Costs and sustainable financing of integrated community case management of common childhood illnesses in Uganda and Mozambique

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**Introduction**
Integrated community case management (iCCM) involves the community-based diagnosis and treatment of malaria, pneumonia and diarrhoea, taking into account that children may often be ill from multiple causes simultaneously and that economic, geographical and social barriers may delay care-seeking at health facilities.

**Objective**
This study presents a cost analysis of two regional iCCM programmes in Uganda and Mozambique and discusses programme financing in relation to current national plans and global initiatives to support and sustain iCCM.

**Methods**
Expenditures and resource use data were collected through a combination of top-down and bottom-up approaches during the implementation of iCCM in mid-western Uganda and southern Mozambique in 2010-2013. The opportunity cost of time of the volunteering CHWs in Uganda was estimated and included in the analysis,1 as well as the present value of other community members participating in training, community sensitization and other project activities. Economic provider costs are presented, in 2016 US$.

**ICCM programme characteristics**

<table>
<thead>
<tr>
<th>Country</th>
<th>Length of total CHW training</th>
<th>CHW remuneration</th>
<th>CHW in service at end of implementation</th>
<th>Average number of consultations in children &lt;5 (2011/2012)</th>
<th>Average number of CHW household visits (2011/2012)</th>
<th>Proportion of ill children &lt;5 first taken to a CHW for diagnosis and treatment (2011/2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>2 weeks</td>
<td>None (volunteers)</td>
<td>7,098</td>
<td>8.9 per month</td>
<td>9.3 per month</td>
<td>20%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>4 months</td>
<td>None</td>
<td>156</td>
<td>39.7 per month</td>
<td>49.6 per month</td>
<td>30%</td>
</tr>
</tbody>
</table>

**Discussion**
Historically, CHW programmes have faced challenges in maintaining effectiveness at scale: Quality supervision, continuous training and delivery systems for drugs and other supplies to avoid stock-outs, are widely acknowledged in the literature as crucial for the sustainability of programmes.1,2 ICMC has been sponsored and promoted by international agencies, and in most countries in sub-Saharan Africa implementation has been managed by international organisations.3,4 External financing can be an important driver in the decision to introduce a new health programme, however a lack of national ownership and national policy-maker concerns about sustainability, budgetary as well as operationally, has delayed alignment of iCCM into national health policies and budgets in many countries.5 This may to some extent be mitigated by recently launched global funding models aiming at strengthening the financing for integrated health services delivery such as iCCM beyond commodity supply to also include investments in human resources and information systems strengthening.

**Results**
Start-up costs per CHW were $397 in Uganda (6-day iCCM training) and $4,746 (4-month general CHW training) in Mozambique. Average annual running cost per CHW by year 3 were $347 in Uganda and $6,697 in Mozambique. Drugs and diagnostics supply constituted 43% and 45% of running costs in Uganda and Mozambique respectively, the estimated time value of the volunteering CHWs in Uganda 27%, and CHW salaries in Mozambique 10%.

**Conclusion**
Start-up and running costs per CHW during implementation differed substantially between the two iCCM programmes with different training lengths and population coverage per CHW. However, the cost per child consultation - dependent of CHW workload - differed less and was partly explained by higher absolute costs of drugs in Mozambique. ICMC implementation costs and the drug/diagnostic supply constitute a substantial investment. This expenditure may be suboptimal if not supported by well-functioning communication between the facility and community level, and working models feasible for CHWs, to encourage CHW retention and performance. This will determine long-term costs and effectiveness of iCCM.

**References**