CDC Global Health

ENSURING PUBLIC HEALTH IN INSECURE AREAS

E-Brief
2ND QUARTER 2009

WELCOME to 2009's second quarter Global Health E-Brief, designed to inform readers about key global health activities at the Centers for Disease Control and Prevention (CDC). Our second issue of the year highlights how CDC strives to improve public health in regions of turmoil. Civil unrest, political instability, and economic crises pose additional challenges to providing public health interventions in already complex environments. Despite these difficult and sometimes dangerous settings, CDC remains committed to helping improve the health of those most in need worldwide.

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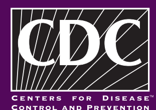
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
Coordinating Office for Global Health



CDC and Partners Work to End Polio in Conflict Areas

"It's clear that many people here in Pakistan are making phenomenal efforts to eradicate polio. Just imagine in your own town if you were asked to knock on the door of every home and convince the parents to let you immunize all their children under age five for a disease that is now relatively uncommon. Now imagine doing it for over 20 million children spread over an area larger than France in 100 degree weather for the grand sum of 80 rupees ($1.60)/day. These vaccinators are real heroes."

—Taken from the notes of a CDC employee deployed to Pakistan for three months to support polio eradication

Since 1988, when public health efforts to eradicate polio began, an estimated 250,000 polio deaths have been prevented and 5 million young people are walking who would otherwise have been paralyzed by polio. The Global Polio Eradication Initiative (GPEI)—the largest public health initiative in history—is spearheaded by CDC, the World Health Organization (WHO), Rotary International, and UNICEF. Since 1992 CDC has deployed more than 50 epidemiologists, public health experts, and scientists to WHO and UNICEF in leadership roles in global, regional, and country polio eradication programs. CDC also provides a wide range of technical expertise and laboratory support for GPEI, and every year provides funds to purchase tens of millions of doses of oral polio vaccine for use in mass immunization campaigns. The US government is the largest single donor to GPEI, providing $1.4 billion, or roughly 23% of total donations, since 1988.

Today, polio is endemic in only four countries in the world—Afghanistan, India, Nigeria, and Pakistan (compared with 125 countries in 1988)—and cases have dropped by more than 99%, from 350,000 per year to 1,652 in 2008. In spite of this incredible public health accomplishment, challenges to eradicating polio remain. One major barrier is ongoing civil strife in Afghanistan and Pakistan, which limits vaccinators' access to children. It's not the first time GPEI partners have faced such challenges.

In 2000–2001, polio eradication efforts in the Democratic Republic of Congo (DRC), a country roughly the size of Western Europe, were hampered by low immunization coverage, poor surveillance, and political instability caused by warring factions in the eastern part of the country. The fighting jeopardized the safety of vaccinators, who were sometimes harmed or even killed during attempts to vaccinate children. Determined to continue the vaccination campaigns, the DRC government, WHO, and the U.S. government convened a meeting to discuss the multilateral nature of the eradication initiative and the neutral interest in immunizing children. As a result, safe passage for non-governmental organization-operated planes and for vaccinators was established. Ultimately, 4.2 million children younger than 5 years in insecure areas were reached. Not only were children vaccinated against a major disease, but the negotiations related to polio eradication helped open the door for additional emergency visits and technical assistance.

