## It Really Is a Matter of Health for Life

*CDC's daily work is essential to the health of America, and the world. Because of CDC, people are healthier ... safer ... more productive ... and happier. Six strategic imperatives are the foundation of all our efforts.*

**1. HEALTH IMPACT FOCUS:** Align CDC's strategies, goals, and performance to have the maximum impact on people'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 that people need to protect their health now and in the future.

**4. LEADERSHIP:** Leverage our unique capabilities, partnerships, and networks to improve the health system.

**5. GLOBAL HEALTH IMPACT:** Extend our 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 investments in us.

*Let us know how you think we're doing. Log on to www.cdc.gov and send us a note. Or call 1-800-CDC -INFO. We look forward to hearing from you.*

# CDC

## Protecting Health

*for Life*

THE STATE OF THE CDC, FISCAL YEAR 2004.

CENTERS FOR DISEASE CONTROL AND PREVENTION

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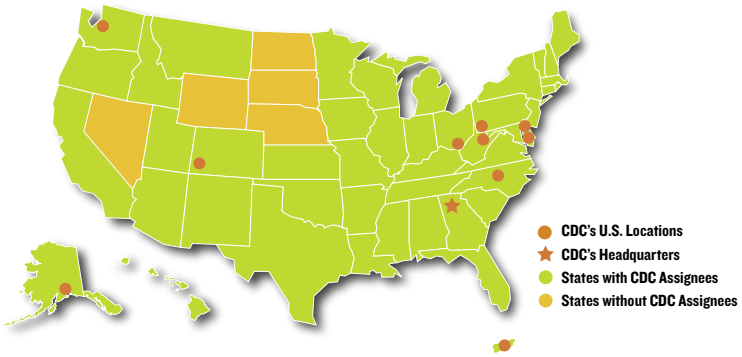
*Learn even more about how CDC protects health for life with this interactive CD-ROM. Inside, you'll find CDC fiscal and program summaries by state; an interactive calendar highlighting key activities and events of 2004; printable copies of the 2003 and 2004 annual reports; and more.*


*You can contact CDC by phone or on the web:*
*1-800-CDC-INFO (1-800-232-4636)*
*404-639-3286 (media inquiries)*
*202-690-8598 (CDC Washington office)*
*www.cdc.gov*



March 2005

## Our Job Gets Bigger Every Second of Every Day




***1 Birth every 8 seconds - 1 Death every 13 seconds + 1 International migrant (net) every 24 seconds = Net gain of 1 person every 10 seconds***

America's population is now nearly 300,000,000 and grows by 1 person every 10 seconds:

- **6/minute**
- **360/hour**
- **8,640/day**
- **3,153,600/year**

America is more diverse, growing older, and on the move:

- By 2010, nearly one-third of Americans will be people of color: Hispanics, African Americans, Asian Americans and Pacific Islanders, and Native Americans. Hispanic and Asian populations are growing faster than other groups.
- More than 13% of the population will be older than 65 by 2010, and more than 18% by 2025.
- Between 2002 and 2003, 40 million people moved. Young adults ages 20–29 relocated the most: 33% moved within that time period.

## CDC: A Healthy Return on Investment

### For less than 7¢ per person a day in FY04, CDC programs:

- Funded research into how to prevent our highest priority health threats at 33 Prevention Research Centers across the country.
- Increased by 20% Latinas' understanding of the importance of folic acid to prevent serious birth defects of the brain and spine.
- Reduced mother-to-child AIDS cases in America to just 58 in calendar year 2003 — down 94% from a peak of 912 in 1992.
- Vaccinated more than 45% of kids in the U.S. through childhood immunization programs.
- Increased 9- and 10-year-old kids' physical activity levels more than 34% through our multimedia campaign: VERB — It's What You Do™.
- Contributed to reducing America's teenage birth rate for the 11th year in a row.

*Learn more about the healthy return on investment in CDC in the following pages.*

CDC
CENTERS FOR DISEASE
AND PREVENT

## YOU CAN COUNT ON CDC

Public health depends on counting: the number of new cases, the rate of injury, the percentage of success, the rank of diseases and chronic illnesses that kill Americans. Counting is essential, but so is doing something with the numbers. CDC counts — and acts. To give you an idea of the variety of CDC's health protection responsibilities, some noteworthy numbers, 0–100, from Fiscal Year 2004.

| | |
|---|---|
| **0** | Deaths in the U.S. from SARS, October 2003–September 2004 |
| **1** | The number of steps it takes to get started toward a healthier lifestyle |
| **2** | Cases of Lyme disease reported to CDC from Alaska in 2004 |
| **4** | People killed by rabies transmitted through transplanted organs or tissues in 2004 |
| **8** | People in America die each day, on average, from fires |
| **11** | Consecutive years the teen birth rate has declined in the U.S. |
| **15** | Workers die each day from occupational injuries |
| **16** | States used CDC funds to implement health programs for Americans with disabilities |
| **18** | People in the U.S. die every hour, every day from injuries |
| **22** | States have laws requiring car booster seats for young children, a proven intervention to reduce injuries and fatalities |
| **23** | Dollars saved for every dollar spent on measles-mumps-rubella vaccine |
| **25** | Developing countries receive direct prevention, care, and treatment assistance through CDC's Global AIDS Program |
| **33** | Prevention Research Centers funded by CDC nationwide conducting applied research on disease prevention and control |
| **35** | States participate in ABLES — the Adult Blood Lead Epidemiology and Surveillance program funded by CDC |
| **40** | Years since the first Surgeon General's report on smoking stated that smoking causes cancer, heart disease, and leads to early death |
| **45** | Countries worldwide with CDC staff on non-emergency assignment |
| **48** | High school students die in motor vehicle crashes over Prom Weekend, on average |
| **50** | States receive CDC funding and technical assistance for better health protection |
| **57** | Cases of Q Fever reported to CDC, January 1–October 2, 2004 |
| **58** | Perinatal AIDS cases reported in the U.S. in 2004 |
| **59** | Deaths caused by West Nile virus in the U.S., January 1–October 1, 2004 |
| **61** | Average number of deaths per year caused by *E.coli* O157:H7 — mostly from eating undercooked, contaminated ground beef |
| **62** | State and major city health departments and other sentinel sites supported by CDC to detect, investigate, and mitigate health threats from bioterrorism |
| **67** | Cases of leprosy in the U.S. in 2003 |
| **70** | U.S. teens die annually from work-related injuries |
| **71** | Cases of tularemia in the U.S. reported to CDC, January 1– October 2, 2003 |
| **75** | Cases of acute, viral hepatitis A reported to CDC from North Carolina, January 1-October 2, 2004 |
| **79** | Cases of primary and secondary syphilis among women reported to CDC from Louisiana in calendar year 2003 |
| **80** | Projected price in dollars for a single dose of meningococcal vaccine |
| **81** | People ages 10–24 commit suicide each week, on average |
| **86** | Children ages 5–14 die each year, on average, from nonmalignant neoplasms |
| **88** | Cases of cryptosporidiosis reported to CDC from New York City, January 1–September 27, 2003 |
| **89** | EIS Officers — CDC's "disease detectives" — in the class of 2004 |
| **92** | Estimated number of children 5 and younger dying from influenza each year, on average |
| **93** | Epi-Aids in FY04 — immediate deployments of CDC's disease detectives to solve public health outbreaks |
| **94** | Cases of pertussis reported to CDC from Florida, January 1–October 2, 2004 |
| **95** | Cases of Rocky Mountain Spotted Fever reported from Maryland to CDC in 2004 |
| **100** | Cases of toxic shock syndrome in the U.S., January 1–October 2, 2004 |

## Hello!

Welcome to *The State of the CDC, Fiscal Year 2004,* our annual health protection impact report.

Every day CDC's extraordinary team of dedicated men and women works around the clock — and around the globe — to protect Americans' health. SARS spreads in Asia, hemorrhagic fever spreads in Africa, tuberculosis spreads in Russia, and these illnesses can be in America in less than half a day. The flight from Shanghai to Los Angeles is about 11 hours ... from Dakar, Senegal, through New York to Washington, DC, 11 hours ... from Vladivostock to Seattle, about 15 hours, via Seoul and San Francisco. The 21st century world is small, and getting even smaller each day.

CDC faces big challenges as naturally occurring and deliberate threats increase both at home and abroad in this small world, but we are undaunted. As you will see in this report, the CDC team — from Alaska to Zambia — is working faster and more effectively to ensure a safer, healthier America.

But health is more than the absence of threats of disease and disability ... it's a precious resource that helps us to create productive and satisfying lives for ourselves and our families. And although Americans and people around the world place a very high value on health, we all too often fail to protect it. Indeed, our personal and financial investments in health protection are overshadowed by our investments in restoring health once it is lost.

> **"The vast majority of health spending, as much as 95 percent by some estimates, is directed toward medical care and biomedical research."**
>
> ***The Future of the Public's Health in the 21st Century***
> **The Institute of Medicine, 2003**

Risks to health come in many forms: personal lifestyles, environmental exposures, workplace hazards, educational disadvantages, socioeconomic challenges.

The good news is that these risks to health are reducible. Together with our sister agencies in the Department of Health and Human Services and our wonderful public health partners, CDC is committed to helping people and communities promote health and — as you will read in this report — we're already taking major steps to do so. Nevertheless, the challenge is great, the situation is urgent, and the time for even more action is now!

Simply stated, CDC's mission to protect America's health rests on two overarching goals:

- All people, and especially those at greatest risk for health disparities, will achieve their optimal lifespan with the best possible quality of health in every stage of life.
- People in all communities will be protected from infectious, occupational, environmental, and terrorist threats.

To meet these goals in our small and rapidly transforming world, we're transforming CDC. Fiscal Year 2004 was a time of exciting — and often difficult — change at CDC as we undertook our first major strategic development initiative in more than 20 years. The frame for change is our "Futures Initiative," which is shaping CDC's future, and we hope will serve as a catalyst for innovation in the public health system.

CDC deserves its worldwide reputation as a leader in public health. But after seeking advice and insight from a wide variety of consumers, partners, and stakeholders, we learned we can be even better and do more, faster and more efficiently. By making changes while we are a strong and healthy organization, we're following the same prescription for prevention we promote day in and day out — in this case, a prescription for more science, more innovation, and most importantly, more health impact.

CDC's core values — accountability, respect, and integrity — aren't changing. These values epitomize the passion that motivates the men and women of CDC to do far more than what is required, to go anywhere in the world at any time a health threat emerges, and to be exemplars of excellence in science and in service. The changes being made through the Futures Initiative protect this passion and these values, but at the same time strengthen CDC's capabilities in the "new normal" of globalization, connectivity, and speed. CDC is evolving to a more efficient, more effective, and more networked organization that better recognizes and responds to those who need us. And we're changing our culture, so we can be even more successful, whether communicating results on the Internet or getting grants out the door.

CDC is changing on the outside as well. In FY04, our $1.5B, 10-year facilities modernization plan moved into high gear on 5 buildings. This wise investment of tax dollars allows CDC to replace dilapidated and aging buildings with modern, safe, and secure facilities to support our expanded role in fighting the health threats of the 21st century.

CDC's transformation is ongoing, but results are already reflected in this report. For example, we've developed a set of health protection goals based on 5 lifestages (infants and toddlers, children, adolescents, adults, and older adults). We're developing a list of key performance indicators to measure progress in meeting those goals. And we're defining specific goals for our cross-cutting preparedness activities as well. These goals will set the direction for CDC in years to come. We will be using them not only for resource allocation, but for making decisions about our research agenda and how we continue to recruit, train, and keep the best and brightest workforce to deliver cutting-edge health protection programs.

In this report you'll also see the steady progress we're making in business functions as CDC implements the President's Management Agenda, making government more efficient, effective, and accountable. A special section on this critical effort, the Chief Operating Officer's report, starts on page 64.

By implementing the recommendations from the Futures Initiative and proven business improvement practices, we've set the foundation for an even better CDC, with even more public health impact. Despite these changes, our underlying standards have not changed; in fact, we've redoubled our focus on achieving excellence in science, excellence in service, excellence in strategy, and excellence in the systems that support these activities.

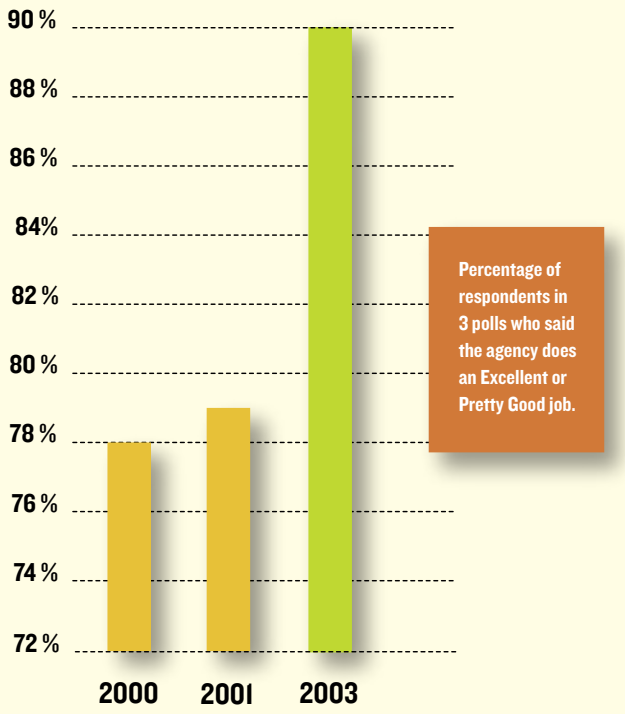
### At CDC, these core values are central to our work:

**ACCOUNTABILITY —** As diligent stewards of public trust and public funds, we act decisively and compassionately in service to the people's health. We ensure that our research and our services are based on sound science and meet real public needs to achieve our public health goals.

**RESPECT —** We respect and understand our interdependence with all people both inside the agency and throughout the world, treating them and their contributions with dignity and valuing individual and cultural diversity. We are committed to achieving a diverse workforce at all levels of the organization.

**INTEGRITY —** We are honest and ethical in all we do. We will do what we say. We prize scientific integrity and professional excellence.

### CDC Earns America's Trust




*Source: The Harris Poll; Dec. 3, 2003*

**At the beginning of this fiscal year, The Harris Poll conducted a national survey about the work of 11 different federal government agencies. CDC topped the list — for both understanding and appreciation.**

- **Nearly all the people surveyed said they know what CDC does: 96% — up from 85% in 2001.**
- **And fully 90% of those people gave CDC high marks for its work — jumping up from 79% in 2001.**

CDC is an exciting place to work, constantly in motion, and it makes a real difference in the world. I am privileged to serve as the director. The men and women at CDC are highly skilled, dedicated, and caring. The achievements found in these pages are just some of the many ways they are putting the American people's money and trust to good use.

I hope you will be both informed and inspired, as I am, by the wealth of activities and outcomes we share with you in *The State of the CDC, Fiscal Year 2004.* Thank you for taking the time to get to know us better. Let us know how we can serve you in the coming year!

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

**Visit CDC on the web at www.cdc.gov**

# The Future Is Now

*In the 21st century, CDC's new strategic orientation reflects public health's first and most vital mission: to protect health.*

## CDC'S TWO OVERARCHING HEALTH PROTECTION GOALS:

**GOAL # 1:** All people, and especially those at greatest risk for health disparities, will achieve their optimal lifespan with the best possible quality of health in every stage of life. **GOAL # 2:** People in all communities will be protected from infectious, occupational, environmental, and terrorist threats.

### CDC's Futures Initiative: Redefining, Restructuring, Reorienting

America is a very different place from what it was just a few years ago.

- Our population is growing older and more diverse.
- Health care costs are soaring.
- Emerging infectious diseases and terrorism make us more vulnerable to outside threats.
- Diabetes, hypertension, and other chronic diseases threaten to erode years of steady gains in Americans' quality of life.

Effectively addressing those health threats, and the ones as yet unknown, requires CDC to work more effectively and efficiently ... faster ... with a more diverse array of allies than ever before.

CDC Director Julie L. Gerberding launched a strategic process, the Futures Initiative, in June 2003. Thus began an unprecedented, top-to-bottom review of CDC's performance, organization, and operations that brought together :

- ***Customers***
- ***Decision-makers***
- ***Partners***
- ***Stakeholders***
- ***Employees***

This fresh examination of CDC's functions identified what CDC does well, and what it can do better.

### We learned that CDC must:

- Respond to increased consumer demand for credible public health information and services. We need to listen better to our customers and our partners, and eliminate the organizational silos hindering communication and effectiveness.
- Strengthen ourselves as the leader in protecting health and quality of life. CDC is well known for its work in infectious disease, but needs to take a more visible role in chronic diseases, environmental health threats, injuries, and other risks to health, and needs to focus on health protection, rather than on controlling health problems once they arise.
- Learn how to modernize management and be accountable for the decisions we make. Beyond explaining how we improve public health, we must be able to measure and document it.

These and other recommendations from the Futures Initiative have helped set the course for CDC's future. And that future begins with defining the two overarching goals above, which will direct our priority decisions — how we spend our money, allocate our personnel, and evolve our workforce.

### Working Smarter, Faster, and More Effectively

Leveraging gains in multiple sectors to increase our health protection impact, CDC is transitioning from a strategy of funding and managing disease control programs. Our new orientation is toward leveraging and influencing others working in health, including:

- Public health
- Academic communities
- The public sector providing medical care
- Business
- Other government services
- Nongovernmental organizations

CDC is in a unique position to encourage each component to work together, mutually reinforcing and extending the reach and impact of all — and better protecting all Americans' health.

CDC is transforming itself to meet the public health challenges of the 21st century. We're redefining our mission, restructuring the way we conduct business, and reorienting our goals. We're changing because we must respond faster and more efficiently as we protect our nation's health in a small and transforming world.

### A More Holistic, Lifestage Approach Toward Health Protection

The people whose health we're working to safeguard have to be drafted into the fight, and armed with the tools they need to protect and defend health, for themselves and those they care for.

What we've learned through the Futures Initiative is something marketers have known for decades: Consumers are much more likely to pay attention to messages that have personal meaning. People's wants, needs, and desires vary by age and stage of life, and so do their health protection requirements.

Beginning in FY04, CDC is framing its health goals in this more meaningful context of people's lifestages:

- ***Infants and Toddlers*** *(ages 0-3)*
- ***Children*** *(ages 4-11)*
- ***Adolescents*** *(ages 12-19)*
- ***Adults*** *(ages 20-49)*
- ***Older Adults*** *(ages 50+)*

Each lifestage will have measurable objectives and key performance indicators, and each center within CDC will be held accountable for meeting them.

Read more about lifestages goals, investments, and programs beginning on page 12.

In addition to lifestage-specific health goals, CDC is also creating explicit goals for preparedness that will detail our actions to prepare for, detect and verify, respond to, and recover from naturally occurring and deliberate threats to people's wellbeing. A third focus for goals development is places – covering safety and health for Americans at home, work, and play. Finally, we're also developing goals to guide our international health efforts. Together with the lifestage health goals, these three strategic spheres of influence will form a comprehensive blueprint for health protection.

### TRANSITIONING CDC'S STRATEGIC ORIENTATION

| TRANSITIONING FROM: | TRANSITIONING TO: |
|---|---|
| Disease orientation | Health protection focus |
| Designing and implementing sponsored programs | Informing and guiding health system actors |
| Allocating agency resources | Leveraging resources to steer larger health system investments |
| Emphasis on clinical prevention | Focus on continuum of prevention and health protection actions |
| Transaction-based relationships | Partnerships and strategic alliances |
| Program requirements | Incentives for participation/cooperation |
| Interacting with health care and public health providers | Engaging the full array of health system actors, including communities and the private sector |
| Collecting and analyzing health data | Creating integrated health information systems |
| Issuing advisories and guidelines | Building decision-support systems |

# Public Health Research

*Research for Health Protection ... Research for Life* — CDC's extramural health protection research and development programs had a combined portfolio of nearly $357M in FY04. The potential return on that investment is incalculable.

■ Research is the ultimate foundation for effective public health programs, and for CDC's health protection and preparedness goals. Research will provide new understanding, new tools, new evidence-based interventions, and new dissemination strategies that result in real and important impacts on people's health.

■ Right now, science has defined interventions to prevent only about 25% of the risk factors associated with America's leading causes of death and illness. Our health protection research — conducted here at CDC by our scientists and at academic institutions through sponsored research — aims to find tried-and-true solutions for the other 75%.

■ Applied research conducted at CDC and sponsored by CDC in universities across America holds the promise of beating some of our nation's most tenacious health problems: infectious diseases, devastating birth defects, obesity, heart disease, and other chronic conditions.

■ We're funding research to keep as many people as we can healthy, and return those who are ill to optimal health. We're collaborating with academic researchers, and also with state and local health departments and education agencies and national and community-based organizations. Through these strategic alliances, promising research is translated into practical, cost-effective health protection programs for communities and the people who live in them.

## Centers of Excellence in Health Promotion Economics

**Determining the most effective — and cost-effective — health protection strategies is essential to our nation's physical and fiscal health. With CDC support, two Centers of Excellence in Health Promotion Economics will add critical knowledge to the science of health protection.**

**ILLINOIS**

**Chicago Center of Excellence in Health Promotion Economics, University of Chicago. The Center will develop and apply economic methods to advance knowledge about the role of economic factors in health behaviors, the value of health promotion initiatives, and health disparities.**

**NORTH CAROLINA**

**Center of Excellence in Health Promotion Economics, Research Triangle Institute. The Center's Economics Core will develop and refine economic methods and applications for health promotion economics, with an emphasis on chronic diseases. The Translation Core will test economic theory in the context of health promotion, integrate economic tools and methods into ongoing health promotion interventions, and promote health economics in public health.**

### New in FY04: CDC's Health Protection Research Intitiative

In FY04, CDC rolled out the Health Protection Research Initiative, a goal-directed effort with a prioritized and targeted agenda for engaging new researchers to help solve the nation's thorniest public health problems by:

- Developing effective workplace and community health protection programs to address the leading killers of Americans.
- Supporting critical training in public health research for individuals and institutions, to build our nation's corps of diverse, well-trained health scientists.
- Establishing two Centers of Excellence devoted to the economics of health promotion, particularly cost-effectiveness research and analysis.

This year, CDC awarded nearly $22M to 57 varied health protection projects in 22 states. Collectively, these multi-year investigations will add to our nation's store of effective, science-based interventions. They'll save money and, more importantly, save lives — the ultimate return on investment.

- 31 grants (R01) went to university and institutional investigators who will evaluate and improve a variety of health promotion strategies in workplace settings — sleep disorders, wellness programs, smoking cessation, physical fitness, weight reduction, mental health, and others.
- 21 grants (K01) support career development experiences among current research scientists to address CDC's health protection research priorities — emergency preparedness, outbreak investigations, asthma, racial and ethnic disparities, vaccine-preventable diseases, community design and health, and others.
- 3 institutional awards (T01) are directed to develop or enhance training programs that offer research training opportunities in health research for individuals selected by the institutions.
- 2 institutional awards (P30) established the Centers of Excellence in Health Promotion Economics that will explore economic solutions to developing, evaluating, and implementing health promotion programs and policies and assessing their cost effectiveness.

