The Catalytic Initiative to Save a Million Lives was an international multi-donor partnership designed to accelerate progress on the health-related Millennium Development Goals (MDGs). As part of the Catalytic Initiative, from 2007 to 2013 the Canadian Department of Foreign Affairs, Trade and Development (DFATD) supported UNICEF’s Integrated Health Systems Strengthening (IHSS) programme in Ethiopia, Ghana, Malawi, Mali, Mozambique and Niger.

The aim of the IHSS was to reduce maternal and child mortality by strengthening the health system’s capacity to deliver high-impact interventions at the community level. During the first two years of implementation in Malawi, the IHSS supported a range of preventive interventions, including vaccinations, vitamin A supplementation and the distribution of insecticide-treated nets (ITNs). From 2009 to 2013, the programme supported the training and equipping of Health Surveillance Assistants (HSAs) to deliver integrated community case management (iCCM) of diarrhoea, malaria and pneumonia.

The IHSS was implemented in 10 districts in Malawi, which together contain 48 per cent of the population of the country.

Evaluation purpose and objectives

In 2014 DFATD and UNICEF contracted the Medical Research Council (MRC), South Africa, to conduct an external evaluation of the IHSS. The

UNICEF has been operating in Malawi since 1987. The current UNICEF/Government of Malawi Country Programme of Cooperation aims to support national efforts to realize the rights of children and women through improved child survival, development, protection and participation.

Operating from village clinics, HSAs are salaried government workers who have formed part of the backbone of the Malawi health system for decades.
The objectives of the evaluation were to assess the effect of the IHSS on the following:

- **Relevance**: Alignment with national priorities and plans, enhanced policy environment and promotion of gender equity.
- **Effectiveness**: Effect on strengthening the health system and the capacity of government and/or civil society organizations to train, equip, deploy and supervise front-line health workers to deliver a limited package of high-impact health interventions.
- **Impact**: Effect on coverage of health and nutrition interventions supported by the IHSS; as well as the effect on the number of additional lives saved calculated using the Lives Saved Tool (LiST).
- **Sustainability**: The cost of implementing iCCM and the organizational and financial sustainability of the programme.

The full evaluation report is available at [link](unicef.org/evaldatabase/index_82018.html). Evaluation briefs for each of the six countries and for the overall programme are available at [www.unicef.org/evaldatabase/index_82018.html](www.unicef.org/evaldatabase/index_82018.html).

### Table 1: Summary of coverage trend indicators (% and 95% confidence intervals)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Malawi (10 IHSS districts)</th>
<th>Average annual rate of change during IHSS (2006-2012). Data shown as % per year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tetanus toxoid vaccination of pregnant women (at least 2 doses)</strong></td>
<td>DHS 2000 (pre IHSS) 58 (56-61) DHS 2000 (pre IHSS) 72 (70-74) MICS 2006 (baseline) 72 (69-75)</td>
<td>2.3 (2.1-2.6) 0.0 (-0.4 - 0.4)</td>
</tr>
<tr>
<td><strong>IPTp</strong></td>
<td>MICS 2006 (baseline) 48 (46-51) MICS 2006 (baseline) 84 (82-87)</td>
<td>3.3 (3.1 - 3.6) 6.0 (5.7-6.3)</td>
</tr>
<tr>
<td><em>Postnatal care for the mother</em></td>
<td>DHS 2000 (pre IHSS) 3 (2-3) DHS 2000 (pre IHSS) 14 (13-16)</td>
<td>5.3 (3-7) 1.8 (1.7-2.0) -1.5 [-1.7-(-1.3)]</td>
</tr>
<tr>
<td><strong>Early breastfeeding</strong></td>
<td>MICS 2006 (baseline) 53 (51-56) MICS 2006 (baseline) 75 (72-79)</td>
<td>-2.5 [-2.7-(-2.2)] 3.7 (3.3-4.1)</td>
</tr>
<tr>
<td><strong>Exclusive breastfeeding</strong></td>
<td>MICS 2006 (baseline) 55 (50-60) MICS 2006 (baseline) 61 (57-64)</td>
<td>2.8 (2.3-3.4) 1.9 (0.7-1.7)</td>
</tr>
<tr>
<td><strong>Vitamin A supplementation</strong></td>
<td>MICS 2006 (baseline) 56 (52-59) MICS 2006 (baseline) 56 (52-59)</td>
<td>-0.7 [-0.9-(-0.5)] -3.2 [-3.6-(-2.7)]</td>
</tr>
<tr>
<td><strong>Measles immunization</strong></td>
<td>MICS 2006 (baseline) 80 (77-84) MICS 2006 (baseline) 87 (84-89)</td>
<td>0.2 (-0.2-0.5) 1.0 (0.7-1.3)</td>
</tr>
<tr>
<td><strong>DPT3 immunization</strong></td>
<td>MICS 2006 (baseline) 82 (79-85) MICS 2006 (baseline) 86 (83-88)</td>
<td>0.7 (0.4-1.0) 0.3 (0.0-0.7)</td>
</tr>
<tr>
<td><strong>Care-seeking for suspected pneumonia</strong></td>
<td>MICS 2006 (baseline) 26 (23-29) MICS 2006 (baseline) 52 (46-58)</td>
<td>4.3 (3.8-4.8) 4.3 (3.8-4.9)</td>
</tr>
<tr>
<td><strong>Care-seeking for fever</strong></td>
<td>MICS 2006 (baseline) 36 (33-38) MICS 2006 (baseline) 43 (40-46)</td>
<td>1.2 (0.8-1.5) 5.2 (4.7-5.5)</td>
</tr>
<tr>
<td><strong>ACT</strong></td>
<td>LQAS 2012/2013 (endline) 0.08 (-0.01-0.17)</td>
<td>53 (49-56) NA 8.8 (8.4-9.3)</td>
</tr>
<tr>
<td><strong>ITN</strong></td>
<td>LQAS 2012/2013 (endline) 2 (2-3)</td>
<td>25 (23-26) 46 (42-49) 3.8 (3.7-3.9) 3.5 (3.1-4.0)</td>
</tr>
<tr>
<td><strong>ORS coverage</strong></td>
<td>LQAS 2012/2013 (endline) 47 (42-52)</td>
<td>50 (46-53) 61 (57-64) 0.5 (0.0-1.0) 1.8 (1.3-2.3)</td>
</tr>
</tbody>
</table>

