ASLM

AFRICAN SOCIETY FOR LABORATORY MEDICINE

ADVANCING THE LABORATORY PROFESSION AND NETWORKS IN AFRICA

Laboratory capacity to combat COVID-19 in Africa

NDLOVU NQOBILE
Chief Executive Officer

Test, test, test

WHO head: 'Our key message is: test, test, test'

World Health Organisation head Tedros Adhanom Ghebreyesus says there has not been an urgent enough escalation in testing, isolation and contact tracing, which should be the "backbone" of the global response.

He said it is not possible to "fight a fire blindfolded", and social distancing measures and handwashing will not alone extinguish the epidemic.

16 Mar 2020

Share

Key considerations for laboratory capacity

Country policy & planning

Diagnostic network

Infrastructure

Personnel

Lab–clinical interface

Biosafety & quality assurance

Supply chain

Implementation monitoring

Open-source digital solutions

Financing

FIND

WHO guidance recommends the use of molecular testing

Interim Guidance

"WHO recommends that all suspect cases be tested for COVID-19"

"Any persons meeting the criteria for testing should be tested…

using **available molecular tests.**

However, depending on the intensity of the transmission, the number of cases and the laboratory capacity, only a subset of the suspect cases may ***prioritized for testing****."*

World Health Organization

WHO Interim Guidance: Laboratory testing for coronavirus disease (COVID-19) in suspected human cases, *2020*

Africa CDC testing strategy (1)

If no known community transmission:

- Anyone with fever and acute respiratory symptoms who have been in a place in the last 14 days where COVID-19 is transmitting, and who is currently in a location without local transmission.
- All symptomatic contacts of a confirmed or probable cases of COVID-19.
- All cases of SARI and selected ILI samples reported through National Influenza Sentinel Surveillance.
- Healthcare workers with symptoms consistent with COVID-19 disease regardless of exposure

Africa CDC testing strategy (2)

If known community transmission:

- All cases of SARI and ILI reported through the Influenza Sentinel Surveillance System to identify undetected transmission areas.
- Severe acute respiratory infections presenting to hospitals.
- Healthcare workers with symptoms consistent with COVID-19 disease regardless of exposure.

Laboratory: Trainings to ensure the full continent has access to diagnostic capabilities for COVID-19

Africa CDC, WAHO and WHO are ramping the continent's COVID-19 diagnostic capabilities…

Countries with diagnostic capacity

In January…

No diagnostic capability

Early February…

2 countries

South Africa, Senegal

Today…

43 countries with diagnostic capabilities

1,2m+

Test kits distributed

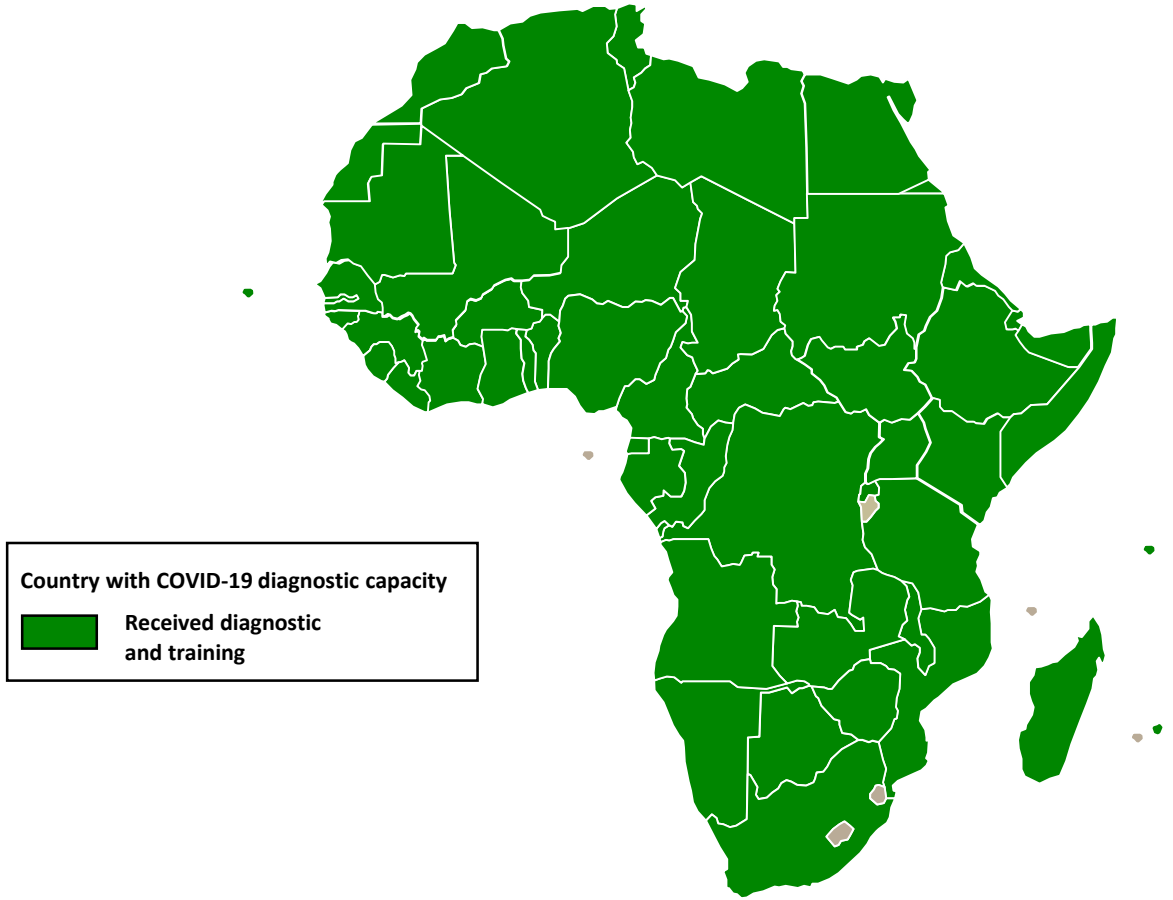
Lab referral networks created for Member States without diagnostic capabilities

