Seasonal Malaria Chemoprevention
An Innovative Strategy to Reduce Malaria Morbidity and Mortality

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Background

- Global shift from a ‘one size fits all’ approach to the targeting of malaria control strategies to specific populations and/or locations for maximum effectiveness

- Based on accumulated evidence, in 2012, the World Health Organisation (WHO) issued a policy recommendation for a new intervention against *Plasmodium falciparum* malaria, *Seasonal Malaria Chemoprevention (SMC)*, previously referred to as Intermittent Preventive Treatment in children (IPTc)
What is Seasonal Malaria Chemoprevention?

- Intermittent administration of full treatment courses of an antimalarial treatment combination during the malaria season to prevent malaria illness

- Drug combination of choice is at present amodiaquine/sulfadoxine-pyrimethamine (AQ/SP)

- Objective of SMC is maintaining therapeutic antimalarial drug concentrations in the blood throughout the period of greatest risk
Research evidence to support effectiveness of SMC

Meta analysis and a Cochrane Review - potential impact:

► If all of the SMC suitable areas of Sahel and sub-Sahel was covered; **approximately 5 million malaria episodes and 20,000 deaths could be averted***


► Intervention shown to be effective, cost effective, and feasible

► Modelling of the cost effectiveness indicates it is highly cost effective even in low transmission areas

Malaria Consortium SMC project in Nigeria

An implementation trial to explore the feasibility, effectiveness, acceptability and costs of a community-based delivery system for SMC in Katsina state, Northern Nigeria

Project supported by Bill & Melinda Gates Foundation and the Department for International Development/UKaid
Why Katsina State

- Katsina State is within the Sahel Region; rainy season and peak malaria incidence from July to October
- 2012 estimated population of 6,916,641
  - 1,383,328 under-5 years
  - 600,281 cases of malaria (2008)
  - 4,103 malaria related deaths
- Katsina overall under-5 mortality rate 180 per 1,000 live births
Objective 1: To design in consultation with key local stakeholders, community-based delivery systems for SMC which will review aspects relating to feasibility, community acceptability, effectiveness and cost.

Objective 2: To launch and execute SMC delivery in selected areas using predetermined delivery systems and collect data on process indicators including cost.

Objective 3: To disseminate findings and share experiences with stakeholders to inform scale up and national plans for SMC.

Objective 4: To evaluate community acceptability, costs and effectiveness of the delivery system for SMC.
Year 1 (Oct12 - Sep13) | Year 2 (Oct13 - Sep14) | Year 3 (Oct14 - Sep15)
---|---|---
Formative research | Baseline survey | Qualitative review

Costing analysis

Routine M&E (HMIS)

Case control study

Endline survey

SMC delivery (2 LGAs)

SMC delivery (4 LGAs)
In consultation with the State MOH and SMCP, four LGAs were chosen.

- Two for implementation of SMC and two for control in 2013.

- Full implementation in four LGAs in 2014.
Process of implementation 1

- Choice of location: LGAs jointly chosen with MoH at Central and State levels during joint planning meetings
- Widespread consultative process within State to obtain consensus among health authorities, (State and LGA) political, traditional, religious and community leaders including nomad organisations
- Estimating the population to be covered
- Mapping settlements including remote and mobile populations and estimation of coverage population
- Ordering of drugs (regulatory requirements, and importation)
- Ensuring the availability of AL, an ACT no containing AQ, and RDTs to test for malaria in all receiving health facilities
Community Mobilisation Activities
Fixed post delivery

Household to household delivery

12 to 59 month blister pack in Arabic

PREVENTION | DIAGNOSIS | TREATMENT | RESEARCH
Process of implementation 2

- Logistics planning including supply chain management
- Development of training plan and tools in collaboration with state health personnel based on formative research; e.g., training materials, fixed-dose packaging and BCC materials
- Selection and training of 2,500 community caregivers (CCGs) and supervisors to deliver the intervention and complete the necessary forms
- Training of health workers on use of pharmacovigilance forms and management of breakthrough cases
- Selection of sentinel sites and training for case control study
Multiple training materials for various participating groups
Community Caregiver job aid

