Challenges in Post-Validation Surveillance

Session Date: Saturday, November 4

Session Time: 9:00am – 12:00pm

Session Location: Severn II

Session Description: Many national LF programs are rapidly approaching elimination. As of 2016, eight countries had been validated for elimination of LF as a public health problem, with 12 in the post-MDA surveillance phase. After stopping MDAs, national LF elimination programs will need to plan for post-validation surveillance activities that should be routinely implemented after WHO acknowledgement of elimination of LF as a public health problem. Their objectives will be to detect and respond to recrudescence or re-introduction of LF above the elimination threshold and to confirm interruption of transmission. More operational research is needed before WHO can provide specific recommendations to programs on how to carry out these activities. The overall aim of this session is to define the current scope of LF surveillance methods and diagnosis, share challenges among national LF programs, and explore country-specific opportunities to implement LF post-validation surveillance.

Session Chairs: Christine Dubray, U.S. Centers for Disease Control and Prevention
Molly Brady, RTI International

Session Rapporteur: Caitlin Worrell

KEY DISCUSSION POINTS

Dr. Christine Dubray (U.S. Centers for Disease Control and Prevention) presented the current WHO recommendations and key challenges for post-validation surveillance (PVS) to set the stage for the presentations. She introduced three country program representatives who shared experiences with planning and executing post-MDA surveillance systems to catalyse discussion around post-validation surveillance (PVS).

Dr. Mohammad Jahirul Karim (Ministry of Health and Family Welfare, Bangladesh) presented experiences conducting post-treatment surveillance in one endemic, one high-risk non-endemic district, and one central clinic in the capital that served populations from around Bangladesh. This hospital-based surveillance system targeted adults (18+ years) at district and sub-district clinics who were presenting for blood test for other purposes. It also targeted migrant workers at one clinic. Participants were tested for filarial antigen (Og4C3) and filarial antibodies (Wb123 and Bm14). Overall, 11,932 participants were enrolled in the surveillance system from all sites over a three-year period. Good geographic coverage was achieved in the two peripheral districts, however the central migrant clinic did not attract many patients from LF-endemic areas. The blood marker trends were explored overtime. In the endemic district, Bm14 increased across the study period, but trend seemed to decrease in Wb123, Og4C3, and Bm14 in the non-endemic district. More detailed analysis needs to be done to determine if these trends are significant.

Dr. Leda Hernandez (Department of Health, Philippines) presented the Philippine's proposed plan to conduct post-validation surveillance, comprising a two-pronged approach: enhanced post-TAS1/TAS2 surveillance and post-validation surveillance and response. During enhanced TAS activities, positive results from TAS1 and TAS2 surveys will be used to target schools and municipalities requiring further testing and case investigation. For post-validation surveillance, any school with at least one Ag positive in TAS3, will trigger case investigation and response. Possible platforms for integration included integrated malaria/LF elimination hubs, the NTD Laboratory Network and Response, and mosquito-borne diseases platforms.

Dr. Upendo Mwingira (Ministry of Health and Social Welfare, Tanzania) presented Tanzania's proposed plan to conduct post-validation surveillance in high-risk regions in Tanzania. The system will test children for filarial antigen and antibodies during routine in- or out-patient surveys in high risk areas. The program proposed several potential surveillance platforms including: the integrated disease surveillance and reporting system (IDSR), leveraging routine health care delivery, national surveys such as MIS, and partnering with the Field Epidemiology and Laboratory Training Program (FELTP).

A discussion between country managers and session participants emphasized the need to define the aims and objectives of the PVS system either at the global or country level. Defining the system aim would ensure that the system could be appropriately designed to meet the stated objectives (e.g., the sample size, the age-group under surveillance, and the diagnostic tests used).

KNOWLEDGE GAPS IDENTIFIED

- What is the aim of PVS systems either on a global or country-specific scale?
- Which areas are at highest risk for recrudescence or misclassification that should be prioritized for PVS activities due to limited resources?
    - Can an algorithm be created to help countries identify high risk areas (e.g. high baseline prevalence, low MDA coverage, and positive TAS results) where PVS activities can be focused?
    - What is the role of modelling in helping countries prioritize areas of high risk for recrudescence?
- Is there a certain population density below which transmission is not expected even in the presence of positive cases?
- Do all positive participants identified through PVS need to be followed?
- What are the cost implications (i.e. human, therapeutics, and diagnostics) of the various proposed PVS platforms?
- What are the strategies to maintaining political will for continuing surveillance when zero or low level results are seen?
- Are adaptive sampling strategies practical and feasible to help continually refine sampling to best detect LF hotspots?
- How can modelling predict the true timeline for LF elimination?
- What strategies exist to integrate PVS into other clinical care or surveillance platforms?

RECOMMENDED NEXT STEPS

- In order to design PVS systems, it is critical to define global or country-specific targets for PVS (e.g. measure transmission threshold or to detect an increase in markers over time). The

target is necessary to guide decisions regarding sampling frame, sample size, and diagnostic selection.

- As countries shift from MDA into post-MDA surveillance phase, there is a limited ongoing need for therapeutics and an increasing need for diagnostics. It will be critical to identify how and in which quantities therapeutics and diagnostics will be available to countries in the post-treatment phase of their programs.
- Improved diagnostics are critical to the PVS activities, including a rapid diagnostic test for LF antibody.