Background

- Integrated Community Case Management (iCCM) of childhood illness is an evidence-based strategy to extend the treatment of leading causes of death in children to hard-to-reach areas, under-served by health facilities to increase timely access to & use of lifesaving treatments.

Kenyan iCCM Package:

1) Diagnosis and Treatment of Malaria
2) Diagnosis and Diarrhea;
3) Referral of Suspected Pneumonia; Malnourished Children* and Newborn sepsis

Many countries include treatment for pneumonia
iCCM Implementation Research in Bondo

**Rationale:** Lessons learned to inform iCCM scale-up to other areas in Kenya and inform policy at national level
Specific objectives (1)

1. To determine changes in the community's knowledge and practices including care-seeking behaviour.

2. To document the feasibility of iCCM implementation through the assessment of CHV performance, CHV satisfaction, client satisfaction and implementation challenges.
Specific objectives (2)

3. To document the extent to which community health extension workers (CHEWs) provide support to CHVs and challenges the CHEWs face.

4. To document the extent to which Sub-County health management committees (SHMTs), and community leaders were able to support implementation of the iCCM package and the challenges faced.

5. To document the cost of implementing iCCM in Bondo Sub-County over an 18-month period of implementation.
Map of Study Area- Bondo
Study Area & Selection Criteria

• There were 4 intervention & 4 comparison CUs identified based on:
  o Distance
  o Link facility operational for less than 24 hours daily
  o Poverty
  o Poor infrastructure/lack of reliable transportation
  o Religious/cultural issues affecting care seeking behaviour
Study Design

• **Quasi-experimental** pretest-posttest design, without randomization to intervention and comparison groups

• **Evaluation methods** included:
  1. household surveys
  2. direct observation of CHVs during case management,
  3. key informant interviews, and
  4. analysis of implementation monitoring program data (including direct costs)
Household Survey – Identification of Sick Child

• Household (HH) selection was through a two stage cluster sampling with villages within the CU being the “clusters”
### Table 2: packages implemented

<table>
<thead>
<tr>
<th>Service package to CHVs and CHEWs</th>
<th>Intervention CUs (Experimental)</th>
<th>Comparison CUs (Usual care)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCC training and provided tools (e.g. gum boots, torch, and bags – to carry data tools and supplies) to all CHVs</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Provided CHVs basic monthly stipend to CHVs</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Support monthly meeting between CHEWs/ CHVs/ CHCs (e.g. to distribute M&amp;E tools and transport reimbursement)</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Provided CHVs with basic CHVs kit: ITNs, Vitamin A, deworming tablets, condoms, torch, registers and health promotion materials.</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Provided basic CHVs kit PLUS iCCM commodities- ORS, zinc, RDTs, ACTs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trained CHVs in iCCM</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Trained CHEWs on iCCM and IMCI</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Study Timeline

- **2013**
  - Sep: Baseline survey
- **2014**
  - Mar: iCCM project implementation
  - Jul: Midline survey
- **2015**
  - Mar: iCCM implementation in Comparison CUs
  - May: End line survey
CHEW capacity building for iCCM at Intervention CU

- ICCM training
- Introduction to ICCM commodity tools
- Building Monitoring methods for CHVs
- IMCI refresher training
Changes in the Comparison Group during the study period

- Some villages and CHVs in the comparison CUs were involved in a **malaria incidence and surveillance cohort study** from November 2013 to November 2015 and were trained to provide diagnosis and treatment for malaria using RDTs and ACTs.

- Training of CHVs on iCCM in the comparison group begun **6 months** prior to the end line survey, as part of Siaya County iCCM roll out plan.

