

CDC Now

Protecting **Health** for Life



THE STATE OF CDC, FISCAL YEAR 2005



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On CD-ROM

Presentations: CDC Goals in Action

Watch how CDC is making a difference in our People, Places, Preparedness, and Global goals.

Calendar: FY 2005 Highlights Month-by-Month

Browse the calendar section, which highlights the year's top health protection stories.

Tour CDC's New Buildings

See the new buildings on CDC's Atlanta campus.

A Day in the Life of CDC

Read about a Day in the Life of CDC on September 30, 2005.

Hurricane Katrina: CDC Responds

See stories and a presentation on the agencywide response to one of our nation's worst natural disasters.

State of CDC Reports

Access links to printable versions of *The State of CDC Reports*, FY 2003, FY 2004, and FY 2005.

PROTECTING HEALTH FOR LIFE



Providing Life-Saving Information at Home

Every year, CDC receives more than 4,000 letters from its customers: Congress; public health partners; local, state, and federal agencies; and the public. In October 2005, a letter sent by Sally Gibson typifies CDC's commitment to improving and protecting people's health. Here's what Gibson had to say after she called the CDC hotline (1-800-CDC-INFO) with her health concerns.

"So often as administrators we hear only the negative comments. I wanted to write and let you know what a terrific job your employees are doing. This year I have had an occasion to call the CDC twice about unrelated matters. I have never called before this year.

First, my son, who is a veterinarian, was exposed to a rabid puppy. Being a mom, I worried about the information that he was getting from his practice about how to handle the exposure. My call to CDC was returned promptly and I was told he should get two follow-up vaccines because he had had the series nine years ago in vet school. Even though he had to go to the emergency room to get the medicine, it was a relief to know what to do.

Second, I was exposed to hepatitis B when my cousin was in the hospital before he died. I found out after his death and called your staff again. They told me that I needed the gamma globulin within a week of exposure and also to start the series of three shots. I did as instructed and appreciate their calmness and help so much. I am so thankful that my tax dollars support you. I am thankful for all of us you help every day with your work. Please tell your staff that I am very grateful."

Caring for AIDS Patients in Mozambique

When Esperança fell ill following the birth of her third child, her troubles were just beginning. After years of battling HIV infection, her body was losing. And when she had trouble looking after their children, her husband left them to live with another woman. Fortunately, a CDC-funded hospital referred Esperança to a home-based care program that provided her with follow-up support. The program is supported by World Vision International, a U.S.-based Christian relief agency that receives funding from the President's Emergency Plan for AIDS Relief.

A home-care volunteer, trained by the Ministry of Health with CDC funding, visited Esperança regularly. He discussed nutrition and enrolled her in a food program where she received a monthly food basket. He showed her ways to prepare food and care for her children to prevent opportunistic infections associated with HIV. Moreover, he emphasized the importance of taking her medication regularly to prevent HIV-related infections and monitored her symptoms in case she needed more intensive care.

U.S. government funding for the home-based care services, coupled with access to life-saving drugs, allowed Esperança to become healthy enough to delay the onset of acute AIDS infection. With the encouragement of the volunteer, she started a small business selling corn- and rice-based drinks rich in vitamins to her neighbors. Now, instead of wondering how her children will survive without her, Esperança is planning her future with them.

Preventing Head Injuries on the Field

Tara and Michael Wuebben are thrilled to see their 15-year-old son enjoy soccer. But after three concussions they knew someone had to take action. "In the first one, he was down on the field, knocked out and twitching," said Michael Wuebben. "We felt we had to do something."

The answer appeared on television, when they saw protective helmets during the World Cup games. Later, they were able to find them on the Internet. Both their sons now wear helmets to play soccer, and the Wuebbens have observed helmet use spreading in Michigan, where the Michigan Youth Soccer Association represents more than 90,000 children.

Michael Wuebbens, a volunteer coach, actively promotes CDC's Coaches' Tool Kit. "I've ordered it for the coaches at our high school," he said. "There's a lot they need to know. Some football players think it's a show of manhood to get back in the game after an injury, but according to CDC's kit, we should be taking them to the hospital."

Learn more about the CDC Coaches' Tool Kit at www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm.





Secretary's Message

The Department of Health and Human Services (HHS) is committed to protecting the health and safety of all Americans and to providing essential human services to those in need. We are the largest civilian department in the federal government, with more than 66,000 employees and a budget that accounts for almost one out of every four federal dollars.

Soon after I became Secretary of HHS in January 2005, I developed a 500-Day Plan, an outline of my personal vision about the goals and priorities our agency needs to create a healthier America and a safer world. The Centers for Disease Control and Prevention (CDC) is part of that vision to transform our healthcare system, advance medical research, secure our nation, and protect our health for the next 500 days, the next 5,000 days, and beyond.

"I enjoy solving problems and am guided by selected long-term goals. I then rely on a 500-Day Plan to create a timetable of short-term actions that chart a course for future progress. It's a 500-Day Plan with a 5,000-day horizon."

In collaboration with numerous partners in the public and the private sector, as well as international health agencies, CDC is tirelessly leading the fight against known, new, and emerging diseases around the globe, whether preparing for a potential flu pandemic or delivering much-needed education and treatment to countries ravaged by HIV/AIDS. At the same time, CDC is stepping up its prevention efforts to reduce the burden of chronic and preventable diseases, particularly obesity and its terrible consequences, such as diabetes, and heart and vascular diseases. This year I am especially proud of CDC's outstanding response to the unprecedented devastation brought on by the Gulf Coast hurricanes.

Millions of people know CDC and millions more rely on the guidance, information, and help provided by the agency's teams of dedicated and able scientists, researchers, and staff. I hope that the information in this *State of CDC, Fiscal Year 2005* will provide you with useful insights and help you to better know, understand, and appreciate the many programs CDC is undertaking to achieve our vision of "Healthy People in a Healthy World—Through Prevention."

Michael Leavitt
Secretary of Health and Human Services

Secretary's Leavitt's 500-Day Plan, with a 5,000-Day Horizon

I use a 500-Day Plan as a management tool to guide my energies in fulfilling the President's vision of a healthier and more hopeful America. The plan is a personal expression of many of my priorities and provides direction to the daily leadership and management of HHS.

The strategies in the plan focus on actions during a rolling 500-day period that will achieve significant progress for the American people over the long term. The plan is both flexible and dynamic, and it will be updated every 200 days.

It may be helpful to describe what the 500-Day Plan is not. It is not an exhaustive list of the department's priorities; it is a simple declaration of my key focus areas. It does not replace the HHS strategic plan; it complements the plan. It does not cover all of my priorities, but it is what I will spend at least half of my time on. It includes actions the department can complete within 500 days that will yield results within 5,000 days.

I subscribe to a core set of public policy principles. These principles of governance form the philosophical backbone for how I approach and solve problems.

The 10 principles, listed below, are not all-inclusive, but do provide the philosophical underpinnings for my 500-Day Plan. The plan is available online at www.hhs.gov/500DayPlan/.

- Care for the truly needy, foster self-reliance.
- National standards, neighborhood solutions.
- Collaboration, not polarization.
- Solutions transcend political boundaries.
- Markets before mandates.
- Protect privacy.
- Science for facts, process for priorities.
- Reward results, not programs.
- Change a heart, change a nation.
- Value life.





Director's Message

Welcome to *The State of CDC, Fiscal Year 2005*, our annual health protection impact report.

As you will read in these pages, CDC's outstanding men and women are making a real difference in people's lives. The level of excellence they bring to the job—from hurricane relief on the Gulf Coast to HIV prevention in the Ivory Coast—is what makes them world-renowned leaders in public health.

Fiscal Year (FY) 2005 will be remembered at CDC as a time of important changes, huge challenges, and remarkable accomplishments—often under difficult conditions. On April 5, 2005, CDC took a landmark step in its readiness to confront the challenges of 21st century health threats when Congress accepted the agency's new strategic orientation, including its overarching mission and restructuring. When CDC started this process in 2003, more than a quarter century had passed since the last modernization effort. At that time, CDC had 4,000 employees and a budget of approximately \$300 million. Today, CDC's combined workforce (employees and contractors) is approximately 15,000 with a budget of \$8 billion for FY 2005.

Against this backdrop of internal transformation, four new buildings opened as part of CDC's 10-year Master Facilities Plan. These world-class facilities give our world-class scientists the tools they need to extend the boundaries of scientific knowledge and meet the healthcare challenges of tomorrow.

Each year brings new public health challenges to CDC and 2005 was no different. When an earthquake unleashed deadly tsunamis in Asia, CDC responded on several fronts. The lessons we learned from that catastrophe helped prepare the agency for the unprecedented devastation caused by Hurricane Katrina when it hit the Gulf Coast 9 months later.

Besides responding to those two disasters, CDC took the lead in preparing the country against the risk of pandemic flu, as outbreaks of avian influenza intensified in Asia and spread into Eastern Europe. At the same time, we made great strides toward moving science from bench to people. CDC scientists helped develop and license the first DNA vaccine. They also

collaborated on a revolutionary testing technique that will reduce test time for select biological agents from days to hours. We have a lot to celebrate outside our labs, too, as you will learn throughout the pages of this report.

And then, there was the Katrina crisis. In the end, the hurricane was no match for the world's greatest public health system. But it reminded us how Americans place great trust in CDC to guide them through health emergencies, when they feel most vulnerable.

"Fiscal Year 2005 will be remembered at CDC as a time of important changes, huge challenges, and remarkable accomplishments—often under difficult conditions."

This list of accomplishments skims the surface of the tremendous work CDC does throughout the year—day in and day out, at home and abroad. Transformation, innovation, dedication—FY 2005 saw a modernized CDC move into high gear as it continues to build the foundation for an even better CDC, with even more public health impact for our customers.

I thank our health system partners, especially those in state, local, tribal, and territorial health agencies, who are extraordinary colleagues and truly serve on the frontlines to protect people in communities everywhere, every day. I encourage everyone to get to know your local public health officials and the critical work they do.

Helping you get to know us better is an important goal to CDC. I hope that reading this report serves that purpose. As diligent stewards of public trust and public funds, we invite your comments and feedback. So please let us know how we have done and how we can serve you better in the coming year.

Julie Louise Gerberding, MD, MPH
Director, Centers for Disease Control and Prevention



CDC Now: Health Protection Goals

As America has entered a new millennium, new health and safety challenges have arisen while old ones remain deeply rooted:

- Emerging infectious diseases, such as SARS and pandemic influenza.
- Terrorism.
- Chronic diseases, injury, disability.

Without question, the nation is better prepared for these public health threats than ever before. CDC staff have demonstrated remarkable flexibility and resilience in responding to these challenges. Well-designed goals supported by new strategies and more innovations sharpen the focus of our work, allowing CDC to do even more to protect and improve health.

Health Protection Goals

Our new health protection goals (www.cdc.gov/about/goals/goals.htm) address four themes:

- Healthy People in Every Stage of Life.
- Healthy People in Healthy Places.
- People Prepared for Emerging Health Threats.

- Healthy People in a Healthy World.

Creating these agencywide goals has taken careful consideration, and now we are ready to create the action plans, with measurable objectives and activities, to achieve them. In April 2005, Congress formally endorsed CDC's revised organizational structure, which corresponds to the new budget CDC enacted for FY 2005. This event signaled the beginning of our transition to a more modern CDC.

Strategy First

CDC has defined six key strategies for achieving the agency's health protection goals:

1) Health Impact Focus

Align CDC's staff, strategies, goals, investments, and performance to maximize impact on the population's health and safety.

2) Customer-Centricity

Market what people want and need to choose health.

3) Public Health Research

Create and disseminate the knowledge and innovations people need to protect their health now and in the future.

4) Leadership

Leverage CDC's unique expertise, partnerships, and networks to improve the health system.

5) Global Health Impact

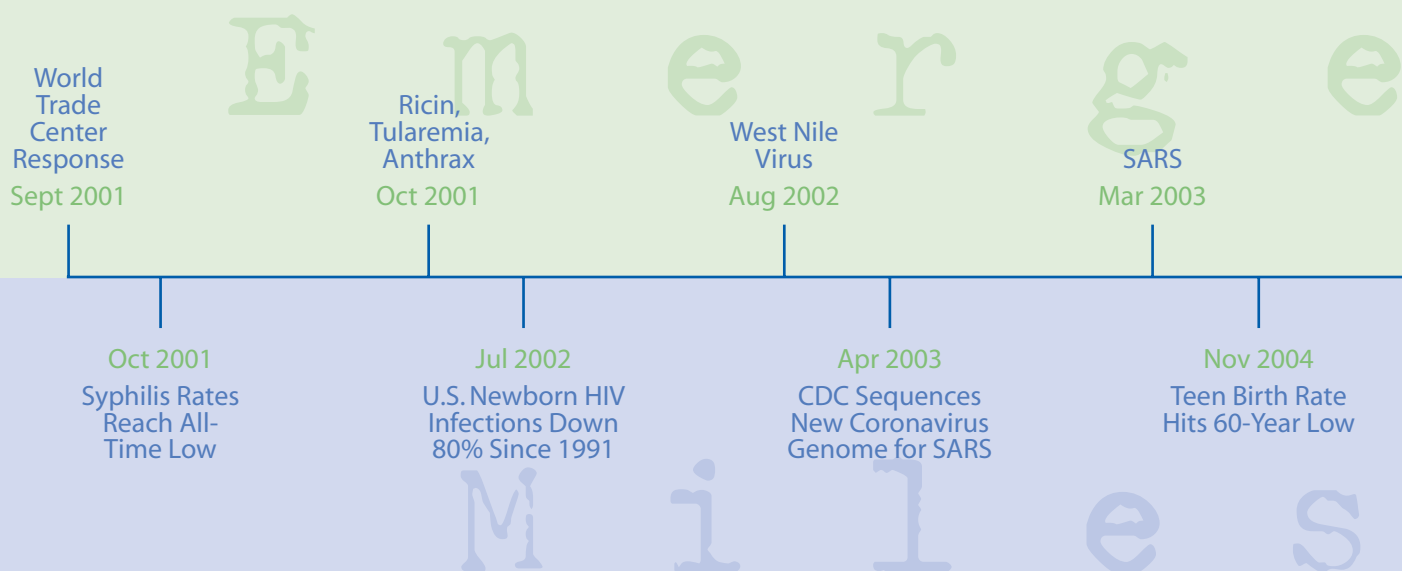
Extend CDC's knowledge and tools to promote health protection around the world.

6) Accountability

Sustain people's trust and confidence by making the most efficient and effective use of their investment in CDC.

These strategic imperatives, developed through intensive consultation and review of CDC's challenges and opportunities, are defining the major paths toward accomplishing our mission. Our core values—respect, integrity, and accountability—remain constant and support the foundation of everything CDC does.

CDC Health Protection: 2001–2005



For the 21st Century

Achieving CDC's Health Protection Goals

The benefits of an even more integrated, adaptable, and nimble CDC were clearly visible throughout FY 2005. Below is a partial list of achievements in research, preparedness, protection, and global health driven by networking, leadership, and innovation.

Research

- Drafted the first-ever CDC-wide research agenda identifying the information needed to meet our goals.
- Developed new, safe, and non-toxic tick and insect repellents with academic partners.
- Developed and licensed the first-ever DNA vaccine through collaboration with USDA and private sector scientists.
- Created a method to clean toxic dust from soiled work clothes.
- Identified biomarkers that could better identify children with traumatic brain injury.
- Published assessment of U.S. population's exposure to 148 environmental chemicals.
- Networked scientists from two centers to develop a new technology for quick detection of bioterrorism agents.

- Identified a tick species as a new vector for Rocky Mountain Spotted Fever.

Preparedness

- Created the government's first collaborative "Response Resilience Team" during the tsunami response to support the mental health needs of the community as well as relief and rescue workers.
- Teamed experts from nine CDC centers to achieve high influenza vaccination rates among risk groups, despite a severe vaccine shortage in the 2004–2005 season.
- Became an official member of the National Biodefense Research Coalition at Fort Detrick, where we are collaborating on research to prevent, detect, mitigate, and recover from bioterrorism threats.

Protection

- Launched CDC's new agency-wide Health Protection Goals.
- With our many partners, eliminated rubella, achieved the highest ever childhood immunization rates in the U.S. and the lowest domestic tuberculosis rates.
- Created pandemic preparedness checklists for state, community,

business, education, and other sectors.

- Published the *Guide to Community Preventive Services: What Works to Promote Health*—the first published compendium of evidence-based interventions that protect health.

Global Health

- Contributed to the President's Emergency Plan for AIDS Relief, which exceeded goals for preventing and treating HIV infection in the 15 focus countries covered by the program.
- Achieved the lowest global measles infection incidence ever.
- Scaled up polio eradication efforts in regions with outbreaks.
- Established a new International Emerging Infectious Disease Program site in Cairo.
- Created bilateral financial and scientific support agreements with priority Asian countries to detect and respond to avian influenza.
- Established a Global Business Roundtable, with the help of the CDC Foundation, to engage leaders of international businesses in our global health protection initiatives.

n c i e s

Influenza
Vaccine Shortage
Oct 2004

Tsunami
Dec 2004

Marburg
Outbreak
Mar 2005

Hurricane
Katrina
Aug 2005

Mar 2005
Rubella
Eliminated in U.S.

