Malawi

AMF worked in partnership with the Ministry of Health, whose health workers, coordinated by the MOH's National Malaria Control Programme (NMCP), carried out the household by household registration; and with several independent organisations who carried out monitoring and other data-management activities on behalf of AMF.

1. Planning monitoring

What: AMF engaged a partner organisation to monitor key aspects of the campaign microplanning, so termed, as it deals with all detailed aspects of the campaign's operations. Our focus was on understanding all planning activities and assessing whether intended operations were appropriately structured, scheduled and resourced to deliver a successful net distribution campaign. Monitoring covered major operational procedures including inbound shipments, warehousing of nets, forward deployment of nets, selection and training of registration and distribution personnel and through-campaign reporting. This monitoring was carried out by attending national level and district level meetings, reviewing documentation and by liaising with NMCP and national task force members. Regular reporting was made to AMF by our monitoring partner.
Why: This monitoring helped AMF remain apprised, via an independent source, of planning progress and decisions to build confidence in the planning process and allow points of concern or clarification to be raised with the NMCP.
Who: United Purpose (formerly Concern Universal), funded by AMF.

2. Registration

What: The NMCP collected data on the number of people and the number of long-lasting insecticide-treated nets (LLINs) required to achieve universal coverage. In the months prior to registration, district health officers provided demographic information to the NMCP, including the number of households per village, to guide resource planning. Registration was carried out in pairs, one HSA (Health Surveillance Assistant) with one volunteer, often a village leader, visiting a minimum of 30 households per day. These pairs went door-to-door to register all households in the targeted villages. During household registration:

- The volunteer and HSA introduced themselves to the head of the household and explained why they were there.
- The HSA obtained permission to enter the household from the household head. (The difficulty of obtaining this permission varied based on the local culture. Local leaders can lend credibility to the HSA when asking for permission to enter a household.)
- Once in the household the HSA collected information including the name of the head of the household and the number of people in the household, from which the number of LLINs required ws later calculated based on two people per net.

These data collector pairs were supervised by senior staff from the respective health facility who performed spot checks at village level. Further supervision was conducted at health facility level, by district supervisors and at district level by members of the national task force (NTF). The NMCP trained the HSAs that carried out the door-to-door monitoring. This was part of a cascade approach: the national task force (NTF) trained the district task forces (DTF); the DTFs trained the HSAs and

volunteers. There are no detailed maps or geographical information system data for rural Malawi, so HSAs relied on traditional authorities and community leaders to locate all the households in the targeted villages.

Why: Obtaining registration data at the household level was an important part of maximizing the accuracy of the registration data that then underpins an accurate distribution i.e. ensuring nets reach beneficiaries as intended, and in the numbers intended.

Who: The NMCP managed the registration that was implemented by the various levels of the Malawi health system. HSAs and volunteers carried out door-to-door visits. Payments were managed by World Vision International (on behalf of the Global Fund).

3. 5% Revisit Registration

What: 5% of the households were chosen at random and re-visited. The 5% was identified at a sub-district level i.e. 5% of the households in a sub-district were re-visited rather than 5% in every village. This was to balance adequate monitoring with cost: visiting 5% of the households in each and every village would have been prohibitively expensive. A different set of data collectors to those that carried out the 100% registration gathered the same household information during the re-visits. Re-visits took place one to five days after the 100% registration. All 100% and 5% data collectors were aware ahead of their work that re-visits will occur. The 5% data collectors did not know the information collected in the 100% data collection phase.

Why: There were two reasons for carrying out re-visits
1. The knowledge amongst all HSAs that re-visit checks would take place, aimed to encourage accurate 100% data collection
2. Re-visit data allowed a comparison to be made (between matched households) to give a data-driven view of the reliability of the 100% registration data and to help identify problems if they existed

Who: The NMCP managed the registration which was implemented by the various levels of the Malawi health system. Supervisors from the 100% registration carried out the door to door visits. Payments are managed by World Vision International.

Together the 100% registration and 5% revisit registration are referred to as '105% registration'.

4. Registration Monitoring

What: AMF engaged an independent organisation to monitor the 105% registration. This was done via field visits during the registration process. For each of the 100% registration monitoring and 5% re-visit monitoring, AMF districts were randomly selected, with 6 villages then randomly selected per district, making 48 villages to visit in total. Information was collected on a paper-based form with key questions in 'Yes/No' format. The information was then aggregated to give a % 'Yes/No' score for each question.