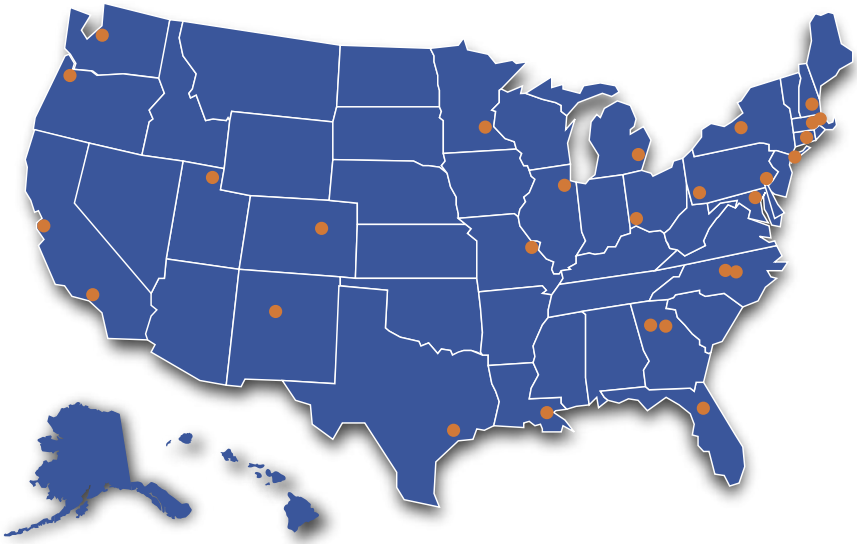
*For more information, log on to www.cdc.gov/od/hpri/*

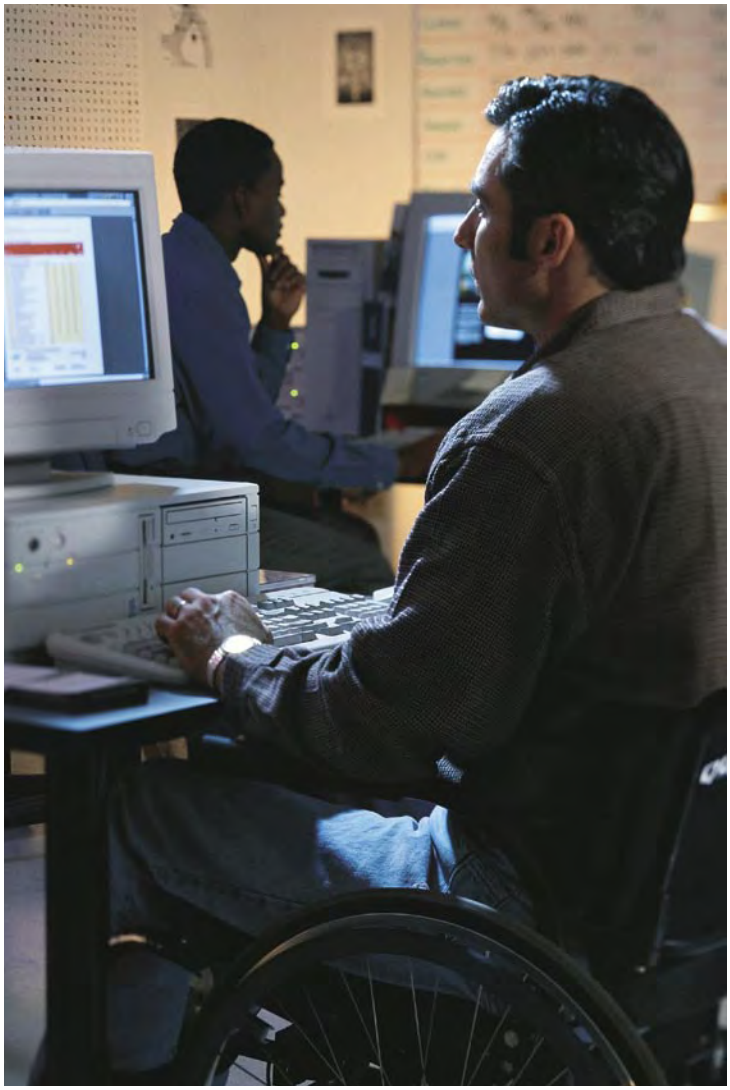
### YEAR ONE AWARD AMOUNTS

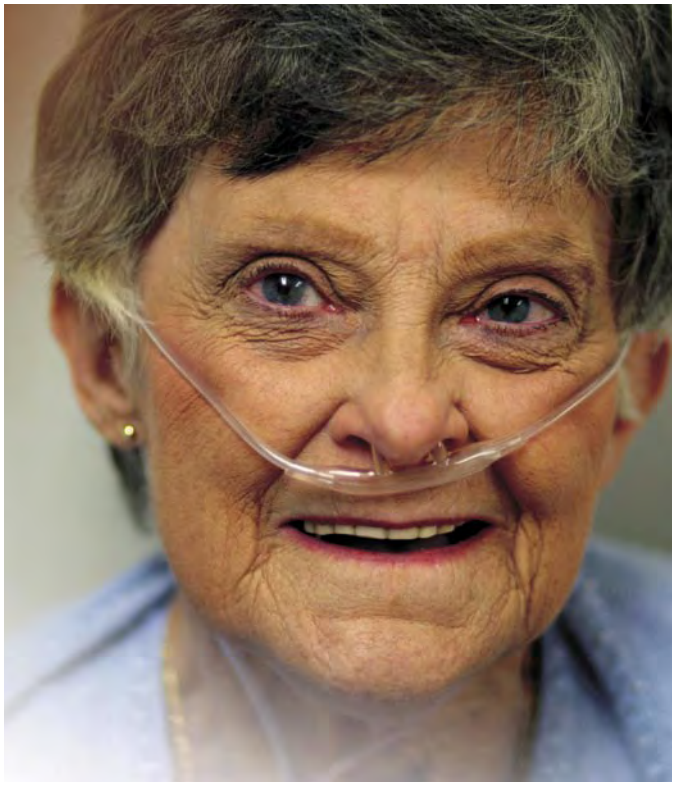
| | |
|---|---|
| Investigator-Initiated Research (R01); 31 projects | $12,221,656 |
| Mentored Researcher Training (K01); 21 projects | 5,638,606 |
| Institutional Research Training (T01); 3 projects | 1,878,829 |
| Centers of Excellence in Health Protection Economics (P30); 2 projects | 2,000,641 |
| 57 projects: Total = | $21,739,732 |

## Health Protection Research Initiative

*FY04 Awardees*







## Finding Out What Works At Work

The scope of newly funded research programs examining worksite health promotion is extensive, to assess a broad range of strategies, including lifestage targeting for workers, such as:

- Cost-Effective Health Promotion for Older Workers, University of Illinois. This project will compare the cost effectiveness of 2 health promotion and behavioral change interventions among employees 50–59 years.
- Preventing Tobacco Use in Young Latino Workers in Texas, Baylor University College of Medicine. This project focuses on reducing tobacco use among at-risk Latino young workers ages 18–25, by using mass media, peer networking, and web-based health communications.

## The Next Generation of Public Health

Assembling the next generation of public health researchers is a long-term, ongoing task. In FY04, CDC expanded efforts to help bolster the ranks of America's best scientists, funding 24 individuals and institutions to conduct mentored research. Among the projects are these:

- School-based Emergency Preparedness, Children's Hospital Los Angeles. This school district-based project assesses emergency preparedness theories and methods for analyzing and evaluating qualitative and quantitative data.
- Improving Health Literacy to Reduce Asthma Disparities, Northwestern University. The researcher will develop and test multimedia print materials delivering culturally appropriate, low-literacy information designed to improve asthma coping skills and health outcomes, targeting adults with asthma and adult caregivers of asthmatic children.
- Genetic and Environmental Factors in Pneumococcal Conjugate Vaccine (PCV7) Effect, Boston University Medical Campus. Three studies investigate the role of candidate genes and vaccine response using cases of childhood invasive pneumococcal disease detected through enhanced laboratory-based public health surveillance.

# Infants and Toddlers

*Starting Off Right* — In 2002, U.S. life expectancy at birth was at record-high levels: 80 years for girls and 75 years for boys. But far too many of our children don't live through birth, infancy, and toddler days. CDC's vital statistics show that more than 32,000 children ages 0–3 died in 2002. We're working to find out why and how to keep those newly arrived into the world safe, healthy, and free from harm. Making sure adults have the information and skills they need to do the right thing and keep kids safe is one of CDC's top priorities. Before and after they're born infants and toddlers depend on adults to protect them:

- To take care of them before and during pregnancy, by eating the right foods, taking folic acid daily, and not drinking or smoking.

- To put them in car seats.
- To not smoke around them as they grow.
- To take them for needed shots and other health care.

- To make sure babies sleep in the right kind of bed and on their backs.
- To help them learn, play, and explore their world safely.

**PROPOSED HEALTH PROTECTION GOALS FOR INFANTS AND TODDLERS (Ages 0-3)**

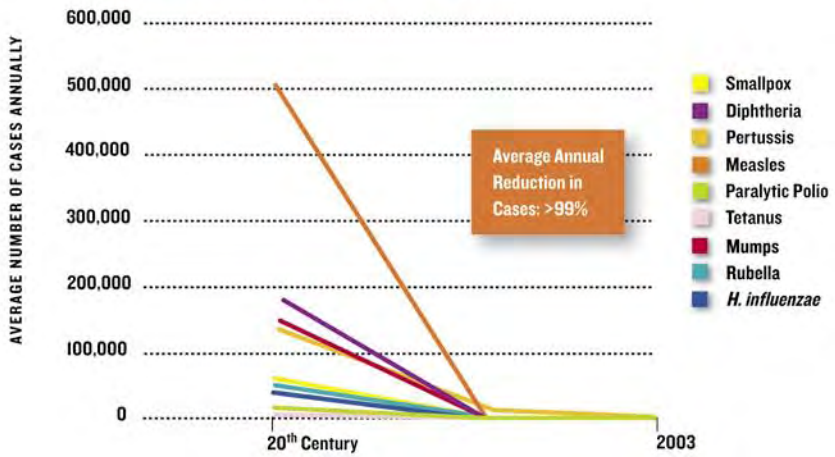
**GOAL # 1:**
The U.S. is 1 of 5 countries with the highest rates of infant survival.

**GOAL # 2:**
At least 99% of infants and toddlers are in very good or excellent health.

**GOAL # 3:**
At least 90% of infants and toddlers with developmental conditions are promptly identified and treated.

**GOAL # 4:**
Mortality from injuries and other causes is reduced 25% among children 1–3 years, saving at least 1,000 lives per year.

## Vaccination Saves Lives




**7 childhood diseases have been reduced by 99% or more, thanks to vaccination.**

### Public Health's Biggest Success Story Gets Bigger

In FY04, CDC and our partners celebrated the 50th anniversary of the first national polio vaccine trial. And CDC reported that U.S. childhood immunizations were at record-high levels.

In 2003, nearly 80% of children 2 years and younger had received the full series of routine childhood vaccines, up from 75% in 2002. And we posted strong increases in coverage for the newer chickenpox and pneumococcal vaccines.

CDC's childhood immunization programs serve more than 50% of U.S. children. Vaccines for Children, our largest public-private partnership, provides vaccines without cost to program providers for children who are uninsured, Medicaid recipients, Native Americans, and Alaska Natives at their doctors' offices. VFC also provides shots for children whose insurance does not cover vaccines at participating federally-qualified health centers and rural health clinics.

VFC is a critical part of the dramatic decrease in immunization disparities that existed among children in the late 1980's and early 1990's. But wide gaps in coverage are still seen in some states and urban areas.

**Some of the most common causes of death for children 3 and younger actually originate in pregnancy. Problems like low birth weight and pre-term birth result from inadequate nutrition during pregnancy ... from smoking ... alcohol and drug use ... and inadequate prenatal care to treat high blood pressure, infections, and other conditions.**

**Among the most distressing causes of death for young kids are unintentional injuries and homicide. Vaccine-preventable illnesses and deaths are also troubling — because they're easily avoidable. Most cases of spina bifida and other spine and brain defects can also be prevented if mothers-to-be get enough folic acid in their diet before and during early pregnancy. The risk of SIDS (sudden infant death syndrome) is also reducible, with parent education and behavior change, like stopping smoking and making sure babies sleep in the right kind of bed and on their backs.**

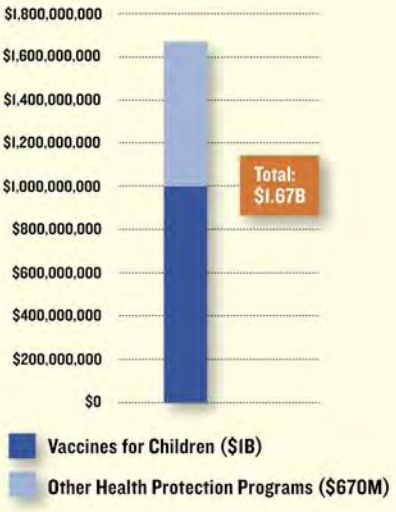
**In FY04, CDC was able to invest $1.67B in research and frontline programs to keep babies and toddlers healthy — about 23% of our $7B budget.**

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

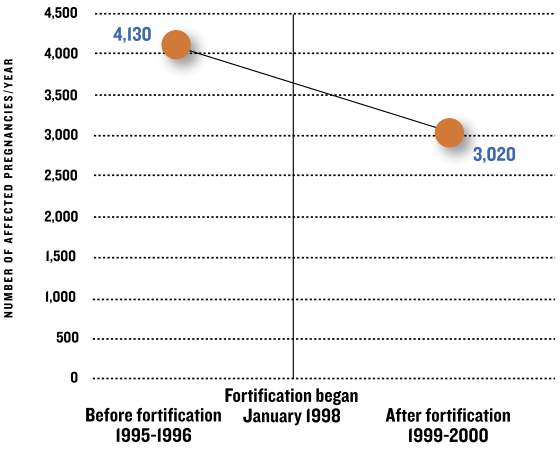
- **Perinatal Problems (44%)** *E.g., early labor, low birthweight, SIDS*
- **Congenital Abnormalities (19%)** *Malformations, deformations, genetic problems*
- **Unintentional Injuries (7%)** *Car wrecks, drownings, falls, etc.*
- **Heart Diseases (2%)** *Problems with heart structure; blood supply*
- **Homicide (2%)** *Deliberate assaults and killings*
- **Septicemia (1%)** *Infections in the blood; blood poisoning*
- **Cancers (1%)**
- **Flu and Pneumonia (1%)**
- **All Other Causes (<1% each) Combined (22%)**

*Percentages rounded to nearest whole number*

### CDC's FY04 Estimated Investment in Infants and Toddlers



## NTD-Affected Pregnancies Before and After Folic Acid Fortification



## Las Madres con Buena Salud Tienen Bebes Mas Sanos con Acido Folico

*(Healthy Mothers Have Healthier Babies with Folic Acid)*

**CHALLENGE:** Neural tube defects are serious birth defects of the brain or spine, resulting from the incomplete closing of the neural tube during the first couple of weeks of pregnancy, when most women don't even know they're pregnant. Hispanic women continue to have the highest incidence of NTDs in the U.S.

**CDC RESPONSE:** A simple B vitamin — folic acid — can drastically reduce the risk of devastating neural tube defects like spina bifida and anencephaly by 50% to 70%. But only when it's taken 1 month before conception and throughout the first trimester of pregnancy. In FY04, CDC reported a 27% decline in NTDs since folic acid fortification began in 1998, resulting in health care savings of about $425M annually. The reduction in the number of spina bifida cases alone accounted for $142M in direct health care savings.

The CDC Spanish Folic Acid Campaign (SFACES) is an intervention using both mass-media marketing (e.g., TV, radio, newspapers) and interpersonal communication on the local level to increase folic acid intake in this high-risk population.

**IMPACT:** SFACES increased Latinas' understanding of the importance of folic acid to prevent serious birth defects of the brain and spine, as well as the importance of timing: taking the vitamin before pregnancy. More important, it increased Latinas' intake of folic acid, demonstrating a 17% rise in multivitamin intake and a 7% increase in consumption of folate by itself.

## Keeping Babies Safe from Group B Strep

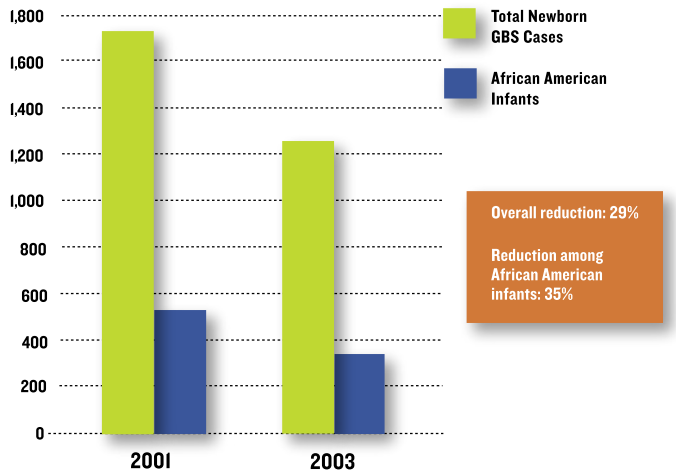
**CHALLENGE:** Group B streptococcus, a type of bacteria, is the most common cause of sepsis (blood infection) and meningitis (infection of the fluid and lining around the brain) for newborns and a frequent cause of newborn pneumonia.

**CDC RESPONSE:** Giving antibiotics to mothers during labor can prevent GBS infections in their babies. Since 1993 CDC's GBS program has used a multi-pronged prevention approach that includes:

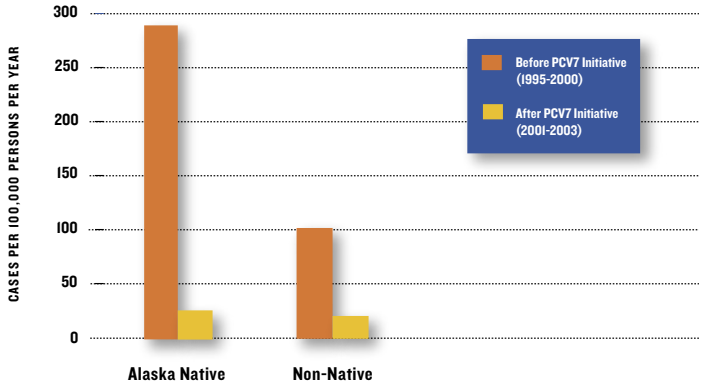
- Active surveillance to monitor newborn disease burden.
- Research into the most effective prevention strategy.
- Collaboration with partners to develop and update national prevention guidelines.
- Health communications outreach to GBS prevention partners and the general public.
- In 2002, CDC issued new prevention guidelines recommending GBS screening for all pregnant women.

**IMPACT:** In the year leading up to our new guidelines, more than 1,700 babies got sick because of GBS. Just 1 year after the guidelines, the number of newborns with GBS infections fell to 1,250. The most dramatic reduction was in African American newborns: In 2001, there were 546 GBS infections in African American infants. In 2003, there were 356 — a 35% reduction.

## Group B Strep in Newborn Before and After 2002 CDC Guidelines



**Invasive vaccine-type *S. pneumoniae* among Alaskan children <2 years**
*before and after PCV 7 initiative*




*Source: CDC/Arctic Investigations Program*

## North to the Future: Eliminating Health Disparity in Alaska's Kids

**CHALLENGE:** Each year, *Streptococcus pneumoniae,* also called pneumococcus, causes about 700 cases of meningitis, 17,000 cases of blood infections or other serious disease, and 4.9 million cases of otitis media (ear infections) in American kids younger than 5. In Alaska, Native children had a three-times greater risk of pneumococcal infections than non-Native children. In fact, Alaska Natives, particularly children younger than 2 and adults older than 65, have had some of the highest rates of invasive pneumococcal disease of any population worldwide.

**CDC RESPONSE:** CDC's Arctic Investigations Program, based in Anchorage, has been working with the Alaska Department of Health and Social Services to eliminate that disparity in kids through a pneumococcal conjugate vaccine (PCV7) initiative.

**IMPACT:** FY04, CDC surveillance showed:

- A 90% decline in invasive pneumococcal disease caused by strains covered by the vaccine among children younger than 2.
- The rates for Alaska Native and non-Native children are now equal.
- The PCV7 initiative prevented an estimated 92 cases of invasive pneumococcal disease and 46 cases of multi-drug resistant invasive disease among Alaskan children younger than 5.
- The PCV7 initiative reversed a 10-year trend of increasing antibiotic resistance — helping keep all Alaskans, young and old, safer and healthier.

## Get Smart: Know When Antibiotics Work

**CHALLENGE:** Ear infections are the most common bacterial illness among children and the most common illness treated with antibiotics, totaling more than 10 million prescriptions annually. But most ear infections get better without antibiotics, and overuse promotes antibiotic resistance, which makes infections harder to treat.

**CDC RESPONSE:** In FY04, CDC launched a national media campaign about antibiotic resistance. CDC's *GetSmart: Know When Antibiotics Work* campaign educates patients and providers about the dangers of over-prescribing antibiotics.

**IMPACT:** Last year, *GetSmart* reached 86 million people, and 27 sites across the country received CDC funds to support local campaigns.

# Children

> **It is in the national interest to have healthy children. Healthy children are more ready and able to learn and, in the longer term, are more likely to become healthy adults who will contribute as a productive citizenry and workforce to the continued vitality of society.**

*Children's Health, the Nation's Wealth*
Institute of Medicine, 2004

*Food for Thought* — Last year, corporations spent at least $15B on marketing to America's children, in a variety of ways and locations: television, the Internet, in-school promotions and sponsorships. By some estimates, children may see 40,000 television commercials a year. Food is commonly marketed to kids, and the items most forcefully targeted to children — fast food, carbonated soft drinks, breakfast cereals, snacks — are typically high in fat, sugar, and salt and low in nutrients.

Kids all too often have a steady diet of violence, as well, in the form of what the Federal Trade Commission called "pervasive and aggressive marketing of violent movies, music and electronic games to children."

## PROPOSED HEALTH PROTECTION GOALS FOR CHILDREN (Ages 4-11)

**GOAL # 1:**
At least 95% of children are in very good or excellent health.

**GOAL # 2:**
At least 95% of children have a healthy weight.

**GOAL # 3:**
At least 95% of children have no limitations in activity due to a chronic physical, mental, or emotional problem.

**GOAL # 4:**
Mortality from injuries and other causes is reduced 25%, saving at least an additional 1,000 lives per year.

## A Moving Experience

Children who learn to lead healthy lifestyles are more likely to be healthy adults. That's the basis for CDC's youth media campaign, VERB: It's What You Do™. Through an integrated marketing strategy using paid media, physical activity is presented as an opportunity to be active, play, and have fun. Partnerships with athletes, celebrities, recognized kids' brands, and national sports leagues contribute to VERB's "cool" image. Results from this award-winning, multicultural campaign showed a strong impact in FY04:

- 9–10 year olds engaged in 34% more free-time physical activity sessions as compared to those who never saw the campaign.
- 9–13 year old girls engaged in 27% more free-time physical activity sessions as compared to those girls who never saw the campaign.
- 9–13 year olds from low- to middle-income households ($25,000–$50,000) engaged in 25% more free-time physical activity sessions as compared to children from control households who never saw the campaign.