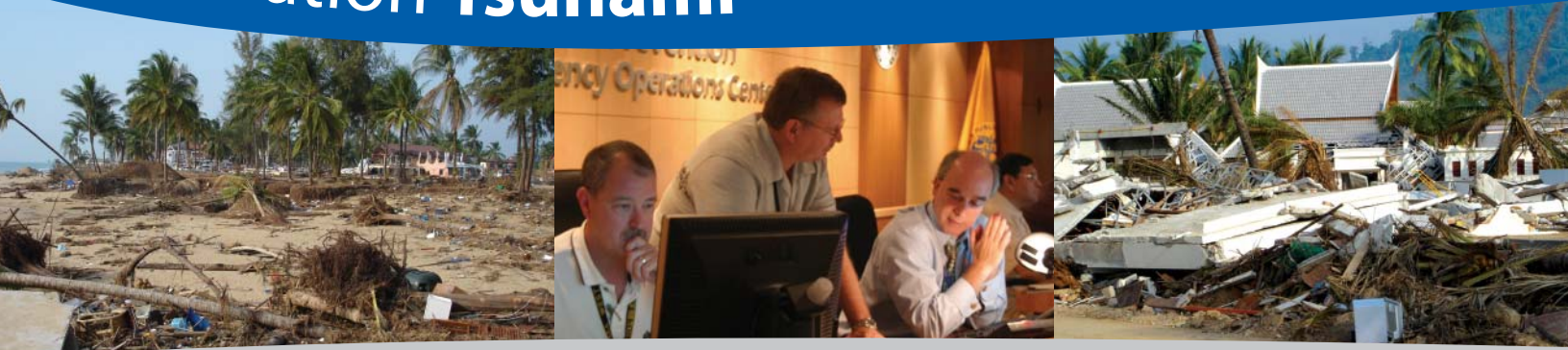
Apr 2005
Healthy People 2010
Goals Reached for
E. coli O157

Oct 2005
CDC Researchers
Reconstruct 1918
Pandemic Influenza Virus

t o n e s



Operation Tsunami



On December 26, 2004, as many Americans were going about their holiday traditions, the earth trembled. A violent earthquake at the bottom of the Indian Ocean—so powerful its effects registered halfway around the globe—spawned a massive tsunami that slammed into the coastlines of 11 countries and took the lives of nearly 200,000 people.

Shortly after news of the earthquake's devastation reached

CDC, the Director's Emergency Operations Center was activated to support HHS. Hundreds of employees volunteered to help, either at the disaster zone or at CDC headquarters. Staff in Thailand and India rushed into the field, as CDC headquarters fielded requests for help from the host countries and international partners.

The international scope and number of health and relief

organizations involved made the tsunami one of the most complicated emergency responses in history. Nonetheless, CDC was there to help restore public health and to address the threat of infectious diseases, injuries, and mental health. And the lessons learned halfway around the globe would help prepare for another natural disaster on the homefront 9 months later.

India

- 18,045 dead and missing
- 647,800 displaced

Indonesia

- 169,000 dead and missing
- 572,126 displaced

Sri Lanka

- 35,322 dead and missing
- 516,150 displaced

Thailand

- 8,327 dead and missing
- 6,000 displaced

Other Countries

- 580 dead and missing
- Number displaced not available

Total

- 231,274 dead and missing
- 1,742,076 displaced



CDC Responds

- Animal shelters, p. 34
- Life-saving information, p. 40–41
- Medical supplies, p. 40
- Staff stories, CD-ROM

Operation Katrina



Hurricane Katrina ranks among our nation’s most costly disasters. More than 1,300 people perished and damage to property exceeded \$34 billion. Nearly 100,000 people were displaced to 400 evacuation centers in 18 states. Polluted flood waters, trapped residents, and overcrowded shelters created an environment ripe for multiple disease outbreaks. Nearly 25% of the people in the cities most affected by the hurricane (New Orleans, Biloxi, and Mobile) were people with one or more disabilities who were at greater risk after the storm.

CDC’s response was swift. Under the coordination of HHS Secretary Mike Leavitt, hundreds of staff were deployed, including environmental occupational health experts, lab

workers, medical epidemiologists, public health advisors, veterinarians, and mental health workers. CDC deployed over 460 of the almost 860 uniformed U.S. Public Health Service (USPHS) Commissioned Corps officers normally assigned to the agency, part of the largest collaborative mobilization in USPHS Corps history.

To keep the public informed of potential health hazards, CDC immediately released health protection messages for potential chemical hazards and immunization guidance for healthcare workers and volunteers assisting hurricane victims.

With the cooperation of other federal, state, and local officials, CDC instituted sound public health evaluation planning, decision-

making, and risk communication to respond to the crisis.

Long-term health needs will keep the agency engaged throughout FY 2006. The environmental, social, and economic issues communities face are complex and dynamic, making it imperative to provide accurate, timely, and understandable health and safety information throughout the rebuilding process. Toward that end, CDC began work on a long-term communication and community engagement plan for returning residents, including those people with special needs. Working together, the people in these communities will be able to better protect themselves and their families in the future.

Louisiana

- 1,098 dead
- 472 CDC staff deployed

Mississippi

- 231 dead
- 108 CDC staff deployed

Other States

- 18 dead
- 191 CDC staff deployed

Total

- 1,347 dead
- 771 CDC staff deployed

A Day in the Life of CDC:

CDC. These letters are synonymous with the intrepid disease detectives who investigate and restore health in communities facing terrifying disasters or diseases. That popular image of CDC is well deserved, but it is just one aspect of an agency that, at any given moment, has hundreds of employees spread across the globe. Indeed, the routine, day-to-day activities and the dedicated civil servants who perform them are the backbone of the public health system. Look beyond the health and safety headlines and chances are you will find a CDC employee in the background, providing expertise, resources, technical assistance, and whatever else it takes to protect our well-being. Here are excerpts from journals describing a day in the life of CDC. Their complete entries for September 30 can be found on the interactive CD-ROM.



Frank Mahoney

Medical Epidemiologist, Iraq

One of the most challenging aspects of being the Health Attaché in Iraq is experiencing the impact of the ongoing conflict on the personal lives of friends and colleagues. One of these colleagues, the Surgeon General of the Iraqi Armed Forces, was admitted to the American Military 86th Combat Support Hospital with gastrointestinal bleeding on Sept 29. I visited him around 9 PM as he was receiving his 5th unit of blood. I had been working with the Surgeon General for several weeks on the difficult task of providing health services for the Iraqi Armed Forces. We discussed the stress he had at work and how it may have contributed to his illness, particularly the kidnapping of his deputy director 2 days previously. I promised to return the next day.

Jay C. Butler

Medical Officer, Alaska

First day back from hurricane deployment. Dark in the morning now. Had to find batteries for headlamp before biking to office. Made AM rounds on pediatric service at Alaska Native Medical Center. Service includes three infants in intensive care unit with pneumonia; a teenager with meningococcal meningitis; a 2-year-old with Group A Strep in an abscess in the neck; and an 8-year-old with a surgical site infection after mole removal.

CDC at a Glance: Our Workforce and Where We Are

W O R K F O R C E

- CDC is among Georgia's top 15 employers, with nearly 15,000 employees (including 6,000 contractors) in 170 occupations.
- In FY 2005, CDC hired 592 new employees.
- Nearly 200 employees are assigned overseas to address HIV/AIDS, emerging infections, malaria, vaccine-preventable diseases, and other global health threats.
- Nearly 40% of employees have a Master's degree, 25% have a PhD, and 10% have a medical degree.
- Women account for nearly 60% of CDC's workforce.
- More than one-third of CDC's employees are members of a racial or ethnic minority group.

September 30, 2005

Ros O'Loughlin

EIS Officer, Louisiana

This is our 4th day in Louisiana after having already been in San Antonio for 9 days doing the same assessment there. In our first shelter I interviewed a man who was in prison during the hurricane (an eventuality that we hadn't considered in designing our questionnaire), a woman who required referral to the mental health services, and a woman with two small children. The drive through rural Louisiana is an educational experience as Todd, a native of Louisiana, gives an interesting commentary on everything from cotton farming to fishing to local sayings to bayous, which I have learned are eerily beautiful, swamp-like lakes.

Tracy Creek

Medical Officer, Botswana

My favorite hotel in Gaborone is my second home, and I always ask for my favorite room. It has more outlets than all the other ones and a better view of the cows on the road behind the hotel. This morning I woke up at 6 with my two cell phones and laptop plugged in, wishing that the battered red suitcase that followed me on my last 12 trips to Botswana had appeared on the carousel the night before. But a lack of clean clothes doesn't give me a day off, so I got up and drove to the airport to pick up a shipment of supplies from South Africa.



Keith Sabin

Epidemiologist, Atlanta

It's a cool day in Atlanta, a bit humid for September. As I walk my son to elementary school we talk about Vietnam's markets and whether he could chase live chickens around there, like pigeons in a piazza. He's in 4th grade and we've been discussing the possibility of his joining me in Vietnam on one of my trips so that he can spend some time with the 10-year-old son of the Global AIDS Program chief of party there. I tell him no chicken chasing and I mention avian flu. He asks if he can just get a flu shot. Some day, perhaps.

Linda Pezzanite

Occupational Safety and Health Specialist, Atlanta

This morning we are decontaminating a lab procedure room so that a new viral reference strain can be worked with in the area. We don't want any possibility of cross contamination since this is a vaccine reference strain. FDA regulations are very specific.

LOCATION

- CDC is headquartered in Atlanta, Georgia, with 10 other locations in the U.S. and Puerto Rico.
- CDC employees are located in state and local health agencies, in quarantine/border health offices at ports of entry, and in 45 countries around the world.
- In September 2005, four new facilities opened in Atlanta: a Headquarters and Emergency Operations Center, a Global Communications Center, an Emerging Infectious Diseases Laboratory, and an Environmental Health Laboratory.

Communicating Prevention

CDC Courts Hollywood

Reaching more people with CDC's life-saving public health messages is an ongoing challenge. Health communication marketing took several exciting turns in FY 2005, including the first collaboration with Telemundo, the largest Spanish-language television network, on a popular telenovela dealing with diabetes.

Now in its sixth year, the Hollywood, Health, and Society Project strengthened its partnership between CDC and the entertainment industry to promote public health messages. Operated out of the Norman Lear Center, the project connects CDC experts with television writers and

producers. CDC has consulted on scripts for numerous shows, including NBC's *ER*, *Law & Order*, and *The West Wing*. CDC staff also develop tip sheets on health issues to help writers and producers research story lines.

In FY 2005, CDC collaborated with Telemundo on a script in which a character in the telenovela, *Amarte Asi*, develops diabetes. CDC provided handouts in Spanish and English, a toll-free number for further information, and links from the Telemundo website to CDC's diabetes Web pages. After the diabetes story aired in August, 37% of referrals to the Spanish pages of CDC's diabetes website originated from Telemundo.com that month.



"As we move into the 21st century, communication may well become the central science of public health practice."

*Edward Baker, MD, MPH,
Former Assistant Surgeon General*



Health Marketing Targets Influenza Prevention

The 2004–2005 flu vaccine shortage led CDC to refocus its influenza message campaign by encouraging high-risk groups to receive the limited supply of vaccine. This decision to refocus was based on invaluable results from CDC's Behavioral Risk Factor Surveillance System that conducted a special survey related to the shortage. Promoting the benefits of late-season vaccination and preparing for possibly encouraging the use of an investigational drug were also key health messaging goals guided by survey results.

Another urgent communication priority was developing interim guidelines for inactivated flu vaccine and making sure they were widely issued—a task that was boosted by pro bono support from the National Ad Council. CDC also communicated with the public through more than 81,000 hotline calls and through its influenza website, which received more than 12 million hits.

Such a massive communication effort required a timely and coordinated strategy that included

- Reaching state and local public health officials through the Health Alert Network. Between October 2004 and January 2005, CDC delivered six network messages. CDC also held conference calls with state and local health officials to inform them about available communications materials and to determine the needs of each state.
- Handling 1,384 media calls, facilitating satellite media tours, issuing press releases, and conducting press briefings.
- Issuing 25 Clinician Registry updates and 26 Clinician Outreach and Communication Activity updates, as well as holding 5 Web or teleconferences, and handling more than 2,000 clinician calls.

As FY 2005 drew to a close, CDC announced that shortages would be minimal and the nation was better prepared than ever to meet the challenges of the next flu season.





Health Protection Research at CDC

In FY 2005, CDC awarded about \$28 million to 60 researchers to conduct community-based or participatory research. Nearly \$5.2 million was awarded to four new Centers of Excellence to study marketing, communications, and public health informatics. The remaining \$22 million was awarded to 56 continuing projects initiated in FY 2004. These awards fund 31 investigator-initiated grants, 20 career development grants, 3 institutional training awards, and 2 Centers of Excellence in Health Promotion Economics.

Thinking Locally, Researching Locally

In 2003, CDC awarded 26 grants to encourage research that takes a community-based participatory approach. This type of research enhances the translation of research into practice by requiring the researchers to engage practitioners, policy-makers, and others in the community who will ultimately use the results. As these 3-year research projects near conclusion, they are already having an impact in their communities.

California

Researchers at UCLA partnered with the Los Angeles Unified School District to implement a school-based, science-driven project to prevent obesity among elementary school children. Each participating school formed an advisory council of parents, students, school staff, and community members.

Each council worked to develop a plan tailored for their school and launched activities such as a “no junk food” policy, school gardens, healthy snacks, yoga, and funds raised to pay for a physical education teacher. Upon completion, schools were certified “Nutrition Friendly.”

South Carolina

Through a University of South Carolina partnership with the Sumter County Active Lifestyles Coalition and the county recreation and parks department, this project used social marketing strategies, including a print, radio, billboard, and television media campaign, to increase physical activity in the county. Four hundred fifty women were recruited into the Step Up. Step Out! Program, which encourages the use of South Carolina walking trails.

West Virginia

Researchers from West Virginia University, the University of North Carolina, the North Carolina Commission of Indian Affairs, and a Community Advisory Board of North Carolina tribal and urban association members tailored the American Lung Association’s Not On Tobacco (NOT) Program to American-Indian youth. About half of American-Indian high school seniors smoke. Nearly 18% of male youth enrolled in the tailored NOT Program quit smoking, compared to only 10% of youth who received the typical school-based smoking intervention.



Health Protection Research at CDC

Research Collaborations with the National Institutes of Health

Rapid advances in science and medical technology open new possibilities for improving health. But translating those research findings into practice is a slower, more deliberate process that often leaves a gap between what the science tells us and how we apply it. As the nation's

disease prevention leader, CDC is taking a greater role in bridging that gap through increased collaboration with our sister agency, the National Institutes of Health (NIH). CDC and NIH have a rich history of collaboration that continues today and into the future.

Cystic Fibrosis

Cystic fibrosis is the second most common pediatric, genetic disorder in the U.S. Each year, about 1,000 individuals are diagnosed with cystic fibrosis. From 1984 to the present, NIH has funded a clinical trial of newborn screening for cystic fibrosis in Wisconsin.

Based on the results of this study, CDC developed evidence-based recommendations in FY 2005 supporting state newborn screening for cystic fibrosis. In the 12 months following the report, an additional five states have acted to offer newborn screening for cystic fibrosis to all families, for a total of 14 states. At least three other states are expected to approve screening for cystic fibrosis during 2006. The benefits of newborn screening panels for cystic fibrosis include earlier diagnosis and treatment, reduction in growth retardation, and reduction in chronic malnutrition and cognitive impairment.

Haemophilus Influenzae Type b

Haemophilus influenzae type b (Hib), a bacterial disease, was until 1988 the leading cause of meningitis and a major cause of other serious invasive diseases among U.S. children 5 years old and under. NIH funded vaccine development studies and successful clinical trials on Hib conjugate vaccines, which led to licensure in 1988. Subsequently, CDC recommended Hib vaccine for routine childhood immunization.

CDC conducted nationwide provider education; offered financial subsidies to purchase vaccine for underserved, vulnerable, and uninsured populations; and provided technical assistance to states for surveillance of vaccine coverage. CDC support for this vaccine intervention has resulted in the near elimination of invasive Hib disease from the U.S.

Pertussis

Pertussis affects all ages; complications and death are most frequently recognized among unvaccinated infants. Early diphtheria, tetanus, and pertussis vaccines (DTP) reduced more than 90% of severe illness and death from pertussis among infants.

In the early 1990s, NIH funded studies that accelerated the introduction of safer vaccines. Subsequently, CDC recommended replacing DTP with new DTaP vaccines, incorporated them into the Vaccines for Children Program, and conducted widespread provider education. The improved DTaP

vaccines and outreach activities resulted in renewed confidence in the safety of pertussis vaccines, higher levels of vaccination uptake, and decreased illness and death. From 1996 through 2004, vaccination coverage with the recommended four doses of DTaP, for children under 2 years of age, rose to over 85%.

Introduction in 2005 of adolescent and adult versions of improved acellular pertussis vaccines with tetanus and diphtheria booster provides new opportunities to reduce severe pertussis and its complications in all age groups.

Strokes

Strokes affect 600,000 people each year and are a leading cause of death and serious, long-term disability. NIH clinical trials on thrombolytics (t-PA) therapy for patients suffering from strokes found that those who received t-PA therapy within 3 hours of stroke symptoms recovered faster and were less likely to suffer long-term disability.

CDC used this research to increase the use of t-PA therapy in hospitals to improve acute stroke care and outcomes. In FY 2003, CDC collected performance measures, response times, and treatment information from 158 hospitals in 8 states. With these data, participating hospitals identified gaps in their stroke response protocols and used performance measures to improve the quality of stroke care, including the use of t-PA therapy. For example, Massachusetts noted an increase in t-PA therapy use from 7% to 30% over a 1-year period.