- **3 months** before the end line survey, CHVs in the comparison CUs commenced community case management of diarrhea and management of malaria, as part of Siaya county roll out of iCCM.
Findings
Key finding: Changes in Care giver Knowledge and Practice

Graph 1: Practices & Knowledge of Caregivers
Key finding: Changes in Care seeking Behavior

Graph 2: Time taken by care giver to seek treatment

<table>
<thead>
<tr>
<th>Time taken to seek treatment after onset of fever</th>
<th>Intervention BL (n=295)</th>
<th>Comparison BL (n=328)</th>
<th>Intervention EL (n=306)</th>
<th>Comparison EL (n=304)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same day</td>
<td>14</td>
<td>15</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Next day</td>
<td>26</td>
<td>41</td>
<td>44</td>
<td>57</td>
</tr>
<tr>
<td>After 2 days</td>
<td>25</td>
<td>21</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>After 3 days</td>
<td>6</td>
<td>5</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>After 4 or more days</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
**Key finding: CHV Competence (1)**

**Graph 3: Identification of Danger Signs**

<table>
<thead>
<tr>
<th>Introduction and history taking</th>
<th>Baseline</th>
<th></th>
<th></th>
<th></th>
<th>End line</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>P**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=115</td>
<td>percent</td>
<td></td>
<td></td>
<td>N=206</td>
<td>percent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CHV asked caregiver for the following danger signs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convulsions with this illness</td>
<td>38</td>
<td>33.0</td>
<td></td>
<td></td>
<td>197</td>
<td>95.6</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty in drinking, feeding or breastfeeding</td>
<td>54</td>
<td>47.0</td>
<td></td>
<td></td>
<td>202</td>
<td>98.1</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not able to drink or eat</td>
<td>34</td>
<td>29.6</td>
<td></td>
<td></td>
<td>202</td>
<td>98.1</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vomiting everything</td>
<td>39</td>
<td>33.9</td>
<td></td>
<td></td>
<td>195</td>
<td>94.7</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lethargic or unusually sleepy or unconscious</td>
<td>18</td>
<td>15.7</td>
<td></td>
<td></td>
<td>162</td>
<td>78.6</td>
<td>&lt;0.001</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Key Finding: CHV Competence (2)

Graph 4: Conducting malaria Rapid Diagnostic Test

<table>
<thead>
<tr>
<th>Assessment &amp; Conducting RDT</th>
<th>Baseline</th>
<th>End line</th>
<th>p**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 115</td>
<td>N = 206</td>
<td></td>
</tr>
<tr>
<td></td>
<td>percent</td>
<td>percent</td>
<td></td>
</tr>
<tr>
<td><strong>Acute respiratory infection</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHV asked if child had cough</td>
<td>102</td>
<td>205</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHV asked about the duration of cough*</td>
<td>82</td>
<td>139</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Diarrhoea</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHV asked if child had diarrhoea</td>
<td>86</td>
<td>203</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHV asked for duration of the diarrhoea illness*</td>
<td>37</td>
<td>61</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Asked for presence of blood in the diarrhoea*</td>
<td>28</td>
<td>52</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Fever</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHV asked if child had fever</td>
<td>110</td>
<td>206</td>
<td>0.006</td>
</tr>
<tr>
<td>CHV asked for duration of fever*</td>
<td>81</td>
<td>195</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Performed an RDT test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performed an RDT test</td>
<td>0.0</td>
<td>189</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Wiped finger using sterile swab/spirit swab before pricking</td>
<td>0.0</td>
<td>189</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHV collected blood using capillary tube 45 degree angle</td>
<td>0.0</td>
<td>187</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHV added buffer solution drops correctly to test cassette</td>
<td>0.0</td>
<td>189</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHV timed duration prior to reading the test results</td>
<td>0.0</td>
<td>188</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>CHV reads RDT test results</td>
<td>0.0</td>
<td>181</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Assessor agrees with CHV interpretation of test result</td>
<td>0.0</td>
<td>181</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Key Finding: CHV Competence (3)

