Specimen Referrals for SARS-CoV-2 Testing

ASLM Special COVID-19 ECHO

Session #14 on 2 June

Specimen Referral Systems (SRSs) Overview

- Goals of SRS within a diagnostics network:
  - Increase access to diagnostics services (offsite)
  - Timeliness
  - Quality
  - Biosafety/biosecurity
  - Cost efficiency (for routine systems)

- SRSs have been strengthened by funding from HIV and TB programs, as well as disease prevention, detection, surveillance

SRS Scores within JEE underscore challenges

- Effective SRS underpins laboratory's ability to support the International Health Regulations (IHR 2005)
- This support is measured by the Joint External Evaluation (JEE), used to monitor and evaluate a country's capacity to meet IHR
- JEE scores national laboratory system capacity to detect disease on four key criteria, of which one is the specimen referral and transportation system
- Joint External Evaluation (JEE) scores for SRS across 41 countries in Africa:
  - Average score 2.4 out of 5
  - 80% of countries scored 1 to 3

Can SRSs help countries achieve testing targets?

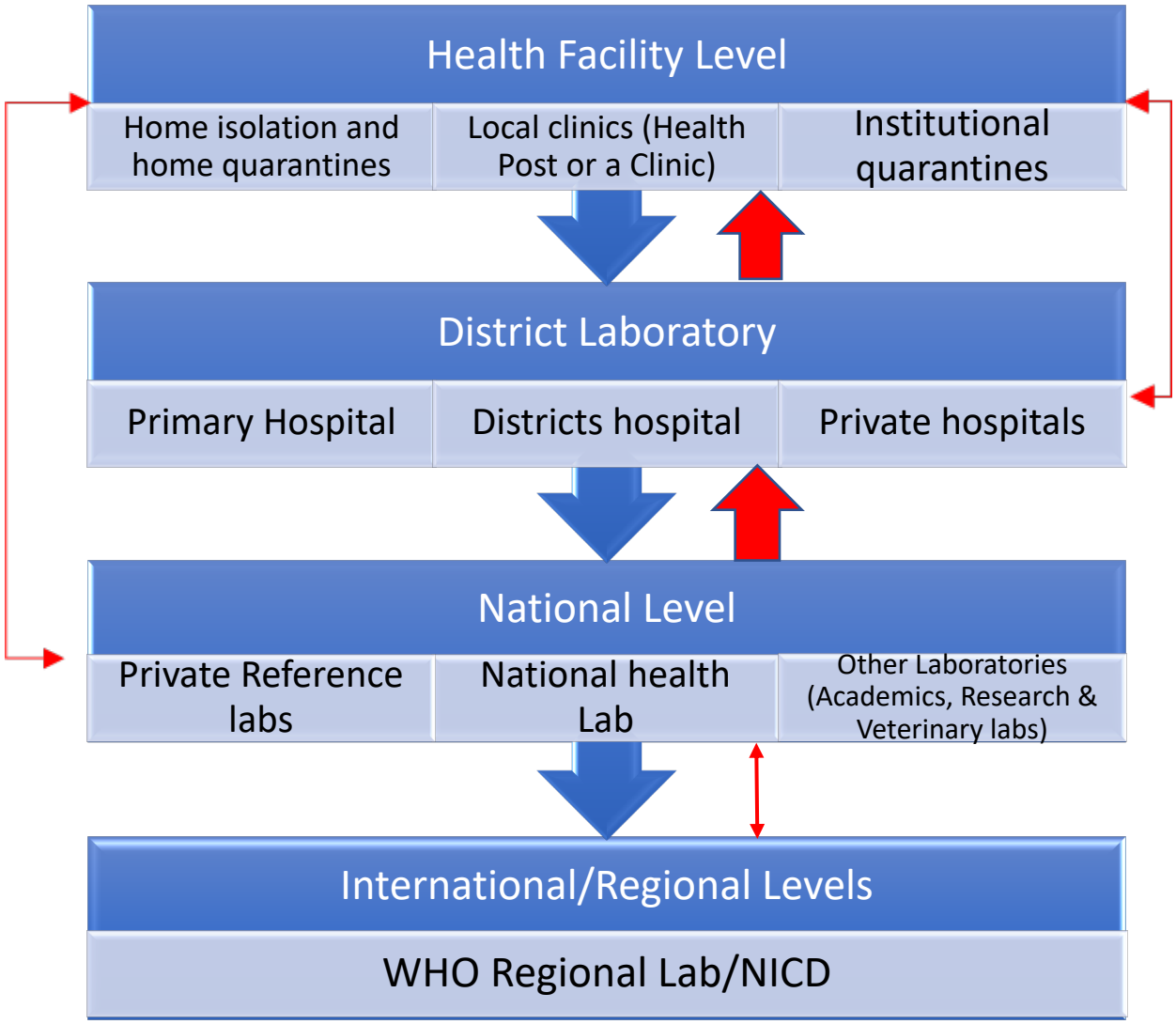
- In this context, how can countries plan for accessing limited testing sites within the diagnostics network for SARS-CoV-2?
- Africa CDC targets for COVID diagnostics network:
  - Currently at 1,300 tests* per million population
  - Target of 16,000 tests* per million population
- Even challenging logistics for SRS in the US (link to New York Times article)

