

1st Global Forum on Bacterial Infections

Balancing Treatment Access and Antibiotic Resistance



Challenges and Promise Microbiology laboratories in sub- Saharan Africa

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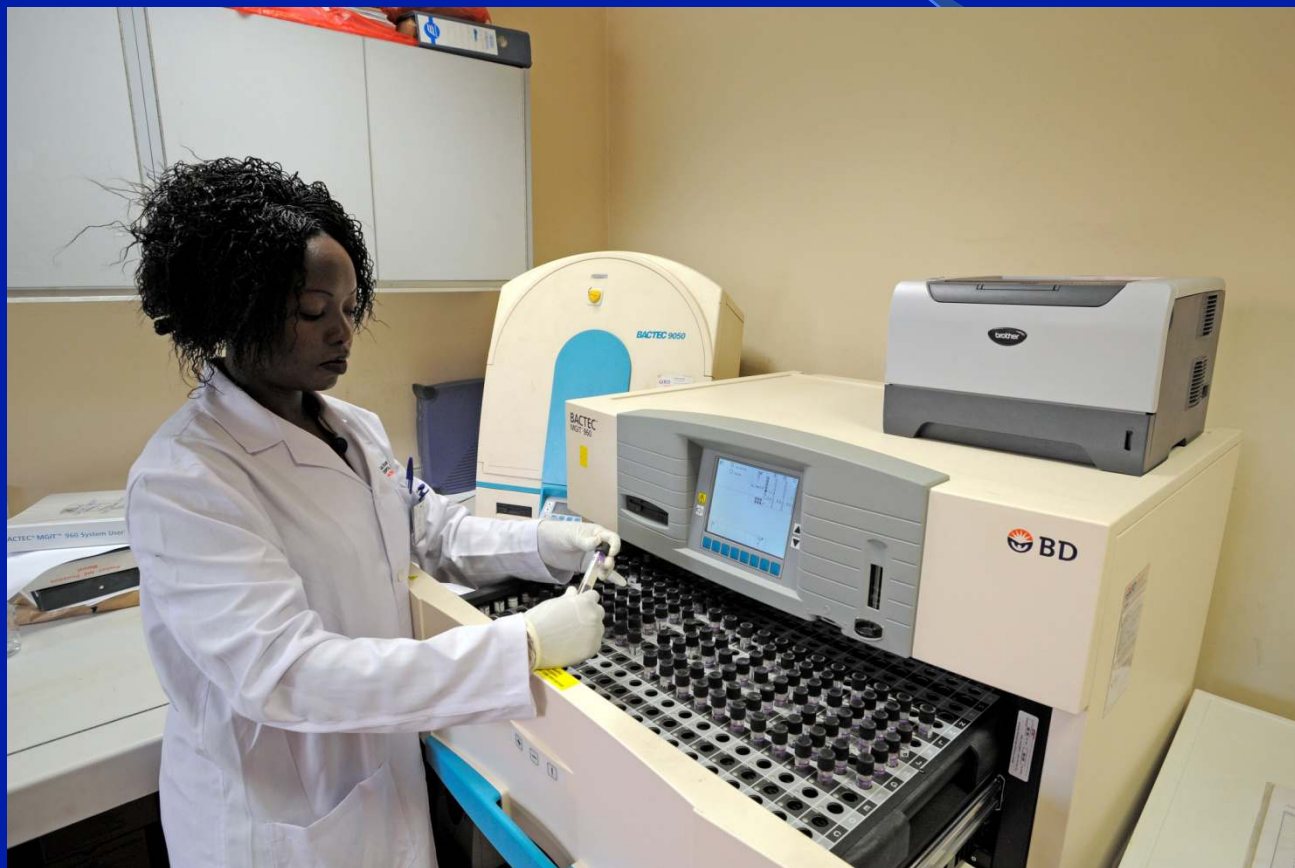
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- Clinical Laboratories play a critical role in all disease control and prevention programs
- Provide timely and accurate information for patient management and disease surveillance

- Clinical laboratories

Public Health laboratories

Challenges common to all resource constrained settings



Discussion excludes Donor funded Project
labs, NGOs or research labs – such as
KAVI (Kenya AIDS vaccine initiative)
CDC labs,
Walter Reed or
Welcome Trust funded labs.



Major areas of concern

- Lack of emphasis on specific diagnosis / Clinical misdiagnosis,
- Inadequate health care infrastructure
- laboratory capability and diagnostic accuracy



- Lack of emphasis on lab diagnosis of infectious diseases – clinician apathy and a culture of syndromic approach
- Concept that microbiology is expensive and time consuming
- Perceptions that Lab results can not be trusted



- Total absence of any kind of surveillance system for general antibiograms.
- The ongoing HIV pandemic opportunistic infections populations on septrin and fluconazole prophylaxis.



Inadequate funding has been identified as a hindrance to quality microbiology services.

