

A Decade of Strengthening Laboratory Medicine in Africa: Then, Now, Future

2nd ASLM2014 International Conference

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John N. Nkengasong, Ph.D
**Associate Director for Laboratory Science &
Chief, International Laboratory Branch**
Division of Global HIV/AIDS
Center for Global Health



Outline

- Decade of Increased Global Health Funding
- Global Commitment and Laboratory Strategic Plans
- Embracing the Culture of Quality
- Future

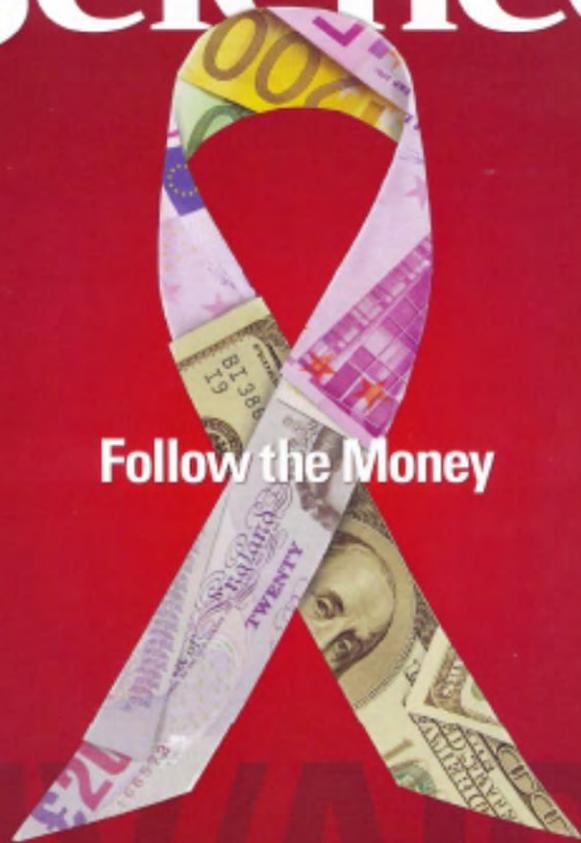
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Decade of Increased Global Health Funding



Science

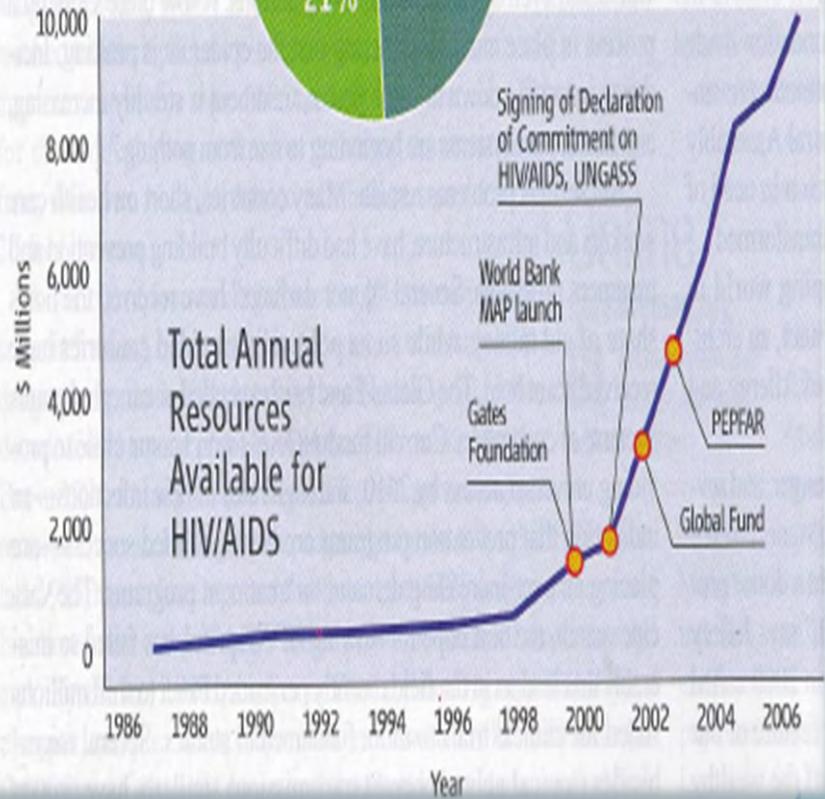
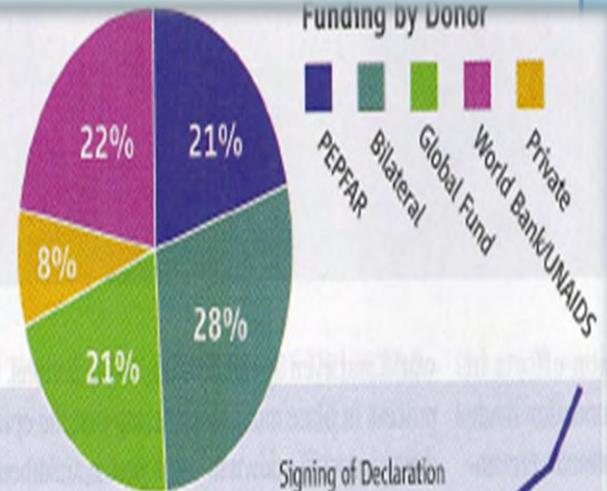
25 July 2008 | \$10



Follow the Money

AAAS

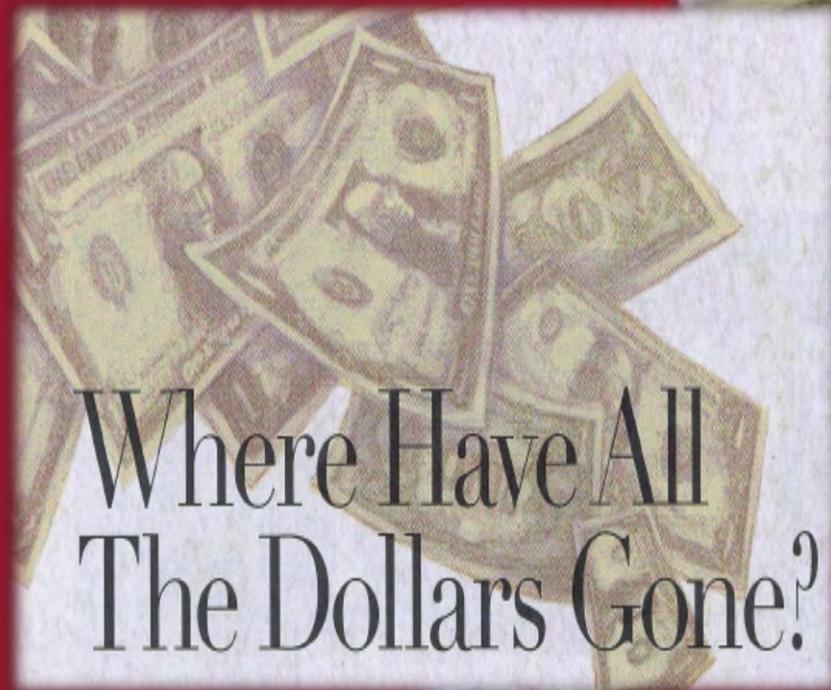
Money Flows



Science

The Great Funding Surge

HIV/AIDS now attracts billions of dollars each year, extending millions of lives.



Implication for Laboratory Health Systems!



The Case for Strengthening Laboratory Medicine

Kigali Conference / LABORATORY SYSTEMS AND SERVICES IN GLOBAL HEALTH

Laboratory Systems and Services Are Critical in Global Health

Time to End the Neglect?

John N. Nkengasong, PhD,¹ Peter Nsubuga, MD, MPH,² Okey Nwanyanwu, PhD,³ Guy-Michel Gershy-Damet, PhD,⁴ Giorgio Roscigno, MD,⁵ Marc Bulterys, MD, MPH,⁶ Barry Schoub, MD,⁷ Kevin M. DeCock, MD, MPH,⁸ and Deborah Birx, MD¹

Key Words: National laboratory systems; Laboratory strengthening; Global health; Public health; Infectious diseases

