A Comparative Analysis of Parallel Parasitic Disease Surveillance Systems in China: Schistosomiasis in Sichuan Province

Maggie Bale
Rollins School of Public Health
Hubert Department of Global Health

BACKGROUND
Schistosomiasis has been a focus of China’s public health system since the 1950s. Parallel surveillance systems collect human, animal and environmental data on this disease:

• Routine Surveys
• National Sentinel Surveillance
• National Sampling Surveys
• Provincial Sampling Surveys
• National Infectious Disease Reporting

METHODS

• Interviews in English and Mandarin with officials at the Sichuan CDC Institutes of Parasitic Disease and Public Health Information to discuss surveillance system purpose, sampling design, strengths and limitations
• Interviews in Mandarin with officials at the Xichang County Anti-Schistosomiasis Station to understand details of on-the-ground implementation of surveillance
• Xiaoyu Gao, a Masters of Engineering student at Ohio State University and native of Sichuan Province served as translator for the interviews in Mandarin

PROJECT TIMELINE:
June 2011: Background research on surveillance system theory
July-August 2011: Travel to Chengdu and Xichang, Sichuan Province, China to meet with SCDC officials
September-December 2011: Summarize findings

PROJECT GOALS

Document a detailed characterization of the surveillance systems in place for schistosomiasis in China. Prepare a comprehensive report and, ultimately, manuscript reflecting on the present and future of parasitic disease surveillance in China.

PROJECT PARTNERS

• Sichuan Centers for Disease Control and Prevention
• Xichang Anti-Schistosomiasis Station
• Remais Research Group

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Table 1: Summary of Schistosomiasis Surveillance Systems

<table>
<thead>
<tr>
<th>Year initiated</th>
<th>NIDR</th>
<th>Sentinel</th>
<th>Routine</th>
<th>Nat’l/provincial sampling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coverage</td>
<td>All hospitals</td>
<td>80 sentinel villages</td>
<td>All endemic villages in endemic counties</td>
<td>1% of endemic villages in endemic provinces</td>
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<tr>
<td>Purpose</td>
<td>Describe disease patterns to provide evidence for policy-making.</td>
<td>Longitudinally monitor the schistosome-endemic situation over time.</td>
<td>Evaluate control measures.</td>
<td>Clarify the endemic status of schistosomiasis established by previous National Sampling Surveys.</td>
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<tr>
<td>Information collected</td>
<td>Individual cases (demographics, patient residence, diagnosis, treatment and hospital)</td>
<td>Snail habitat, human infection and intensity, bovine infection</td>
<td>Snail habitat, human infection</td>
<td>Human infection and intensity, bovine infection, snail habitat</td>
</tr>
</tbody>
</table>

CHALLENGES

• Decreased prevalence = fewer cases, poses sampling challenge
• Decreased infection intensity = more false negatives
• Political pressure to maintain Transmission Control status
  • No acute cases
  • < 1% human infection rate
  • No infected snails
• Diagnostics have limited capabilities in detecting low intensity infections
• Villager fatigue
• Integrating schistosomiasis surveillance systems

REFERENCES


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