African Union

AFRICA CDC
Centres for Disease Control and Prevention
Safeguarding Africa's Health

Map of African countries with diagnostic capacity for COVID-19

7 April 2020



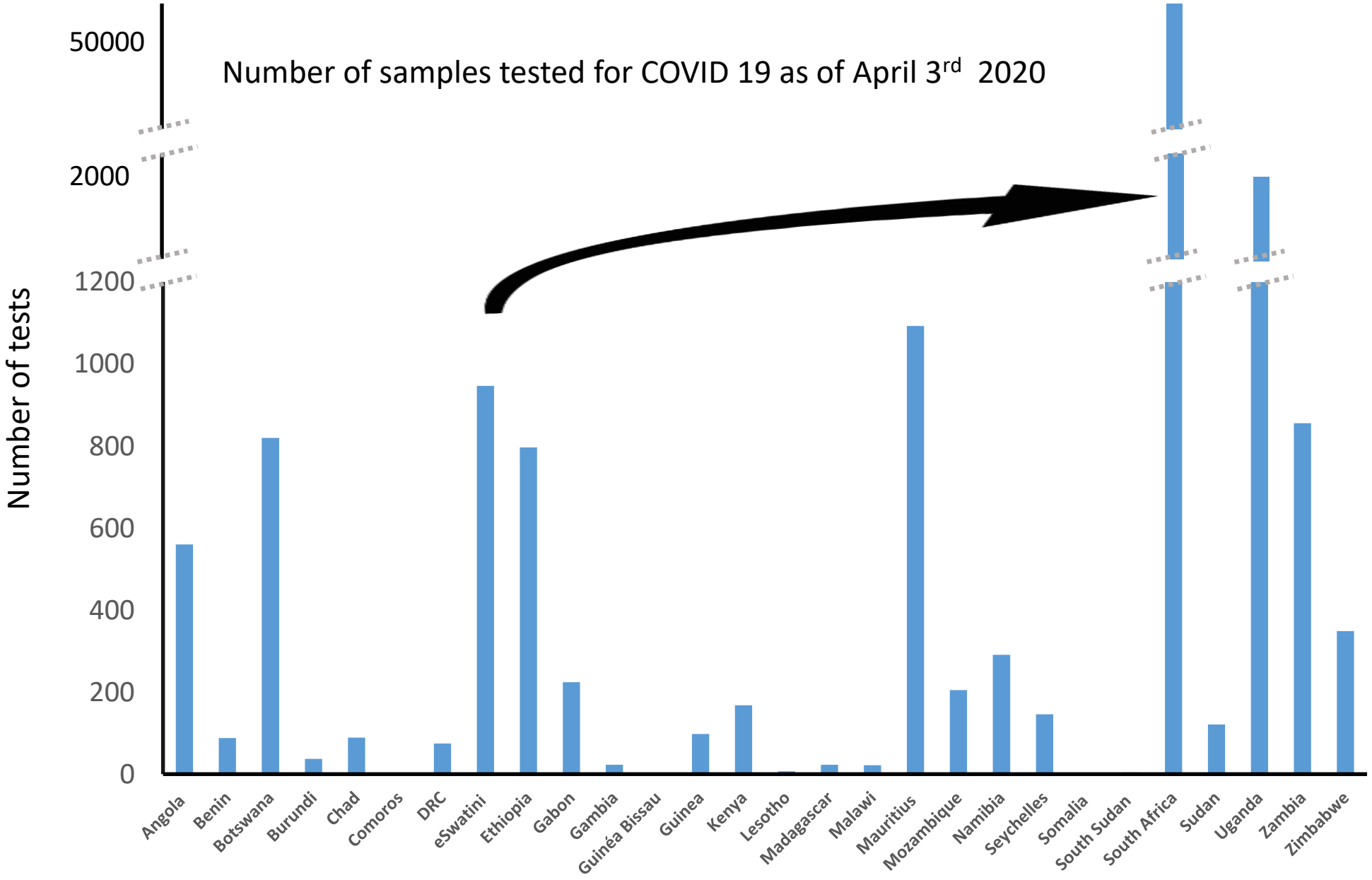
- Molecular (PCR based) testing platforms
- >50 trained lab personnel
- Remaining:
  - Lesotho, Eswatini,
  - Sao Tome and Principe and Comoros
- 1,220,000 tests distributed

  (PM Abiy and Jack Ma Foundation initiative donation)

African Union

AFRICA CDC
Centres for Disease Control and Prevention
Safeguarding Africa's Health

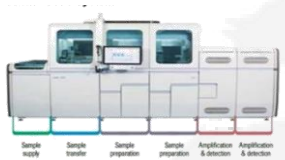
How much testing is happening?



