Strengthening Quality Management and Specimen Referral Systems in Public Health Laboratories and Networks in Africa

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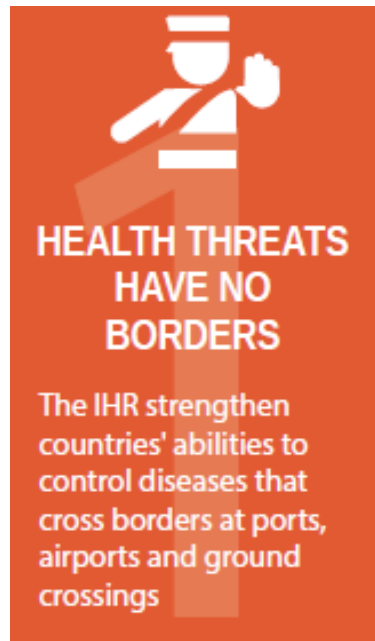
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Conflict of interest

None to declare

Epidemics preparedness

❑ "the capacity to detect, assess, notify and report events"

❑ "the capacity to respond promptly and effectively to public health risks and public health emergencies of international concern"

WHO, International Health regulations

HEALTH THREATS HAVE NO BORDERS

The IHR strengthen countries' abilities to control diseases that cross borders at ports, airports and ground crossings

GLOBAL HEALTH SECURITY IS ENHANCED

The IHR establish an early warning system not only for diseases but for anything that threatens human health and livelihoods

DAILY THREATS ARE KEPT UNDER CONTROL

The IHR guide countries to detect, assess and respond to threats and inform other countries quickly

Make sure surveillance systems and laboratories can detect potential threats

DETECT

ASSESS

Work together with other countries to make decisions in public health emergencies

The IHR require that all countries can:

Respond to public health events

RESPOND

Report specific diseases, plus any potential international public health emergencies

REPORT

CDC

Prevent–**Detect**–Respond framework

Relevant action packages:

- Functional national laboratory networks
- Real-Time Surveillance
- Reporting
- Systems and workforce development

(1) Under-resourced infrastructure and equipment;

(2) Poor laboratory linkages to clinical services (low test demand, suboptimal utilisation of modern diagnostics for clinical decisions);

(3) Poor laboratory quality control and assurance systems;

(4) Paucity of leadership to provide adequate policy intervention, technical guidance and supportive supervision;

(5) Inadequate or absent national laboratory networks.

Onyebujoh et al (Afr J Lab Med. 2016)

