Chapter 3: Planning for mass distribution campaigns

3.1 Mass distribution as part of the overall LLIN strategy

LLIN mass distribution strategies vary by country, each having its own objectives and challenges. Common to all, however, is the crucial requirement to plan mass distributions early, ensuring that all the details of the country's strategy, objectives and specific situation are considered. As LLIN distribution campaigns have increased in size and scope with the shift to universal coverage, early and coordinated planning has become more and more important.

Good planning is key to the success of any mass distribution campaign, whether stand-alone or integrated, national or sub-national, universal or targeted coverage.

This chapter contains advice on planning different kinds of mass distribution campaigns, universal coverage and targeted, both integrated and stand-alone, and mop-up or fill-in. The advice and recommendations are based on the experiences of countries who have implemented such campaigns, and the lessons learned from doing so. While the advice necessarily looks at the broad picture, recommendations and lessons learned can be adapted and very generally applied across countries. It is important, however, to be aware that as more countries implement mass distribution campaigns, the experience grows and recommendations, suggestions, examples of good practice and references require updating. The latest updates can be found on the Alliance for Malaria Prevention (AMP) website[a], while ongoing updates will be announced via AMP conference calls and minutes, and through the Roll Back Malaria (RBM) e-update[b].

While this toolkit concentrates largely on mass distribution of LLINs, it should be emphasized that such distributions are only one part of a holistic National Malaria Strategy. Each country should have a policy describing how LLIN coverage will be scaled up, sustained and monitored over time, taking into consideration LLIN durability and recommended timing for replacement. A long-term strategy for continuous LLIN distribution should include multiple channels for distribution of nets including routine continuous delivery through antenatal care (ANC) or Expanded Programme on Immunization (EPI) visits, subsidized and private sector sales and mass free distribution when necessary and appropriate[c]. Timing for mass LLIN distribution campaigns should be based on the condition and age of LLINs previously distributed, as well as on the availability of nets through other continuous distribution channels. Through continuous monitoring and evaluation of net coverage and data collection to assess country-specific net durability and decay rates, countries should begin to work towards a policy whereby mass coverage campaigns are triggered when coverage decreases below specified levels. Where continuous distribution systems are well established, mass distribution campaigns may not be needed to maintain universal coverage levels.

Countries that are planning for mass distribution of LLINs as part of their proposals to donors such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) should ensure that their campaign strategy is well thought-out prior to submission of the application. Guidelines (see Resource R3-1) for planning LLIN distribution campaigns (as well as continuous distribution through routine health services) are produced each year by the Harmonization Working Group (HWG) as part of the advice provided for development of GFATM proposals, and an additional template (see Appendix 3A and Resources R3-2) with items generally included in the budget has also been produced by AMP. New quantification guidelines were approved in 2010 based on the experiences of countries implementing universal coverage campaigns involving household registration, and these should be used to guide country macro-quantification and strategy development (see Resources R3-3). Advice on how to quantify when accounting for already existing nets is also available, including calculation estimates for "decay" rates of nets (see section 3.3 Macro-quantification of LLINs). The calculations are, however, based on a median survival time of three years for a LLIN, and should be adapted to each specific country situation based on guidelines for monitoring durability of LLINs released by WHO (see Resource R3-4).

Technical support to countries at the planning stages of LLIN mass distribution is available through AMP, via the RBM partnership.

3.2 Defining an implementation strategy

The MoH and partners will need to define an implementation strategy based on the MoH policy for LLIN distribution, the targeted population and the number of LLINs available to the country through existing commitments. Deciding on the implementation strategy is a key action, as this will give the basis for the number of LLINs, personnel and supplies needed.

At the outset of planning, prior to proposal development and submission to donor organizations, there are a number of questions to be asked and key decisions to be made in order to determine needs for both LLINs and personnel. Most important of these are:

1. What is the scope of the LLIN distribution (national, sub-national)?
2. Which partners (international organizations, NGOs, community-based, private sector, etc.) are present in the targeted area? What contributions may be expected from partners?
3. What is the existing LLIN coverage in the targeted area relative to the National Malaria Strategy objectives that have been set for prevention?
4. Do existing LLINs need to be taken into account and, if so, according to which criteria (e.g. how long the net has been hanging, condition of net, etc.)?
5. Based on the existing coverage and whether existing LLINs are to be considered, will the campaign be targeted (e.g. to children under five) or universal coverage?
6. Will the LLINs be given to beneficiaries through fixed site or door-to-door distribution?
7. What is the method by which LLINs will be allocated to beneficiaries (e.g. household census to count people/nets/sleeping spaces, fixed number of nets per household, one net per child under five, etc.)?
8. What method, if fixed site distribution, will be used to identify beneficiaries at distribution sites (e.g. household register, voucher, wristband, under five vaccination card, etc.)?
9. What method, if door-to-door distribution, will be used to identify households that have received LLINs (e.g. chalk marking, sticker, door sign, etc.)?
10. Is there a net culture already existing in the area? If not, which activities will promote correct hanging, use and maintenance of LLINs? If so, how will correct hanging, use and maintenance of nets be reinforced?
11. Which other activities for malaria prevention, such as indoor residual spraying (IRS), are taking place in the targeted area?
12. Are there systems in place for continuous distribution of nets, either through health facilities or through subsidized or private sector sales?

In most cases, countries planning to scale up with LLINs will opt for universal coverage distribution, either integrated with other interventions or as a stand-alone activity. In other cases, such as when the quantity of LLINs is insufficient to meet the needs of the total population, or when universal coverage has been reached and mass distribution is being included as part of a sustainability strategy, LLIN distribution may be targeted to specific sub-national geographic regions or to particular groups, such as children under five years of age, refugee populations, people living with HIV/AIDS (PLWHA) or other at-risk groups. Distribution may either be integrated with other health interventions or implemented as a stand-alone activity. In still other situations, to achieve full coverage of the population at risk, the distribution strategy may be to fill in or mop up gaps from a previous targeted distribution or from sub-optimal coverage during a universal coverage distribution.

A recommended method of identifying the most appropriate implementation strategy is to use a SWOT analysis (strengths versus weaknesses, opportunities versus threats) of all the factors that need to be considered. Among these are the following:

- MoH and NMCP policy for malaria prevention with LLINs
- resources available, notably LLINs and finances for operational costs
- current coverage levels in the country (including estimated lifespan/timing for replacement of previously distributed LLINs)
- regional and seasonal variations in endemicity or burden, population density and whether largely urban, rural or hard-to-reach, access to treatment and health services, political situation, and so on
- quantity of LLINs effectively delivered through continuous distribution systems (e.g. through antenatal care)
- possible existing platforms, such as vaccination days or child health days, for integrated distribution
- LLINs available for delivery through various channels for the year of the campaign and the years following (LLIN supply pipeline)

Other factors may also be important in specific country situations and contexts and these should be included in all discussions on the implementation strategy and in the SWOT analysis. Taking all factors into account, the implementation strategy is likely to follow one of three models:

1. universal coverage
2. a targeted campaign covering specific populations at risk of malaria
3. a mop-up or fill-in campaign to achieve universal coverage after a previous targeted campaign or sub-optimal universal coverage distribution

Any of the three models can be stand-alone or integrated, national or sub-national.

Universal coverage campaigns

Universal coverage is designed to reach the entire population at risk of malaria, reflecting the Roll Back Malaria Targets Beyond 2011 (see Resource R3-5) and MDG 2015 targets and priorities. While targeted campaigns have focused on the groups with the highest morbidity and mortality from malaria, a universal coverage campaign aims at covering all populations at risk, both to ensure personal protection and to reduce overall transmission of malaria. Universal coverage campaigns can conveniently be categorized based on geographical reach (national, sub-national), content (integrated with other interventions or stand-alone), and implementation strategy (fixed site, house-to-house distribution). National universal coverage campaigns are possible when there are sufficient LLINs at one time to meet the total country need. Sub-national universal coverage campaigns are normally planned where the LLINs are not sufficient to meet the entire country's need, or where coverage levels in certain areas are lower and need to be increased to meet or maintain the universal coverage objective set by the country. To date, the most common universal coverage approach has been stand-alone.

Often, given the large resource requirements in personnel, LLINs and financing, and procurement and delivery timelines from multiple suppliers, national universal coverage campaigns are rolling. This means that although the final objective is national universal coverage with LLINs, the implementation may be district by district or region by region until all areas have been covered. Reaching national universal coverage in these situations may take anywhere from a few months to a few years depending on LLIN availability and delivery to the country.

Stand-alone universal coverage campaigns have been most common in country efforts to reach the RBM and MDG 2015 targets. They may be easier to implement than integrated universal coverage campaigns as there is a single intervention being given to the entire population at risk, as against multiple interventions and multiple targeted age-groups. However, with both stand-alone and integrated universal coverage distributions, requirements for data collection and analysis are

significantly greater than with integrated or stand-alone distribution to children under five years of age and must be planned for accordingly.

Universal coverage campaigns involve four major phases of activity:

1. detailed and timely micro-planning to ensure efficient implementation of the campaign
2. household/beneficiary registration and provision of voucher/wristband or other identification
3. distributing LLINs
4. promoting LLIN hanging, utilization and maintenance

The micro-planning process at district and community level will provide more detailed information on households and distribution points, leading to more efficient campaign implementation. It is imperative to undertake micro-planning early in the campaign process (4—6 months before) and to allocate sufficient time and resources for its implementation. Adequate training, supervision, guidelines and detailed templates should all be planned from the outset. Micro-planning is a vital strategic step, and must be carried out across all areas covered by the campaign in order to plan optimal use of resources.

For all universal coverage campaigns, whether stand-alone or integrated, it is important at the macro planning stage to determine the means by which households will be allocated LLINs (either by counting individuals or sleeping spaces or by assigning a fixed number of LLINs per household). Means of identification at distribution points, whether this is in the community or at the household itself in the case of door-to-door distribution, must also be determined (vouchers or coupons, wristbands or other means of identification).