**Children ages 4–11 are in a constant tug-of-war between their need and desire for independence from adults who care for them and their need and desire for security and boundaries. Sometimes striking a balance is difficult, and the result can prove harmful. The leading cause of death for children in this age range is unintentional injury, accounting for 39% of all deaths — equal to the next 9 causes combined.**

**The habits that children grow into in this stage form the basis for adolescence and adulthood. Daily activities lay the foundation for health — or ill health — decades in the future. The number of children who are overweight continues to increase at an alarming rate.**

- **Among children and teens ages 6-19, 16% are overweight, triple the rate in 1980. And another 15% are at risk for becoming overweight.**
- **Overweight kids tend to become overweight adults, with a higher risk of developing serious health problems, including heart attack and stroke, type 2 diabetes, bowel cancer, and high blood pressure.**
- **All the problems aren't just later in life, though. Overweight kids are more at risk for diabetes. Diabetes presents unique issues for children. Things other kids take for granted — like going to a birthday party, playing sports, or staying overnight with friends — need careful planning. Every day, children with diabetes may need to take insulin or oral medication. They also need to check their blood glucose several times during the day and remember to make correct food choices.**

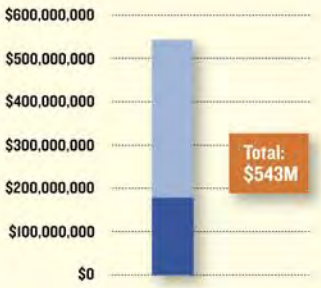
**In FY04 CDC invested $543M in children ages 4-11. Our research and programs focus on the here and now as well as the future: reducing preventable injuries and other leading causes of death and laying the groundwork for healthy adulthood through good nutrition, physical activity, and other health-protective behaviors, including abstaining from sex, drugs, and alcohol.**

### Leading Causes of Death, 2002
*(Ages 4-11)*

*Percentages rounded to nearest whole number*

- **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%)** *Problems with heart structure; blood supply*
- **Chronic Lower Respiratory Diseases (2%)**
- **Septicemia (2%)** *Infections in the blood; blood poisoning*
- **Flu and Pneumonia (1%)**
- **Non-malignant Tumors (1%)**
- **Cerebrovascular Diseases (1%)** *Problems with blood supply to the brain*
- **All Other Causes (<1% each) Combined (23%)**

### CDC's FY04 Estimated Investment in Children




- **Vaccines for Children ($1.69M)**
- **Other Health Protection Programs ($3.74M)**

## Protecting Kids from Violence at School

**CHALLENGE:** Bullying is a chronic problem in many schools. That was the case at Jefferson Elementary in Green Bay, Wisconsin. During the 2000–2001 school year, 29% of 4th–5th grade students said teasing others was OK, and nearly 10% said they bullied other kids.

**CDC RESPONSE:** The *Keep It Safe Project* is a schoolwide, multiyear project at Johnson Elementary that employs strategies to prevent bullying and harassment. Led by the Wisconsin Coalition Against Sexual Assault and funded by CDC, this program has transformed students' knowledge, attitudes, and behaviors.

**IMPACT:** Students at Jefferson Elementary no longer tolerate bullying.

- After taking part in the CDC-sponsored *Keep it Safe Project,* only 8% said it was OK to tease; just 2.6% of kids said they bullied.
- And teacher reports about misbehaviors dropped a remarkable 75%.

## When Father — or Mother — Doesn't Know Best

Drinking and driving don't mix — especially with kids in the car. A CDC study in FY04 showed that 68% of children killed in alcohol-related crashes were riding in the same car as the drinking driver. And 68% of the kids killed were riding unrestrained.

- Mothers Against Drunk Driving used the results from this study and a previous CDC study to raise public and decision-maker awareness about drinking drivers who transport children.
- MADD is working to strengthen child endangerment laws for those who drive under the influence and to boost enforce ment of child restraint laws.

## Bringing Safety Home

**CHALLENGE:** Unintentional injuries are the leading cause of death for children age 1 and older in the U.S. Each year between 20% and 25% of all children sustain a severe injury that requires medical attention, missing school, or bed rest.

**CDC RESPONSE:** The Johns Hopkins University Injury Control Research Center is taking to the streets to show low-income urban families how to keep children safe and healthy. The Mobile Safety Center travels to schools and clinics, churches, temples, mosques, and community events. CDC is funding a 3-year evaluation to assess effectiveness.

The 40-foot house-on-wheels has a kitchen, bedroom, stairs, and bathroom with engaging, interactive exhibits. Trained instructors teach parents and children how to prevent poisonings, falls, burns, strangulation, and other injuries at home, in cars, and in their neighborhood.

**IMPACT:** The van is located at the East Baltimore Medical Center 3 days per week and travels to community sites on other days. These additional locations are determined by community requests. It is anticipated that the van will educate between 50–100 visitors at community events. In the first 5 appearances at the clinic, the van had 101 visitors.

## Breathing Easier

**CHALLENGE:** Asthma is the most common long-term disease affecting U.S. children. CDC data released in FY04 showed that nearly 9 million children younger than 18 have been diagnosed with asthma and more than 4.2 million have had an asthma attack in the past year.

**CDC RESPONSE:** CDC is working to reduce the burden of asthma and give asthmatics and their families better quality of life, fewer emergency room visits, and lower health care costs. Recognizing asthma symptoms is the first step. But too many parents and other adults who interact with kids don't.

In rural LaPine, Oregon, for example, school district officials had identified only 1% of their students as having asthma, but faculty and staff felt sure the percentage was higher. Through the *Asthma Friendly Schools Initiative,* funded by CDC, school officials partnered with local health care professionals, starting in September 2003, to identify, monitor, and manage students with health problems like asthma.

**IMPACT:**

- By January 2004, all LaPine faculty and staff — even bus drivers — had participated in asthma awareness and management training.
- Schools held clinics twice a month to monitor and track students' conditions.
- By the end of the school year, clinic results confirmed the initial suspicions: More than 12% of LaPine's students had asthma.
- After just 1 month back at school in September 2004, officials noticed a marked decrease in absences among students diagnosed with asthma the preceding spring.

## A(nother) Shot in the Arm

**CHALLENGE:** When most people think about immunizations, they think of infants and toddlers. That's because the majority of vaccinations are given before age 2. Although vaccination coverage levels vary geographically, they are usually greater than 95% for school-age children. But surveillance shows that schools in certain geographic areas have much lower coverage levels, for reasons that are not yet clear and require additional research.

**CDC RESPONSE:** CDC is working with states to standardize and improve data collection procedures for reporting vaccination coverage levels among children entering school. As part of this effort, in FY04 CDC deployed an online reporting system that automates data management and calculation tasks.

- We're also working with states to ensure that children who are home-schooled or who attend private school are included in the reporting system.
- Other efforts include developing a new component of the National Immunization Survey that will measure adolescent vaccination coverage levels, and developing and evaluating strategies to improve vaccination coverage levels among adults.

**IMPACT:** The U.S. has high vaccination coverage levels among children entering school — primarily the result of concerted efforts to reduce barriers to preschool vaccination and state requirements for vaccinations to enter school. New tools are helping state and local public health officials identify low-coverage schools and mount interventions to improve vaccination levels.

# Adolescents

> **"To encourage right choices, we must be willing to confront the dangers young people face — even when they're difficult to talk about..."**

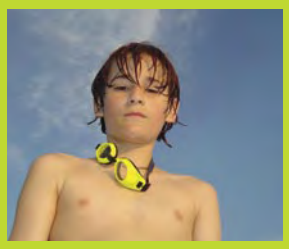
*President George W. Bush*
*State of the Union Address (January 2004)*

*Keeping it Real* — The health dangers America's adolescents face are hard to think about, let alone talk about. They center on topics many people would rather avoid: youth sexuality, violence, depression and suicide, drug and alcohol use.

Because adolescents are so different — even from each other — CDC is working on defining the risks for each group in the 12–19 cohort, by age, sex, race/ethnicity, to give us all a common language for talking about group-specific risks, and then to do something about them.

Across the board, the most common risks adolescents face are avoidable:

- Poor eating habits
- Lack of physical activity
- Tobacco use



- Alcohol and drug use
- Risky driving

- Sexual behaviors that put them at risk for HIV infection, other sexually transmitted diseases, unintended pregnancy, and infertility

- Behaviors that put them at risk for unintentional and intentional injuries

## PROPOSED HEALTH PROTECTION GOALS FOR ADOLESCENTS (Ages 12-19)

### GOAL # 1:
At least 95% of adolescents rate their health as very good to excellent.

### GOAL # 2:
At least 95% of adolescents are tobacco free.

### GOAL # 3:
2 out of 3 adolescents have a healthy weight and practice behaviors which protect them from cancer, heart disease, diabetes, sexually transmitted diseases, and other preventable infections during adolescence and later life.

### GOAL # 4:
Mortality from injuries and other causes of death is reduced by 25%, saving at least an additional 4,000 lives per year.

## Fitness Facts

**CHALLENGES:** America's youth aren't as fit as they need to be, and the reasons are showing:

- Nearly half of American youths 12–21 say they aren't regularly and vigorously physically active.
- About 14% of young people report no recent physical activity. Inactivity is more common among females (14%) than males (7%) and among black females (21%) than white females (12%).
- Participation in all types of physical activity declines strikingly as age or grade in school increases.
- Only 19% of all high school students are physically active for 20 minutes or more, 5 days a week, in physical education classes.

**CDC RESPONSE:** In FY04, CDC and HRSA teamed up with other members of the *National Initiative to Improve Adolescent Health* to create a sensible guide for states and communities on improving the health of adolescents and young adults. The guide offers practical resources and starts with a common-sense premise: Behaviors of young people are influenced at individual, peer, family, school, community, and societal levels. Because many societal factors contribute to adolescent health, safety, and well-being, a collaborative effort engaging multiple partners and sectors is necessary. Joint efforts help promote a more comprehensive approach to addressing adolescent health — one that views adolescents as whole persons, recognizing and drawing upon their assets and not just focusing on their risks.

**IMPACT:**

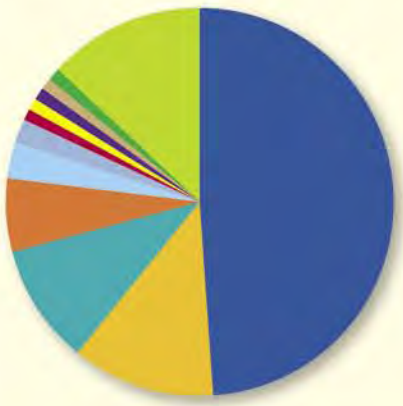
- Only 3 months after being released, the guide has been disseminated to or ordered by over 15,000 health and education agencies and national private and public organizations.
- In Wisconsin, the Youth Policy, Comprehensive School Health, and Adolescent Health Director for the Wisconsin Department of Health and Family Service and the Division of Public Health held a state-wide teleconference, using the guide as an overarching framework for adolescent health programming and policy development. Participants included over 60 local public health departments, local school districts, community organizations, health care providers, and health educators.

**Adolescence is a unique lifestage that presents special challenges and opportunities. It's a tumultuous time. During the transition from childhood to adulthood, adolescents and young adults experience pivotal biological, cognitive, emotional, and social changes.**

**They establish patterns of behavior and make lifestyle choices that affect their current and future health. But an unacceptable number of our young people don't make it to adulthood. Unintentional injury, homicide, and suicide claimed the lives of nearly 12,000 young people in 2002 — more than all the other causes of death combined.**

**In FY04, CDC was able to allocate approximately $566M to adolescent health protection research and programs — about 8% of our $7B budget.**

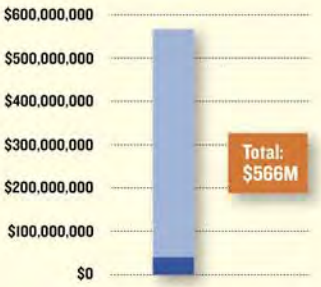
### Leading Causes of Death, 2002
*(Ages 12-19)*



*Percentages rounded to nearest whole number*

- **Unintentional Injuries (49%)** *Car wrecks, falls, etc.*
- **Homicide (12%)** *Deliberate assaults and killings*
- **Suicide (10%)**
- **Cancers (6%)**
- **Heart Diseases (3%)** *Problems with heart structure; 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 (1%)** *Infections in the blood; blood poisoning*
- **All Other Causes (<1% each) Combined (13%)**

### CDC's FY04 Estimated Investment in Adolescents




- **Vaccines for Children ($36M)**
- **Other Health Protection Programs ($530M)**

## Preventing Youth Violence

**CHALLENGE:** In 2002, more than 877,700 young people ages 10 to 24 were injured from violent acts. Approximately 1 in 13 required hospitalization. Homicide is the second leading cause of death among young people ages 10 to 24 overall and the leading cause of death for African Americans in this age group. In a nationwide survey, 17% of students reported carrying a weapon (e.g., gun, knife, or club) on 1 or more days in the 30 days preceding the survey.

**CDC RESPONSE:** Through its research-based *Resolving Conflict Creatively* program, Columbia University's Academic Center of Excellence for Youth Violence Prevention achieved significant behavior changes among participating young people. *Resolving Conflict Creatively* is the nation's largest and longest-running school program focusing on conflict resolution and intergroup relations.

The program's primary goal is to ensure young people develop the social and emotional skills they need to reduce violence and prejudice, to form caring relationships, and to build healthy lives. It works to change school cultures so these skills are modeled by staff and taught to students.

**IMPACT:** In FY04, a CDC-supported evaluation found that *Resolving Conflict Creatively* reduced youth violence risk by teaching positive problem-solving behaviors. The young people who participated improved both conduct and academic achievement. Economic evaluation found that these positive results cost just $98 per young person per year.

### IMPROVING THE ARSENAL OF SCIENCE-BASED INTERVENTIONS

**CDC-supported evaluation is critical to knowing what works. Effective programs can be replicated. Ineffective programs can be scrapped or revised.**

***Resolving Conflict Creatively* now serves 6,000 teachers and 175,000 young people in 375 schools nationwide, including New York City's public schools and 12 other diverse school systems across the country:**

- **Anchorage School District in Alaska**
- **Atlanta Public Schools in Georgia**
- **Lawrence Public Schools in New York**
- **New Orleans Public Schools in Louisiana**
- **Vista Unified School District and Modesto City Schools in California**
- **Newark, West Orange, and South Orange-Maplewood School Districts in New Jersey**
- **Lincoln County School District in Oregon**
- **Roosevelt School District in Arizona**
- **Boston Public Schools in Massachusetts**

**The program's concepts are being integrated in the 35 Freedom Schools of the Children's Defense Fund, reaching an additional 2,250 young people in underserved communities throughout the country. Pilot projects are also underway in Rio Grande Do Sul, Brazil, and Puerto Rico.**

**Knowing how and why this program works is essential for the wise use of fiscal and human resources — that's why CDC supports strong program evaluation.**

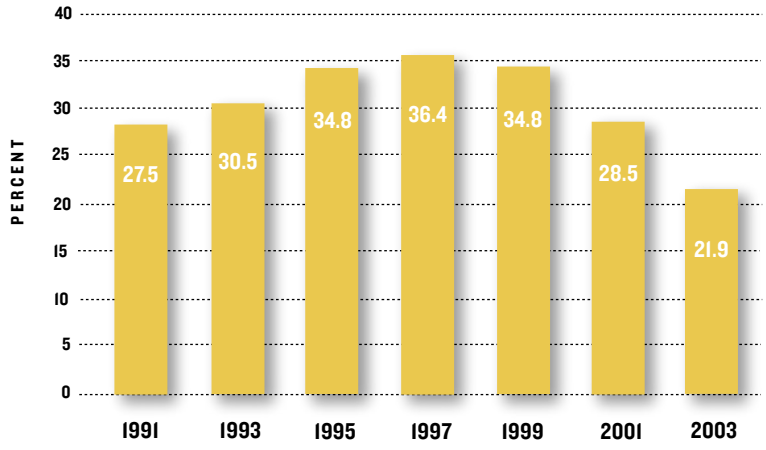
## Smoking Down — But Not Out

**CHALLENGE:** Tobacco use remains the leading preventable cause of death in America, causing more than 440,000 deaths and costing more than $75B in direct medical costs every year. Studies show that 80% of adults who smoke started smoking before age 18.

**CDC RESPONSE:** Deterring youth smoking is directly correlated with reducing preventable adult deaths. CDC works with states and other partners to plan, implement, and evaluate effective tobacco counter-marketing campaigns across the country.

**IMPACT:** In FY04, a CDC study showed fewer adolescents smoke now than any time since 1991. That's when CDC researchers first used national surveys to monitor youth smoking. CDC initiatives, state and local programs, and increases in cigarette retail prices have helped drive down the percentage of high school students who smoke from 36% to 22% — a drop of around 2 million young smokers. Combined with other school- and community-based programs, these campaigns have shown we can reduce adolescent smoking. Results show that sustained prevention efforts could reduce the percentage of U.S. high school students who smoke to less than 16%, the Healthy People 2010 goal.

### Percentage of U.S. High School Students Who Reported Current Cigarette Smoking, 1991-2003




*Source: CDC Youth Risk Behavior Survey*

## A Different Kind of Test

**CHALLENGE:** Chlamydia is the most frequently reported bacterial sexually transmitted disease in the U.S. Between 1995 and 2002 the chlamydia infection rate for Philadelphia women 15–19 years old reached 3 times the national average for that age group.

**CDC RESPONSE:** During the 2002–2003 school year the city's health department and school district began a voluntary STD screening program in Philadelphia public high schools. In combination with the screening program, the department taught 30,000 students in 53 of Philadelphia's 54 high schools how to avoid STDs using the ABC method:

- **A**bstinence first, or
- **B**eing faithful to one partner, and
- Using **C**ondoms correctly and consistently, for those who are sexually active.

Through the program 19,713 students were screened for chlamydia and gonorrhea. Slightly more than 5% (1,052 students) tested positive for 1 or both of these infections. Nearly all of them – 1,051 – were treated.

To ensure this successful public health intervention continued, CDC provided a one-time grant to Philadelphia in November 2003. During the 2003–2004 school year:

- 17,091 students were screened, and 813 tested positive for chlamydia and/or gonorrhea.
- Of the young people who were infected (574 female students and 239 males), 807 (99.3%) received needed treatment.
- They were also counseled to reduce or abstain from sexual intercourse.

**IMPACT:** Based on estimates of the consequences of untreated infection and cost of treatment, the return on CDC's investment in this program was substantial.

- Treating the 570 female students may have prevented about 114 cases of PID – a savings of up to $413,364.
- More importantly, these young women are more aware of the consequences of early sexual activity.
- And, they've all received potentially lifesaving counseling about reducing sexual risk.

## CDC Abstinence Programs

- **FACT:** America's teenage birth rate fell for the 11th year in a row in FY04.
- **FACT:** Sexual activity declined significantly for younger teenage girls and for teenage boys between 1995 and 2002.

Abstinence education is a vital component of CDC's efforts to educate youth about how to protect themselves against sexually transmitted diseases and unintended pregnancy. In 2000, 96.1% of the nation's high schools taught abstinence as the best way to avoid HIV, other STDs, and unintended pregnancy. These efforts are contributing to the steady decline in the number of high school students who report having sexual intercourse and in teen pregnancies.

- In FY04, CDC provided $2.3M to help youth avoid early sexual debut and to prevent or reduce unintended pregnancies, infections from STDs, and HIV infection.
- Our funds also support evaluation: A 5-year cooperative agreement with the University of Texas will assess a Title V abstinence program for middle-school students. The study will compare abstinence-only education to a comprehensive sexuality education program (abstinence-plus), which includes information and skills for condom use for adolescents already sexually active.

# Adults

*The Time of Our Lives* — Children are the key to our nation's future, including our future wealth. But adults 20–49 keep our economic engine running now. Americans in their most productive work years account for the largest lifestage group: approximately 44% of the U.S. population.

Preventable causes of death and disability rob too many adults of productive days and years of life, and rob America of their contribution to our nation's health and wealth.

In many cases, the origins of heart disease and stroke, cancer, and diabetes are grounded in lifestyles people engage in for years before the actual onset of disease. Behaviors like tobacco use, poor diet, and lack of physical activity in childhood, adolescence, and adulthood put people at increased risk for chronic diseases and disabilities. But unhealthy behaviors can be prevented or changed, substantially reducing America's burden of chronic disease and disability. CDC's health protection research and programs focus on turning these numbers around, bolstering America's health and our economic well-being. In 2002, CDC's National Health Interview Survey revealed that:

- Approximately 5 million people 20-49 were unable to work due to health problems.
- Poor health limited the work of another 3 million.

- Nearly 800,000 had health problems so severe they needed help with daily activities like bathing, eating, and dressing.
- 12 million years of productive life were lost in this age group due to premature death.

## PROPOSED HEALTH PROTECTION GOALS FOR ADULTS (Ages 20-49)

### GOAL # 1:
At least 85% of adults rate their health as very good to excellent.

### GOAL # 2:
At least 95% of adults are tobacco free.

### GOAL # 3:
The majority of adults have a healthy weight and practice behaviors to protect themselves from cancer, heart disease, diabetes, sexually transmitted diseases, and other preventable infections.

### GOAL # 4:
At least 90% of adults have no limitation in activity due to a chronic physical, mental, or emotional problem.

### GOAL # 5:
Mortality from injuries and other causes is reduced by 25%, saving at least an additional 50,000 lives per year.

## The Heart of the Matter: Protecting Women's Health

CDC initiated WISEWOMAN (Well-Integrated Screening and Evaluation for Women Across the Nation) to help women with little or no health insurance get health screening and lifestyle interventions that can reduce their risk for heart disease and other chronic diseases.

WISEWOMAN builds on the success of CDC's National Breast and Cervical Cancer Early Detection program, which has screened more than 2 million low-income and uninsured women and diagnosed over 20,000 cases of cancer.

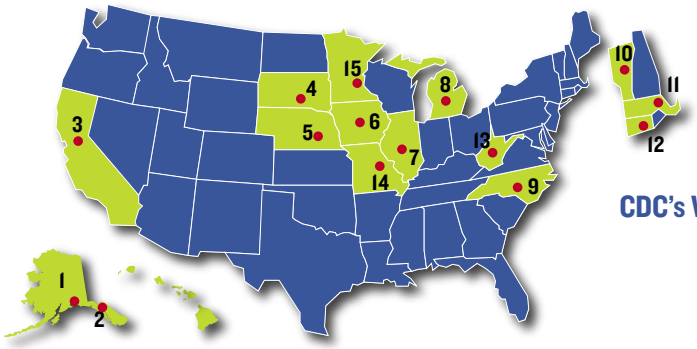
Uninsured women are more likely to smoke and be overweight, and less likely to engage in physical activity and know their cholesterol levels. These women are especially vulnerable to heart and blood vessel disease — already the leading cause of death among women — and other chronic diseases, like diabetes. WISEWOMAN interventions are helping at-risk women in 15 states and tribal governments across America.

### WISEWOMAN offers these services:

- Screening for chronic disease risk factors.
- Dietary, physical activity, and smoking-cessation interventions.
- Referral and follow-up as needed.

### And they're working...

- As of 2004, more than 21,000 low-income women have participated in WISEWOMAN.
- WISEWOMAN participants are more likely to return for regular health screenings.
- 10% of smokers have quit.
- Women's blood pressure has decreased, as well as their cholesterol levels.
- Participants have been able to maintain weight through exercise and better nutrition.
- In the past 3 years, WISEWOMAN has identified 2,700 women with previously undiagnosed hypertension; 3,000 with undiagnosed high cholesterol; and 400 with undiagnosed diabetes.




CDC's WISEWOMAN Projects

Nearly 46,000 Americans died from unintentional injuries in 2002. Traffic crashes are the number 1 cause of death for young adults 20-34 and number 3 cause for adults 35–44.

Other unintentional injuries (falls, poisonings, work-related injuries) add to the toll. Cancers and heart diseases, which are connected to diet, exercise, and environment, as well as to genes, are the second and third leading causes of death overall, followed by intentional self-harm (suicide) and intentional harm to others (homicide).

Poor eating habits, combined with a lack of exercise, result in nearly 17% of all deaths in the U.S. Obesity-attributable medical expenditures reached $75B in 2003, and about half those costs were financed through Medicare and Medicaid.

In FY04, CDC was able to devote $1.9B to research and programs to protect the health of adults.