Schroeder LF et al, AJCP, 2014
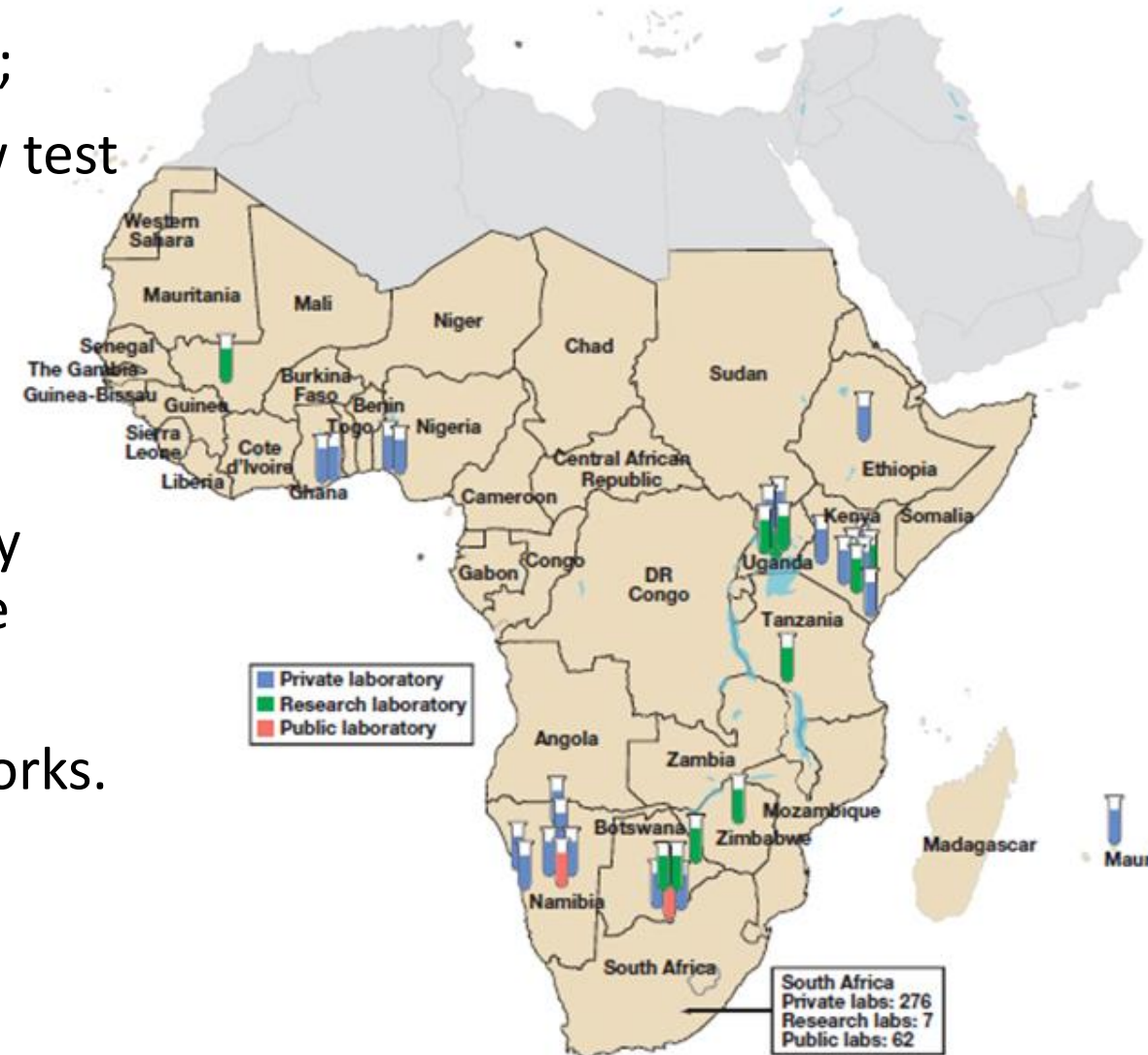
Africa CDC

Laboratory Systems and Networks focus area:

➢ To promote a Regional Integrated Surveillance and Laboratory Networks (RISLNET) to improve endemic disease surveillance, alert and response mechanisms in the region through the leverage of existing surveillance and laboratory networks.

➢ A five-year campaign funded by Bloomberg Philanthropies, the Chan Zuckerberg Initiative, and the Bill & Melinda Gates Foundation

➢ Works with governments in LMIC to implement evidence-based tools to strengthen key areas to improve capacity and preparedness.

➢ **RESOLVE to prevent Epidemics Laboratory core** : support laboratory networks so that new and emerging pathogens are recognized promptly

➢ Join efforts to sustain health security for all.

➢ Facilitate development and implementation of proven laboratory systems and networks capacity reinforcement activities

Main Objectíve

To strengthen Quality Management and Specimen Referral Systems in Public Health Laboratory and Networks in Africa

➢ Strengthen laboratory systems and networks in 5 selected Africa countries as part of the RISLNET to improve capacity and preparedness.

➢ Special focus on the **DETECT core area** of the GHSA:
  ➢ Indicator D.1.2 ***Specimen referral and transport system***
  ➢ Indicator D.1.4 ***Laboratory quality system***

Mechanisms/responsibilities

- Ressources and partners mobilization
- High level country engagement
- Regional oversight

- Situationnal analysis
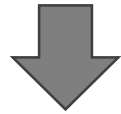- Technical proposals/workplan development
- Leadership and support

- Mentorship
- Training and knowledge sharing
- Good practices dissemination

- Peer to peer learning
- Mutual accountability
- Solidarity and sustainability fostering

