Update of Oncho Program Status

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Presentation Outline

• Introduction
• Progress of Activities
• Achievements
• Challenges
• Way Forward
NTDs......

- A group of about 17 infectious diseases which affect over a billion people worldwide and most of whom live in extreme poverty
- Severely debilitating and disabling
- Endemic in poor communities
- Promotes poverty and intense stigma
- Concentrate in remote rural areas, urban slums or conflict zones
Neglected Tropical Disease (NTDs)

- Lymphatic Filariasis
- Onchocerciasis
- Schistomiasis
- Soil Transmitted Helminthes
- Trachoma
- Buruli ulcer
- Dracunculiasis
- Leprosy
- Rabies
- Human African Trypanosomiasis
- Leishmaniasis
- Yaws
- Cysticercosis
- Echinococcosis
- Dengue
- Chaga’s disease
- Foodborne trematode infections
Ghana is endemic for all 5 NTDs which employ MDA for their control and elimination

- LF is endemic in 98 out of 216 districts (endemic pop about 12M)
- Onchocerciasis is endemic in 9 out of 10 regions (85 districts targeted)
- Trachoma is endemic in 2 regions - 37 districts
- SCH is mapped and endemic in all districts and regions
- STH is endemic in all districts (*strategy is to deworm all SAC annually*)
Strategies

• Mass Drug Administration
• Morbidity Control and Management
• Health Education
Onchocerciasis

- Onchocerciasis also known as “River Blindness”
- Caused by filarial worm called *Onchocerca volvulus*
- Endemic in South America, Africa and Asia
- 2 types exist in Ghana
  - Savannah
  - Forest
Transmission Cycle

• Human infection begins with deposition of the infective larvae in the skin by the bite of an infected black fly (simulium damnosum).

• Larvae develop into adult worms which are found in the subcutaneous nodules.

• Gravid adult female worms release microfilariae (mf).

• Mf migrate out of the nodules through the tissues and concentrate in the dermis.
Transmission of Oncho

• When female fly ingests mf from the host’s skin and transmits to others these develop into infective larvae

• Life span of the adult worms is up to 15 yrs (av. 9 yrs)

• Blackfly breeds along fast flowing rivers and streams

• Biting and disease transmission is restricted to these locations
Disease presentation

- The most common symptom is itching, which is caused by the body's reaction to microfilariae and the following clinical signs:
  - Skin disorders
    - Nodules formation - often found over the bony
    - Onchocercal dermatitis - small papules
    - 'Lizard skin' - areas of roughening
    - 'Leopard skin' - areas of depigmentation (esp. lower limbs)
    - Ocular lesions - which may lead to blindness
Nodules
The Onchocerciasis Disease

These microscopic worms cause
* unbearable itching
* disfiguring skin disease
* blindness
Snapshot of MDA/Oncho History

• MDA started in 1998 for all endemic districts – under OCP
• As a control program, MDA was done only at the community level
• 2002 APOC was formed, MDA cont at the community level
• Loss of data so APOC org REMO in 2009
• 2015 ESPEN was formed, change from control to Elimination
• 2016 GOEC was formed
• 2017- Oncho Impact Assessment was done
• 2018 – MDA implementation unit was changed from community to sub district level
## Change in Oncho Prevalence

<table>
<thead>
<tr>
<th>Type of endemicity</th>
<th>Number of districts being treated 2009-REMO</th>
<th>Number of districts from 2013 – 2015 with epi results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyper</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Meso</td>
<td>29</td>
<td>2</td>
</tr>
<tr>
<td>Hypo</td>
<td>41</td>
<td>83</td>
</tr>
</tbody>
</table>
Activities – Oncho Impact Assessment-2017

Study Area

• 154 districts
  • 85 endemic districts
    • 15 hyper endemic
    • 29 meso endemic
    • 41 hypo endemic
  • 50 hypo endemic districts
• 19 additional districts with reported endemicity based on epidemiological surveys, blackfly nuisance and stopped LF treatment
Criteria for sites selected

• 312 sites selected

• 2 sites per districts; in a few cases 2 sites for 3 districts based on location of breeding site, river basin and district re-demarcation

• Communities closest to fly breeding site/river basin

• Communities within 5km of fly breeding site/river basin

• Large (pop > 500) urbanized communities excluded

• Smaller (pop < 100) communities will be paired with adjacent community as a site
Survey Tools and Samples

• Tools – Skin snip test, Ov16 rapid test, Ov16 ELISA
  • Skin snip – up to 300 samples per site (adults ≥ 20yrs)
  • Ov16 rapid test – all children < 10yrs for each site
  • Ov16 ELISA for 10% of children < 10yrs as quality control and compare sensitivity and specificity of Ov16 rapid test

• Entomology
  • Blackfly breeding sites survey
  • Blackfly collection for vector species identification and transmission assessment
## Oncho Entomology