If the method of LLIN distribution is at distribution points (versus door-to-door), voucher redemption for universal coverage campaigns often takes place at sites that mirror the EPI mass campaign model of fixed (at a health facility), advanced (at a school or other public structure, covering populations five to ten kilometres from the health facility) and mobile (in villages more than ten kilometres from the health facility). In the case of stand-alone LLIN distributions, it is not efficient to deliver to all mobile sites, primarily due to the bulk of nets and their transport requirements, and it would be usual to have a community distribution point where a sufficient number of nets are stored and distributed to a number of smaller hard-to-reach villages within walking distance.

Integrated universal coverage campaigns involve delivery of multiple interventions to the same or different target populations. For example, in some countries, vouchers for LLINs, based on the number of people in the household or based on a fixed number of nets per household, are provided during door-to-door health activities (administration of vitamin A and/or mebendazole, polio vaccination, and so on). In this situation, a country can combine social mobilization messages for a broader healthy population campaign with the LLIN distribution.

Integrated campaigns have the advantage of building on the EPI's experience of mass vaccination, mass drug administration, etc. A further advantage is the sharing of some costs with EPI, such as mass communications and staff at distribution sites. Finally, in countries where the population is sparse and caregivers have to travel a long distance to access health facilities, combining campaign interventions is convenient for beneficiaries.

Appendices 3B and 3C give examples of timelines for stand-alone and integrated campaigns, provided on the Resources CD in spreadsheet format (R3-10 and R3-11).

Targeted campaigns

A campaign is considered targeted when it is designed to reach a specific segment of the population. Until recently, in most cases, targeted campaigns focused on children under five years of age, whether on a national or a sub-national basis. In some instances, targeted campaigns have also included

broader age groups (for example where LLIN distribution is combined with yellow fever vaccination or with mass drug administration) and pregnant women. In other countries, however, pregnant women are not included in the campaign LLIN distribution as it is health policy that they should attend antenatal care to receive a LLIN along with the full package of antenatal services. It may also be difficult to identify pregnant women unless they are registered for antenatal care, which may exclude women with limited access to health care.

Targeted LLIN distribution campaigns can be integrated or stand-alone. Stand-alone targeted campaigns distribute LLINs to the focus population. Since LLINs are the only intervention, it is important to have a means to identify the beneficiary population and needs for coverage. Where LLINs are being distributed to children under five years of age through a stand-alone distribution, use of target population information from the EPI for macro-quantification of needs is strongly advised.

LLIN distribution campaigns targeting children under five years of age have often provided multiple interventions to the same age-group, and are referred to as integrated. In 2002, the first pilot project for integrating distribution of LLINs with a mass measles vaccination campaign took place in one district of northern Ghana. Since that first pilot, integrated campaigns have included LLIN delivery combined with polio or measles vaccination, vitamin A supplementation, presumptive treatment for intestinal worms, distribution of soap and mass drug administration (MDA) for neglected tropical diseases (NTDs) and other diseases, including malaria.

Targeted campaigns can be national or sub-national. Where countries have good LLIN monitoring and tracking data, sub-national targeted campaigns may be organized in order to bring decreasing coverage back to the national objective. Sub-national campaigns may also be organized where LLINs are insufficient for national coverage and only specific, high-risk districts or regions (because of particular vulnerability or low existing coverage, for example) are selected for the LLIN distribution. Targeted campaigns on a national scale may be used as part of a continuous LLIN distribution strategy where resources allow and/or while other channels for LLIN delivery are being built up or reinforced.

Mop-up or fill-in campaigns

The shift to universal coverage of the total population at risk of malaria presents a major challenge for those countries transitioning from targeted distribution of LLINs to households with children under five years of age and pregnant women to LLIN coverage in all households. In countries where population coverage with LLINs is high[d], it may be necessary to take into account existing nets in households in the quantification of needs. A number of issues need to be addressed, including how to quantify LLIN needs, how to identify houses with existing nets, how to determine whether existing nets in households are still viable, and how to communicate positively with those households who already have the number of nets required for full coverage and will therefore be excluded during the LLIN distribution. Campaigns that achieve sub-optimal coverage during previous targeted or universal coverage distributions for whichever reasons present a similar challenge and may require mop-up campaigns.

In 2010, Senegal and Cross River State in Nigeria worked on mop-up campaigns following earlier integrated campaigns targeting households with children under five years of age. In both countries, trained health workers or volunteers undertook a household registration to determine:

- the total net need for each household (this was based on one LLIN for two people, rounding up in the case of odd numbers of people in the household, but Senegal also looked at the number of habitual sleeping spaces in each household)
- how many nets each household already had
- how many nets in each household were still viable (in Senegal this number was based on net condition, while in Cross River State, it was based on how long the net had been hanging)

- how many new nets each household would need for full coverage

Both countries had previously undertaken post-distribution surveys which showed high household coverage with LLINs, but during the mop-up exercise they experienced challenges with finding nets in households. Significantly lower numbers of nets were found (50—60 per cent) than would have been expected based on the surveys.

In a follow-up qualitative survey in Cross River State, it was found that there are a number of reasons why this was so, including possible behavioural factors that influence perceived net durability and, therefore, use. A number of beliefs that affected the reported number of viable nets were expressed by respondents, including that nets were only good for 18 months, were no longer viable after two washes, or were ineffective after washing in cold water or bleach as it destroyed the chemical entirely.

The survey also found that the majority of LLINs not present in households had been destroyed or damaged by use or had been given away. A number of additional nets were "found" during the survey, many stored still in their packages for use at a later time.

In both countries, it seemed that families often hid nets once word spread that ownership of nets meant no new nets would be received. Despite efforts to encourage families to hang pre-existing nets prior to the household registration in Senegal, people hid nets in order to receive more.

Mop-up campaigns are complicated and costly. Quantification for mop-up is problematic given that, in addition to modelled variables such as LLIN expected decay rates (see 3.3 Macro-quantification of LLINs), there are a number of other variables, such as respondents hiding nets or bias on the part of the health worker/volunteer, that are difficult to factor in. In both Senegal and Cross River State, registered need for universal coverage to be achieved via the mop-up campaigns was higher than the number of LLINs procured based on macro-quantification estimates.

Issues with integrated campaigns

Integrated campaigns should be effective for delivering a number of interventions to a specific target group, but they do require special efforts and careful planning to ensure coordination and effective training of all personnel involved in the campaign to reduce any risk of adverse effects and to ensure all interventions are received by all targeted beneficiaries.

When planning for integrated campaigns, it is important to reduce the level of complexity as much as possible. For example, if an integrated campaign is taking place on a sub-national or a national scale, the target group for the interventions to be provided should be as similar as possible (e.g. all children under the age of five or specific sub-groups within this age bracket). In addition, the same interventions should be provided throughout the geographic area of the campaign rather than targeting specific districts in a region with different interventions.

With integrated universal coverage campaigns, it is important to assess the choice of the different target populations and the method of delivery. An example might be distributing LLINs to the full population at the same time as giving measles vaccination for children 9—59 months at fixed sites. In that case, a number of questions should be asked and possible negative consequences assessed:

- How will LLIN beneficiaries be identified?
- How will crowd control be addressed?
- Will distributing LLINs in the same location as the vaccination be disruptive, or have possible adverse effects on either intervention?
- Is it possible to divide the site into two distinct areas?

Minimizing potential negative consequences is part of the planning process. This may include addressing problems with coordination of partners, and ensuring personnel are well-trained and supervised. Where it will be possible to achieve success for all interventions in an integrated campaign with limited negative consequences, integration may be the right choice for the country.

The AMP toolkit version 1[e], published in 2008, provides advice and recommendations for the development of integrated campaigns.

Beneficiary identification

Regardless of the campaign strategy chosen (integrated or stand-alone, targeted or universal coverage), there needs to be a clear method of identifying beneficiaries who should receive nets. In the case of integrated campaigns targeting children under five years of age, this is relatively simple as there are ways of checking children's ages (for example, vaccination card, asking the child to try to touch his or her ear[1]) at the point of service delivery. Where children under five are the targeted age group, additional means of beneficiary identification are not necessarily required.

In the case of universal coverage distributions that are using a fixed site strategy, it is critical to establish a means of identifying beneficiaries at distribution points early in the planning process to allow for appropriate budgeting and timely procurement of any unique identification tools. Where distribution is door-to-door, beneficiary identification can take place at the point of service delivery (the household).

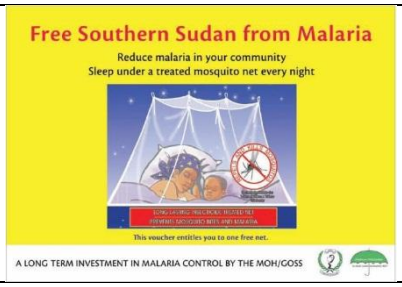
Countries undertaking universal coverage distributions using a fixed site strategy have used a number of different methods for beneficiary identification:

- **Household registration form**: in most countries, a household registration form is filled out even where other means of beneficiary identification are being used. In some countries, the household registration forms have been used at the distribution sites to provide LLINs to beneficiaries. This method has the advantage that households are not told how many nets they will receive so there are no unmet expectations if there is a shortage of nets at the distribution site. The disadvantage is that, without a specific identifier and with the large amount of data collected, it is difficult and time-consuming to find the names of household heads on the sheets of paper and can cause problems with crowd control if waiting times are long.
- **Vouchers or coupons**: many countries use vouchers, in addition to a household registration form, to identify beneficiaries. Some countries have used coloured vouchers, with different colours representing either different numbers of nets or, in order to regulate crowd control, different distribution points where beneficiaries must go to be served. Vouchers should have two parts, one given to the beneficiary and the second (the counterfoil) remaining in the booklet for later verification if necessary. Depending on the level of accountability required by the country and the donor, the voucher booklet may be sufficient without an additional household registration form. Advantages of using vouchers include their procurement in-country (as long as vouchers are not able to be falsified) and smoother flow at distribution points. Possible challenges include a difference in nets provided versus the number written on the voucher, because of shortages of nets identified post-household registration, and loss of vouchers between household registration and LLIN distribution. In the case of the latter, the household registration form could be used to verify the identity of a beneficiary.
- **Wristbands/bracelets**: these plastic bracelets are snapped on to the wrist and cannot be removed except by cutting. During the household registration, one person (not necessarily the head of the household) who will be available to collect the net(s) on distribution day on behalf of the household will receive a wristband. There are various methods for indicating how many nets the

[1] As a general rule, children under five years of age cannot reach over their heads to touch the opposite ear.

household should receive, such as colour of wristband. Volunteers undertaking household registration and identification of beneficiaries must be trained to explain the purpose of the wristband and to minimize any reluctance to wear it. They should also make it clear that wristbands that have been cut prior to distribution day cannot be redeemed for nets. On distribution day, the wristband is cut off, exchanged for a net or nets and collected in a box for later verification. There may, however, be some practical disadvantages in using a wristband. Its use relies on the person with the wristband being physically present on the day of the distribution, taking no account of possible illness, absence due to work commitments, and so on. As they are not valid when cut, another member of the household cannot take the original person's place. They must be procured internationally and are more costly than the vouchers. If used, they must be included early in the planning and budget and ordered at the same time as LLINs.

