

**Use of Multiplex Technology to Innovate Public Health Surveillance in the Americas**

**Session Date:** Saturday, November 4

**Session Time:** 1:00pm – 4:00pm

**Session Location:** Severn III

**Session Description:** Recently, studies have been published with results from experiences with the laboratory diagnostic tool known as MBA (Multiplex Bead Assay), which can simultaneously study and monitor the dynamics and behaviour in time, place, and person of several infectious diseases (in an integrated manner), and define a population's immunity profile, using biomarker-based information. The goal of this session is to present and discuss the potential use of multiplex bead assay technology to strengthen epidemiological surveillance of communicable diseases and monitoring of public health interventions in the public health systems of the Americas.

**Session Chairs:** Luis Gerardo Castellanos, Pan American Health Organization (PAHO)  
Gretchen Cooley, U.S. Centers for Disease Control and Prevention

**Session Rapporteur:** Pat Lammie

**KEY DISCUSSION POINTS**

- Countries have a strong interest in including Neglected Infectious Diseases (NID) in routine surveillance, but the cost of disease-specific surveys is high, representing an important obstacle
- Geographic overlap across NIDs provides opportunities to integrate surveillance
- Multiplex technology provides a platform to support integrated serologic testing now
- PAHO, with technical support from CDC, is spearheading an innovative pilot study in three countries to implement integrated surveillance, including NIDs and vaccine preventable diseases

**KNOWLEDGE GAPS IDENTIFIED**

- Standardized protocols needed to ensure consistent approaches to:
  - Assay performance and data interpretation
  - Quality control
  - Validation of new antigens on the platform
- Inclusion of new antigens in the multiplex panel (e.g., arboviruses, Chagas and leprosy)
- Epidemiologic support is needed to determine how to optimize survey design and frequency

**RECOMMENDED NEXT STEPS**

- Urgent attention is required to validate arbovirus antigens for inclusion in multiplex panels

- Information exchange across countries should be promoted, to encourage exchange of technology and surveillance findings
- Additional countries should consider whether planned public health surveys provide an opportunity to include multiplex testing