~65,000 +
Total number of tests done

Rapid scale up can be accomplished in Africa by using the large global footprint of nucleic acid testing instruments

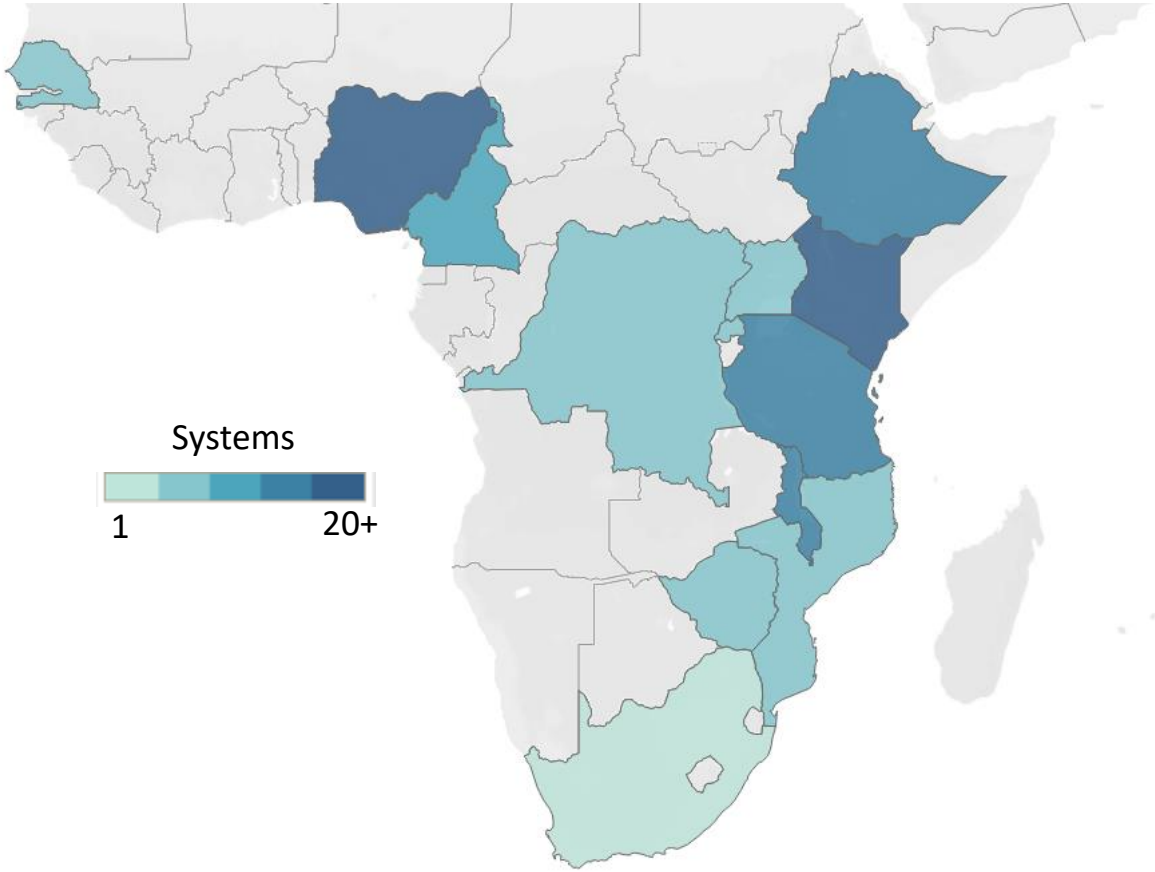
These companies provide high capacity manufacturing and logistics expertise that can be leveraged to rapidly expand testing programs simultaneously across many countries

Manufacturer	Abbott Laboratories (USA)	Roche (Switzerland)	Hologic (USA)	Cepheid (USA)	Thermo Fisher (USA)
Platform	m2000 sp/rt 	6/8800 	Panther 	GeneXpert 	AB7500/Kingfisher 
Current Price COVID-19 test	TBD	$15.21 ex-works	$12.00 all-inclusive	$19.80 ex-works	$15.00 ex-works
Devices (Sub-Saharan Africa)	**~350**	**~50**	**~50**	**~5,000**	**555**
Devices (*Global*)	~2000	~842	~2000	~10,000	>10,000
8/24 Hour Throughput	96 / 192	**6800 –** 384 / 1344 **8800 –** 960 / 3072	320 / 1220	**GX4** - 40 / 120 **GX16** – 160 / 512	376/752