Why: Independent monitoring provided AMF with information to allow the reliability and accuracy of the registration process to be assessed and identify any issues of concern to raise with the NMCP.

Who: United Purpose (formerly Concern Universal), funded by AMF.

5. Independent Village Re-registration (IVR)

What: AMF engaged an independent organisation to re-register 100% of the households in two randomly selected villages in each of the 12 AMF-funded districts. The same set of information was collected as that collected during the 100% registration carried out by the NMCP. In addition, the names of all household members were collected. Information was collected on electronic devices shortly after the end of the 100% registration and 5% re-visits.
Why: The IVR acted as an independent check of the NMCP-led registration. Comparison of the 100% registration and IVR datasets helped assess the reliability of the 100% registration data and identify any issues to raise with the NMCP.
Who: PSI Malawi (Population Services International), funded by AMF

6. Electronification of data

What: AMF engaged an independent organisation to enter all paper-based household records (100% registration and 5% re-visit data) into AMF's Data Entry System (DES) database, through a centralized Data Entry Centre (DEC), situated in Lilongwe. Data was entered by 130 data entry clerks, supported by 12 supervisors, over two shifts, one from 6am – 12 noon, one from 12 noon – 6pm. 6% of records for each data entry clerk were selected at random and were entered again by different data entry clerks to encourage, and provide data for, data entry accuracy. All data entry clerks knew ahead of starting work that 6% of the records they entered would be re-entered and checks made for accuracy. Performance statistics allowed supervisors to track progress, such as the rate of data entry, both overall and per data entry clerk. This helped ongoing resource planning and helped identify data entry clerks in need of extra training. Data was entered at a rate of ~70,000 households per day, or on average <1 minute per household record.
Why: Having data in electronic form has significant benefits, notably:
Providing transparency on registration and distribution numbers at the household level
Helping operational decisions with in-country partners via quick access to accurate data
Allowing analysis to assess data reliability and identify problem areas
Improving accountability to AMF by showing exactly where nets are to be distributed
Facilitating post-distribution monitoring by providing household lists that can be used as the basis of monitoring activities with distribution data able to be compared to data collected during post-distribution monitoring.
Who: United Purpose, funded by AMF. World Vision International was responsible for delivering paper records from the districts to the Data Entry Centre.

7. Data Analysis

What: AMF analysed the data in the DES in four main areas.
1. 100% registration data. Key metrics were analysed such as People(Ppl)/HH and Ppl/net as well as the variation between registration numbers and original planning numbers
2. 100% registration data vs 5% revisit data. The proportion of the 5% re-visit data that could be matched to the 100% data was assessed. Of the matched households, variations in population and LLIN numbers were analysed.

3. 100% registration data vs IVR data. The proportion of the IVR data that could be matched to the 100% data was assessed. Of the matched households, variations in population and LLIN numbers were analysed.
4. 6% re-entry data accuracy. Original and re-entered data was compared to allow an assessment of data entry accuracy.

Why: This analysis enabled the reliability of the registration data to be assessed and helped identify specific areas for follow up action.
Who: AMF

8. Resulting actions

What: AMF shared relevant findings with the NMCP. If there were discrepancies in net need numbers, these were discussed. Some of the lessons learned from the distribution were:
   In future, time frames for delivery of HH records to the DES will be set in the agreement
   In future, nets will not be moved until AMF gives authorisation
   In future, nets will be moved on the basis of validated DES numbers
Why: Improve the distribution.
Who: AMF and NMCP

9. Distribution Monitoring

What: AMF engaged an independent organisation to monitor the distribution. This was done by having independent monitoring staff present at distribution sites during the distribution. 4/12 AMF districts were randomly selected and then 6 distribution sites randomly selected per district, giving 24 distribution sites to visit in total. Information was collected using a paper-based form with key questions in 'Yes/No' format. The information was then aggregated to give statistics on the % 'Yes/No' for each question allowing any areas of concern to be quickly identified for feedback to the NMCP.
Why: Independent monitoring provided AMF with information to allow the reliability and accuracy of the distribution process to be assessed and helped identify any issues of concern to be raised with the NMCP.
Who: United Purpose (formerly Concern Universal), funded by AMF.