/pubs/mmwr/rr4713.pdf>
- ▶ **Strategy 4.6.3**
In support of NIH efforts, increase biomedical research to define host factors for TB protection and susceptibility, including the development of new animal models for assessing vaccine efficacy.
- ▶ **Strategy 4.6.4**
Work with domestic and international partners, including WHO, to increase collaboration between private and public sectors and build necessary capacity for implementation of clinical vaccine trials.

OBJECTIVE 4.7

Develop and evaluate vaccines for other diseases of global importance.

- ▶ **Strategy 4.7.1**
Collaborate with Mahidol University, Thailand to evaluate strain-specific vaccines against dengue.

- ▶ **Strategy 4.7.2**
Collaborate with USAID and other national and international agencies on the development and evaluation of schistosomiasis candidate vaccines.
- ▶ **Strategy 4.7.3**
Conduct epidemiologic studies of schistosomiasis to evaluate disease burden and risk factors in different age groups in anticipation of vaccine field studies.
- ▶ **Strategy 4.7.4**
Support and develop recombinant vaccine against cryptosporidiosis for human and veterinary use as well as in support of public health programs to protect source water.
- ▶ **Strategy 4.7.5**
Support and develop laboratory correlates of immunity for RSV.
- ▶ **Strategy 4.7.6**
Provide support to develop and evaluate the safety and effectiveness of vaccines for use against potential bioterrorist agents (e.g., smallpox and anthrax).
- ▶ **Strategy 4.7.7**
Collaborate with the NIH and other national and international agencies on the development and evaluation of shigellosis candidate vaccines.
- ▶ **Strategy 4.7.8**
Conduct epidemiologic studies of shigellosis to evaluate disease burden and risk factors in different age groups in anticipation of vaccine field studies.
- ▶ **Strategy 4.7.9**
Collaborate with the WHO and other national and international agencies to evaluate the effectiveness of existing and newly developed vaccines for cholera and typhoid fever in controlling these diseases in endemic areas and during epidemics.

GOAL 5

GLOBAL IMMUNIZATION 2002-2006

Build and strengthen partnerships and collaborative efforts to develop, evaluate, and promote the availability of vaccines that are needed in developing countries

OBJECTIVE 5.1

Engage new and strengthen existing partnerships to help achieve our mission.

- ▶ **Strategy 5.1.1**
Participate in establishing global immunization priorities, including development, implementation and evaluation of strategies for vaccine preventable disease control.
- ▶ **Strategy 5.1.2**
By 2003, build and maintain strong partnerships with all international immunization supporters, collaborate with partners in communicating the value of vaccines, and participate in interagency coordinating committees at the regional level and in selected priority countries.
- ▶ **Strategy 5.1.3**
Work with traditional and non-traditional partners to identify and address gaps in global surveillance and incidence of vaccine preventable disease.
- ▶ **Strategy 5.1.4**
Work with global partners to secure and maintain the combined resources necessary to address global immunization needs.



OBJECTIVE 5.2

Enhance capacity of CDC and domestic and international partners to support global immunization programs.

► Strategy 5.2.1

Increase public health training opportunities on vaccine-preventable diseases for public health workers and scientists at CDC and in other countries.

► Strategy 5.2.2

Support global training programs to build effective immunization program management, surveillance, outbreak investigation, assessment, and disease-specific laboratory and epidemiologic expertise.

► Strategy 5.2.3

Work with global, regional and country partners to strengthen information systems capacity.

► Strategy 5.2.4

Provide support and capacity building in countries and at regional offices on appropriate strategies to monitor immunization program quality (including program and vaccine management and vaccine/injection safety), and appropriately respond to identified concerns.

► Strategy 5.2.5

For countries implementing new vaccines, provide support and training to document disease and programmatic impacts through surveillance and special studies.



PERFORMANCE MEASUREMENT & EVALUATION

GLOBAL IMMUNIZATION 2002-2006

To successfully meet our global immunization mission, it must be clearly stated what CDC, in coordination with its partners, is seeking to accomplish, as well as our progress toward achieving these goals.

The most effective way to monitor success is to assess our progress against a set of measurable objectives, which can be evaluated and readjusted as appropriate. Each goal area should be supported by at least one such performance measure. When the results of our monitoring indicate a failure to meet these objectives, we should reexamine our approaches and incorporate necessary changes to our strategies. The table below presents some candidate measures that correspond with our global immunization goals. CDC will actively work to supplement and finalize measures of performance.

Performance Measurement & Evaluation

GLOBAL IMMUNIZATION GOAL	CANDIDATE PERFORMANCE MEASURES
Build and sustain effective and safe immunization services as a component of health delivery systems.	<ul style="list-style-type: none"> ■ Eighty percent of developing countries will have routine immunization coverage (as measured by DTP3) of at least 80% in all districts by 2005 ■ By 2005, vaccines in 80% of countries are given consistent with safe injection practices
Control, eliminate, and/or eradicate vaccine-preventable disease, disability and death globally.	<ul style="list-style-type: none"> ■ Achieve global poliomyelitis eradication and certification of a polio-free world by 2005 ■ Regional elimination of measles in PAHO by 2002, EURO by 2010, and EMRO by 2010 ■ By 2005, reduce by 50% the annual global measles-related mortality compared with 1999 estimates (875,000 deaths) ■ Proportion of countries that have introduced new or underutilized vaccines, e.g., Hib, Hepatitis B, yellow fever ■ Eliminate neonatal tetanus (NNT) (<1 case per 1000 live births) in all districts of all countries by 2005)
Improve global surveillance for vaccine-preventable diseases and vaccine safety, including development and strengthening of laboratory surveillance.	<ul style="list-style-type: none"> ■ Proportion of countries with integrated surveillance that includes at least two vaccine-preventable diseases with appropriate laboratory support ■ Proportion of countries that have established surveillance for adverse events
Work in partnership with others to develop and evaluate vaccines for diseases of global public health importance.	<ul style="list-style-type: none"> ■ Introduce conjugate meningococcal type A/C vaccine into at least 3 African countries by 2010 ■ Introduce pneumococcal conjugate vaccine into at least 3 of the least developed countries by 2007 ■ By 2010, a safe and effective rotavirus vaccine will be available in developing countries ■ By 2010, one or more safe and effective HIV vaccines targeted at strains predominant in developing countries will be licensed
Build and strengthen partnerships and collaborative efforts to develop, evaluate, and promote the availability of vaccines that are needed in developing countries.	<ul style="list-style-type: none"> ■ Increase in number of partners which provide funding support for childhood immunization and accelerated disease control

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•
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