Health Protection Research Guide 2006–2015

To pave the way to better public health in the 21st century, CDC has developed its first agencywide *Health Protection Research Guide*.

The guide, which will be released in 2006, reflects CDC's health protection goals and ensures that future research efforts are focused on key areas that will have substantial and positive health impact.

In addition to identifying broad research areas and themes, the guide

- Provides opportunities for collaboration among CDC researchers.
- Identifies critical knowledge gaps that must be filled to achieve health protection goals.
- Highlights and encourages research opportunities across a range of public health disciplines.
- Provides evidence to improve existing or to establish new public health programs and interventions.
- Creates a platform to partner with external organizations and other federal agencies, to jointly solve critical public health problems.
- Provides a 10-year vision for CDC research.

CDC Funds New Centers of Excellence

CDC has awarded nearly \$5.2 million to fund four Centers of Excellence: two in Health Marketing and Health Communication and two in Public Health Informatics. The grants strengthen the science behind CDC's health communication and information technology efforts.

Centers of Excellence in Public Health Informatics

Will improve the public's health through discovery, innovation, and research via information technology.

Center of Excellence in Public Health Informatics, Harvard University

Will focus on linking disparate information systems (i.e., electronic medical records, personally controlled health records, and electronic public health reporting and communication systems) to enable information exchange among individuals, healthcare providers, and public health authorities.

Center of Excellence in Public Health Informatics, University of Washington

- Will focus on developing public health surveillance methods.
- Will create an interactive digital knowledge management system to support the collection, management, and retrieval of public health documents, data, learning objectives, and tools.

Centers of Excellence in Health Marketing and Health Communication

Will provide vital tools and knowledge to develop and market information needed to make sound health decisions.

Center for Health Communication and Marketing, University of Connecticut

- Will conduct research on the design and dissemination of health communication and on marketing interventions and practices.
- Will focus on understanding the relationships among different at-risk populations.

Southern Center on Communication, Health, and Poverty, University of Georgia

- Will focus its research on the poor and near-poor in the South.
- Will explore different facets of communication.
- Will look at message processing, message contents, audience participation in message design, and how individuals respond to health risks.



Healthy People

Year after year, protecting Americans from disease has been a guiding principle at CDC. Risks to Americans' health come in many forms—lifestyle choices, environmental exposures, workplace hazards, socio-economic challenges. CDC's primary mission is to reduce those risks, at all stages of life, through the most efficient and effective means possible.

F A C I N G T H E I S S U E

Ted Misselbeck, Public Health Advisor



Epidemiology can identify the source of disease outbreaks, but stopping transmission can be a daunting challenge, especially with an airborne pathogen like tuberculosis (TB). So when 16 TB cases, including two deaths, were linked to a St. Louis homeless shelter in 2002, Ted Misselbeck, a CDC public health advisor, knew he had to pull out all the stops to halt its spread.

A former teacher and drug counselor, Misselbeck put together a team of colleagues from 11 agencies to find the answer to a deadly mystery—why was TB continuing to spread among the shelter's 250 residents?

After searching city offices for architectural plans, crawling through air ducts, and researching air filter and ultraviolet technology, Misselbeck managed a complicated outbreak response strategy that has become a model for other homeless shelters in the country. For the past 2 years, no new TB cases have been reported.

The strategy's linchpin is a new system of UV lights that resembles a small flying saucer and circulates air 24 hours a day. The light kills germs that could survive in stagnant air. TB screening and education also help residents protect themselves.

"Public health is so gratifying because it's one of the few places where you still go to patients' homes," says Misselbeck.

For this CDC response, "home" was a homeless shelter—one that now offers protection against a deadly disease as well.

Overarching Health Protection Goal for Healthy People

All people will achieve their optimal lifespan with the best possible quality of health in every stage of life

Curiously, Americans have stepped into a new millennium straddling two seemingly divergent paths. Down one road, we are living longer, our children are born healthier, and healthcare technology offers unprecedented advances in health. Down the other road, we still battle preventable chronic illnesses; we struggle with choices, such as eating right and exercising regularly; and we face the specter of novel pathogens that could lead to deadly pandemics.

Whether we are developing new tests to detect bird flu in humans or promoting cancer screenings, CDC must constantly review and renew its strategies for guarding against all manner of health threats, both new and old. Amid the steady, unsustainable rise in healthcare costs, prevention takes on greater urgency. Our health protection goal for healthy people—optimal lifespan with the best quality of life—relies on Prevention, with a capital P.

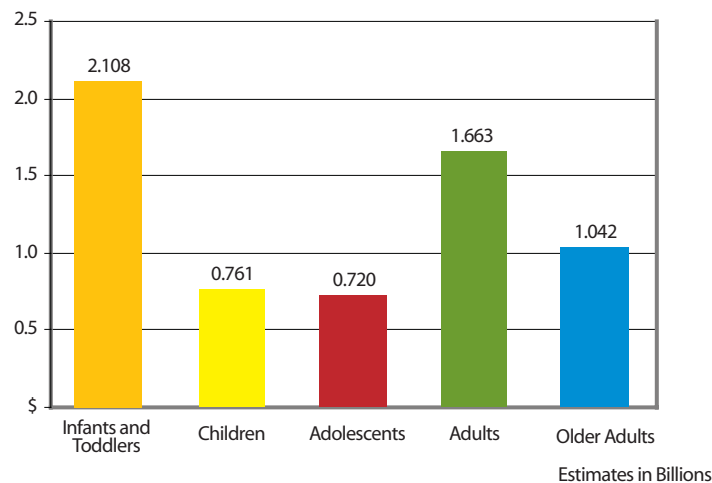
Emerging Issue: The Aging of a Nation

Emerging at mid-century, the Baby Boom generation has progressively profited from an unprecedented era of medical and health discovery. While the aging of the boomers presents challenges, it also offers an exciting proving ground for the impact of those advances.

Up-and-coming public health workers will have to make the most of resources and leverage the power of prevention. Indeed, such work is under way. Using CDC

funds, a carefully prepared project in Georgia offered drive-in vaccinations to seniors and others at high risk of flu complications. Extensive media interest—even overhead helicopter coverage—drew 1,600 people; 73% were elderly. Vaccinations proceeded at a rate of about four per minute. In follow-up, 75% of 1,032 participants surveyed were very satisfied, though some were unhappy with a novel complication in prevention—traffic congestion at the site.

FY 2005 Total Program Dollars Aligned with Healthy People Goals



Infants & Toddlers



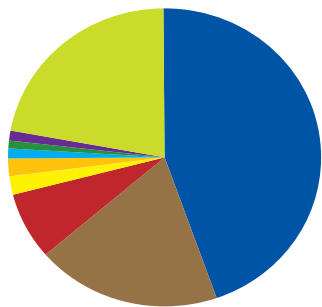
Approximately 11,000 infants are born in the U.S. every day. Not so long ago, those born with certain diseases did not live to celebrate their first birthday. Infant mortality rates have decreased steadily over the past few decades, but early recognition is critical. CDC's surveillance activities are the nation's stethoscope for birth defects, diseases, and injuries that still threaten to steal the health of our youngest citizens.

Just this year, polio—a disease everyone assumed we had eliminated from the U.S.—emerged in one

unvaccinated Minnesota child. A collaborative CDC and state health department investigation quickly determined that four more children had been infected, and there was no evidence that the virus had spread beyond this one rural community.

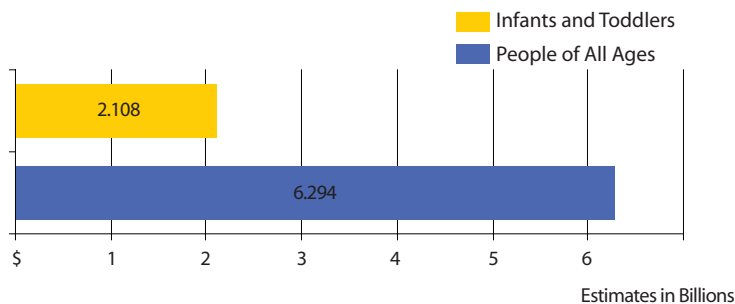
Every day, CDC surveillance monitors threats like this one; and our data, published electronically each week, provide public health officials across the nation with reliable scientific information that saves lives.

**Leading Causes of Death, 2002
(Infants and Toddlers)**



- **Perinatal Problems (44%)**
Early delivery, low birth weight, etc.
- **Congenital Abnormalities (19%)**
Malformations, deformations, genetic problems
- **Unintentional Injuries (7%)**
Car wrecks, drownings, falls, etc.
- **Heart Diseases (2%)**
Congenital heart disease, blood supply
- **Homicide (2%)**
Deliberate assaults and killings
- **Septicemia (1%)**
Infections in the blood
- **Cancers (1%)**
- **Flu and Pneumonia (1%)**
- **All Other Causes (<1% each) Combined (22%)**

FY 2005 Total Program Dollars for Infants and Toddlers



Saving Babies One Screening at a Time

When Harry Hannon, a 35-year CDC veteran, created the Newborn Screening Quality Assurance Program (NSQAP) nearly three decades ago, his children were screened for just two disorders. His newest grandchild was screened for over 40—an exponential increase that illustrates how the number of new screenings have grown as medicine has advanced.

Today, newborn screening is the largest genetic testing effort in the nation. It is an essential, life-saving, and effective public health service that identifies thousands of babies each year born with metabolic or genetic disorders. Testing is required in every state and is administered to 98% of all babies born in the U.S. Screening identifies disorders in some 3,000 each year. For many babies, the accuracy of these tests means the difference between life and death; for others, identifying a disorder means that they can be treated—and so avoid lifelong disabilities.

For over 26 years, CDC has ensured the quality and accuracy of screening tests for more than four million babies each year in the U.S. alone. NSQAP annually provides

HEALTH PROTECTION GOAL FOR INFANTS AND TODDLERS (AGES 0–3)

Increase the number of infants and toddlers that have a strong start for healthy and safe lives



quality-assurance and proficiency-testing services and materials to 400 labs in 54 countries. Since 2002, domestic and international labs have been using CDC's Web-based reporting site. In 2005, CDC launched a redesigned site, which 250 labs now use to report data. Reporting on the Web not only reduces errors, but also allows for rapid feedback to the labs—meaning doctors can take corrective actions to safeguard children's health more quickly.

FY 2005 Sees the Elimination of Rubella

In March 2005, CDC announced a major public health milestone—the elimination of the rubella virus in the U.S. Once a common disease in this country, rubella is now a rare threat. This remarkable achievement is a tribute to having a safe and effective vaccine and a successful immunization program.

The rubella virus is a potent infectious agent that causes birth defects, known as congenital rubella syndrome (CRS), if a woman becomes infected during pregnancy. Babies with CRS may suffer from blindness, deafness, heart defects, and mental retardation.

The last rubella epidemic occurred in the U.S. 40 years ago, causing about 20,000 cases of CRS and 11,250 fetal deaths. The U.S. started a vaccination campaign to prevent CRS in 1969 after the first rubella vaccine was licensed. Over the next decades, millions of infants have been vaccinated routinely as well as children, adolescents, and adults, particularly women of child-bearing age. This has resulted in high levels of population immunity (91%) and vaccine coverage (over 95%) among school children. In recent years, rubella cases have been the lowest ever recorded: 18 in 2002, 7 in 2003, and 9 in 2004.

Implementation of rubella control programs in other countries in the Americas since the late 1990s likely decreased importations of rubella into the U.S. and contributed to the decline in cases since 2001.

Rubella infections are still common worldwide, resulting in more than 100,000 cases of CRS annually. The U.S. should continue its current efforts and vigilance against rubella and CRS to ensure that elimination of rubella is maintained.



Children



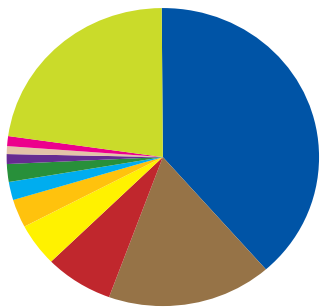
No resource is more precious than our children. How we invest our time, effort, and money can influence whether a child grows up to be a happy, healthy, productive adult. CDC recognizes that children who are educated, eat healthy foods, exercise, and receive family nurture and encouragement stand the best chance of succeeding in today's complex world.

CDC's coordinated school health programs are teaching children and adolescents how to make healthy choices. CDC promoted February 2005 as National

Parenting Month, focusing on domestic violence prevention. In August 2005, we released Got a Minute? Give It to Your Kid, a campaign that encourages parents to be more involved with their preteens and to stop the teens from smoking.

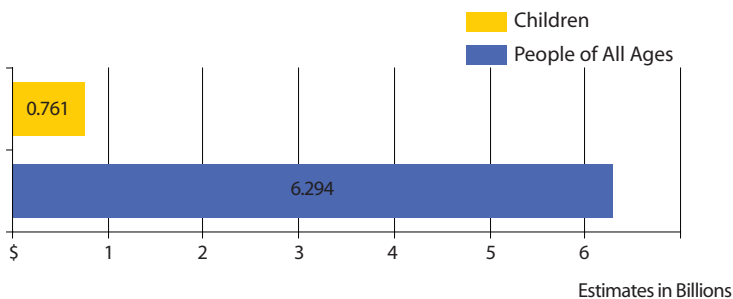
Through its Global Health Odyssey and EXCITE website, CDC invites young people to become contributors to their world by learning about science, global health, and a career in the health sciences.

Leading Causes of Death, 2002 (Children)



- **Unintentional Injuries (39%)**
Car wrecks, drownings, falls, etc.
- **Cancers (17%)**
- **Congenital Abnormalities (7%)**
Malformations, deformations, genetic problems
- **Homicide (5%)**
Deliberate assaults and killings
- **Heart Diseases (3%)**
Congenital heart disease, blood supply
- **Chronic Lower Respiratory Diseases (2%)**
- **Septicemia (2%)**
Infections in the blood
- **Flu and Pneumonia (1%)**
- **Non-Malignant Tumors (1%)**
- **Cerebrovascular Diseases (1%)**
- **All Other Causes (<1% each) Combined (23%)**

FY 2005 Total Program Dollars for Children



Blood Lead Levels Drop for Children in Utah Community

CDC and state efforts have helped decrease average blood-lead levels in children living in Eureka City, Utah.

Elevated blood-lead levels are known to be linked with learning disabilities and behavior problems in children. Because of Eureka City's history as a mining center, children there are 10 times more likely to have elevated blood lead than children elsewhere in Utah.

Beginning in 2000, the Utah Department of Health, with funding from CDC, developed a successful new program designed to encourage blood-lead testing for community residents. The program is also aimed at decreasing children's average blood-lead levels by teaching elementary-school students about avoiding exposures to lead. So far, the return on this investment shows promises. Data through March 2005 indicate that blood-lead levels in local children ages 0–72 months have dropped and stabilized below levels considered to be elevated.

HEALTH PROTECTION GOAL FOR CHILDREN (AGES 4–11)

Increase the number of children who grow up healthy, safe, and ready to learn



Campaign Helps Parents Identify Developmental Delays

Approximately 17% of U.S. children have a developmental delay or behavioral disability such as an autism spectrum disorder, mental retardation, or attention deficit/hyperactivity disorder.

CDC launched the Learn the Signs. Act Early 2004–2005 Campaign to identify more children who are at risk. The campaign teaches parents to monitor the social and emotional milestones that children should reach by a certain age. It also reminds healthcare professionals to document developmental achievements, encourages dialogue between parents and healthcare professionals, and urges action when a developmental delay or disability such as autism is suspected. As of November 2005, the campaign

- Reached nearly 5 million healthcare providers.
- Reached 26 million people through television and radio public service announcements.
- Resulted in 102 print and online placements, including sites such as WebMD.com and Yahoo.com.
- Distributed 15,000 healthcare provider resource kits and 21,500 parent resource kits.
- Created a website accessed by more than 215,000 visitors who downloaded 56,000 materials.
- Handled more than 18,000 calls at CDC's call center.

Stopping Child Sexual Abuse

CDC research published in 2005 shows that childhood sexual abuse is commonly reported among both men and women, and that childhood sexual abuse increases the risk of developing health and social problems later in life. Compounding the trauma of child abuse is the fact that many victims keep silent and never receive the protection they deserve.

In 2005, CDC and the Massachusetts Citizens for Children and Youth pioneered an approach to inform and enlist adults and communities in spotting and preventing sexual abuse against children. A statewide campaign, ENOUGH ABUSE, calls on community social service professionals to educate the public about child sexual abuse and how to respond.

Community members pledge support for prevention through a “show of hands”—photocopies or tracings of their hands, which are showcased at events and conferences.

The sponsors of ENOUGH ABUSE aim to gather 10,000 hands, representing 10,000 citizens who have an enlightened perspective on how they can interrupt and prevent child sexual abuse.

Research Network Set up for Muscular Dystrophy

Duchenne and Becker are two common types of muscular dystrophy—a genetic disorder that causes progressive muscle weakness, and predominantly affects males. It is sometimes referred to as DBMD.

CDC and researchers in Arizona, Colorado, Georgia, Iowa, and western New York have set up a network to help find all DBMD patients in those areas by searching through medical and hospital records. Researchers will work with healthcare providers and families to collect demographic and treatment information about medical problems associated with DBMD.

Researchers hope to determine, among other things, the prevalence of DBMD, so that healthcare providers have adequate resources. Recognizing the early signs and symptoms will help healthcare providers diagnose DBMD earlier. Also, knowing how different mutations affect the severity of DBMD will prepare families for what to expect.



