



Laboratory Professionals For
the 21st Century- Building A
Force Fit for Purpose

Dr Suzanne Kiwanuka

Head Department of Policy Planning and Management

Makerere University School of Public Health

Introduction

- Laboratory professionals, are the backbone of quality diagnostics.
- Medical- individual services and public health (at population level)
- Constitute a broad spectrum of expertise and cadres (medical, imaging)
- Laboratory professionals figure prominently among neglected cadres in health systems across sub-Saharan Africa.

Introduction

- Laboratory professionals are under researched.
- Characterised by insufficient numbers, a skewed distribution, low level of qualifications, and limited career opportunities.
- Constrained supply (especially specialized staff), sluggish public sector demand, and relatively low wages.
- High turnover of staff with highly skilled staff finding work in the private sector.
- Laboratory professionals predominantly male with relatively limited female labor participation, with potential gender based barriers to advancement.

Workplace environment

- For decades Poorly resourced – yet with clear KPIs
- Laboratory system is a system within the health system

(HR, information system, supplies and equipment, ...**without the corresponding funding**)- **WHY?**





What ~~has changed~~ is changing

- Demographic and Epidemiologic transition- changing age profiles, life expectancy, disease profile, emerging and re-emerging disease threats, climate change, environmental threats
- Beyond clinical (medical/imaging) laboratories to public health laboratories (environmental health labs, occupational health laboratories, geo-laboratories)
- Changing service delivery models (laboratory networks, Telemedicine)
- Technologies- advances- POC, genomics, Automation,
- From paper to electronic (paper on glass) and some of them have moved to the digital lab by implementing digital workflows.



When The Drummers
Change Their Beats
The Dancers Must Also
Change Their Steps.

African Proverb



How do we Adapt the workforce to
the 21st Century

How do we make the laboratory workforce FIT
for PURPOSE?

the *intended purpose* of the workforce

- Infectious disease, surveillance, AMR, imaging, gene therapy
- Planetary health laboratories- clinical, veterinary, occupational, global security, veterinary, environmental, food, climate
- Technology innovation – point of care, telemedicine, electronic information, automation, drones for transportation
- Bio-medical engineers- increasing demand to commission, maintain and decommission equipment.
- New service delivery models- Hubs, Testing outside the lab- community workers, electronic lab information systems, pre-diagnostic capacities
- Labour market considerations – quality assurance and accreditation,
- Leadership, management and governance
- New mindset of the Africa (such as self-sufficiency for medical products)





Appropriate skill sets and performing



Quality training



Adequate numbers, well distributed, retained

Framework for building the workforce

Workforce planning

Who do we have, where are they, what can they do?

Laboratory
Workforce fit for
21st Century

Workforce management

How can we use them efficiently?
How can we retain them? How can they network and learn from each other

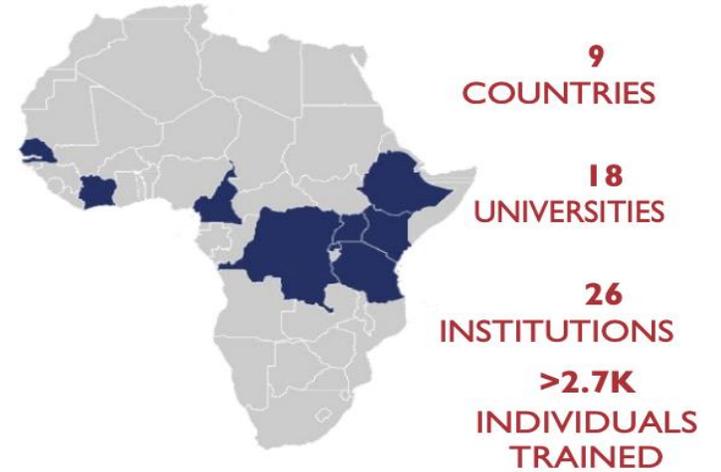
Workforce development

What are their training needs for the current agenda?

How can these needs be supplied? By who?