DOI: 10.1309/AJCPMPSINQaBRMU6

AJCP / EDITORIAL

A Shifting Paradigm in Strengthening Laboratory Health Systems for Global Health

Acting Now, Acting Collectively, but Acting Differently

John N. Nkengasong, PhD

DOI: 10.1309/AJCPYSASUE.YOBRK



Neglected Lab Infrastructure

Humble Beginnings and the Biblical Lazarus



Before

Adwa Hospital Laboratory



After



Awash Health Center Laboratories

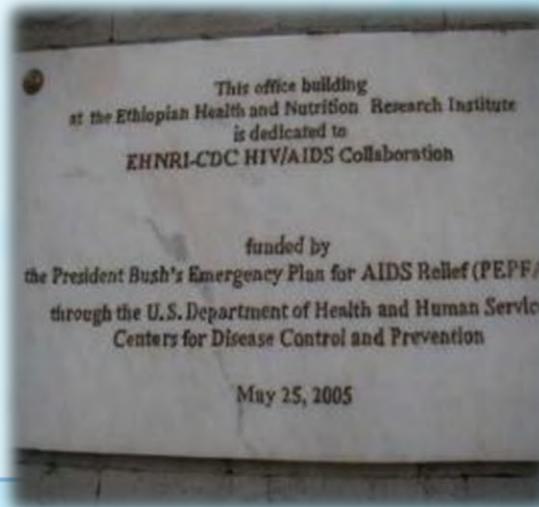
State of Reference Laboratories in 2014

Kisumu, Kenya,

Dar es Salaam, Tanzania



Addis Ababa, Ethiopia



Emergence of Integrated Laboratory Networks

Reference Laboratories

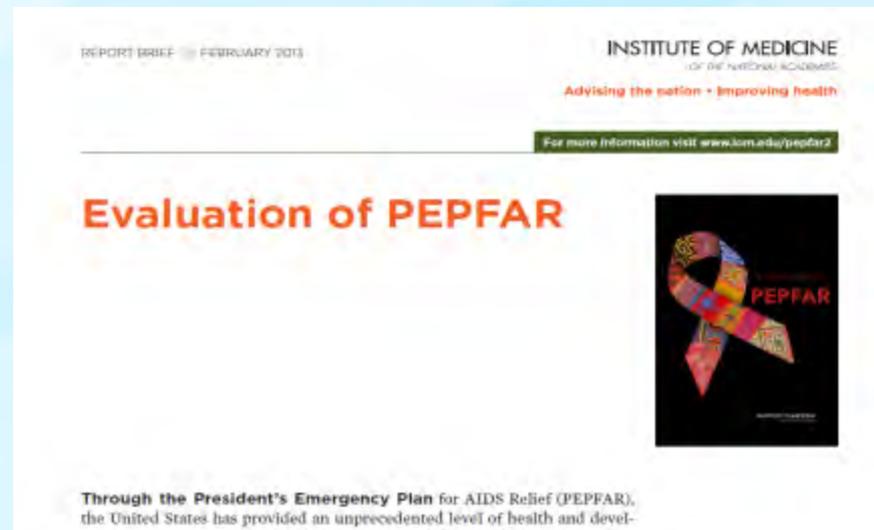


Regional Laboratories



Institute Of Medicine Report on Evaluation of PEPFAR (2013)

“Although challenges remain, the improvement of laboratories under PEPFAR support and guidance has been a signature achievement of the program ----During the committee’s country visits, this was a theme emphasized with near universality”

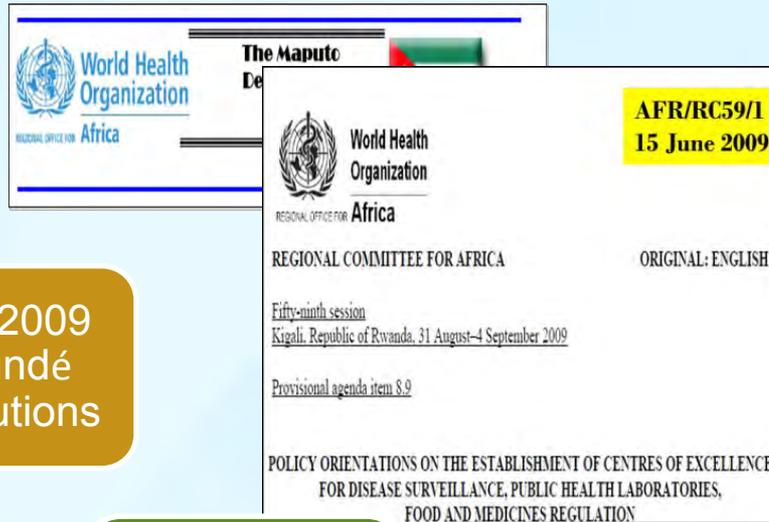


2

Global Commitment and Laboratory Strategic Plans

Major Milestones in Developing Laboratory Medicine in the Last Decade in Africa

2008
Maputo
Declaration



2008-2009
Yaoundé
Resolutions

2009 Kigali
Stepwise
Accreditation

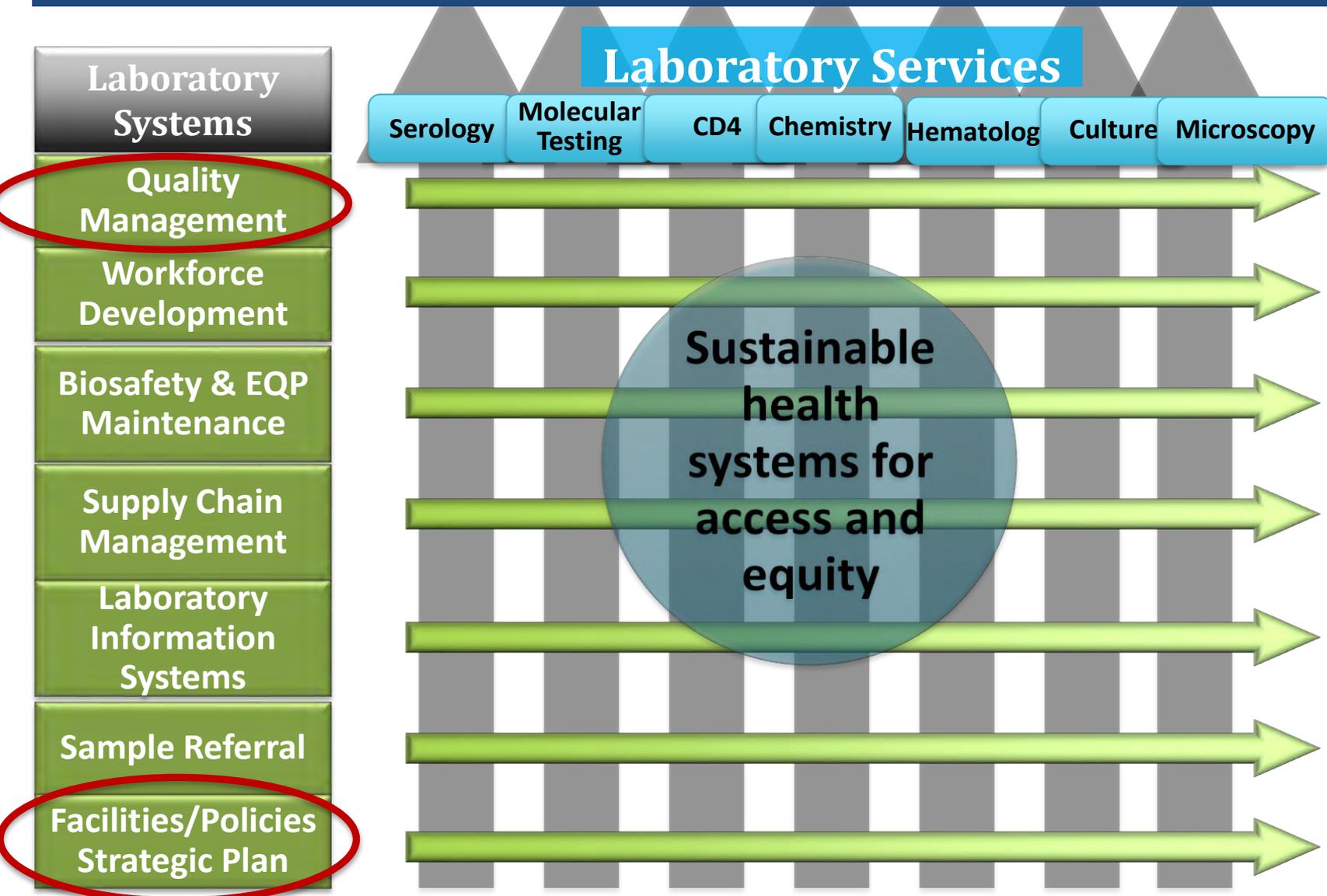


2010
Kampala
Statement

KAMPALA Statement for the Creation of the
African Society for Laboratory Medicine

