Interventions and progress towards onchocerciasis elimination in Uganda

David W. Oguttu,
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Background

- Onchocerciasis (river blindness) is caused by a filarial worm; *O. volvulus*
- Transmitted by female *Simulium* fly
- Major Vectors in Uganda are *S. naevei* and *S. damnosum*
- In late stage causes blindness and skin disease
Initially endemic in 17 foci in 39 districts

Affects over 3 million with 7.2 million people at risk

Progress towards oncho elimination
Progress towards oncho elimination

Interventions

- Spraying DDT in 1950s; Victoria Nile
- Control program in 1990: started annual mass drug administration (MDA) of ivermectin
- Elimination policy launched in 2007
- The strategies adopted:
  - Semi-annual MDA: Ivermectin
  - Vector control/elimination where feasible
High MDA coverage for many years

Progress towards oncho elimination
Larviciding rivers with abate

- Vectors eliminated in 6 isolated foci
- *Simulium* population and biting nuisance controlled in Mid-North focus
Epidemiological evaluation

- Oncho nodule and skin disease prevalence
- Parasite prevalence by skin snip microscopy
- Skin snip PCR
- Exposure of children <10 to infective vectors by OV16 ELISA
- Clinical case detection and confirmation in health facilities
Entomological evaluation

- Vector population monitoring
- Dissection of vectors
- Pool screening by 0-150 PCR
Entomological achievements

• Vector elimination was achieved in 6 foci, no re-infestation observed for over 5 years
• Flies caught in Bwindi and West Nile foci are not infected
• Number of infective flies in Madi mid North focus has reduced as a result of vector control
• Vector disappeared in some foci due to ecological changes (Imaramagambo, Wadelai)
Epi achievements

- OV16 in all foci shows no active transmission except in Madi mid North and Lubiriha
- OV16 in refugee camps indicate low or no risk of parasite from DRC and South Sudan
- No case of oncho skin disease currently observed in communities
Elimination progress as of 2018

- 7 foci eliminated onchocerciasis transmission (PES)
- 7 foci interrupted transmission now in PTS
- 1 focus suspected to have interrupted transmission
- 2 foci with ongoing transmission
  - Cross border transmission Uganda, DRC and RSS
- Overall MDA stopped in 24 districts, ongoing in 15
- Cross border collaboration established to eliminate transmission (Uganda, DRC, RSS)

Need for WHA resolution on elimination of transmission to celebrate.........
Elimination by 2023 possible!!

Base line 2007

Current 2018
### Uganda oncho flag 2018

**3.8 million people no longer at risk**

<table>
<thead>
<tr>
<th>Region</th>
<th>District</th>
<th>Location</th>
<th>People at Risk 2017</th>
<th>People at Risk 2018</th>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>Nebbi</td>
<td>N/A</td>
<td>272,340</td>
<td>272,340</td>
<td>Eliminated</td>
<td>2018</td>
</tr>
<tr>
<td>Northern</td>
<td>Nebbi</td>
<td>N/A</td>
<td>95,154</td>
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<td>Eliminated</td>
<td>2018</td>
</tr>
<tr>
<td>Northern</td>
<td>Nebbi</td>
<td>N/A</td>
<td>317,166</td>
<td>317,166</td>
<td>Eliminated</td>
<td>2018</td>
</tr>
<tr>
<td>Northern</td>
<td>Nebbi</td>
<td>N/A</td>
<td>821,357</td>
<td>821,357</td>
<td>Eliminated</td>
<td>2018</td>
</tr>
<tr>
<td>Northern</td>
<td>Nebbi</td>
<td>N/A</td>
<td>193,303</td>
<td>193,303</td>
<td>Eliminated</td>
<td>2018</td>
</tr>
</tbody>
</table>

Total: 3.8 million people no longer at risk

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### Progress towards oncho elimination

- **Uganda**: 3.8 million people no longer at risk
- **Global**: 12.1 million people no longer at risk

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### Key Actions

1. **Community Engagement**: Increased awareness and participation in oncho elimination programs
2. **Vector Control**: Implementation of vector control methods to reduce transmission
3. **Drug Distribution**: Mass drug distribution to affected communities

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**Note**: Data based on recent surveys and reports. Progress and achievements vary by region and district.
Acknowledgement

- The Carter Center
- Sightsavers
- RTI
- Mectizan Donation Program
- APOC
- MOH
- WHO
- UOEEAC
Onchocerciasis disease

- Dermatitis, serious itching
- Lizard skin
- Leopard skin
- Hanging groins
- Nakalanga syndrome
- Blindness
- Associated with nodding disease; but scientific linkage not clear
Lizard skin

Progress towards oncho elimination
O-150 PCR technique

Based on amplification of O. volvulus DNA (O-150) in Simulium vector

and in skin snips of humans (Meredith et al. 1991, Katholi et al. 1995)