### Leading Causes of Death, 2002
*(Ages 20-49)*

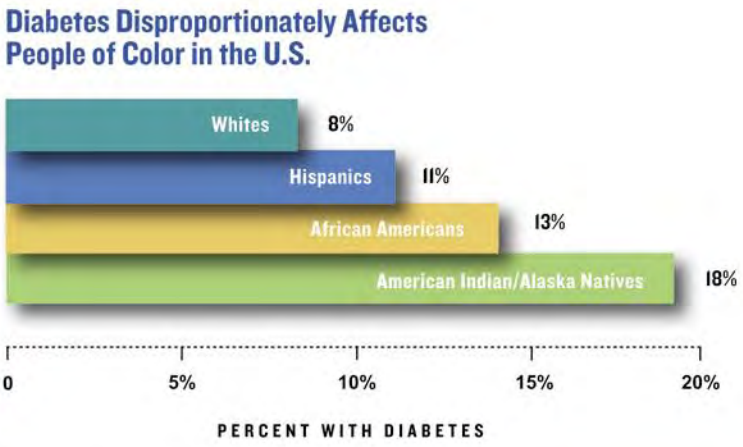
*Percentages rounded to nearest whole number*

- **Unintentional Injuries (20%)** *Traffic crashes, work-related injuries, etc.*
- **Cancers (18%)**
- **Heart Diseases (14%)** *Problems with heart structure; 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 & Pneumonia (1%)**
- **Septicemia (1%)** *Infections in the blood; blood poisoning*
- **All Other Causes (<1% each) Combined (20%)**

### CDC's FY04 Estimated Investment in Adults

## Diabetes By The Numbers

**Fact:** 18 million people in the U.S. have diabetes.
**Fact:** 41 million people are at risk for diabetes.
**Fact:** Diabetes disproportionately affects people of color in the U.S.: Prevalence among American Indians/Alaska Natives is the highest of any group at 18%.
**Fact:** CDC estimates that 1 in 3 Americans will develop diabetes during their lifetime.
**Fact:** Diabetes is now the sixth leading overall cause of death in the U.S.
**Fact:** Diabetes accounts for 11% of all U.S. health care costs.




### Reducing the Diabetes Toll in Minority Communities

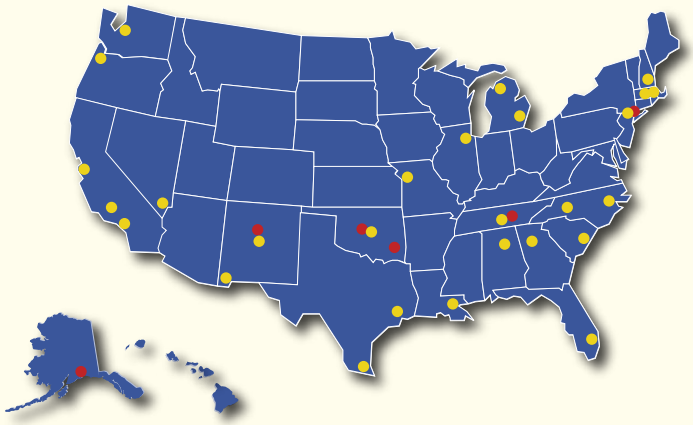
**CHALLENGE:** African American, Hispanic, American Indian, and Alaska Native adults are 2 to 3 times more likely than white adults to have diabetes.

**CDC RESPONSE:** CDC's REACH 2010 initiative — Racial and Ethnic Approaches to Community Health — works to abolish health disparities in 6 key health areas. Diabetes is 1 of them. The others are cardiovascular disease, immunizations, breast and cervical cancer screening and management, HIV/AIDS, and infant mortality. REACH funding totaled $34.8 in FY04.

In South Carolina, the Medical University of South Carolina/Charleston and the Georgetown REACH Diabetes Coalition have formed an urban-rural coalition to improve the health of more than 12,000 African Americans diagnosed with diabetes.

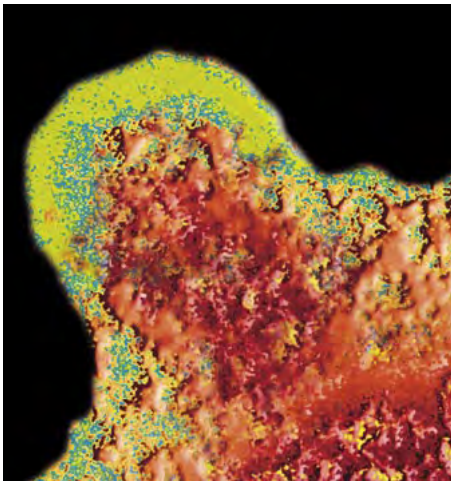
**IMPACT:** African American participants are now more physically active, serve healthier foods, and have better diabetes care and control. This program has succeeded in eliminating a 21% gap between African Americans and whites in annual hemoglobin A1c testing, a method used to measure blood sugar control. The coalition aims to eliminate all disparities in diabetes care and control in Charleston and Georgetown counties by 2007.

## REACH 2010 Project Sites, FY04



Funding for Program Implementation and Evaluation (35 sites)

Funding for American Indian/Alaska Native Core Capacity Building (5 sites)



### Quicker is Better

**CHALLENGE:** Each year, thousands of people tested for HIV never come back for their results because the tests can take up to 2 weeks to process.

**CDC RESPONSE:** Fortunately, HIV tests offering rapid results are now approved in the U.S., and CDC is helping providers take advantage of this new technology.

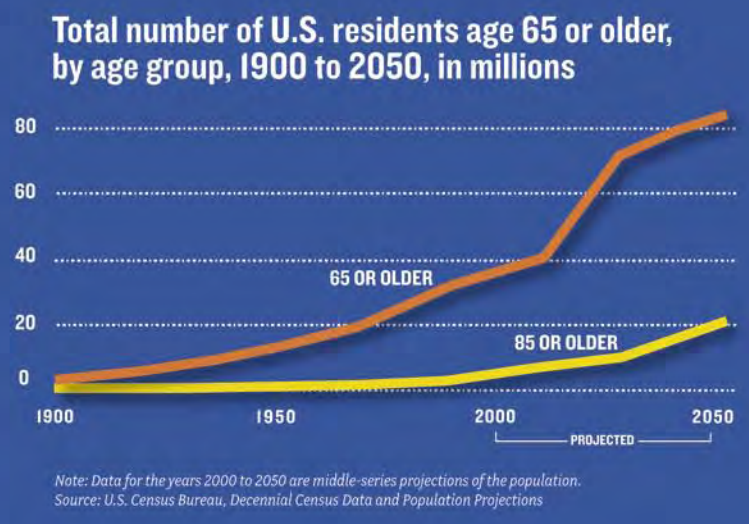
**IMPACT:**

- Through CDC's Advancing HIV Prevention Initiative, more than 500,000 rapid test kits have been shipped to health departments and community-based organizations in 35 states. Nearly 39,000 people were tested in the first quarter of 2004; 513 tested positive — and found out right away. With a traditional test, as many as one-third of those infected wouldn't have returned for their results, missing out on lifesaving treatment and information to help protect others.
- A CDC-funded community-based organization in Philadelphia is targeting rapid HIV testing to social contacts of people at high risk for HIV infection. Philadelphia's social networks strategy tested 253 people in 5 months during FY04. More than 4% tested positive for HIV, compared to 1% typical for traditional counseling and testing techniques and locations.
- A CDC-funded study of rapid HIV testing at Chicago's Cook County General Hospital Emergency Department shows promising results. Between October 2002 and August 2004, 62% of eligible patients agreed to be tested with a rapid HIV test. Among the 4,164 patients tested, 102 — around 2.43% — were newly identified with HIV infection during their ED visit. More than 80% of those newly diagnosed were seen for at least 1 follow-up health care appointment linked to needed care.

# Older Adults

*Health for Life* — It used to be accepted wisdom that disability and ill-health were just part of getting older. *No longer.*

As America ages, we've learned that people can stay active and healthy well into older years — and the more active you stay, the healthier you are. Many chronic diseases can be prevented through healthy lifestyles, physical activity, appropriate diet and nutrition, smoking cessation, active and meaningful social engagement, and regular screenings.




## PROPOSED HEALTH PROTECTION GOALS FOR OLDER ADULTS (Ages 50+)

### GOAL # 1:
At least 70% of older adults rate their health as very good to excellent.

### GOAL # 2:
At least 95% of older adults are tobacco free.

### GOAL # 3:
The majority of older adults have a healthy weight and practice behaviors to protect themselves from cancer, heart disease, diabetes, and injuries.

### GOAL # 4:
Average lifespan of older adults is increased by 2 healthy life-years.

## Diabetes – Deadly Yet Preventable

About 12% of Americans age 50 and older — some 9 million people — have diabetes. And diabetes kills.

- African American, Hispanic, American Indian, and Alaska Native adults are 2 to 3 times more likely than white adults to have diabetes.
- The annual mortality rate for patients with diabetes age 65 and older is 10%.
- A study of almost 300,000 people by researchers at Wake Forest University Baptist Medical Center in Winston-Salem, North Carolina, found that, in comparison, annual mortality for people in the same age group without diabetes is 6%.
- Research also shows that some of the most troubling effects of diabetes can be avoided, thus averting preventable disability and death.
- Regular eye exams and timely treatment could prevent up to 90% of diabetes-related blindness.
- Foot care programs that include regular examinations and patient education could prevent up to 85% of diabetes-related amputations.
- Better blood pressure treatment could reduce heart disease and stroke by up to 50% and diabetes-related kidney failure by 33%.

The National Diabetes Education Program, sponsored by CDC, the National Institutes of Health, and more than 200 partners nationwide, launched *Small Steps Big Rewards to Prevent Diabetes* in FY04.

- The campaign includes teams of representatives — like Frenchy Risco (at right) from Philadelphia — selected from groups at high risk for developing Type 2 diabetes.
- Mr. Risco, 61, joined Philadelphia's Fun, Fit, and Free healthy living program after his friend of 50 years had a leg amputated because of diabetes.
- Mr. Risco, a real estate executive, learned how to cook healthier meals and now walks 2-3 miles a day to his appointments with clients in downtown Philadelphia.

**Nearly 40% of all deaths in America result from heart disease and stroke, and can be attributed to smoking, physical inactivity, poor diet, or alcohol misuse. To a large degree, these killers are an extension of what people do, or don't do, as they go about their daily lives.**

**And chronic diseases don't just kill: Every year, illness and disability resulting from chronic disease affect quality of life for millions of older adults and their caregivers.**

**More than 22 million Americans older than 50 are limited in their daily tasks such as bathing, eating, and dressing. A shocking 96% of them are restricted because of 1 or more chronic conditions.**

**Nearly 90% of people 65 and older — roughly 32 million individuals — have at least 1 chronic health condition. But that doesn't have to be true.**

**Adopting healthy behaviors such as eating nutritious foods, being physically active, and avoiding tobacco use can prevent or control the devastating effects of many of the nation's leading causes of death — and it's never too late.**

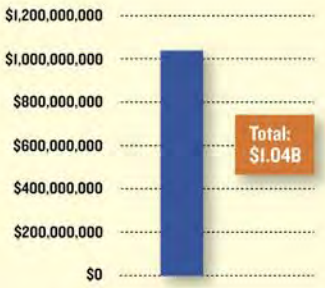
**In FY04, CDC was able to devote about $1B, or 15% of its budget, to health research and protection programs for older Americans.**

### Leading Causes of Death, 2002
*(Ages 50+)*

*Percentages rounded to nearest whole number*

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

### CDC's FY04 Estimated Investment in Older Adults



## Let The Spirit Move You

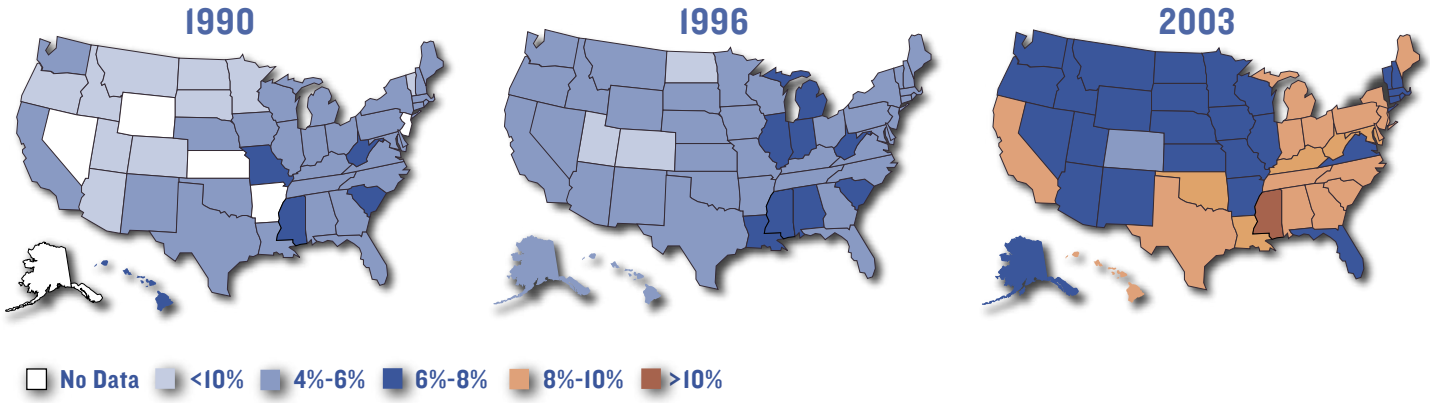
**CHALLENGE:** Racial and ethnic minority populations face higher rates of obesity, diabetes, and other chronic diseases.

**CDC RESPONSE:** An inventive approach to health protection is working in South Carolina to get at-risk elders up and moving. CDC's REACH 2010 initiative — Racial and Ethnic Approaches to Community Health — funds the Medical University of South Carolina to work with local diabetes coalitions to reduce the disparate toll diabetes takes on minority communities.

Praisercise combines diabetes education and exercise to gospel music. It appeals to older adults whose church community is often an extended family. Praisercise is conducted at multiple sites weekly, and includes diabetes education along with song and movement.

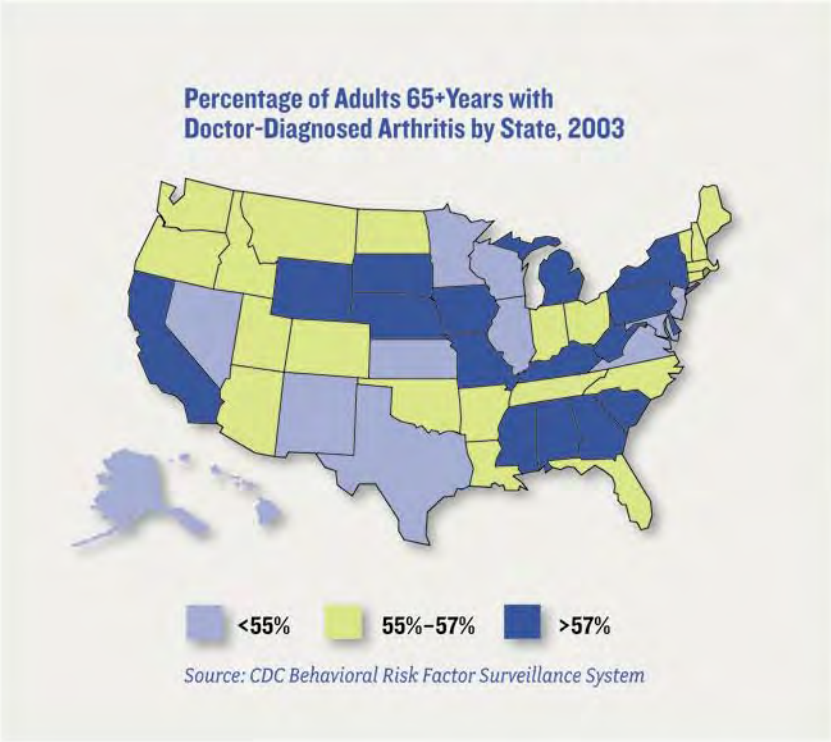
**IMPACT:** Since Praisercise began in 2003, about 500 elders have participated. Their average age is 76. One group started through CDC's REACH 2010 program now travels throughout neighboring communities performing their soul-stirring routines and attracting physical activity converts.

## Diabetes* Trends Among U.S. 18 Years of Age & Older




** Includes Gestational Diabetes*
*Source: CDC Behavioral Risk Factor Surveillance System*

## DOCTOR-DIAGNOSED ARTHRITIS BY STATE



## CDC'S RESEARCH FOCUS ON ARTHRITIS

- ***Understanding "Successful Exercisers" Among People with Arthritis.*** **Although physical activity and exercise has well-documented health benefits for people with arthritis, many people with arthritis are sedentary, or unsuccessful in their attempts to begin exercising. CDC funded the University of South Carolina and State University of New York-Albany to explore what factors help or hinder establishing an exercise habit.**
- ***Evaluation of PACE (People with Arthritis Can Exercise).*** **PACE, developed by the Arthritis Foundation, is a group-delivered physical activity program designed specifically for people with arthritis. Pilot tests of the PACE program have been very promising. Investigators at the University of Missouri and the University of North Carolina-Chapel Hill evaluated the health effects of participating in the PACE physical activity program.**
- ***Active Living Every Day Evaluation.*** **Active Living Every Day, by the Cooper Institute, is a group program designed to help individuals overcome barriers to becoming physically active. Preliminary testing suggests it is effective in increasing physical activity levels and health status, but it has not been tested among people with arthritis. CDC's Arthritis program funded the University of North Carolina at Chapel Hill to evaluate the program among people with arthritis.**

### Disabling Arthritis

**CHALLENGE:** Arthritis, the nation's leading cause of disability, limits daily activities for 8 million people. If trends continue, it will affect twice as many people 65 and older by 2030. Each year, arthritis and other rheumatic conditions result in 750,000 hospitalizations and 36 million outpatient visits. Economic burdens are significant: more than $51B a year.

**CDC RESPONSE:** In FY04, CDC developed and rolled out a health communications campaign, *Physical Activity: The Arthritis Pain Reliever,* which targets people age 45–64. We also funded 36 states to implement 3 evidence-based interventions to reduce disability associated with arthritis:

- PACE: People with Arthritis Can Exercise.
- The Arthritis Self-Help Course.
- Aquatics programs to improve mobility and overall health.

**IMPACT:** More than 2,200 leaders have been trained to deliver these courses, and more than 4,000 courses have been offered.

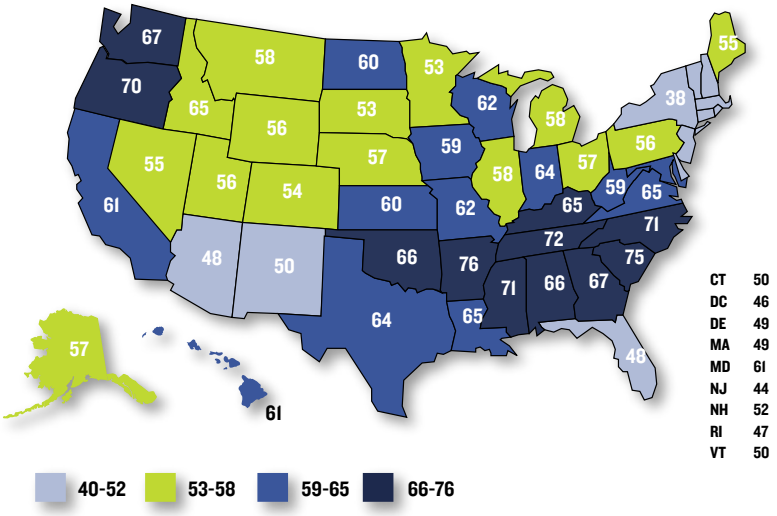
You can find the *Physical Activity: The Arthritis Pain Reliver* guide at: www.cdc.gov/nccdphp/arthritis/campaign/pdf/other/howto_guide.pdf

## Preventing Death and Disability From Heart Disease and Stroke

**CHALLENGE:** Heart disease and stroke claim more lives each year than the next 5 leading causes of death combined. Major disparities in disease risk adversely affect people with low income or little education, older adults, and African Americans.

**CDC RESPONSE:** In FY04, CDC expanded efforts to help states prevent death and disability from heart disease and stroke. With CDC funding, states are working on innovative programs to control high blood pressure and high cholesterol, educate people about the signs of heart disease and stroke, and ensure better emergency response.

### Stroke Deaths, 2001




| | |
|---|---|
| CT | 50 |
| DC | 46 |
| DE | 49 |
| MA | 49 |
| MD | 61 |
| NJ | 44 |
| NH | 52 |
| RI | 47 |
| VT | 50 |

**Age-adjusted death rates per 100,000 population**
*Source: CDC Vital Statistics*

**IMPACT:**

- In South Carolina, over 300 participating providers have undertaken a statewide effort to improve blood pressure control in high-risk populations, with the goal of 70% of hypertensive patients achieving controlled blood pressure.
- In Mississippi, the Mississippi Diabetes Prevention and Control Program is initiating new systems-based strategies aimed at promoting wellness behaviors; increasing the number of persons with diabetes who receive recommended basic preventive services; and increasing flu and pneumonia vaccination for persons with diabetes.

## READII ... Set ... Shots

Eliminating persistent racial and ethnic disparities in influenza and pneumococcal vaccination coverage for people 65 years of age and older is a priority for CDC and the whole of the Department of Health and Human Services. African Americans and Hispanics have significantly lower influenza and pneumococcal immunization coverage rates compared to the rest of America's seniors.

To address this problem, HHS launched READII (Racial and Ethnic Adult Disparities in Immunization Initiative) in 2002, with start-up funds going to 5 demonstration sites:

- Chicago, Illinois
- Rochester, New York
- San Antonio, Texas
- Milwaukee, Wisconsin
- Jackson (Hinds County) and 18 other counties in the Mississippi Delta region

### PROVIDER CHALLENGES:

- Accessing and intervening with adult health care providers has proven to be extremely challenging.
- Clinicians generally see patients only for acute or chronic disease care, not preventive health care visits.
- Factors influencing their decisions to offer vaccination may include: time constraints, costs, limited staff and resources, office policies and organization, and perception of their role in patient care.
- Upfront costs for vaccines may be a disincentive to some providers, who have limited financial resources and who cannot afford to have non-returnable vaccine go unused.
- Misinformation and/or negative attitudes among office, administrative, and nursing staff may have an impact on whether patients get vaccinated, even when standing orders are in place. Health professionals themselves continue to have low rates (only around 38%) for annual influenza vaccine, which may negatively impact how they discuss immunizations with their patients.
- Changing health care system procedures may be effective in identifying and immunizing high-risk minority patients. Mississippi implemented a statewide policy requiring all health clinic patients to be assessed for their need for pneumococcal vaccine and, if needed, offered it on the spot; those refusing were asked to sign a declination form. Vaccinations approximately doubled statewide.

### COMMUNITY INFORMATION:

- Some minority communities may not have venues in which to access immunization. The Milwaukee READII project found that supermarkets, pharmacies, and senior centers have closed in many neighborhoods due to economic constraints and high crime rates.
- Grantees are working to find alternative sites at which to promote and provide immunizations when traditional venues are not available. Wisconsin instituted the "Shot and a Slot" program: 6 of the state's 17 Native American casinos, where a significant number of patrons are 65 and older, took part in the vaccination plan last year, handing out $1 tokens with each flu shot.

### CONSUMER INSIGHTS:

- The AARP reports that 6.3% of all children in the U.S. under age 18 are growing up in grandparent-headed households, and 20% to 25% of grandparents raising grandchildren are 65 years or older. READII focus group findings suggest that seniors age 65 years or older may be motivated by messages that emphasize getting immunized to protect those you love, such as grandchildren and other family members.