The following table shows a comparison between vouchers and wristbands:

	Vouchers	**Wristbands/bracelets**
Visual		
Description	Piece of paper or card, redeemable for 1, 2, 3 or more LLINs. May have a unique identifier number. Many colours.	Plastic wristband with snap closure, similar to those issued to newborns in hospitals. Cannot be removed without being cut with scissors/knife. Many colours. Length of wristband can vary.
Price	Generally cheaper, especially if produced domestically.	Generally more expensive, depending on size of order and variety of colours. International procurement and shipping required.
Production	Usually produced in-country	Produced internationally
Durability (especially relevant where there is a 1+ month lag between registration and distribution)	Can be damaged	Longer-lasting
Water-resistance	Should avoid getting wet. Lamination improves water-resistance but also increases price	Waterproof
Risk of loss/sale/trade	Perceived risk of loss/sale/trade, although there is no hard evidence that this happens	Very low risk. Once wristbands are attached to the wrist, they cannot be removed without being cut. They cannot be traded or sold and then reattached to another wrist.
Risk of falsification/ reproduction	Perceived risk of falsification, although there is no hard evidence that this happens	Much harder to falsify domestically, particularly when colour coded

Shipment time	None if produced domestically	Minimum 6 weeks freight
IEC opportunity	Some space for messages	Limited space
Cultural/religious /political barriers to acceptability and use	None reported	There is limited experience with wristbands to date, but there is no evidence of any concerns that may constitute a barrier to use
Waste	May be burned following verification	Should not be burned. Proper disposal guidelines should be followed, possibly requiring transport back up the supply chain

Wristbands are a good alternative to vouchers where:

- there is a lag of more than one month between registration and distribution
- everyone involved (central, district, and village level supervisors, trainers, registers, distributors, community and religious leaders, etc.) is convinced of the utility of wristbands
- budget can support additional cost of wristbands
- timeline can allow for extra shipment time of wristbands
- there are no known cultural/religious barriers to wearing wristbands

> In 2009, Sudan piloted the use of the plastic wristband/bracelet with great success. Manufacturers may have the ability to attach two or more removable "tabs" to the wristband. Sudan labeled one tab "distribution" and the other "hang up" and intended to collect those tabs at the time of LLIN distribution and door-to-door hang-up campaign, respectively, as a way to monitor the campaign. Due to lack of durability and permanence of the tabs, however, this system is not recommended until tab attachment techniques improve.

3.3 Macro-quantification of LLINs

Once the implementation strategy has been decided, the macro-quantification of LLINs can take place. This is a complex task that must be done early in the planning process, before the detailed plan of action has been developed, as it will often form part of the initial proposal application for funding. Moreover, because of the long lead time for procurement and because LLINs will almost certainly need to be imported, they will need to be ordered early to ensure timely delivery. In most cases, needs are estimated by the Ministry of Health, technical partners and the funding organizations. See Chapter 4 for details of LLIN procurement.

Universal coverage quantification

Universal coverage has been generally accepted to mean one LLIN available for every two people where LLINs are part of the national prevention policy[f]. Most countries have now revised their National Malaria Strategy to reflect the universal coverage objectives. See Resources R3-5 for the most recent RBM targets.

When universal coverage distributions first began, there was limited operational experience to draw on, since the methodology differed significantly from targeted LLIN distributions. A number of methods have been used for allocating LLINs to households, each with its own challenges:

1. Setting a fixed number of LLINs per household based on the average household size (typically from the national census), for example, providing two or three LLINs (depending on rounding up or down and available nets) to a household of five people. The operational definition of a household is important for quantification. This method is not recommended as setting a fixed number of LLINs per household will over- or underestimate need in at least half of cases[g].

2. Counting the number of people living in a household and dividing by two to determine the number of LLINs required. In the case of uneven numbers of household members, countries have rounded up or down depending on policy and available LLINs. When rounding down, the intra-household coverage will be lower than when rounding up[h].

> In Mali, where net culture is well-established, and where the percentage of households with any net was over 80 per cent, the number of nets required was based on rounding down for uneven numbers of persons in the household. This was a rational use of resources in an area with existing high coverage.

3. Counting the number of sleeping spaces, which can be quantified with the average household size and some information about common sleeping patterns (generally two persons per sleeping space, but this varies). Difficulties with counting sleeping spaces include lack of physical access by assessor, basing number of sleeping spaces on reports, which can be inflated, and determining a working definition of a sleeping space in places where people sleep outside for part of the year. In addition, the number of sleeping spaces in a household increases as socio-economic status rises, thus leading to more LLINs being provided to the least poor households[i].
4. In some countries, taking into account household structures, living and sleeping patterns, space constraints for hanging and available LLINs, a maximum number of nets per household has been established regardless of the methodology for LLIN allocation.

Quantification can be determined with data from a population-based survey or census that provides data on household size. These data can be used to estimate the percentage of households with one to three people, four to six people, and so on. Where estimated or average household size is being used as the basis for the macro-quantification, it is recommended that the two sets of figures for urban and rural areas should be used to improve accuracy of estimations. Rural areas generally have larger average household sizes.

When universal coverage was first announced as the objective for malaria prevention with LLINs, it was estimated that one LLIN was required for every two people. Based on this simple equation, countries undertaking early universal coverage campaigns estimated their total need for LLINs by dividing their population by two. During implementation, given that most countries had exceptionally low coverage of LLINs prior to the campaign, the LLIN allocation strategy was one LLIN for every two people in a household, rounding up in the case of an odd number of people. This method of LLIN allocation should improve the intra-household coverage of people sleeping there.

However, a number of countries implementing universal coverage campaigns and using this method found that the recommended calculation for macro-quantification did not provide sufficient LLINs to reach universal coverage. Based on evidence collected from these countries, as well as an analysis of population-based survey data (primarily demographic and health surveys (DHS)), the quantification guideline has been changed by WHO from total population divided by two to total population divided by 1.8 (see Resources R3-3)[j]. Although the 1.8 factor accounts for rounding up in the case of uneven numbers of people in a household, it does not account for inaccurate or out-of-date population projections, because of the time lag between last census and campaign, or population movement and demographic trends (for example, to smaller or larger household size). Population projections need to be based on proposed campaign dates, with countries being aware that the time lapse between proposal submission and campaign can be as much as two years in the case of GFATM grants.

Evidence that may lead to further revision of the quantification guidelines for reaching universal coverage is currently being collected from countries implementing mass LLIN distributions[k]. The AMP website[l] will be updated when any revision occurs.

Targeted campaign quantification

In general, quantification for campaigns targeting children under five years of age should be based on the most recent EPI data available. Preferably, these data should be from a recent mass immunization campaign since more children tend to be reached through this platform. The number of children vaccinated can be used for projecting the number of children expected at the time of the LLIN distribution campaign. Typically, integrated campaigns have the objective of providing one LLIN to every child, with nets acting as an incentive to attend for other interventions. Where children are not provided with a LLIN, refusals for other interventions may increase.

While EPI includes a loss factor in estimates for vaccines, vitamin A and mebendazole, **no loss factor should be included when quantifying needs for LLINs**. Where possible, quantification of LLINs for a targeted campaign should be based on a realistic projection of the target group population. If it can be justified, a small percentage over the estimated population should be added in case of inaccurate population figures or out-of-date census data. Although many donors will not accept a margin of error in requests for funding, countries should consider looking to other (in-country or international) partners to provide additional nets to allow for a buffer in case gaps are identified during distribution of LLINs to children under the age of five years.

Accounting for existing nets

Wherever possible, the campaign strategy should be universal coverage, since mop-up campaigns are difficult and costly. In some countries, however, where population coverage with LLINs is high[m], it may be necessary to take into account existing nets in households in the quantification of needs. It is important for countries to undertake their own net durability studies, as condition of nets will vary according to the country situation. The figures below are based on a median survival time of three years for a LLIN, and will need to be adapted to address the results obtained from country-specific durability studies.

In addition to country-specific LLIN durability studies, countries are encouraged to undertake an assessment to determine the actual situation with previously distributed nets. The assessment serves two purposes:

1. It allows for a data-driven decision on whether accounting for existing nets will be cost-effective given the number of LLINs expected in households and the percentage actually found and in good condition[2].
2. Where the percentage of nets found in good condition is high enough that accounting for existing nets is cost-effective, it allows for a better means of quantification based on the percentage of nets found versus what would have been expected according to the predicted loss rates presented below.

If a country determines that the LLIN coverage with viable nets is high enough to make accounting for the existing nets cost-effective, which will largely be in countries with established and well-functioning continuous distribution systems, the quantification for universal coverage (total population divided by 1.8) should be used to provide the total need for LLINs. Assuming the three-year survival time, the number of LLINs already distributed over the last three years and considered to be available in households should be calculated and subtracted from the total need, working with a decay rate of 8 per cent at one year (0—12 months), 20 per cent at two years (13—24 months) and 50 per cent at three years (25—36 months). These rates of loss are based on data available to date and may change as more data become available. The table below illustrates how the calculation should be done.

Example calculation for 2013

Year nets	Quantity	Quantity lost	Quantity remaining

[2] "Good condition" must be clearly defined and should be included as a topic in training.

distributed	distributed		available
2010	50,000	50% of 50,000 = 25,000	25,000
2011	100,000	20% of 100,000 = 20,000	80,000
2012	10,000	8% of 10,000 = 800	9,200
Total existing nets 2013			**114,200**

It should be noted that mop-up campaigns following recent mass LLIN distributions have found fewer nets than expected during the household registration. While there is no hard evidence to account for the lower figures and to provide reliable quantification guidelines, it is thought that reasons include insufficient education about proper care of nets, daily wear and tear, and behavioural factors, such as nets being hidden by beneficiaries in order to receive more for the household.

