Characterising persistent hot-spots of urogenital schistosomiasis on Unguja Island, Zanzibar

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Outline

Identifying...

Surveying...

Characterising...

Tackling...

...persistent hot-spots on Unguja Island
Distribution of *S. haematobium*

Unguja, Zanzibar

Overall *S. haematobium* prevalence <5%

Some areas with much higher prevalence = persistent hot-spots
Selection of persistent hot-spots

ZEST Annual: Single urine filtration examination of ~100 schoolchildren per school (9-12 years)

Prevalence data 2012-2014

>15% *S. haematobium* at some point over 3 years
  = 5 persistent hot-spots

<5% *S. haematobium* at some point over 3 years
  = 2 low-prevalence areas*
Surveying human-water contact sites and safe-water sources

**Mapping**
- Schools
- Human-water contact sites (i.e. ponds, rivers, streams, rice paddies)
- Safe water sources (i.e. taps, wells etc)

**Snail surveys**
- Presence of [patent] infected and uninfected *Bulinus globosus*
- Habitat and behavioural surveys

**Safe water source availability**
- Reliability questionnaire
<table>
<thead>
<tr>
<th></th>
<th>Persistent hot-spot</th>
<th>Low-prevalence area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment Coverage</strong></td>
<td>≈ &gt;75%</td>
<td>≈ &gt;75%</td>
</tr>
<tr>
<td><strong>Human-Water Contact Sites (HWCSs)</strong></td>
<td>More HWCSs (12)</td>
<td>Less HWCSs (2)</td>
</tr>
<tr>
<td><strong>Bulinus globosus HWCSs</strong></td>
<td>More HWCSs containing <em>B. globosus</em> (8)</td>
<td>Less HWCSs containing <em>B. globosus</em> (2)</td>
</tr>
<tr>
<td><strong>Infected <em>Bulinus globosus</em></strong></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Distance from schools to HWCSs</strong></td>
<td>Shorter (229m)</td>
<td>Longer (722m)</td>
</tr>
<tr>
<td><strong>Risk behaviours at HWCSs</strong></td>
<td>More common</td>
<td>Less common</td>
</tr>
<tr>
<td><strong>Number of Safe Water Sources</strong></td>
<td>45</td>
<td>38</td>
</tr>
<tr>
<td><strong>Safe Water Source impact</strong></td>
<td>Generally poor accessibility and availability</td>
<td>Generally poor accessibility and availability</td>
</tr>
<tr>
<td><strong>Number of taps</strong></td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>
The number of human-water contact sites, their infestation with *B. globosus* and their distance to schools seem to play a major role for a persistently high *S. haematobium* prevalence in children.
Tackling persistent hot-spots

**Treatment +**
- Targeted snail control near schools
- Enhanced behaviour change measures
- Increasing access to reliably working taps

= reduce *S. haematobium* prevalence in hot-spot areas and reach **elimination**
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