- Laboratories are usually given low priority and recognition in most national health delivery systems.
- Microbiology needs specific equipment seen as an avoidable expense as compared to Hematology or Chemistry



- Limited clinical microbiology technical knowledge base -
 - Most countries no microbiology training beyond bench basics for technicians
- A serious limitation of level of technology and knowledge base
(impinges on all those involved in delivering health care in poorer African countries)
- Clinical Pathology programs - no emphasis on clinical microbiology



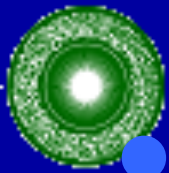
- A vicious cycle exists between adequate facilities and competent personnel -

LOW MORALE

- A WHO external QA survey revealed -
Few labs supervised by pathologists /
qualified microbiologists
- Any small number of microbiologists lost
to Brain drain or Brain in the drain



- Microbiology depts. in medical college were staffed by veterinary graduates for lack of other qualified personnel.
- Pathology trainees tend to spend the least possible time in microbiology section
- Infectious disease consults are hardly ever available even in major hospitals

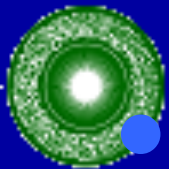


- Pathologists pay scant attention to this subject that is seen as the least glamorous
- The most glamorous pathology is tissue/cancer diagnosis and Medico-legal post mortems
- Microbiology is perceived as purely technologist's work that deals with some funny looking agar plates.



Challenges in Microbiology Training

- Microbiology / Bacteriology needs special manual skills on the bench.
- Enthusiasm and self directed motivation are essential elements
- Mentorship and close supervision equally important
- CPD/ CME refresher courses not available or accessible
- Online resources and access to computers



- In this scenario, Interpretation of bacterial cultures and other tests purely by technologists with little clinical knowledge.
- Normal flora is regularly reported with susceptibility results in swabs, urine and other specimens.
- Lack of technical competence to isolate and identify various pathogens and reporting of antibiotic susceptibility tests,
- Total absence of awareness of QC & QA issues



- Specimen collection is seen totally as lab responsibility.
- Clinicians do not collect samples at all.
- Surgeons expect lab techs to collect prostate fluids and vaginal /endo-cervical swabs.



- Local availability of reagents, media, antibiotic disks and commercial test kits – daunting prospect.
- Astronomical prices drive costs of service very high.



- Inadequacy of biosafety and biosecurity equipment in microbiology labs
- The migration of skilled personnel from the public sector to higher-paying positions within the private and research sectors
- No representation of laboratory services at the highest decision-making level.



Barriers effective laboratory services in resource poor countries including sub-Saharan Africa

- Laboratory infrastructure Problems
- Lack of laboratory consumables
- Essential equipment
- Skilled personnel
- Educators and training programs
- Insufficient monitoring of test quality
- Absence of governmental standards for laboratory testing



- Considerable challenges for microbiology laboratory services in the Africa Region.
- Need for a combination of complementary measures, strategies and capacity strengthening
- Developing comprehensive national laboratory policy to address the key issues.



How to redress the imbalance in prioritization and bring investments in diagnostics to a level that will support cost effective deployment of available treatment regimens in sub-Saharan Africa?



Potential solutions could be –

- Emphasize importance of laboratory testing,
- Allocation of financial resources,
- Strengthen the existing health care infrastructure,
- Monitor test quality,
- System for laboratory accreditation,
- Laboratory training programs,
- Partnerships between public and private organizations
- Introduction of affordable, rapid diagnostic tests.



**World Health
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REGIONAL OFFICE FOR **Africa**

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Provisional agenda item 7.4

**STRENGTHENING PUBLIC HEALTH LABORATORIES IN THE WHO AFRICAN
REGION: A CRITICAL NEED FOR DISEASE CONTROL**

Report of the Regional Director

RESOLUTION

STRENGTHENING PUBLIC HEALTH LABORATORIES IN THE WHO AFRICAN REGION: A CRITICAL NEED FOR DISEASE CONTROL (document AFR/RC58/6)

The Regional Committee,

Aware of the crucial role that laboratories play in disease prevention, control, alert and response to epidemics and health research;

Acknowledging the important role of laboratories in Integrated Disease Surveillance and implementation of the International Health Regulations;

Concerned about the frequent occurrence of outbreaks in the Region that are not immediately detected and responded to due to inadequate laboratory capacities;

Recognizing the weak organizational, financial and human resource capacity and low investment in laboratory services;

Concerned about the unclear oversight arrangement and the role of laboratory services within the national health systems in some Member States;

Cognizant of the need for Member States to ensure availability of quality laboratory services;

Acknowledging the need for national laboratory policies to guide the development and proper functioning of national laboratory networks in Member States;

1. ENDORSES the report of the Regional Director on strengthening public health laboratories in the WHO African Region;



- Recent realization -limited laboratory capacity is the greatest barrier to effective health care in African countries
- Leading global health care funders decision to finance provision of accurate frontline diagnostic services even in the poorest countries.
- World Bank sponsored East African Public Health Laboratory Network (EAPHLN) Project covering Kenya, Tanzania, Uganda and Rwanda –
- ASM and CDC supported Lab Cap program
- Universities sourcing & appointing ID specialists

Lab Cap Africa program countries

Botswana, Côte d'Ivoire, Ethiopia

Kenya

Mozambique

Namibia

Nigeria

Rwanda

Tanzania

Zambia



- None of these opportunities can be realized by laboratory services in isolation;
- Depend on close partnerships between technical and clinical professionals
- Support from Local and National health care managers

Future appears very bright for clinical
microbiology



Thank you for your
attention!