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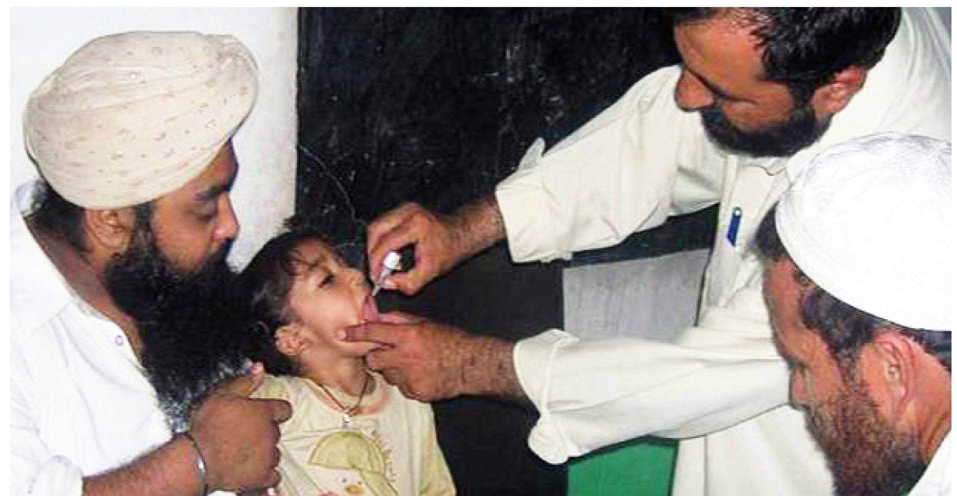
Similar events took place in another part of the world in the late 1980s. Opportunities for improving health in violent areas of El Salvador came as a result of negotiated ceasefires. In 1985 government and guerilla forces in the region suspended hostility for three "days of tranquility" to allow 20,000 vaccinators, volunteers, and guerilla forces to immunize children against polio. An extraordinary media campaign mobilized popular support for the program. From 1985–1991,



Community members in Afghanistan help provide oral polio vaccine to a child.

multiple one-day truces were negotiated between opposing forces for polio immunization days in El Salvador. The campaign helped end polio transmission in the country in 1991. "Ceasefires for National Immunization Days" have also been conducted in Afghanistan, the Philippines, Sri Lanka, Sudan, and Tajikistan. Former UN Secretary-General Kofi Annan said in 2001, "In war zones around the world, guns have fallen silent to allow immunization days to take place—demonstrating that even in the most intractable of conflicts, warring parties can call a halt to destruction in the cause of life."

Today, the polio collaboration is conducting vaccination campaigns in insecure areas of Pakistan (North West Frontier Province/Federally Administered Tribal Areas and parts of Balochistan) and Afghanistan (in the south) and among highly mobile populations in both countries. This effort requires:

- Between large-scale nationwide vaccination campaigns, delivering an extra dose of oral polio vaccine to people living in insecure areas;
- Regularly re-prioritizing districts based on the evolving security of the area and movement of people; and
- Involving all parties in the conflict in efforts to allow safe passage of polio vaccinators.

"CDC is keenly aware of the challenges in achieving the goal of eradication —gaining access to all children; working in insecure areas; stopping outbreaks before virus transmission is re-established" says Dr. Steve Cochi, CDC expert on immunization who has worked on polio eradication for nearly 20 years. "However, CDC, WHO, Rotary International, and UNICEF all remain committed to eradicating polio; success in more than 200 countries proves that a polio-free world is possible."

Economic and Political Upheaval Can't Deter CDC Commitment to Supporting Care and Treatment for Zimbabweans with HIV/AIDS

Dr. Tapiwanashe Bwakura, a young doctor at Harare Central Hospital in Zimbabwe, was on assignment at CDC in Atlanta in 2002 when he first visited an HIV/AIDS clinic. There he saw firsthand how HIV treatment could save patients' lives and how treatment sites were operated. At the time, no treatment for HIV/AIDS was available in Zimbabwe.

That early exposure bore fruit the next year. In 2003, soon after Dr. Bwakura's visit to Atlanta, CDC and the University of Zimbabwe partnered to plan Zimbabwe's first pilot HIV treatment sites. Nine months later, in a two-room clinic tucked in a corner of Harare Central, Dr. Bwakura and one nurse were administering the most advanced HIV treatment available to more than 250 patients. Over the next four years, with leveraged funding for drug orders, donated supplies, a larger space and another staff member, Dr. Bwakura showed the world that HIV treatment in Zimbabwe was not only possible, but practical on a national scale.

Zimbabwe was once the breadbasket of Africa, rich in natural resources and high-quality education and health care. Over the past 20 years, however, the country has seen a drastic decline in affordable food, sanitation, and even basic health care. Throughout this decline, CDC provided assistance in improving HIV/AIDS care and treatment in the country.

Then the economic crisis of 2008 hit.