What have we achieved? Is it enough?

- Policy and governance for laboratory workforce
- WHO Global Strategy on Human Resources for Health: Workforce 2030 - policy agenda to ensure a workforce that is fit for purpose to attain the targets of the Sustainable Development Goals (SDGs).
- WHO resolution on diagnostics adopted during the 76th World Health Assembly on May 23, 2023,
- Africa CDC- One of the pillars is a **Strengthened public health workforce**
- The One Health Quadripartite a collaborative framework of the [Food and Agriculture Organization of the United Nations](#) (FAO), [United Nations Environment Programme](#) (UNEP), [World Organisation for Animal Health](#) (WOAH*), and [World Health Organization](#) (WHO) to coordinate the One Health approach,



One Health Workforce – Next Generation Project objectives: 1. Increase proficiency in One Health competencies and establish a well-trained and technically proficient workforce pipeline. 2. Strengthen systems and procedures to assess and track multi-sectoral workforce placement, performance, and impact. 3. Empower AFROHUN & SEAOHUN by strengthening their organizational capacities.

HR partnerships critical

ASLM and its partners - Over the past decade have worked concertedly to map workforce, provide guidelines and train hundreds of laboratory professions across the continent

Africa CDC/AFENET- Laboratory leadership training program and other workforce capacity building

Global Laboratory Leadership Programme (GLLP) human and animal health laboratories, and public health impact (environmental, agricultural, food, or chemical laboratories)

Networking- LabCop (22 countries)

Governance- strengthen bodies representing laboratory professionals - Directors forum- 42 countries

Planning the laboratory workforce-

- Mapping the laboratory workforce in terms of numbers, skills mix, distribution, **movement, most countries have less than 1.3 per 1000 popn, mostly urban**
- Competence needs- Diagnostics, imaging, surveillance, genomics, informatics
- Laboratory engineers- commission maintain and de-commission equipment
- Community laboratory workforce
- Human, Public health, environmental, animal laboratory workforce
- Mapping capacities of training institutions, curricula, outputs, licensing
- Strategic plans for HRH – growth triggered by HIV/Tb/Malaria – some focus on lab but implementation

**Research to generate and apply workforce data/observatories and evidence needed
Planning without robust data is tantamount to dancing in the dark.**



Pre-service training opportunities and challenges- select countries

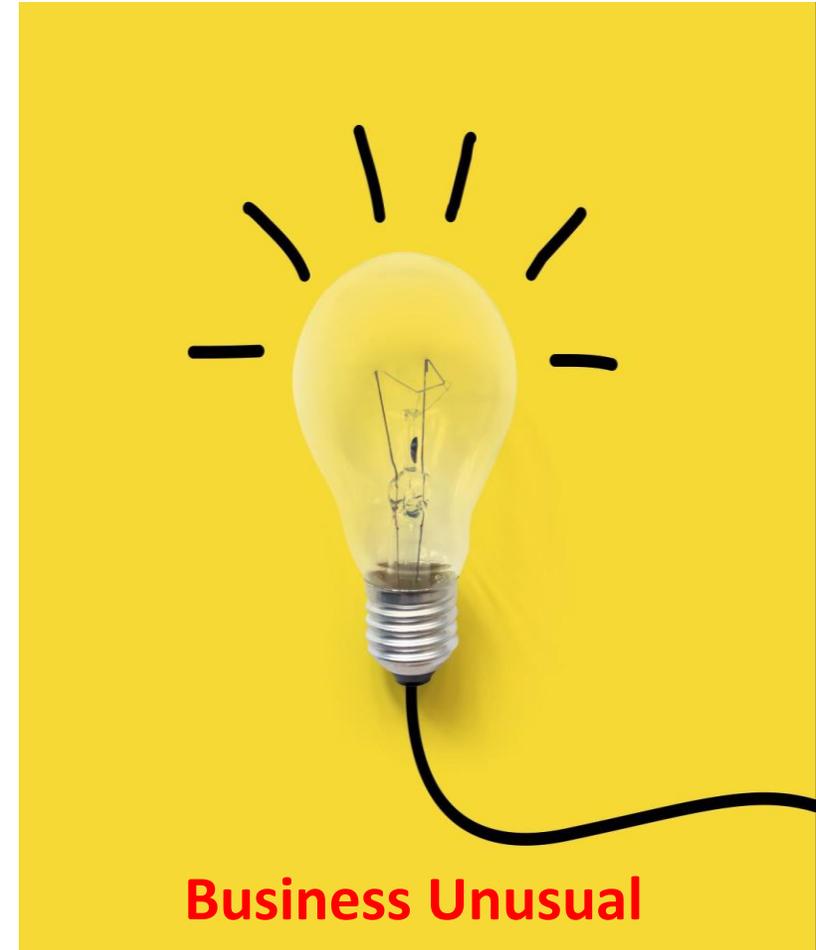
- African countries have increased capacity to train **BUT**
- 28 training institutions offering laboratory science qualifications vs <65 nurse training institutions (Tanzania).
- Shortage of qualified lecturers (public and private)- (Rwanda)
- Majority of training institutions offer certificate and Diploma courses (Uganda)
- Around 1/3 Registered training institutions are private sector (Kenya).

