The roles of NPHIs in the Health Sector

The Ethiopian Public Health Institute (EPHI): from bench to societal change

December 04, 2019
Addis Ababa, Ethiopia
Motherland of all humans
Global Public Health Challenges
Global Challenges

Thanks for joining. The livestream will begin Sept. 23 at 7 p.m. ET.

The AMR Challenge
A Night Celebrating Global Antimicrobial Resistance (AMR) Fighters

CDC Foundation
Bill & Melinda Gates Foundation
American Society for Microbiology
Centers for Disease Control and Prevention

CHOLERA
Public Health

It is a cornerstone of preventing diseases/emergencies and promoting health

How ???

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Public Health: *health system strengthening*

1. Strategy, epidemiologic information
Public Health: *health system strengthening*

2. Public Health laboratory networks
Public Health: *health system strengthening*

3. Work force development
4. Evidence generation and use

“In God we trust, all others must bring data.”

W. Edwards Deming
Public Health: *health system strengthening*

5. Public Health institutions and infrastructure

*NPHIs*
National Public Health Institutes (NPHIs)

- Permit the assembly of:
  - Disciplines
  - Critical mass of skills
  - Systems

serve as a building block towards more robust national capacity
National Public Health Institutes (NPHIs)

A strong NPHIs enable countries to:

- Improve delivery of public health services
- Prevent, detect, and respond to public health threats
- Have a strong national voice for public health issues
- Evidence generation and use
- Use limited funds more efficiently
Public Health: The case of Africa
Public Health: The case of Africa

• “It is clear that we must find an African solution to our problems, and that this can only be found in African unity. Divided we are weak; united, Africa could become one of the greatest forces for good in the world.”

  Kwame Nkrumah, 1953
Ethiopia's experience
Health sector development

• Good progress over the years

• Achieved MDG goals

• Strive to achieve the HSTP targets
Executive committee members of the Ministry of Health, Ethiopia
Evolution of EPHI

1922- Hospital by the American missionary, Dr. Lambie

1935- "Minstro dela Sanita"

1940- Imperial Medical Research Institute

1952- ‘Institute Pasteur d’Ethiopie” established

1965- Imperial Central Laboratory and Research Institute (ICLRI)

1986- the National Research Institute of Health

1996- The Ethiopian Health and Nutrition Research Institute (EHNRI)

2013- Ethiopian Public Health Institute (EPHI)
The Ethiopian Public Health Institute

Four major strategic missions

• National laboratory system building
• Public Health Emergency Management
• Research—Evidence synthesis and translation
• Capacity building and workforce development
Mission-1

National Laboratory System Building
Roles - in the health sector

- 13 regional laboratories
Roles- in the health sector

• National HIV Viral load/EID services (target for the 3rd 90)

<table>
<thead>
<tr>
<th>Year</th>
<th>VL Coverage</th>
<th>Target</th>
<th>VL Sup</th>
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<tbody>
<tr>
<td>2016</td>
<td>5%</td>
<td>-</td>
<td>76%</td>
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<tr>
<td>2017</td>
<td>54%</td>
<td>65%</td>
<td>87%</td>
</tr>
<tr>
<td>2018</td>
<td>61%</td>
<td>75%</td>
<td>88%</td>
</tr>
<tr>
<td>2019</td>
<td><strong>67%</strong></td>
<td><strong>90%</strong></td>
<td>89%</td>
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Nearly 200 labs enrolled

- 55-64 %
- 65-74 %
- 75-84 %
- 85-94 %
- > 95 %

Bar chart:
- Accredited in previous yrs: 9
- Accredited in 2019: 10
- Private labs (accredited): 6
- Assessed & Waiting for AAC approval: 10
- Labs ready for assessment: 7
- Total accredited labs: 25

National Laboratory Quality System Strengthening
Major Laboratory Programs…

Specimen Referral Linkage and testing services
  • 3843 health facilities mapped and networked
National Lab capacity building

150 million USD initiative

Grand project
Mission-2

Public Health Emergency Management System
Global Health Security

Disease has no passport and border spread faster.