> In Cross River State, Nigeria, a small qualitative survey was undertaken to try to determine what had happened to nets distributed in late 2008. Household registration in early 2010 found only around half (52 per cent) being reported as still existing in households. During the qualitative survey, 21 per cent more nets were found. Most of these nets were found in their packages, stored for use at a later date even though not everyone in the household was protected by a LLIN. These nets raised the percentage of existing nets to between 60 and 65 per cent of the original distribution.
>
> During the qualitative survey, one third of households reported receiving nets during the 2008 campaign but not having them currently. Of these households, 44 per cent reported "giving away" the nets and 40 per cent stated that the nets had worn out (60 per cent of these were subsequently burned). The remaining households either stated that they used the nets for other purposes or did not know what had happened to the nets they had received.
>
> The survey showed substantial rates of loss and wear of LLINs distributed during the previous campaign, but it also showed considerable rates of retention and use. Although not representative because of the limited number of settlements included in the survey, the results will be used to guide communication messages, as well as quantification of additional nets required, to ensure full coverage, high utilization and better maintenance and repair of LLINs distributed.

For planning purposes, based on recent experiences in Senegal and Cross River State, a figure between 50 per cent and 60 per cent of expected existing nets is likely to be found. However, local analysis of the situation (coverage figures and condition of LLINs) prior to planning will allow for a context-specific assessment of the cost-effectiveness of accounting for previously distributed nets.

3.4 Quantification of other campaign materials

It is important to quantify the needs for campaign materials and personnel early to develop the estimated global budget and to allow for early tendering for key materials. All quantification for the purposes of the initial plan and budget takes place centrally as part of the macro-planning process. Final quantification of campaign materials, which will fix the global budget, must be based on micro-planning informed by the local situation. This will ensure that the materials provided are sufficient to meet the identified needs for implementation at the operational level. When micro-planning is completed early enough, and the global budget is fixed, there will be time to advocate for further resources if funding gaps are identified.

For quantification of campaign materials that is based on the number of households (e.g. household registration forms, vouchers, registrar identification, nails and hooks, etc.), it is very important to have a clear definition of a household, particularly in areas with a high percentage of polygamous families.

Once a definition is established, the number of households in the targeted LLIN distribution area should be calculated, and at least a 10 per cent margin of error added in the event of inaccuracies with population figures and average household sizes.

Experience from countries implementing universal coverage campaigns has shown that average household size is often underestimated, leading to a shortage of campaign materials. The ten per cent buffer on the number of households should help to mitigate this problem.

The table below contains some of the materials to be quantified and the level at which they need to be procured. For materials requiring international procurement, it is important that enough time is planned between ordering and the campaign start date to prevent implementation delays. When estimating time for goods acquired through international procurement, it is important to take into account not only the date of arrival in the country, but also the time needed for customs clearing and in-country transportation before the goods reach the place where they are needed.

International procurement	National and local procurement
• LLINs (hooks and string may be included in the call for tenders as part of the specifications) • Wristbands or bracelets, if applicable (generally for universal coverage campaigns) • Indelible ink markers, if applicable (generally for integrated campaigns)	• Implementation guidelines • Government/media briefing documents • Vouchers/pens • Posters/flyers/banners • Identification, such as t-shirts, caps, badges, aprons • Training manuals • Data and supply chain management tools, including waybills, stocksheets, tally sheets, supervision checklists, rapid survey forms, household registration/summary books • Vehicle rental, fuel • Nails or hooks, string (unless provided with the nets), hammers • Chalk, stickers or cards for marking visited households • Rope (cordoning at distribution site), cutting device (for bale strapping), scissors • Campaign cards (for marking off different interventions in integrated campaigns) • Waste management, e,g, transport

Wristbands/bracelets

If it is decided that wristbands or bracelets will be used for beneficiary identification, they will need to be procured internationally. Timely planning is therefore required to ensure that they have been delivered to the implementation areas before the household registration process begins. In general each household will receive one wristband indicating the number of nets to which the household is entitled. Households in the targeted LLIN distribution area should be calculated (including the 10 per

cent buffer), and a further 10 per cent margin of error should be added to arrive at the number of bracelets to be procured.

Where is it probable that population data are inaccurate, the margin of error should be increased. It is important not to underestimate needs as international procurement means that any late gaps cannot be filled and alternative methods will be required. During micro-planning, more accurate population figures should be used to ensure that the appropriate quantities are pre-positioned in health facilities for the household registration, including a surplus in case of need. The surplus must be carefully managed and used only when proven necessary to avoid having insufficient nets for the number of people with bracelets.

Indelible markers

Indelible markers are often used on the nails of beneficiaries as an effective way to keep track of receipt of LLINs. Indelible markers have largely been used during integrated campaigns to prevent children from receiving interventions more than once in order to receive more LLINs. Indelible markers are not so relevant for universal coverage campaigns where beneficiaries receive nets based on identification such as vouchers, coupons or bracelets. It is difficult to calculate needs for indelible ink markers, as there are quality, user and environmental elements to consider. Most indelible ink markers are said to mark 500 nails, but when caps are not put on immediately after use or when used in dry climates, it can be fewer. Experience has shown that one marker generally makes between 250 and 375 marks. A buffer stock of around five per cent should be added to the quantification.

Vouchers

Vouchers which are exchangeable for LLINs may be used in a number of different ways and quantification depends on the method:

- One voucher for every LLIN available for distribution: in this case, the number of vouchers to be printed is equal to the number of LLINs available. It should be kept in mind, however, that with a large volume of vouchers, there is always a possibility of misprinting or inaccurate quantities being produced or delivered. Countries should print a buffer stock of vouchers (at least 10 per cent) that are held at a central location (such as the district health management team office) for use if necessary. There should be an established process for verifying that additional vouchers are necessary before they are released from the central location for use.
- One voucher for each household: in this case, a similar method of quantification can be used as described above for wristbands/bracelets.
- Coloured vouchers representing different numbers of nets: in this case, it is necessary to establish the strategy, estimate the number of households in each category and produce vouchers accordingly. The table below provides a hypothetical example of this method of quantification. It remains important to determine the buffer stock of vouchers that will be printed.

Number of people in household	**Percentage of households in category**	**Estimated number of households**	**Vouchers required with buffer (10%)**
1—3 persons	20%	20,000	22,000 red
4—7 persons	60%	60,000	66,000 blue
8—11 persons	15%	15,000	16,500 yellow
11+ persons	5%	5,000	5,500 green
Total	**100%**	**100,000**	**110,000**

It should be noted, however, that rural household size is generally larger than urban, and using a country average might result in underestimating requirements for urban areas. Calculations using a

different average size for urban and rural households should result in the allocation of a more accurate number of vouchers in various settings.

Tools, materials and training for micro-planning

> **The importance of micro-planning cannot be emphasized enough (see Chapter 7). Micro-planning is critical in order to finalize needs estimates, timelines and the global campaign budget.**

Micro-planning involves gathering detailed information from the district/community levels of the campaign regarding the need for LLINs and other commodities, personnel, data recording and reporting forms, communication materials and so on. Templates, tools and guidelines to be used for micro-planning purposes need to be developed and/or adapted for use at different levels. To ensure that the data collected are as accurate and complete as possible, staff responsible for their collection and collation need clear instruction materials on the use of micro-planning tools and templates.

Training materials for implementation

From the outset it is important to make an accurate calculation of the training sessions required, and to quantify the training materials that need to be developed, printed and disseminated to the appropriate locations in a timely manner. In general, training will need to take place at central, regional, district and health facility/community levels. In order to maximize human resources, training is generally given on a cascade or training of trainers (ToT) model, with each level given the skills and knowledge to facilitate training for the level below. It is advisable, given the complexity of universal coverage campaigns in terms of data collection, to carry out a minimum of two training sessions for each level, one focused on the household registration and the second focused on the LLIN distribution and post-distribution activities. Where possible, the post-distribution activities should constitute a separate, third, training.

The number of training sessions, and therefore the training materials to be procured, will depend on the number of people to be trained at each level. In general, countries should set an upper limit on the number of participants in a single training session in order for the training to be interactive and to facilitate learning. Training sessions should be long enough to include practical experience with the data collection tools, including visits to households or simulated LLIN distribution role-plays. For training of personnel for the household registration, a minimum of two days is recommended, with an additional two days' training for distribution and hang-up activities. This will ensure that the quality of data is good and that their collation and analysis are less time-consuming.

During the training at each level, participants will be provided with various materials and should be given practical training in their use. At central, regional, district and health facility levels, all trainees should be provided with a training manual, data collection and summary sheets, supervision and monitoring checklists and volunteer job aids in order to ensure quality of training throughout the various cascade levels and during implementation of activities. If there is an additional implementation guideline that supervisors should use during their work, this should also be provided during the training.

For the training of volunteers at the community level, where literacy may be lower than at the higher levels, job aids relevant to each phase of activity should be provided, in addition to data collection and summary sheets. Training manuals are not as useful at this level and may lead to confusion if participants do not understand what is written. Volunteers do not need very detailed information, and the training they receive should be focused on precisely what they are expected to do and say.

It is recommended that all training sessions are followed by a post-test or other culturally appropriate means of assessing knowledge and comprehension, as well as assessing the effectiveness of the training process. Post-test materials will need to be developed.

For each training session, a package of support materials should be put together (flipchart paper, markers, chalk, etc.) with a cost per package to be included in the budget. One support package per training should be sufficient. There is also a need to include a package of practical materials, such as paper, pen or pencil, eraser, calculator and a folder for participants in each training session. Contents will vary according to the type and level of the training session and the functions of participants. Once the contents have been determined, total cost of training materials can be calculated by establishing a cost per package per training participant.

Household registration forms, data collection tools and household marking

An accurate estimation of the quantity of household registration forms and other data collection tools required is important as shortages during implementation can have a negative impact on campaign implementation.