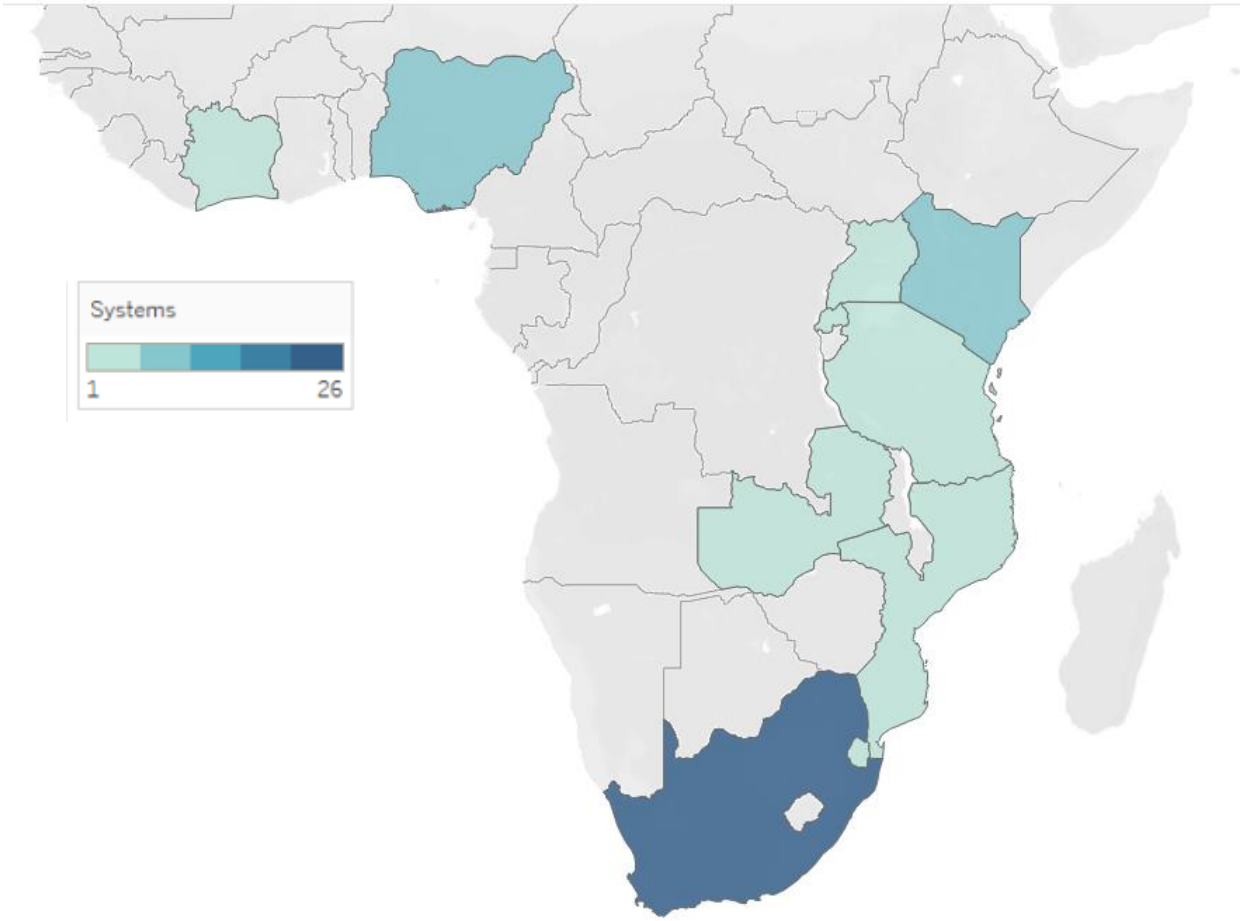
If need arise, 2-3 shifts maybe used based on existing footprint!!

Footprint of existing testing technology (1)

