

# Monitoring & Evaluation Tools





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Under the cooperative agreements between the U.S. Centers for Disease Control and Prevention's (CDC) Influenza Division and its partner countries, the Division supports the monitoring and evaluation (M&E) of activities associated with international influenza program capacity-strengthening. The purpose of M&E in this context is to:

- Document each country's baseline capacity for influenza surveillance, laboratory diagnostics and pandemic preparedness in a standardized way in order to measure progress toward defined criteria and thereby demonstrate meaningful improvement
- Use results to inform ongoing investment and programmatic planning for influenza detection, assessment, and response systems
- Demonstrate accountability for resources and activities tied to capacity-strengthening
- Identify best practices for capacity-strengthening that can be shared

The Influenza Division has developed three tools which are described below. Countries participate voluntarily in these assessments.

## National Inventory of Core Capabilities for Pandemic Influenza Preparedness and Response

**Purpose:** The National Inventory of Core Capabilities for Pandemic Influenza Preparedness and Response (National Inventory) is a comprehensive tool by which countries can systematically and quantitatively measure their capability and capacity to respond to an influenza pandemic.

**Structure and content:** The National Inventory covers 12 distinct domains, defined as 'core capabilities' and each capability is assigned a composite score based on the quality, coverage and timeliness of four related indicators. For example, the core capability of 'Infection Control' is measured by determining performance in the following indicators (i) standards of infection control by level of health-care system (ii) integration of infection control training for staff (iii) availability of logistical resources for infection control and (iv) level of institutionalization of infection control efforts. The end-points for the core capabilities are country determined which allows for variation in public health priorities across countries with differing resource constraints. Countries repeated the assessment every two years to monitor changes in pandemic preparedness between 2008 and 2012. For a copy of the National Inventory, please visit [www.cdc.gov/flu/international/tools.htm](http://www.cdc.gov/flu/international/tools.htm).

**Implementation:** In 2008, 40 countries completed baseline self-assessments, facilitated by CDC staff. A further 12 countries participated in late 2009 and early 2010 to establish baselines. By the end of 2010, 36 of the initial 40 countries completed a repeat assessment to monitor changes in their level of pandemic preparedness since 2008. In 2012, 33 out of the 36 countries were able to complete a third assessment to continue to track changes in their level of pandemic preparedness. 10 of the 12 countries that established 2010 baselines also completed their first re-assessment in 2012. Since 2012, the tool is available for use, but CDC is no longer completing facilitated assessments with partner countries.

**Outcomes:** All of the countries improved their scores between 2008 and 2012 indicating an overall improvement in pandemic preparedness for each country over the period.

- The biggest improvements in pandemic preparedness capabilities were made between 2008 and 2010 whereas between 2010 and 2012 four capabilities improved, six remained the same and two decreased although they remained higher than the 2008 level (Figure 1).
- Among the 12 core capabilities for pandemic preparedness, countries scored 'routine influenza surveillance' capability highest in 2008, 2010, and 2012, and scored 'health sector pandemic response' lowest in 2008, 2010, and 2012.

Further to this:

- The assessments in 2008 helped countries to identify and target areas for preparedness improvement which in turn strengthened their ability to respond to the 2009 H1N1 pandemic.
- At the same time, the 2009 outbreak offered an enormous opportunity for countries to test their pandemic response with the outcomes captured when they repeated the tool in 2010.
- The assessments in 2012 helped countries identify whether improvements in 2010 were sustained.
- Identifying areas for Influenza improvement is also enhancing capacity-building for other infectious diseases as well as encouraging compliance with International Health Regulations 2005 (IHR).
- The tool can be used to document progress in countries to help target collaboration with different partners & advocate for continued support.



Cover art left to right:  
 International Influenza Surveillance Assessment Tool  
 International Influenza Laboratory Capacity Review Tool  
 National Inventory of Core Capabilities for Pandemic Influenza Preparedness and Response

## International Influenza Laboratory Capacity Review Tool

**Purpose:** The International Influenza Laboratory Capacity Review Tool (IILCRT) is designed for assessing the capability and capacity of an influenza laboratory to perform influenza diagnostics and use of good laboratory practices.