Adolescents

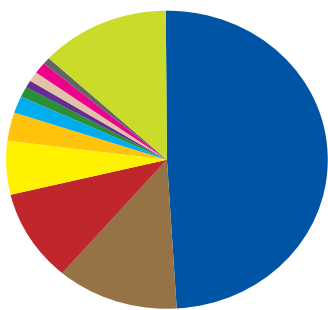


The adolescent years are a time of exploring and learning new life skills, a formative time when attitudes and behaviors can shape the adult whom the child eventually becomes.

Recognizing that helping teenagers adopt healthy behavior will have a lasting impact, CDC works hard to promote health protection strategies. Persuading adolescents to drive safely, avoid violence, choose healthy foods, and forgo tobacco, alcohol, and drugs are just some of the behaviors CDC promotes by drawing upon the expertise of its researchers, scientists, and partners.

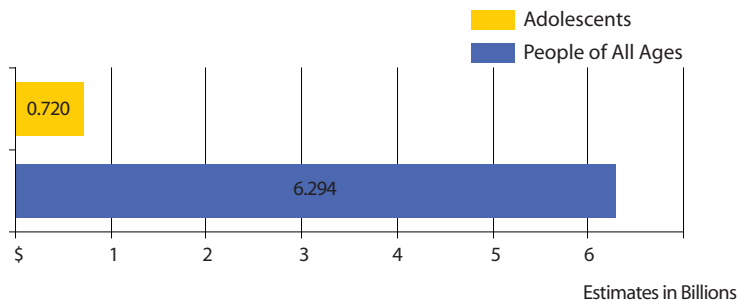
FY 2005 saw important benefits from CDC's commitment. For example, the birth rate for teenagers declined for the 11th consecutive year to 43 births per 1,000 females aged 15–19 years. That is the lowest rate in more than six decades. Concerned that motor vehicle accidents are the leading cause of deaths among young people, CDC partnered with universities to come up with effective interventions. On the disease front, CDC promoted a newly approved meningitis vaccine that offers long-term protection for this vulnerable age group.

Leading Causes of Death, 2002 (Adolescents)



- **Unintentional Injuries (49%)**
Car wrecks, drownings, falls, etc.
- **Homicide (12%)**
Deliberate assaults and killings
- **Suicide (10%)**
- **Cancers (6%)**
- **Heart Diseases (3%)**
Congenital heart disease, blood supply
- **Congenital Abnormalities (2%)**
Malformations, deformations, genetic problems
- **Chronic Lower Respiratory Diseases (1%)**
- **Flu and Pneumonia (1%)**
- **Cerebrovascular Diseases (1%)**
Problems with blood supply to the brain
- **Diabetes (1%)**
- **Septicemia (2%)**
Infections in the blood
- **All Other Causes (<1% each) Combined (23%)**

FY 2005 Total Program Dollars for Adolescents



Concussion Tool Kit Empowers Coaches

Beginning this year, CDC's multimedia educational tool kit, Heads Up: Concussion in High School Sports, became available to high school coaches across the country. As a high school basketball coach and health teacher, Ronnie Bruce is using the tool kit materials on the field and in his classroom to teach his students about the risks of concussion.

Parents of young athletes have also benefited from the materials. Renée Barrett, a concerned mother, ordered the kit after her son Nate sustained two concussions within an 18-day period while playing high school football. Nate's football coach told him to "shake it off;" however, Renée used the materials in the kit and got her son the medical attention he needed. Renée also shared the information in the kit with her son's coach to educate him on the seriousness of concussions, and he is now using the materials as well. Nate has recovered and is planning to present the information in the kit as part of a classroom project.

Learn more about the CDC tool kit at www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm.

HEALTH PROTECTION GOAL FOR ADOLESCENTS (AGES 12–19)

Increase the number of adolescents who are prepared to be healthy, safe, independent, and productive members of society

Interventions Aim to Lower Motor Vehicle Deaths

Motor vehicle accidents are the leading cause of death among young people 10 to 24 years of age, accounting for one-third of all deaths in this age group. Nonetheless, young people continue to engage in risky behaviors, such as driving drunk, riding with a driver who is impaired, or riding without seatbelts.

To evaluate appropriate interventions, CDC supported studies at two universities in 2005.

The University of Michigan implemented Checkpoints, a program developed by the National Institutes of Health. It teaches parents to limit teen exposure to certain driving conditions in the first year of being a licensed driver, the period when teens are most likely to have an accident.

The University of North Carolina instituted a community-based intervention focused on enforcement of Graduated Drivers Licensing Laws. Researchers are looking at how teens respond to heightened police attention to driving restrictions, along with publicity about enforcement.

Efforts like these will provide scientific data on how to better address motor vehicle deaths among young people.

Did You Know?

Six states created or improved their child endangerment laws on the basis of a child endangerment report from Mothers Against Drunk Driving. CDC findings were used in the report.

New Vaccine Helps Protect Vulnerable Teens

Meningococcal disease strikes up to 3,000 Americans every year. Between 10% and 12% of people with meningococcal disease die. Among survivors, up to 15% may suffer long-term permanent disabilities, including hearing loss, limb amputation, or brain damage. The disease often begins with symptoms that can be mistaken for common illnesses, such as the flu. However, meningococcal disease is particularly dangerous because it progresses rapidly and can kill within hours.

In January 2005, a new meningococcal vaccine (MCV4) was licensed by the Food and Drug Administration for use in people 11 to 55 years of age. This single-shot vaccine offers longer protection than previous vaccines.

CDC has recommended routine vaccination with MCV4 for children 11–12 years old, previously unvaccinated adolescents at high school entry, and college freshmen living in dormitories. The recommendation is designed to help achieve vaccination among those at highest risk for meningococcal disease. As vaccine supply increases, CDC hopes that within 3 years it can recommend routine vaccination for all adolescents beginning at 11 years of age.



Adults



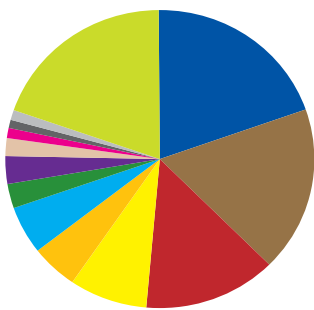
Today's adults are perhaps the most challenged of all age groups. They are sandwiched between raising their children and caring for their elderly parents; they spend long hours at work; and sometimes they make choices to save time, rather than improve their health.

Obesity and the onset of chronic illnesses, like diabetes and heart disease, are risks adults will face as

they grow older. Illness prevention is a pillar in CDC's mission to protect, improve, and maintain the health of all Americans.

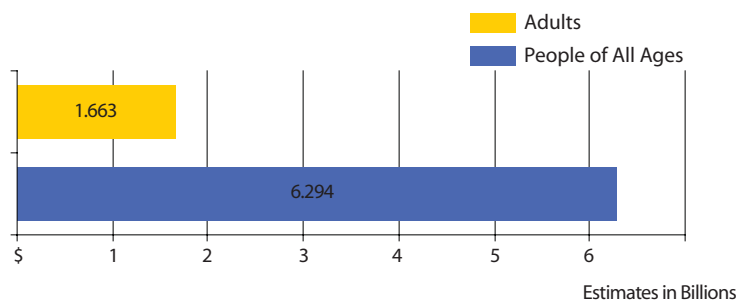
Through awareness programs, research, and public health practice, CDC is committed to reducing obesity, cancer, and heart disease by promoting healthy lifestyles among adults.

Leading Causes of Death, 2002 (Adults)



- **Unintentional Injuries (20%)**
Car wrecks, drownings, falls, etc.
- **Cancers (18%)**
- **Heart Diseases (14%)**
Congenital heart disease, blood supply
- **Suicide (8%)**
- **Homicide (5%)**
Deliberate assaults and killings
- **HIV/AIDS (5%)**
- **Chronic Liver Disease and Cirrhosis (3%)**
- **Cerebrovascular Diseases (3%)**
Problems with blood supply to the brain
- **Diabetes (2%)**
- **Chronic Lower Respiratory Diseases (1%)**
- **Flu and Pneumonia (1%)**
- **Septicemia (1%)**
Infections in the blood
- **All Other Causes (<1% each) Combined (20%)**

FY 2005 Total Program Dollars for Adults



Targeting Social Networks Pays Off for HIV Prevention

An estimated 250,000 persons in the U.S. are unaware they are infected with HIV, putting them at risk of spreading the virus unintentionally.

As a part of CDC's Advancing HIV Prevention Initiative, identifying persons with undiagnosed HIV infection and linking them to medical care and prevention services is a high priority. Two years ago, CDC began evaluating the effectiveness of using a social network strategy to identify those at highest risk for HIV infection. Persons already infected and those at high risk for becoming infected are enlisted to recruit acquaintances for counseling, testing, and referral. Nine community-based organizations participated in the project.

In 2005, CDC reported that of 800 people tested in the first year, nearly 6% received a positive result. At publicly funded test sites, only about 1% tested positive. The strategy is proving effective and efficient for identifying HIV-infected persons and linking them to care.

HEALTH PROTECTION GOAL FOR ADULTS (AGES 20–49)

Increase the number of adults who are healthy and able to participate fully in life activities and enter their later years with optimum health

Did You Know?

96% of Americans believe that knowing family history is important to their health. However, only 30% of Americans have ever tried to gather and organize their families' health histories.

Using Family Health History to Prevent Chronic Diseases

CDC launched the Family History Public Health Initiative in collaboration with the National Institutes of Health, health professional organizations, state health departments, and academic institutions to develop family history tools for use in preventive medicine and public health, to raise awareness about the value of family history for prevention, and to help healthcare providers interpret and apply family history information in their practices.

At the center of this effort is Family Healthware™, a new electronic, self-administered, Web-based tool that assesses familial risk for six diseases (coronary heart disease; stroke; diabetes; and colorectal, breast, and ovarian cancer) and provides personalized recommendations for lifestyle changes and screening.

CDC has filed a provisional patent for Family Healthware™ and is making the tool available for cooperative research and development agreements through a license with CDC's Technology Transfer Office. CDC also provided an abbreviated version of the tool to the U.S. Surgeon General's Family History Initiative. Called "My Family Health Portrait," it is available to the public online and free of charge at www.hhs.gov/familyhistory/.



Women & Diabetes
TAKE CHARGE. FOR LIFE.



CDC Aired "Women and Diabetes"

More than 9.7 million American women have diabetes. The disease has serious consequences for women in all stages of life. Women with gestational diabetes, for example, are at risk for developing type 2 diabetes; their offspring risk developing childhood obesity and type 2 diabetes later in life.

To raise awareness about the disease and its impact on women, CDC aired "Women and Diabetes: Across the Life Stages" in 2005. The award-winning video captures the stories of seven women who have learned to manage diabetes.

About 1.5 million women between 25 and 54 years of age saw the video on 125 local channels across the U.S. between February and March 2005. It was also distributed to 59 diabetes prevention and control programs, as well as to the 500 partners of the National Public Health Initiative on Diabetes and Women's Health.

The video received a Telly Award and a Silver Screen Award from the 38th International Film Festival and was nominated for an Emmy award in the category of Medicine and Health.

Did You Know?

- Diabetes is the number six cause of death in the U.S.
- Nearly 21 million Americans have diabetes (7% of the U.S. population).
- More than 6 million of those people do not know they have diabetes.
- An estimated 41 million Americans have "prediabetes," a condition that increases the risk of developing diabetes.
- 1.5 million new cases were diagnosed in people aged 20 and older in 2005.
- People aged 40 to 59 led the new cases for adults in 2005.

Older Adults

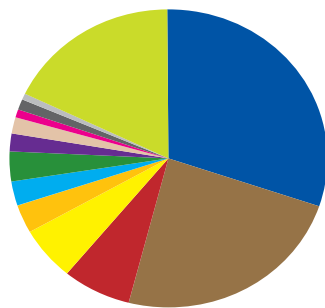


Older Americans are blazing into old age, living and working longer than generations before them. Some are volunteering their time and skills to improve their communities.

We are living longer, too. CDC data released in 2005 showed that life expectancy for Americans has reached an all-time high: 77.6 years in 2003 (up from 77.3 in 2002). At the same time, CDC data estimate that half of adults

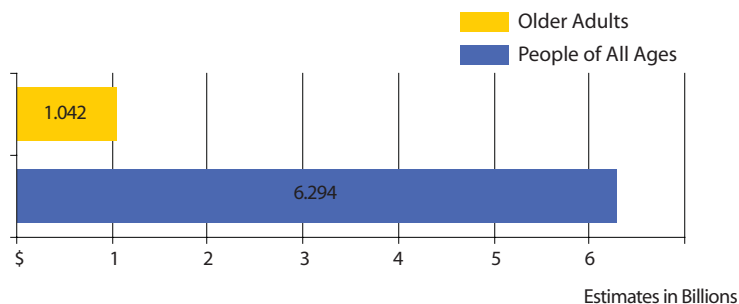
aged 55–64 have hypertension and two in five are obese. Also, nearly 90% of people 65 and older—roughly 32 million Americans—have at least one chronic condition, and more than 22 million Americans older than 50 need help with activities of daily living. CDC is committed to providing resources and programs to help more Americans stay in good health so the golden years are truly rich and rewarding.

Leading Causes of Death, 2002 (Older Adults)



- **Heart Diseases (31%)**
Congenital heart disease, blood supply
- **Cancers (24%)**
- **Cerebrovascular Diseases (7%)**
Problems with blood supply to the brain
- **Chronic Lower Respiratory Diseases (6%)**
- **Diabetes (3%)**
- **Flu and Pneumonia (3%)**
- **Alzheimer's Disease (3%)**
- **Unintentional Injuries (2%)**
Car wrecks, drownings, falls, etc.
- **Kidney Diseases (2%)**
- **Septicemia (1%)**
Infections in the blood
- **Hypertension (1%)**
High blood pressure and related problems
- **Chronic Liver Disease and Cirrhosis (1%)**
- **All Other Causes (<1% each) Combined (18%)**

FY 2005 Total Program Dollars for Older Adults



Screen for Life to Save Life

In 2005, an estimated 145,290 Americans will be diagnosed with colorectal cancer and an estimated 56,290 will die from it. As many as 60% of these deaths would be preventable if everyone aged 50 or older were screened regularly. Screening can detect polyps so they can be removed before they become cancerous, yet nearly 42 million older Americans fail to get screened appropriately.

The CDC Screen for Life campaign educates people 50 years or older about colorectal cancer and the importance of regular screenings. Since the campaign's start in 1999, screening rates have improved. CDC estimates that almost 41% of Americans aged 50 or older reported in 2002 that they had a flexible sigmoidoscopy or colonoscopy within the last 5 years, compared with 34% in 1999.

Screen for Life continues to make a difference. The 2005 campaign illustrates the impact:

- Morgan Freeman and Katie Couric appeared in separate television and print public service announcements (PSAs). These PSAs, and two others in English and Spanish, were distributed to more than 8,000 publications and 1,000 television stations

HEALTH PROTECTION GOAL FOR OLDER ADULTS (AGES 50+)

Increase the number of older adults who live longer, high-quality, productive, and independent lives

in March for National Colorectal Cancer Awareness Month.

- Screen for Life TV and radio PSAs have generated nearly 3 billion audience impressions (the number of times someone sees or hears a PSA), including airplay on Spanish-language networks, and on Internet portals such as Yahoo!.
- The campaign's print public service ads/airport dioramas appeared in popular national publications and were placed in 39 airports, generating an estimated 350 million viewer impressions.

Are You the Picture of Health?



"You might look and feel fine, but you need to get the inside story. Colorectal cancer often has no symptoms, so please get tested. I did."

*Katie Couric, Co-Founder
EIF's National Colorectal Cancer Research Alliance*

Screening can detect precancerous polyps so they can be removed **before** they turn into colorectal cancer. Screening also can find colorectal cancer early, when the chance for a full recovery is very high.

If you're 50 or older, talk to your doctor and get screened for colorectal cancer.

1 (888) 842-6355 • www.cdc.gov/cancer/screenforlife



DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention



Beating Cancer Through Innovation and Collaboration

Cancer, the second leading cause of death among Americans, is responsible for one of every four deaths in the U.S. In 2005, more than 570,000 Americans—or more than 1,500 people a day—will have died of cancer. Close to 1.4 million new cases were diagnosed in 2005.

Studies show that cancer rates are higher—and screening and survival rates are lower—among some minority racial/ethnic groups.

To reduce these health disparities, Georgia's Breast and



Cervical Cancer Program is working to overcome the barriers that sometimes prevent women from receiving appropriate and timely screening, follow-up, and treatment for cancer.

Client navigators (also called lay health advisors or community health workers) provide outreach, education, and case management in underserved communities. They focus on overcoming specific obstacles to screening and care, such as transportation, lack of insurance, or language barriers. For example, one client navigator arranged for a quadriplegic patient to receive a Pap test and clinical breast examination at home and to be taken to get a mammogram.

With FY 2005 funding of \$414 million (\$309.7 million for cancer prevention and control activities and \$104.3 million to address smoking and health issues), CDC provided national leadership for preventing cancer and promoting its early detection, with an increased focus on cancer survivorship. In FY 2004, for example, CDC launched its new Cancer Survivor Initiative in partnership with The Lance Armstrong Foundation. The plan identifies and prioritizes survivorship needs for Americans living with cancer—now numbering nearly 9.8 million, compared to 3 million in 1971.