PREPARATION
DETECTION
COMMUNICATION
RESPONSE

## PREPAREDNESS:

# The Whole is More Than the Sum of Its Parts

*Systemwide Improvement Means Better Health Protection*

*Readiness for terrorist attacks* is complex, particularly across America's multi-tiered federal, regional, state, local, and tribal public- and private-sector health systems. Preparation, detection, communication, and response are different for each agent terrorists could use: chemical, biological, nuclear, or radiological. And distinguishing deliberate use from a naturally occurring threat adds yet another layer of complexity.

CDC identifies, diagnoses, and recommends treatment guidelines for the health consequences of terrorist threats — as well as "standard issue" public health threats. The proven core competencies of public health that have driven our success in the past are the foundation for our efforts now. By investing in resources and activities across public health, we ensure that as emergency health protection capacity improves, non-emergency public health improves as well.

## PREPARATION

### Helping Communities Get Prepared

CDC invested approximately $844M in FY04 with 62 state, local, and territorial health departments to improve their ability to detect and respond to terrorism, outbreaks of infectious diseases, and other public health threats.

- All health departments have developed public health emergency preparedness and response plans.
- Nearly all — 95% — have developed systems to evaluate urgent disease reports on a 24/7 basis.
- 92% have developed a communications system providing 24/7 flow of critical information among hospital emergency departments, state and local health officials, and law enforcement officials.

*Preparation takes many forms:*

- New York developed the Hospital Emergency Response Data System (HERDS), a web-based information network that identifies emergency response resources and needs across the health care system and tracks them in real time during an emergency. HERDS' tracking includes disease surveillance, bed availability, medication supply levels, number of isolation units, number of admissions, and an individual patient locator. During the 2003 flu season, New York used HERDS to generate weekly surveillance reports of pediatric influenza, hospital admissions, severe illness, and weekly bed availability by hospital. HERDS was also used to monitor hospital usage and blood supply during the August 2004 Republican National Convention.

- Missouri's "Ready in 3," launched in the winter of 2004, is a statewide education program that informs the state's residents how they can prepare for an emergency at home, school, or work. A family safety guide, brochures, fact sheets, posters, presentation materials, and newsletter articles are available for residents, community groups, and businesses. All materials are in English, Spanish, Bosnian, Korean, Vietnamese, and Somali and can be found on the department's website at http:// www.dhss.mo.gov/BT_Response/ready main.html.

- In August 2004, South Dakota completed and deployed America's first mobile laboratory. The lab's security, monitoring, and decontamination equipment is used for training in rural locations. It can also serve as the main public health laboratory if the bricks-and-mortar lab is incapacitated. The mobile lab, which has no identifying information, is housed in a secure location and escorted by the state highway patrol.

## Strategic National Stockpile Update

**FY04 improvements to the Strategic National Stockpile enhanced our nation's repository of lifesaving drugs and medical equipment.**

- **We nearly tripled the amount of anthrax preventive, enough to treat 30 million people.**
- **We reconfigured the Stockpile's 12-hour push packs, the caches of pharmaceuticals, antidotes, and medical supplies designed for rapid delivery. Now essential medicines are immediately accessible, so they can be given to patients instantly when the pack arrives at the scene of a disaster.**

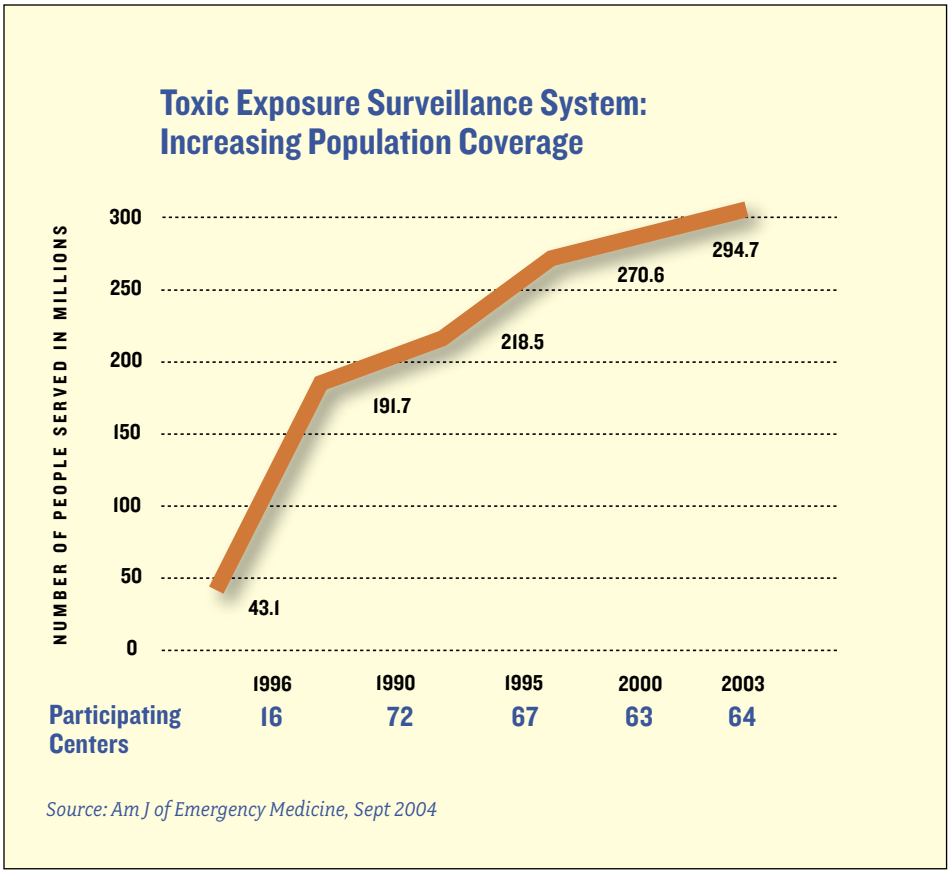
### CHEMPACK — COUNTERING CHEMICAL TERRORISM

- **When a motor nerve is stimulated it releases acetylcholine, a neurotransmitter, which carries the impulse through the nervous system to a muscle or organ.**
- **Once the impulse is sent, a specific enzyme breaks down the acetylcholine, allowing the muscle or organ to relax.**
- **All nerve agents work the same way: They interrupt the breakdown of the body's neurotransmitters that signal muscles to contract, preventing them from relaxing.**
- **Nerve agents can cause immediate nervous system failure, so treatment must be swift to save as many lives as possible.**

**But stocking nerve agent antidotes has been challenging for communities across the country, because the drugs expire and are expensive to replace. CDC's CHEMPACK project, begun in FY04, will improve local access to lifesaving treatments by placing federally owned medications in cities across America.**

**NERVE AGENT ANTIDOTES INCLUDE:**

- **Atropine sulfate, which blocks the effects of too much acetylcholine.**
- **Pralidoxime chloride (2PAM), which reactivates the acetycholine breakdown enzyme, reducing acetylcholine levels in the body.**
- **Diazepam, which reduces the severity of acetylcholine-induced convulsions that can contribute to death or long-term neurological effects in survivors.**




*Source: Am J of Emergency Medicine, Sept 2004*

## Every Second Counts

In FY04, CDC funded the Cities Readiness Initiative (CRI), a $27M program to increase cities' capacity to deliver medicines and medical supplies during large-scale public health emergencies. In the event of a terrorism attack, nuclear accident, or other disaster, CRI systems will help save lives with rapidly accessible drugs and medical supplies. CRI also integrates readiness plans from all levels of government — federal, regional, state, and local — to ensure consistent, effective, and rapid response.

## DETECTION

### BioSense: Real-Time Monitoring

Early event detection is crucial to minimizing the potentially devastating health impacts of bioterrorism events and naturally occurring disease outbreaks. CDC's BioSense Initiative is a new approach to detection based on the secondary use of existing health care and health-related data. BioSense strives to implement real-time monitoring nationally and support data analysis in CDC's newly established BioIntelligence Center.

- BioSense works to detect events based on people's health-seeking behaviors, such as visits to hospitals, clinics, and doctors' offices.
- It can also provide dynamic views on the size of an adverse health event, where it is occurring, how it is spreading, and how effective response strategies have been.
- This kind of health situational awareness is critical for decision-makers, who must act to contain spread, treat those who are ill or exposed, and protect those who aren't.

BioSense receives, analyzes, and evaluates health data from numerous data sources, such as emergency rooms, ambulatory care physicians and clinics, and clinical laboratories. To date, BioSense has received over 400 million records and has over 330 users nationally.

### High-Speed Chemical ID

During a chemical terrorist attack, medical providers need information fast to start the right treatment and minimize long-term toxic effects. With the right chemical information, emergency responders can correctly estimate the extent of contamination and alert at-risk people.

CDC's state-of-the-art Environmental Health Laboratory helps state health labs rapidly identify chemical agents.

- In FY04, CDC trained staff in all 62 public health chemical labs across the country how to properly collect and ship human samples after chemical terrorism.
- Our scientists also developed new methods to analyze poisoning from 2 chemicals: sulfur mustard (a blistering agent) and ricin.
- We improved methods to measure exposure to nitrogen mustard, another blistering agent, and 2 nerve gases, tabun and VX.
- We taught staff in 31 public health laboratories to identify these chemical terrorist agents.

Ensuring multiple data-capture points, CDC and the American Association of Poison Control Centers have developed a national system for chemical poisonings, including terrorist-deployed chemicals. The Toxic Exposure Surveillance System was alerted when ricin was discovered in a mail-sorting facility in South Carolina in FY04.

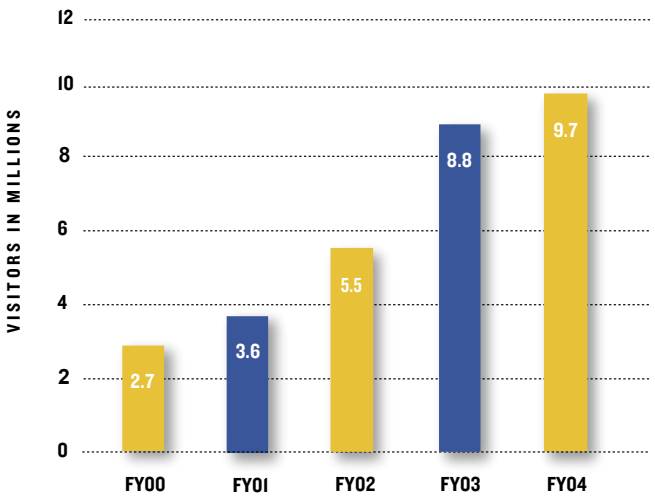
## CDC's Laboratory Response Network

The Laboratory Response Network is a network of local, state, and federal public health, food testing, veterinary diagnostic, and environmental testing laboratories. LRN is a critical part of our nation's biological security.

- Collectively, these labs provide our nation's frontline capability to respond to biological and chemical terrorism and other public health emergencies.
- In FY04, CDC increased the LRN to 126 laboratories: 96% can confirm anthrax, 94% can confirm tularemia, and 92% can confirm plague.
- LRN includes 5 labs in Australia and 2 in Canada, casting a wider net of protection.
- 5 veterinary diagnostic labs are now part of LRN because of the important disease-transmission link between animals and humans.

**U.S. Laboratory Response Network Locations, 2004**

## Average CDC Website Visitors Per Month



## COMMUNICATION

### Information When, How, and Where It's Needed

Fast detection is nothing without fast communication. CDC provides vital information to people who need it at speeds unimaginable just a few years ago.

### Epi-X is the Communications Solution

Epi-X is CDC's secure, two-way, web-based communications solution. Epi-X lets CDC officials, state and local health departments, poison control centers, and other public health professionals share health information as events unfold, to rapidly detect and contain threats.

- When an unusual bacterial infection, *Burkholderia cepacia,* was discovered in recent sinus-surgery patients in Colorado, officials called on CDC to investigate.
- Once we linked the infection to a specific nasal spray, Epi-X quickly notified health officials which lot of nasal sprays was contaminated.
- The information was also published on CDC's website, alerting the public.
- Fast information allowed the Food and Drug Administration to react rapidly and the company to voluntarily recall the contaminated sprays.

## Communications Count

**Public health practitioners, health care providers, and the public look to CDC for information about breaking events as well as daily health questions. In FY04 :**

- **We redesigned CDC's website, making its 200,000 pages of valuable information easier to use: 110,000,000 people visited our website and made 625,000,000 requests for information.**
- **We had 20,000 press calls requesting information on topics including influenza, West Nile virus, HIV and AIDS, and chronic health problems.**
- **There were 14 press conferences and teleconferences with national and local media to provide updates and answer questions about breaking public health events.**
- **We issued 65 press releases, alerting the media to important news regarding the nation's health.**
- **On average, CDC experts gave approximately 40 interviews a week with major media outlets.**
- **Roughly 2,000,000 calls were made to CDC hotlines, which provide information on immunizations, AIDS and sexually transmitted diseases, hepatitis, international travel, and other public health issues.**
- **As of July 20, 2004, the Clinician Registry for Terrorism and Emergency Response Updates and Training Opportunities had distributed nearly 2,000,000 messages.**

## RESPONSE

### Reaction Time: Ricin in Greenville, South Carolina

Because of our critical role in the anthrax attacks in 2001, CDC was well prepared when another deadly biological agent was found at a U.S. postal facility. In October 2003, ricin was identified in an envelope at a postal facility in Greenville, South Carolina.

CDC rushed to determine if any workers had been exposed to the deadly toxin. Thankfully, testing at the facility confirmed no one was.

- CDC's unprecedented environmental testing for ricin provided critical information about how best to test the extent of contamination in the facility.
- CDC's findings also guided health decisions about reopening the facility and conducting medical surveillance of the postal employees.
- We held a webcast training on diagnosing, treating, and managing patients sickened by ricin. More than 1,200 visitors to CDC's website, from 46 states and 4 countries, watched the webcast within the first 24 hours of its release.
- We updated our Emergency Preparedness and Response webpage section on ricin to provide information on routes of exposure and sampling methods, and recommendations for selecting and using personal protective equipment.

*See www.bt.cdc.gov/ for more information*

# Keeping Old and New Threats at Bay

With vigilance and multi-tiered, comprehensive protection networks, CDC helps keep America safe from old threats and newly emerging diseases. Elsewhere in the world, infectious diseases are the leading cause of death. In FY04, infectious disease threats emerged inside and outside our borders. CDC's 24/7/365 detection, epidemic investigations, laboratory research, and public education programs worked with allies in the U.S. and around the world to protect people at home and abroad, keeping infectious diseases at bay.

### Rapid Detection, Fast Science Solves Organ Transplant Mystery

Three patients in 1 hospital receive transplants from the same donor. Soon they're hospitalized with similar neurological symptoms, including seizures. All 3 die. Coincidence?

CDC's expertise in fast detection and fast science helped state and local partners determine this was no coincidence. A series of laboratory tests confirmed the transplant recipients died from rabies — the first time the disease had been transmitted through organ donation.

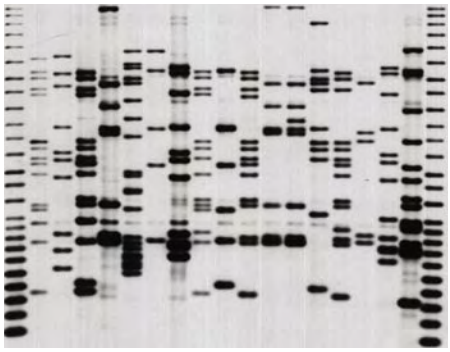
CDC worked with health officials from Texas, Alabama, Oklahoma, and Arkansas to evaluate potential contacts of the transplant recipients and the donor to determine who needed rabies vaccine. The quick, collaborative effort kept others from getting rabies.

## TB Fingerprinting

Tracking down the source of a tuberculosis outbreak traditionally takes lots of time and shoe leather. With a 5-year investment in public health research, CDC and its stakeholders have developed a new system called TB genotyping. This system, which cracks TB's genetic code, allows health officials to detect outbreaks almost immediately by analyzing the "fingerprints" of individual TB strains.

CDC's Tuberculosis Genotyping Program, initiated in FY04, provides rapid fingerprinting results to TB control programs across the U.S. All 50 states are participating, and it's already paying off.

- TB genotyping was able to link 5 apparently unrelated TB patients to a Kansas homeless shelter. The findings led to mandatory TB screening for clients and workers in the community's homeless shelters.
- Fingerprinting also identified a large outbreak involving 23 patients in Mississippi.
- In North Carolina, a TB outbreak occurred over a 4-year period and wasn't recognized until genotyping linked 25 TB patients, most of whom were co-infected with HIV. Had genotyping been available from the start, the outbreak likely would have been spotted after the first 7 patients were diagnosed. With early detection and proper control measures, TB could have been prevented in as many as 18 patients.



## Fingerprinting Foodborne Illness, Too

CDC's award-winning PulseNet continues to live up to its promise as the best innovation in American government in 1999. Its transforming DNA technology helps contain foodborne illness outbreaks, which affect more than 76 million people in the U.S. each year, and it's being adopted around the globe.

In the summer of 2004 more than 500 people in 5 states were sickened by a huge outbreak of salmonellosis, a foodborne illness often spread by contaminated foods. CDC sent an Epi-Aid epidemic response team to track down the source before it could spread.

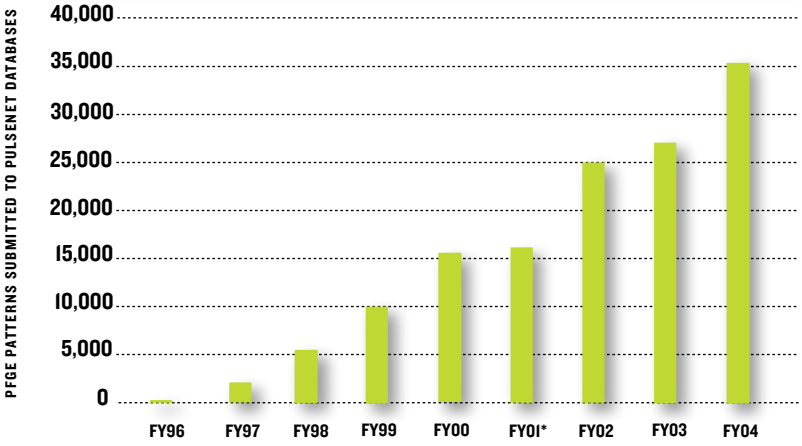
Enter PulseNet, a network of state public health labs that provide DNA fingerprinting for *Salmonella* and other bacteria, all of which have unique molecular structures — just as human fingerprints do.

- PulseNet identified an increase in the *Salmonella* serotype *Javiana*, all with the same unique fingerprint.
- Armed with that information, states were able to identify cases by looking for *Javiana* with that exclusive pattern.
- Fingerprinting also matched the *Salmonella* strains from the 500 sick people with contaminated tomatoes served at a chain of deli restaurants.
- Once the link was made, the restaurants pulled the tomatoes from use.
- Investigators began working on the premise that the tomatoes were contaminated before being shipped north from Florida.
- Hurricane Charley disrupted the investigation of a tomato farm, but CDC and FDA are still trying to pinpoint this lapse in food safety.

PulseNet's success has led to its adoption in other parts of the world, with technical assistance from CDC. PulseNet Europe is now ready to look for multi-country outbreaks of *E. coli* O157 and other foodborne bacteria. PulseNet Asia Pacific Rim and PulseNet Latin America also geared up in FY04.

## PulseNet Activity, 1996–2004

| | 1996 | 2000 | 2002 | 2004 |
|---|---|---|---|---|
| No. of pathogens | 1 | 4 | 6 | 8 |

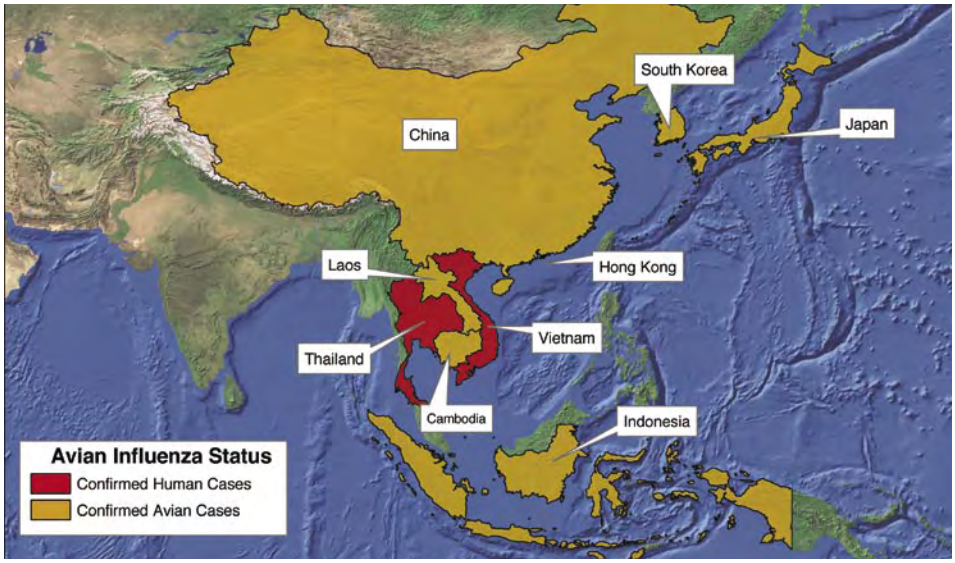



*Lower than expected number due to events of Sept. 11, 2001 and anthrax.

## PulseNet Fast Facts

**The network includes:**

- **7 area laboratories in Massachusetts, Michigan, Minnesota, Texas, Utah, Virginia, and Washington State**
- **50 state public health laboratories**
- **7 city/county laboratories in New York City, Philadelphia Houston, Washington D.C., and Los Angeles, San Diego, and Orange counties in California**
- **PulseNet currently tracks 5 foodborne disease-causing bacteria: *E. coli O157:H7, Salmonella, Shigella, Listeria monocytogenes, and Campylobacter***
- **PulseNet Canada has 6 provincial public health laboratories and 1 federal food safety laboratory**



## Avian Influenza: A New Threat

- Outbreaks of highly pathogenic avian influenza A (H5N1) occurred in poultry in 8 countries in Asia (Cambodia, China, Indonesia, Japan, Laos, South Korea, Thailand, and Vietnam) during late 2003 and early 2004.
- More than 100 million birds either died from the disease or were culled.
- From December 30, 2003, to March 17, 2004, 12 confirmed human cases of avian influenza A (H5N1) were reported in Thailand and 23 in Vietnam.
- By late February, however, the number of new human H5 cases being reported in Thailand and Vietnam slowed and then stopped.
- Within a month, countries in Asia were reporting that the avian influenza outbreak among poultry had been contained.
- No conclusive evidence of sustained human-to-human transmission was found.
- Beginning in late June 2004, however, new lethal outbreaks of H5N1 among poultry were reported by several countries in Asia: Cambodia, China, Indonesia, Malaysia (first-time reports), Thailand, and Vietnam.
- The new outbreaks of H5N1 in poultry in Asia were followed by renewed sporadic reporting of human cases of H5N1 infection in Vietnam and Thailand, beginning in August. Of particular note is 1 isolated instance of probable limited human-to-human transmission occurring in Thailand in September.
- In all, 47 people in Asia were confirmed to have avian flu; 34 died — a 72% fatality rate.

## CDC Response to Bird Flu Outbreaks

### DOMESTIC ACTIVITIES:

- In February 2004, CDC issued recommendations for enhanced domestic surveillance of avian influenza A (H5N1).
- Following the reports of human deaths in Vietnam in August, CDC issued a follow-up HAN (Health Alert Network) message on August 12 reiterating the criteria for domestic surveillance, diagnostic evaluation, and infection control precautions for avian influenza A (H5N1). The alert also detailed laboratory testing procedures for H5N1.
- CDC collaborated with the Association of Public Health Laboratories on training workshops for state laboratories on the use of molecular techniques to identify H5 viruses.