ABBOTT m-2000 platforms:
~350 in Sub-Saharan Africa

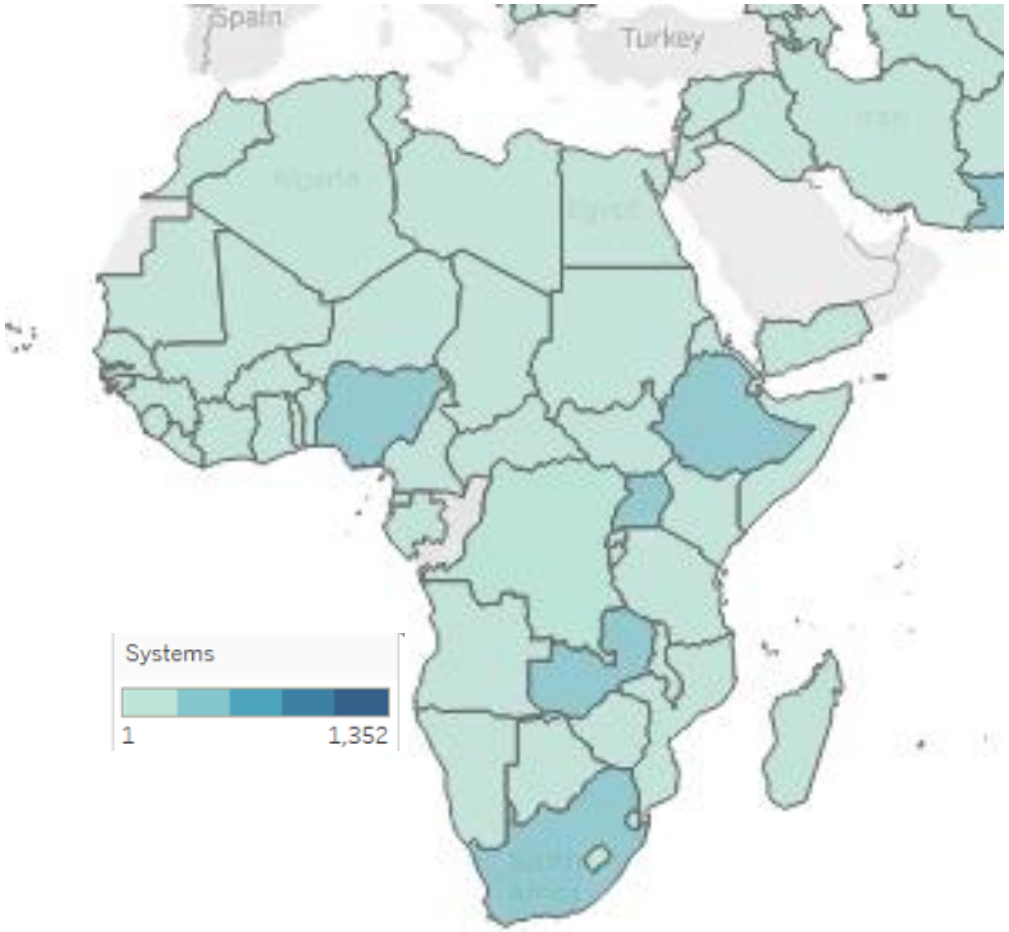


ROCHE 8800
10 countries in Africa: installed totaling 46 platforms

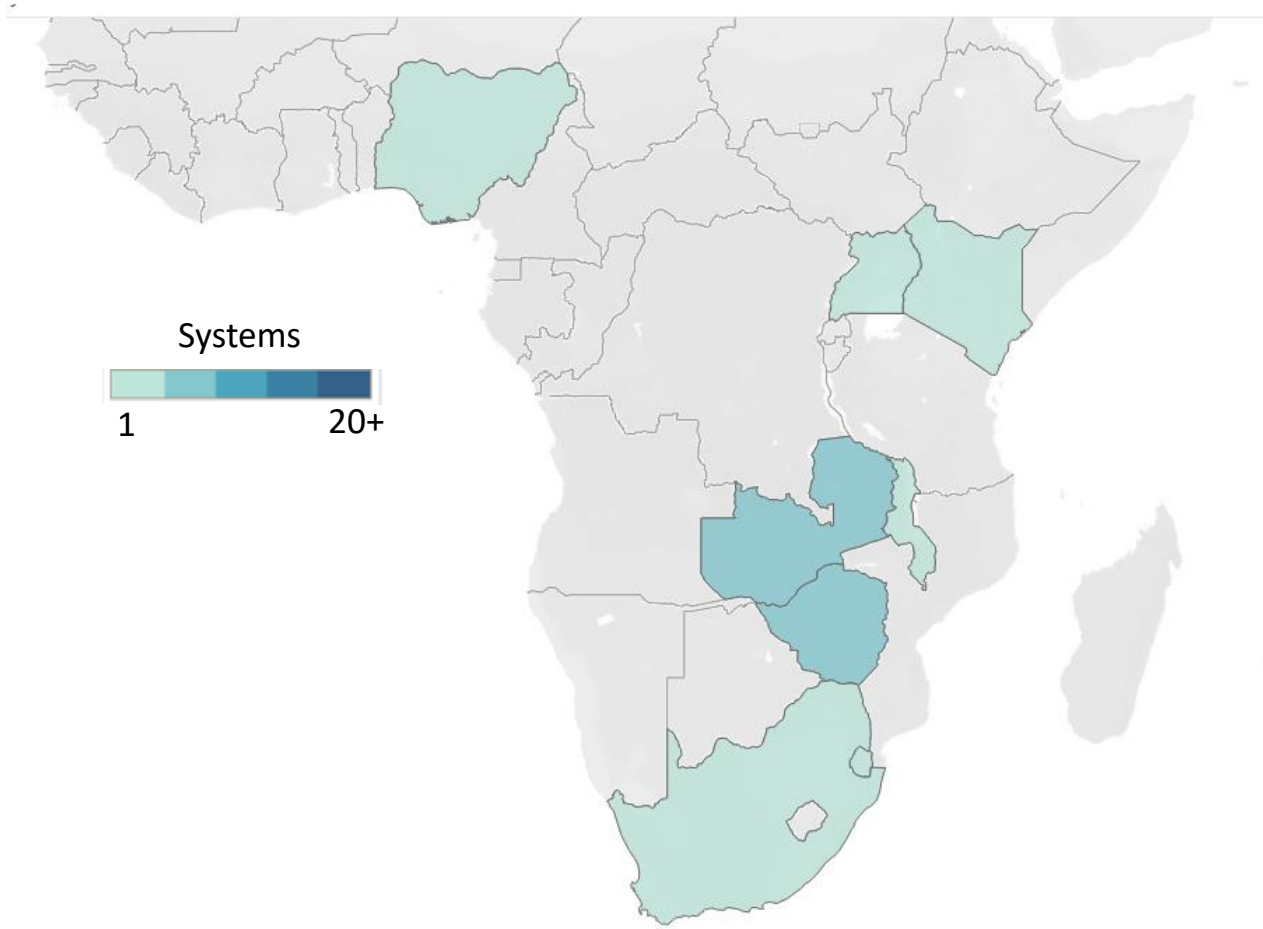


Footprint of existing testing technology (2)