Inflation soared to 230 million percent. Hundreds of skilled medical professionals fled the country to earn a living wage. Those that remained went on strike to protest the lack of protective equipment in a country where one in seven people is HIV-infected.

The economic crisis was exacerbated by an intense political campaign leading up to the March 2008 presidential election, which ended in a run-off. Any hope for change was crushed when the incumbent party campaigned with violence to ensure a win. To control the flow of information, any gathering of more than three people was banned.

Overnight, Dr. Bwakura's bustling clinic was labeled a political threat. Despite the health threats and empty bank accounts, Dr. Bwakura and his two staff kept the clinic running with support from CDC staff in Zimbabwe and at headquarters in Atlanta. So far this year, CDC has organized workshops to train workers in HIV treatment and management of tuberculosis (TB) co-infections and has conducted training for nurses—resulting in education for more than 2,000 health care providers.

Individuals in Zimbabwe prepare sanitation packages (a bucket, water purification tablets, and soap) for distribution in response to the devastating and disruptive cholera epidemic.

"Training in Zimbabwe sometimes feels like treading water because of the constant emigration. Yet, it is essential that people affected and infected by HIV receive the best care possible. We work to keep providers up to date, whatever their background or their futures," says Dr. Ruth Walkup, CDC's Country Director in Zimbabwe.

"Our ability to address local needs at all levels—from the policies and systems that impact the delivery of services to the care that each individual patient receives—is helping to build sustainable programs, despite the challenges of working in Zimbabwe."

Besides HIV, Zimbabwe has battled an epidemic of cholera—a potentially fatal bacterial infection that causes severe diarrhea and dehydration. According to the United Nations Office of the Coordination of Humanitarian Affairs, 94,443 suspected cases and 4,127 deaths were reported in the country from late August 2008 through early April 2009. CDC supplied lab reagents to the National Laboratory in Harare to ensure that cholera drug resistance testing could take place.

The funds and supplies have been invaluable, but, according to Walkup, CDC's scientific expertise is the agency's most valuable contribution. "CDC funding is welcome, but it is our specialized technical assistance that is unique."

"Our staffs are specialists in their fields. Our ability to address local needs at all levels—from the policies and systems that impact the delivery of services to the care that each individual patient receives—is helping to build sustainable programs, despite the challenges of working in Zimbabwe."

CDC Expertise in Nutrition Surveys Helps Ensure Food Aid in Darfur, Sudan, Gets Where Most Needed

It's hunger season in Darfur—the time of year before autumn harvests, when food supplies are running low and heavy rains contribute to malaria and diarrheal disease.

Even before the conflict in Darfur, Sudan, began in 2003, hunger and disease were major problems. But this year has Leisel Talley, a CDC epidemiologist who works in complex humanitarian emergency situations, especially worried about malnutrition in the region. As of January 2009, the United Nations estimates that nearly 2.7 million people in Darfur are Internally Displaced Persons—all relying on international food aid.

CDC works in about 40 countries around the world to improve the health of populations affected by complex humanitarian emergencies—war, famine, civil strife, disaster, genocide, drought and displacement. CDC has worked in the Darfur region to prevent hunger and monitor malnutrition for the past five years.

Talley has conducted annual comprehensive nutrition surveys of Darfur's children and their mothers since 2004. The surveys provide data on the extent of malnutrition in the area, information that is essential to plan for food aid and to coordinate humanitarian relief efforts. CDC conducts the surveys with the United Nations Children's Fund (UNICEF), local nongovernmental organizations (NGOs), the World Food Programme, and the Sudanese government.

Conducting the Darfur survey necessitates a marriage of science and logistics. Each year Talley and colleagues collect information about children in each of Darfur's three states—90 locations and 800 children per year. Surveyors measure children's height and weight, the circumference of their upper arms, and swelling of their feet (a sign of kwashiorkor, or extreme malnutrition).

Getting surveyors to the sites is dangerous. Hijackers and bandits prey on the roads and many sites are only accessible by helicopter. "You'd be on the road to go, and you'd turn

Leisel Talley, CDC epidemiologist, interviews a mother and child in Darfur in 2004.

around because you couldn't go any further. Logistically, it's not easy," Talley said.