**Opportunities to leverage superior infrastructure in private
public partnerships**

Curriculum reviews to fit current and projected skill sets

Developing the Laboratory Workforce- from Reactive to Proactive to Transformative

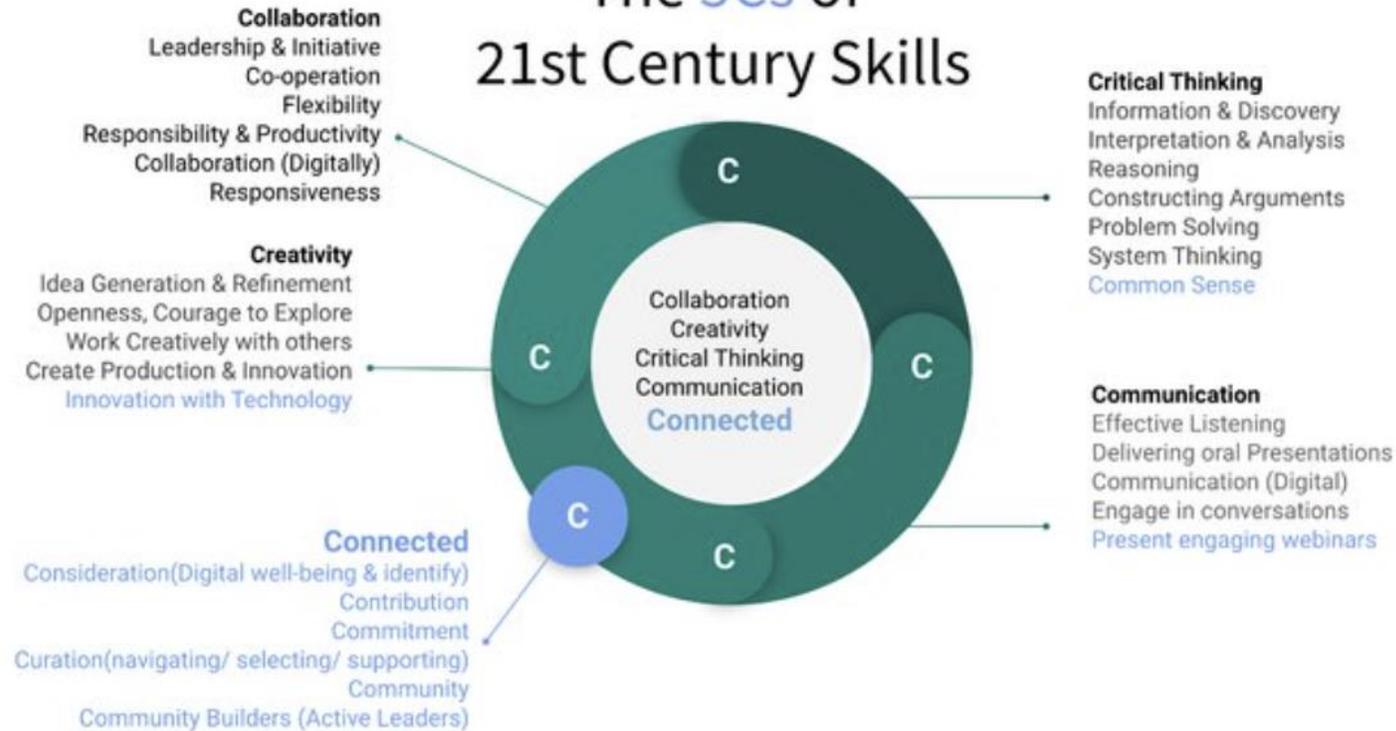
- Post service- training needs assessment- Technical, Technology
- Quality assurance- standardising training
- Access to CPD- self driven virtual training and hands on.
- Networking/co-learning/ Benchmarking – documenting good practices (ASLM)
- Leadership and governance (GLLP, FELTP, ACILT, others)
- Multi-disciplinary – collaboration
- Partnerships- private sector (mentorships, placements)
- Expertise to deliver highly specialised laboratory services