CEPHEID platforms
>4000 systems deployed

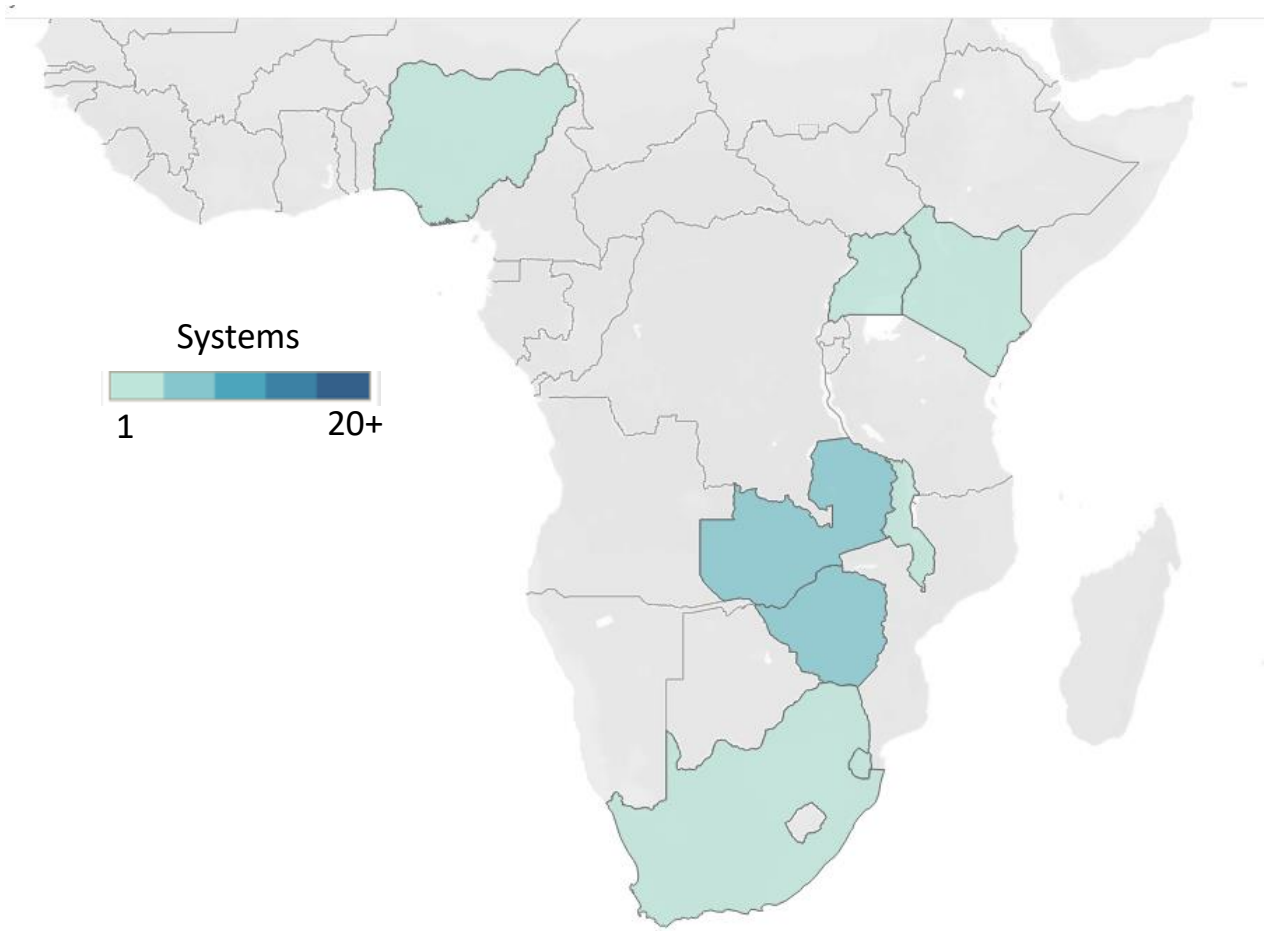


Hologic has ~50 Panthers
in Sub-Saharan Africa



Footprint of existing testing technology (3)

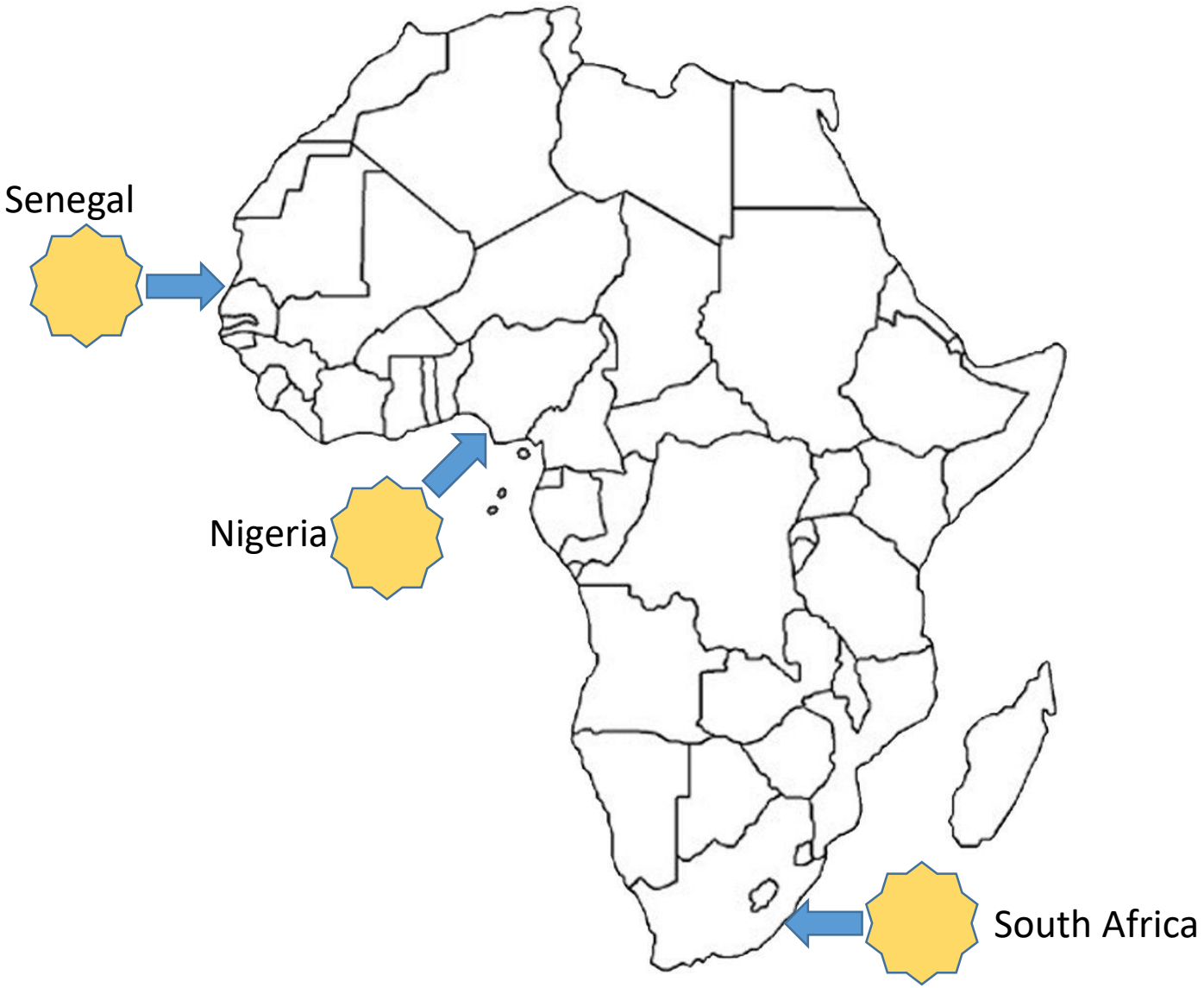
Hologic has ~50 Panthers in Sub-Saharan Africa