Only 1/3 of the countries are prepared.

Huge economic impact:
Ex. SARS: $40B Globally
Ebola: >$30B Globally

Faster movement of goods and population.

Urbanization.

Population Growth.
Public Health Emergency Management System

Building Emergency Resilience in Ethiopia

- Resilient Community Initiatives
- Resilient Health System Initiatives
- Enhanced Surveillance and Preparedness for PHEs
- Coordinated PHE Response
- Capacity Enhancement

Emergency Resilience

The Ethiopian Public Health Institute
Reporting and feedback mechanisms

- **Epidemiological Week**
  - Monday to Sunday

- **Health Facilities**
  - Health Posts
  - Health Centers
  - Hospitals
  - Private Clinics and Hospitals
  - NGO
Timeliness and Completeness of Weekly Reports

Rate (%)

WHO Epidemic Week

Completeness rate 2018
Timeliness rate 2018
Minimum requirement
Emergency Operating Center (EOC)

Before Activation

After Activation
Evidence synthesis and translation

Mission-3

Research

Data to action!
Research outlays

- Biomedical (HIV, TB, NCD, NTD, malaria, parasitology---)
- Zoonotic and Entomology
- Health system
- Survey/surveillance
- Public Health
- Vaccine and development
- Food and Nutrition Sciences
- Traditional medicine

National Data Management Centre
EPHI & IHME project launching, Sept 02, 2019

National Data Management Center (NDMC)

“Data to action”

12 million USD initiative (BMGF)

“In God we trust, all others must bring data.”

W. Edwards Deming
Burdens of diseases - Ethiopia: 1990-2017

<table>
<thead>
<tr>
<th>1990 Rank</th>
<th>1 Respiratory infections &amp; TB</th>
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<tbody>
<tr>
<td>2 Other infectious</td>
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<tr>
<td>3 NTDs &amp; malaria</td>
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<tr>
<td>4 Maternal &amp; neonatal</td>
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<tr>
<td>5 Cardiovascular diseases</td>
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<tr>
<td>6 Enteric infections</td>
<td></td>
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<tr>
<td>7 Nutritional deficiencies</td>
<td></td>
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<tr>
<td>8 Self-harm &amp; violence</td>
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<tr>
<td>9 Neoplasms</td>
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<tr>
<td>10 Diabetes &amp; CKD</td>
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<tr>
<td>11 HIV/AIDS &amp; STIs</td>
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<td>12 Unintentional inj</td>
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<td>13 Digestive diseases</td>
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<td>14 Other non-communicable</td>
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<tr>
<td>15 Chronic respiratory</td>
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<td>16 Neurological disorders</td>
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<td>17 Transport injuries</td>
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<td>18 Mental disorders</td>
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<td>19 Musculoskeletal disorders</td>
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Antimicrobial resistance (AMR)

Proportion of *E. coli* Isolates from Urine Showing Resistance by Antibiotic Tested
Preliminary Findings - Ethiopia AMR Surveillance, July 2017 - February 2018

- Ampicillin (N=95): 96%
- Augmentin (N=109): 80%
- Co-Triamoxazole (N=131): 76%
- Tetracycline (N=44): 75%
- Norfloxacin (N=32): 66%
- Cefepime (N=81): 63%
- Ciprofloxacin (N=126): 63%
- Ceftriaxone (N=71): 61%
- Tobramycin (N=41): 59%
- Ceftazidime (N=75): 45%
- Gentamicin (N=92): 35%
- Amikacin (N=78): 10%
- Meropenem (N=77): 7%
- Nitrofurantoin (N=56): 4%
Program evaluation: Mini DHS survey findings

Its impact on: Trend, Progress, Gaps, Future intervention
Regional CPR (2005-2019 DHS)