Working in one of the most troubled regions in the world is also mentally challenging. In 2007, Talley had a 7-month-old son at home and found herself getting angry about the malnutrition she saw.

Among the important long-term outcomes of CDC's work over the past five years is that UN agencies based in Darfur have improved nutritional data collection.

"Sitting in a feeding center for the hundredth time in my career, I found myself getting angry that children were suffering and the situation hadn't changed in the three years that I had been involved in Darfur."

In 2004, the surveyors found 21% of children were moderately to severely malnourished. In 2005 the presence of acute malnutrition decreased to 12%, below the 15% "emergency" threshold. Talley attributes that decrease to improved humanitarian access. But in 2006 and 2007, acute malnutrition was back up to 16%. The Sudanese government has not yet released data for 2008.

Conducting the survey has become more difficult and expensive as security has deteriorated and nongovernmental organizations have left the region. This year, there are fears that the survey may not happen, but Talley is hopeful that the situation will improve. Among the important long-term outcomes of CDC's work over the past five years is that UN agencies based in Darfur have improved nutritional data collection. This ensures that resources are used in the best way, for the most vulnerable populations.

CDC also has trained staff from the UN, UNICEF and NGOs based in Darfur to do the on-the-ground survey work and has been contacted about training surveyors in other conflict regions. Today, UNICEF is taking responsibility for more of the survey.

"For me that's been one of the big successes. We're helping build capacity for these organizations in Sudan."

Besides the survey, CDC also conducts research on the best ways to prevent malnutrition. Talley is currently studying whether a fat-based nutrient spread—"super peanut butter"—given to children in internally displaced persons camps can prevent malnutrition. The spread can be used at home without further preparation (i.e. no cooking or additional water required), and it provides essential nutrients and protein needed for growth.

According to Talley, three spoons three times a day, an extra 274 calories a day, could make a big difference.

Improving the Health of Iraqis through Better Disease Surveillance and Electronic Reporting

A stable public health system is vital to building a healthy and resilient society. In countries like Iraq, decades of civil war have weakened the public health infrastructure, and power outages, malnutrition, and unsanitary conditions have created an ideal environment for infectious diseases to flourish. In its role in helping countries to strengthen their own public health systems to enable them to respond to their own public health needs, CDC is working in Iraq to build a strong foundation in disease surveillance and electronic reporting.

"War and unrest always divide and, in doing so, take a toll on the public's health" says Dr. Erica Dueger, who leads CDC's efforts on international emerging infections in Cairo, Egypt.

Recognizing the opportunity to protect the health of Iraqi citizens, Dueger and CDC colleagues at the Naval Medical Research Unit 3 (NAMRU-3) in Egypt have partnered with the Iraq Ministries of Health and Agriculture and several governmental and non-governmental partners to improve public health in Iraq.

In January, the partners launched a two-year project to improve Iraq's ability to identify and respond to both human and animal health threats. Many infectious diseases that threaten people around the world, including H5N1 avian influenza and the new novel influenza A H1N1, originated in animals.

The cornerstones of the project are public health training and disease surveillance. Over the next two years, Dueger and a team of CDC epidemiologists and laboratory staff will work closely with NAMRU-3 to provide a series of trainings for Iraqi health officials in the areas of epidemiology, medical entomology (the scientific study of insects that cause disease), laboratory practices, biosafety (safeguarding lab staff from exposure to infectious or toxic agents) and biosecurity (preventing unauthorized access, loss, theft, misuse, diversion, or intentional release of infectious agents or toxic materials), and public health information technology.

(L to R) Dr. Rima Khabbaz, Dr. Erica Dueger, CDC, and Dr. Mohamed Abukela, Egyptian Ministry of Health and Population, mark the opening of the collaborative International Emerging Infections Program's facility in Cairo, Egypt.