Centralised, decentralised and point of care testing

- Most countries have started off with centralised testing
  - Testing happening in National Reference Labs
  - A few countries still referring to other countries NRLs
  - Requires a strong specimen referral system
- Decentralised testing possible with these technology
- Trues point of care (FDA approved)
  - Still in the pipeline

4. In-house developed COVID testing..

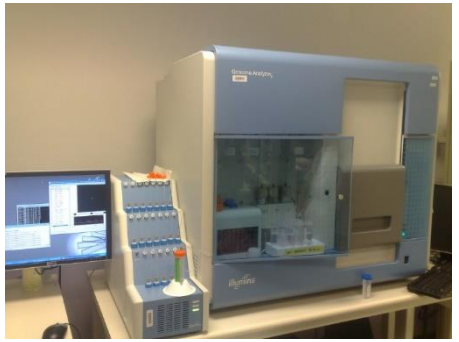


For example

- South Africa
- Senegal
- Nigeria

Gene sequencing capabilities for COVID-19: Africa CDC

- Establishing sequencing capabilities in 12 reference centers
  - Equipment placement,
  - online installation
  - training, reagent supply
- Sequencing data has been out for 35 cases in Africa
- Understand transmission patterns



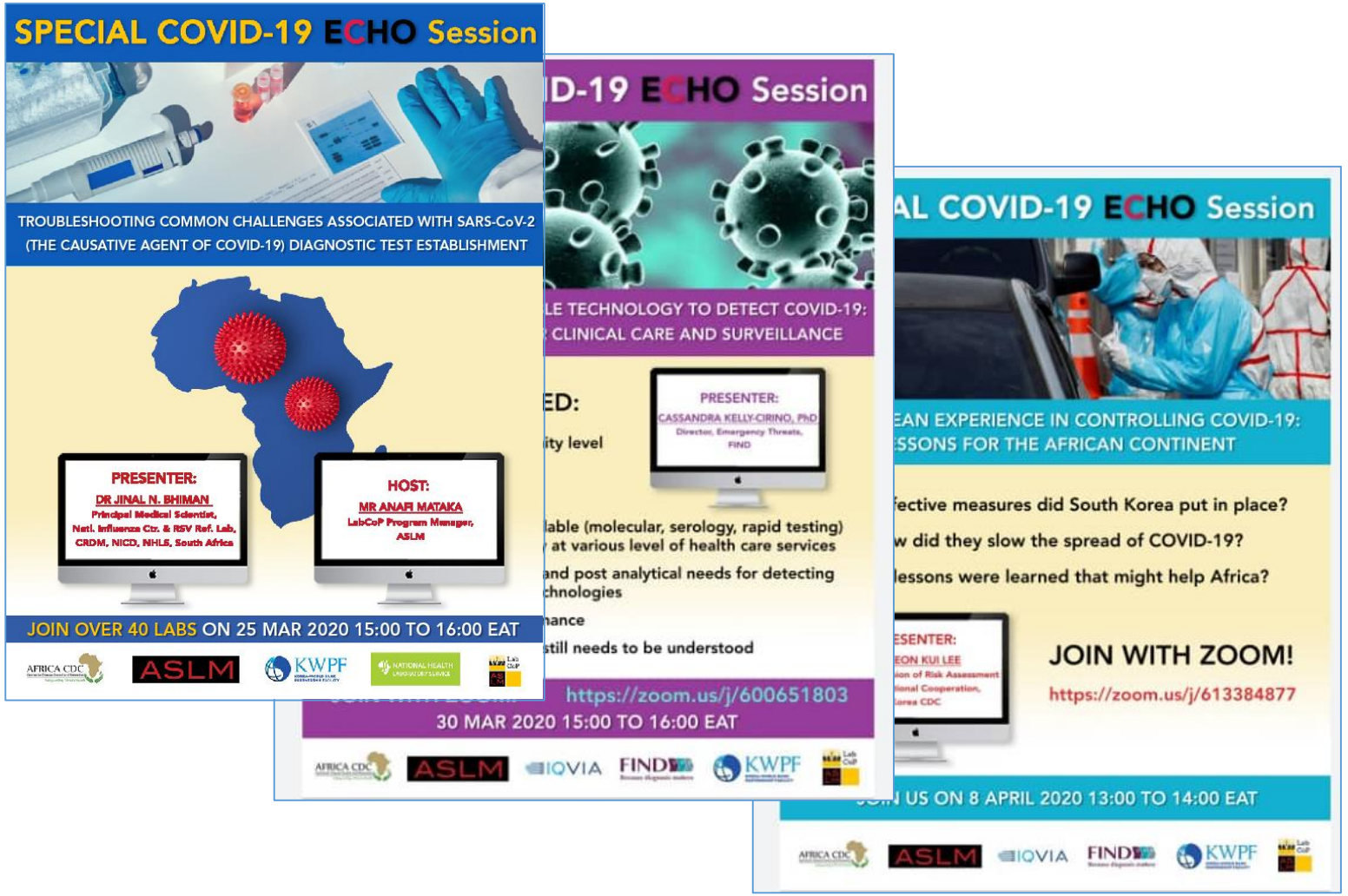
Assuring quality of molecular SARS-CoV-2 testing: available EQA schemes