Forms used during household registration should have duplicate carbon copies (or photocopies if carbon copies are not available) and should be bound into books to ensure papers do not get lost. One copy will be kept at the distribution point to be used in the case of lost vouchers, and one is kept by the district to allow for summarizing and analysis of data by the immediate and higher level supervisors. The books should accord with what each volunteer is expected to achieve each day. For example, if a volunteer is expected to register 200 households over 10 days, then a book with sufficient pages for this number of households (typically 20 households per sheet), plus some extra pages should be printed. A ten per cent margin for error should be printed for cases where the population estimates may be inaccurate, or for cases where the printing is of inferior quality and the books cannot be used.

In addition to the household registration books, summary forms, including a ten per cent margin for error, must be printed to facilitate data collation and analysis. Summary forms will be necessary at each level: health facility, district, regional and national, and the numbers required will depend on the number of facilities, districts and regions as well as on the method for data retrieval and management (daily, weekly, end of activity summary, etc.). To avoid confusion, however, it is advisable to keep the number of different forms to a manageable number, and to collect, collate and analyse only information and key data that are relevant to the exercise.

Where countries have mobile phone coverage over the majority of the area where the campaign is taking place, they may wish to consider limiting the paper-based summarizing of household registration data and implementing a system where data is transferred by text message (SMS) from supervisory level upwards to facilitate collation and analysis. It is particularly important to limit the number of pieces of information that need to be transmitted each day to reduce risk of errors. As an example, four data points should be sufficient: name of village, total number of people, total number of vouchers distributed, total number of nets needed. If a mobile phone-based system is chosen, there will be a smaller budget for photocopying but increased costs for the purchase of air time to ensure no problems with the transmission of the data.

> **Regardless of the method for data collection and transmission, there should be a budget for personnel at the district level to be specifically focused on the management of incoming data to improve the quality of the data collation and to reduce time for data management.**

Finally, for the household registration and for hang-up visits, it is important to have a way of marking households that have been visited to avoid duplication of activities. A number of visual methods have

been used to show houses that have been visited, so that it is easier to identify those that have been missed or require follow-up visits. These include chalk marks, stickers and cards, placed out of the reach of children. Whichever culturally appropriate method is employed, the chalk, stickers or cards must be included in the quantification requirements. Stickers and cards, if based on macro-quantification numbers, require one per household plus a buffer stock of at least 10 per cent, or more if population data are out of date. For chalk, the quantification should be based on how much information will be written (e.g. date and volunteer initials, or just an "X" mark), and on the number of households a volunteer is expected to cover in a day. In general, a volunteer visiting 20—30 households per day would require between two and four sticks of chalk per day for each day of the household registration or door-to-door hang-up visit. However, to avoid volunteers running out during the activity, additional quantities should be procured for each health centre/district.

During the distribution, site personnel will use a tally sheet to record the number of LLINs distributed. The calculation for tally sheets required should be based on the number of sites and the number of days of distribution (a new sheet should be used each day) plus a 10 per cent margin of error.

During door-to-door hang-up activities, volunteers will use a household visit form to record information. These should be produced according to the guidelines above for household registration, but the quantity should be modified according to the strategy adopted (see the section in 3.5 below on Hang-up).

The number of supervision and monitoring checklists, as well as the number of rapid surveys to be printed will depend on the number of supervisors and monitors, as well as on the protocol for implementation of the rapid surveys. This will be country-specific, but supervisors and monitors should be provided with a number of checklists and monitoring forms/questionnaires per day plus a buffer stock in order to undertake their tasks.

Communication supports

In order to ensure sufficient resources are allocated for communication supports from the initial macro-planning, it is important to identify what is needed for each phase of activities and in what quantities. Items that may need to be quantified include job aids for volunteers undertaking social mobilization or other communication activities, advocacy folders for government officials and donor organizations, television or radio spots on CD or cassette to circulate to television and radio stations to ensure consistency of messages, print materials to identify sites or for launch events and air time for radio and television spots before, during and after the campaign.

While every effort should be made in advance of the household registration to inform beneficiaries about what will happen and why, ensuring that volunteers visiting households have adequate identification is vital. Beneficiaries must understand that the volunteers have a valid health-linked reason for visiting their household and collecting information. This is particularly important where beneficiaries may be uncomfortable with the government collecting detailed information about them or where elections are being held soon. Volunteers can be identified through t-shirts, bibs, aprons, badges, hats, or bags/folders with a campaign logo.

LLIN distribution and hang-up materials

In addition to the data collection tools, certain materials are required at distribution sites to facilitate the work of the distribution teams. These materials include scissors, a cutting device (many bales are now strapped with metal, requiring a knife or other sharp tool to cut the ties), rope (to form lines for more effective crowd control and to provide a barrier between the distribution site and the LLIN storage area) and writing materials. In addition, each site should have a box for collection of vouchers or wristbands and large bins or bags for the collection of waste at the site.

For door-to-door distribution, the methodology will need to be determined early on to ensure supplies are procured on time and in sufficient quantities. If the methodology is to physically hang all or some nets in every household, the volunteer will need to be provided with materials for hanging: hammers, nails, string, hooks or other items that are commonly used in the area based on typical household construction. Countries should consider procuring hooks, nails and string with the LLINs to be included in each package, and procuring sufficient hammers for the volunteers locally. If the methodology is to distribute nets door-to-door without physically hanging, then volunteers will only need supplies common to either methodology: large bags to carry nets, job aids for dissemination of key messages, communication materials to be given to beneficiaries on hanging, use and proper care of nets and data collection forms.

For post-distribution door-to-door hang-up after fixed site delivery, there are a number of different approaches, and quantification of materials required will depend on which approach is adopted. Visits by volunteers may be, for example:

- to disseminate key messages about hanging, use and maintenance of nets
- to help householders with hanging nets not hung or incorrectly hung

If the latter, decisions need to be made on provision of materials to volunteers for the hang-up activity. Will volunteers receive hammers, nails (and which type – regular or concrete or a mix), string or other tools to hang the nets? What are the main ways that people hang their nets (and how much string, on average, would be required for each net)? Is the plan to hang all nets at a household or only one to demonstrate how it should be done? Is there a break between the LLIN distribution and the hang-up? If so, what percentage of LLINs should have been hung during that period (to provide an estimate for the materials required for hanging the remaining percentage that have not been hung)?

Waste management

At the time of writing this toolkit, no policy guidelines have yet been agreed upon for the management of waste, notably plastic packaging, created during the mass LLIN distribution campaigns. WHO is currently working on the development of a guidance document on disposal of LLIN packaging. The interim recommendations from WHO[n] are:

DO NOT

1. Burn LLIN bags in the open air by any method other than the proper incineration conditions (see below).
2. Re-use LLIN bags for any purpose.

DO

1. Recycle LLIN packaging only through recyclers that understand the necessity of recycling non-biodegradable pesticide-tainted residues only into non-consumer products.
2. Incinerate LLIN bags ONLY if specified high temperature incineration conditions for pesticide-tainted plastic can be guaranteed and FAO/WHO and Basel Convention guidelines[3] can be strictly followed.
3. Store LLIN packaging only if future safe incineration or recycling is expected: the storage facility must be dry and secure.
4. If recycling or incineration is not possible and if the manufacturers provide directions on methods for safe disposal, follow these. If not, bury any potentially insecticide-treated plastics in soils with low permeability, away from any residences, preferably down gradient from any known domestic water sources but at least 100 metres from wells or other domestic water

[3] Basel Convention Technical Guidelines specify that "The condition for the optimal incineration of material is: Temperature of 850°C—1100°C for hydrocarbon wastes and 1100°C—1200°C for halogenated wastes; sufficient (gas) residence time in the incinerator (EU legislation requires 2 seconds as a minimum)."

intakes or high water marks of lakes/wetlands. Material should be buried to a depth not exceeding one metre above the highest annual water table and compacted soil should cover the buried plastic to a depth of one metre or more.

At the time of procurement of LLINs, countries can specify packaging requirements when issuing a tender. For example, in Uganda the NMCP avoided the plastic packaging by ordering naked nets that came in wrapped bales but without individual packages. Some suppliers also offer alternatives to plastic packaging, such as bio bags, a solution that can be explored at the time of LLIN procurement and tendering.

For budget purposes, it is important to estimate the transportation requirements if packages are being moved to a location with an incinerator or to a central point for burying. For these estimates, it is necessary to factor in the movement from the lowest point in the supply chain (often the distribution point which is where the packages will have been maintained) to the final destination. This should be estimated in conjunction with logistics staff since the process is essentially a reversal of what was done to move the nets down to the lowest points in the supply chain.

3.5 Quantification of personnel

Quantification of personnel needs should closely mirror the implementation plan, ensuring that there are sufficient people to carry out all the required tasks at different phases of the campaign. Trained personnel may be required at central, regional, district and health facility/community level, depending on the scale of the campaign. Personnel are required for all phases of the campaign and the number of people needed in each phase will depend on the strategies adopted. For example, if household registration is door-to-door and LLIN distribution is from fixed sites, in general fewer people will be required for the LLIN distribution than were needed to reach every household during the registration. However, in the case of door-to-door LLIN distribution, the personnel required for household registration would be the same as the number required for distribution (although the registration and distribution may be done in a single step).

As for the quantification of campaign materials, the quantification of personnel, where based on the number of households, should be based on the estimated number of households plus a buffer of 10 per cent to allow for inaccurate population data and/or smaller average household size. The buffer will allow for additional personnel to be identified for hard-to-reach areas during the micro-planning.

Household registration

When quantifying personnel needs for household registration, distances between households will affect the number of households that a registrar can cover in one day, as will the amount of information being collected and the average literacy level of the registrars. The number of days allocated to household registration will also affect personnel quantification. Where there are few days to reach every household during the registration, more personnel will be required to accomplish the task. To calculate the number of people needed to reach all households during household registration, it is recommended that the following figures be used:

- 25—30 households per person per day in urban areas
- 20—25 households per person per day in rural areas

If a registrar works in an area where houses are closer together, it may be possible to register more households per day than in areas where the population is highly dispersed. The quantification is based on the household registration taking approximately 15 minutes per household (introductions, explanation of purpose of visit, asking questions of the beneficiary and recording information, responding to questions from the beneficiary and disseminating key messages about the dates and

procedure for the LLIN distribution) and a registrar working a maximum of six to seven hours per day (including time for walking between houses).