**Structure and content:** The IILCRT is a series of questions divided into nine sections for assessing laboratories across a wide variety of influenza laboratory functions including, general laboratory functions, virology and molecular biology techniques, availability and maintenance of equipment, specimen handling, collection and reporting, staff training, laboratory safety and methods for quality assurance and quality control. The results from these sections form the basis of laboratory capacity summary reports and recommendations for countries. The structure and content of the tool was updated in 2011 for clarity. For a copy of the tool, please visit [www.cdc.gov/flu/international/tools.htm](http://www.cdc.gov/flu/international/tools.htm).

**Implementation:** Between September 2009 and September 2015, 63 national laboratories in 60 countries completed laboratory assessments, facilitated by staff from CDC and the Association of Public Health Laboratories (APHL). Several national laboratories completed re-repeat assessments between FY 2013 and 2015.



**Outcomes:** The tool has helped highlight overall laboratory strengths, while recommendations are provided by reviewers where opportunities for improvement present themselves. For example, a training needs assessment based on the first 26 laboratories reviewed, identified six country laboratories in the Africa region that did not perform virus isolation; all expressed interest and readiness to receive technical assistance in these methods. Likewise, across all regions, many countries received specific recommendations for improving the biosafety of their laboratories. The need for better laboratory management, also surfaced during reviews, and as a consequence the course “Improving Influenza Laboratory Management Practices”, was developed in partnership with the American Association of Public Health Laboratories (APHL) in order to build grantee skills in this area. To date, these data management courses have been held in Johannesburg (2011), Bangkok (2012), and Greece (2014). In 2015 a review of the biosafety issues identified in assessments was used as the basis to develop a biosafety course to address common issues. A pilot training with the new curriculum will be conducted in October 2015.

**Analytic Framework:** During FY 2011, CDC and APHL enhanced the ILLCRT by adding a quantitative component to the analysis of data collected. A quantitative analysis can be presented visually allowing quick identification of the status of an influenza laboratory’s capacity. It can also provide a standardized approach to tracking changes in laboratory capacity over time. Approximately 150 questions have been selected for analyzing laboratory capacity across eight categories which have been identified as critical to the functioning of a national influenza laboratory. The eight categories for analysis include: National Influenza Center (NIC) Criteria, Laboratory Management, Biosafety, Quality Assurance and Quality Control, Molecular Biology, Virology, Specimen Handling, Collection, and Reporting and Equipment. Each selected question has been assigned one point. The points are aggregated by category and converted to a percentage performance measure. Beginning in 2012, the quantitative analysis has been included in summary reports.

## International Influenza Surveillance Assessment Tool

**Purpose:** The International Influenza Surveillance Assessment Tool (IISAT) is designed to standardize and systematize the review of national surveillance systems. The tool helps CDC and partners to clarify the objectives and structure of their surveillance systems, such that recommendations and technical assistance can be targeted to meet system goals such as, conducting data quality checks and establishing built-in laboratory and epidemiologic data integration.

**Structure and content:** The IISAT consists of six checklists covering national, central and sentinel site levels and covers all ILI and SARI related surveillance. For example, it includes a review of data management, analysis and reporting procedures. The tool uses a standard format for creating surveillance capacity summary reports where recommendations for countries can be provided. For a copy of the tool, please visit [www.cdc.gov/flu/international/tools.htm](http://www.cdc.gov/flu/international/tools.htm).

**Implementation:** In FY 2011, CDC’s Influenza Division also entered into a cooperative agreement with the Council of State and Territorial Epidemiologists (CSTE) who provide epidemiologists to assist with conducting reviews in partner countries. Between March and September 2015, surveillance assessments were completed in 55 countries, with 16 of them repeating follow-up assessments to review progress.

**Outcomes:** The tool has served to highlight overall surveillance strengths and challenges with specific recommendations documented and sent formally to the Institute reviewed. Recommendations have included: weekly and quarterly analysis of risk factor data, dissemination of data to stakeholders, and better coordination between national staff and sites.