In March 2009, a comprehensive, 2-week workshop on epidemiology and laboratory science was pilot-tested in Cairo with 70 scientists from Egypt, Jordan, Djibouti, Afghanistan, Morocco, Libya and Sudan. All 50 of the participants who completed the workshop evaluation said they would recommend this workshop to their colleagues, and 47 of them said they would return to NAMRU-3 for a more advanced workshop. Their comments about the training were positive. "One of the best aspects was the opportunity to interact with public health people from other countries and to exchange ideas on surveillance programs and diseases encountered, etc... It was great to hear what projects were being undertaken in the region and what approaches they were taking to achieve their goals. From the epidemiology side, it was great to have more exposure to laboratory procedures and practices," one participant noted in the evaluation.

"It is heartening to know that through partnerships like these with Iraqi and other international organizations, we can bridge the divide caused by war to make a real impact on the health of the Iraqi people"

Based on participants' feedback during the pilot, the course has been modified and will be attended by 60 Iraqi epidemiologists and laboratory scientists this summer. For example, the modified course will include training in H1N1 flu, covering CDC's response and the roles of other international organizations; it will have an increased focus on zoonotic disease; and it will include training in virology and entomology. The course will be taught by experts from across CDC, including those with expertise in field epidemiology, zoonotic diseases, and informatics. NAMRU-3 staff said they are pleased they will have the opportunity to collaborate with lecturers from CDC and have access to their expertise.

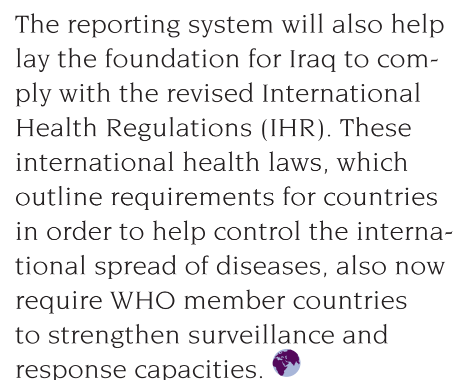
"It is heartening to know that through partnerships like these with Iraqi and other international organizations, we can bridge the divide caused by war to make a real impact on the health of the Iraqi people," Dueger said.

CDC is also working with partners in Iraq to develop an electronic disease-reporting system to rapidly identify and prioritize infectious diseases into three categories:

1) Those that pose the greatest risk of illness and death in people;

2) Those that pose the greatest risk of transmission from animals to people; and

3) Those that have the potential to prevent impact on much-needed food production.



The reporting system will also help lay the foundation for Iraq to comply with the revised International Health Regulations (IHR). These international health laws, which outline requirements for countries in order to help control the international spread of diseases, also now require WHO member countries to strengthen surveillance and response capacities.

Newsbytes

As WHO Raises the Alert level to Pandemic, CDC Continues its Critical Role in the Global Response to Influenza A (H1N1)

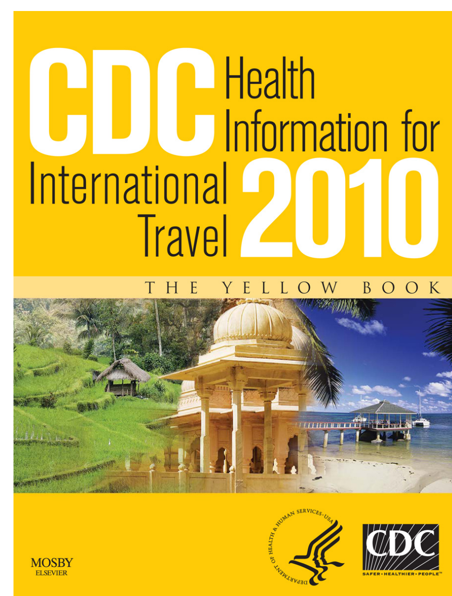
As of June 22, 2009, according to the World Health Organization (WHO), 99 countries and territories have officially reported 52,160 laboratory-confirmed cases of influenza A (H1N1) infection, including 231 deaths; additionally, on June 11, WHO officially raised the pandemic alert level from Phase 5 to Phase 6; thereby declaring a pandemic. CDC is working very closely with public health officials around the world as part of the international response to the H1N1 pandemic. As part of these efforts, CDC has supported staff deployments to Mexico and other countries for technical assistance, hosted liaisons from PAHO, the European Centre for Disease Prevention and Control, the Public Health Agency of Canada, and the China CDC; with this, we have facilitated coordination and collaboration with global partners, enhanced routine surveillance activities and laboratory testing activities to better detect unusual activities, and provided real-time RT-PCR protocols and kits for detection of H1N1 free of charge to domestic and international public health institutions around the globe. CDC is also working to answer some critical research questions in the Southern Hemisphere, as they may uncover important clues to the future of the H1N1 virus and its potential re-emergence during the influenza season in the US.

