Background and Intended Use

The goal of the CDC International Influenza Surveillance Assessment Tool is to assist in the systematic, standardized review of influenza sentinel site surveillance systems. The data gathered using this tool can serve as a guide for identifying problems in the function of a surveillance system and gaps in data collection. By systematically identifying these problems, we can design effective solutions, both at the country and site-level and offer ongoing support and guidance to our partners to ensure that problems identified are subsequently overcome.  The information collected with this tool can be used to identify a system's strengths and use these strengths as examples in developing and improving other surveillance programs.

Surveillance assessments will be conducted through field visits to the national surveillance coordinating office, as well as to selected sentinel sites, in order to provide the opportunity for a brief assessment of activities at the sentinel site level, and to conduct interviews with national-level and site-level surveillance staff. The tool consists of seven modular sections:

- System Overview – General System Details, Analysis, Reporting
- Data
- National SARI Oversight
- National ILI Oversight
- National Laboratory Activities
- ILI Site Visit
- SARI Site Visit

The modular design of the tool allows for each of the sections described above to be administered independently, and/or by multiple persons if teams are completing the capacity review.  The person(s) performing the review should have significant experience in disease surveillance (specifically influenza), have a good understanding of the differing goals of disease surveillance systems, epidemiologic data analysis, database design and development, in addition to some knowledge of influenza diagnostics of both the laboratory and the clinical variety. Lastly, the reviewer should be available to do significant technical assistance follow-up with the partner hosting the review.

Suggested Protocol and Itinerary

International influenza surveillance assessments are anticipated to last between three and five days, depending on the size and status of the sentinel system. This period of time should provide the opportunity to visit with national level surveillance coordinators to discuss both ILI and SARI surveillance, national laboratory staff, and ideally at least one to two each of both ILI and SARI sentinel sites (depending on system structure, ILI and SARI sites may be in the same facility or in separate facilities, requiring separate trips) in different locations in the country. National partner staff will select sites to be visited, and sites should be chosen that are representative of how the system is functioning – both those sites that are performing well, and those that are posing greater challenges.

An assessment will typically consist of the following:

| Task | Description | Timeframe | Responsible Party |
|---|---|---|---|
| Review country's existing surveillance protocols & SOPs | | Prior to departure | Reviewing Epidemiologist & Project Officer |
| Communications with country POCs regarding length of review, types & numbers of sites needed for a thorough review & understanding of system | | One month before departure | Reviewing Epidemiologist & Project Officer |
| In-briefing with national surveillance staff, stakeholders | Meet with national level surveillance coordinators, other national stakeholders, to describe review activities, outline schedule, and objectives. | Upon arrival/prior to beginning review | Reviewing Epidemiologist & Project Officer |
| Interviews with national/central level surveillance staff | Meet with national surveillance staff, using "System Overview," "National SARI," and "National ILI," and "Data" spreadsheets, as system structure requires | First day or two of review | Reviewing Epidemiologist |
| Interviews with national/central level data managers & analysts | Meet with national surveillance staff in charge of data management and analysis, using "Data" spreadsheet | Prior to development of recommendations and out-briefing | Reviewing Epidemiologist |
| On-site database review & analysis | Review database structure, perform basic data analyses, following those suggested in guide, to ensure that data being collected meet the basic epidemiologic data needs for a successful surveillance system | During/after administration of data portion of review. Timing not critical, but must be completed before development of recommendations and de-briefing. | Analyses should be performed by both the reviewing epidemiologist and national epidemiologists/data analysts |
| Interview national laboratory staff | Meet with national laboratory staff responsible for influenza testing and data entry/management, using "National Laboratory" spreadsheet | Prior to development of recommendations and out-briefing | Reviewing Epidemiologist |
| Interview site level surveillance staff/surveillance coordinators | Meet with on-site surveillance staff, nurses, coordinators at sentinel sites, using "SARI Site Visit" or "ILI Site Visit" spreadsheet, as appropriate | During ILI and SARI site visits | Reviewing Epidemiologist |