When planning for the household registration, the plan of action will provide macro-estimations of the number of personnel required in each district or health facility catchment area. However, at the micro-planning stage, it will be important for the local context to be taken into account, which may increase the number of personnel required in order to reach populations living in areas that are difficult to access.

During the household registration, supervision is of utmost importance to ensure the quality of the activity and management of the data collected. Supervision should occur from all levels (community, health facility, district, regional and central) and supervision planning should take place to ensure that all areas are reached and there is no duplication of activities. In order to quantify the number of community/health facility supervisors (those who undertake "immediate" supervision of the registrars) required, a calculation of one supervisor for every ten volunteers should be used in rural areas, while this can be increased to one supervisor for every fifteen volunteers in urban areas. At central, regional and district level, supervisors are more focused on ensuring that data are collated correctly by the immediate supervisors, and transmitted and collated at each higher level using whatever data management system (paper-based, cell phone-based, etc.) has been planned and budgeted for.

Supervision of activities is important to assess volunteer performance and overall coverage during the implementation of the activities and to allow for immediate corrective action where households have been missed. The corrective action taken will depend on the issue. Where households have been missed (for example fewer than 8 out of 10 were visited and registered according to monitoring data), the supervisor should discuss the situation with the volunteers responsible for the area during their daily meeting, ask the volunteers to ensure the area is covered the following day and follow up to confirm that action has been taken. Where the problem is with data collection or summarizing daily data, the corrective action may include on-the-job training where the supervisor accompanies the volunteer to a few houses to observe and then discuss how the visit can be improved. The supervisor may also work directly with the volunteers at the end of each day to ensure that the summary of their data is correct. It is important that there are sufficient supervisors to ensure that all volunteers can be met and supervised, notably during the first days of the household registration where errors are most likely to occur.

Independent monitors should be considered for the household registration phase in order to reinforce the quality of the activity. Independent monitors will be most useful in the early days of the household registration as supervisors are too busy to undertake monitoring as well as supervision of volunteers. The number of monitors needed, as well as guidelines and questionnaires, will depend on the monitoring strategy and methodology put in place (see Chapter 7).

LLIN distribution

The number of personnel for the LLIN distribution will depend on the number of sites and the number of days of distribution. Generally, the number and location of sites will be based on the EPI mass vaccination campaigns to ensure use of sites with which the population is familiar. However, it will be necessary to see if the number of sites used by the EPI is sufficient to allow for a successful LLIN distribution with minimal crowd control problems. It would also be necessary to look at the most appropriate community distribution points to act as alternatives to mobile sites and to serve multiple villages within walking distance. In general, the number of distribution sites required (when macro-planning) will be based on either the number of beneficiaries to be served (number of people that can be served per day) or the number of LLINs to be distributed per day.

The number of days of distribution is typically a function of the number of sites and the number of LLINs to be distributed. In general, LLIN distribution takes between four and seven days. In urban

areas, a distribution site team can expect to serve between 300 and 400 beneficiaries each day, while in rural areas the number of beneficiaries expected per day is 150 to 200. In many cases, countries opt to limit the number of nets to be distributed from any single site in order to minimize crowd control issues. In this case, the number of days for distribution could be determined as follows:

> **Urban area**: maximum of 6,000 LLINs to be distributed
> Estimate 400 beneficiaries a day, average of three LLINs per beneficiary based on average household size
> Calculate average of 1,200 nets to be distributed each day
> Determine that number of days of distribution is five
>
> **Rural area**: maximum of 2,000 LLINs to be distributed
> Estimate 150 beneficiaries a day, average of four LLINs per beneficiary based on average household size
> Calculate average of 600 nets to be distributed each day
> Determine that number of days of distribution is four

Alternatively, the number of days of distribution can be based on the number of distribution sites. If, for example, a country opts to limit the number of sites to those used by EPI, then the National Coordinating Committee and supporting sub-committees will need to calculate the number of nets for each site and then determine the number of days required for a successful distribution. In this case, the number of days for distribution could be determined as follows:

> Total LLINs to be distributed: 500,000 in urban areas + 200,000 in rural areas
> Total number of sites: 300 fixed (urban/peri-urban), 120 advanced (rural)
>
> **Urban**: 500,000 LLINs/300 sites = 1,667 LLINs per site
> Estimate 300 beneficiaries per day and average of two LLINs per person (600)
> Number of days = 1,667/600 = 3 days of distribution
>
> **Rural**: 200,000 LLINs/125 sites = 1,600 LLINs per site
> Estimate 200 beneficiaries per day and average of three LLINs per person (600)
> Number of days = 1,600 /600 = 3 days of distribution

Where the number of days for the campaign is set, such as when LLINs are integrated with another platform, it will be necessary to calculate the number of nets that need to be distributed each day. Since distribution numbers may be larger than normal and there will be more beneficiaries expected at a site, it will be necessary to plan for additional personnel to manage the larger numbers per day and the related crowd control issues.

During distribution, the recommended number of personnel per site is:

- urban sites, minimum of six people, expecting 300—400 beneficiaries per day
    - two persons for crowd control and net security
    - two distributors
    - one person to mark tally sheet
    - one person to provide health education messages and net hanging demonstrations
- rural sites, minimum of four persons, expecting 150—200 beneficiaries per day
    - one person for crowd control and net security
    - one distributor
    - one person to mark tally sheet
    - one person to provide health education messages and net hanging demonstrations

Supervision is important during the LLIN distribution, particularly on the first days when the majority of beneficiaries will come to sites to receive their nets, with potential crowd control issues. For macro-quantification purposes it is recommended that there is one supervisor for five to ten sites in urban areas and one supervisor for five sites in rural areas (as these are likely to be more dispersed). During micro-planning, it will be important to verify the number of supervisors required to ensure that difficult access areas will have adequate supervision.

As for the household registration activities, monitoring is vital to be able to provide corrective action, such as redistributing nets in areas with stock-outs, or enhancing communication when LLIN household coverage (LLIN ownership) or utilization (distributed nets not hanging) falls below an agreed cut-off, such as fewer than eight out of ten households.

Hang-up

Each country will need to assess what is required to ensure that the nets distributed during the campaign are hung and used, as well as repaired and maintained. Where possible, the hang-up strategy should be based on an assessment of existing data about use of mosquito nets in the country. In some countries, such as Mali and the Gambia, there is a long tradition of mosquito net use and these positive behaviours only need to be reinforced. In other countries, there is little experience with widespread use of mosquito nets, and the population may require more information about correct hanging and use to ensure that the LLINs distributed have their desired impact. In addition, knowledge of likely net durability in terms of physical integrity and insecticide concentration, as well as awareness of perceived net longevity by beneficiaries, will feed into the design of hang-up strategies and messages.

Among other methods, hang-up can be carried out through mass media campaigns, community events and door-to-door visits. Where a country chooses door-to-door hang-up activities as the strategy for encouraging correct, nightly use of LLINs, one of the key questions to ask is whether the objective is to visit 100 per cent of households targeted during the campaign or whether a smaller percentage (e.g. 75 per cent) will be targeted under the assumption that some information will pass between households without a visit by a volunteer. In addition, the NMCP and partners will need to determine whether door-to-door hang-up will take place:

- nationally
- in areas showing low utilization following monitoring and evaluation activities
- in both urban and rural locations

Once these decisions have been made, macro-quantification of personnel required for door-to-door hang-up should be based on the same rationale as personnel required for the household registration, with appropriate modifications made according to the strategy selected. The number of supervisors and monitors required for the door-to-door hang-up should be the same as the recommendations for the household registration.

Supervision and monitoring

Supervision and monitoring are crucial during LLIN mass distribution to ensure quality of activities and success in the overall roll-out of the campaign. In each of the sections above, recommendations for quantification of the lowest level supervisors have been provided. In addition to these “immediate” supervisors of the registrars, distribution teams and hang-up volunteers, it will be important to mobilize and train supervisors from the district, regional and central levels to reinforce the work of the immediate supervisors of the registrars, and to assist with data collection, collation and analysis during all phases of activity. The number of supervisors at each level will be dependent on the total population of the area and the number of campaign personnel requiring supervision. Terms of

reference, or a clear list of tasks and responsibilities for supervisors at each level should be developed to help determine the number required.

In addition to supervisors, many countries identify and train people to act as monitors during the campaign. Monitors oversee a defined area, using assessment forms to give an objective view of how the campaign is progressing at any phase of the activity. Monitors do not take corrective action in the field: this is the role of the supervisor. The monitors will provide feedback to the supervisory team during the daily evening meetings for immediate remedial action if necessary. At the end of the campaign, they should produce a report with recommendations for future activities. The number of monitors will depend on the number of households or sites that are to be visited and the geographical location of the distribution.

Communication

At the community level, for all phases of the campaign, social mobilization activities will require trained personnel to ensure a high level of community participation in the campaign activities. Potential beneficiaries need to know dates and locations of the LLIN distribution, information about registration and distribution and what to expect from household visits, as well as the importance of keeping the voucher or other identification material provided to be able to receive LLINs. Quantification of personnel will depend on method of social mobilization, size of area, number and size of communities to be reached and geographical characteristics. Many communities have existing "traditional communicators", such as town criers, who are well placed to deliver these types of messages. Local radio stations are also a good method of spreading messages about the campaign.

For further detail on communication activities, see Chapter 6.

3.6 The detailed planning process

Following the decision to scale up coverage of LLINs via mass distribution to a level where it can be sustained through other continuous distribution channels, the first step is to undertake a detailed planning exercise, based on strategies for LLIN allocation to households, identification of beneficiaries, LLIN distribution and hang-up to promote utilization.

> **There are as a general rule many partners involved in campaigns (see Chapter 2, Coordination) and it is crucial that they are part of the planning process and that all actors agree on the campaign strategy, the target areas and groups where coverage is not national or universal, and the resources required for campaign implementation.**

Following submission and approval of proposals, which will include general macro-quantification of LLINs and operational costs for the mass distribution, detailed campaign planning should begin. It is advised that the start date for developing the plan of action should be at least nine to twelve months, and certainly a minimum of six months, in advance of the campaign dates. The earlier planning begins, the earlier that gaps (financial, LLINs, technical support) can be identified. In general, countries tend to start planning late and identify gaps too close to the campaign start date for partners to have sufficient time to advocate for filling them. When countries are able to finalize a plan of action or implementation guideline, a timeline of activities and a budget showing partner contributions and gaps well in advance of the campaign start date, it allows time for in-country and international partners to raise funds for LLINs or operational costs or identify technical assistance to assist countries with filling capacity gaps. Very detailed, accurate and early planning should ensure that, once the campaign begins, there are no gaps remaining to be filled.