CDC produced diagnostic test kits (as pictured here) in response to H1N1 Influenza.

Photo by Greg Sykes, ATCC

The New 2010 Yellow Book has arrived

For decades, CDC's *Health Information for International Travel* (the Yellow Book) has been the gold standard for travel medicine in the United States. Published every two years, health-care professionals and everyday travelers rely on it for the latest dependable advice about travel health issues, including vaccinations, essential trip planning and safety tips, travelers with specific needs, humanitarian work, and more! The 2010 edition is available in bookstores ($29.95) and will be available for free this summer on CDC's Travelers' Health website. More information can be found at **www.cdc.gov/yellowbook**



The Yellow Book is published every two years by CDC as a reference for those who advise international travelers about health risks. The Yellow Book is written primarily for health professionals, although others will find it useful.

Stop Transmission of Polio Celebrates 10 Year Anniversary

Earlier this year CDC marked the Stop Transmission of Polio (STOP) program's ten year anniversary by hosting a celebration at the CDC Global Health Odyssey museum in Atlanta, GA. Members of the current STOP team, representatives from Rotary International and the World Health Organization (WHO) (partners in polio eradication effort along with CDC, UNICEF and the Canadian Public Health Association) attended the celebration. During the past decade the program has sent more than 1,000 volunteers to 60 countries around the world to support polio eradication; STOP has become largest global health training program ever at CDC. These volunteers provide a range of technical support, such as conducting field surveillance for polio, training local health care providers in surveillance, and planning and monitoring polio and measles vaccination campaigns. Dr. Stephen Blount, Director of CDC's Coordinating Office for Global Health, says of STOP's success, "More children today are leading healthy, active lives and hundreds of public health workers from around the world have learned—and lived—the lessons of hope and teamwork that predict the success soon of the eradication effort. In the years to come, I'm sure we will apply what we've learned from STOP to take on and complete the unfinished business of making routine immunizations a part of the life of every child."

Celebrating World No Tobacco Day

In recognition of World No Tobacco Day, held on May 31, 2009, the *Morbidity and Mortality Weekly Report* (MMWR), distributed on May 22nd, had a special focus on tobacco issues. CDC works in partnership with the World Health Organization (WHO) to address tobacco related health implications. This edition of the MMWR includes an article on federal and state cigarette excise taxes, an article, submitted by the WHO, on the assessment of tobacco packaging and warning requirements worldwide, and an informational piece about World No Tobacco Day. To view this issue of the CDC *Morbidity and Mortality Weekly Report*, go to: **http://www.cdc.gov/mmwr/PDF/wk/mm5819.pdf**

A quilt made of t-shirts signed by representatives from countries participating in the Global Tobacco Surveillance System (GTSS) was displayed at the Global Tobacco Surveillance System conference held in Atlanta in June.

International Rabies Experts Address Global Canine Rabies Elimination Strategy

CDC staff participated at a conference in Turin, Italy, in April as members of the Partners for Rabies Prevention (PRP), an international group of rabies experts and stakeholders focused on global canine rabies elimination. The PRP is working to develop a strategy for eliminating canine rabies in countries where the disease is endemic in domestic dog populations and to provide guidance for rabies elimination projects. Recently, the Bill and Melinda Gates Foundation have added rabies to their list of neglected diseases, and are funding pilot projects in the Philippines, Tanzania, and South Africa to successfully control human and dog rabies within five years. Some of the key activities will include education and training to foster community awareness, improved access to human rabies biologicals (post-exposure prophylaxis), and mass dog vaccination campaigns. For more information: **http://www.rabiescontrol.net/prp/Meetings.html**