Africa CDC

Regional Coordinating Centers

Project consultants ASLM

Implementing partners

In country actors
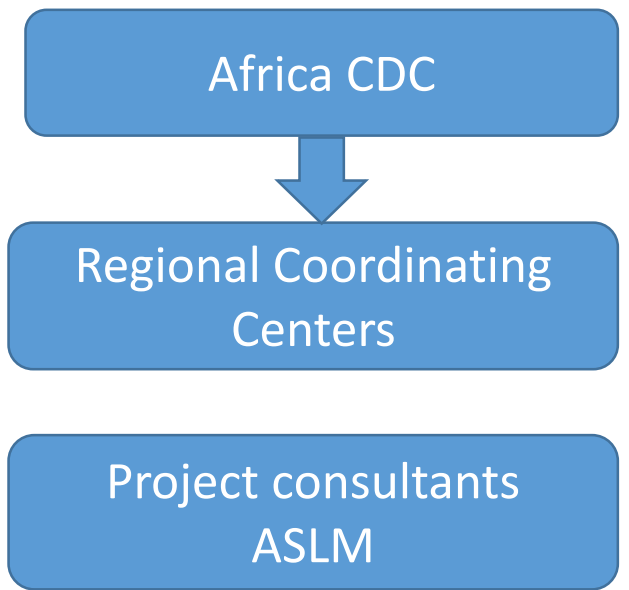
Regional level
Oversight and coordination

Country level
Implemnetation

Cascade Model

Specific Objectíves

1. *To develop a roadmap for QMS and STS reinforcement in 5 selected Member States in Africa based on identified public health gaps in preparedness for outbreak response.*

2. *To support reference laboratories in selected Member States in Africa to implement QMS using SLMTA/SLIPTA.*