### INTERNATIONAL ACTIVITIES:

- CDC worked collaboratively with the World Health Organization to conduct investigations of H5N1 influenza in Vietnam and to provide laboratory diag nostic and training assistance.
- CDC has performed laboratory testing of H5N1 viruses from Thailand and Vietnam.
- CDC has implemented a $5.5M initiative to improve influenza surveillance in Asia.
- CDC has developed and distributed a reagents kit for the detection of the currently circulating influenza A H5 viruses.

The outbreak put CDC and international health agencies on heightened alert for the growing threat of pandemic flu.

- The Asian outbreak in birds is not expected to diminish significantly in the short term.
- It is likely that H5N1 infection among birds has become endemic to the region and that human infections will continue.
- If these H5N1 viruses gain the ability for efficient and sustained transmission between humans, there is little pre-existing natural immunity to H5N1 in the human population, and an influenza pandemic could result, with high rates of illness and death.
- To address this threat, CDC is working collaboratively with the Council of State and Territorial Epidemiologists and others to assist states with pandemic planning efforts. We're also working with other agencies, such as the Department of Defense and the Veterans Administration, on antiviral stockpile issues.

*For more information, see Preparing for Pandemic Flu, next page.*

## Preparing for Pandemic Flu

Influenza pandemics — global outbreaks of disease — result from the sudden appearance of a novel influenza virus that is likely unaffected by currently available flu vaccines and is capable of causing widespread illness and death among infected people.

There were 3 pandemics in the 20th century. All of them spread worldwide within 1 year of being detected.

- ***1918-19: The "Spanish flu"*** caused the highest number of known flu deaths. More than 500,000 people died in the U.S., and 20 million to 50 million people may have died worldwide. Many died within the first few days after infection and others died of complications soon after. Nearly half were young, healthy adults.
- ***1957-58: The "Asian flu"*** caused about 70,000 deaths in the U.S. First identified in China in late February 1957, it spread to America by June.
- ***1968-69: The "Hong Kong flu"*** caused approximately 34,000 deaths in the U.S. It was first detected in Hong Kong in early 1968 and spread to America later that year.

Both the 1957-58 and 1968-69 pandemic viruses were a result of the reassortment of a human virus with an avian influenza virus. This can happen when a person is infected with bird flu and human flu at the same time, and the viruses mix genetically. This is one reason scientists at CDC and other health agencies are so concerned about the recent periodic avian influenza outbreaks in Asia.

To prepare for pandemic flu, in FY04 CDC worked with sister agencies in HHS to develop a national pandemic preparedness plan for America. The plan provides guidance to national, state, and local policy makers and health departments for public health preparation and response in the event of pandemic influenza outbreak. We also:

- Stockpiled influenza antiviral drugs in the Strategic National Stockpile.
- Enhanced U.S. and global disease detection and surveillance infrastructures to enable earlier detection of a developing pandemic.
- Expanded our portfolio of influenza-related research.
- Supported public health planning and laboratory capacity.
- Worked with NIH and WHO on safety testing vaccine seed candidates and developing new vaccine seed candidates, a critical first step for influenza vaccine development.

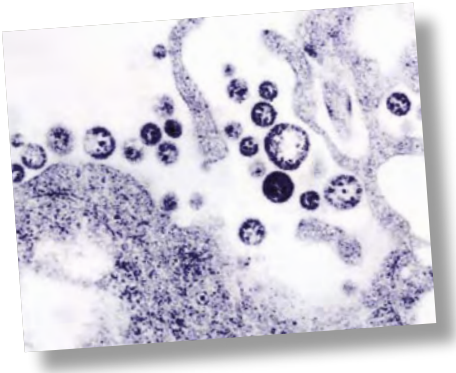
## UPDATE:

# Coping with the U.S. Influenza Vaccine Shortfall

Just following the close of FY04, on October 5, 2004, CDC learned that our nation's flu vaccine supply was imperiled. The facts are well known: Chiron Corp., 1 of 2 companies licensed to supply inactivated flu vaccine in the U.S., would be unable to supply any vaccine from its British manufacturing facility due to contamination. Aventis-Pasteur, the only remaining manufacturer of inactivated flu vaccine, would be able to make up only about half of America's expected supply for the 2004-2005 flu season. The single manufacturer of live attenuated vaccine estimated it could provide 1-3 million doses of vaccine. As Department of Health and Human Services officials explored other sources for vaccine, CDC mobilized to ensure efficient use of the available supply:

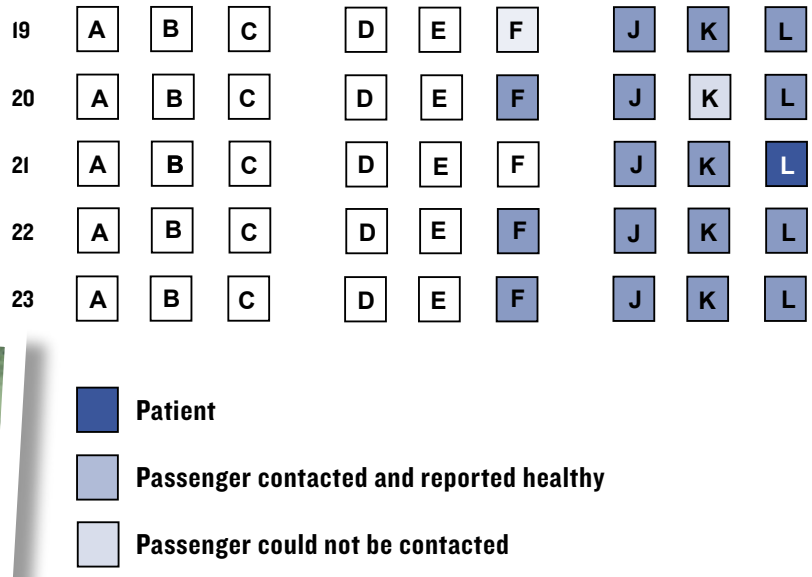
- We worked with the Advisory Committee for Immunization Practices and other partners to quickly develop and issue interim vaccination guidelines for inactivated flu vaccine.
- We worked with state and local health departments and others to develop an allocation plan for the available doses of vaccine, distributing them as fairly as possible across the nation to protect the most vulnerable citizens. Included in the allocation plan are the 50 states, the 8 U.S. territories, and the District of Columbia. Also included are the cities of Philadelphia, San Antonio, New York, and Chicago because they have long-standing independent arrangements for purchasing vaccine through the CDC's National Immunization Program.
- We created a quick communication system: The Secure Data Network is a secure website used by CDC to share information with state health officials about influenza vaccine supply.
- Because people living in long-term care facilities are particularly vulnerable, we moved to survey long-term care facilities that ordered directly from Chiron distributors or via subdistributors or intermediaries such as pharmacies. The survey is a collaborative effort between CDC, the Centers for Medicare and Medicaid Services, Aventis-Pasteur, and a number of long-term care partners.
- We ensured that health care providers got essential information they needed to care best for their patients and provided information to the public via our website and through press conferences, including information tailored to specific places, like schools and day-care centers, colleges and universities, and workplaces, and to specific groups, like people with chronic health conditions and parents.
- We initiated rapid assessments of vaccine coverage to determine the shortfall's impact on high-risk and non-high-risk groups.

The unprecedented shortage has also raised questions about vaccine supply and use in the event of an influenza pandemic. For more on this, and CDC's role in preparing for pandemic flu and addressing avian flu, see the other stories in this section. Avian Influenza: A New Threat, page 44, and Preparing for Pandemic Flu, page 45.



**Airplane row numbers and seat letters for Lassa fever patient and nearby passengers and contact status of passengers**

*London-Newark, August 2004*




## Imported Lassa Fever

Lassa fever, an acute viral illness, is rarely exported outside West Africa, where the disease is endemic. There, it infects 100,000 to 300,000 people yearly, and kills 5,000. When the virus does travel elsewhere, it poses a lethal health risk.

That was the cause for alarm in August 2004 when a New Jersey man returning from West Africa was hospitalized with fever, chills, severe sore throat, diarrhea, and back pain.

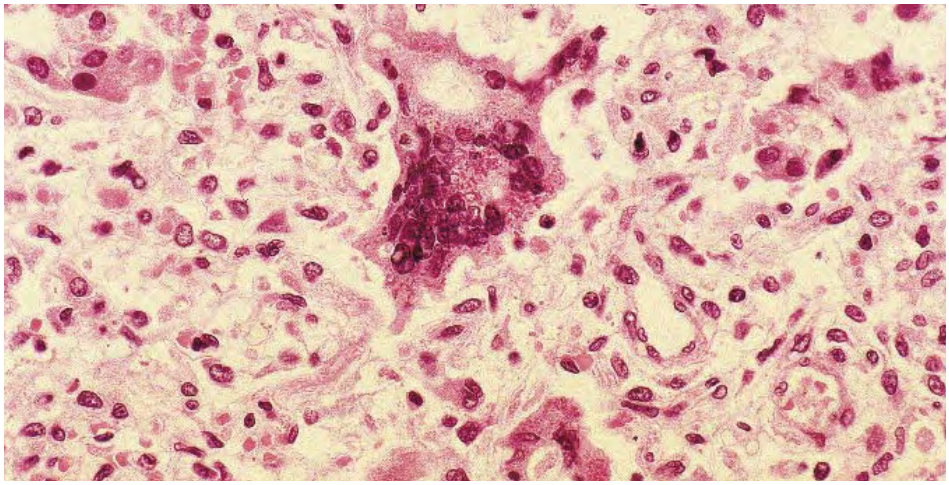
Within hours of arriving home, the man's condition worsened, and his family brought him to a Trenton hospital. Despite intensive care, he continued to decline and died within several days. Clinical and postmortem specimens were sent to CDC for specific diagnostic testing. We confirmed Lassa fever.

Because he traveled while ill, the patient potentially exposed nearly 200 people:

- 13 family members.
- 139 health care workers.
- 16 lab workers.
- 19 airplane passengers seated near him on a flight from London's Gatwick Airport to Newark, New Jersey.
- Plus, an unknown number of riders were possibly exposed as he traveled by train to his home near Trenton.

- Within 5 days, CDC had interviewed 13 of 19 potentially exposed airline passengers.
- Within 3 more days, we contacted another 3.
- None had developed Lassa fever.
- Nearly all — 17 of the 19 — were British citizens, so we alerted health authorities in the United Kingdom.

Everyone exposed was categorized according to risk, instructed to monitor their temperatures, and to report any fevers. Through fast detection and fast communication — along with low-tech thermometers — a public health crisis was avoided and people were reassured.



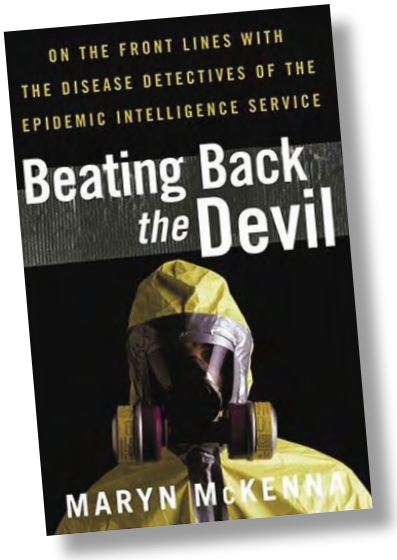
## Imported Measles Travels to Multiple States

High vaccination rates and strong surveillance have stopped measles transmission in the U.S. But international travelers continue to import the virus. In April 2004, public health officials in Seattle reported to CDC that they had a laboratory-confirmed case of measles in a child recently adopted from China.

CDC worked with health officials in several states to locate other children recently adopted from China.

- They identified 11 families that had traveled to China the previous month to adopt children.
- All counted, their 12 adopted children were together for about 10 days before coming to the U.S.
- Once here, they traveled to 5 states, including Washington.
- Nearly all the children had a measles-like rash, and 4 were confirmed with measles.

Because of generally high vaccination rates, most Americans are immune to measles, and no additional infections were reported. If U.S. vaccination rates slip, however, measles — now considered a banished childhood disease in America — could easily re-emerge.




*Reprinted by permission of Simon and Shuster*

## CDC'S EPIDEMIC INTELLIGENCE SERVICE

### "In The War Against Diseases, They Are The Special Forces."

In FY04, a new book about CDC's disease detectives, the Epidemic Intelligence Service, came out. It chronicles a year in the life of an EIS cohort, the class of 2002.

*"They always keep a bag packed. They seldom have more than 24 hours' notice before they are dispatched. The phone calls that tell them to head to the airport, sometimes in the middle of the night, may give them no more information than the country they are traveling to and the epidemic they will tackle when they get there. The universal human instinct is to run from an outbreak of disease. These doctors run toward it."*

From *Beating Back the Devil* by Maryn McKenna, 2004. Reprinted by permission of Simon and Shuster.

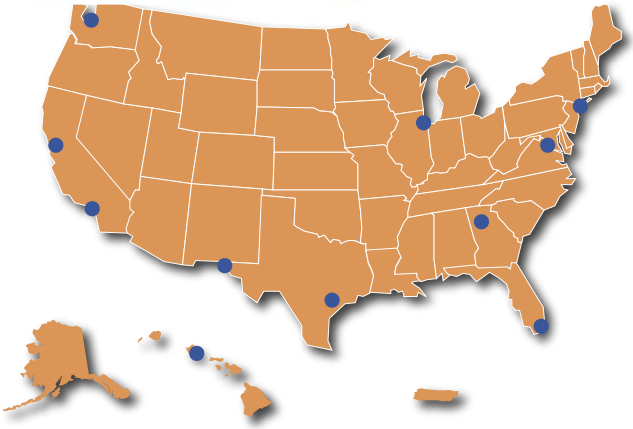
For 2 years of low pay, long hours, and personal risk, EIS officers get to be part of the same group that helped rid the world of smallpox, discovered Legionnaires' disease and AIDS, and contained SARS.

This elite corps of highly trained experts, created in 1951 because of the Cold War and concerns about biological warfare, is still America's first and best hope against naturally occurring and deliberate health threats. More than 50 years later, CDC's EIS officers, past and present, are still on the frontlines, protecting America.

The EIS class of 2004 has 89 members. Slightly more than half are physicians; the rest have advanced training in other public health specialties like behavioral science, veterinary medicine, virology, and toxicology. Most — 70 of them — are U.S. citizens; the others come from countries as diverse as Ethiopia, Belgium, Greece, Pakistan, and India. About two-thirds are women. Together, they form the next generation of health defense for America and the world.

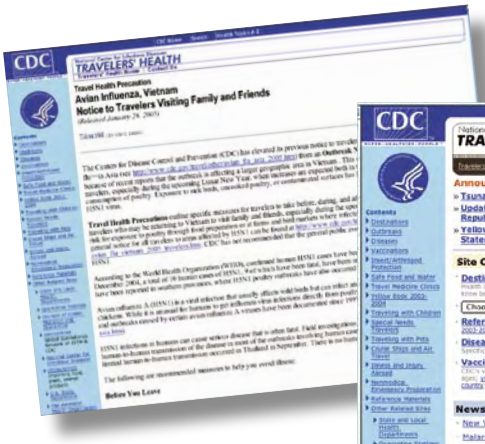
This book is not a publication of the Centers for Disease Control and Prevention or the U.S. government, and CDC takes no position on its contents.

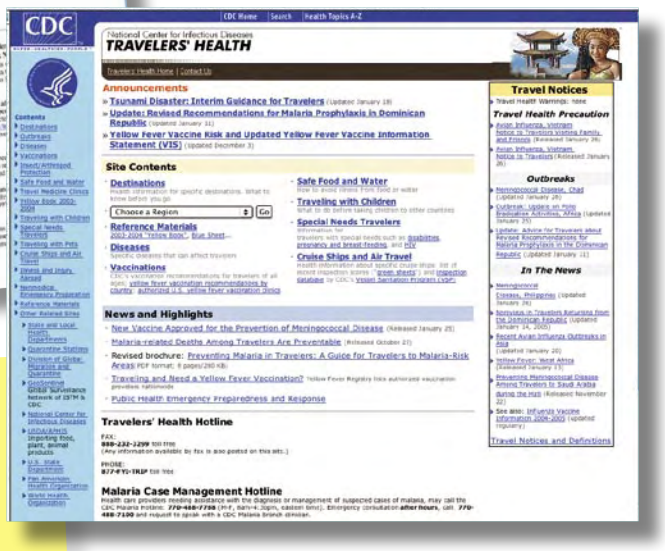
# TRAVELERS' HEALTH



**At 11 Quarantine Stations across the country, CDC staff:**

* Respond to sick passengers on planes and ships.
* Investigate disease outbreaks affecting travelers.
* Monitor the health of refugees and adoptees to America.
* Assess shipments of non-human primates and certify their safety.
* Prevent contraband cargo from entering America.
* Distribute lifesaving treatments such as botulism antitoxin.




**CDC Has Developed Several Innovative Tactics in the Past Year:**

*A customer-friendly website for travelers' health that posted nearly 5 million visits in 2003 and an online e-mail response system to provide up-to-the-minute information.

*A comprehensive electronic notification system to communicate with domestic and international partners about disease and disease outbreaks occurring among immigrants and refugees entering the U.S.

*A collaboration with airlines to develop an electronic notification system to alert passengers who may have been exposed to an infectious disease and to provide them with essential health-protection messages.

- Every year, more than 700 million passengers travel on planes within or to the U.S.
- Another 200 million people travel on cruise ships or ferries.
- More than 8,000 foreign flag vessels make 60,000 ports of call.

With the world getting smaller every day, travelers can bring avian flu, Lassa fever, tuberculosis, SARS, or Ebola to our doorstep within a matter of hours. Guarding our country against these possible threats, CDC's Division of Global Migration and Quarantine is America's first line of defense.

**www.cdc.gov/travel/**

# Healthier Communities Healthier Workers

From the air we breathe to the food we eat, our environment – at home, work, and play – is integral to our health. CDC scientists crisscross the country investigating environmental hazards seen and unseen and confronting health risks large and small.

### Charley, Frances, Ivan, and Jeanne Visit Florida

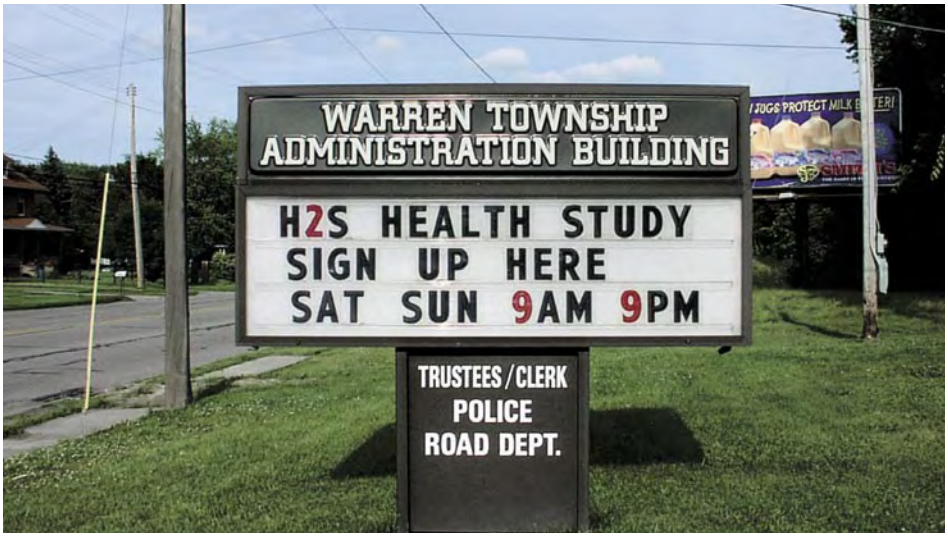
Hurricane Charley, a Category 4 storm, hit Florida in August 2004. Frances, Ivan, and Jeanne followed in the next 5 weeks. CDC helped the devastated state respond to the health needs of millions, sending nearly 40 employees to assist. Their efforts ran the gamut of health protection — from monitoring storm-related health threats before, during, and after the hurricanes to assessing disruptions in hospital operations, and everything in between.

- Hurricane flooding creates ideal conditions for mosquito breeding, and CDC mosquito surveillance reported record numbers of mosquitoes following the storms. When local governments increased pesticide sprayings, CDC was there to assess any possible health impact.
- We also worked with the home supply company Lowe's to run a public service announcement on carbon monoxide safety on their in-store music programs. Carbon monoxide poisoning is common when power fails and people turn to fuel-powered generators for electricity and camp stoves or grills for cooking indoors.
- Many older Floridians need special medical care. We helped protect their health and safety at the Orlando Convention Shelter, a shelter for storm refugees with special health needs, making sure infectious diseases weren't spread from person to person.
- Looking ahead to the next hurricane season, we helped Florida's health department design a comprehensive plan for mega-shelters that can safely house people with special health needs. We advised the health department on how to reduce the spread of communicable disease and assure adequate medical supplies and equipment are on hand.

### Time to Take out the Trash

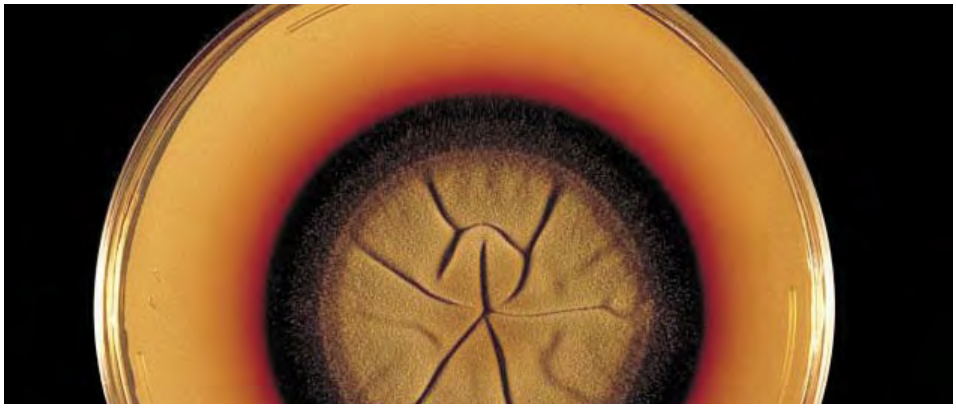
As our nation's many landfills grow in size and number, CDC is increasingly asked to investigate health risks they can pose to nearby residents. Construction and demolition debris landfills have become a serious health problem, because hydrogen sulfide is produced when gypsum drywall breaks down in a landfill — as the people in Warren Township, Ohio, found out.

CDC began investigating the Warren Recycling Landfill in 2002 in response to a petition from the local school board and the Warren Township Trustees. Students and residents were complaining about smelling rotten eggs and blamed their headaches, nausea, vomiting, and eye irritation — all classic signs of hydrogen sulfide ($H_2S$) exposure — on this toxic gas.



In FY04, well over 1,000 odor complaints were reported to a 24-hour odor hotline CDC helped to establish. Citizens wanted a health study to assess whether landfill emissions were affecting their health, and CDC delivered. The Ohio Department of Health requested an emergency health investigation known as an Epi-Aid, a mechanism typically used for infectious disease outbreaks. This study addressed community environmental exposures and involved more than 100 volunteers who lived near the landfill.

During the Epi-Aid, CDC measured outdoor H2S and documented levels approaching a concentration considered immediately dangerous to health and life. This finding prompted an emergency response by local, state, and federal partners. CDC supplied personal monitoring badges to measure individuals' exposures to H2S and taught people how to keep daily diaries of exposures and symptoms. The data collected over 2 years at the site have provided enough evidence for the U.S. EPA to clean up the site beginning in FY05.

