Scaling Up Research Results: School-Based Deworming in Kenya and beyond

Karen Levy
Senior Director, IPA; Regional Director, Deworm the World
The Problem

- Parasitic worms, primarily soil-transmitted helminths (STH) and schistosomes, infect more than one-third of the world’s population.
- 600 million school-age children are at risk of infection with parasitic worms.
- Worms can cause anemia and malnutrition, harming mental and physical development.
- Children with worms are less likely to attend schools or to concentrate when they are there.
The Research

Rigorous research has shown that regular deworming:

• **Reduces school absenteeism by 25%** among school children;

• **Dramatically improves cognition** (equivalent to half a year of schooling) in untreated younger siblings of school children, due to spillover effects; and

• **Results in over 20% higher earnings** among wage-earners and 12% more hours worked in young adults who were dewormed as children.
The solution: School based deworming

- Existing and extensive infrastructure of schools
- Albendazole and Mebendazole are available as donations
- Both can be safely administered by teachers
Cheap and Cost Effective

- Less than US$0.5 per child per year
- $3.50 for each additional year of school gained
- 70% annual rate of return
Deworm the World
Supporting the Development of National School-Based Deworming Programs
Deworm the World

Overcoming barriers to deworming

Launched by the Education Task Force of the Young Global Leaders at the 2007 World Economic Forum at Davos

• Advocating for large scale school-based programs
  – Disseminate strong evidence and develop policy frameworks

• Providing in-depth technical assistance
  – Tailored technical support packages to governments for all programmatic phases

• Coordinating strategic support
  – Facilitate drug donations and other support for specific program areas (i.e. mapping, training)
The National School-Based Deworming Programme: Improving the Health and Education of Kenya’s Children
Types of Support and Collaboration

• Policy development
• Operational support
• Catalytic funding
• PR and advocacy
• Technical assistance (direct and indirect)
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Background: The National School Health Policy and Guidelines

- Signed and launched in May 2009
- Policy developed by Ministry of Education, Ministry of Public Health and Sanitation, various partners and stakeholders.
- The policy provides:
  - A legal framework
  - Clear cut leadership for ownership and sustainability
  - A guide to program implementation
National School Health Policy

School-based mass deworming adopted as an effective preventative and treatment measure; policy instructs that:

“Treatment shall be administered to all school-age children, including those out of school, based on the prevalence and intensity of worms and bilharzias in the area.”

- GoK Nat’l School Health Policy, p. 32
Types of Support and Collaboration

- Policy development
- Operational support
- Catalytic funding
- PR and advocacy
- Technical assistance (direct and indirect)
Training Roll-Out

Example: Kwale District

Master Trainers

KWALE DISTRICT

KUBO DIVISION

MKONGANI ZONE 24 schools

SHIMBA HILLS ZONE 11 schools

MATUGA DIVISION

NGOMBENI/WAA ZONE 17 schools

TSIMBA/TIWI ZONE 24 schools
Using existing infrastructure and personnel.
Developing and organizing training materials
Types of Support and Collaboration

- Policy development
- Operational support
- Catalytic funding
- PR and advocacy
- Technical assistance (direct and indirect)
Training Materials

National Worm Control

Why worm control in schools?
School-age children typically have the highest immunity of worm infection of any age group. In addition, the most cost-effective way to deliver deworming tablets regularly to children is through schools because schools offer a readily available, extensive and sustained infrastructure with a skilled workforce that is in close contact with the community.

Regular treatment contributes to good health and nutrition for children of school age, which in turn leads to increased enrollment and attendance, reduced class repetition, and increased educational attainment.

Definition of worms and Transmission
Worms, also known as intestinal helminths, are parasites, which live in the human intestines for food and survival.
Common names include: Margos, Taga, Safura, Kahawa etc.
In English, these are Roundworm, Tapeworm, Hookworm and Bilharzia.

Drug Distribution

The following drugs can be used:
- Mebendazole
- Albendazole
- Pyrantel
- Praziquantel

Children who are ill on the Treatment Day should not receive drug.

This is not because of any danger of side effects, but to prevent the possibility of misperception that the drug causes the illness. These children can be given the drug later, when they are well again.