Healthy Places

Our interactions with the environment are complex and not always healthy. From the air we breathe to the food we eat to the chemicals and microbes that interact with us, the environment is a complex interplay of health risks and benefits that require constant attention. CDC's environmental health activities cover the life-span and

F A C I N G T H E I S S U E

Robert Cooksey, PhD, Microbiologist



CDC microbiologist Bob Cooksey never thought he would find a new bacterium in such an unlikely place as a local nail salon. That kind of surprise, however, is exactly what makes his job so interesting.

Cooksey was evaluating a new molecular identification method when a Venezuelan colleague sent him an unusual isolate—or bacterial culture—from a weight-loss clinic. Working with his research team, Cooksey decided

to look at some other isolates from a nail salon in Atlanta using this new method. To his surprise, the Atlanta and the Venezuelan isolates shared a molecular pattern. When a scientific database search came up negative, it became evident that this was a new bacterium. Because Cooksey and his team discovered the bacterium, they were allowed to name it. Appropriately enough, they chose *Mycobacterium cosmeticum*, a Latinized version of “cosmetic.”

Patients and customers run the risk of developing an infection from the bacterium primarily by exposure to contaminated water, ice, medical devices, or solutions. The infection can then spread into the blood stream and pose serious complications. Those

with compromised immune systems, such as the elderly or those with HIV, are especially vulnerable. “We find these organisms are very persistent in the environment and can survive in unusually harsh environmental conditions,” says Cooksey. “The antibiotic therapy can go on for many months or even years. It very often requires an incision to remove the abscess.”

As a result of Cooksey's discovery, CDC issued the following advisory: “Infection with rapidly growing mycobacteria should be considered in patients who have undergone cosmetic-surgery procedures in the [Dominican Republic] and who subsequently have surgical-site infections that fail to respond to standard therapy.”

Overarching Health Protection Goal for Healthy Places

The places where people live, work, learn, and play will protect and promote their health and safety

cross the entire globe. Whether it is preventing birth defects or monitoring chemical exposures, such as second-hand smoke, CDC scientists are working hard to make this world a safe place.

In FY 2005, CDC published the *Third National Report on Human Exposure to Environmental Chemicals*. The findings provide an ongoing assessment of the U.S. population's exposure to environmental chemicals using biomonitoring,

a method of measuring the chemicals or their metabolites in human specimens such as blood or urine.

Through this type of cutting-edge research, coupled with the extensive monitoring of the environment—from homes to workplaces—we are learning more about the effectiveness of public health interventions and can better understand the often hidden health risks found in today's environment.

Emerging Issue: The Built Environment

As the U.S. population shifts unchecked from countryside to city, urban sprawl is seen as a growing threat to the environment and quality of life. In recent years, the “built environment”—primarily the intersection of land use and transportation—has emerged as an important focus of public health. Traffic, air quality, walkability, access to parks and recreation—the challenges of urban life have a direct impact on our health. Particularly vulnerable are older adults and people with disabilities.

Recognizing the impact of the growing number of people living with disabilities and the aging of our society, CDC is exploring ways to more effectively deal with our changing society. Scientists at CDC are looking for ways to prevent

obesity, asthma, unintentional injuries, and other conditions that threaten our well-being. CDC is helping to build and promote communities that provide access to and encourage healthier behaviors. Starting in its own backyard, CDC is making improvements to its campuses such as adding walking paths, setting up garden markets, and using “green” technology in its new buildings.

CDC also has begun to make its campuses tobacco-free and expanded tobacco cessation services to employees. Research on these projects should provide businesses and other partners with the tools and incentives to improve the quality of life for their employees.





Healthy Homes

Sharing CDC Technology Improves Mold Detection

As residents from the Gulf states began returning to their hurricane-damaged homes, they were greeted by an infestation of mold that turned former living spaces into potential health hazards. Mold exposure was one of the biggest challenges posed by Hurricane Katrina.

CDC was addressing the health impact of mold long before the Gulf Coast flooding brought it so much attention. In fact, it was CDC's previous work on mold that was directly applied to hurricane cleanup and recovery efforts. CDC developed species-specific antibodies that react only to *Stachybotrys chartarum*, a fungus linked to serious health problems. CDC made the antibodies available to commercial partners.

In 2003, CDC and EnviroLogix, a Maine-based biotechnology company, developed a commercially available mold test kit that detects spores of *S. chartarum* using the CDC-developed technology.

Building Safer Homes Through Education

Lead poisoning, asthma, carbon monoxide poisoning, rodent bites, and other illnesses and injuries have been associated with substandard housing. That is why HHS has called for a 52% reduction in the estimated 6 million substandard housing units throughout the country.

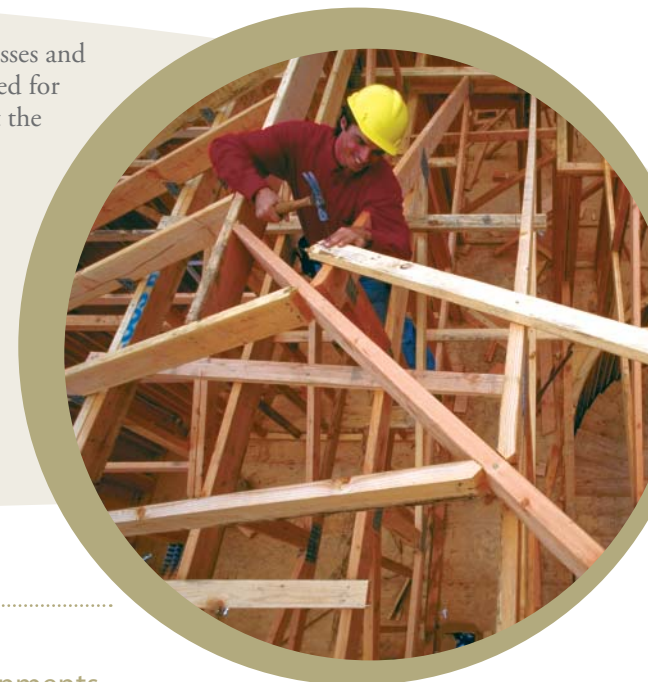
To help achieve this goal, CDC established the Healthy Homes Initiative in 2003. It includes a curriculum designed to cross-train housing and health professionals on issues such as environmental public health, injury prevention, housing laws and codes, pests, moisture, and ventilation. Nearly 200 professionals have been trained to recognize hazardous housing conditions and ways to reduce threats to residents' health.

In 2005, CDC revised and updated two resource manuals for assessing, reducing, and eliminating health and safety risks in homes: the *Healthy Housing Reference Manual* and *Integrated Pest Management: Conducting Urban Rodent Surveys*. These manuals will be available in 2006 free of charge at www.cdc.gov/healthyplaces/healthyhomes.htm.

When Home Is also a Methamphetamine Lab

The number of methamphetamine (meth) labs set up in private homes across the U.S. has increased dramatically within the last 5 years. In 2005, the Michigan Department of Community Health (MDCH), a CDC partner, helped lawmakers take an important first step in reducing the serious public health risk posed by such labs. MDCH provided key testimony in support of a bill to restrict access to over-the-counter medications critical for meth production, including products that contain ephedrine or pseudoephedrine. The testimony helped demonstrate that meth labs threaten people in surrounding homes with high levels of contamination and chemical exposure. The testimony also emphasized the danger children face when their homes are used as labs.

Both chambers of the Michigan Congress overwhelmingly passed the bill, and the governor signed it in July 2005. The new law took effect in December 2005. CDC's Hazardous Substances Emergency Events Surveillance System provided support for a similar law passed in Georgia in 2004.



HEALTH PROTECTION GOAL FOR HEALTHY HOMES

Protect and promote health through safe and healthy home environments



Healthy Communities



Fighting Obesity One Step at a Time

Chronic diseases cause 7 of every 10 deaths, yet many of these diseases are preventable. CDC helped establish Steps to a HealthierUS, a 5-year cooperative agreement program in the amount of \$43,315,822 to implement chronic disease prevention programs aimed at reducing diabetes, obesity, and asthma. The program builds on the premise that improving nutrition, increasing exercise, and eliminating tobacco use will go a long way to prevent chronic diseases.

In 2005, the program granted \$1.7 million to the Monterey County Health Department in Salinas, California, a predominantly Latino community highly prone to chronic diseases.

Steps to a Healthier Salinas will incorporate effective case management of patients with chronic conditions and provide training on standards of care, including customer service and cultural competency for 60 to 100 community health providers.

Protecting Owners from Infected Pets

In May 2005, CDC received reports of four organ-transplant recipients suffering from an unknown illness. Eventually, the cause was identified as an infection from a virus, lymphocytic choriomeningitis virus (LCMV), spread by the same organ donor. Three of the four organ recipients died. The source of the virus was traced to a pet hamster the donor had recently purchased from a local pet store.

Humans can develop LCMV infection after being exposed to urine, droppings, saliva, or nesting material of infected rodents. In addition to the risks to people having organ transplants, a pregnant woman who becomes infected with LCMV can pass the infection to her unborn baby, potentially causing serious birth defects or even the loss of her child.

A CDC investigation of the facility that supplied the pet store found that 4% of the animals sampled were infected with LCMV. Review of the commercial distributor's shipping records suggested that infected pet rodents might have been transported from the distribution facility to pet stores in the Northeast and the Midwest as early as February 2005.

As a result of the investigation, CDC and other partners worked closely with breeders and retailers in the pet industry to minimize the risk for LCMV infection in rodents sold to the public. CDC will continue to educate the public about the potential risk of LCMV and work with the industry to prevent distribution of LCMV-infected pets.



HEALTH PROTECTION GOAL FOR HEALTHY COMMUNITIES

Increase the number of communities that protect and promote health and safety and prevent illness and injury in all their members

Healthy Schools



Healthy Choices Helping Students Make the Grade

Promoting safe and healthy behaviors among students is part of the fundamental mission of schools, especially with the growing recognition that health influences academic performance.

In 2005, CDC released the fourth edition of its School Health Index (SHI), a self-assessment and planning guide to help schools develop and improve their school health policies and programs. SHI is derived from CDC's research-based guidelines, which identify the policies and practices most likely to improve healthy behaviors in students. SHI is being used by schools in 46 states.

SHI prompted schools in South Carolina to build walking trails, offer whole grain breads in the lunchroom, add healthier options to vending machines, and incorporate gardening skills into science classes. As a result, schools report improved school attendance, increased physical activity, better nutritional choices among their students and staff, and higher academic performance.

Michigan's use of SHI has led to extended physical education time, more fresh fruits and vegetables offered during lunch, and tobacco-free environments.

Eating Better in Mississippi Schools

To reduce childhood obesity, CDC is helping school districts create local wellness policies for the start of the 2006 academic year. These federally mandated policies engage schools, parents, students, and communities in developing school-based activities, such as increasing opportunities for physical activity and improving nutrition education in order to promote student wellness and reduce obesity.

In FY 2005, CDC funded several innovative pilot programs that will help identify effective approaches to promoting school wellness. One program is distributing free fruits and vegetables daily in 25 Mississippi schools. Students in these schools also receive nutrition education that promotes fruit and vegetable consumption. While the U.S. Department of Agriculture expands the program to eight states this year, CDC is evaluating the Mississippi initiative to determine how children's attitudes toward fruits and vegetables have changed—and if they are eating better.

Handwashing Promotes Defense Against Infection

The simple act of keeping hands clean is an easy and effective first line of defense against the spread of disease. During the 2004–2005 flu season, more than 54 million students were at risk of catching the flu and passing it to family members and teachers. When school administrators asked CDC how they can prevent the spread of flu, they were advised to educate students on the importance of cleaning hands thoroughly and often.

CDC's award-winning Healthy Schools, Healthy People, It's a SNAP educational initiative, produced in partnership with the Soap and Detergent Association, provides resources and information about the importance of handwashing and illness prevention. This school-based initiative culminates annually in a national awards program to recognize outstanding classroom projects that promote good health through hand hygiene.

Ralston Middle School's 8th-grade health education class in Belmont, California, used their hands and their heads to win the 2005 national award for the SNAP program. Their winning entry included the creation of a handwashing video that was shown in five district schools.

Free soap donated by a manufacturer was distributed after the video. As a result, 600 elementary school students learned how and why hands should be kept clean. Students also were challenged to share the messages and soap with their families and friends.



HEALTH PROTECTION GOAL FOR HEALTHY SCHOOLS

Increase the number of schools that protect and promote the health, safety, and development of all students; and protect and promote the health and safety of all staff

Healthy Healthcare Settings

“Saving 100,000 Lives Campaign” Protects Patients

Although the U.S. spends more money on healthcare than other advanced industrialized nations, it performs poorly on many measures of healthcare quality. In late 2004, the Institute for Healthcare Improvement (IHI) launched a campaign to save lives by implementing evidence-based strategies to protect patients. Three of the six intervention areas focus on the prevention of healthcare-associated infections (HAIs). CDC guidelines and recommendations are the basis of many of these strategies. As of November 2005, more than 2,900 hospitals—50% of the hospital beds in the U.S.—are participating in the IHI campaign.

CDC will continue to serve as a scientific partner to IHI and provide its expertise in preventing HAIs to the local and regional hospital teams taking part in the “Saving 100,000 Lives Campaign.”

CDC Guides Public Reporting of HAIs

Based on CDC estimates, in hospitals alone, HAIs account for approximately two million infections and 90,000 deaths. Because HAIs pose a serious threat to consumers, states began to consider legislation to mandate healthcare organizations to publicly disclose information regarding HAIs.

As a national leader, CDC/HHS Healthcare Infection Control Practices Advisory Committee (HICPAC) published *Guidance on Public Reporting of Healthcare-Associated Infections* that presents a framework for policy-makers, program planners, and consumer advocates, and has helped states considering related legislation. By the end of 2005, seven states enacted legislation for mandatory reporting of HAIs.

As more states consider similar approaches, CDC will continue to work with states and partners to provide leadership on how to collect, interpret, and use data related to HAIs. CDC believes that monitoring lifesaving strategies that prevent infections, in addition to the infection rates, can improve patient safety.



CDC Research Improves Patient Safety

Improving patient safety is a CDC priority. Protecting against HAIs is a critical component of patient safety. In 2005, CDC participated in a regional patient-safety intervention with 32 Pennsylvania hospitals that resulted in a major reduction of 68% in bloodstream infections. This improvement suggests that coordinated infection-control initiatives among healthcare facilities in a region might be an effective way to reduce HAIs.

Also in 2005, researchers at CDC examined data, confirming the increasing prevalence of a dangerous drug-resistance bacterium, methicillin-resistant *Staphylococcus aureus* (MRSA), in many intensive care units. This strain of MRSA differs from traditional hospital strains by having different resistance genes and by producing a toxin that causes serious skin infections and pneumonia. The emergence of this strain is causing pediatricians, family physicians, and emergency physicians to change the standard antimicrobial regimen for treating some infections in outpatients.

HEALTH PROTECTION GOAL FOR HEALTHY HEALTHCARE SETTINGS

Increase the number of healthcare settings that provide safe, effective, and satisfying patient care

Healthy Workplaces and Institutions

Farm Safety Programs Save Lives

As Waco Phipps knows, farming is one of the most hazardous jobs in the U.S. Two years ago, while repairing a fence with his family, the Nebraska high school sophomore was injured when his all-terrain vehicle overturned. Now, as a youth ambassador for Farm Safety 4 Just Kids, Waco teaches other young people how to avoid becoming one of the more than 20,000 children injured each year in farm accidents.

“Farm Safety 4 Just Kids taught me how effective risk-management involves anticipating possible problems and then planning how you can help reduce their consequences,” he says.

With support from CDC, Farm Safety 4 Just Kids was started 18 years ago, after the tragic death of an 11-year-old Iowa farmer’s son who suffocated in a grain wagon. The national organization relies on volunteers from dozens of chapters to spread farm safety messages. Volunteers range from Phipps to a 78-year-old South Dakota farmer who lost his grandson to a farming accident.

The work of this grassroots organization is paying off. In the 1980s, when Farm Safety 4 Just Kids was started, more than 300 farm children were killed each year. Today, that number is on the decline at just over 100.

In FY 2004, a CDC grant helped Farm Safety 4 Just Kids hold its largest national conference, where trainers learned about new ideas and effective programs for keeping farm families safe. In addition, in Minnesota, a CDC-supported school curriculum is enhancing knowledge and attitudes about occupational safety and health in rural students. The curriculum is so popular that CDC is working to incorporate it into existing curricula for rural schools across the nation.



Promoting Fruits and Vegetables: 5 A Day for Better Health

Eating fruits and vegetables helps prevent obesity and various chronic diseases. Despite these apparent benefits, only about 25% of U.S. adults and less than 20% of children eat the recommended five servings per day.

In 2005, CDC became the lead federal agency for the national 5 A Day for Better Health program, a broad partnership that includes more than 650 private industry organizations.

CDC produced several programs and publications to promote fruits and vegetables to various audiences. One of these programs, “5 A Day Works,” includes books for preschoolers, incentive programs for employees, tool kits to establish community gardens and farmers markets, and special interventions in restaurants and churches. “Making It Happen! School Nutrition Success Stories” shows how to incorporate healthy food in schools. “How to Use Fruits and Vegetables to Help Manage Your Weight” emphasizes substituting fruits and vegetables for high-calorie foods.

As part of its vision to create a workplace where healthful choices are easy choices, CDC initiated garden markets on several CDC campuses. Once a week, employees can buy fresh, regionally grown fruits and vegetables. Since the project’s start in 2004, the market has thrived, with about 350 employees buying fresh produce each week.

