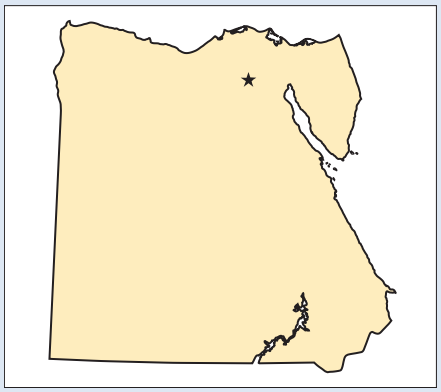
Arab Republic of Egypt



- **Capital:** Cairo
- **Area:** 1,001,450 sq km
- **Population:** 83,688,164 (July 2012 est.)
- **Age Structure:** 0-14 years: 32.7% (male 13,725,282/female 13,112,157); 15-64 years: 62.8% (male 26,187,921/female 25,353,947); 65 years and over: 4.5% (male 1,669,313/female 2,031,016) (2011 est.)
- **Life Expectancy at Birth:** Total population: 72.93 years; male: 70.33 years; female: 75.66 years (2012 est.)
- **Infant Mortality Rate:** Total: 24.23 deaths/1,000 live births; male: 25.8 deaths/1,000 live births; female: 22.59 deaths/1,000 live births (2012 est.)
- **Literacy Rate:** Total population: 71.4%; male: 83%; female: 59.4% (2005 est.)
- **GDP:** $515.4 billion (2011 est.)

Highlights

- All influenza-related activities are currently being coordinated by a newly formed influenza surveillance group at the Ministry of Health and Populations (MOHP). Included in these activities are the nationwide hospital-based surveillance for avian and pandemic influenza, and the influenza-like illness (ILI) and severe acute respiratory infections (SARI) sentinel surveillance system.
- A web-based reporting system has been launched by the MOHP in 8 of 16 sentinel sites.
- Seven subnational laboratories for influenza detection and diagnosis are now functional, allowing for more rapid detection of outbreaks and identification of viruses.
- The national capacity for risk assessment has been improved by the establishment of a framework to link epidemiologic and laboratory groups from both human health and animal health.
- The MOHP has upgraded its national surveillance guidelines for, and case definitions of, priority communicable diseases including influenza.
- The MOHP is updating, printing and distributing the reporting forms for ILI and SARI sentinel surveillance sites.
- The web-based electronic reporting system, National Egyptian Disease Surveillance System (NEDSS-online) is operational in 27 governorates (provinces), 270 health districts and 57 main fever and chest hospitals.
- Population-based surveillance for SARI (with plans to expand to ILI) is being conducted in Damanhour, Behera Governorate in conjunction with U.S. Naval Medical Research Unit No. 3 (NAMRU-3).

U.S. CDC Direct Country Support

In 2009, the MOHP of the Arab Republic of Egypt entered into a cooperative agreement with the U.S. Centers for Disease Control and Prevention (CDC) titled *Surveillance and Response to Avian and Pandemic Influenza*. Initial funding provided through this cooperative agreement was used to build laboratory and epidemiology capacity for influenza surveillance. The objectives of the CDC-Egypt cooperative agreement are to prevent the emergence and spread of a pandemic influenza virus, to reduce morbidity and mortality caused by influenza viruses, and to improve the state of preparedness and the quality of response to an influenza pandemic. The MOHP collaborates with the U.S. Naval Medical Research Unit No. 3 (NAMRU-3) in Cairo and WHO's Eastern Mediterranean Regional Office (EMRO), to review and enhance ongoing national surveillance activities.

Surveillance

Egypt has multiple activities for influenza within their surveillance system. General influenza surveillance takes place in all government hospitals (up to 450) and approximately 5,000 outpatient clinics. Sentinel surveillance for ILI was established in 1999 in eight outpatient clinics of selected fever and chest hospitals. Sentinel surveillance for SARI began in 2009 and occurs in eight inpatient wards of selected fever hospitals. Both ILI and SARI sentinel surveillance continue in collaboration with NAMRU-3. Surveillance also occurs for suspected novel influenza viruses and pneumonia and avian influenza surveillance started in early 2006. Influenza data from hospitals throughout 29 governorate surveillance units is collated and then submitted electronically to the MOHP's central Epidemiologic Surveillance Unit (ESU).

Surveillance Activities

- A weekly report is generated from surveillance data for pneumonia and avian influenza.
- A weekly report is also generated from sentinel SARI and ILI surveillance data and distributed to designated persons within the MOHP and to regional epidemiologists.

Laboratory

The Central Public Health Laboratory (CPHL) serves as the National Influenza Center (NIC) and provides laboratory support to the ESU for surveillance activities related to human influenza in Egypt. Four of the eight sentinel hospitals have subnational laboratories that perform RT-PCR testing for influenza. Two additional subnational laboratories will begin functioning under the quality assurance in 2012; one in upper Egypt in the Assiut Governorate and the other in Kafr el-Sheikh Governorate in lower Egypt.

Laboratory Activities

- CPHL has the capacity to detect and subtype seasonal, H5N1, and 2009 H1N1 influenza viruses using both molecular and culture-based techniques; culture is only used for virus isolation with specimens collected for the purposes of ILI and SARI surveillance.
- CPHL routinely provides training to laboratory staff members and offers technical support to subnational laboratories.

Preparedness

The MOHP has devoted time and resources to establishing, and building the capacity of rapid response teams. These teams investigate and implement control measures for combatting zoonotic transmission of H5N1, and to contain and mitigate pandemic influenza.

Preparedness Activities

- Rapid response teams from all levels (central, governorate and district) have been trained on the preparedness guidelines outlined in Egypt's national preparedness pandemic plan.
- Personal protective equipment (PPE) has been procured and stored for rapid deployment if required.

- The MOHP has stockpiled 2.5 million doses of oseltamivir.
- The Central Epidemiology Team and virology laboratories in the MOHP and veterinary sector have collaborated in a joint risk assessment at the national level.

Training

The MOHP conducted the following trainings in FY 2011:

- Seven training courses were implemented for 175 physicians working in health care establishments, with the purpose of improving awareness in the early detection and diagnosis of influenza cases.
- Five training courses on enhancing human surveillance for H5N1 influenza infection were conducted for 175 participants in nine high-risk governorates.
- Six training courses were implemented for surveillance teams with 183 participants (88 physicians, 74 specialists in public sanitation and health, and 21 statistical technicians) from 14 governorates.
- Training courses were held to improve capacity for immediate reporting and rapid response to sporadic cases or clusters of illness, including nine training courses for 325 participants from all 27 governorates of Egypt.
- Twenty-two training courses were held for 865 participants (325 physicians and 540 nurses) to improve the quality of infection control practices in isolation wards and critical care units at MOHP hospitals.
- One training course was held for the ILI surveillance team including 28 physicians, two nurses, and five lab technicians.

Hajj Pilgrim Measures

- The MOHP provided Hajj pilgrims with seasonal influenza vaccine that included the 2009 H1N1 strain. In total, 300,000 doses were dispensed among pilgrims and health care workers.
- The MOHP offered pilgrims health education in the prevention of influenza.

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