Elimination of Neglected Diseases and other Infectious Diseases related to Poverty

Schistosomiasis
Schistosomiasis
Presence at subnational level, 1998–2007
Schistosomiasis endemic or recently ex-endemic countries/territories

- **Currently endemic:**
  St. Lucia, Suriname, Venezuela, Brazil

- **Formerly endemic:**
  Guadalupe, Martinique, Dominican Rep., Puerto Rico
Schistosomiasis
Presence at subnational level, 1998–2007

Epidemiology
- 4 Countries
- 39 Sub national Units
- 25 million people living at risk, mainly in Brazil
- 1 to 3 million people are estimated to be infected

Strategy
- MDA to school age children, reaching at least 75% coverage
- Improve access to drinking water and sanitation
- Health education

Goal
To reduce the prevalence and the parasitic load (as measured by egg counts) in high transmission areas to less than 10%

Resolution
WHA 54.19 (2001)
Process Indicators
(school-based programs)

- Number of schools enrolled in the program
- Percentage of schools enrolled in the program
  Numerator: total number of schools enrolled in the program
  Denominator: total number of schools existing in the intervention area
- Number of training sessions given to teachers
- Percentage of schools with a trained teacher
- Number of tablets administered
- Number of tablets returned by the teachers.
- Coverage
  Numerator: number of school age children that received the treatment
  Denominator: number of school age children in the intervention area
- Percentage of classrooms that participated in at least one health education activity

*Source: WHO. Helminth Control in School-Age children. 2002*
Parasitological Indicators

- **Prevalence of infection by intestinal schistosoma**
  
  *Numerator:* number of children infected by intestinal schistosoma  
  *Denominator:* total number of children investigated

- **Prevalence of moderate to high intensity intestinal schistosoma infections**
  
  *Numerator:* number of children with high to moderate-intensity intestinal schistosoma infections  
  *Denominator:* total number of children investigated

Intensity of schistosoma infection

<table>
<thead>
<tr>
<th>Helminth</th>
<th>Intensity threshold</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mild</td>
<td>Moderate</td>
<td>High</td>
<td></td>
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<tr>
<td><em>Schistosoma mansoni</em></td>
<td>1-99 epg</td>
<td>100-399 epg</td>
<td>≥ 400 epg</td>
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</tr>
</tbody>
</table>

*Source: WHO.Helminth Control in School-Age children. 2002*
Morbidity Indicators

- **Proportion of children with clinical signs or symptoms**
  *Numerator*: number of children with specified clinical signs or symptoms (e.g., liver lesions detected by ultrasound)
  *Denominator*: total number of children examined for that sign or symptom

- **Percentage of children suffering anemia (proxy)**
  *Numerator*: number of anemic children (haemoglobin < 11g/dl)
  *Denominator*: total number of children investigated for haemoglobin status

- **Percentage of children suffering severe anemia (proxy)**
  *Numerator*: number of children with severe anemia (haemoglobin < 7g/dl)
  *Denominator*: total number of children investigated for haemoglobin status

*Source: WHO.Helminth Control in School-Age children. 2002*
Indicators for the monitoring of impact of preventive chemotherapy interventions

- In School-age Children:
  - Prevalence of infection (parasitological methods)
  - Intensity of infection (proportion of heavy intensity infections)
  - Prevalence of anemia
  - Prevalence of liver damage (lesions) detected by ultrasound.

*WHO. Preventive Chemotherapy for Human Helminthiasis. 2006, Table 3.*
Key documents
Gaps

- 4.3 million of school age children & 1.8 million pre-school age children may need annual Massive Drug Administration
- Survey + scale up for elimination: Suriname & St. Lucia
- Survey + Scale up for control: Brazil & Venezuela
- Surveys + Mapping for verification of interruption of transmission: Dominican Republic, Puerto Rico, Martinique, Guadalupe
- Regional criteria for schistosomiasis elimination in low endemicity areas
Quick wins

- Determine if transmission has been eliminated: Puerto Rico, Dominican Republic & French territories
- Map and begin MDA campaign: Suriname
- Eliminate transmission: St. Lucia
Discussion Points

- Low Transmission areas:
  - Usefulness of parasitological techniques
  - Usefulness of serological test for individual testing and for epidemiological surveillance
  - Usefulness of classical methods and/or molecular tools for monitoring of the snail host
  - MDA vs. individual/targeted/family treatment

- Coordination with activities of STH surveillance and control (surveys and massive drug administration)

- Snail surveys

- Follow-up surveillance after elimination
Thank you very much