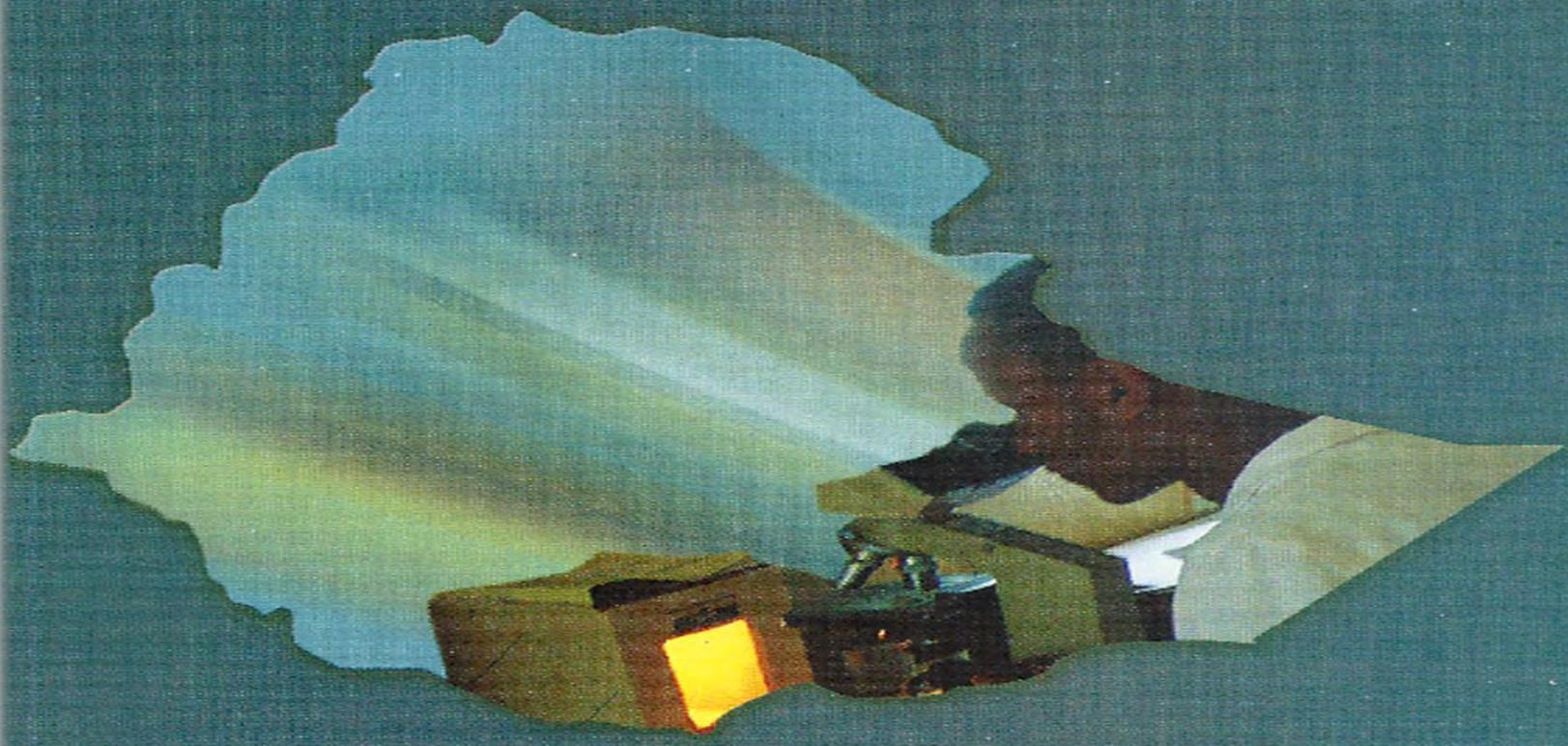


Strengthening Systems For Multiple Disease Prevention and Control



Development and Implementation of National Laboratory Strategic Plans (2005-2014)





MASTER PLAN FOR THE PUBLIC HEALTH LABORATORY SYSTEM IN ETHIOPIA

Second Edition, 2009-2013



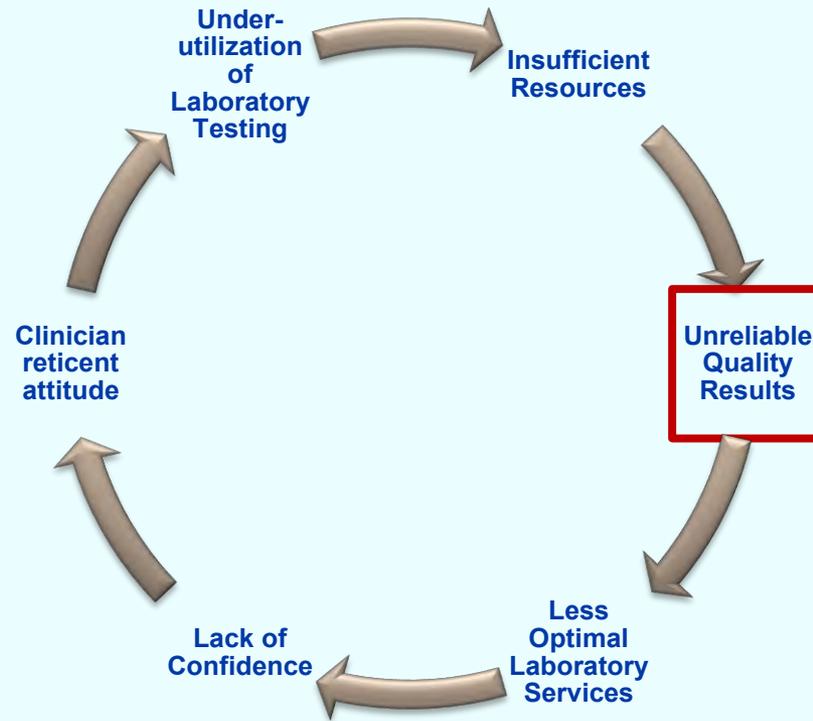
Ethiopian Health and Nutrition Research Institute (EHNRI)
Federal Ministry of Health, Ethiopia



3

Embracing the Culture of Quality

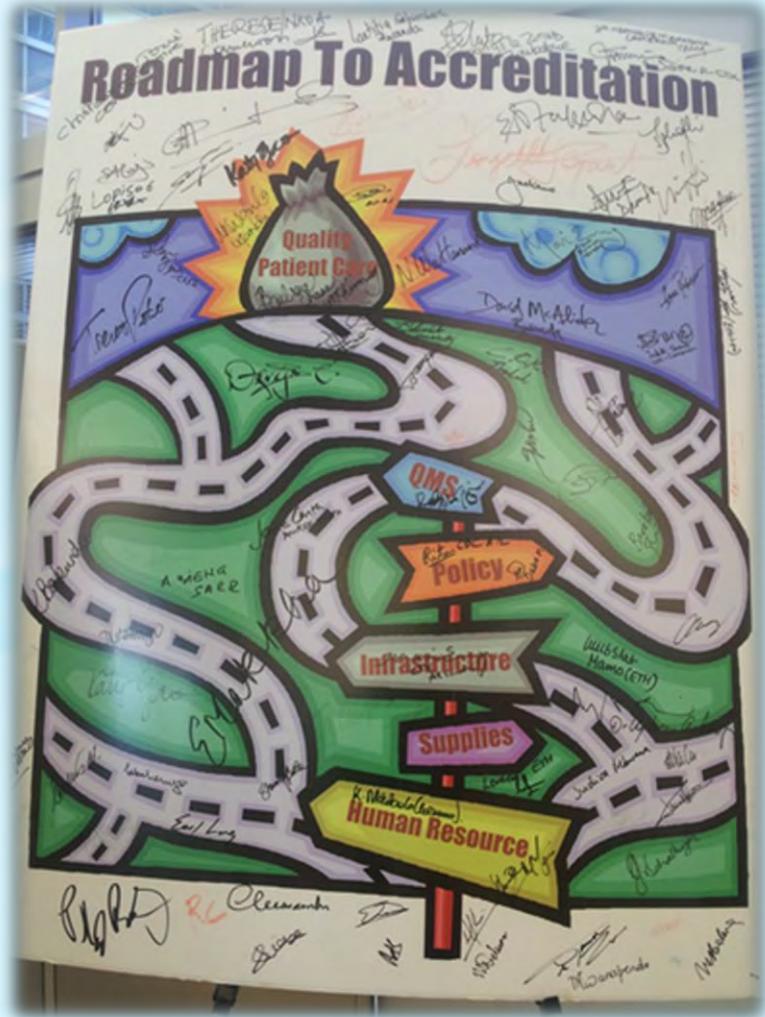
Quality Matters: Breaking the Vicious Cycle?



Road to Accreditation -Launch of Two Innovative Approaches

1. WHO AFRO Stepwise Laboratory Improvement Process

2. Strengthening Laboratory Management Toward Accreditation



Stepwise Laboratory Quality Improvement Process Towards Accreditation - SLIPTA



Measures the level of quality using an ISO 15189-based audit checklist with 258 points