**Tests are defined by results that are returned and actioned upon/ patients managed*

Country Examples and Panelists

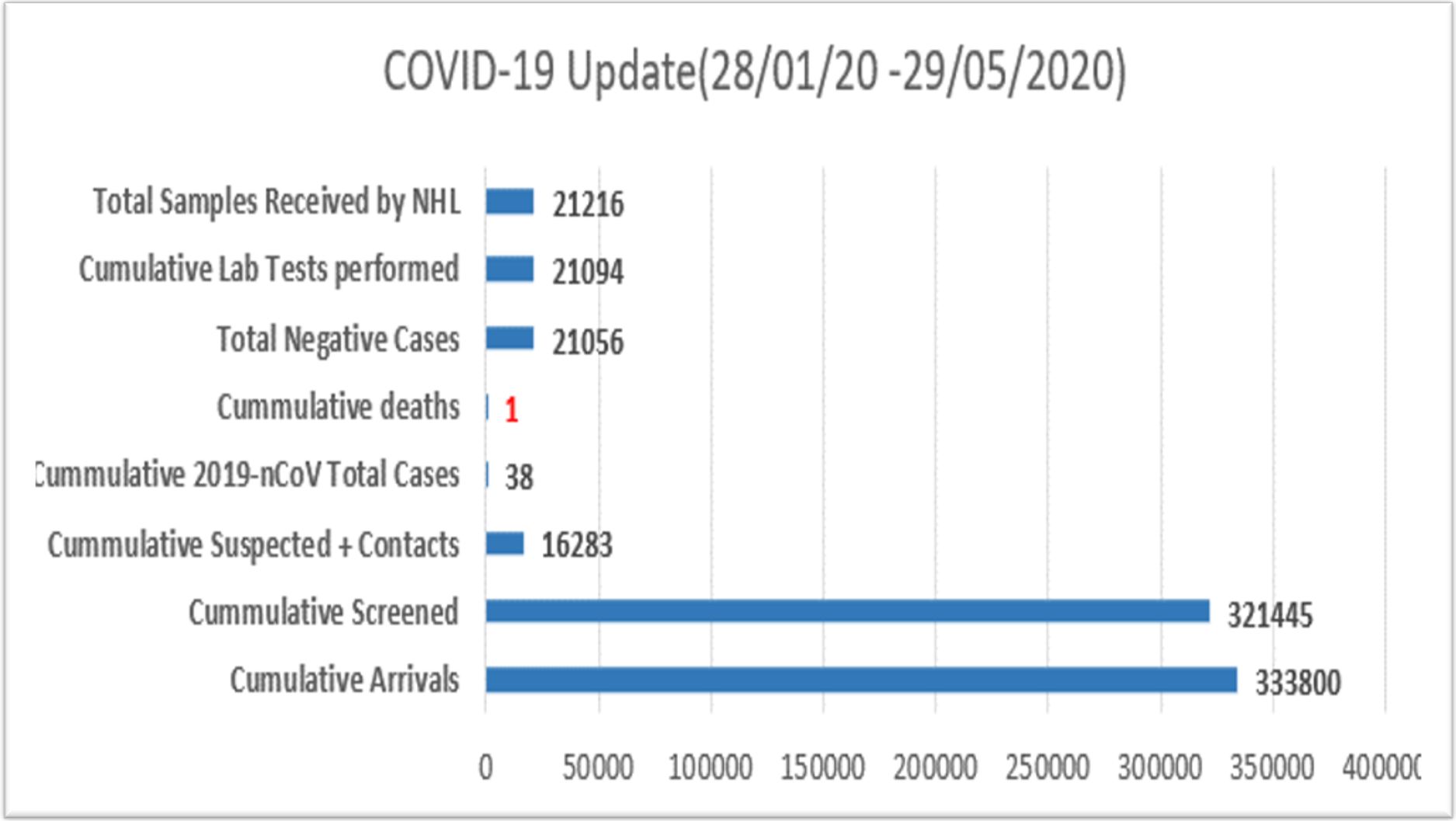
- **Botswana -** Maruping Maruping, Principal Medical Scientist, National Health Laboratory, Ministry of Health
- **Malawi -** James Kandulu, Deputy Director of Diagnostics, Ministry of Health
- **Zambia -** Aaron Lunda Shibemba, National Coordinator Pathology and Laboratory Services, Ministry of Health & Head Pathology and Microbiology, University Teaching Hospital
- **Infectious Disease Detection and Surveillance (IDDS) Project** (USAID-funded multi-country project) - Chana Rabiner, Infectious Disease Health Systems Advisor