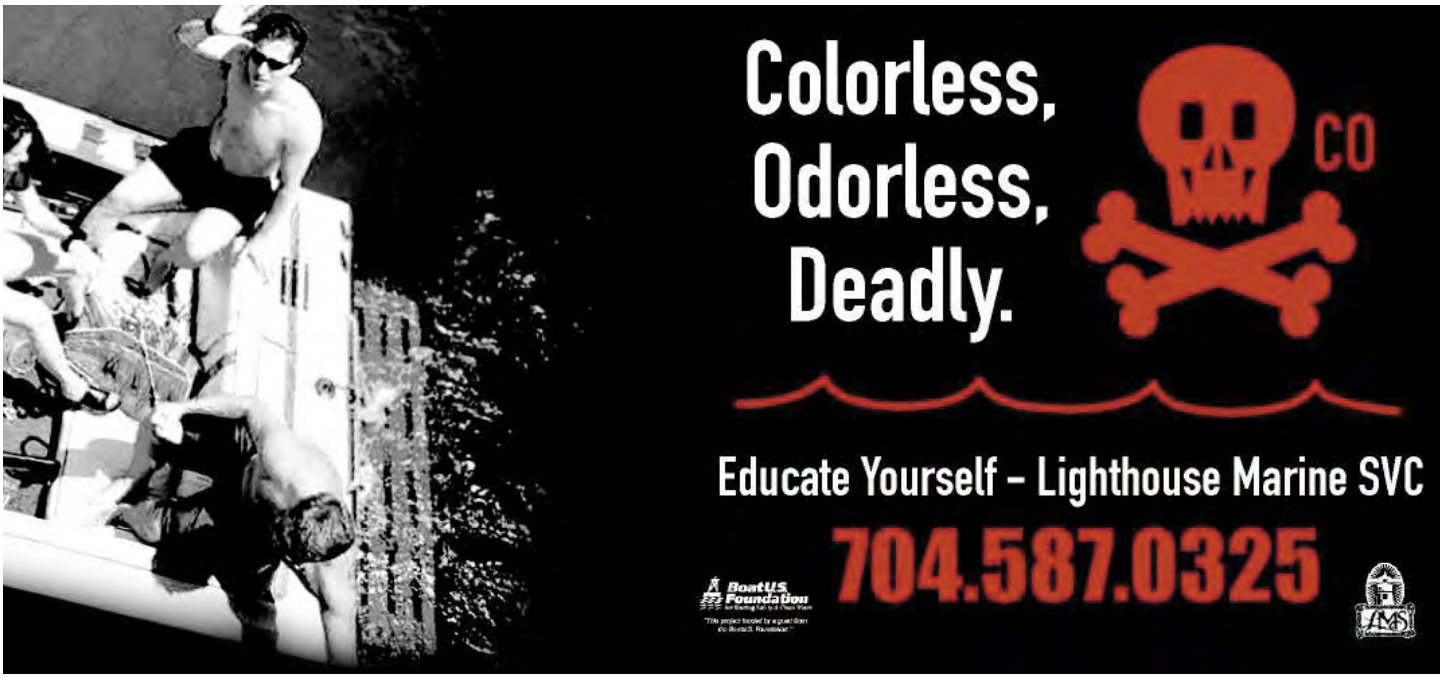


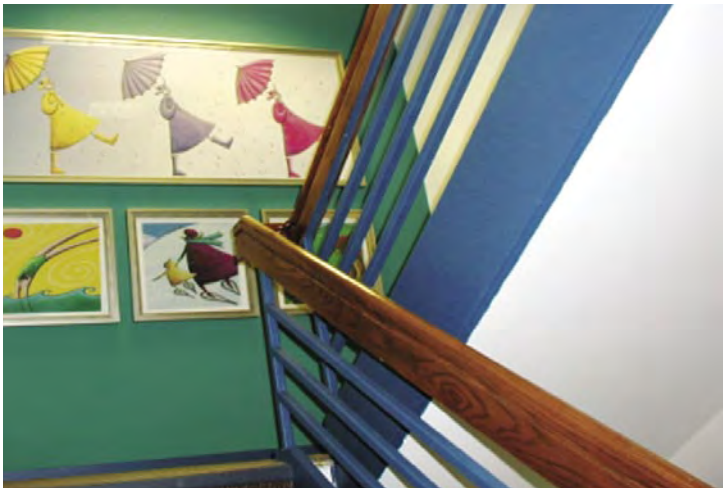
## Protecting People at Play

Many people know breathing carbon monoxide — CO — indoors can be deadly. But too few are aware that engine exhaust can kill outdoors, too. Estimates are that about 40 people a year are poisoned by carbon monoxide while boating, jet-skiing, swimming, and even wading.

But outdoor CO poisonings are likely underreported. Because symptoms of CO poisoning resemble those of other common conditions (drinking too much alcohol, motion sickness, heat stress, viral illness), poisonings often go unrecognized. Like the public, EMS staff, hospital emergency department personnel, and coroners may be unaware that CO poisoning can happen in open air.

- An FY04 CDC investigation found that CO endangered marina workers and vacationers boating and wading on Lake Havasu in Arizona.
- CDC developed and evaluated systems for the U.S. Coast Guard to reduce CO poisonings, and tested several devices currently on the market that redirect the exhaust from inboard engines away from nearby swimmers.
- We also supplied technical information and support to organizations developing interventions — groups like Lighthouse Marine — that educate the public about boat-related carbon monoxide poisoning. After the non-profit group posted bill boards around North Carolina's Lake Norman and Lake Wylie, the number of students taking safe boating classes at Lighthouse Marine jumped about 30% — a sure indication of people's interest in making sure boating stays safe.





## Practicing What We Preach

In FY04, CDC developed, evaluated, and disseminated a Healthier Worksite Initiative to promote worksite health for all employees. This initiative is founded on science-based programs and serves as a role model and a resource for other worksites throughout the U.S.

CDC's Healthier Worksite Initiative focuses on the 4 pillars of the President's HealthierUS Executive Order:

- Physical Activity
- Healthy Eating
- Preventive Screenings
- Making Healthy Choices

## FY04 Accomplishments

**PHYSICAL ACTIVITY:**

- A CDC-wide walkability audit.
- A walking trail at CDC's Chamblee campus.
- StairWELL to Better Health projects on 2 CDC campuses, designed to make taking the stairs more appealing.
- Results from the StairWELL to Better Health projects published in the *American Journal of Health Promotion*.

**HEALTHY EATING:**

- A campaign for healthier food at the main CDC campus cafeteria.
- A weekly fresh produce vendor to encourage employees to buy fresh fruits and vegetables at 2 campuses.

**PREVENTIVE SCREENINGS:**

- A preventive benefits audit of CDC's Atlanta-area employee health plans.

**MAKING HEALTHY CHOICES:**

- Smoking cessation support services to assist employees in quitting smoking.

## Protecting Families at Home

It was unusual, puzzling, and — as it turned out — potentially life-threatening.

- The occupants of a newly built home in West Virginia were experiencing episodic shortness of breath, dizziness, confusion, headache, and fatigue when they were in their basement.
- Contractors working at the entrance to a crawlspace in the house experienced rapid heart rates and breathlessness.
- When firefighters arrived in response to a call from the contractors, 1 felt a rush of air from the crawlspace that "took his breath away."
- But environmental measurements of suspected culprit gases — such as carbon monoxide and methane — were below detectable limits.

The state Department of Environmental Protection requested technical assistance from CDC to pursue suspicions that the problems were due to displacement of oxygen by carbon dioxide, or $CO_2$. The investigation confirmed $CO_2$ in high concentrations. Many measurements in the basement and crawlspace exceeded limits posing an immediate danger to health and life.

- The cause? Natural $CO_2$ sources in an abandoned coal mine under the property.
- The solution? The crawlspace was redesigned to redirect and limit $CO_2$ infiltration into the house. $CO_2$ levels subsided and oxygen levels returned to normal, protecting the family and workers.

## Helping Businesses Protect Workers, Too

At a Midwestern poultry processing plant, employees were coughing, sneezing, wheezing, and experiencing itchy and burning eyes. Finding a specific cause was elusive. Working with the state agency, the employer, and employees to conduct a rigorous scientific investigation, CDC linked the symptoms with exposures to airborne compounds called chloramines, given off by the highly chlorinated water used to kill bacteria that might otherwise contaminate the poultry meat.

Once the likely cause was identified, CDC worked with the same team of partners to develop, install, and evaluate changes in the ventilation system to reduce employees' exposures. Our involvement didn't just help this company and its employees:

- It provided a basis for potential partnerships with other companies and employees to see if similar problems may exist elsewhere.
- It stimulated the development of new analytical methods for better measurement of chloramines.
- It provided exceptional experience for the next generation of public health. Through CDC's Project IMHOTEP, which recruits undergraduate interns from Historically Black Colleges and Universities, the scientific investigation provided a talented student with a unique, career-enhancing experience. As an intern serving with the CDC team, the student gained valuable health protection know-how.

Twenty-four *Steps to a HealthierUS* communities ended their first year of funding in FY04. In FY04, $41 million was provided to increase funding to existing communities and to fund 16 additional Steps communities and 1 national partner, the YMCA. These 17 new participants will enhance the Steps program's reach and continue the exciting work begun by the first 24 communities.

This first year of activities resulted in the development of strong community partnerships, expansion of existing community programs, and the implementation of community-based programs that are proven effective in preventing and controlling diabetes, asthma, and obesity with a focus on physical activity, nutrition, and tobacco. All Steps communities worked in all 6 focus areas across schools, communities, worksites, and health care organizations. Some examples of achievements and initial impacts include:

- The Philadelphia Steps Faith-Based Coalition conducted a 4-week, 16-session diabetes initiative. Fifty African Americans with diabetes and 20 who were pre-diabetic achieved blood sugar levels within normal limits in less than 4 weeks.
- Salinas/Monterey County implemented the American Lung Association's Open Airways for Schools in all Salinas schools. Open Airways provides students with specific asthma self-management skills and positive reinforcement from teachers and asthma education instructors.
- Seattle held 70 healthy eating classes in 30 different sites, including community centers, ethnic meal programs, senior housing sites, schools, and Head Start programs.
- Workplace-based interventions by the Steps to a Healthier New York Program reached 3,900 employees in Broome and Chautauqua counties.

# Global Health Protection Means Americans Are Safer

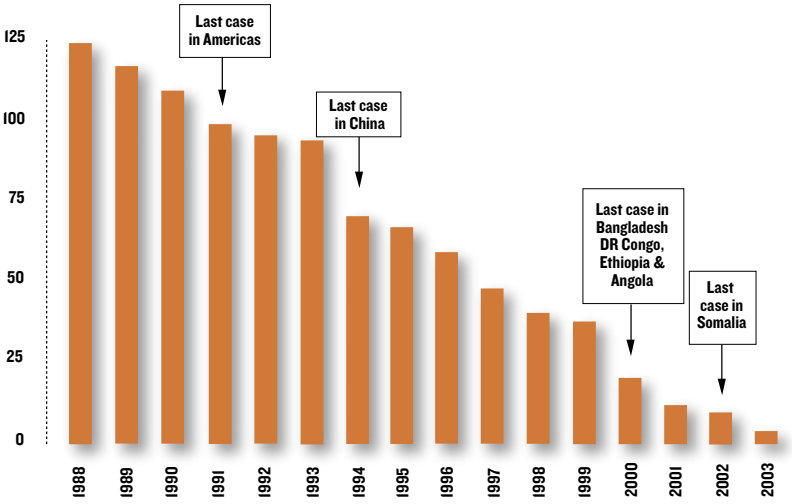
| 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|---|---|---|---|---|---|
| Hantavirus Pulmonary Syndrome (USA) | Plague (India) | Ebola Hemorrhagic Fever (Zaire) | New Variant Creutzfeldt-Jakob Disease (UK) | Human H5N1 Influenza (Hong Kong) | Nipah Virus Encephalitis (Malaysia, Singapore) | West Nile Encephalitis (Russia, USA) |

*In an age of expanding international trade* and air travel, infectious microbes are transported across borders — even oceans — every day. Left unchecked, today's emerging diseases can become the epidemics of tomorrow. In FY04, CDC assigned 160 staff to 45 countries overseas, chiefly working to control infectious diseases and providing guidance and technical assistance to Ministries of Health, the World Health Organization, and nongovernmental organizations.

From the remote mountains of Afghanistan to the crowded cities of Zambia, CDC staff worked with global partners to protect millions of people from ever-present, ever-changing microbes that threaten human health — and kept America safer as a result.

| 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| Rift Valley Fever (Saudi Arabia, Yemen) | Anthrax (USA) | Vancomycin-Resistant *S. aureus* (USA) | SARS (25 countries) | H5N1 Avian Influenza in Poultry (8 countries) | ? |
| Ebola Hemorrhagic Fever (Uganda) | Foot and Mouth Disease (UK) | SARS (China) | Monkeypox (Midwestern US) | Human H5N1 Influenza (Thailand and Vietnam) | ? |
| | Nipah Virus (Bangladesh) | | Human H5N1 Influenza (Hong Kong) | Nipah Virus (Bangladesh) | ? |
| | | | H5N1 Avian Influenza in Poultry (Midwestern USA) | | |
| | | | Nipah Virus (Bangladesh) | | |

## Number of Countries with Endemic Polio
*1988-2003*



### Ridding The World Of Polio — So Close, Yet...

The world is at a critical juncture as it comes up just short of making polio a disease of the past. Tracking down the last few cases is often the hardest, and that was certainly true in FY04 as CDC and its partners — WHO, UNICEF, and Rotary International — intensified efforts in the largest public health initiative in history.

Since the initiative began in 1988, CDC and its partners have invested more than $3B and engaged more than 200 countries and territories in the fight against polio. The investment has paid off.

Polio is confined to fewer than 20 countries now, down from 125 countries when the global eradication effort began in 1988. In 2004, polio declined by nearly 43% in India, Pakistan, and Afghanistan. However, vanquishing polio requires constant efforts.

In 2003 and 2004, wild poliovirus spread from Nigeria to other countries in west and central Africa. Polio transmission was re-established in 5 countries and imported polio cases occurred in several others. An outbreak of polio in Sudan paralyzed more than 100 children, adding to the humanitarian crisis resulting from the conflict in Darfur. These challenges are a reminder that, despite the tremendous success of the last 16 years, we cannot be complacent.

In 2003, CDC contributed 500 million doses of oral polio vaccine through UNICEF. We also helped WHO network polio laboratories worldwide. As of January 2004, 145 laboratories were connected to the network. These laboratories also serve as the platform for global surveillance of other diseases, and will play a critical role in global health protection long after polio is eradicated. Through polio eradication efforts:

- Health service delivery systems have been strengthened in many countries.
- Hundreds of thousands of health workers have been trained.
- Millions of volunteers have been mobilized to support immunization campaigns
- Cold-chain and transport equipment have been refurbished.

## Measles Elimination Gains Ground

During FY04, CDC and its partners made great progress toward eliminating measles in many parts of the world. In countries and regions able to keep vaccination coverage high — around 95% — measles is very rare. By the end of 2004, prolonged indigenous measles transmission was interrupted in all 47 countries of the Americas, with only 108 measles cases reported in the entire Western Hemisphere.

Still, measles remains one of the leading child-killers worldwide, and the leading cause of preventable blindness. Around the globe, there are around 30 million measles cases and 530,000 deaths each year. More than half the deaths are in Africa.

Between 2001 and the end of 2004, CDC and its allies in the quest to rid the world of measles vaccinated more than 155 million children — preventing more than 270,000 deaths, most in Africa.
CDC also provided measles vaccines and auto-disable needles, syringes, and safety boxes for national campaigns in developing countries.

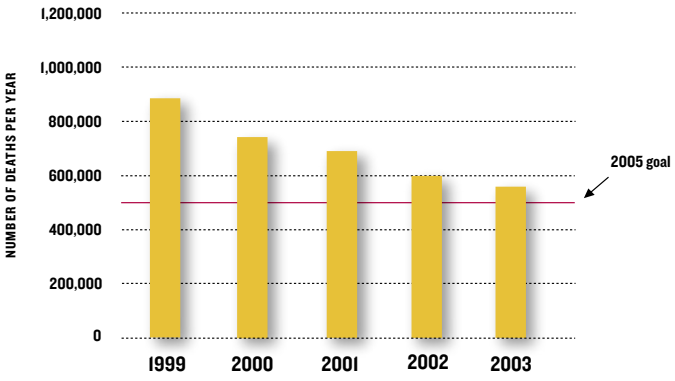
## Simple Solutions for Big Problems: Soap and Water

Sometimes big problems can be fixed with small changes. CDC and its partners in Pakistan have dramatic proof of how ordinary soap and water form an extraordinary solution.

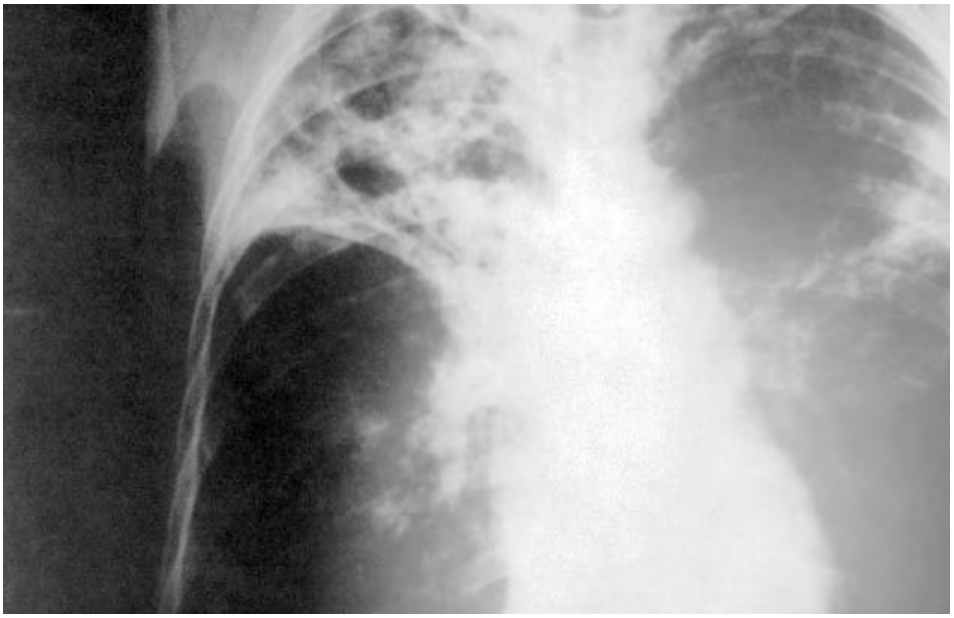
In FY04, CDC programs to improve water safety and hygiene around the world brought together Pakistani health officials and U.S. soap manufacturer Procter & Gamble for a collaborative study that provides soap to poor families in the country's Karachi region.

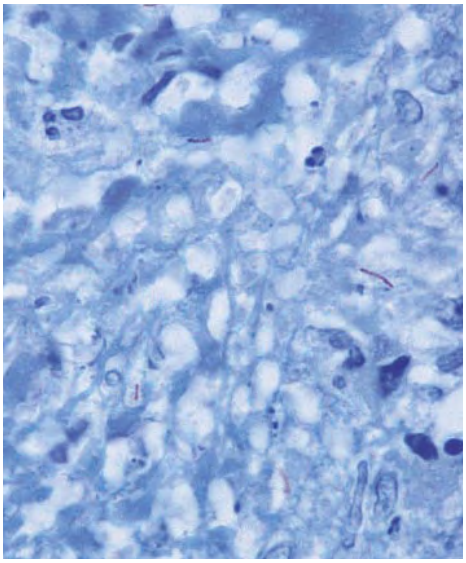
- Promoting handwashing with soap led to a 40% reduction in diarrheal illness.
- Compared to families that didn't use soap, the "clean hands" families also showed a 40% reduction in acute respiratory illness, pneumonia, and skin infections such as impetigo.
- Even young infants were better protected, despite not washing their hands.
- Thanks to $150,000 in direct funding from P&G, total U.S. taxpayer contributions for this remarkable outcome were just $7,000.

### Estimated Measles Deaths Worldwide
*1999-2003*




*Source: CDC, MMWR March 4 2005, Vol 54.No. 8; 200-203*
** Uncertainty bounds*





## TB Program Eliminates Borders

Diseases have no borders, and that's especially true for tuberculosis. A quarter of all foreign-born tuberculosis patients in the U.S. come from Mexico, so making it easier for them to continue treatment while traveling between the 2 countries is an important health protection measure. That's the goal of a U.S.-Mexico collaboration that began in March 2003.

- A cornerstone of the program is issuing TB bi-national cards, which link patients to a referral system in both countries.
- So far, the program has issued nearly 1,000 cards to TB patients in Mexico and 275 cards to TB patients in the U.S.
- About 30% of the U.S. patients traveled to Mexico while on treatment.
- The card contains a unique identification number to protect the patient's identity, and allows providers to access patient records and provide continued care.
- It includes toll-free numbers in both countries for finding clinical care.
- A TB education flip chart also has been developed for patients.
- CDC is evaluating the program for impact and cost effectiveness in FY05.

## Early Warning, Early Action for Emerging Infectious Diseases

Two very different countries, Thailand and Kenya, are the sites for CDC's first 2 International Emerging Infections Programs.

The Thailand program provided essential public health expertise during the SARS outbreak in March 2003:

- Developing daily situational reports.
- Participating in emergency response operations in Thailand and other affected countries in the region.
- Obtaining the specimens that first identified a novel coronavirus as a cause for SARS.

Following the success of the Thailand site, the Kenya program was begun in FY04.

The long-term goal of the international programs is to develop sustainable, in-country capacity for disease surveillance, outbreak investigation, and applied research on diseases of regional or global importance by fostering the next generation of international public health leaders.

The program's sites combine specialized epidemiologic and laboratory expertise. They:

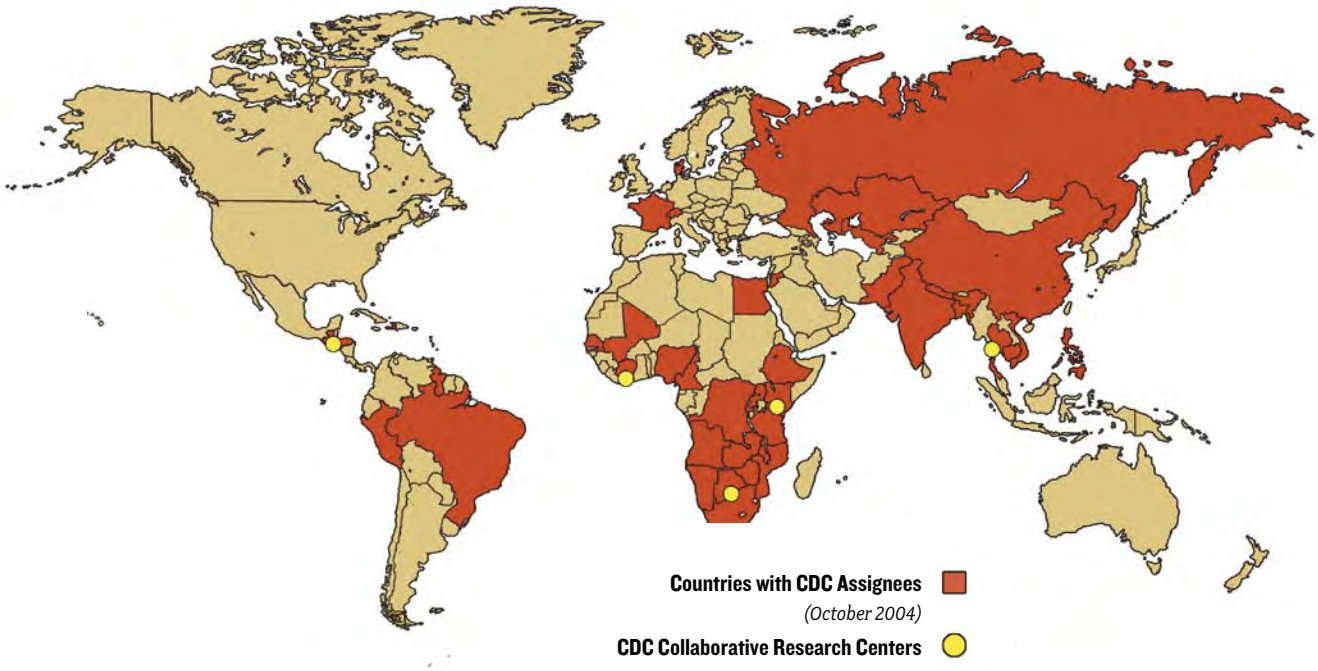
- Train local scientists and CDC personnel.
- Provide diagnostic and epidemiologic resources when outbreaks occur.
- Serve as platforms for regional infectious disease control activities.
- Conduct public health research of global importance.
- Disseminate proven public health tools.