Recognizes a lab's progression towards accreditation using a 0-to-5 star scale



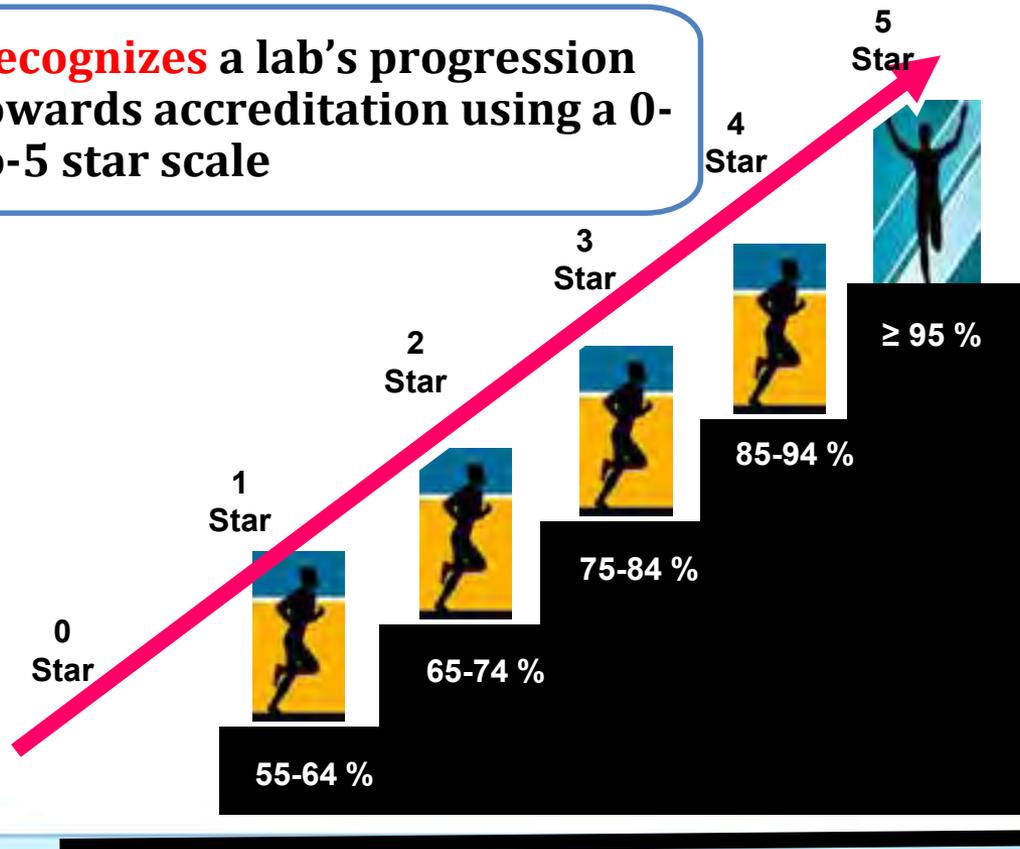
World Health Organization

REGIONAL OFFICE FOR **Africa**



Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) Checklist

Audit Sections	Score
Section 1: Documents and Records	25
Section 2: Management Reviews	17
Section 3: Organization & Personnel	20
Section 4: Client Management & Customer Service	8
Section 5: Equipment	30
Section 6: Internal Audit	10
Section 7: Purchasing & Inventory	30
Section 8: Process Control and Internal & External Quality Assessment	33
Section 9: Information Management	18
Section 10: Corrective Action	12
Section 11: Occurrence Management & Process Improvement	12
Section 12: Facilities and Safety	43
TOTAL SCORE	258

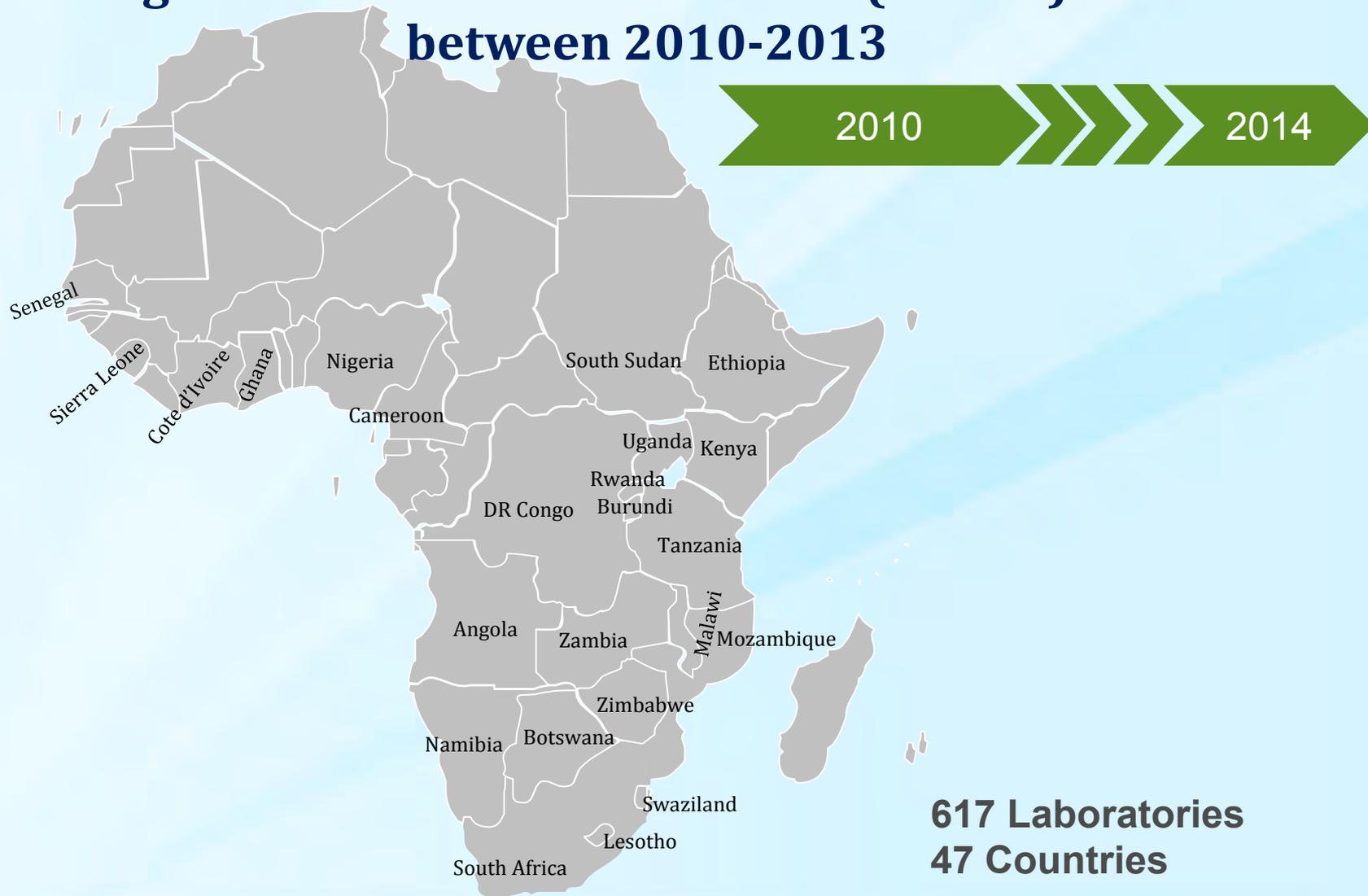


Strengthening Laboratory Management Toward Accreditation - SLMTA

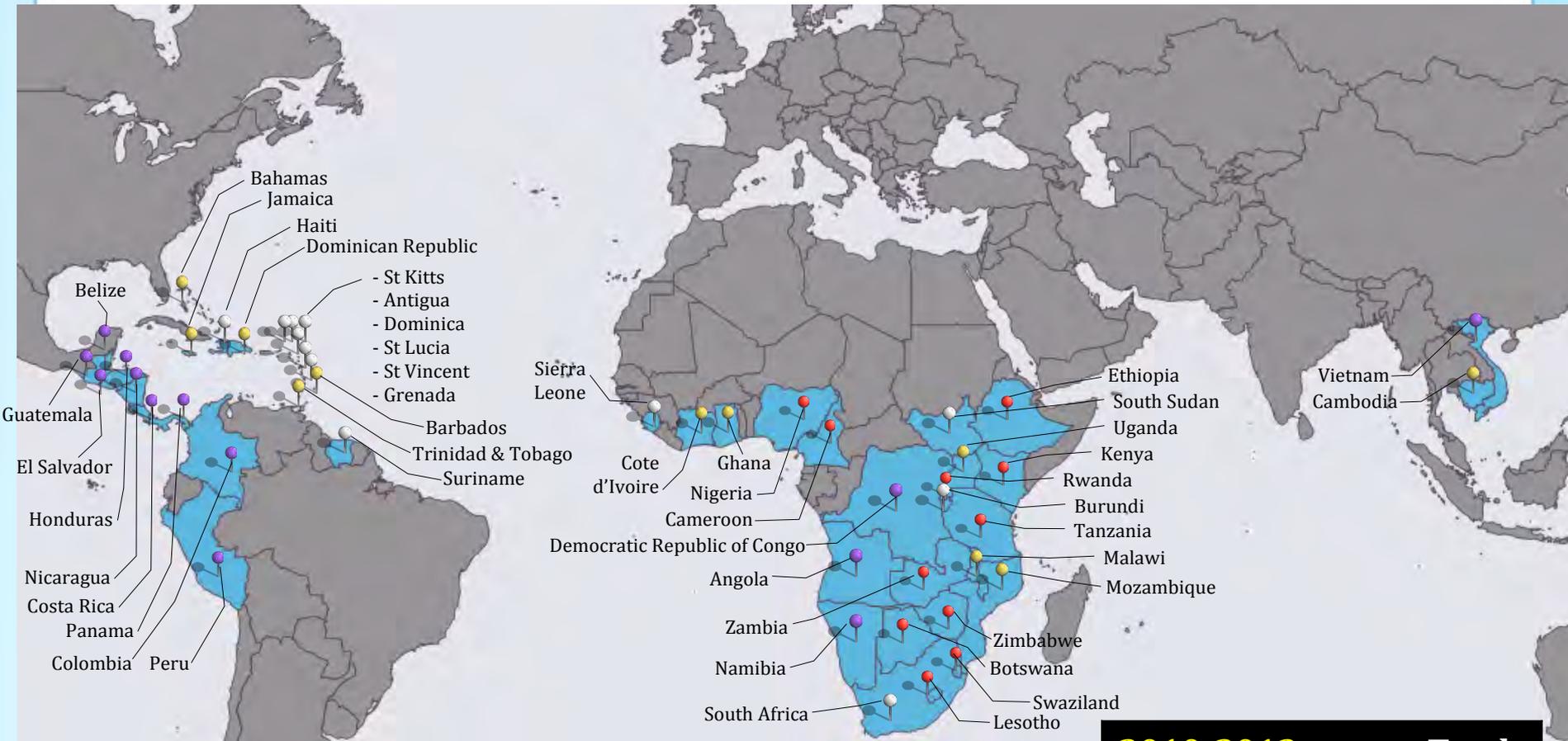
A *structured* quality improvement program that teaches laboratory managers *how to* implement *practical Quality Management Systems* using *available resources*