3. *To develop a framework for biological specimen referral systems in Member States and across region.*

4. *To monitor and evaluate project implementation*

❑ Process available for the evaluation of countries capacity to prevent, detect and rapidly respond to public health threats

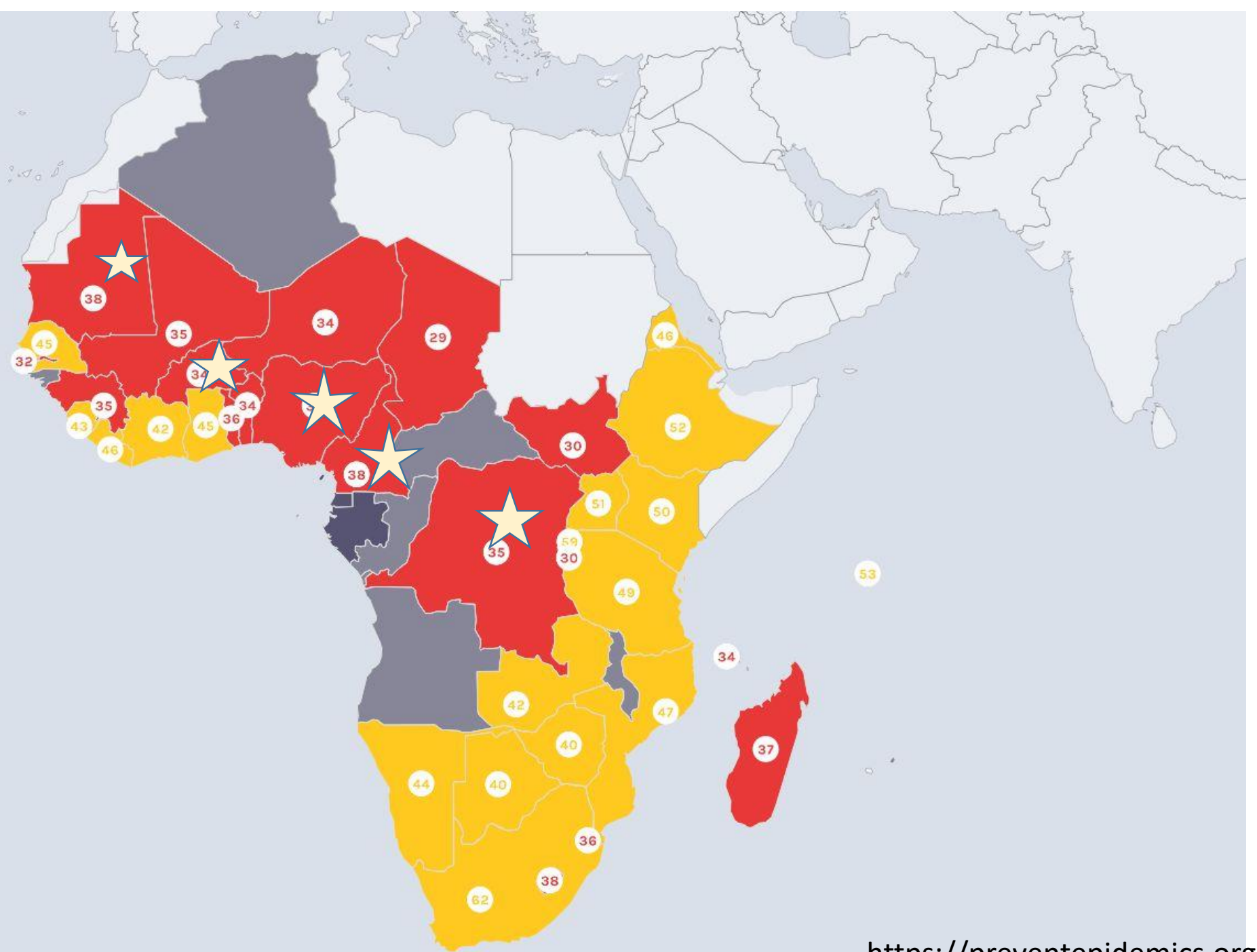❑Measures country-specific status and progress in achieving IHR targets
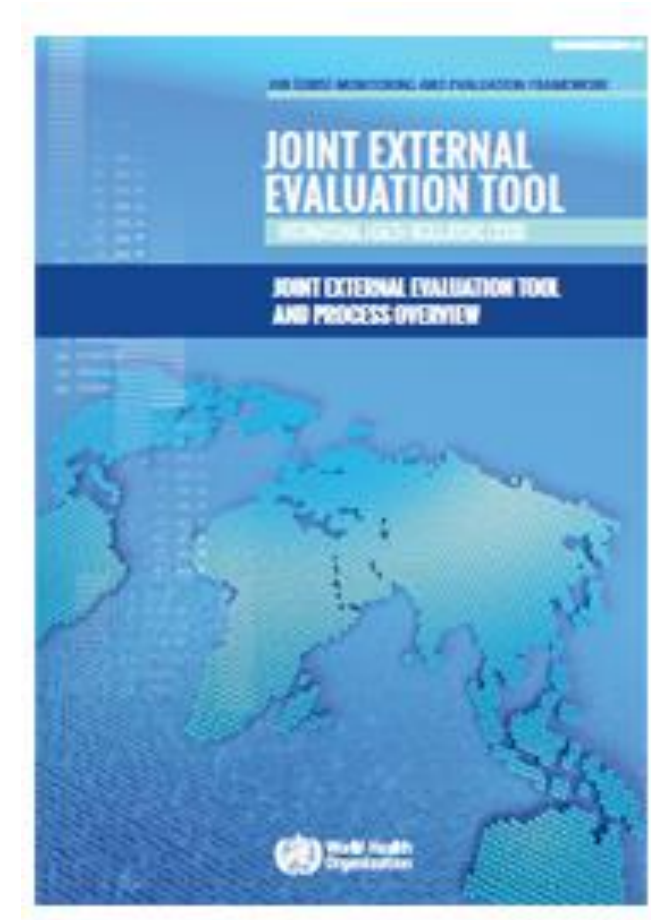
AFRICA

