TWINNING PROJECT BETWEEN CENTRAL PUBLIC HEALTH LABORATORIES - UGANDA AND THE STATE PUBLIC HEALTH LABORATORY OF NEW MEXICO STATE - USA

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Outline of Presentation

- Location of Uganda in Africa
- Background
- CPHL Strategic Objectives
- Structural Linkages with other labs
- Key programs within CPHL
- Other Programs CPHL Coordinates in the Lab Network
- Hub and Sample Transport Network
- Introduction of the Twinning Project in 2013
- Key Milestones in the twinning
- Lessons Learnt in the twinning
Location of Uganda
Uganda-Country Profile

- Total population: 44,270,563 million
- Fertility rate: 5.4
- Life expectancy: M 57.4 F 59.4
- Literacy rate: 67%
- Rural population: 87.5%
- Health facility delivery: 73%

- HIV Prevalence: 6.2%
- MMR: 336/100,000
- Annual GDP per capita: USD 560
- Public exp. On health PHC: 7.4%
- Per capita expenditure on health: USD 6.4
- Contraceptive Prevalence Rate (CPR): 35%

- Population growth: 3.0%
- New HIV infections 2016: 87,000
- <5 MR: -90/1000
- IMR: 43/1000
- UMN for FP (28%) from 54%

- Literacy rate: 67%
- Rural population: 87.5%
- Health facility delivery: 73%
UNHLS (CPHL & NTRL) Campus at Butabika, Kampala
Background

- CPHL is a technical arm of the Uganda MOH responsible for health Laboratory services in Uganda
  - Does both coordination of laboratory service delivery and referral testing for specialized diagnostics

- It started in 1983 as a unit under the National Disease Control department

- It is now an independent department of the Ministry of Health headed by commissioner /Chief Pathologist

- The MOH proposed a law which is currently in Parliament to make CPHL an autonomous institution called Uganda National Health Laboratory Services (UNHLS) headed by an Executive Director.
UNHLS Vision, Mission, Principles and Values

**Vision:**
Quality health laboratory services available and accessible to all people in Uganda

**Mission:**
Provide quality, cost-effective and sustainable health laboratory services to support health care delivery at national, regional and international levels.

**Principles and Values:**
- **Quality** laboratory services
- **Accessibility and affordability** for laboratory testing services
- **Adequacy and competency** of Laboratory workforce
- **Confidentiality** of patient information
- **Transparency and accountability**
- **Equity of services**
Key programs and Labs within current UNHLS/CPHL

a. HIV EID/Viral Load Laboratories accredited to International Standards; and National VL Program

b. Hepatitis B Viral load Lab

c. Sickle cell program

d. Microbiology: Bacterial Disease outbreak investigation Laboratory

e. Special pathogens Lab – diagnosis of anthrax

f. National TB reference Laboratory (SRL), MDR, XDR – Supporting 19 Labs in Africa
a) CPHL EID/VL Labs received certificate of International Accreditation to ISO 15189 Standards – Feb 2017

Implication

- Results are of highest possible quality
- Results are trusted throughout the world
- A pool of Quality and Accreditation experts created locally
- Provision of consultancy & technical support to other labs
The Abbott platform has a throughput of 480 tests per day, 14,400 tests per month and 172,800 tests per year.

The Cobas 8800 machine has a throughput of 3,000 tests per day, 84,000 tests per month and over 1,008,000 tests per year.

The bioneer existation machine has a throughput of 117 tests per day, 3,276 tests per month and 39,312 tests per year.
Capabilities of the National Bacteriology Reference Lab

- Bactec FX 200 blood culture system
- Vitec 2 compact Bacterial identification/resistance testing system with capacity of up to 60T
- Serotyping for identification
- BSL3 for special pathogens
- **National AMR surveillance centre**
- ***2 Mobile labs (vans) to be delivered under the EAC-RNPHRL Project***
Management of epidemic outbreaks with the help of National sample transport network and HLIMS

- **GHS Uganda pathogens of interest**
  - Ebola: Suspect cases isolated, specimens collected and transported to UVRI via hub network and Posta Uganda
  - Cholera: Rapid diagnostic tests pre-positioned at 17 district health facilities with specimen referral to regional referral hospital or CPHL via Posta Uganda for culture
  - MDR TB: Sputum transported to a GeneXpert site via EID transportation hubs; rifampin-resistant TB specimens sent to NTRL via Posta Uganda for culture and drug resistance testing

- **Notification**
  - Laboratory results interlinked via EOC through SMS; online reporting and tracking via DHIS-2
Other programs we coordinate in the Laboratory Network

• Quality assurance
• Biosafety and biosecurity
• Equipment management
• Point of care testing (POCT)
• Lab supply chain and Logistics management
• Capacity building
• Hub and Sample transport network
• Laboratory Information Management System
• Biorepository and research
The National Health Laboratory Hub and Sample Transport Network

Hubs (100)
- RR Hospital (13)
- General Hospital (43)
- HC IV (43)
- HC III (1)

Legend:
- National Boundary
- District Boundary
- Surface Water
Each hub is within reach of lower level health facilities within a 20-40Km radius e.g. Lira hub serves 33 HCs.
Introduction of the twinning project in 2013

- **Definition:** The building of long-term relationship between CPHL and a US PHL to improve health laboratory systems in Uganda

- **Facilitated by:** CDC with PEPFAR funding through APHL

- CPHL/UNHLS has had long relationship with the American people through CDC spanning over 20 years

- **Key strategies:** Providing mentorships, generating sustainability using global networking
Objective

- To increase collaboration and understanding between CPHL of Uganda and the Scientific Laboratory Division of the State of New Mexico, USA
Key Milestones 1: Building Management capacity of the laboratory system in Uganda

- 1 week course on “Foundations of Laboratory Leadership and Management”
- 21 Laboratory Managers from regional labs and CPHL departments participated in the training
- Consultants were sourced by APHL from among the senior US faculty
Key Mile Stone 2: Benchmarking visit by CPHL Top Management to the Scientific Laboratory Division of New Mexico State in Albuquerque

- Introductory meeting with Director and top managers
- Interaction with key laboratory and support departments of the institution
- Visit to key associated departments and institutions e.g. Government Pathologist, Veterinary Department etc.
- Visited the State Minister for Health – Secretary for Health Epidemiology Division
- Visited the University Hospital Clinical Laboratories
- Debriefing meeting in which received various documents for adaptation and for reference
Lessons Learnt:

• Proper organization of National Health Laboratories system in order to increase effectiveness and efficiency while minimizing cost:
  - Good sample referral system eliminates need for building complex laboratories everywhere in the country
  - The bar coding system can minimize errors while employing less workforce

• Good Health laboratory systems promote inter-sectoral collaboration which helps to achieve overall National goals
  - CPHL now collaborates with other labs in the animal sector and we utilize the same sample transport network

• Close collaboration with the epidemiology division is important for effective implementation of Public Health programs
Lessons Learnt Con’d:

• Engagement of political leaders is critical for implementation of Health laboratory programs

• Close collaboration between Public Health laboratories and clinical laboratories promotes sharing of resources and therefore lowers cost of laboratory services

• CPHL benchmarked the good functioning of Albuquerque Public Health Laboratory which led us to improve the NMRL after adopting some organizational and testing modules from Albuquerque

  ✓ A senior microbiologist from the US – APHL; Dr. Marty, provided mentorship for one month in our national microbiology reference laboratory – Thanks to APHL

• Better user and public confidence on the work of the CPHL as a result of more involvement of the health sector political leadership in CPHL functions
Thank You

FOR GOD
AND MY
COUNTRY