Designed to achieve *immediate, measurable* results

Implementation of Strengthening Laboratory Management Toward Accreditation (SLMTA) in Africa between 2010-2013



SLMTA is now a Global Program



Year when SLMTA was initiated: 2010 2011 2012 2013

Source: Yao et al. 2014

2010-2013	Total
# countries	47
# labs enrolled	617
# people trained	1,923

Results of Laboratory Audits at Baseline and Exit (n=302)

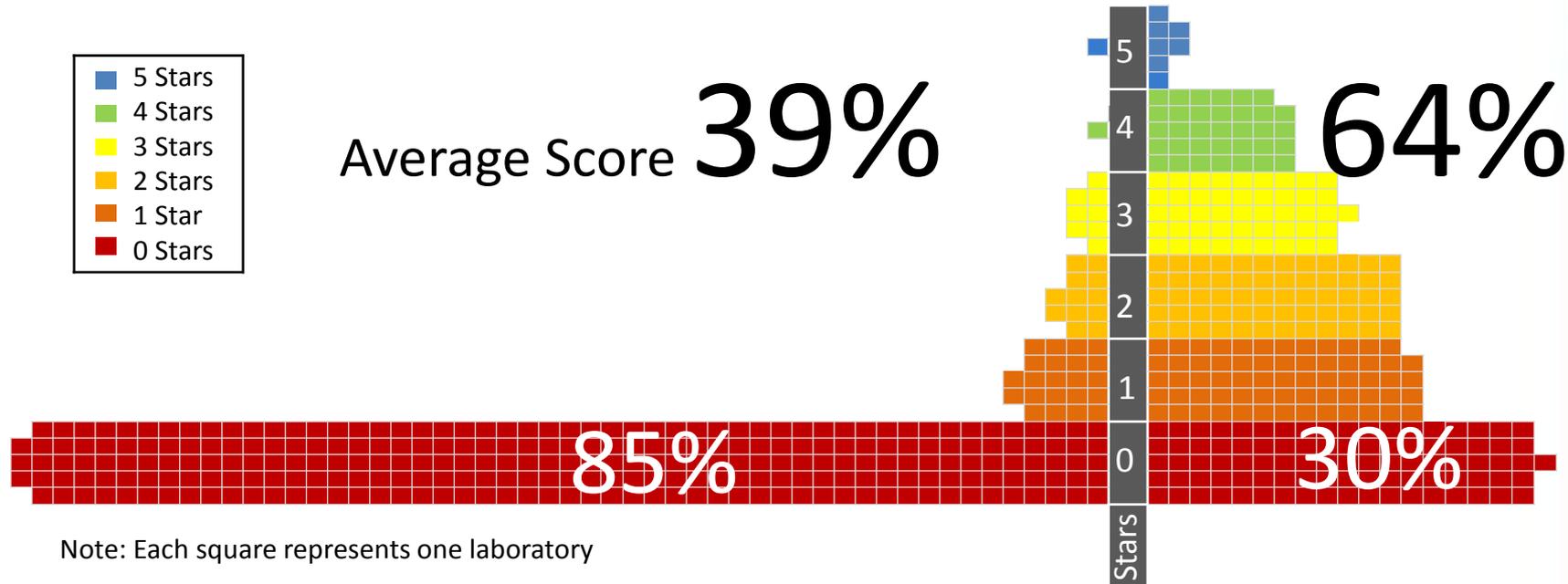
Baseline

Exit



Average Score **39%**

64%

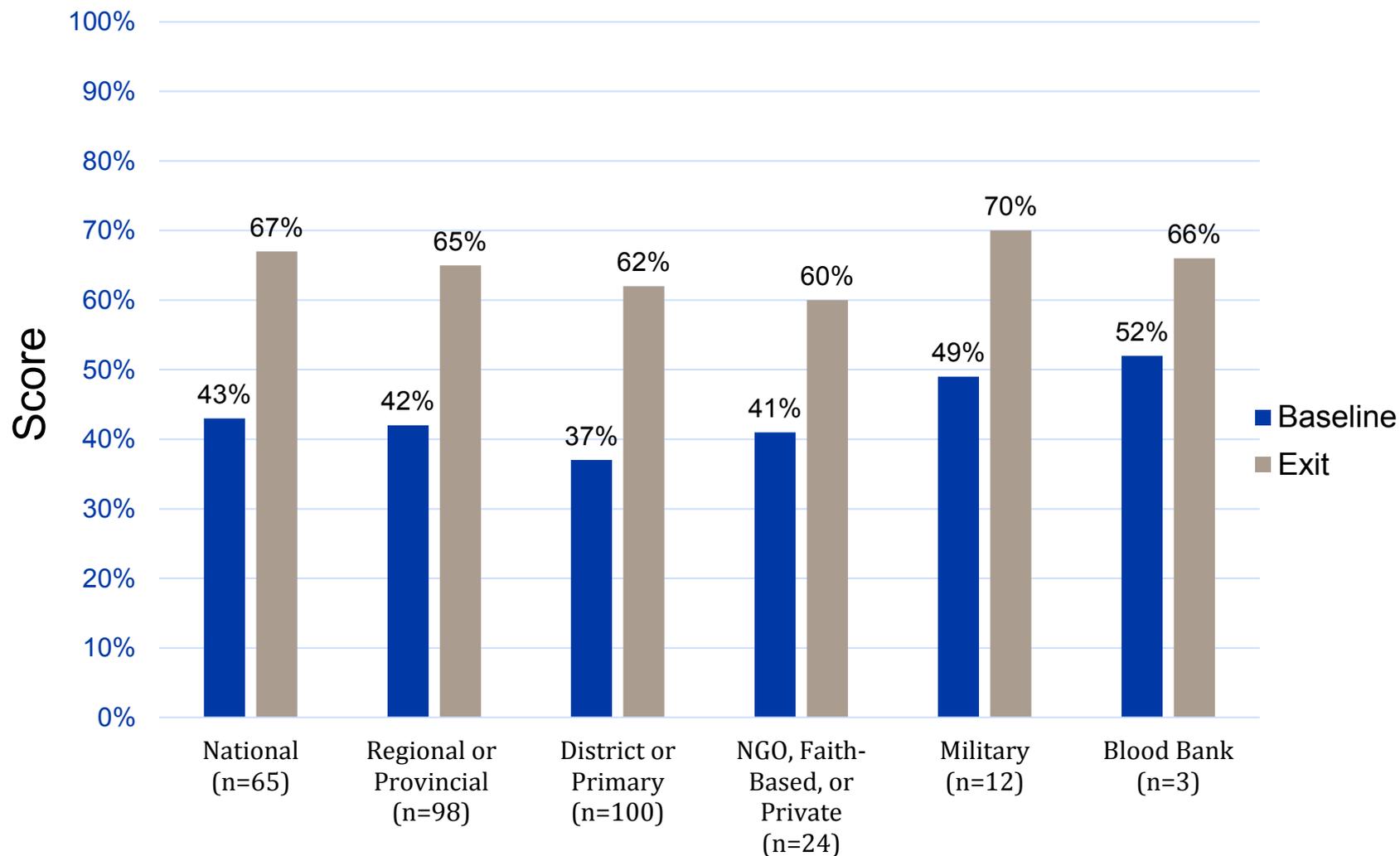


Note: Each square represents one laboratory

Average Implementation Time = **16** months

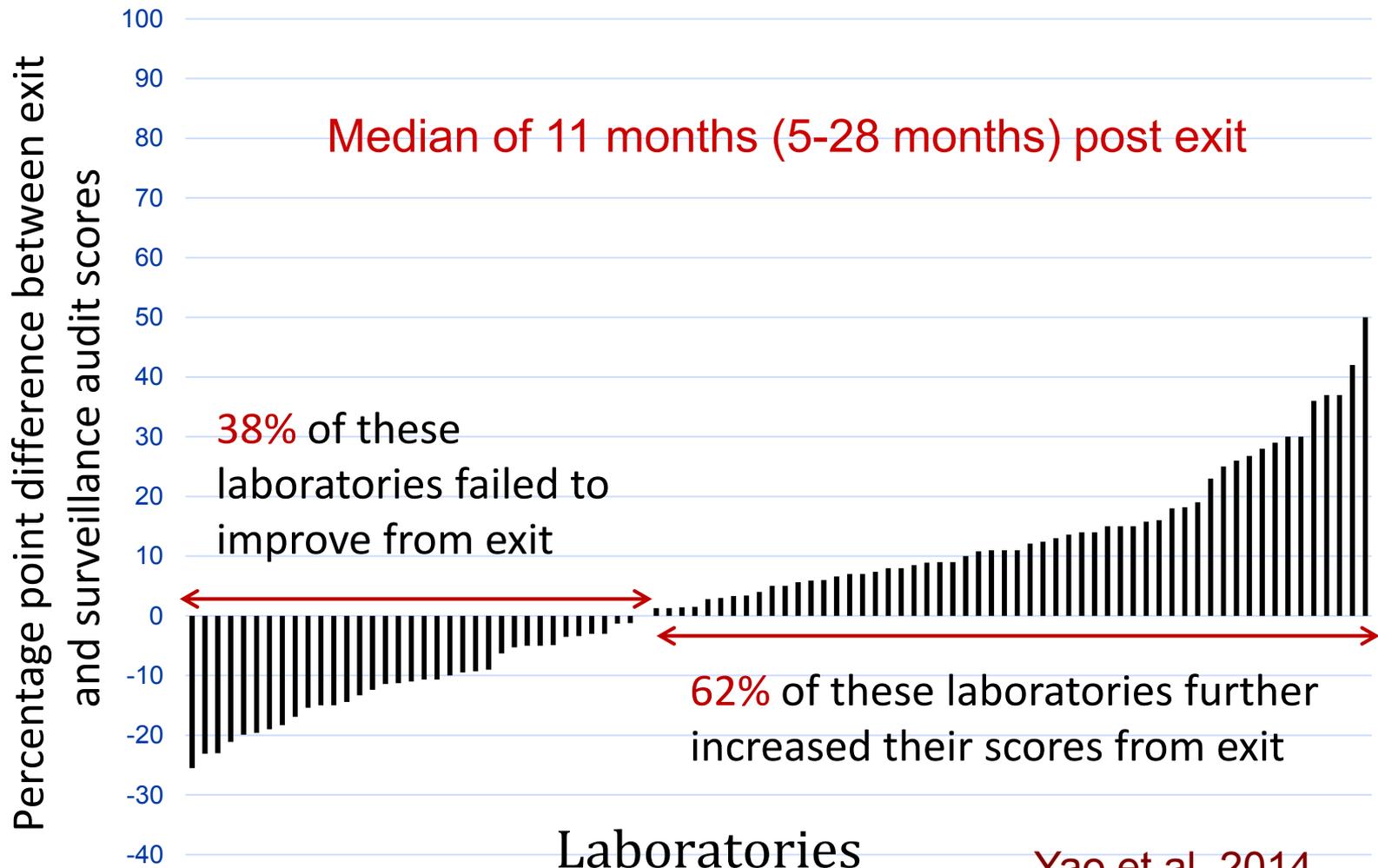
Source: Yao et al. 2014

Average Performance by Laboratory Type (n=302)



Source: Yao et al. 2014

Post-SLMTA Surveillance Audit (n=92)



Yao et al. 2014



LONDON
SCHOOL OF
HYGIENE
& TROPICAL
MEDICINE

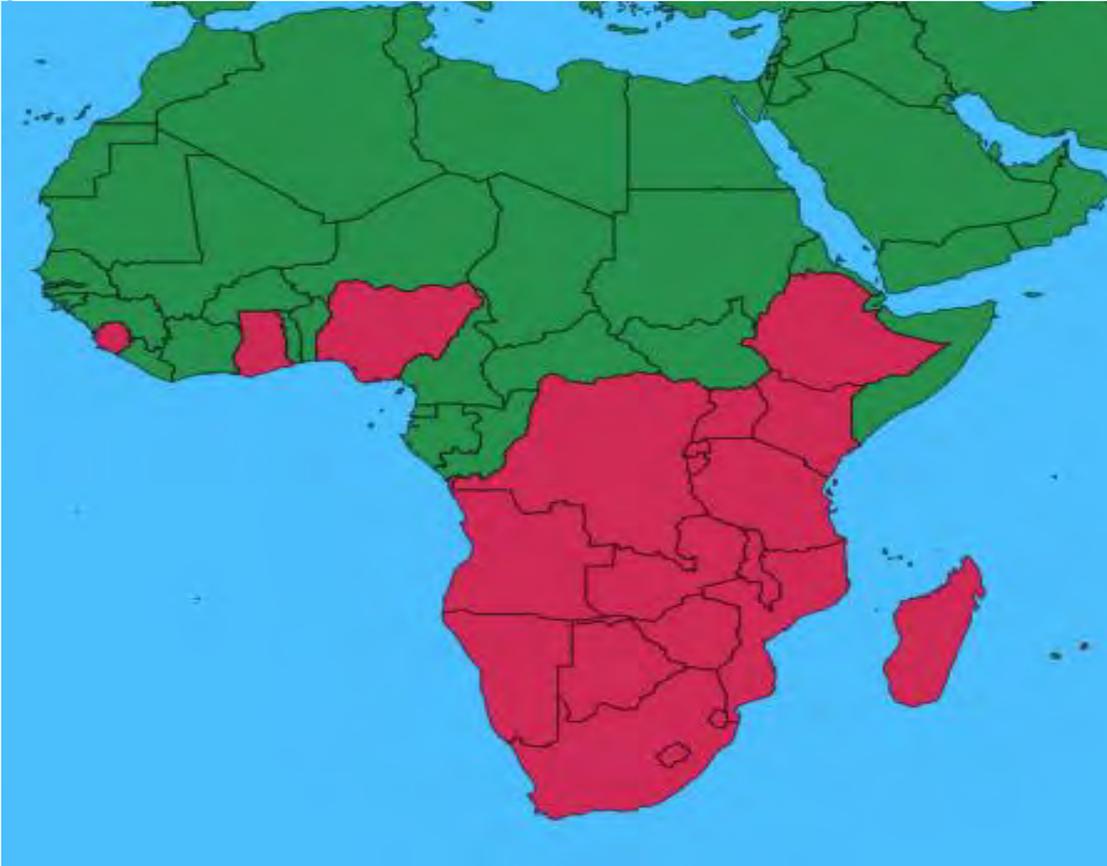


NEPAD
TRANSFORMING AFRICA

giz

ASLM
AFRICAN SOCIETY FOR LABORATORY MEDICINE

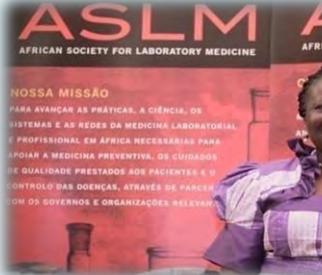
Pan-African Harmonization Working Party (Founded 2012)



Goal: To harmonize and strengthen the regulation of medical devices and diagnostics

4

Institutions and Emergence of Laboratory Networks



ASLM MISSION

To advance professional laboratory medicine practice, science, systems and networks in Africa needed to support preventive medicine, quality care of patients and disease control through partnership with governments and relevant organizations.



ADVANCING THE LABORATORY PROFESSION & NETWORK IN AFRICA

ASLM
AFRICAN SOCIETY FOR LABORATORY MEDICINE

The African Public Health Laboratory Network (APHLN)

ASLM
AFRICAN SOCIETY FOR LABORATORY MEDICINE

Mission

To promote collaboration and coordination to address health care priorities in Africa.