In the case of universal coverage distributions, campaign planning must be led by the MoH and should include the key partners who are contributing to, or committed to, the LLIN distribution. Where there are multiple partners involved in a campaign, it may be best to identify a small working

group (say between two and five people) of technical individuals representing key partners to elaborate the proposed plan, timeline and budget for circulation to the broader group. The working group should contain representation from the logistics, communication and monitoring and evaluation subcommittees as needed, who should develop sections of the overall plan of action relevant to their areas of expertise and in agreement with the separate logistics, communication and monitoring and evaluation plans. Once the key campaign documents have been developed in draft by the working group, they can be shared with the National Coordinating Committee and/or the technical sub-committee for their input and final approval.

In the case of integrated campaigns, where LLIN distribution will coincide with either supplementary immunization activities (SIAs) or mother-child health (MCH) days, it is vital that the malaria partners join the existing coordination structure, the Inter-agency Coordinating Committee (ICC), which is often led by EPI staff. During planning for integrated campaigns, malaria partners should participate actively to ensure that the LLIN distribution is included in the campaign plan of action, budget and timeline. They should ensure that details are included of how LLIN distribution will give added value and not be disruptive to the already planned activity. When LLINs are added on to an existing platform, or where other interventions are added on to a planned LLIN distribution, it is critical that each partner brings their own financial resources to the table to avoid stretching already thin resources for the other interventions.

The plan of action, timeline and budget are the main documents to be developed, reviewed and validated by partners. The sooner the plan of action can be completed and validated, the better the chances are that all partners will be able to implement those commitments to the campaign that were made during the planning for health activities for the coming fiscal year. If timely, the detailed plan of action may also allow partners to put any extra resources into filling gaps to ensure the success of the campaign.

Early budgeting is vital. Without a budget it is difficult to justify requests for funds for activities or convince partners to fill unseen gaps. Early budgeting should be tied to establishing a mechanism that allows funds to be disbursed in a timely manner, avoiding delays in implementation.

3.7 Developing the plan of action

Once the major decisions about implementation and quantification have been taken, the campaign plan of action should be developed. It should contain detailed information on the broad spectrum of activities that need to take place before, during and after the LLIN distribution campaign. The plan will be used for a number of purposes, not just for informing partners and those involved in implementing the campaign. It will also serve as a tool for advocacy, for securing both in-country and international support and funding. In addition, it is a valuable source of data to inform the final campaign report.

The following structure is recommended for the plan of action:

TITLE OF SECTION	ELEMENTS TO INCLUDE	COMMENTS
Executive summary		A summary (1—2 pages maximum) of the key activities, issues and challenges. In order to summarize the most important points, this section would generally be written last, once all elements had been included in the document.
Country overview	Population data (size, urban/rural) Geography/climate Health system, structure and access Map of country Table of key indicators (health, socio-economic)	Various sources of data[o] exist for population figures. In theory, the national census should provide accurate figures, but in countries with a long time period between the last census and the campaign planning process, one should assume that figures will not be reliable. Other sources of data on population should be considered and a best estimate made. Where the population figures are being taken from a non-census source, appropriate justification should be provided for the population source(s) utilized. Planning should also take into account areas that may experience large fluctuations in population, due to conflict or natural disaster, mining, seasonal agriculture or labour migration, or cross-border movement.
Context, analysis and justification	Malaria-specific data[p] Mara map[q] National malaria strategy (LLINs, treatment, IRS) and plans for achieving universal coverage of all interventions Experience from past campaigns Current campaign funding situation Progress towards MDGs	This section should be specific to the country and should explain how the planned LLIN campaign fits into the current national malaria strategy and how it will help the country to reach universal coverage with prevention in a bid to achieve the MDGs. In countries where malaria transmission differs by region, it will be important to explain which other interventions are used to target non-endemic areas. If a country has already implemented a mass campaign, it is important to refer to that experience, provide any results from the LLIN distribution (from a survey or administrative coverage) and identify key lessons learned that should be taken into account during the planning and implementation of the current campaign. If available, include the coverage data on ITN ownership and use from the most recent national population-based survey, such as the Demographic and Health Survey (DHS), the Malaria Indicator Survey (MIS), or the Multiple Indicator Cluster Survey (MICS). This section should identify the total LLIN needs for the campaign and the various

		funding partners who are contributing the LLINs. In addition, partners pledging resources for operational costs should be identified when explaining the current campaign funding situation.
Goal, objectives, expected results	Overall goal Specific objectives Expected results	In general, the LLIN distribution campaign should have a single goal that is linked to achievement of national malaria objectives, the RBM universal coverage targets and achievement of the MDGs. For example: "The goal of the LLIN distribution is to achieve the 2015 MDGs by reaching 100% coverage of the population at risk of malaria and 80% utilization of the LLINs distributed in order to reduce malaria transmission and achieve universal coverage for prevention of malaria." A number of objectives will be identified as necessary for achieving the goal, including: reach 100% of households to identify beneficiaries and provide vouchers for LLINs; distribute LLINs to 100% of beneficiaries presenting a voucher at distribution posts; ensure 80% of LLINs distributed are hanging in households. The expected results should directly relate to the objectives set.
Procurement	Overview of LLIN procurement	The procurement section should describe when and how LLINs were ordered (e.g. through third party procurement, independently), timelines for arrival and delivery level (centralized or decentralized). The section should briefly describe the roles of various stakeholders (supplier, freight forwarder, NMCP and partners) in the arrival, customs clearing and delivery of nets to the first destination in the country and the chain of responsibility for the LLINs (where LLINs are handed over to the NMCP or other implementing partner throughout the supply chain). The LLIN suppliers and specifications of bales and packaging should be listed. The LLIN pipeline monitoring process should be described.
Strategy	Overview of overall implementation strategy for all campaign phases Definition of household/operational definition of household	This section is the overview of the entire campaign, from micro-planning through to end of campaign evaluation. The section should describe how households are defined for the purposes of the campaign (operational definition) and should describe the LLIN allocation (including whether existing nets will be taken into account) and beneficiary identification (voucher, wristband/bracelet, etc.) strategies. It should describe how the distribution will take place

	Macro-quantification of LLINs, personnel and other needs Micro-planning Training Household registration and beneficiary identification Distribution of LLINs Hang-up to improve LLIN utilization Supervision and monitoring Data collection and management Evaluation	(fixed site, door-to-door, etc.) and which follow-up activities are planned to ensure utilization of the nets (media campaign, door-to-door visits, etc.). In a table (using Excel or similar spreadsheet software) annexed to the plan of action, macro-quantification of LLINs, personnel and other needs should be presented for each phase of activity based on the guidelines provided earlier in the chapter. Where possible, the macro-quantification estimates should be to health facility level, but at minimum should be to district level. The micro-planning process should be described, including any briefings or trainings prior to the planning activity, information to be collected/verified, and supervision and support during the micro-planning and consolidation and analysis of results. The plan should describe how the information collected from the operational level will be incorporated in the district, regional and national plans and budgets. Training should be described in terms of the levels where training will take place, the phases of activity for which there will be training and the duration of the training sessions for each phase and at each level. Supervision and monitoring activities, and the various levels and phases of activity at which these will occur should be explained with a brief description of the key tasks and responsibilities. During universal coverage campaigns, a great deal of information is collected that needs to be cleaned, analysed, collated and validated to determine LLIN needs from the household registration, LLINs distributed during the distribution and LLINs hanging at the end of the immediate post-distribution activities (where the hang-up strategy is door-to-door). The data management chain and data transmission methods (e.g. paper or mobile phone based, etc.) should be described in detail and timelines for reporting should be included. If a post-campaign coverage and utilization survey is planned, this should be noted in this section of the plan of action and elaborated on in the monitoring and evaluation plan

		annexed to the PoA.
Logistics	General background Supply chain Timeline of key milestones Training Micro-planning Transport Storage Security Commodity management assessment	This section should provide a brief overview of the logistics operation, but details will be found in the logistics plan of action that is annexed to the overall campaign plan of action. The logistics section in the campaign plan of action should indicate the supply chain management process from the entry point to the first level of storage (note that this information may have already been provided under procurement, depending on where nets are being delivered). A timeline of key milestones (such as arrival of nets in country, micro-planning, LLIN movement through the supply chain) should be provided. A more detailed timeline of all activities is contained in the logistics plan of action. The section should briefly describe the training and tools that are necessary for good supply chain management. The micro-planning process is important for the success of the campaign logistics and a brief overview of that process should be included. The various levels of transport and storage, as well as security throughout the operation, should be highlighted. Security measures are paramount throughout the supply chain and should be mentioned in brief terms, with detailed activities found in the logistics plan of action. While much of the supervision and monitoring of the LLIN supply chain is internal to the trained logistics team, a commodity management assessment to evaluate the use of key documents throughout the supply chain should be included.
Communication	Communication objectives Strategies and key activities planned for advocacy, social mobilization and behaviour change communication:	This section should provide a brief overview of the communication activities, but details will be found in the communication plan of action that is annexed to the overall campaign plan of action. The communication objectives, which are linked to the overall campaign objectives, should be described. An overview of strategies and key activities planned for advocacy,

