ADD/FBD Pilot Project Activities until July 2016

Step 1: Based on field-based assessments of baseline capacity and infrastructure (using a **standardised questionnaire**), two districts in Gujarat and two districts in Tamil Nadu were selected for the pilot project.

Step 2: State level trainings for epidemiologic and laboratory personnel posted at the state, district, and sub-district levels at Cuddalore and Kanchipuram districts of Tamil Nadu, and Sabarkantha and Ahmedabad Rural districts of Gujarat were conducted in October and November 2013. In each state, an IDSP state referral laboratory was also selected to support the district level laboratories in microbiologic identification/confirmation and for preparation, distribution and management of proficiency testing (PT) panels, and mentor district laboratory scientists as needed.

Step 3: Epidemiologic enhancement has been focused on strengthening the capacity of local public health officials to conduct and document systematic ADD/foodborne disease outbreak investigations, frequently with the involvement of an Indian Epidemic Intelligence Service officer. The first six months were focused on developing and improving a range of documents utilized during field outbreak investigations. This has resulted in the adaptation and use of standardized formats for epidemiologic investigation of foodborne and ADD outbreaks in all four pilot districts, including **illness complaint forms, line list formats, and food history questionnaires**. Additionally, with the involvement of the EIS officers, analytic risk factor studies conducted in several outbreaks have helped to identify the responsible food or water vehicle responsible for illness.

Laboratory enhancement at initial stages focused on ensuring timely submission of clinical (stool) specimens that had been properly collected and safely transported in appropriate transport medium with a **specimen referral form**, drafting and disseminating clear **guidelines** and materials **for specimen collection and transport** at all primary health centers, and developing **appropriate specimen log books and specimen referral logs.**

Step 4: Subsequently in September 2014, onsite microbiologic trainings were conducted at each of the four district hospital laboratories to enhance the analytical skills of the microbiologists and technicians. **Flow charts for isolation and identification of cholera, salmonella and shigella were provided to the labs**.

Step 5: In subsequent months, all four pilot districts have initiated routine laboratory-based surveillance of patients presenting to district hospitals with acute diarrheal disease complaints.

Interim Results

Between December 2013 and March 2015, Cuddalore and Kanchipuram Districts in Tamil Nadu have reported 14 foodborne and ADD outbreaks. District health officials have utilized the standard outbreak formats in 10 of the 14 outbreaks. Similarly, clinical stool specimens were submitted in 10 of the 14 outbreaks. This marks a considerable change from prior to the initiation of the pilot project, when stool specimens were rarely collected during outbreak investigations. During the same time period, Sabarkantha and Ahmedabad Rural districts in Gujarat have reported nine ADD and foodborne outbreaks; district health officials have initiated use of standard outbreak formats in the more recently reported outbreaks.

The India EIS officers have been engaged in three of the outbreak investigations. In recent months, this has included an investigation of an ADD outbreak in Cuddalore District, Tamil Nadu in October 2014 that demonstrated a coordinated outbreak response, with real-time collaboration between the laboratory scientists and epidemiologists. *Shigella sonnei* was isolated and identified by the district hospital laboratory, and an appropriately targeted case control study indicated that illness was associated with drinking water from a contaminated overhead water tank as well as contact with an existing case. A more recent outbreak of food poisoning following a wedding feast in Sabarkantha, Gujarat was investigated in January 2015 through a cohort study, which identified the consumption of basundi, a dairy-based sweet, as the primary risk factor for illness. The investigation involved site visit and review of the dairy where the sweet was produced in order to understand the potential risk factor for food contamination and develop appropriate food safety messaging to prevent a similar such outbreak in the future. In February 2015, an outbreak of acute vomiting and dizziness investigated in Cuddalore revealed that illness was consistent with acute shellfish toxin poisoning associated with the consumption of clams purchased from a seaside vendor; coordination between the public health and food safety officials has been a key component of this most recent outbreak.

Following the on-site laboratory training conducted in September 2014, each district has initiated routine laboratory-based surveillance for ADD cases seen at district and sub-district health facilities. Each district laboratory receives stool specimens collected from patients admitted to the district hospital for ADD, as well specimens collected, transported, and submitted from ADD patients seen at PHCs within the district. In the last eight months, each district laboratory has received and processed well over 100 specimens. At present, microbiologic examination is focused on evaluation of *Shigella, Salmonella,* and *Vibrio* species, as these are the three most common bacterial species encountered in ADD outbreaks. The establishment of routine ADD surveillance provides the framework for enhancing the capacity for laboratory detection of potential ADD outbreaks, which can trigger appropriate, timely public health investigation and response.