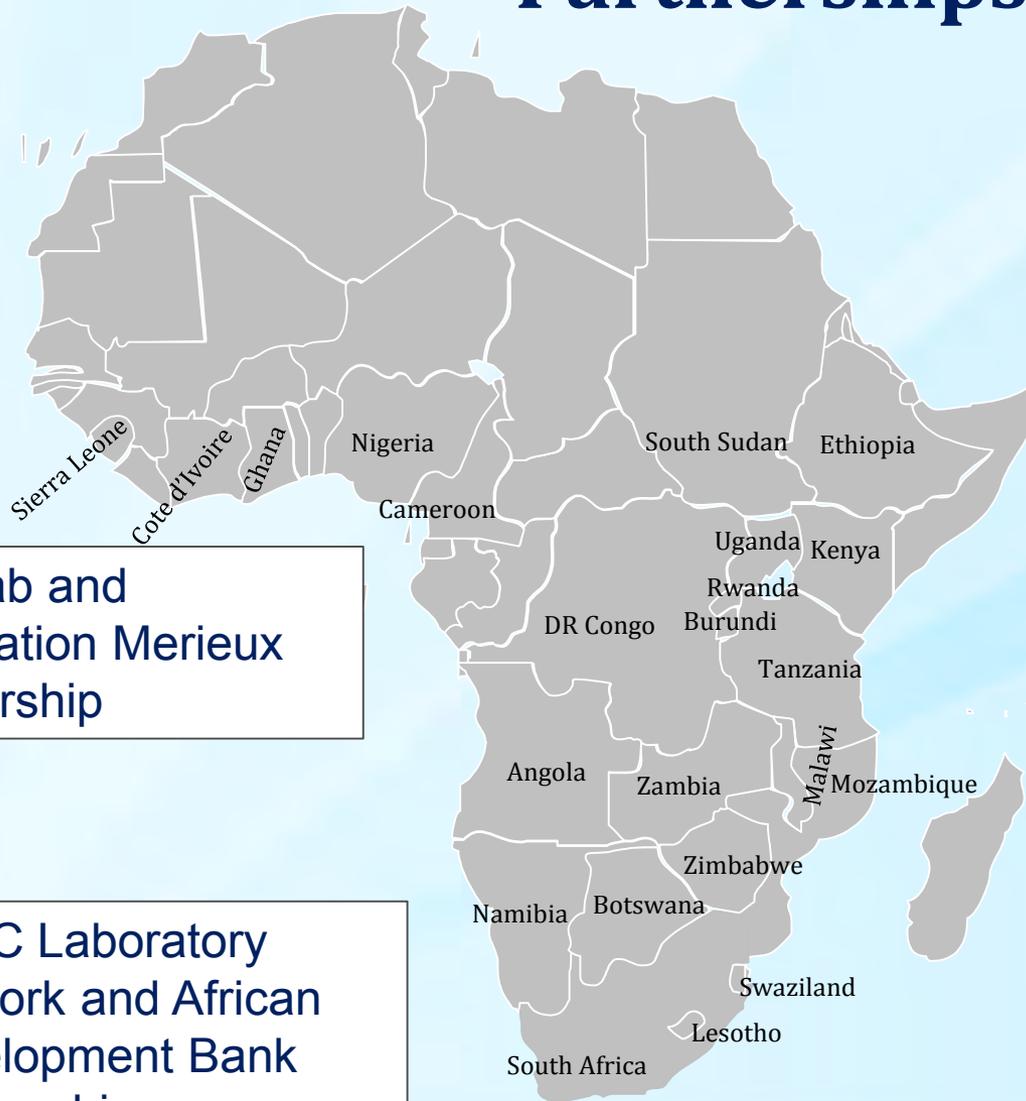
Objectives

- Coordination and information sharing for strengthened national and regional health security
- Laboratory systems strengthening (workforce, quality, biosafety, sample referral etc)
- Standardization of protocols and policies
- South-South collaboration and capacity building
- Evaluation of new technologies and regulation



**Critical for Early Diagnosis, Detection and Prevention of
Emerging Infections**

Emergence of Laboratory Networks and Partnerships



Resolab and
Foundation Merieux
Partnership

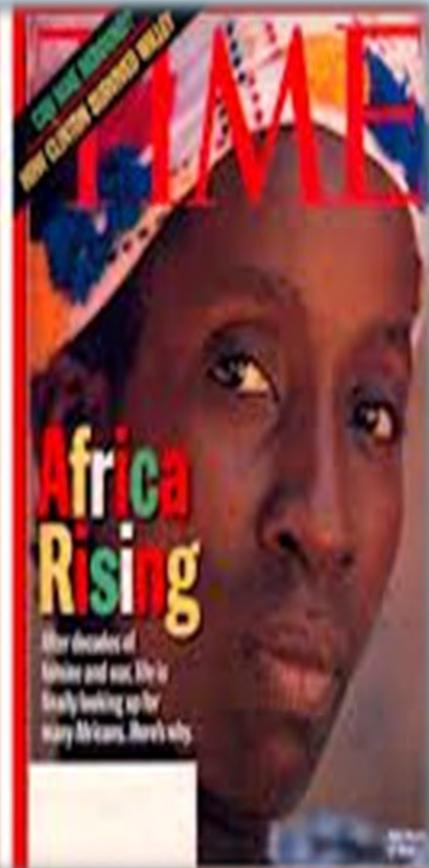
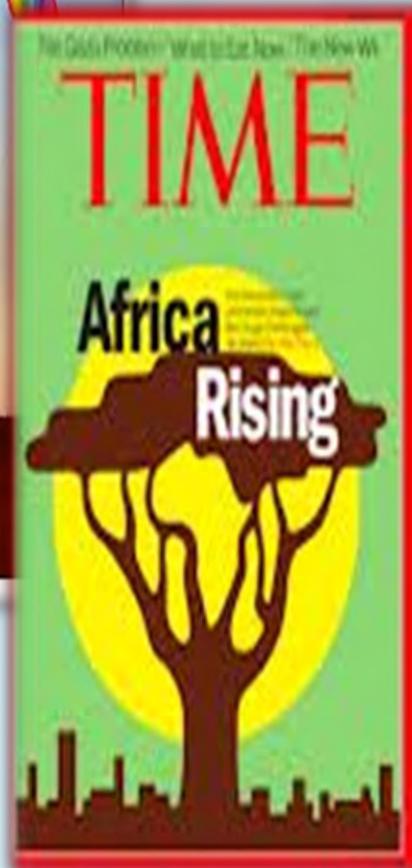
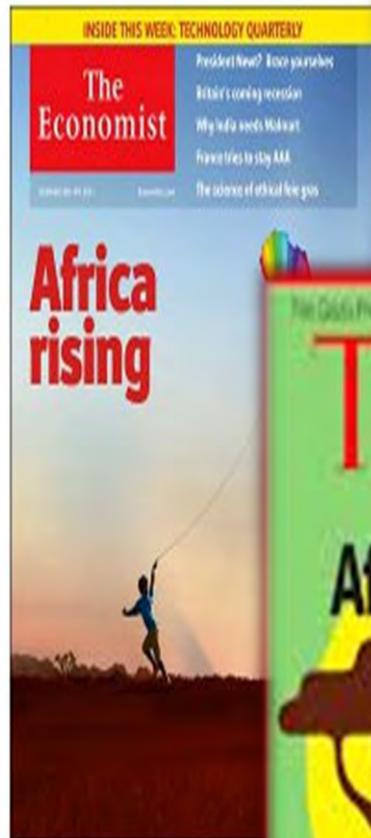
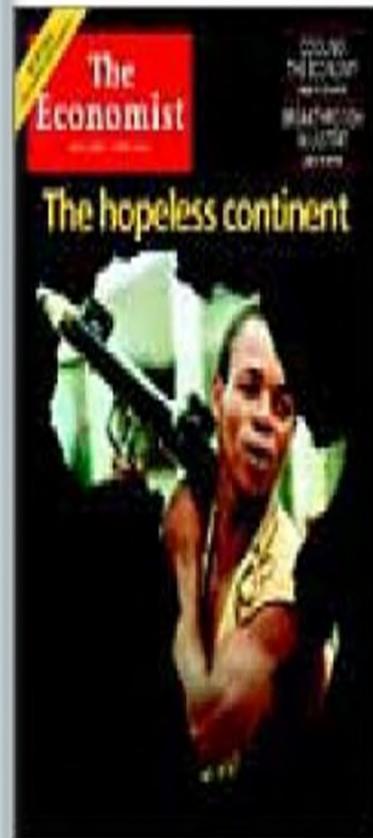
East Africa Public
Health Laboratory,
Network and World
Bank Partnership