READY SCORE

100 Better prepared

79 Work to do

39 Not ready

https://preventepidemics.org/

National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	3
	D.1.2 Specimen referral and transport system	1
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	2
	D.1.4 Laboratory quality system	2

❑Identifies strengths and weaknesses and provides recommendations

➢ Assess the functionality of national laboratory networks and systems

➢ Evaluate capacity to respond to infectious disease threats according to the GHSA and the IHR

➢ Map existing laboratory and workforce capacities at country level

➢ Identify gaps and requirements of the national lab networks

Effective lab Networks – Core Capabilities
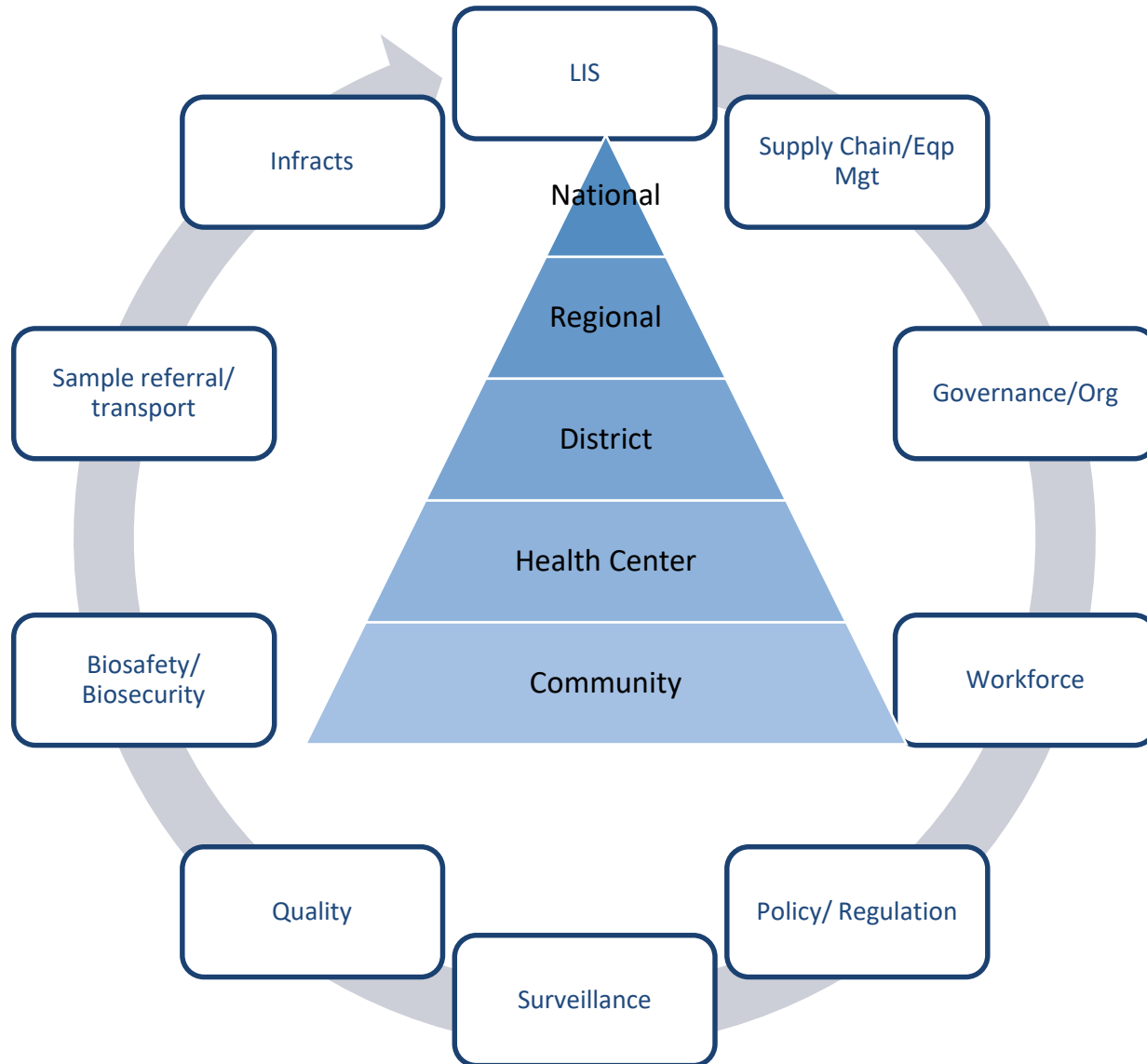
1. **Political, legal and regulatory**
2. **Structure and organization**
3. **Coverage and rapid response**
4. **LIMS**
5. **Infrastructures**
6. **Human ressources**
7. **Quality**
8. **Biosafety & biosecurity**
9. **Priority diseases**

Core Capabilities – components
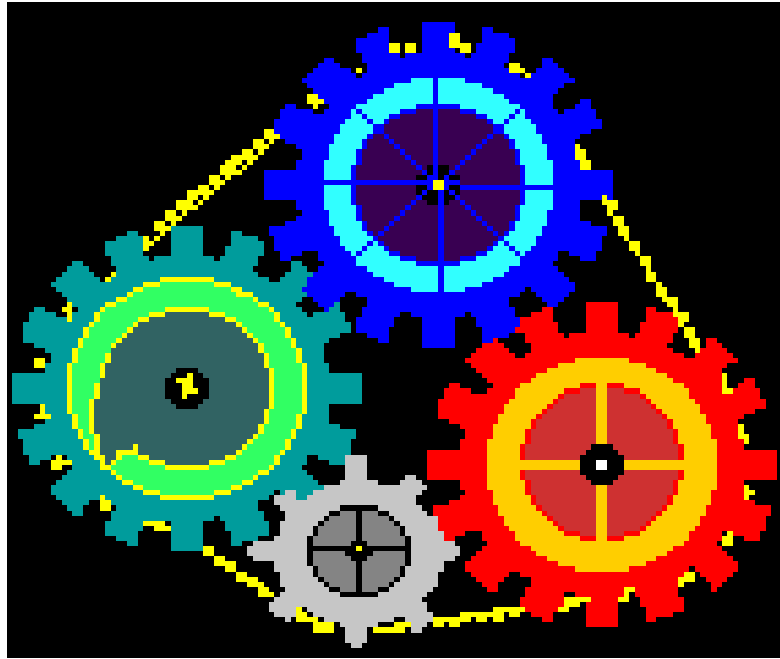
Capability 2: Structure and organisation