<table>
<thead>
<tr>
<th>Total Sites Visited</th>
<th>Sites where eggs, Larvae, Nymph were collected</th>
<th>Preliminary Results</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| 267                 | 37                                             | 11 sites (S. damnosum)  
26 sites (other species) | Most sites on the major rivers were flooded and some inaccessible. |
Salient outcomes of GOEC Meeting

• 120 oncho districts

• 82 biannual oncho districts

• Programme to conduct the pilot OEM survey
Delineation exercise

• Using the 20km flight rate, a delineation exercise was conducted in consultation with the districts

• A follow up - CDD training was done in districts to facilitate MDA
MDA data and Coverage by region - 2017

- Ashanti: 82.6
- Brong-Ahafo: 82.5
- Central: 82.1
- Eastern: 84.6
- Northern: 80.6
- Upper East: 83.5
- Upper West: 81.8
- Volta: 85.3
- Western: 85.9

Legend:
- Popu
- # Treated
- Coverage
Cont - MDA data- LF/Oncho

83.2%

83.5%

Total population

Total Number treated
### MDA REGISTERED/TREATMENT BY GENDER 2018

#### Region
- **Ashanti**: Male registered 579608, Female registered 516545, Male treated 486102, Female treated 518141, Coverage 83.7%
- **Brong-Ahafo**: Male registered 486102, Female registered 442483, Male treated 433185, Female treated 443185, Coverage 83.3%
- **Central**: Male registered 252844, Female registered 269327, Male treated 207533, Female treated 219645, Coverage 81.8%
- **Eastern**: Male registered 464153, Female registered 510688, Male treated 432691, Female treated 430402, Coverage 84.2%
- **Northern**: Male registered 214246, Female registered 232691, Male treated 178802, Female treated 193760, Coverage 83.4%
- **Upper East**: Male registered 148006, Female registered 162678, Male treated 127817, Female treated 137072, Coverage 85.3%
- **Upper West**: Male registered 209402, Female registered 228761, Male treated 171529, Female treated 186894, Coverage 81.8%
- **Volta**: Male registered 411670, Female registered 445555, Male treated 354952, Female treated 381819, Coverage 85.9%
- **Western**: Male registered 773978, Female registered 798954, Male treated 667427, Female treated 682954, Coverage 85.9%

#### Region Coverage
- **Ashanti**: 83.7%
- **Brong-Ahafo**: 83.3%
- **Central**: 81.8%
- **Eastern**: 84.2%
- **Northern**: 83.4%
- **Upper East**: 85.3%
- **Upper West**: 81.8%
- **Volta**: 85.9%
- **Western**: 85.9%

#### 注解
- **# registered / treated**: 注册/治疗人数
- **Coverage**: 覆盖率
Collaboration with research institutions

• UHAS (University of Health & Allied Sciences)

• KCCR (Kumasi Centre for Collaborative Research) of KNUST
Collaboration with Research unit of UHAS

• An open-label study of the pharmacokinetics and safety of a single dose of moxidectin per oral in participants aged 4 to 17 years with (or at high risk of) *Onchocerca volvulus* infection

• Safety and efficacy of combination therapy with ivermectin, diethylcarbamazine, and albendazole (IDA) for individuals with onchocerciasis

• A Randomized, Double Blind, Parallel Group study to investigate Emodepside (BAY 44-4400) in Comparison to Ivermectin in Patients with *Onchocerca volvulus* Infection
Past Collaboration with KCCR

• Assessments of the transmission of Onchocerca volvulus by Simulium sanctipauli in the Upper Denkyira District, Ghana, and the intermittent disappearance of the vector
Ongoing Collaboration with KCCR

Tackling the Obstacles of Filariasis
Cont

• Work-packages:
• Research task 1 “Establishing a Filariasis Clinical Trial and Research Platform
• Research task 2: “Rapid assessment of lymphedema burden using mobile phone based text messages by community health workers”
• Research task 3: “Reducing the daily dose of doxycycline to successfully treat filarial LE - a multinational, randomized, controlled non-inferiority trial”
• Research task 4: “Efficacy of ultrasound-guided hydrocele aspiration to prevent surgical intervention”
• Research task 5: “Comparing cost benefit ratios of test and treat approaches with the macrofilaricide doxycycline vs MDA with IVM/ALB for regional elimination of LF”
KCCR - Future work awaiting approval

• Morbidity Management and surveillance of pathology of lymphatic filariasis using mobile phone-based tool by community health volunteers (CHVs) in Ghana
Challenges

• CDD apathy
• Community Inertia
• Weak monitoring and supervision
• Insecurity during field visits
• Cross border issues
  • Population movement
  • Synchronizing activities with neighbouring countries
• Retirement of highly skilled staff
• Decreasing political commitment
Way Forward

• Need for research evidence to guide hot spots??

• Formal request for police service security in some areas

• Engage the HR division to recruit some category of staff

• Strengthen monitoring and supervision, especially at remote areas
• Synchronization of MDAs with neighbouring countries
• Strengthen monitoring and supervision, especially in remote areas
• Improve CDD motivation
Acknowledgements

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