HEALTH PROTECTION GOAL FOR HEALTHY WORKPLACES AND INSTITUTIONS

Promote and protect the health and safety of people who work by preventing workplace-related fatalities, illnesses, injuries, and personal health risks. Increase the number of institutions that provide safe, healthy, and equitable environments for their residents, clients, or inmates



Healthy Travel and Recreation

CDC Enhances Traveler's Website

More than 27 million Americans travel abroad for leisure or business each year, spending an average of 16 days out of the country. With the rise of international travel and commerce, the spread of diseases is a global concern.

To meet increased demand for travel information, the CDC Travelers' Health website (www.cdc.gov/travel) was upgraded in July 2005. The improved site provides information about regional health risks and preventive measures; malaria and yellow fever risk by country; food and water safety; protection from insect bites; and health recommendations for travelers with special needs and conditions, such as infants, children, and pregnant women. The website also posts the latest travel health warnings and precautions, as well as updates about disease outbreaks around the world.

The website is among CDC's top 10 destinations online. Visits range from 332,000 to 509,000 per month. Following Hurricane Katrina, the "health recommendations for relief workers" notice registered 84,000 visits in a single month.

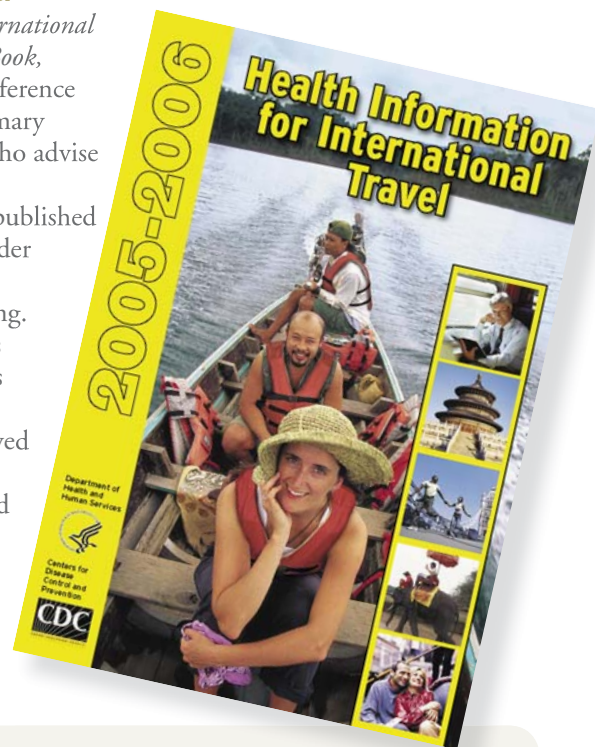


Health Information for International Travelers: *The Yellow Book* Travels Farther

CDC's *Health Information for International Travel*, also known as *The Yellow Book*, has long been the gold standard reference for travel medicine specialists, primary healthcare providers, and others who advise international travelers.

This valuable reference book, published biennially, is now available to a wider audience through a public-private partnership with Elsevier Publishing.

The enhanced edition includes new maps and tables; new sections on norovirus, jet lag, SARS, and pneumococcal disease; and improved indexing and referencing. *The Yellow Book* also contains expanded advice on traveling with infants and children, and traveling while pregnant. The 2005–2006 edition of *The Yellow Book* is available online at www.cdc.gov/travel/.



CDC Expands GeoSentinel Surveillance Network

Research and surveillance are key components in improving travel medicine. In 1996, CDC initiated the GeoSentinel surveillance network, in partnership with the International Society for Travel Medicine.

GeoSentinel now comprises 31 travel/tropical medicine clinics around the world, including three new clinics at major international gateways in Asia. In addition, 130 GeoSentinel network members provide information locally for

issues of interest in travelers' health and help disseminate timely information. Surveillance reports are received on approximately 10,000 travelers per year. As a result of new information provided by the GeoSentinel network, CDC took these steps to protect public health in 2005:

- Revised malaria prevention recommendations for travelers to the Dominican Republic.
- Enhanced surveillance for various illnesses, including influenza-like illness in travelers from Asia.

HEALTH PROTECTION GOAL FOR HEALTHY TRAVEL AND RECREATION

Ensure that environments enhance health and prevent illness and injury during travel and recreation

Preparedness

CDC is at the center of America's preparedness activities, ready to respond to events we hope never come to pass. In FY 2005, CDC continued its leadership in coordinating state public health partners, assisting America's cities with terrorism preparedness, enhancing the connectivity of labs, and working with other federal agencies to ensure seamless responses to public health emergencies.

F A C I N G T H E I S S U E

Marta Guerra, DVM, PhD, Veterinary Officer



In the chaos of Hurricane Katrina, thousands of pet owners were forced to leave their animals behind, a sad footnote to the human tragedy that was unfolding. When the rain and winds subsided, CDC workers were among the thousands of animal rescuers who helped more than 8,000 animals.

CDC sent five veterinarians to two temporary animal shelters in Louisiana: the Dixon Center in Gonzales and the Parker Coliseum in Baton Rouge. Dr. Marta Guerra, a commander in the U.S. Public Health Service, was deployed to the coliseum, where she

managed the activities in the barn that housed large dogs. At its peak, the shelter cared for 907 animals, mostly cats and dogs. About 280 dogs were housed in stalls intended for livestock.

Guerra coordinated the volunteer veterinarian and veterinary technician staff who treated and cared for the animals.

At first, owners found it difficult to locate their pets. Guerra implemented a tracking system, updated daily, to work with the existing database of animals. She also developed policies to enforce guidelines requiring everyone working in the barn to wear armbands and to secure animals in their stalls overnight to prevent thefts.

Guerra also addressed safety and health concerns. She helped develop guidelines for the staff to reduce the number of dog bites, provided personal hygiene and protection supplies, and

recommended frequent breaks and fluid consumption to combat the high temperatures.

By the end of September, the animal population had decreased to about 750 as owners began picking up their animals or finding foster care for them. When the shelter closed on October 15, 85% of the pets had been reunited with their owners, and remaining animals were relocated to shelters in Georgia, North Carolina, and Virginia.

"I have been asked why we were spending so much effort and resources on rescuing animals," says Guerra. "Well, for some Katrina evacuees, their pets are all they have left. Many owners repeatedly told us how grateful they were that we were able to provide shelter and veterinary care for their pets while they were out looking for jobs and housing."

Overarching Health Protection Goal for Preparedness

People in all communities will be protected from infectious, occupational, environmental, and terrorist threats

All that preparation paid off with swift response to the tsunami that struck the shores of India, Indonesia, Sri Lanka, and Thailand in late 2004. It paid off again in late summer 2005, when Hurricane Katrina devastated the Gulf Coast. CDC's ability to quickly implement its emergency plans helped avert serious disease outbreaks that often accompany such large-scale natural disasters.

CDC's surveillance, monitoring, research, and guidance—spanning the public health spectrum from mental health to environmental health—will help safeguard countless lives during the long restoration process in the years to come.

Emerging Issue: Preparing for “All Hazards”

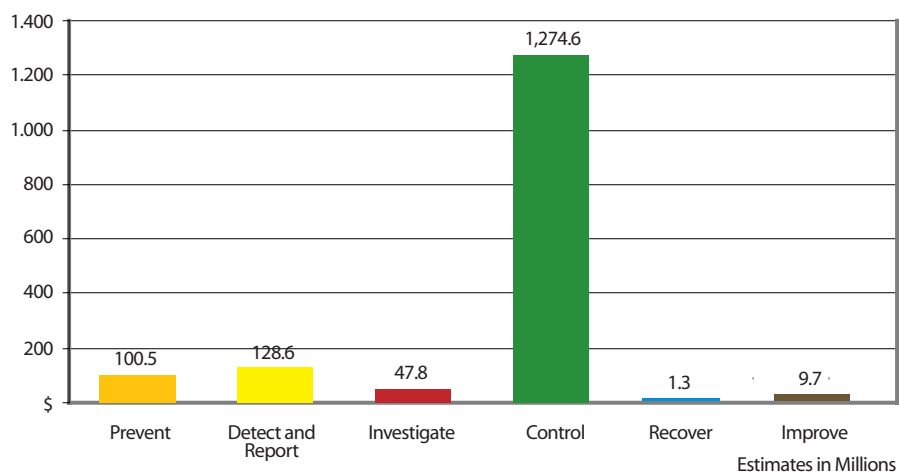
Avoiding the terrible consequence of a bioterrorism attack—mass casualties and a crippled economy—drives our nation's antiterrorism efforts. CDC has committed resources to developing faster tests to detect disease outbreaks; has increased disease surveillance; and has partnered with other federal agencies, states, and private industry to share and develop new technology and vaccines.

At the same time, CDC has not ignored the potential for other avenues of terror—chemical, radiation, and nuclear. And as the record number of hurricanes this year reminds us, disasters also can be wrought by nature. Preparing for

“All Hazards” is a daunting task. With limited resources, the challenge is how to best allocate money to ensure public health is protected regardless of the emergency.

Through the Cooperative Agreement for Public Health Emergency Preparedness and Response, CDC awarded \$857.3 million to states and U.S. territories for all-hazards preparedness and response. States are using the funds to improve their emergency response capacity so that they address not only bioterrorism, but other public health emergencies as well.

FY 2005 Total Program Dollars Aligned with Preparedness Goals



Prevent

CDC Strengthens Borders Against Disease

CDC's national quarantine program protects the U.S. against the introduction of communicable diseases. Because of growing concerns about disease importation and bioterrorism, the quarantine stations' role in protecting our borders was expanded in 2005, revitalizing a program that holds a significant place in public health history.

Quarantine staff collaborate with public health partners in state and local health departments, the travel industry, the healthcare community, and other federal agencies.

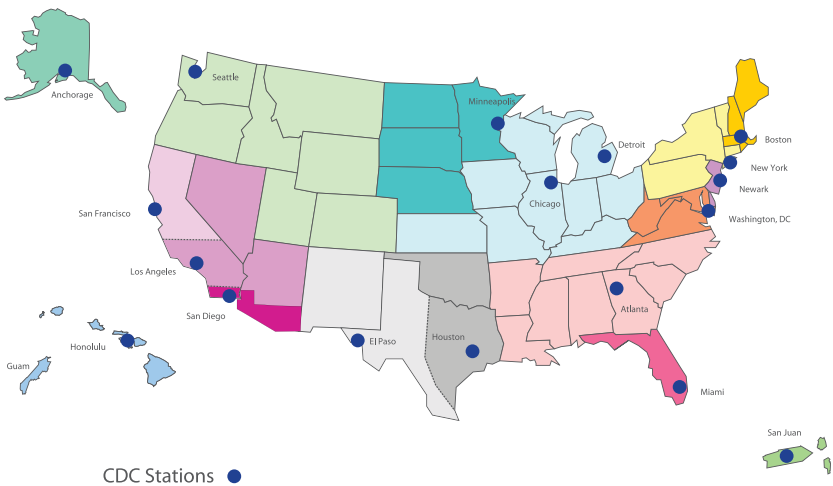
Staff include quarantine medical officers who provide clinical, epidemiologic, and programmatic support, as well as quarantine public health officers who conduct surveillance, response, and communicable disease prevention activities.



Traditionally used to evaluate ill passengers, inspect animal shipments, and seize contraband cargo, quarantine stations now also play a part in bioterrorism preparedness and emergency response.

Historically, quarantine stations were located at every major U.S. port of entry. By the 1980s, however, only seven remained, reflecting the popular assumption that vaccines had conquered infectious diseases. Today, emerging infectious diseases such as SARS and avian flu remind us of the importance of a vigilant quarantine station program. In 2005, CDC increased the number of stations from 8 to 18. More stations may be added in the future.

CDC Quarantine/Border Health Stations



Did You Know?

- International travel is a major factor in global disease emergence and spread. Recent examples include the outbreak of SARS in 2003 and outbreaks of gastroenteritis associated with norovirus on cruise ships.
- During 2004, there were 760 million international tourist arrivals worldwide. It is estimated that up to 8% of the 50 million travelers to the developing world are ill enough to seek medical care while abroad or upon returning home.

HEALTH PROTECTION GOAL FOR PREVENTION

Increase the use and development of interventions known to prevent human illness from chemical, biological, radiological agents, and naturally occurring health threats

Detect and Report



Laboratories Expand Network Preparedness

CDC's Laboratory Response Network (LRN) is one of the most visible and valuable assets in our nation's terrorism preparedness portfolio. This network of public health, military, food, environmental, and international labs is designed for early detection of bioterrorism and chemical terrorism agents. In addition to responding to terrorism threats, LRN is also called upon to respond to public health emergencies.

Since it was founded in 1999, the network has worked with other federal agencies to support their biosurveillance efforts, including the Department of Homeland Security and the U.S. Postal Service. LRN also has provided lab surveillance for high-profile events, such as the Democratic and Republican national conventions.

In 2005, LRN added 14 new partner labs, for a total of 152. All 50 states now have at least one LRN lab for biological threat agent detection. Forty seven labs perform analyses for chemical terrorism agents, 10 of which act as surge capacity facilities to assist CDC in a chemical terrorism event.

FY 2005 also saw the development of rapid detection tests, including a new procedure that tests for multiple biological agents simultaneously, thus reducing the time needed to detect a bioterrorism event.

In response to a potential pandemic brought on by avian influenza, CDC scientists have been working on new tests for LRN labs to identify an avian flu outbreak in humans and ensure a swift public health response.

Collaboration Revolutionizing Bioterror Detection

Rapid identification of biologic agents used in a terrorist attack can mean the difference between life and death. Yet, even some of the best tests cannot keep pace with today's demands for rapid detection. The current test for botulinum toxins, a group of seven toxic agents considered to be a terrorism threat, is one of them. The test requires injecting samples into mice and waiting up to 4 days for results.

CDC scientists are developing an innovative approach for detecting botulinum toxin in people using mass spectrometry technology, which yields faster results. Mass spectrometry can identify unknown compounds at very low concentrations.

This method to detect botulinum toxin reduces testing time to about 3 to 4 hours, and it can identify all seven types of botulism toxins detected by the standard traditional assay. Preliminary results indicate that the test could be used for rapid identification of other biological agents as well—taking agent detection to new levels.

Expanding Detection of Food-Related Outbreaks

PulseNet USA was established in 1996 as a molecular surveillance system to investigate outbreaks caused by *E. coli* O157. Since then, it has evolved from a small network of labs to one that includes 75 public health and food regulatory labs across all 50 states. Using DNA fingerprints of organisms such as *Listeria*, *E. coli* O157, *Salmonella*, *Shigella*, and *Campylobacter*, these labs can share and compare their surveillance data to find clusters of infection suggesting food has been contaminated. They also can expand the database of available DNA fingerprints for future outbreak investigations.

To date, more than 175,000 fingerprints are in the database. PulseNet has been such a success that sister networks were created in FY 2005. In August 2005, CDC finalized an agreement with Canada to allow an exchange of PulseNet database information with participating labs in the U.S. for seamless surveillance between the two countries. Sister networks also have been established in Europe, the Asian Pacific, and Latin American regions. Initial training for these programs has been launched in Latin America, Europe, and China.

CDC is working toward implementing a PulseNet surveillance system for the bacteria that cause plague and tularemia. The system will detect and trace the source of both naturally occurring and terrorism-related outbreaks.



HEALTH PROTECTION GOAL FOR DETECTION AND REPORTING

- Decrease the time needed to classify health events as terrorism or naturally occurring, in partnership with other agencies
- Decrease the time needed to detect and report chemical, biological, radiological agents in tissue, food, or environmental samples that cause threats to the public's health
- Improve the timeliness and accuracy of communications regarding threats to the public's health

Investigate



Reconstructing the Past To Protect the Future

As the nation geared up for preventing the possible spread of avian flu, CDC undertook groundbreaking research in FY 2005 that is helping unlock the mystery of the 1918 flu pandemic and advancing preparedness for possible pandemics of the future.

In collaboration with Mount Sinai School of Medicine, the Armed Forces Institute of Pathology, and the Southeast Poultry Research Laboratory, CDC researchers reconstructed the 1918 influenza virus strain. This landmark event has allowed researchers to identify gene sequences that may predict when an influenza virus strain is likely to



spread among humans. Researchers also have determined in the test tube and in mice which genes are most likely to account for the lethal effects of the 1918 virus.

As an added protection to the public, CDC declared the 1918 influenza strain a select agent, which means its use is strictly limited under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002. Currently, 41 agents and toxins are covered under this act.

CDC Gears up for Pandemic Protection

The growing threat of a novel influenza virus capable of sickening millions of people across the globe has captured the nation's full attention. Of particular concern is avian influenza, H5N1, which is currently causing outbreaks in birds and occasional cases in people.

In FY 2005, CDC helped develop a comprehensive plan to strengthen U.S. preparedness and response for the next influenza pandemic. The plan provides detailed guidance for surveillance, epidemiology, community containment, healthcare, infection control, lab diagnostics, communications, and research. Among recent activities, CDC has

- Provided leadership to the National Pandemic Influenza Preparedness and Response Task Force, created in May 2005 by the Secretary of HHS. HHS and CDC, among other federal agencies, are providing funding, advice, and other support to states to assist with pandemic

planning and preparation.

