Diagnostic Network Mapping, Analysis and Optimization: Learnings from Countries

ASLM2021 Symposium 5

Co-conveners

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- **Kameko Nichols,** The Nichols Group

Summary

Analysing a country's diagnostic network, to increase access to testing and network efficiencies, decrease total cost per test, understand components of specimen-to-result turnaround time, and create greater visibility and a more competitive and dynamic marketplace, is critical to ensuring its readiness and capacity for patient-centred service delivery and global health crisis response. Diagnostic network evaluation can be achieved through data-driven network mapping and geospatial analysis, such as diagnostic network optimization (DNO) and vehicle route optimization for a specimen referral network. The outcomes of a well planned and conducted mapping and DNO exercise should address issues around the number and location of laboratories, instrument type, sample referral and transportation systems, turnaround time, equipment utilization and capacity, data systems and connectivity, and funding and serve as a guiding process for operationalization and sustainability.

This symposium will highlight practical and specific examples from some countries on how diagnostic capacity mapping, diagnostic network optimization, and route optimization have been used to visualize the diagnostic network and answer questions about integration/multiplexing (in some cases, using COVID-19 as examples), specimen referral design and routing, and how recommendations from these exercises were implemented and monitored. Each country representative will focus on specific aspects of mapping and network analysis/optimization answering targeted questions on their experience.

Symposium seeks to

Share specific country experiences where network mapping and optimization was used to improve laboratory testing services. At the end of this symposium, the participants will understand that:

1. Understanding and visualizing your network is the first DNO step and is data-driven

2. Integrated stakeholder engagement and improved coordination during planning can lead to integrated network design.
3. DNO looks at equipment placement and capacity and referral linkages between health facilities and testing sites.
4. Route optimization, which is related to DNO, can help determine optimal routing and design for complex integrated specimen referral networks where the final destination for testing at reference laboratories vary by disease/test.
5. Mapping and optimization can create a novel network design but implementing and monitoring that design should follow.

Target Audience

- Government officials
- Programme managers
- Clinicians
- Laboratorians
- Funders and donors
- Implementing partners
- Non-governmental organizations (NGOs)
- Civil society
- Diagnostic suppliers

Session Programme

Presenter & Affiliation	Title
George Alemnji (Office of the United States Global AIDS Coordinator and Health Diplomacy) **Kameko Nichols** (The Nichols Group)	Welcome, introduction and opening remarks
Kameko Nichols (The Nichols Group)	Overview presentation – briefly define a mapping, network optimization, route optimization, principles, tools to provide context for country case studies
Michael Maina (ASLM)	Country case study – TBD - highlighting the ASLM-supported LabMap tool and process in one country and how it helped the country to answer a specific question about the network

Christina Mwangi (Uganda CDC)	Country case study – Uganda (TBC) – integration of COVID-19 response into the existing diagnostic network
TBD	Country case study – Zambia - highlighting multi-disease stakeholder engagement by MoH to examine network scenarios using various instruments optimally for multiplexing based on costs/accessibility
TBD	Country case study – Zimbabwe - highlighting the use of route optimization to determine the best design for higher-level HIV/TB referrals to provincial HIV PCR and regional TB reference labs
McPaul Okoye (Nigeria CDC)	Country case study – Nigeria - highlighting what happens after the DNO/route optimization exercise from implementing design/recommendations to monitoring the network and COVID-19 integration
All session participants	Question/Answer panel discussion
George Alemnji (Office of the United States Global AIDS Coordinator and Health Diplomacy)	Summary and closing remarks