**Key findings and conclusions**

**Key conclusion 1: The IHSS was well aligned with the policies of the Government of Malawi.**

The introduction of the IHSS programme in Malawi occurred within the context of a coherent and conducive policy framework. The evaluation found that pre-existing policies and programmes, including a long-standing commitment to community-level health care and initiatives such as Reach Every District (RED) and Accelerated Child Survival and Development (ACSD), provided a strong foundation upon which iCCM could be implemented. As a result, alignment with the government’s priorities and integration into the national health system was achieved with relative ease. While there was initial resistance towards HSAs by some health professionals and experts, especially around treating children and dispensing drugs, the government’s commitment to and ownership of the programme led to their eventual acceptance and support.

**Key conclusion 2: By training more than 1,000 community health workers, the IHSS strengthened Malawi’s health system.**

The evaluation indicates that the IHSS supported iCCM training for 1,018 HSAs in the 10 focus districts, representing 16 per cent of the approximately 10,450 HSAs in Malawi (falling slightly short of the target of 1,470). The training involved a 12-week course on health surveillance and treatment and a further six days on iCCM. In addition, 3,946 nurses...
The programme also supported the introduction of a system through which HSAs are to receive one-on-one supervision at health facilities on a quarterly basis. Data from 2013 show that 53 per cent of HSAs had received supervision by an ICCM-trained supervisor in the last three months, and 48 per cent had had clinical observation of case management by a supervisor. While improvements are needed, the evaluation team found that the supervision system represented a significant achievement.

**Key conclusion 3: The IHSS supported the procurement and distribution of a range of essential supplies. However, stock outs were a major challenge.**

The evaluation found that the IHSS played a significant role in ensuring the provision and replenishment of supplies for ICCM in Malawi, including ITNs, oral rehydration salts (ORS), zinc, cotrimoxazole, fansidar, artemisinin-based combination therapy (ACTs) for malaria and bicycles. This support was especially important during the country’s economic crisis of 2010-2011, which involved fuel and currency shortages and a lack of funds from the Ministry of Health.

Despite these efforts, the evaluation found that stock outs were a major challenge, with two-thirds of HSAs experiencing stock outs of ORS and co-trimoxazole in the last three months. The evaluation team concluded that part of the problem lies in the fact that HSAs rely on health centres in their districts for supplies, and that those health centres struggle to maintain their own stocks, even without the added responsibility of supplying HSAs. The evaluation team found that innovations in supply chain management, such as ‘cStock’, a mobile phone platform, present promising opportunities for improving the situation.

**Key conclusion 4: The practice of having HSAs work in areas they do not reside in hindered utilization.**

Interviews conducted by the evaluation team indicated that communities were extremely happy with work of the HSAs. The beneficiaries generally felt that the presence of HSAs had brought significant change to their communities and to the management of sick children. However, utilization of HSAs was found to be low. In 2013, only 9 per cent of children with diarrhoea, malaria and pneumonia received care from an HSA, while 52 per cent received care from a health centre. While the low utilization of HSAs should be interpreted in light of the fact that the programme had only been at scale for 11 months at the time of the endline survey, the evaluation suggested that the national selection and deployment of HSAs, which leads to a situation in which most HSAs live a significant distance from the communities they serve, may be at least partly responsible. The situation is also difficult for the HSAs who have to travel long distances, often on foot, to reach the communities they work in. The government plans to address this problem by constructing new homes for HSAs in the communities where they are deployed.