- Provided nearly all states with funding to purchase equipment to properly and safely analyze human specimens for avian influenza.
- Increased the stockpile of antivirals.
- Worked with federal partners in developing a vaccine against H5N1, the influenza virus currently of concern because of its potential to become pandemic.
- Created interim guidance to protect people with possible exposure to avian influenza during poultry outbreaks.
- Worked closely with FDA and USDA to address potential human health issues related to the food supply, specifically the public's concern about consuming poultry and egg products.
- Developed recommendations and guidance on the use of appropriate infection control measures to prevent transmission during patient care.
- Identified gaps and provided recommendations for healthcare facilities to improve their readiness to respond.
- Expanded the nation's quarantine stations, with the goal of having a station in any port that admits more than one million passengers per year.
- Worked through the International Partnership on Avian and Pandemic Influenza to harmonize risk-communication efforts so that governments are not sending contradictory or confusing messages.

FluAid Helps Estimate Local Impact

The National Influenza Pandemic Plan calls for each state to develop its own plan to deal with an influenza pandemic. However, state and local level public health planners first need estimates of the potential impact of a pandemic in their state or locality.

FluAid is a test version of software created by CDC programmers. It can provide estimates of potential impact specific to a locality, offering a range of estimates for deaths, hospitalizations, and outpatients visits due to pandemic influenza. Information on FluAid and its utility in pandemic influenza planning can be found at www2.cdc.gov/od/fluaid/default.htm#Sectiona.

HEALTH PROTECTION GOAL FOR INVESTIGATION

Decrease the time to identify causes, risk factors, and appropriate interventions for those affected by threats to the public's health



CDC Answers Pesky Question: What's Bugging You?

Thomas Burkot, a CDC entomologist, does not have to go out on hot, humid weekends to poke around in old tires and stagnant water. But he does. *Aedes albopictus*—those little black-and-white mosquitoes that gnaw ankles and pass West Nile virus from infected birds to humans—really bug him.

When he moved to Atlanta 2 years ago, Burkot was surprised by the city's large mosquito population. He mentioned it to his supervisor, never expecting the conversation would result in a CDC community-based research project with the Fulton County Department of Health and Wellness.

The supervisor introduced Burkot to Jerry Kerce, an activist who had been conducting antimosquito clean-ups in Atlanta for years. Kerce had no resources to measure the effectiveness of his efforts, so Burkot enlisted public health graduate students at Emory University.

Soon, others were interested. "This turned into a really nice collaboration of federal, state, county, and city governments," Burkot said. Together, they launched a major clean-up, including removal of materials that foster breeding.

Burkot expects test interventions soon, but he has already discovered that outdated sewage disposal practices are creating prime breeding sites. After heavy rains, minimally treated storm and waste water are dumped into stream beds threading the most populated parts of Atlanta. With no fish or other predators, these waterways become "rivers of mosquitoes," says Burkot. In 2004, there were 90 such events.

CDC Reports Decline in Foodborne-Related Illnesses

The U.S. food supply is among the safest in the world. Even so, CDC estimates that each year, 76 million Americans fall ill, more than 300,000 are hospitalized, and 5,000 die from foodborne illnesses.

Comparing baseline data (1996–1999) with 2004 data, CDC's Foodborne Diseases Active Surveillance Network (FoodNet), which monitors foodborne diseases, reported declines in infections due to common pathogens. FoodNet data showed the following:

- 8% drop in *Salmonella* infections.
- 31% decrease in *Campylobacter* infections.
- 40% drop in *Cryptosporidium* infections.
- 42% decrease in the incidence of *E. coli* O157.
- 45% decrease in *Yersinia* infections.

CDC and other federal agencies credited the decline to improved industry efforts to enhance their food safety systems and greater public awareness of proper food handling.

Safeguarding Drinking Water

Chemicals in drinking water wells affect thousands of people in U.S. homes. CDC works with state and local health departments to investigate and recommend solutions for contaminated drinking water issues.

For instance, after residents of a neighborhood in Winslow Township, New Jersey, asked for an investigation of well-water contamination, state and local agencies tested 241 area wells. CDC and its state partner found that more than half the wells contained volatile organic compounds, and some contained nitrate and metals, including lead and mercury. CDC and the state recommended that safe water should be provided to all residents of the area. A main water line to the area also was installed, and service began in April 2005.

CDC is also helping residents protect themselves against contaminated drinking water. The Illinois Department of Public Health, funded in part by CDC, tracked the presence of two chemicals, trichloroethylene and perchloroethylene, in drinking water from wells near an industrial site in DuPage County. The findings of this research led the governor to sign a bill that ensures a community's right-to-know about potentially dangerous local environmental threats. The bill also provides new power to expedite cleanup when the public may be at risk for exposure to contaminants. The governor also signed legislation to protect children from environmental hazards by establishing a Children's Environmental Health Officer in the state's Department of Public Health.



HEALTH PROTECTION GOAL FOR CONTROLLING HEALTH THREATS

Decrease the time needed to provide countermeasures and health guidance to those affected by threats to the public's health

Recover



Strategic National Stockpile Delivers Help

Preparing for all kinds of attacks, any place, any time, is a daunting task and delivering life-saving medications and supplies—on target and on time—is critical. CDC's Strategic National Stockpile (SNS) is designed to meet that challenge.

SNS is a repository of life-saving antibiotics, antidotes, medical supplies, and other medications on stand-by in the event of a public health emergency.

Hurricane Katrina put the SNS mission to the test. In response to the deadly storm, SNS ordered and sent approximately \$38 million worth of medical supplies to the affected Gulf Coast region. The supplies included:

- 3,500 hospital beds.
- Hundreds of thousands of doses of antibiotics and maintenance medication for chronic diseases, such as diabetes and heart disease.
- 12-hour push packs containing 50 tons of pharmaceuticals and medical supplies.
- Nearly 470,000 doses of hepatitis A and B, tetanus, and diphtheria vaccines.

In recent years, SNS has increased its inventory of preventive drugs to be used in the event of an anthrax attack. The inventory now contains enough antibiotics to protect more than 36 million people. SNS also improved its processes so that medical interventions can be given to patients faster.



Responding to Real and Potential Chemical Hazards

Immediately following Hurricane Katrina, CDC staff deployed to the area to help Gulf Coast residents get back on their feet. During such large-scale public health emergencies, CDC personnel often serve by performing vital services when events disrupt normal operations. The Katrina response is a perfect example. CDC staff quickly arrived on site to assess environmental public health needs and to perform critical tasks—assessing drinking water safety, evaluating the hazard posed by chemicals carried in the floodwaters, and many other services.

CDC personnel were also on the ground—in some cases for weeks at a time—helping local, state, and federal authorities on issues such as infection control, potable water, waste water, disease vector control, and food services. CDC also helped assess and reopen approximately 200 schools in Jefferson Parish and rebuild the New Orleans Environmental Health Department's ability to operate. With

the Environmental Protection Agency, the Coast Guard, and other responders, CDC also helped avert widespread, dangerous chemical exposures for thousands of people. For example, CDC helped to

- Abate chemical spills in Mississippi.
- Search out and remediate potential industrial and residential hazards, such as dislodged or leaking fuel tanks, hospital biohazards, and 55-gallon chemical drums the storm floated from barges onto front lawns.
- Deliver critical health guidance to returning residents and responders on mold, carbon monoxide, water sanitation, electrical hazards, and other topics.
- Survey rail lines for damaged or leaking chemical and freight cars.
- Investigate industrial facilities to determine whether these facilities posed hazards as a result of hurricane damage.
- Evaluate National Priorities List sites in the area for hazards following the hurricane.

HEALTH PROTECTION GOAL FOR RECOVERING FROM A HEALTH THREAT RESPONSE

- Decrease the time needed to restore health services and environmental safety to pre-event levels
- Improve the long-term follow-up provided to those affected by threats to the public's health



CDC Senior Management Official for Texas, Mark Fussell with Texas Health Commissioner Dr. Eduardo Sanchez of State Health Services

CDC's Portfolio Managers Provide Critical Link

The Portfolio Management Project is a CDC-wide initiative aimed at fostering shared leadership, common health protection goals, and effective use of resources with state and local health agencies.

In 2005, CDC created seven new Portfolio Manager positions in six states (Arkansas, Florida, New York, Ohio, Texas, and Washington) and the District of Columbia.

Working closely with the states and other partners, CDC and its Portfolio Managers developed descriptive information on about 600 grants totaling more than \$1.26 billion. This information will help assess all state grants and cooperative agreements. Assessments include identifying opportunities to develop business efficiencies, determining alignment to CDC goals, and describing progress toward meeting state and CDC health impact objectives.

A key part of Portfolio Management is the Senior Management Official (SMO), who is a critical link between the executive management levels of CDC and state and local health departments. The SMO has varied responsibilities

ranging from identifying and assessing CDC's portfolio within a given location to serving as the primary CDC representative during a public health emergency. For example, during Hurricane Katrina, SMOs in Arkansas, Florida, and Texas served in key leadership roles coordinating CDC's emergency response. In addition, two emergency SMO positions were developed and deployed for placement in Louisiana and Mississippi.

Portfolio Management determines CDC's resource investment in a portfolio state and seeks to help CDC better address the context of the state's public health investment. For example, in New York

- CDC funding represents 7% of the New York State Department of Health FY 2005/2006 budget of \$2.16 billion dollars, and 8% of the New York City Department of Health and Mental Hygiene budget.
- As of October 2005, the state had 56 CDC field staff, 51 of which are assigned in New York City; 29 state staff are assigned to directly support CDC's grants programs.

Taking Health Protection Information into the Stores

Predictable—but preventable—tragedies seem to come on the heels of each hurricane that makes landfall. After the severe weather has moved on, its ill effects continue to take their toll when people fail to properly use gasoline-operated generators.

Hurricane Katrina was no different. Within days of its landfall, five people died of carbon monoxide poisoning. In September, the number of persons treated in emergency rooms for carbon monoxide poisoning climbed to 46, and 5 others died in three states. Unofficial numbers indicate injuries from this colorless, odorless, deadly gas may have been as high as 116.

Year after year, this scenario is repeated after major storms. Yet these deaths and injuries are entirely preventable with simple safety steps.

CDC communications teams worked with scientists to rapidly package information about carbon monoxide safety, while CDC's marketing staff worked with retail outlets to get important safety messages to the public. CDC and retailers collaborated to

- Co-merchandise battery-powered carbon monoxide detectors; batteries; long, outdoor-rated extension cords; and chains and locks with generators.
- Display easy-to-read warning labels found on CDC's website (www.bt.cdc.gov/disasters/co-materials.asp).

- Customize broadcast-quality public service announcements found on CDC's website (www.cdc.gov/co/psa.htm) and play them in stores every 30 minutes during the recovery period.
- Link to CDC's hurricane website highlighting health and safety information for returning hurricane-affected residents. As a result of these health protection efforts, CDC's recommendations were readily available and included public service announcements that educated shoppers about carbon monoxide poisoning and increased risk for West Nile virus.

HEALTH PROTECTION GOAL FOR IMPROVING PUBLIC HEALTH PRACTICE

Decrease the time needed to implement recommendations from after-action reports following threats to the public's health

Global Health

The list of major global public health successes during the past several decades is impressive. Controlling tuberculosis in China. Reducing guinea worm in Asia. Eliminating measles in southern Africa and polio in Latin America. Preventing HIV infections in Thailand.

We owe these successes to a combination of medical technology, international coalitions, government intervention, and basic behavior changes. With

F A C I N G T H E I S S U E

Holly Ann Williams, PhD, MN, RN, Anthropologist, Nurse Epidemiologist



Holly Williams came to CDC in 1996 as an Epidemic Intelligence Service officer assigned to the malaria branch. A former pediatric nurse specializing in refugee health and the care of terminally ill children, she brought with her a deep understanding of how critical it is to

integrate social and cultural norms into prevention efforts.

“Very few malaria control programs are based on cultural or social aspects—they are not very accepting of social scientists,” says Williams, who also has a PhD in anthropology.

Williams’ interest and skill in cultural sensitivity came into full play when she was assigned to the Greater Mekong Subregion, which includes Cambodia, Thailand, and Vietnam. Since 2002, she has served as special advisor on a malaria control plan developed through the Reducing the Spread of Malaria: Asian Development Bank/WHO/Roll Back Malaria Mekong Region Information,

Education and Communication Project. With an estimated 2 million malaria cases in this region alone, the program faces a great challenge.

Williams was able to persuade national malaria control programs in the Mekong region to strengthen information, education, and communication activities along the border, targeting underserved ethnic groups, labor immigrants, refugees, and others who are at greatest risk for malaria. Top priorities include making sure that communication flows through the right channels and that education materials reflect the language and customs of these vulnerable populations.

Overarching Health Protection Goal for Global Health

People around the world will live safer, healthier, and longer lives through health promotion, health protection, and health diplomacy

globalization and the rise of rapid communication, future success will depend more heavily on knowledge-sharing networks that create bridges between rich countries and poor countries, between scientists and the public, between government and business.

Since the emergence of SARS, CDC has created lab hubs that can quickly disseminate information to the

rest of the scientific and clinical community. CDC also has built highly connected small-world networks to better detect and respond to emerging health threats. With the opening of the new Global Communications Center, rapid satellite dissemination programs and distance learning systems will expand CDC's global reach farther and faster.

Emerging Issue: Zoonotic Diseases

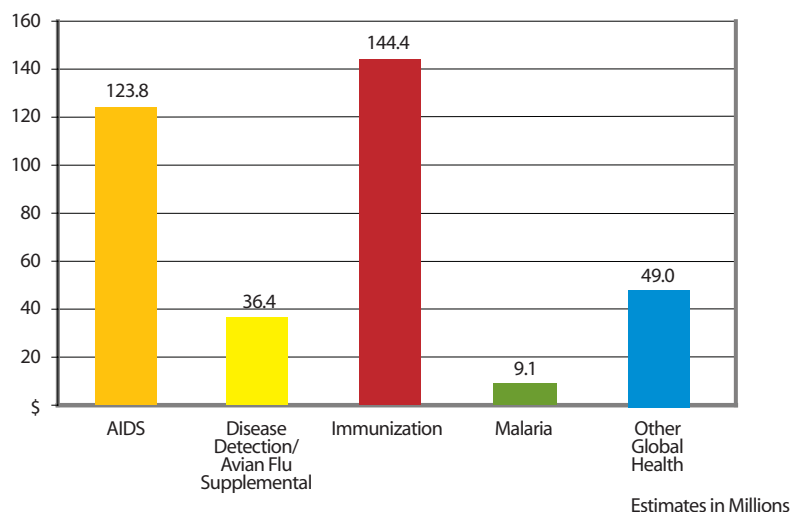
Sixty-two percent of all known human pathogens and 75% of all emerging infectious diseases are zoonotic, meaning they can be passed from animals to humans. Unlike diseases such as smallpox or polio, they cannot be eradicated because animals are natural hosts.

CDC is tracking and researching zoonotic diseases for numerous reasons, including expanded international travel and commerce; increased contact among humans, domestic animals, and wildlife; rapid microbial adaptation and change; modified food and farming practices; and fluctuating climates and ecosystems.

To increase its capacity to deal with zoonoses effectively, CDC is committed to

- Understanding zoonoses in the environment and how changing ecology and contact between humans and animals affect zoonotic diseases.
- Improving surveillance and reporting of zoonotic diseases.
- Developing interventions that effectively reduce, prevent, and control disease transmission in animals and humans.

FY 2005 Total Program Dollars Aligned with Global Health Goals





Dried Blood Spots Improve HIV Testing

In sub-Saharan Africa, where up to 40% of pregnant women are now HIV-infected, the virus is devastating families. However, simple interventions, such as routine testing and counseling, short-course therapy to HIV-infected mothers and their infants, and modified infant feeding practices, can substantially reduce mother-to-child transmission.

Early infant diagnostic testing is a priority for the prevention of mother-to-child HIV transmission. Unfortunately, providing accurate and reliable testing can be difficult in developing countries, where diagnostic tools and facilities are often inadequate.

The President's Emergency Plan for AIDS Relief is promoting early infant HIV diagnosis through the use of dried blood spot collection. This method has several advantages over others. It is easier to transport and store, cheaper, and requires less blood from the infant.

In June 2005, CDC helped train 200 Botswana healthcare workers in dried blood spot collection for early HIV diagnosis in infants. During the first month, 236 HIV-exposed infants aged 6 weeks to 17 months were tested. Only five samples were rejected for poor quality.

Helping Botswana Overcome HIV/AIDS

Botswana is one of 15 focus countries of the President's Emergency Plan for AIDS Relief (PEPFAR). Collectively, these countries represent at least 50% of HIV infections worldwide. About 40% of Botswana's population is HIV-infected. If left unchecked, the epidemic could reduce the country's average lifespan to an alarming 29 years by 2010.

In FY 2005, the U.S. committed more than \$51 million to support Botswana in its efforts to combat HIV/AIDS. CDC worked closely with the government of Botswana and partner organizations to determine what Botswana needed, and then developed, tested, and refined programs. The outcomes of the efforts in 2003 and 2004 are now ensuring that the 2005 funds will be used effectively. As part of their efforts, CDC and its partners.

- Integrated HIV testing into routine prenatal care and trained workers to use rapid testing methods that provided results for mothers on the same day. A CDC study showed that 52% of women receiving prenatal care nationwide learned their HIV status in 2003. By the first few months of 2004, the percentage had climbed to 69%.
- Launched a training package in 2004 that instructs workers how to provide public health services in settings with limited resources, including how to set up a registry, implement a program, keep accurate records, and use public health software to report data to appropriate agencies.
- Used total quality management techniques in clinic worker training, dramatically reducing the number of clients who waited more than 1 hour from 80% in February 2004 to just 9% in June 2004.

