Behavior Change Interventions for Malaria Programs

Peter Winch
RBM Program Implementation

- RBM is using a new approach to program implementation
  - Decentralized decision-making
  - Collaboration between a variety of partners in implementation
  - Emphasis on behavior change at household and community levels
Key RBM Interventions

- Early and appropriate treatment of malaria, especially in under-fives
- Prevention and control of malaria in pregnancy
- Insecticide-treated mosquito nets
Key RBM Interventions

- Each are supported by the results of high-quality research that has demonstrated their impact.
- Nevertheless, limited evidence of significant decreases in malaria-related mortality and morbidity in sub-Saharan Africa, with some exceptions (Eritrea, South Africa, Botswana, southern Mozambique, parts of Tanzania).
Key RBM Interventions

- Why aren’t we seeing greater results from implementation of RBM interventions?
Early and appropriate treatment of malaria, especially in under-fives
Early and Appropriate Treatment of Malaria, Especially in Under-Fives

- Approaches to implementation
  - Health facilities
  - Community health workers
  - Mothers
  - Private providers
Early and Appropriate Treatment of Malaria by CHWs: Traditional Approach

- Presumptive treatment of fever with first-line antimalarial
- Referral of cases with signs of severity to health facility
- NO:
  - Use of microscopy or diagnostic tests
  - Training on assessment or management of ARI/pneumonia
Example: CHW Program in Southern Mali
# Health Indicators for Mali from DHS Surveys

<table>
<thead>
<tr>
<th></th>
<th>1995/6 DHS</th>
<th>2001 DHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fertility Rate 15-49 yrs</td>
<td>6.7</td>
<td>6.8</td>
</tr>
<tr>
<td>Under five mortality rate</td>
<td>237.6/1000 live births</td>
<td>229.1/1000 live births</td>
</tr>
</tbody>
</table>
Structure of a Health Zone

- Health center
- Village drug kits
Early and Appropriate Treatment of Malaria by CHWs: Current Challenges

- Chloroquine has been the gas in the tank of CHW programs: Safe, effective, and inexpensive. Alternatives are less safe and more expensive.

- Many Ministries of Health feel that Artemisinin Combination Therapy (ACT) should not be placed in the hands of CHWs.
Issues Related to ACTs

- High cost
  - If paid by customer: Will customer be willing to pay versus getting chloroquine from the market
  - If paid by government: Will government allow CHW prescribing of ACTs, concern about wastage
- Counseling: Can CHWs effectively counsel parents/patients on ACT administration?
- RDTs: Many governments don’t want ACTs given without positive microscope or RDT
RDTs

- Some CHW programs have used microscopy
- Some examples of CHWs using RDTs, minimal training and supervision needed compared to microscopy:
  - Used ParacheckPf and OptiMAL
Issues with RDTs

- Cost compared to drugs, in Laos study:
  - Paracheck Pf $0.75
  - OptiMAL $1.95

- What to do with people with negative RDT who still want treatment?

- What to do if people have signs of malaria and are very sick, but negative RDT?
Discussion Question #1

- In southern Mali would you:
  - Allow CHWs to dispense ACTs?
  - Train CHWs to use RDTs?
- What do you do with people who test negative with RDTs?
- What behavior change communication would be needed to introduce ACTs?
# Sources of Care for Sick Children

Survey conducted in Bougouni District, Mali, April 2004, \( n = 228 \)

## Appropriate sources of modern medications/care

<table>
<thead>
<tr>
<th>Source</th>
<th>Number (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community health centre</td>
<td>68 (29.8%)</td>
</tr>
<tr>
<td>District referral hospital</td>
<td>2 (0.9%)</td>
</tr>
<tr>
<td>Community health worker operating a drug kit</td>
<td>27 (11.8%)</td>
</tr>
<tr>
<td>Maternity/nurse’s aide</td>
<td>19 (8.3%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99 (43.4%)</strong></td>
</tr>
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</table>

## Unauthorized sources of modern medications

<table>
<thead>
<tr>
<th>Source</th>
<th>Number (Percentage)</th>
</tr>
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<tbody>
<tr>
<td>Vendors in the market</td>
<td>92 (40.4%)</td>
</tr>
<tr>
<td>Small shop/ambulatory vendor</td>
<td>43 (18.9%)</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>5 (2.2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124 (54.4%)</strong></td>
</tr>
</tbody>
</table>

## Traditional sources of care

<table>
<thead>
<tr>
<th>Source</th>
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<tr>
<td>Traditional healer</td>
<td>53 (23.3%)</td>
</tr>
<tr>
<td>Old “wise” woman</td>
<td>59 (29.9%)</td>
</tr>
<tr>
<td>Traditional medications prepared by family</td>
<td>94 (41.2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>170 (74.6%)</strong></td>
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## Sources of Care for Sick Children