| Task | Description | Timeframe | Responsible Party |
|------|-------------|-----------|-------------------|
| Interview site level laboratory staff | Meet with on-site laboratory staff, using sections of "SARI Site Visit" or "ILI Site Visit" as appropriate | During ILI and SARI site visits | Reviewing Epidemiologist |
| Provide in-country technical assistance | Provide on the ground technical assistance to national or site-level staff, as needed. This might involved suggested changes to data base design, assistance with basic data analysis, assistance with refinement of system goals, identifying best practices, right-sizing system, etc, as needed. Please document assistance provided. | Throughout/during course of visit | Reviewing Epidemiologist |
| Debriefing of national surveillance coordinators, staff, other stakeholders | Debriefing should highlight some key recommendations, key system strengths, follow up goals. | Prior to departure | Reviewing Epidemiologist and Project Officer |
| Draft summary report, share with Project Officer, Ann Moen, Marc-Alain Widdowson, Meg McCarron | Report should detail key recommendations, system strengths, and opportunities for improvement, provide detailed recommendations to reach national surveillance goals, plans for follow up, training needs and other technical assistance needs. | Upon return from visit | Reviewing Epidemiologist & Project Officer |
| Atlanta debriefing | Atlanta debriefing will include discussion of the draft report, recommendations, and plans for follow up. | Upon return | Reviewing Epidemiologist & Project Officer |
| Share final report with national partners | Final report should include comments received on draft report & reflect discussion from debriefings. Reviewing epidemiologist should complete final report and share with project officer. | Two weeks after return | Project Officer |

Prior to the review, the reviewer should provide the in-country point of contact with a work plan, describing the types of sites they would like to visit, who they would like to meet with, and what they plan to do each day of the review period. The reviewer should plan to meet with representatives from the Ministry of Health, the lead surveillance coordinator, on-site surveillance staff or nurses/clinical staff responsible for oversight of surveillance activities, national laboratory staff responsible for influenza testing, and staff responsible for analysis, interpretation, and reporting of surveillance data.

*Please note: It is important to start the review with a discussion of the partners' goals for the surveillance system. The goal for the system may affect appropriate recommendations. After a review of the capacities, the reviewer and surveillance staff can revisit the goals, feasibility of goals, and tailor recommendations for short-term and longer-term goals.*

*It is also critical to emphasize at the outset of the review that this assessment is not an evaluation or comparison, the surveillance system is not being graded or judged, and that this assessment has no impact on current or future CDC-funding. This assessment is a method by which CDC can systematically document current capacity, identify technical assistance needs, make realistic recommendations based on current capacity, identify future needs, and assist in developing a plan for improvement and moving forward.*

<u>Overview of the International Influenza Surveillance Assessment Tool Modules</u>

Although much of the tool is self explanatory, specific questions and prompts for each module will be highlighted.  Many of the questions can be answered through keen observation and engaged conversation during the site visits, while others may need to be acquired through staff interviews. Reviewers should have a printed hard copy of the tool to serve as a prompt while performing the on-site capacity review.   Reviewers are requested to include additional comments to any of their responses  to aid in the interpretation of the response.  At all times during the review, please note and highlight all exceptional practices, both positive and negative, that are being conducted at the site or national level, as well as any recommendations for improvement.  The findings of the on-site capacity review should be entered electronically into the Microsoft Excel workbook file, and it is recommended that the reviewer enter the information immediately after the visit to each site in order to retain as much detail as possible.

<u>National – General Information, Analysis, and Reporting</u>

This module is meant to capture general information about types of respiratory disease surveillance systems currently being run in the country, which agency/ministry/organization is responsible for each one, and how these systems interact and share data. This module also covers national reporting standards (frequency of reporting, agencies or partners with whom reports are shared, and basic analyses that are included in national influenza activity reports).

National – SARI Surveillance Management

This module is meant to capture the activities of the national (Ministry of Health or other) surveillance staff in the management, standards-setting, oversight, and analysis of data coming in from the sentinel surveillance sites. The module covers the number and type of sites included in the SARI surveillance system, representativeness of the sites, training of site-level staff, and incentives provided to sites for participation in the system. Also covered are standards for case detection, epidemiologic data collection, respiratory specimen collection, data management, analysis, and quality, reporting, and monitoring and evaluation of sentinel sites.

Many of these questions can be answered through informal interviews with surveillance staff and a brief look at the surveillance databases. Please use the spreadsheet as a guide and a prompt in order to obtain a complete picture of the national level SARI activities.

*Please note: It is important to be aware that in many locations, sites cannot be expected to be representative of population, socio-economic status, ethnicity, risk factors, etc. Question 1b asks about representativeness. An answer of "no" to all categories  is not indicative of the quality of the site or the data collected at that site.*

National – ILI Surveillance Management

This module is very similar to the previous SARI module, but with a focus on ILI data collection and management. It is important to note that systems may be set up quite differently in different locations; in some locations SARI and ILI surveillance will be conducted in the same facility, while in others all ILI surveillance might be conducted in a separate facility than that used for SARI.

Many of these questions can be answered through informal interviews with surveillance staff and a brief look at the surveillance databases. Please use the spreadsheet as a guide and a prompt in order to obtain a complete picture of the national level ILI activities.