Graph 5: Competence in Physical Assessment of sick child

- CHV assessed for chest indrawing: 3% (Intervention BL), 96% (Intervention EL)
- CHV assess for fast breathing by counting breaths in 1 minute: 0% (Intervention BL), 74% (Intervention EL)
- CHV assessed whether child was lethargic: 4% (Intervention BL), 92% (Intervention EL)
- CHV assessed malnutrition status using MUAC tape: 10% (Intervention BL), 97% (Intervention EL)
- CHV used thumbs to press and demonstrate swelling of both feet: 2% (Intervention BL), 98% (Intervention EL)
- CHV assessed all symptoms for fever, diarrhea and cough correctly: 10% (Intervention BL), 80% (Intervention EL)

Performance of Physical Examination of Sick Children by CHVs
Summary of CHV’s Competences

Community Health Volunteers

• There was a significant improvement in CHV knowledge of common causes of death in children under five years of age, particularly knowledge of pneumonia,

• *CHV clinical skill improved* as follows:
  o assessment of danger signs
  o performance of physical examination
  o correct performance and interpretation of malaria RDT
CHEWs were knowledgeable about iCCM and saw it as their primary responsibility to mentor/supervise CHVs.

CHEWs recommended scaling up, strengthening training and mentorship, and ensuring a steady supply of commodities.
Qualitative Results - SCHMTs

The Bondo Sub-County health committee members said:

- implementing iCCM had improved the structure of supportive supervision of CHVs by the CHEWs and strengthened collaborations and partnership among community health stakeholders in the Sub-County.

- *It [iCCM] has been useful. It has reduced workload at the health facility and there has been improvement in treatment seeking behaviour by the community.*

  *SHMT member #4*
Qualitative Results - Community Leaders

• Quote…In my church today, I rarely hear of death of children under five, [which] means that some good work is being done by the CHVs and iCCM. Most women deliver in health facilities

  Religious leader #7 (Comparison)

• CHCs are CHVs supervisors in the community, but one can only supervise what she/he knows or understands better than the supervisee.

  CHC #9 (Intervention)
CONCLUSIONS & RECOMMENDATIONS
Conclusions

- CHVs can implement iCCM with appropriate training, mentorship, supervision & support from health managers and community leaders.
- Trained CHEWs provided mentorship and supportive supervision for CHVs implementing iCCM.
- Role of SCHMT is critical in ensuring sufficient commodities to provide iCCM services.
- Community leaders supported iCCM implementation and perceived iCCM to have a positive impact on health of children.
- Bondo SCHMT using best practices from this iCCM study to inform scale up to the rest of Bondo sub county.
Recommendations (1)

**iCCM Service delivery**
- Expand iCCM to all underserved communities in the County
- Ensure a steady supply of medicines and test kits for iCCM
- Integrate iCCM into routine M&E to document service utilization and quality of care

**Management and administration**
- Pay stipends regularly to motivate CHVs
- Provide CHVs with tools e.g. bicycles to facilitate household visits in addition to the medicine kits
- Allocate resources at county level for SCHMT and CHEWs to do regular supportive supervision and mentorship
Recommendations (2)

Community engagement

• Strengthen community mobilization activities to create more awareness of iCCM services and continue to engage local leaders in the planning, social mobilization and implementation of iCCM.

• Reorient CHC members on their roles and responsibilities as outlined in the community health strategy implementation guide
Additional studies and analysis

- Develop and use appropriate tools to enable determination of actual implementation costs for iCCM programs
- Review of community referral system and counter referral system to ensure “no missed opportunity”
Acknowledgement

- Ministry of Health, Kenya
- County Health Management Committees (Siaya, Kisumu, Migori)
- USAID, UNICEF,
- MCSP/Washington; MCSP Kenya
- Community & Religious Leaders
- CHVs & CHEWs in Bondo & Siaya
- Partners in Siaya, Migori & Bondo
Thank You
Institutionalizing Community Health Conference
27-30 March 2017 | Johannesburg, South Africa

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