HIV Preventive Care Paying Off in Developing Countries

A partner in the joint U.S. government effort to implement PEPFAR, CDC contributed to the rapid implementation of AIDS treatment in developing nations. Following are some highlights:

- As of September 30, 2005, PEPFAR had supported antiretroviral treatment for more than 400,000 men, women, and children through bilateral programs in 15 of the most afflicted countries in Africa, Asia, and the Caribbean.
- In Uganda, 509 HIV-positive individuals and their 1,522 HIV-negative household members received daily preventive care with co-trimoxazole and were followed for 1.5 years. Co-trimoxazole was associated with a 46% reduction in death.
- Findings from these efforts and other CDC-funded studies overseas have resulted in the World Health Organization recommending co-trimoxazole for preventive care for persons living with HIV/AIDS in developing countries.

GLOBAL HEALTH GOAL FOR HEALTH PROMOTION

Global health will improve by sharing knowledge, tools, and other resources with people and partners around the world

GLOBAL HEALTH GOAL FOR HEALTH PROTECTION

Americans at home and abroad will be protected from health threats through a transnational prevention, detection, and response network

GLOBAL HEALTH GOAL FOR HEALTH DIPLOMACY

CDC and the U.S. government will be a trusted and effective resource for health development and health protection around the globe



Polio Beaten Back by an Old Weapon

Since the suspension of polio vaccinations in northern Nigeria in 2003–2004, new outbreaks spread through several polio-free countries, just when the virus was close to being eradicated from the globe. The Global Polio Eradication Initiative—CDC, the World Health Organization, UNICEF, and Rotary International—responded to the increase in cases last year, reintroducing an old weapon against polio that has demonstrated great promise: a monovalent polio vaccine first developed by Dr. Albert Sabin in the 1950s.

The “new” strategy offers a high level of immunity to Type 1 polio virus, the most common type circulating today. In record time, more than 250 million doses of the vaccine were manufactured and shipped to Angola, Egypt, India, Somalia, and Yemen for mass immunization campaigns during mid-2005.

The effort to implement this strategy seems to have paid off. While it is still too early to know the full impact, experts are strongly encouraged by preliminary results showing fewer cases in endemic areas using the monovalent vaccine compared to the same period last year. They plan to expand the use of the vaccine to other countries and build on the tremendous success the initiative has already achieved since 1988.

“Many times I’ve sat in a taxi at a busy intersection and seen paralyzed children on crutches or even crawling between buses and cars, begging for a living. It is rare that a child with polio will be able to go to school. As the child with polio grows up, chances of having a steady job, of getting married, and of having children are dim. This is the unnecessary suffering that the polio eradication program is working to prevent.”

Remarks made on April 12, 2005, by Dr. Hamid Jafari, Director of CDC’s Global Immunization Division, during the 50th Anniversary of the Salk vaccine at the Little White House in Warm Springs, Georgia

Did You Know?

Facts about the Global Polio Eradication Initiative:

- Largest health initiative in history.
- Largest partnership in public health.
- \$4 billion donated (\$600 million from Rotary International).
- 5 million children protected from paralysis.
- 250,000 deaths prevented.
- 20 million volunteers.
- 2 billion doses distributed.





Preventing Measles Deaths among Vulnerable Children

Measles is one of the most infectious diseases known to humans. In developing countries, it often results in severe complications, including blindness, pneumonia, and encephalitis. Around the globe, an estimated 30 million measles cases occur yearly. Among the most vulnerable children—those malnourished or displaced through conflict—the death rate can be as high as 25%.

Between 2001 and 2005, CDC and its partners in the Measles Initiative worked toward an ambitious goal: to cut the number of global measles deaths by half by 2005 (compared with 1999 mortality figures). In the past 5 years, the partners have helped vaccinate more than 200 million children against measles, mostly in Africa, the region with the most measles deaths.

Consequently, global measles deaths dropped 39% from 1999 (873,000) to 2003 (530,000). In FY 2005, countries increasingly used measles immunization campaigns as an opportunity to provide additional life-saving health interventions, such as vitamin A, polio vaccination, deworming medicine, and insecticide-treated bed nets for malaria prevention. In the first nationwide integrated campaign in Togo, a CDC survey demonstrated that multiple health interventions can be delivered successfully. More than 90% of eligible children received measles and polio vaccination, deworming medicine, and a bed net. Based on results like these, more countries will be using integrated strategies—and saving more children's lives—in the future.

Marburg Outbreak Requires International Response

In March 2005, CDC confirmed the diagnosis of Marburg virus infection in nine patients who had died during an outbreak in Angola. The rare but deadly disease is notorious for its cruel and excruciating symptoms.

CDC promptly responded to requests from Angola and the World Health Organization as part of the international response to assist with the epidemiologic investigation, infection control, and lab diagnosis.

CDC personnel provided infection-control support in the Uíge Provincial hospital and trained healthcare workers on appropriate practices to keep them safe and to prevent spreading the infection to other patients. They also established a screening ward to evaluate suspect Marburg patients as they arrived at the hospital, helped identify

cases and contacts, and educated persons in the community about the disease and how to protect themselves and their families.

In collaboration with the Angolan Institute for Public Health, CDC established a field lab in Luanda, Angola, to provide prompt lab confirmation of suspect Marburg cases in the region. This lab had the capacity to detect Marburg viral antigen and viral nucleic acid and specific antibodies against Marburg virus in blood specimens.

As of August 23, 2005, the Angolan Ministry of Health reported 374 cases, including 329 deaths (88% case fatality rate) countrywide. No lab-confirmed cases of the disease have been reported since July 2005. This was the largest outbreak of Marburg hemorrhagic fever to date.



Refugee Assessments Stop the Importation of Disease

The increase in refugees worldwide represents a heightened health risk to Americans. In the last decade alone, the percentage of U.S.-bound African refugees has increased from 8% to 35%. The number of U.S.-bound refugees from Asia is also growing. These refugees have lower vaccination rates and higher rates of tuberculosis (TB), HIV, malaria, and intestinal parasites.

In the last 2 years, CDC quarantine staff have responded to 13 domestic and international outbreaks of infectious diseases among African and Asian U.S.-bound refugees, including rash illness in Liberians and multidrug-resistant TB in the Hmong, an ethnic group from Laos. From 2003 through 2005, an enhanced refugee program has kept the U.S. safe from diseases spawned in refugee camps and other transition centers. Activities included

- Providing predeparture treatment for more than 65,000 refugees, which prevented 4,900 people with malarial infections and 2,800 with parasitic infections from entering the U.S. until effective treatment was completed.
- Immunizing thousands of refugees for measles, chickenpox, mumps, and rubella, in response to identified outbreaks.
- Improving the transfer of information about refugees who are identified overseas and treated for TB infection before entering the U.S., so that state-based TB programs can follow up and prevent TB transmission.



New Facilities for a New CDC

Designed for **Health**
Built for **Science**
Prepared for **Tomorrow**



Global Communications Center

The Global Communications Center features high-tech, cutting-edge meeting spaces for training public health professionals. The building also houses a visitor education center, a multimedia facility that offers the public an opportunity to study and learn about public health.



Emerging Infectious Diseases Laboratory

The Emerging Infectious Diseases Laboratory triples CDC's capacity to research pathogens that require the highest levels of safety precautions, such as Ebola, viral hemorrhagic fevers, monkeypox, and avian influenza.

In FY 2005, CDC completed the next phase of its new facilities in Atlanta. These world-class buildings make it possible for our world-class scientists to extend the boundaries of scientific knowledge and meet the challenges posed by the health threats of the 21st century.

The inspiring structures are much more than masterpieces of glass, stone, and steel. They symbolize the expanded footprint of CDC's role as the nation's health protection agency. Like CDC itself, the buildings are designed for health, built for science, and prepared for tomorrow.



Headquarters and Emergency Operations Center

The Headquarters building promotes collaboration by consolidating in one building employees from across the agency, particularly the Office of the Director, the Emergency Operations Center, and the Office of Terrorism Preparedness and Emergency Response.



Environmental Health Laboratory

The Environmental Health Laboratory allows scientists to use advanced laboratory science and innovative techniques to prevent diseases resulting from toxic chemical exposures in the environment. Scientists also have the capacity to respond to terrorism and public health emergencies involving chemicals and to improve laboratory methods to diagnose and prevent diseases.



Chief Operating Officer's Message

Public health emergencies produce huge headlines, but the full story of protecting the public's health is much deeper. CDC must continuously seek a delicate balance between promoting vital health protection goals and providing flexibility to accommodate a swift and effective response when our expertise and assets are needed, anywhere in the world.

We have substantial resources at our disposal to accomplish this balance:

- An \$8 billion budget for FY 2005, approximately 70% of which goes to outside organizations.
- New state-of-the-art facilities, including two of the most advanced labs ever built.
- Nearly 15,000 staff (including 6,000 contractors), many of whom could be deployed halfway around the globe at a moment's notice.

We are proud that the majority of Americans surveyed—90%—believe CDC is doing a good or excellent job. But we continuously challenge ourselves to do even better. We ought to be able to tell the American people the health impact we are having, and we should continuously improve that impact.

More efficient operations contribute to this goal by providing the support researchers need to focus on the science that is the foundation of CDC's reputation.

To improve the transparency of our budget information, we have created a Web-based tool that aligns budget planning and execution with CDC's health goals. This tool will ultimately allow the agency to better manage its portfolio of investments, projects, and programs and to track each activity's effectiveness in delivering health impact.

Facility improvements, including four new buildings that opened in September 2005, are reducing rental expenses, offering access to better working environments for more staff, and providing state-of-the-art lab facilities so that research can be carried out more swiftly, safely, and effectively.

"We ought to be able to tell the American people the health impact we are having, and we should continuously improve that impact."

To help implement these improvements, CDC has hired seven Chief Management Officials. They have a broad responsibility for improving operations throughout the agency and measuring their progress. As a team that includes the directors of all CDC's business service offices, they are setting our operational goals and leading the way to improve our business practices.

CDC has scored the highest level on all areas of the President's Management Agenda.

FY 2005 has been an exciting time to be at CDC, and we believe we are better prepared than ever to face future challenges. If you have thoughts to share, please e-mail us at cdcbusinessservices@cdc.gov. Thank you for taking the time to know us better.

William H. Gimson, MBA
Chief Operating Officer

Business Improvements

Consolidating Operations for Greater Health Impact

CDC's increased focus on customer service improvements continued to drive changes in the way we did business in FY 2005. The following are key areas where improvements were realized in FY 2005.

Competition between the public and private sectors drives improved performance and efficiency of federal programs. As part of the President's Management Agenda, each federal agency must meet goals for this initiative, commonly referred to as competitive sourcing. CDC has met the competitive sourcing goals established by the Office of Management and Budget every year since they were established in 2001. Competitive sourcing has yielded an annual cost savings of \$8.4 million.

In 2005, CDC's bids to retain services in all three areas reviewed for competitive sourcing were successful. This means that the agency will continue to use federal employees to provide the services that were studied in the following job series:

- Computer Clerks and Support.
- Statistical Support.
- Writing and Editorial Services.

CDC's Information Technology Services Office continued its restructuring in FY 2005. The restructuring has already saved the agency \$34 million. Measurements of success include cost efficiency, staffing efficiency, service availability, and service quality.

New Tools Make Fiscal Management More Effective

To help make better, more objective funding decisions, CDC introduced in FY 2005 a Web-enabled knowledge tool that pulls together agencywide budget, strategy, and extramural information.

The tool provides CDC leaders with the information they need to manage complex portfolios of public health activities to achieve CDC's health protection goals. For the first time, every manager within CDC will be able to see narrative descriptions and budget information on all projects across the agency. This knowledge will help eliminate redundancy and waste, as well as encourage broader collaboration.

On another front, CDC became the first operating division in HHS to implement the Unified Financial Management System (UFMS). Since switching to UFMS in April 2005, CDC continues to upgrade fiscal management activities that bridge UFMS to the analytic and reporting tools necessary to respond to complex financial management requirements. From April through September 2005, CDC has processed 176,833 payments to date and is seeing the benefits of automated funds control in stronger financial management practices and internal controls.

In 2006 and beyond, we expect the integration of UFMS and the knowledge tool to strengthen our ability to objectively measure and demonstrate the health impact of our programs and grants as well as improve the ability to target investments in areas yielding the greatest health impact.





Building On Past Performance, Planning for Future Vaccine Needs

On any given day, CDC staff are working to create a better way to deliver vaccines, provide life-saving information for victims of natural disasters, or prepare for the next infectious disease outbreak or terrorist attack. CDC operations must be flexible enough to meet these diverse challenges while seeking continuous and measurable improvement in our business processes.

In 2005, CDC began testing new methods to improve

efficiency in our vaccine distribution system. The new just-in-time distribution model will allow CDC to reduce warehouse space and vaccine inventory for an estimated one-time savings of \$150 million.

CDC will also realize cost savings annually by reducing the handling required for each shipment and by reducing vaccine waste and spoilage.

CDC Governance Gets Networked

As part of CDC's restructuring, a system of networked governance has been established. The top-level leadership groups govern the agency's overall direction. A larger array of specific topic, functional, and project groups work together to network, coordinate, and move the agency's agenda forward.

The Executive Leadership Board (ELB) makes strategic decisions about the key aspects of CDC's direction, policy, investments covering science, programs, and operations. These top-level managers make decisions from an agency-wide perspective. The ELB comprises the CDC Director, Directors of the Coordinating Centers and Offices, and other key senior agency leaders.

The Management Council (MC) governs CDC's management practices in support of the strategic direction established by the ELB. The MC makes recommendations to the ELB about fiscal management and agency operations. Members are CDC's Chief Operating Officer, Deputy Chief Operating Officer, Chief Financial Officer, Chief

Information Officer, Business Service Office Directors, and Chief Management Officials for the Coordinating Centers and Offices.

The Center Leadership Council (CLC) oversees the quality, impact, and integrity of CDC's scientific and public health programs. The CLC informs the ELB of important and impending scientific, program, or policy issues. The CLC also solicits input from the Division Directors' Council, Advisory Committees, extramural experts, and other stakeholders when needed. Members are the Directors of CDC's 12 National Centers, Institute, and Offices (CIOs).

The Division Director's Council and Steering Committee (DDC and DDSC) provide guidance and recommendations to CDC leadership and management officials to enhance the efficiency and effectiveness of divisions. All CDC Division Directors are members of the Council. Membership on the Steering Committee includes representatives of each CIO, selected by the Division Directors of each CIO. This group advises both the CLC and the ELB.

A Journal Ahead of Its Time—10 Years Running

The First Decade

In 1995, CDC took a bold step—to publish an online journal at a time when the world wide web was not so wide and high-speed connections were not so speedy. Today, 10 years old and growing, *Emerging Infectious Diseases*® (EID) has emerged as a leader in the field of electronic publishing.

If submissions and subscriptions are a measure of reader interest, EID has enjoyed much success during its first decade. Readership has grown from 3,000 subscribers in 1995 to more than 45,000 in 2005 while submissions are increasing to more than 140 per month. Indeed, the journal is the fourth most cited of 41 infectious disease journals.

Electronic publishing, the dynamic concept driving EID, has made huge strides during the journal's first decade. Ahead-of-print publication, a founding feature of EID, is now common practice in the scientific journal community. In addition, multiple links to references, databases, and other relevant information have become standard. Interactive features and instant access to authors and editors have revolutionized scientific dialogue.

The Next Decade

As EID begins its second decade, its primary goal remains to communicate the threat of emerging infections worldwide and reduce the global impact of these infections, particularly among the young, the old, and the immunocompromised.

From a public health perspective, the world's current situation is every bit as volatile as it was 10 years ago, perhaps even more so. New infectious diseases and etiologic agents (e.g., avian influenza, Nipah virus infection, SARS) continue to surface, while other diseases are finding new niches.

As predicted within the public health community, multidrug-resistant bacterial infections have become increasingly commonplace, yet development of new antimicrobial drugs has failed to keep pace. Against this backdrop of naturally occurring problems, intentional release of pathogenic organisms has surfaced as a threat to public health and global security.

As it continues to evolve and establish itself as a premier CDC publication, EID will cover these and other public health developments, fulfilling its mission to stay ahead of the rising curve of infectious diseases.



EID by Numbers

- 20,000** print subscribers
- 25,000** electronic subscribers from 111 countries
- 2,000** reviewers
- 1,700** submissions per year
- 35–40** articles per issue
- 4th** most cited infectious disease journal

"Clearly, broader coalitions are needed, and communication must improve if we are to get ahead of the curve. This new periodical is part of the overall strategy to draw worldwide attention to emerging infections and improve communication."

Former CDC Director David Satcher, MD, from an editorial in the premier edition.



CDC's Health Protection **Goals**

CDC is committed to improving people's health. To do so, the agency is defining specific health impact goals to prioritize and focus its work and investments and measure progress.

Healthy People in Every Stage of Life

All people, and especially those at greater risk of health disparities, will achieve their optimal lifespan with the best possible quality of health in every stage of life.

Healthy People in Healthy Places

The places where people live, work, learn, and play will protect and promote their health and safety, especially those at greater risk of health disparities.

People Prepared for Emerging Health Threats

People in all communities will be protected from infectious, occupational, environmental, and terrorist threats.

Healthy People in a Healthy World

People around the world will live safer, healthier and longer lives through health promotion, health protection, and health diplomacy.