Page 2 of the CCG Job Aid in English and Hausa
Community Care Givers (CCGs) completing training

Health facility staff trained in use of RDTs and treatment of malaria cases
Monitoring and evaluation

- **Coverage:** Registration
- **Efficacy:** Case Control Study
- **Effectiveness:** Post distribution survey to explore issues such as adherence and confirmation of coverage
- **Resistance:** Filter papers collected for PCR for resistance markers
- **Pharmacovigilance:** register details minor side effects. Data collection tools for severe adverse events in all health facilities and training of staff.
- **Acceptability:** community dialogues post distribution
## Results

In wards near the border there were consistently higher numbers of children than expected leading to a suspicion of cross border movements

<table>
<thead>
<tr>
<th>Round</th>
<th>Target</th>
<th>Number receiving SMC</th>
<th>Coverage (%)</th>
<th>Referred (%)</th>
<th>Vomiting (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st August</td>
<td>141,842</td>
<td>131,227</td>
<td>94%</td>
<td>8,872 (7)</td>
<td>913 (0.7)</td>
</tr>
<tr>
<td>2nd September</td>
<td>141,842</td>
<td>177,467</td>
<td>127%</td>
<td>6,001 (3.38)</td>
<td>1,644 (0.9)</td>
</tr>
<tr>
<td>3rd October</td>
<td>141,842</td>
<td>176,659</td>
<td>126%</td>
<td>3,210 (1.8)</td>
<td>1,052 (0.5)</td>
</tr>
</tbody>
</table>
The reduction in expected malaria cases seen in health facilities was around 60% during the peak transmission season in September.

A greater reduction might have been demonstrated if drug distribution had been initiated in late July rather than late August.
Scale up plan in Nigeria

- National Malaria Elimination Programme (NMEP): Inclusion of SMC strategy in policy revision and in the new National Strategic Plan
- NMEP to write to drug regulatory agency (NAFDAC) on safety profile of SP-AQ, inclusive of procedures for pharmacovigilance
- Technical expert group set up by the NMEP within the case management sub committee
- Resource mobilisation drive: resources from DFID through the SuNMaP project to extend implementation to Jigawa state on the back of lessons identified
Scale up – plans and possibilities

Sahel Region contains 24.2 million children under five years. (Another 10 million in Southern Africa could also be targeted)

- In Nigeria in 2014 (9.2 million children) Malaria Consortium will target 500,000 children in Katsina and Jigawa state (CHAI will also implement in Kano state if funding can be obtained)

- Countries in the Sahel are planning to include SMC in Global Fund new funding model proposals with support from WARN and CARN (RBM)

- Proposed UNITAID partnership: Malaria Consortium, CRS, MMV, MSH, Speak up Africa will cover 7.6 million children in 7 countries from 2015

- Internal resources within the countries could be mobilised including government and private funding
Other issues for consideration

- Southern African countries need a different drug combination
- Children under 10 years protected (as in Senegal)?
- How far can SMC be extended before it becomes mass drug administration and what effect will SMC have on transmission if it continues to be confined to children under five?
- How will the concentration on SMC affect the funding of other more universal interventions such as mosquito net and case management coverage?
- How long will the combination of AQ/SP last before drug resistance develops?
The future

- Huge planning and funding gaps need to be filled if SMC is to be implemented in a comprehensive manner which would improve both effectiveness and cost effectiveness.

- Attention needs to be paid to Monitoring and Evaluation (M&E) including maintaining high coverage, pharmacovigilance (safety) and efficacy (resistance) to make sure optimal results are continued over the years.
Acknowledgements

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- The communities
www.malariaconsortium.org

Thank you