

CDC works with the Government of Pakistan, the Pakistan National Institute of Health, and other partners to build effective public health collaboration and partnerships to detect, prevent, and respond to global public health threats. Pakistan is part of CDC's Middle East/North Africa regional platform which includes 25 countries, one regional office based in Oman, and the CDC Pakistan country office. Program priority areas address strengthening health systems as part of global health security as well as preventing and controlling polio, viral hepatitis, and other infectious diseases. CDC's work aims to protect the health of Americans and support public health around the world.

KEY ACCOMPLISHMENTS



- Established a national database to track influenza and hepatitis activity



- Supported the establishment of on-site laboratory capabilities for influenza testing to enhance rapid detection of influenza outbreaks in 4 of 5 disease surveillance sites



- Supported Pakistan's Field Epidemiology and Laboratory Training Program (FELTP) since 2006



- Helped increase local capacity to detect, track, and report drug-resistant fungi like *Candida auris* and other organisms



- Served on the Technical Advisory Board for the Pakistan National Committee on Hepatitis

PROGRAM OVERVIEW

GLOBAL HEALTH SECURITY

Pakistan's National Public Health Institute (NPHI) strengthens the country's capabilities to detect and respond to health threats. NPHI partners with other institutes to focus on research, environmental and occupational health, nutrition, non-communicable diseases, and vaccines. CDC helped Pakistan complete the Joint External Evaluation (JEE) in 2016 and 2023. The JEE evaluates public health capacities to help countries understand gaps in their national health security and focus on closing them. CDC's efforts help Pakistan increase capacities for disease surveillance, laboratory systems, workforce development, and emergency management and response.

Disease Surveillance

CDC strengthens influenza surveillance in Pakistan through a cooperative agreement with the Pakistan NIH. Since 2004, five surveillance sites were established to conduct surveillance for influenza-like illness in outpatient settings. These sites also conduct surveillance for severe acute respiratory illness among hospitalized patients. Pakistan is the only country where extensively drug-resistant typhoid fever is regularly occurring. CDC works with local government, Field Epidemiology Training Program participants, and health security partners to expand surveillance for typhoid and waterborne diseases. The agency also enhances typhoid prevention and response efforts. CDC engages in several projects related to bacterial diseases in Pakistan.

Laboratory Strengthening

The Global Laboratory Leadership Program (GLLP) began its first phase in Pakistan in 2019. GLLP strengthens the country's laboratory leadership and management capabilities, which are key functions in public health preparedness and response. The first cohort of GLLP in Pakistan graduated in 2023. Four of Pakistan's five disease surveillance sites established on-site laboratory capabilities for influenza testing to enhance rapid detection of influenza outbreaks.

Workforce Development

CDC has supported Pakistan's FELTP since 2006 at the Advanced and Frontline levels. FELTP-Advanced prepares epidemiologists for national-level public health leadership while FELTP-Frontline trains health workers as community-level epidemiologists. FELTP has been a key technical asset during several health emergencies and was instrumental in establishing Pakistan's first hepatitis surveillance sites. Ownership of the FELTP was officially transferred to the Government of Pakistan in December 2021.

POLIO

Pakistan is one of two countries where the spread of wild poliovirus has never been interrupted. As a key partner in the Global Polio Eradication Initiative (GPEI), CDC has strengthened polio eradication and immunization activities since 2012. CDC also partners with the GPEI Afghanistan and Pakistan Hub in Amman, Jordan to accelerate polio eradication efforts.

CDC's goals include:

- Optimize surveillance for acute flaccid paralysis (rapid onset of weakness or paralysis), which can be an indication of polio infection
- Increase quality of supplemental immunization activities, such as mass polio immunization campaigns
- Reduce the number of children missed during immunization campaigns
- Increase vaccine acceptance through integrated service delivery and improved collaboration between GPEI and the Expanded Programme on Immunization
- Improve data usage, compatibility of health information systems, and data-based risk and impact assessment for real time decision making at national, provincial, and district levels

ANTIMICROBIAL RESISTANCE (AMR)

CDC works to improve healthcare infection prevention and control (IPC) and slow the spread of AMR in Pakistan. CDC helps increase local capacity to detect, track, and report drug-resistant fungi like *Candida auris* and other organisms. CDC also supports whole-genome sequencing (WGS) of multidrug-resistant organisms. WGS can increase understanding of how healthcare-related spread of pathogens might be driving the spread of AMR in Pakistani communities.

CDC helps increase local capacities to:

- Detect invasive candidemia
- Implement IPC practices at 12 sentinel hospitals
- Conduct WGS and molecular characterization of AMR *Candida auris*

VIRAL HEPATITIS

Pakistan continues to experience spread of all forms of viral hepatitis. The country has one of the highest hepatitis C virus (HCV) infection rates in the world. It is estimated that 4-5% of the population lives with HCV. CDC has provided financial and technical support to viral hepatitis prevention and control in Pakistan for over 15 years. CDC continues to work with local partners to identify priority activities for implementation.