Survey conducted in Bougouni District, Mali, April 2004, n=228

<table>
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<tr>
<th>Appropriate sources of modern medications/ care</th>
<th>What we mostly teach about</th>
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<table>
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<tr>
<th>Unauthorized sources of modern medications</th>
<th>What we teach very little about</th>
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Intervention Models to Improve Quality of Care in Private Sector

- Increasing quality of care in pharmacies → Accredited Drug Dispensing Outlets
  - www.msh.org/seam/country_programs/3.1.4b.htm

- Vendor-to-vendor interventions
  - www.malariajournal.com/content/2/1/10

- Negotiation ("contracts") with private providers to change behavior
Discussion Question #2

- Should the private/informal sector be involved in the introduction of ACTs?
- How should the private/informal sector be involved?
Improving Care During the Rainy Season
The Major Constraints Converge During the Rainy Season

- How?
- Why is it important?
Seasonality of Household Expenditures and Revenues

- During rainy seasons when malaria transmission is greatest:
  - Decrease in household revenue
  - Increase in household expenditure
  - Increase in workload

- Resulting in:
  - Less careseeking from health facilities
  - Greater use of traditional medicine
Seasonal Variations in Household Expenditures and Revenues, Burkina Faso

## Seasonal Variations in Patterns of Illness Treatment, Burkina Faso

<table>
<thead>
<tr>
<th></th>
<th>Dry season</th>
<th>Rainy season</th>
</tr>
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<tbody>
<tr>
<td>No. households</td>
<td>566</td>
<td>547</td>
</tr>
<tr>
<td>No. individuals</td>
<td>4820</td>
<td>4634</td>
</tr>
<tr>
<td>No. ill individuals</td>
<td>867 (18%)</td>
<td>636 (13.7%)</td>
</tr>
<tr>
<td>Episodes/person</td>
<td>1.21</td>
<td>1.18</td>
</tr>
<tr>
<td>No. illness episodes</td>
<td>1050</td>
<td>752</td>
</tr>
<tr>
<td>No. episodes treated</td>
<td>674 (64.2%)</td>
<td>259 (34.4%)</td>
</tr>
<tr>
<td>No. treatment episodes</td>
<td>829</td>
<td>282</td>
</tr>
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</table>
Discussion Question #3

- How would you improve access to treatment during the rainy season in Burkina Faso?
Discussion Question #4: Constraints on Behavior in Pregnant Adolescents
Burden of Malaria in Pregnancy

- Malaria contributes to negative health impact of both mothers and infants:

  **Mothers**
  - 3-15% of severe anemia
  - up to 10,000 malaria anemia-related deaths per year

  **Infants**
  - 8-14% of all low birth weight
  - 30% of preventable low birth weight
  - 3-8% of infant mortality
Malaria in Pregnancy

- Pregnancy makes women more vulnerable to malaria, resulting in high morbidity and mortality:
  - Malaria infection can lead to acute disease and anemia
  - Malaria parasites accumulate in the placenta
- Anemia and placental malaria are associated with low birth weight
- Low birth weight is the single greatest risk factor for neonatal death
Prevention Measures

- Antimalarial drugs
  - Chemoprophylaxis
  - Presumptive intermittent therapy (PIT)

- Insecticide-treated materials (ITMs)
Malaria in Pregnant Adolescents

- **BIOLOGICAL RISKS:**
  - Anemia common in adolescence
  - Risk of malaria in pregnancy during first gestation
  - Reduced pelvic size: Pelvis still growing
  - Risk of toxemia in first gestation
Malaria in Pregnant Adolescents

- **SOCIAL RISKS:**
  - First pregnancy may not be declared until near the end
  - No autonomy in decision making
  - May have no previous contacts with health system
  - Less access to money
Discussion Question #4: Malaria in Pregnant Adolescents in Country X

- Program is in place, but coverage is limited to referral-care facilities and urban hospitals
- Official policy has been chemoprophylaxis 2 tabs CQ/week from 8th wk, but this policy never implemented
- New policy is treatment with SP twice during pregnancy at beginning of 2\textsuperscript{nd} and 3\textsuperscript{rd} trimesters
Social and Cultural Factors

- Don’t want to make their pregnancy public
- May be abandoned by the family
  - Mother and father reject her
  - She goes to live with grandparents
- Drop out of school
Questions for Example #4

- You are director of RBM program in this country. Coverage of program has been restricted to the capital until recently.
  - What are your proposed interventions for preventing and treating malaria in pregnancy?
  - What is your strategy for reaching adolescent girls?