

Update: Ntcheu, Malawi

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We now have two sets of post-distribution data following the December 2011 to February 2012 distribution of 270,000 nets in [Ntcheu District, Malawi](#) and the results are strong.



Summary

1. Malaria rates in March to June 2012 are already 50%, 45%, 40% and 40% lower than in the corresponding months in 2011. See: [Malaria case rate data](#)
2. Six months post-distribution a survey of 7,657 households and 15,768 nets showed a hang-up (usage) level of 90% and the percentage of nets in a very good condition is 99% (ninety nine). See: [Six month surveys](#)

We will continue to collect and publish monthly malaria data and hope to see a continued and sustained decline in malaria rates.

Detail

1. Malaria case rates

Raw malaria case rate data for the period March to June 2012 shows a reduction of malaria cases of 60%, 54%, 50% and 50% for March, April, May and June respectively compared to the same months in the prior year. However, the March-June 2011 data was based on clinical observation whereas the March-June 2012 data was based on Rapid Diagnostic Testing Kit (RDTK) blood diagnosis. Data in the non-rainy season strongly indicates clinical observation overestimates malaria cases by 40-50%. This is concluded from comparing data from Jul to Nov 2011 (RDTK basis) with Jul to Nov 2010 data (clinical observation). In the rainy season there is limited data to draw conclusions but data for Dec 2011-Jan 2012 compared to Dec 2010-Jan 2011 suggests the over-estimate due to clinical observation in these months may be significantly lower and in the range 5-15%. This has support from anecdotal evidence (we are trying to collect data from other studies) which suggests 'false positives' decline in the rainy season as a high percentage of those with 'malaria and fever type symptoms' do indeed have malaria. Assessing the likely level of falsely observed malaria cases is important as without doing so the malaria case rate decline would be over-estimated.

As the March-June 2012 data falls within the peak malaria season, we estimate the actual malaria fall is some 10 percentage points less or 50%, 45%, 40 and 40% respectively.

Data has been collected from all 37 of the health centres in Ntcheu District. Four of these data centres have unreliable data and have been excluded.

For the April to June data we are waiting for five health centres to report and we will update this blog post and the attached data when that information has been received. We do not expect it to markedly change the percentages reported above.

• 2. Net hang-up and condition



Between 200 and 250 households in each of the 37 health centre catchment areas were surveyed to assess net hang-up and condition. In total, 7,606 households and 15,681 nets (6% of those distributed) were visited and assessed. The data is currently being double checked and some numbers may change very slightly. A 90% hang-up level is very high compared with many other studies that typically

report hang-up between 50-80%. We put this down to a combination of:

- i) detailed pre-distribution registration survey work carried out in advance of the net distribution with which there were high levels of community involvement and sensitisation;
- ii) thorough malaria education in advance of, and during, the distribution process;
- iii) Malawians have a reputation for responding positively to community-wide initiatives. Concern Universal staff deserve huge credit for their project management abilities.

1% of nets were missing, the predominant reason being nets had been taken by schoolchildren or relatives sleeping elsewhere. This is believable. We do not believe any or many were sold.

The 9% of nets not hung are clustered in 10 areas. We initially thought this might be because these areas were at higher altitude with lower mosquito population levels. This is not the case as some areas are low lying. The 13% to 23% of 'nets present but not hung' is currently being investigated. The 10 areas are those with lower levels of malaria, compared to other areas in the district, and one hypothesis is that some community members in these areas perceive there to be very low or no risk of malaria outside the peak malaria period that coincides with the rainy season. Malaria is still present in these areas however and, if low/no perceived risk is found to be the case, another round of malaria education may be an appropriate action.

Net condition six months post-distribution is exceptionally strong. 99% are in 'very good' condition (fewer than two holes of 2 cms or smaller) and 1% are in 'OK' condition (fewer than 10 holes). We would expect nets to be in very good condition after six months but this is an exceptionally high level. The condition of the net is a subjective assessment. It is possible there is bias introduced by those carrying out the survey. The following operating elements were put in place to mitigate against inaccurate data collection:

- i) training was given to those carrying out the survey to ensure consistency of the counting of the number and size of holes;
- ii) Concern Universal staff were involved in and supervised the survey work and selected to carry out this work with only a subset of the government's health staff, Health Surveillance Assistants (HSAs), known to be the most reliable;
- iii) emphasis was placed during training on accurate recording of net condition and other data as a) false data would not help our collective understanding of the condition of the net stock and b) spot checks would occur to check data accuracy;
- iv) those carrying out the survey work had nothing to gain by providing inaccurate assessments, not even significant time saved in carrying out the assessments as households had to sign the survey forms;
- vi) data verification through spot checks of pre-distribution registration information, gathered by HSAs, showed the data collected was exceptionally accurate.

We believe the data is reliable. We will however be conducting some spot checks to test the accuracy of the data.

We expect the condition of the net stock to decline over time and we would expect to see more of a decline through months 12 and 18. Over this period in particular, malaria education messaging will address net care so as to encourage as high a level of net condition as possible.

It should be noted that even with a number of holes, long-lasting insecticide treated nets (LLINs) remain almost completely effective, often phrased as '99% effective'. This is because mosquitoes land on a net and then migrate to a hole, and in so doing pick up insecticide which can cause knock-down, rather than executing an aerobatic manoeuvre and passing directly through a hole.