National Laboratory Overview

The purpose of this module is to incorporate a brief overview of laboratory activities and how they are coordinated with epidemiologic surveillance activities. The questions cover types of testing performed, laboratory data management and sharing, specimen handling, and monitoring and feedback to clinical sites, and reporting of laboratory results. This overview is not extensive, and is not meant to replace a CDC-APHL Laboratory Capacity Review.

Data

This module covers data management practices – including the structure of the data management system, aggregation of data from sentinel sites and linking laboratory results with clinical/epidemiologic data. *This module includes many questions asked elsewhere in the assessment; this overlap is intentional, and can serve to verify if questions asked on-site are being recorded in the larger data management system.* An overview of the data collected should provide the reviewer with the

knowledge of what data analyses are feasible given the data collection, including the fundamental analyses listed in the tool. The reviewer should ask the staff responsible for conducting data analysis to produce some reports using data collected by the sentinel site system while on-site. The reviewer should also sit and review the database on their own to verify that the data management system is designed in a way to make these analyses possible. *Note that this is of particular importance if there are problems with data analysis and reporting by the host organization.*

Lastly, this module covers the completeness of data collection from sentinel sites. The questions included in this section may be completed for the system overall, as well as broken out by surveillance site to establish which sites participate actively and which do not. An assessment of the completeness of core data elements might also be helpful to know which questions are frequently skipped by surveillance staff.

SARI Site Visit

This module is meant to be used on-site at SARI sentinel sites. Many questions may be completed through observation during a visit and review of clinical/epidemiologic data collection forms, while others will need to be answered through staff interviews.

The reviewer should take some time to look over hospital admission logs and charts to get a sense of which diagnostic codes/clinical diagnoses are being used to identify SARI patients, and if all or most patients meeting the SARI case definition are being enrolled (perhaps looking at one month's worth of admissions & that month's number of enrolled cases). *It is important to be aware that some surveillance systems will not use only the SARI case definition for the enrollment of cases. Some will use ICD-10 codes or clinical diagnoses to identify SARI cases. The reviewer should record these codes to gain an understanding of standards for enrollment, and compare codes/diagnoses being used across sites in the same system.*

This section also focuses on the collection of epidemiologic data, data management and reporting. Lastly, questions are included about specimen collection, storage, transport, and identification measures.

ILI Site Visit

The ILI Site Visit module is very similar to the SARI Site Visit module, however with a focus on the more simple epidemiologic data collection needs of an ILI surveillance system. As with the SARI Site Visit, many questions may be completed through observation, while others will need to be answered through staff interviews.

The reviewer should take some time to look over clinic/outpatient logbooks and charts to get a sense of which diagnostic codes/clinical diagnoses are being used to identify ILI patients, and if all or most patients meeting the ILI case definition are being enrolled (perhaps looking at one month's worth of admissions & that month's number of enrolled cases). *It is important to be aware that some surveillance systems will not use only the ILI case definition for the enrollment of cases. Some will use ICD-10 codes or*

*clinical diagnoses to identify ILI cases. The reviewer should record these codes to gain an understanding of standards for enrollment, and compare codes/diagnoses being used across sites in the same system.*

This section also focuses on the collection of epidemiologic data, data management and reporting. Lastly, questions are included about specimen collection, storage, transport, and identification measures.

Follow Up

Upon return from the site visit, the reviewer will prepare a draft summary report of the visit (template included). This report should outline the system goals and structure, along with general observations about the surveillance system so that others reading it may be able to understand the system prior to a visit. The report should highlight the strengths of the system, and make some key recommendations for improvements to the current system, *keeping in mind the stated goals of the partner organization*. These recommendations provide an opportunity to emphasize standardization of data collected both at the national and the regional level (if the reviewer is familiar with general data standards/other data collected in the region). The report also features a section in which other opportunities for improvement may be identified, along with equipment needs, training needs, and where future plans (immediate and long term) and follow-up discussed in the de-briefing may be documented.

After this draft has been completed, an Atlanta debriefing should be scheduled, to be attended by the reviewer, Project Officer, Ann Moen, Marc-Alain Widdowson, and Meg McCarron. Recommendations and observations can be discussed. Edits to the recommendations and future plans discussed in this debriefing will be incorporated into a final version of the summary report. This final summary report will be shared by the Project Officer with the key points of contact in the host country

After sharing the report with the partner, the reviewer should be available to answer questions from the partner organization about recommendations made, and in the longer term, to help with capacity building in the form assisting in the development of data analysis skills, interpretation of data, and publication of surveillance related materials.