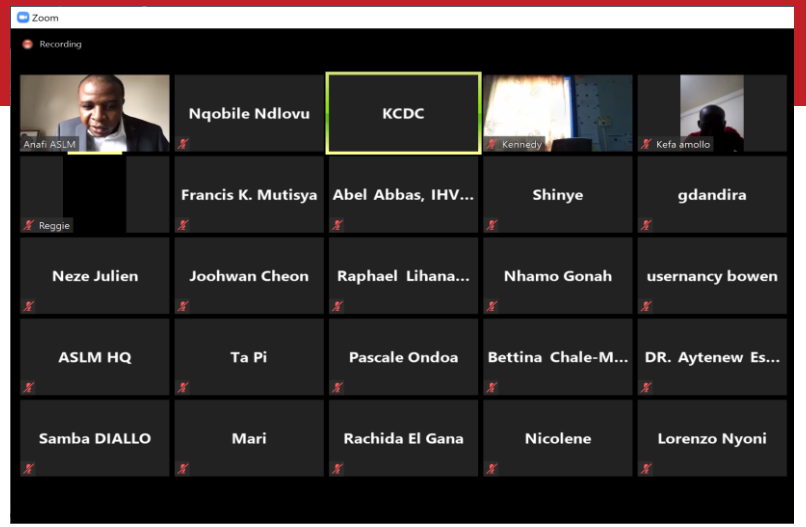
	Number of samples	Applicability	Registration deadline	Evaluation period	Fee
QCMD	8	Global	1 Apr 2020	Spring 2020	€373
INSTAND	8	Global	Not mentioned	Spring 2020	€295
WHO Health Emergencies and Global Influenza programme	5	Influenza RL	31 Mar 2020	Spring 2020	None
ECDC/EVD-LabNet/ERLI-Net	Unknown	EU influenza RL	1 Apr 2020	Spring 2020	None
Thistles	TBA	Global	-	-	€210

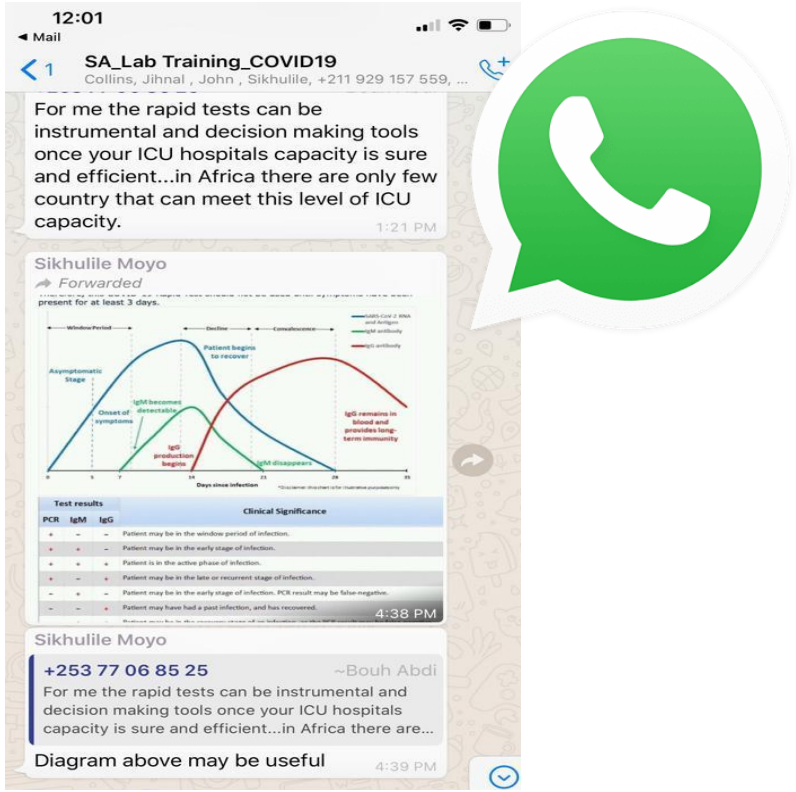
List not exhaustive – many other groups are beginning to offer EQA schemes.
Choose providers who are experienced in delivering EQAs within your region.

COVID-19 Learning platform: ASLM webinars

> 500 online connections





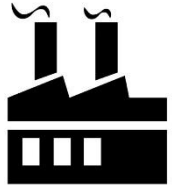


Considerations

- Scaling up testing on the continent

- Ensuring continuous and uninterrupted testing supplies

- Developing local capacity to manufacture these kits



- Regulatory mechanisms during emergence situations

Thank You

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