In FY04 the Thailand program:

- Published the first clinical description of human cases of avian influenza in Vietnam and Thailand.
- Used population-based surveillance to generate information on the burden of severe pneumonia among children in rural areas to guide the Thai government's 2004 avian influenza response.
- Provided critical information and logistical support to the Thailand Ministry of Public Health, WHO field response teams, and response teams at CDC during the 2004 avian influenza crisis.

In FY04, the new Kenya program:

- Assisted the Kenya Ministry of Health in investigations of outbreaks of severe febrile illness in western Kenya and O'nyong-nyong fever on Kenya's coast.
- Began training the first class of Kenya epidemiologists and laboratory managers.
- Established on-the-ground links with partners like WHO, the African Medical and Research Foundation, and non-governmental organizations.



## UPDATE:
# The President's Emergency Plan for AIDS Relief

CDC is one of the key implementing agencies for the President's Emergency Plan for AIDS Relief. This 5-year, $15B initiative will ■ Support treatment for 2 million HIV-infected people ■ Prevent 7 million new HIV infections ■ Support care for 10 million people infected and affected by HIV/AIDS, including orphans and vulnerable children

CDC's Global AIDS Program — or GAP — works with 25 countries in Africa, Asia, the Caribbean, and Latin America to prevent HIV infection, improve treatment for people living with AIDS, and reduce mother-to-child HIV infections. Fifteen of the 25 GAP countries are also focus countries under the President's Emergency Plan for AIDS Relief. (See the maps on page 61 for more information about countries where GAP is working.)

In FY04, CDC:

- Provided expert technical assistance and critical financial support to improve laboratory capacity, HIV/AIDS surveillance, HIV prevention, and AIDS care in 25 GAP countries and 27 other countries served by our regional offices.
- Assigned more than 100 CDC staff to the field and employed more than 1,000 local staff to implement in-country programs.
- Conducted nearly 2 million HIV lab tests and approximately 275,000 TB diagnostic tests.
- Provided HIV counseling and testing to nearly 300,000 individuals and services to prevent mother-to-child HIV transmission (PMTCT) to more than 550,000 pregnant women in the 10 non-focus countries.

With the other agencies that are part of the President's Emergency Plan, CDC helped achieve these FY04 results in the 15 focus countries:

- Supported antiretroviral drug therapy (ART) for nearly 155,000 patients.
- Provided PMTCT services for nearly 1.3 million pregnant women.
- Provided over 125,000 HIV-positive pregnant women with short-course antiretroviral drugs - protecting an estimated nearly 24,000 babies from being infected with HIV.

## CDC Global AIDS Program Countries

## The President's Emergency Plan for AIDS Relief

*15 Focus Countries*

## AIDS Home Care Program Saves Lives

Christopher Omoit is alive today because of a unique program that delivers lifesaving drugs and education to his home in rural Uganda. The Home-Based AIDS Care Program serves 53-year-old Christopher, his wife Florence, their 5 children, and 2 orphans from Christopher's sister, who died of AIDS. The family lives 4 miles from the nearest health clinic. Antiretroviral therapy is delivered to their home each week by community-level workers on motorcycles. This unique program is implemented by CDC in collaboration with a local group, the AIDS Support Organization; Uganda's Ministry of Health; and USAID.

The family also has a CDC safe drinking water vessel to prevent diarrhea and bed nets to prevent malaria, and Christopher takes a simple antibiotic, cotrimoxazole, to prevent illness and prolong his life. The result? Christopher is adhering to his drug regimen better than most people with HIV in America do.

# Helping CDC Do More, Faster

The CDC Foundation is an independent, non-profit enterprise that forges effective alliances to fight threats to health and safety.

Recognizing that no single agency alone can protect people from disease, injury, and disability, Congress established the CDC Foundation in 1995 to connect outside partners and resources with CDC scientists, helping them build programs that can substantially enhance CDC's impact. For the past decade, the CDC Foundation has partnered with corporations, public sector and nongovernmental organizations, academic institutions, individuals, and other foundations to help implement and expand programs addressing a variety of public health threats, at home and abroad.

## Closing the Health Gap

For 15 years, Marsha Farmer, 54, owner of a café in the small town of Arcadia, Kansas, put off having a mammogram. Her rural community had no facility for breast cancer screening and she had no insurance to cover it. So when the Mt. Carmel Regional Cancer Center's mobile mammography van rolled into town, her husband encouraged her to make an appointment.

*"I wanted peace of mind," she says. "Cancer runs in the family — I've had aunts die of breast and cervical cancer. And now I feel better."*

Mt. Carmel is 1 of 7 sites awarded a grant from the CDC Foundation — through a gift from the Avon Foundation — to implement mobile mammography screening programs targeting underserved women. The program gives CDC scientists valuable data on how mobile units can attract and serve women like Marsha, who is sold on the program.

*www.cdcfoundation.org*

## On-the-Job Training

Doan Nguyen, M.D., a Vietnamese laboratory researcher, has learned a lot about avian influenza or "bird flu" during his 1-year stint as an Eli Lilly Emerging Infectious Disease Fellow conducting research for CDC. Nguyen's fellowship was sponsored by Eli Lilly and Company in partnership with the Association of Public Health Laboratories, CDC, and the CDC Foundation.

*"As an Eli Lilly Fellow, I have been working to better understand the frequency of transmission of avian influenza to humans, and the risks to humans, by conducting surveillance among poultry workers in the live-bird markets of Hanoi," says Nguyen.*

At home in Hanoi, Nguyen works in the Laboratory of Respiratory Viruses at NIHE, the National Institute of Hygiene and Epidemiology, a top-level government agency that conducts surveillance for influenza. When the SARS epidemic struck, Nguyen immediately became a crucial link between his laboratory colleagues at NIHE in Hanoi and CDC.

*"I was able to help NIHE by offering them the advice of many CDC experts, as well as coordinating the shipment of SARS analysis tools from CDC to Vietnam," he says.*

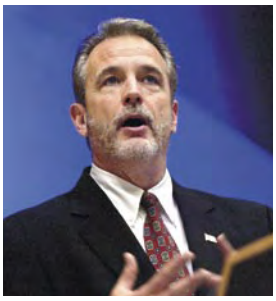
## Addressing Health Threats the World Around

Niegra, a 35-year old mother of 7, lives with her family in one of the most impoverished sections of Kabul, Afghanistan. Until recently, she and her children had almost no access to safe drinking water. They transported water from the community pump to their apartment — often in unclean buckets with unwashed hands. Last year, 1 of her daughters became seriously ill with diarrhea and vomiting. A 2002 cholera epidemic in Kabul sent 6,000 people to hospitals. Cholera is spread in unclean water.

*"All of the children were regularly sick," Niegra says. "I had no idea what to do."*

Niegra's children are not alone. In Afghanistan, diarrhea is the leading cause of child death, killing about 85,000 children yearly. But a CDC program to educate women about a simple, inexpensive way to treat water in their homes is turning the tide. Funded by a grant from the Bill & Melinda Gates Foundation through the CDC Foundation, the project is teaching Niegra and others how to use diluted chlorine bleach to treat drinking water and how to store it safely in narrow-mouthed, lidded vessels. Today, Niegra knows what to do, and has the tools she needs to keep her family safe — and her children are rarely sick.

# Building a Better CDC



> **"In FY04 we made real progress in two critical efforts: improving performance so that government works at the speed of business and improving accountability."**

William H. Gimson,
Chief Operating Officer, CDC

**It's been an exciting year at CDC. We have:**

- A $7B budget — more than 70% of which goes to outside organizations.
- A major facilities improvement plan under way — the largest in agency history.
- 15,000 staff (including nearly 6,000 contractors), many of whom could be needed halfway around the globe at a moment's notice.
- Priorities that have to be flexible enough to encompass public health emergencies, but durable enough to guide us over the long haul.

It's an understatement to say that CDC is a challenging agency to manage. And while the majority of Americans surveyed — 90% — believe CDC is doing a good or excellent job, we know we have to continually ask ourselves, "How can we do better?" and "How can we better serve our customers?"

CDC's core business functions are a critical part of our ability to protect the health and safety of people at home and around the world. So, under the Futures Initiative, CDC initiated 30 major business services improvements designed to increase positive public health impact and maximize the agency's return on investment.

| CDC'S MOST RECENT PMA SCORECARD | |
|---|---|
| Budget & Performance Integration | ● |
| Competitive Sourcing | ● |
| Expanded E-government | ● |
| Financial Management | ● |
| Strategic Management of Human Capital | ● |

**The President's Management Agenda and allied HHS Secretary's Management Objectives have steered CDC's improvements in management and operations, a strategy that's yielding increasingly positive results. On the most recent PMA scorecard from HHS, CDC received 5 green lights — a noteworthy improvement over previous scores.**

**Three imperatives from CDC's Futures Initiative — efficiency, effectiveness, accountability — drive our efforts to upgrade specific business components: human capital, fiscal management, information technology, travel, procurement, and grants.**

These imperatives are based on how good government should work, and in the future will allow CDC to be more flexible, more results-oriented, more innovative, and more effective in achieving our public health mission. On the following pages, you will learn more about the changes we've made, including several that are already posting efficiency gains, and how they're improving CDC's work. Bringing CDC's aging facilities into the 21st century was one of the most visible improvements made over Fiscal Year 2004, with far-ranging effects on improving service. Lastly, you'll find financial information detailing CDC's appropriated budget and how we spent your money to improve health and well-being, here at home and around the world.

I would welcome your comments and insights about the business side of America's prevention agency. If you have thoughts to share, please email cdcbusinessservices@cdc.gov. *Thank you.*

William H. Gimson
Chief Operating Officer

## Applying Proven Business-Sector Practices To Boost CDC's Performance

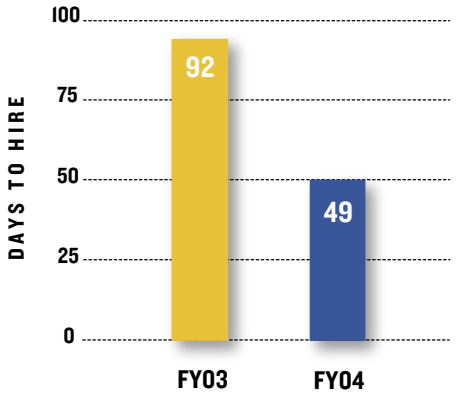
*More efficient and effective operations mean better health protection for America*

CDC is combining the best of the business sector with the best of the public sector to boost operations and increase the health impact of our programs. In FY04, we continued to revamp 30 major business services to gain cost efficiencies and substantial performance improvements and — most significant — to let us redeploy fiscal and human resources to critical front-line health protection activities. Across CDC, 7 new CMOs — Chief Management Officials — will direct our ongoing efforts to enhance business operations. While the positions may be new, the people filling them collectively bring literally hundreds of years of both government and private-sector management experience and practical expertise in boosting performance and systems.

**Six business imperatives are guiding us during our improvement process:**

- **Continuously improve customer service and satisfaction.**
- **Provide the best value for the investment.**
- **Show accountability through performance metrics.**
- **Increase job satisfaction through workforce development.**
- **Search for innovation in work processes.**
- **Ensure stewardship of public funds.**

### Reducing Hiring Time in Workdays



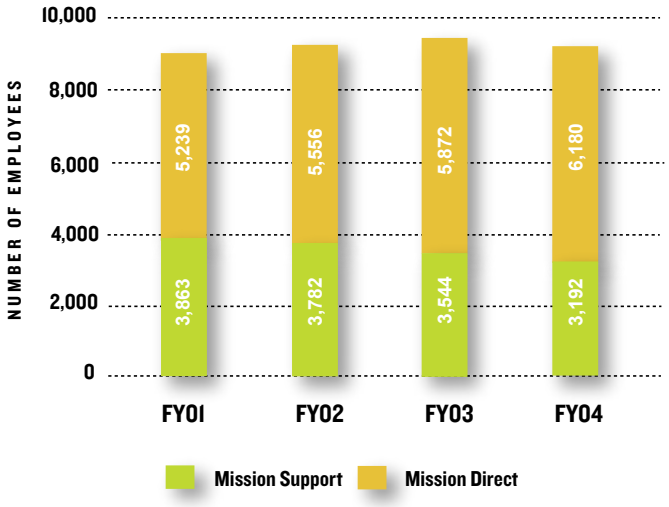

## Human Capital: The Most Important Part of CDC's Health Protection Work

CDC's dedicated and expert staff are our most important asset. Managing that precious asset more strategically has been a critical part of our FY04 efforts to improve performance.

We freed up more than 600 positions from administrative tasks, saving $54M in this year alone. We redirected open slots to direct, front-line public health areas, and filled those positions with core, mission-related disciplines — epidemiologists, medical officers, and laboratorians. Other FY04 restructuring activities included:

- Consolidating budget execution services, saving 61 staff (20%).
- Merging senior management offices from the Agency for Toxic Substances and Disease Registry and CDC's National Center for Environmental Health, resulting in a combined staff reduction of 35 positions (18%).
- Streamlining key administrative services in CDC's Office of the Director — including travel, timekeeping, personnel, and training — leading to a savings of 20 positions (24%).
- Flattening CDC to just 4 organizational levels and reducing the number of overall organizational units from 555 to 373 — a 33% decrease.
- Increasing CDC's supervisor:employee ratio from 1:6 to 1:12 — reducing the number of managers and escalating the number of people working directly to protect health.

### HUMAN CAPITAL: Mission Direct vs. Mission Support



## Sound Stewardship of the People's Investment

In FY04, we took steps to enhance our money management and the results we get from the taxpayers' investment, such as:

- Awarding a performance-based contract for consolidated public and professional health information services reduced more than 40 separate health information hotlines to a single consumer contact center. This will expand our hotline services to 24 hours/day, 365 days/year, and let us provide better customer service with multilingual information and dedicated lines for those who have hearing impairment. Our projected savings are about $35M over 7 years.
- We went live with a new Department of Health and Human Services financial system: the Unified Financial Management System's general ledger and accounting for pay. We'll fully implement the system in 2005.

UFMS, once implemented, will help CDC consistently produce relevant, reliable, and timely financial information to support decision-making and cost-effective business operations at all levels. Some of the direct benefits of implementing UFMS include:

- Providing programs with more real-time data.
- Streamlining processes to free up program resources to do more value-added work, such as trend and programmatic analysis, with less time spent on routine data entry.
- Providing more user-friendly reports and access to information.
- Producing accurate, timely, and reliable financial reports, which will enable fact-based operational decisions.

## Buying Smarter, Paying Faster

In FY04, we increased the productivity of our procurement and we:

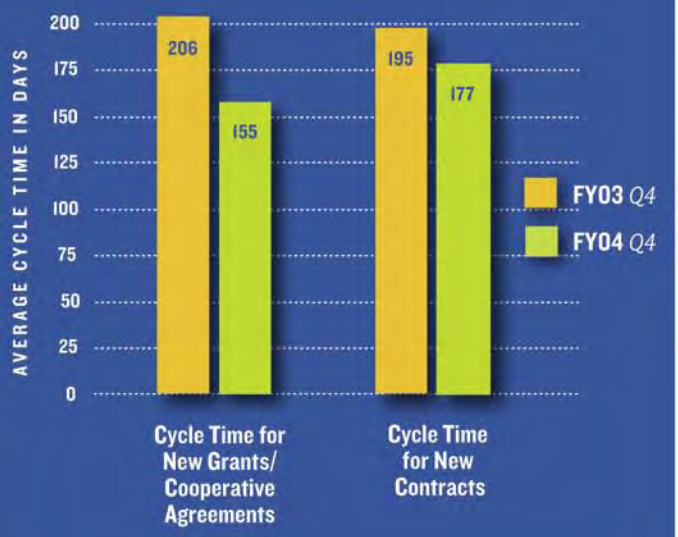
- Reduced transaction cycle time by 20–30%.
- Improved quality and consistency.

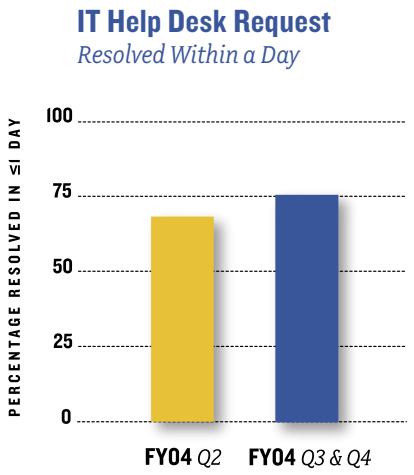
CDC also implemented NIH's IMPAC II grants system, which integrates grants management for external researchers, making it easier for researchers to apply for grants and easier for CDC to award them and then track researchers' progress.

Our new systems meant that we:

- Made accurate financial payments 99.98% of the time.
- Delivered prompt payments 97% of the time.
- Earned our fifth straight CFO unqualified financial clean opinion.

### Grants and Contracts: Cycle Time






## Information is Power

- Consolidating information technology staff reduced CDC's operating costs by $23M annually (21% savings). We redeployed 45 positions (18%) to mission-direct duties.
- Using innovative information technology, we restructured our human resources office and reduced full-time staff by 76 (30%). At the same time, we improved HR operations, nearly cutting in half the number of days it takes to hire a new employee.
- We also improved the way we measure our business performance, harnessing information technology to give us real-time information. Our KPIs — key performance indicators — give us critical information about our most important business operations, ensuring the health of our business processes and allowing us to adapt quickly when needed.

## Developing the Best and the Brightest Workforce for a Healthier America

**In FY04, we:**

- **Established an Office of Workforce and Career Development and a Chief Learning Officer to improve health outcomes by ensuring a competent and sustainable workforce through excellence and innovation.**
- **Awarded a Career Transition Services contract and created a Priority Placement Program for employees needing placement after restructuring.**

**Looking ahead to FY05, we're evaluating how to establish individual learning accounts, so each employee is guaranteed access to continuous learning opportunities.**

## CDC at a Glance: Our Workforce and Where We Are

### CDC's Workforce

- CDC is among Georgia's top 15 employers, with 9,400 employees in 170 occupations and nearly 6,000 contractors.
- CDC hired more than 700 new employees in FY04.
- Women account for nearly 60% of CDC's workforce.
- More than one-third of CDC's employees are members of a racial/ethnic minority group.
- Nearly 75% of CDC employees have a college degree; of those, more than 60% hold an advanced degree.

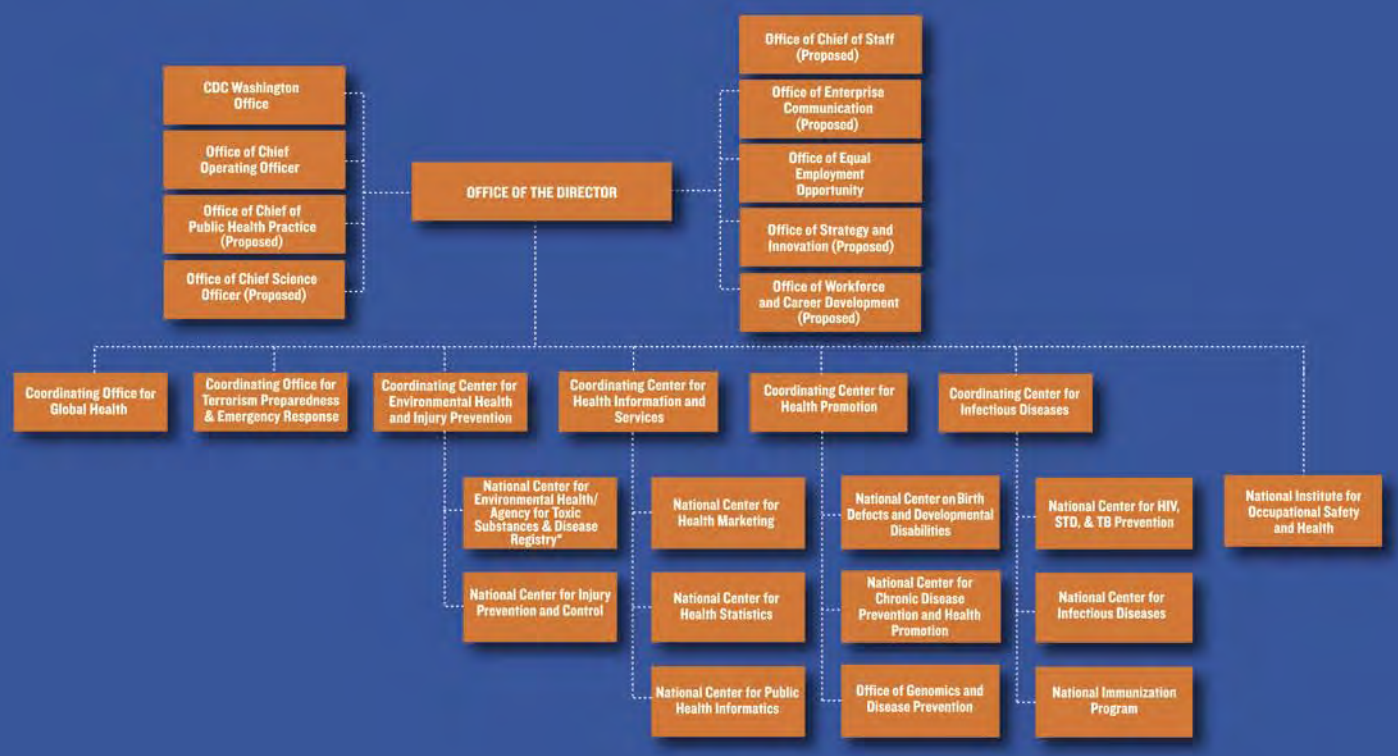
### CDC Locations

- CDC is headquartered in Atlanta, Georgia, and has 10 other locations in the U.S. and Puerto Rico.
- CDC employees are located in state and local health agencies and in quarantine offices across the U.S., and in 45 countries around the world.
- CDC's 10-year Atlanta-area Facilities Master Plan, launched in 2000, is funded at 64% through FY04.
- About 1.2 million square feet of space is under construction in the Atlanta area, with an additional 1.1 million planned through 2009.
- CDC began construction in FY04 on a 156,000 square foot vector-borne diseases lab in Fort Collins, Colorado.
- CDC programs currently occupy 1.6 million square feet of laboratory and laboratory support space.

# CDC FY04 $7B Appropriation

# Interim Organizational Chart

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




*ATSDR is an Operating Division within HHS but is managed by a common Office of the Director with NCEH