SADC Laboratory
Network and African
Development Bank
Partnership

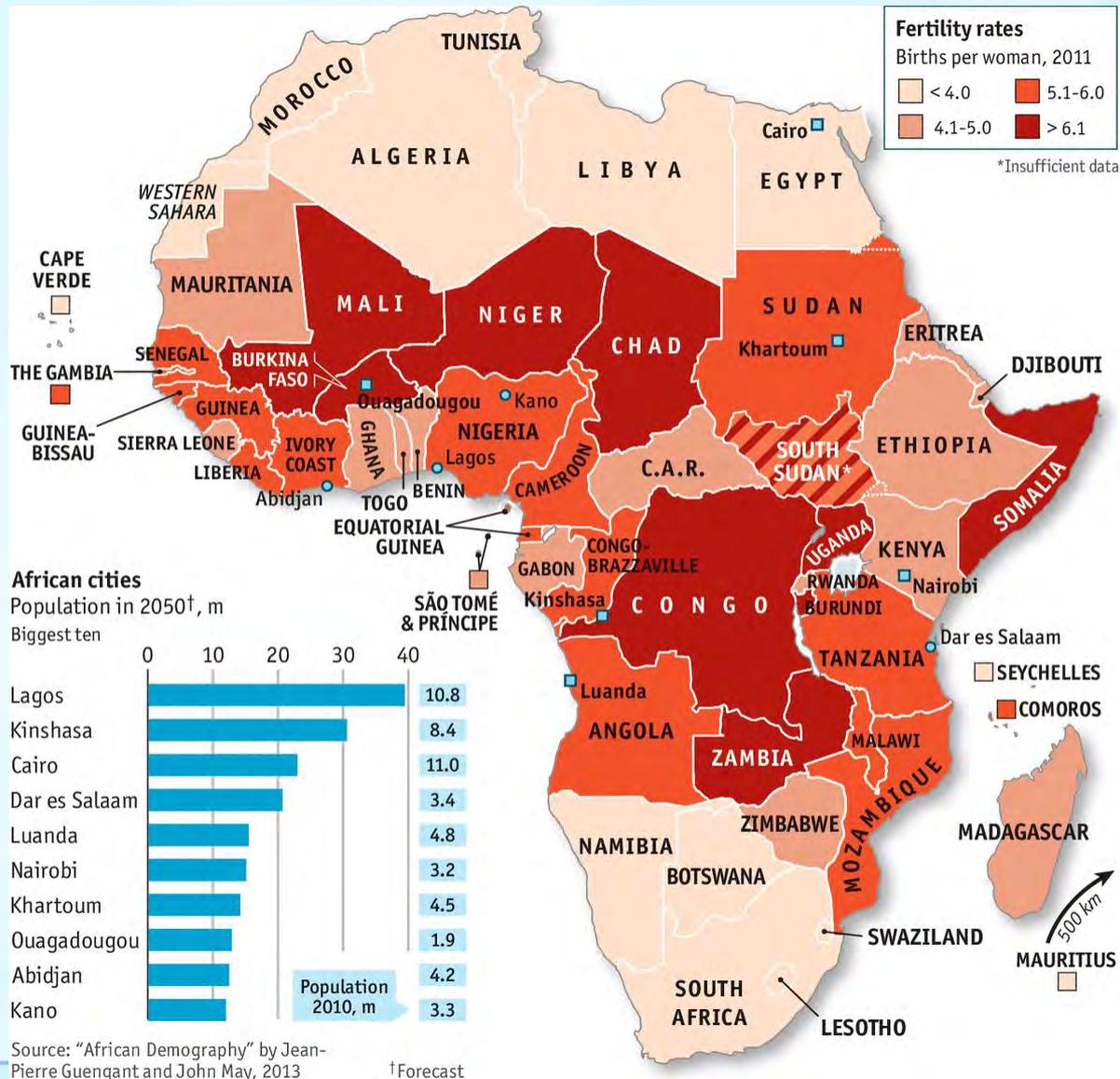
European & Developing
Countries Clinical Trials
Partnerships (EDCTP)
Centers of excellences

5

Future



Projected Populations of Africa by 2050



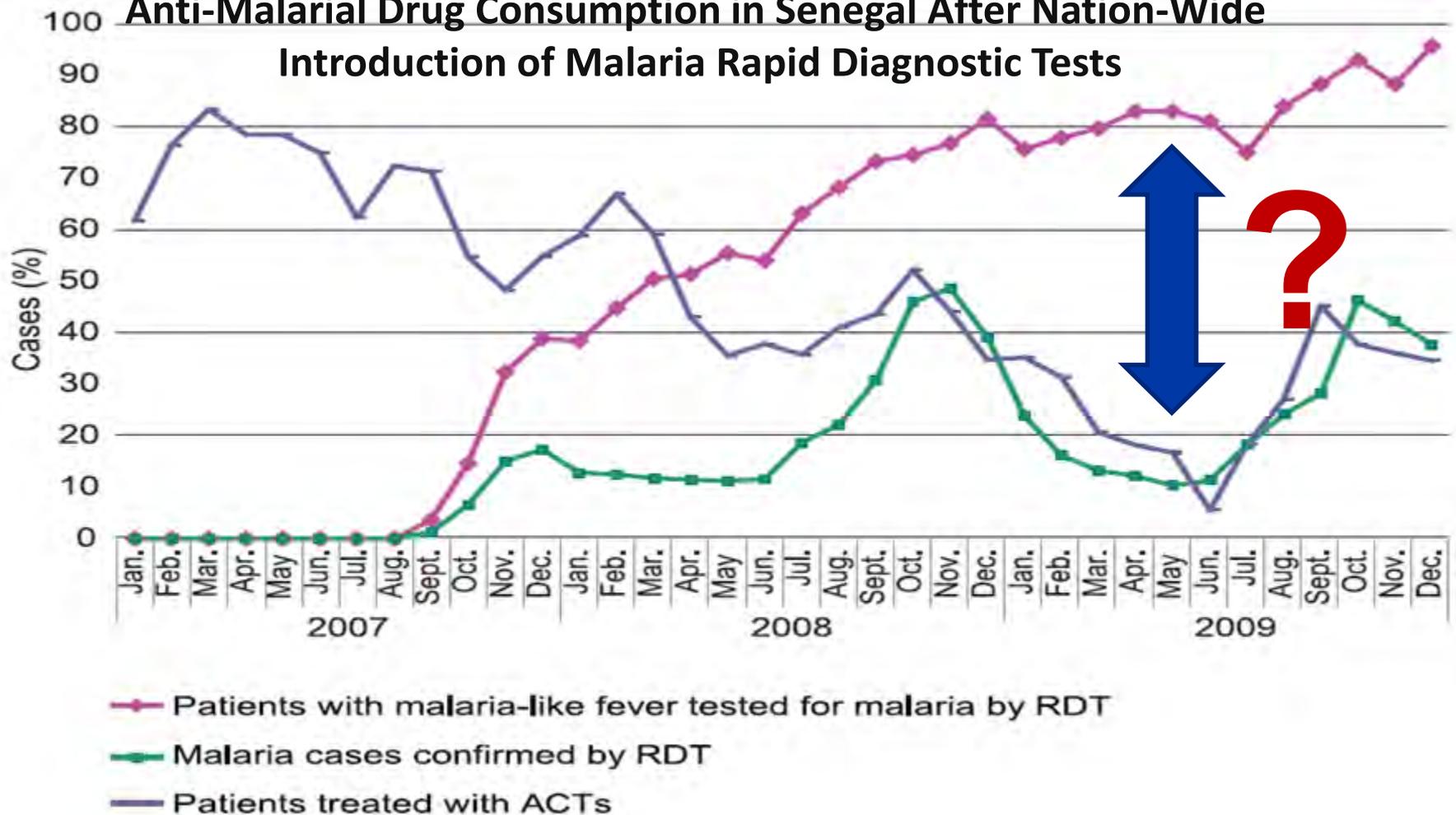
Future: Early Detection, Early Diagnosis, and Early Prevention

1. Non Communicable Diseases

- Diabetes may double from 12.1 M to 24M cases by 2030
- Non communicable diseases will account for about 45% of deaths

2. Emerging Communicable Diseases

Anti-Malarial Drug Consumption in Senegal After Nation-Wide Introduction of Malaria Rapid Diagnostic Tests



Source: Thiam S, et al. PLoS One. 2011

Need for Reliable Point of Care Diagnostics



Disruptive Innovations

— Cheaper, Simpler, Reliable and More Convenient
Laboratory Diagnostics and Services that meets the
Needs of Public Health -----



Medscape > [Eric Topol on Medscape](#) > [Medscape One-on-One](#)

Creative *Disruption*? She's 29 and Set to Reboot Lab Medicine

Elizabeth Holmes plans to revolutionize testing by using tiny blood draws and offering near-instantaneous results

Eric J. Topol, MD, Elizabeth Holmes | [Disclosures](#)

November 18, 2013

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Just a tiny sample.



theranos

one tiny drop
changes
everything.

At Theranos, we're working to shape the future of lab testing. Now, for the first time, our high-complexity CLIA-certified laboratory can perform your tests quickly and accurately on samples as small as a single drop.



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Gloves

RPA kits

Buffers

Marker

Vortex

Waste

Disinfectant

Tubescanner

Minicentrifuge

Tips
10 µl

Tips
100 µl



Towards a Patient-Centered Approach to Quality Improvement?

Page 1 of 5 Original Research

Driving hospital transformation with SLMTA in a regional hospital in Cameroon

Page 1 of 2 Commentary

View from the top: Involvement of Namibia's health ministry in laboratory quality improvement

Authors:

Mary N. Mataranyika¹
Landine K. Beukes¹

Introduction

Laboratories form the backbone of health systems, providing critical test results that aid

~~“SLMTA is an invaluable tool for every hospital manager and health policy maker because of its value in ensuring quality improvement within the laboratory and its potential in contributing to strengthening the entire health system at little or no cost.” (Director of a Regional Hospital in Cameroon)~~
“SLMTA is an invaluable tool for every hospital manager and health policy maker because of its value in ensuring quality improvement within the laboratory and its potential in contributing to strengthening the entire health system at little or no cost.” (Director of a Regional Hospital in Cameroon)
“As quality improvements become institutionalised in hospital laboratories, it is becoming evident that entire hospital systems are in dire need of similar quality improvement programmes. The Namibia MoHSS calls on international agencies to develop and adapt programmes such as SLIPTA and SLMTA for use throughout hospital systems so as to ensure continuous quality patient care.”

Conclusions

- Adopt and adapt elements of best practices of previous decade for next 10 years
- Need to maintain the gains made and scale-up laboratory improvement programs
- Innovations to access and equity to quality-assured diagnostics for communicable and non-communicable diseases
- Patient-centered approach to continuous quality improvement
- Leadership and commitment critical

Thanks!

For more information please contact Centers for Disease Control and Prevention

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.