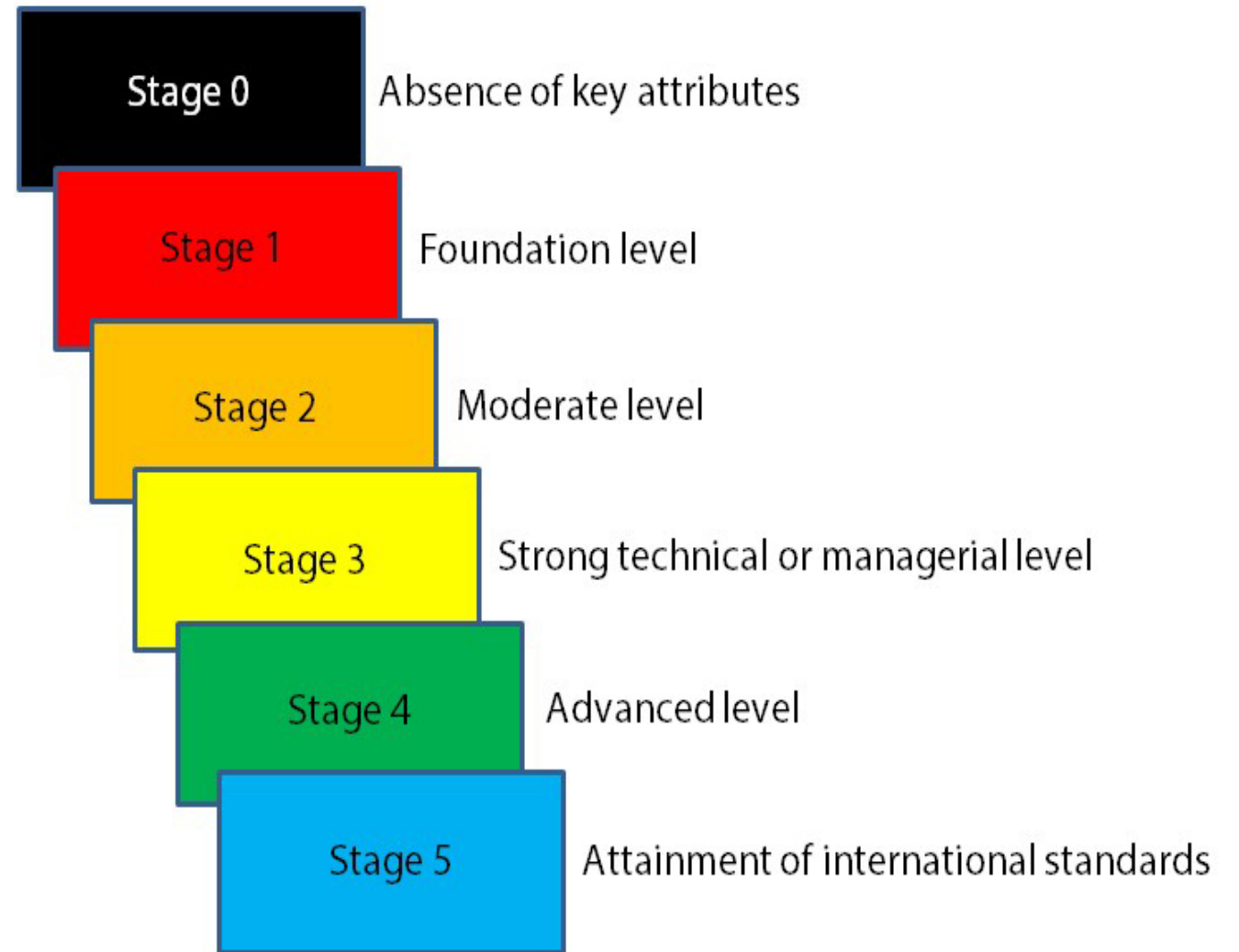| Structure of the tiered network	Coordination et management