National 2019 EDHS m-CPR 41%

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<tr>
<th>Region</th>
<th>EDHS 2011</th>
<th>EDHS 2016</th>
<th>EMDHS 2019***</th>
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<tbody>
<tr>
<td>Tigray</td>
<td>35.0</td>
<td>36.3</td>
<td>49.5</td>
</tr>
<tr>
<td>Afar</td>
<td>11.6</td>
<td>12.7</td>
<td>46.5</td>
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<tr>
<td>Amhara</td>
<td>28.1</td>
<td>38.9</td>
<td>36.7</td>
</tr>
<tr>
<td>Oromia</td>
<td>28.4</td>
<td>36.7</td>
<td>39.6</td>
</tr>
<tr>
<td>Somali</td>
<td>1.4</td>
<td>3.4</td>
<td>44.6</td>
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<tr>
<td>B/Gumuz</td>
<td>34.9</td>
<td>33.2</td>
<td>29.1</td>
</tr>
<tr>
<td>SNNPR</td>
<td>29.3</td>
<td>30.3</td>
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<tr>
<td>Gambella</td>
<td>47.6</td>
<td>30.3</td>
<td>47.6</td>
</tr>
<tr>
<td>Hereri</td>
<td>29.3</td>
<td>30.3</td>
<td>47.6</td>
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<tr>
<td>Addis Ababa</td>
<td>29.3</td>
<td>30.3</td>
<td>47.6</td>
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<tr>
<td>Dire Dawa</td>
<td>29.3</td>
<td>30.3</td>
<td>47.6</td>
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Skilled delivery trend (DHS 2005 -2019)

Percentage increase in between survey

• There is high jump in performance in the recent 2019 Mini DHS compared with previous survey
Children Nutrition Status

Percentage reduction

- Stunting: 4%
- Wasting: 27%
- Underweight: 11%

Percentage Reduction:

- Stunting: 51.5%
- Wasting: 46.5%
- Underweight: 44.4%

Values:

- Stunting: 10.5
- Wasting: 9.7
- Underweight: 7.2

- Stunting: 47.2
- Wasting: 38.2
- Underweight: 28.7
Child Mortality Status

- Neonatal mortality
- Infant mortality
- U5 mortality

EDHS* 2000: 166
EDHS 2005: 123
EDHS 2011: 88
EDHS 2016: 67
EMDHS 2019***: 55

Neonatal mortality:
- EDHS* 2000: 49
- EDHS 2005: 39
- EDHS 2011: 37
- EDHS 2016: 29
- EMDHS 2019***: 30

Infant mortality:
- EDHS* 2000: 97
- EDHS 2005: 77
- EDHS 2011: 59
- EDHS 2016: 48
- EMDHS 2019***: 43

U5 mortality:
- EDHS* 2000: 120
- EDHS 2005: 88
- EDHS 2011: 67
- EDHS 2016: 55
- EMDHS 2019***: 55
Capacity building activities and sharing evidence
Seminars/Workshops/Trainings
National Health Security Strategy

- Building & Sustaining Healthy, Resilient Communities
- Comprehensive Health Situational Awareness for Better Decision Making
- Enhancing Public Health, Healthcare & Emergency Management Systems
- Enhancing Medical Countermeasures & Non-Pharmaceutical Interventions
- Strengthening Global Health Security
EPHI- 4th Health Science congress- May, 2019
20% of the world’s population lives on less than $1.25 / day.
"Poverty...yet wOW! impressive, creative, innovative, humble (TEACHABLE, therefore, rich). WHAT IF one appears rich, yet poor in another way because of pride (not teachable, therefore ignorant). That is the tragedy. That is the greater poverty."—MarianneT3lles
The struggle sometimes is to have something from almost nothing.
Health in all
Health in all
Health in all
Health in all
Health in all
Yes, we can!!!
Thank you!