Botswana SRS Overview



- Population 2.1 million
- One testing facility
- Five tier system - Clinics, Primary Hospitals, District Hospitals and Referral and Reference
- Covid19 samples have adopted the already existing referral system
- Samples transported through couriers and emmergency samples through Hospital vehicles.
- Results sent to the facilities through IPMS, emails, fax

Botswana SRS (continued)



Malawi SRS Overview

- Population of 18.5 million
- Eleven (11) molecular laboratories activated for testing SARS-CoV-2
  - Using ABI 7500, Quant Studio7 and 11 Abbott m2000 systems
- 66 lab officers trained on RT-PCR testing
- NP/OP swabs are used for covid-19 testing
- Testing algorithm: require 2 genes positive results
- From 2/04/20 – 01/06/20: 5,148 specimens have been tested with 336 confirmed cases

Malawi SRS (continued)

- Specimen collection done by District Rapid Response Team
- Specimens collected at home of the suspected cases
- Currently transported to testing laboratories by utility/ ambulance vehicles
- Riders for Health personnel oriented on specimen transportation
- Proposed: Using of combined Flexible and on-demand trips
- Feedback of results through respective District Health Office

Zambia SRS Overview

- Population: 17.35 million
- Number of specimens tested: 28,248 as of 31st May
- Type of specimens : Nasopharyngeal swabs
- Testing Algorithm : Zambia has adopted Nucleic Acid test (NAT) for both diagnosis and follow up
- All specimen are referred for testing. There is no referral of patients or onsite testing.

Zambia SRS (continued)

- Specimens collected: Mortuary, Health Facilities and community
- Testing in 8 Laboratories (UTH- Virology Lab-RT-PCR and Cobas 6800, UTH TB Lab-GeneXpert, Macha Research Trust-RT-PCR, TDRC-RT-PCR, Chipata Central Hospital-GeneXpert, Chinsali General Hospital-GeneXpert, UNZA-Vet-RT-PCR, ADH-Cobas 6800)
- Courier system: pre-existing SRS is not being used due to long turnaround time. A new emergency system was created using provincial initiative.
- Results are returned via email & LIMs – DISA Lab*

USAID Infectious Disease Detection and Surveillance (IDDS) Project Overview

- Improve the quality of detection and real-time surveillance systems for existing and emerging pathogens
- IDDS Diagnostic Network Strengthening
- COVID-19 Emergency Response Activities
  - Specimen Transport, Training and Technical Assistance for Specimen Collection and Integrity
  - TA on molecular diagnostics, decentralization of testing, and procurement
- Countries
  - Bangladesh, Philippines, Vietnam, Indonesia, and Thailand (regional)
  - Senegal, Cameroon, Mali, and Tanzania
- Transport Examples

- Key Challenges
  - Coordination
  - Travel bans, quarantines, and quick transitions
  - Distance
  - Security
  - Coping with fear
  - Specimen Integrity and needed commodities
  - Optimizing networks (centralization vs. decentralization)
- Lessons Learned
  - Plan for now and the future (national strategy)
  - Ensure quality and safety
  - Flexibility and scaling for surge

First Question for Panelists

- How will the SRS contribute to your national testing targets within your COVID-19 response plan?
  - Does your country have national testing targets? If so, what are they?
  - Approximately how many specimen collection facilities are there in your country? And how many testing facilities?
  - Currently, approximately what % of the specimens are being referred for testing vs. referral of patients or onsite testing?

Resources

- Global Laboratory Initiative Specimen Referral Toolkit: http://www.stoptb.org/wg/gli/srt.asp