To give the drugs to the children:
- The tablets
- Forms to register the children treated
- Two poles if praziquantel is distributed

You Need:
- The tablets
- Forms to register the children treated
- Two poles if praziquantel is distributed
Types of Support and Collaboration

- Policy development
- Operational support
- Catalytic funding
- PR and advocacy
- Technical assistance (direct and indirect)
Engaging Stakeholders

• Programme Launched at KEMRI
• Press Conference attended by Ministers, Assistant Ministers, Permanent Secretaries of both ministries
• Covered by print media, television, and numerous radio stations
Engaging Stakeholders

- Press Coverage
- Funds for local sensitization
- Radio adverts on vernacular stations (organized by PR Officer, MoE)
- Prof. Karega Mutahi on Power Breakfast
Types of Support and Collaboration

- Policy development
- Operational support
- Catalytic funding
- PR and advocacy
- Technical assistance (direct and indirect)
Evidence-based *implementation*: Geographic Targeting

- *Scientific basis* for targeting mass treatment
  - Increases efficiency and effectiveness of program
  - Helps to explain resource allocation choices to local and national leaders and politicians
- Technical inputs and scientific expertise from KEMRI-ESACIPAC, Wellcome Trust, PCD, MoPHS
  - Consolidating data from existing surveys
  - Undertaking new prevalence surveys
- We helped to *operationalize* scientific information: generated and organized lists of administrative units, schools, personnel, etc.
School-level targeting for treatment of Schistosomiasis

Map by Dr. Simon Brooker
KEMRI-Wellcome Trust
## Technical Support: M&E

### WORM CONTROL IN SCHOOL-AGE CHILDREN

**Area Activity Summary**

To be completed by the AREA EDUCATION OFFICE

To be submitted to District Program Manager

<table>
<thead>
<tr>
<th>DIVISION</th>
<th>LUBO</th>
</tr>
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<tbody>
<tr>
<td>DISTRICT</td>
<td>KWALE</td>
</tr>
<tr>
<td>PROVINCE</td>
<td>COAST</td>
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</tbody>
</table>

**NAME:** JOSEPH KIUMU  
**POSITION:** AEO  
**PHONE NO:** 0721251259

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**Form A**

<table>
<thead>
<tr>
<th>Name of School</th>
<th>Enrolled</th>
<th>Non-Enrolled</th>
<th>Albendazole/Mebendazole</th>
<th>Praziquantel</th>
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<tbody>
<tr>
<td></td>
<td>Number of primary school children treated</td>
<td>Number of ECD Children in register</td>
<td>Number of ECD Children treated</td>
<td>Number of children treated</td>
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<tr>
<td>Lyicone</td>
<td>673</td>
<td>117</td>
<td>113</td>
<td>118</td>
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<td>AIC Bomana</td>
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<td>14</td>
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<tr>
<td>Shiman Hill</td>
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<td>25</td>
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<td>200</td>
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<tr>
<td>MWINIVAMA</td>
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<td>84</td>
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<td>MUCANDA</td>
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<td>KIPAMUNU</td>
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<td>MWAMUNDA</td>
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<td>500</td>
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<tr>
<td>CIJIMBA</td>
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<td>550</td>
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<td>LITTLE SUMA</td>
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<tr>
<td>MUPOMA</td>
<td>412</td>
<td>83</td>
<td>12</td>
<td>600</td>
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**Summary of this sheet:** 2474 2369 681 653 370 4100 2099 153 375
Map of Phase I Coverage
Achievements

• Roll-out of Phase I successfully reached all 45 targeted districts
• Over 1,000 district and division personnel trained (MoE, MoPHS, KEMRI)
• Over 16,000 teachers trained

Over 3.6 million children in over 8,200 schools were dewormed
Cost-effectiveness

- GoK spent approx. USD $0.28 per child treated (KESSP funds)
- Development partners contributed approx. USD $0.08 per child treated

Overall cost: approximately USD $0.36 per child treated

- This includes all costs: training, logistics, deworming drugs, monitoring, printed materials, etc.
The National School-Based Deworming Programme:
Improving the Health and Education of Kenya’s Children
The National School-Based Deworming Programme: Improving the Health and Education of Kenya’s Children

5 year program; 5 million children per year
Programme Targets

- 5 million children aged 2-14 years
- Approx: 45 Master Trainers, 528 district level staff, and 20,000 teachers
- Over 10,000 schools to be treated
### Geographic Coverage

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>DISTRICTS</th>
<th>TARGET CHILDREN (age 1-14y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Province</td>
<td>20/20</td>
<td>1,887,433</td>
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<tr>
<td>Nyanza Province</td>
<td>22/22</td>
<td>1,857,186</td>
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<tr>
<td>Rift Valley Province</td>
<td>11/44</td>
<td>1,013,923</td>
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<tr>
<td>Coast Province</td>
<td>13/13</td>
<td>1,291,930</td>
</tr>
</tbody>
</table>

**Legend**
- 2nd wave roll-out
- 1st wave roll-out
Research, Evidence and Policy

- Change the way organizations (both implementers and donors) make decisions
  - ensure that they use scientific evidence rather than just instincts to evaluate the performance of policies
- Using evaluations to help design new programs
- Testing variations in existing programs
- Scaling-up programs found to be successful
- Influencing overall policy debate

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