Set of individual indicators

Capability 7: Quality of the lab network

Quality assurance	QMS	Certification &accreditation

Score Card Maturation Stages

Stage	Description
Stage 0	Absence of key attributes
Stage 1	Foundation level
Stage 2	Moderate level
Stage 3	Strong technical or managerial level
Stage 4	Advanced level
Stage 5	Attainment of international standards

National Committee

- Multisectoral:
(Public /private/ academia)

- One Health approach

- Partners

External evaluators

Consensus

Country level analysis

Cap 1: politique	Legislation	Politiques et plans	Gouvernance	Finances
Cap 2: structure	Réseau échelonné des laboratoires		Coordination et Gestion	
Cap 3: couv/rap.rép	Couverture du réseau échelonné	Réponse rapide et préparation à la riposte	Réseau de référencement des échantillons	
Cap 4: SIGL	Collecte des données	Analyse et partage des données	Surveillance /Epi	Rapportage	Sécurité/conf de l'environ^t
Cap 5: inf./equip/react	Infrastructures	Gestion de la chaîne d'approvisionnement	Equipement	
Cap 6: RH	Education et formation	Recrutement	Stratégie de développement des ressources humaines	
Cap 7: QUAL	Assurance qualité	Système de gestion de a qualité	Certification & accréditation	
Cap 8: biosec/biosur	Manuel de biosécurité	Systèmes nat. de biosûr. et biosécurité	Stockage des échantillons	Gestion des déchêts
Cap 9: Mal prior.	Priorisation	Tests	RAM	

Capability 3: Network coverage and rapid response

Tiered network coverage	Rapid response and prepardness	Sample referral system

Laboratory network has not been mapped

Targeted impactful interventions → Stage 4

No specimen transport SOP

Targeted impactful interventions → Stage 3

Regional analysis

| Cap 1: politique | Legislation | Politiques et plans | Gouvernance | Finances |

| Cap 2: structure | Réseau échelonné des laboratoires | Coordination et Gestion |

| Cap 3: couv/rap.rép | Couverture du réseau échelonné | Réponse rapide et préparation à la riposte | Réseau de référencement des échantillons |

| Cap 4: SIGL | Collecte des données | Analyse et partage des données | Surveillance /Epi | Rapportage | Sécurité/conf de l'environᵗ |

| Cap 5: inf./equip/react | Infrastructures | Gestion de la chaîne d'approvisionnement | Equipement |

| Cap 6: RH | Education et formation | Recrutement | Stratégie de développement des ressources humaines |

| Cap 7: QUAL | Assurance qualité | Système de gestion de a qualité | Certification & accréditation |

| Cap 8: biosec/biosur | Manuel de biosécurité | Systèmes nat. de biosûr. et biosécurité | Stockage des échantillons | Gestion des déchêts |

| Cap 9: Mal prior. | Priorisation | Tests | RAM |

Scoping results

Generic
RESOLVE
Proposal

Customized
RESOLVE
Proposal
And action plan

LabMAp

Evidence based interventions

Expected outcomes

Objective 1
Situational analysis based on JEE and LABNET assessments
An evidence-based national roadmap for QMS and STS implementation is available

Objective 2
A national strategic plan for QMS implementation is available
SLIPTA auditors, SLMTA trainers and embedded mentors and QAM are available in MoH
NPHI/NRL and supporting SLIPTA
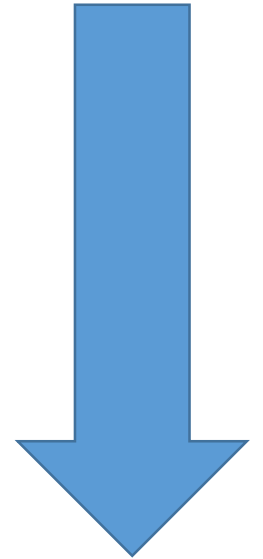Echo hub is setup in Africa CDC RCC and spokes in MoH

Objective 3
STS framework developed and regional STS hubs established
Staff competent for safe and secure specimen packing, storage and transportation

Objective 4
Lessons are learnt and challenges are shared with funders, staff and other stakeholders

Overall

↓

JEE score is improved

Thank you