**Key conclusion 5: The IHSS contributed to improvements in coverage of a number of high-impact, low-cost interventions.**

To assess the plausible contribution of the IHSS to changes in coverage of supported interventions, the evaluation team compared the annual rate of change in coverage between the pre-IHSS period (2000-2006) and the IHSS period (2006-2012). These data revealed improvements in rates of early initiation of breastfeeding, coverage of intermittent preventive treatment of malaria in pregnant women (IPTp), care-seeking for fever, measles immunization and ORS use, where the average annual rates of increase in coverage were significantly higher in the IHSS programme period in comparison to the pre-IHSS period.

For vitamin A coverage, declines of around 1 per cent per year occurred in the pre-IHSS period, which worsened to -3 per cent during the IHSS period. Annual rates of coverage change also decreased for exclusive breastfeeding, tetanus toxoid and postnatal care.

While direct attribution is very difficult, the evaluation team concluded that the IHSS plausibly contributed to the increases in coverage. Given the fact that the ICCM programme was at scale for only 11 months when the survey was conducted, the changes in coverage were seen to be impressive and show promise for the future of the programme.

**Key conclusion 6: During IHSS implementation, equity improved around postnatal care, IPTp coverage and rates of early breastfeeding.**

When investigating the programme’s impact on equity, the evaluation found a narrowing of the gap between the richest and poorest wealth quintiles in postnatal care, IPTp coverage and rates of early breastfeeding. There was consistently better coverage for ITNs and exclusive breastfeeding amongst the richest, while nearly equal access was observed for tetanus toxoid, care seeking for fever, antimalarials, vitamin A supplementation and DPT3 and measles vaccinations.

The evaluation concluded that it is plausible that the IHSS contributed to the improvements in equity through the deployment of HSAs to hard-to-reach areas and the increased availability of medicines.

**Key conclusion 7: The IHSS contributed to a significant number of deaths averted.**

The evaluation used LiST to investigate the extent to which changes in child mortality in the intervention districts could be attributed to increases in coverage of programme-supported interventions. During Phase I of the IHSS programme (2007-2010), the model indicated an additional 9,791 lives were saved as a result of IHSS programme focus interventions, and in Phase II (2010-2013) another cumulative 6,382 lives saved due to the scale up of these interventions. During the ICCM period, the pneumococcal vaccine (PCV) was responsible for the most deaths averted (41 per cent), followed by ITNs (24 per cent). The case management of diarrhoea, malaria and pneumonia together averted 20 per cent of deaths. Given the coverage increases realized, the evaluation concluded that it is plausible that IHSS programme contributed to these lives saved.
Key conclusion 8: The additional cost of an iCCM treatment was relatively low, at an average of $1.44 per treatment.

The costing exercise conducted by the evaluation team found that the additional cost of a malaria treatment provided by an HSA, including rapid diagnostic test and drugs, was $0.70. Treating one case of childhood diarrhoea with ORS and zinc cost $2.36 and pneumonia costs were found to be $0.23 per treatment. The weighted average additional cost of an iCCM treatment was $1.44, which was the lowest among the focus countries. The share of related fixed costs (training, supervision, etc.) represented an average of 7 per cent of the cost per treatment.

Key conclusion 9: Gender equality remains a challenge in Malawi’s iCCM programme. An overwhelming number of HSAs are men.

One of the explicit intentions of the IHSS was the empowerment of women, particularly through training women to deliver community-based health care. However, the evaluation found that gender inequality remains a challenge in Malawi’s programme. For the reporting period 2011 to 2012, females made up only 28 per cent of the HSA workforce. The evaluation team suggested a number of reasons for this situation, including the lack of prioritization of female recruitment. The evaluators also suggested that the decision to not recruit HSAs from within the villages they serve, which requires many HSAs to either move or to travel significant distances to work, may well be hampering the gender balance. Finally, low literacy levels among women, and the requirement of HSAs to have 12 years of education, further affected female recruitment.

This situation has consequences not only for female employment but also for health outcomes. For example, one of the key informants interviewed during the evaluation voiced concerns that male HSAs provided inadequate support for breastfeeding mothers.

The Way Forward

The Government of Malawi has demonstrated commitment to, and ownership of, iCCM, and the approach has been embraced and integrated into the national health system. The evaluation concluded that the programme runs efficiently. However, given the difficult financial situation in the country, the government is unlikely to be able to fund a programme of this magnitude on its own, and therefore some form of continued external support will be needed. The evaluation team suggested that the Global Fund’s New Funding Model, in which iCCM programmes are eligible for funding, could help ensure financial sustainability.

Key recommendations to UNICEF and its partners

- Increase coordination and tracking of partners working on iCCM.
- Increase harmonization of activities around the supply chain, encouraging all partners to work through government systems.
- Consider decreasing the educational requirements for HSAs and training illiterate women to be HSAs.
- Decentralize the recruitment of HSAs to communities.
- Increase the frequency of one-on-one supervision, including case management observation.
- Include a line item for the maintenance of HSA bicycles in future iCCM budgets.
- Further investigate the underlying reasons for the decline in coverage of important preventive interventions, including vitamin A supplementation.
- Undertake a new sustainability study once the programme has reached higher maturity to better evaluate the costs of the programme.
- Formulate a long-term financial plan for the iCCM programme that recognizes that external support will be needed for the foreseeable future.