Managing the laboratory workforce -

- Alternative models of service delivery for efficient use- hubs/reference labs, telemedicine, mobile laboratories, POC tests, self testing
- Taskshifting- community health workforce development – who supervises these?
- Performance management- revised/new cadre, revised staffing norm, revised job descriptions,
- Incentives – low salaries, poor career structures, work environment
- Gender and Mental health

The 5Cs of 21st Century Skills



Laboratory leadership and management skills for the 21st Century



Ad-hoc, piecemeal, and short-term investments have not and will not fundamentally solve workforce shortages and challenges.

Key messages

The critical role of laboratory workforce to quality diagnostics, management of care surveillance and global security efforts cannot be overstated.

- Mapping the laboratory workforce in terms of, training capacity, skills, distribution, mobility, attrition is key for planning
- Capacity building efforts workforce need to cross clinical/health service boundaries to encompass one health, environment climate concerns
- Both hard (technical, IT) and soft skills is needed to make them fit for purpose (leadership, agency, networking)
- Management skills to harness new service delivery models and the community health workforce is important
- Performance management and Quality assurance
- Supportive employment and workplace policies– pipeline/visibility
- Partnerships are critical
- Research on laboratory workforce is critical

References

- Odhiambo CO, van der Puije B, Maina M, Mekonen T, Diallo S, Datema T, Loembe MM, Kebede Y, Ndlovu N, Ondo P. Examining 7 years of implementing quality management systems in medical laboratories in sub-Saharan Africa. *Trop Med Int Health*. 2023 Feb;28(2):126-135. doi: 10.1111/tmi.13839. Epub 2022 Dec 14. PMID: 36480459; PMCID: PMC10108081.
- Achieving the right balance: The role of policy-making processes in managing human resources for health problems Dominique Egger Debra Lipson
- Laboratory Professionals in Africa: The Backbone of Quality Diagnostics Miriam Schneidmana, Russell J. Dacombeb, and Jane Carterc
- Diane C Halstead, Robert L Sautter, A Literature Review on How We Can Address Medical Laboratory Scientist Staffing Shortages, *Laboratory Medicine*, Volume 54, Issue 1, January 2023, Pages e31–e36, <https://doi.org/10.1093/labmed/lmac090>
- WHO Global health and care worker compact: technical guidance compilation. <https://www.who.int/publications/m/item/carecompact#:~:text=The%20care%20compact%20sets%20out,%3B%20inclusivity%3B%20and%20safeguarding%20rights> Date: 2022
- Boniol M, Kunjumen T, Nair TS, Siyam A, Campbell J, Diallo K. **The global health workforce stock and distribution in 2020 and 2030: a threat to equity and ‘universal’ health coverage?**. *BMJ Glob Health*. 2022; 7:e009316