	• pre-campaign • registration • distribution • post-campaign Training Monitoring and evaluation	social mobilization and behaviour change communication pre-campaign, during registration and distribution and post-campaign should be provided. Training, as it is related to communication objectives and the overall contribution of the communication subcommittee to the various training manuals, should be explained. The communication-specific training elements for each phase of activity should be provided. Often, monitoring and evaluation of communication activities does not take place as its value is underestimated. It will be important to explain how communication will be included in all supervision, monitoring and evaluation tools developed.
Evaluation	Evaluation objectives Situation with upcoming population-based surveys Timing Methodological approach Data management and analysis Survey report	This section should provide a brief overview of any planned campaign evaluation(s), but details will be found in the monitoring and evaluation plan that is annexed to the overall campaign plan of action. This section should briefly present the goals, objectives, indicators, outputs and outcomes of any planned evaluation, as well as how these align with the national malaria monitoring and evaluation plan and the recommendations of the Monitoring and Evaluation Reference Group (MERG)[r]. The timing for the evaluation should be explained in relation to any other population-based surveys planned following the LLIN distribution. A brief paragraph to describe the methodological approach will be important, as will a paragraph describing the data management and analysis that will take place. The timing of the release of the final survey report should be estimated and an explanation provided as to how data collected and analysed will be used to improve the LLIN programme performance.
Sustainability	Existing or planned continuous distribution systems	This section should provide a very brief overview of how gains in LLIN coverage and utilization are to be sustained in the longer term. For example, will replacement LLINs be free of charge or offered to beneficiaries at a subsidized rate? Will the existing health infrastructure be used to supply LLINs on a continuous basis to newly pregnant women and newborn children at routine antenatal and immunization visits to health facilities? If there are plans to support the commercial sector to increase the supply of LLINs, then the

		viability of this option should be addressed. Any planned methods for continuous distribution of LLINs should be described, including the geographical area they will be covering and the targeted population(s).
Coordination	Central level structure Sub-committees Regional/district level structure Methods of communication	This section should briefly describe the levels of coordination that will be put in place to ensure a well-planned and implemented campaign. The roles and responsibilities of the central coordinating committee and the subcommittees, as well as the regional, district and lower level coordination structures, should be briefly discussed, with details provided in an annex at the end of the plan of action. The importance of communication should be highlighted and the means for ensuring open and transparent information sharing (regular meetings, emails, etc.) should be explained.
Budget and funding	Total estimated budget for campaign planning and implementation Gaps identified and possible sources for gap-filling System of dispensing funds on time and in correct amounts	The detailed budget should be provided in an annex to the campaign plan of action. The narrative for this section should be brief, focused on providing the total estimated budget for the campaign (final budget cannot be validated until following micro-planning), any gaps that exist and possible sources of funding for filling the gaps. Where gaps are very large, the plan should provide a summary of any resource mobilization plans for bigger international donors. The plan of action should briefly describe the system used to ensure that funds are dispensed at time and in the correct amounts to ensure no delays in implementation of activities.
Timeline	Campaign milestone dates	The detailed timeline should be provided in annex to the campaign plan of action. The narrative for this section should only highlight the milestone dates such as when the household registration, LLIN distribution and post-distribution activities will begin and end.
Annexes	Logistics plan of action Communications plan	

	Monitoring and evaluation plan Macro-quantification of LLINs, personnel and other needs tables Coordination structure and terms of reference Timeline Estimated global budget	

See also Resource R3-6 to R3-9 for examples of action plans with their associated timelines.

Establishing a timeline of activities

Reliable information on delivery schedules is required in order to set campaign dates. LLIN campaign delivery dates will be based on timing for procurement, arrival of LLINs in the country and movement of LLINs through the supply chain to distribution points. In addition, a number of activities, notably the micro-planning and household registration and analysis of the data collected, need to take place prior to the LLIN distribution and take a certain amount of time for completion. The development of a timeline is vital to set a critical path, and to note potential bottlenecks. Adequate time must be allowed for all activities prior to the campaign. This will include any design and printing of vouchers, communication materials, registration forms, supervisory checklists, and so on. The time for collection, cleaning, analysis and compilation of data from the micro-planning and household registration should not be underestimated when developing the timeline.

Countries may be under pressure to begin distributing LLINs at a certain time for political reasons, seasonality or other causes, but it must be kept in mind that certain pre-campaign and implementation elements (such as LLIN delivery or movement of LLINs through the supply chain) cannot be rushed, and the careful development of realistic timelines with some built-in contingency in case of unexpected events provides a vital planning and implementation tool. See sample timelines in Appendices 3B and 3C.

Developing the global budget

The global budget should include all the elements and activities required for campaign success. It must be based on the implementation strategy and macro-quantification (see Resource R3-2).

3.8 Key planning recommendations

In general, integrated universal coverage campaigns have been more difficult to implement than stand-alone universal coverage campaigns, and mop-up campaigns are even more challenging. Previous campaigns of all kinds have, however, provided experience from which lessons can be learned.

Key planning recommendations include:

- Good partner coordination is vital. Roles and responsibilities must be clearly defined, and an effective communication structure between partners set up. See Chapter 2 for more recommendations on how to ensure good coordination. With integrated campaigns in particular, harmonization of approaches and consistency in implementation can be difficult to achieve where there are multiple partners mobilizing human resources for campaign implementation.
- Early planning is crucial. Planning at the macro level gives the estimated budget and will allow for early identification of any major gaps in resources or funding. Based on these major gaps, the country should develop an advocacy and resource mobilization strategy and begin trying to fill gaps. It is recommended that a small working group (a maximum of five people) of technical individuals is designated to develop the plan of action, timeline and estimated budget for review by the broader group.
- Micro-planning is a critical activity for finalizing the operational and implementation needs and associated costs and should be undertaken early in order to finalize the budget and to allow time to take action to fill any remaining gaps identified. Micro-planning is a bottom-up activity, collecting information from the lowest levels. It offers an opportunity for communication and advocacy at the district and health facility level, helping to promote ownership. When setting activity timelines, make sure that micro-planning takes

place at least four to six months before the date of the LLIN distribution and that there is sufficient time allocated (10—14 days) to complete data collection and collation at the regional or district level. The more accurate the information is that is collected during the micro-planning, the better the chances for success of the campaign.

- Quantification is a major challenge. Population figures from census projections are often inaccurate and average household size smaller than predicted, leading to LLIN shortages. Census data should be cross checked with survey data and local data. Often local data are more reliable but may be subject to political or personal influence at either the local or higher levels if the numbers differ significantly from estimates. The more accurate the population numbers are for the planning, the less likely that gaps will appear during implementation. Where using average household size as a means for quantifying LLIN need, be sure to take into account both urban and rural averages for more accurate estimations.
- The definition of a household must be clear and unambiguous, and should be described in the overall plan of action and in training documentation.
- Supervision and monitoring are critical during the household registration, distribution and hang-up activities and should be planned and budgeted for from the outset of campaign planning.
- Training is essential at all levels of campaign implementation, but it is important to ensure that the appropriate people are being trained. Adequate time for training must be built in to the campaign timeline. For cascade training, it is necessary to ensure that the top levels understand training methodologies and have adequate capacity and tools to be trainers. Plans for training should set a maximum number of participants and the budget should reflect the number of sessions and days per session that are required to ensure adequate understanding by participants. Supervision of training should be planned and budgeted for.
- To ensure efficacy of training, post tests or other culturally appropriate methods should be used to check adequate understanding by personnel. Time should also be allowed to include practice with data collection forms to ensure familiarity. Training in the case of integrated universal coverage campaigns is particularly important because of the complexity of the tasks, with more information to be collected from multiple target groups. Ensure that a minimum of two days is planned for training of all levels for the household registration, while an additional two days is planned for the training of all levels for the distribution and hang-up activities. Training is critical to the success of the campaign, a fact that should be reflected in detailed and careful planning and budgeting.
- Data collection, collation and synthesis are time-consuming and must be planned for accordingly. Sufficient time should remain between the household registration and the LLIN distribution to allow for data analysis and pre-positioning of the nets. The logistics sub-committee should provide inputs on movement of the LLINs through the supply chain so that the timelines can be set accurately (for example, where the movement of the LLINs from the district to the distribution point is based on the household registration data, the logistics sub-committee should provide an estimate of the time it will take from reception of the data to net arrival at distribution points).
- Measures for accountability of LLINs must be put in place, made clear in the documentation, and form a topic for training. It is key that a commodity management assessment is planned and included in the budget at the outset. It is essential to plan and budget for sufficient logistics personnel at all levels (central, regional, district, community), and to include personnel training, ensuring that staff can effectively monitor the movement and storage of nets throughout the supply chain.

- **Household registration is the key to the entire campaign. Micro-planning or mapping and careful budgeting prior to household registration should take place to ensure that the number of volunteers and days for the registration are sufficient to reach all areas and all households. Household registration should be practised as a training exercise.**

- Individuals undertaking supervision and monitoring should be trained and should be familiar with the forms used and their purpose. Supervisory activities should be planned carefully to avoid duplication of efforts and to ensure that all areas are covered. Adequate funds should be allocated to ensure that hard-to-reach areas have sufficient oversight from the supervision teams.
- Communication activities should be planned early and should engage key partners, organizations and private sector companies that can contribute to mobilizing the community and ensuring participation and ownership. Adequate and appropriate training should ensure that messages are clear and consistent. For budgeting purposes, while it is important to establish rational and costed activities that have proven ability to reach the target audience, communication activities should also be monitored to check on their reach and effectiveness. Monitoring, evaluation and reporting on communication activities should be included in the budget.
- Supplementary hang-up activities may be necessary, and should be included early in the action plan and budget. The net culture of the country must be understood so that appropriate messages and action can be planned to ensure utilization of nets.

Appendix 3A: Budget template

Coordination

National	Transportation (including vehicle rental if necessary)	In general, costs for coordination meetings should be minimal as meetings in one's home base (national, regional, district, health facility level) are part of normal work service.
	Telephone top-up cards	
	Meetings (room/refreshment)	
	Accommodation/per diem	
	Stationery/photocopying	
	Technical support	
Regional	Transportation (including vehicle rental if necessary)	The importance of communication cannot be overestimated. It is important to plan and budget for travel and regular communication between the central, regional, district and health facility levels.
	Telephone top-up cards	
	Meetings (room/refreshment)	
	Accommodation/per diem	
	Stationery/photocopying	
District	Transportation (including vehicle rental if necessary)	It is important to ensure that the operational level has a final implementation plan. Budget for the field mission to support micro-planning, but also for the finalization of micro-plans and sending of the approved version back to the operational level.
	Telephone top-up cards	
	Meetings (room/refreshment)	
	Accommodation/per diem	
	Stationery/photocopying	

International procurement

	Advertising call for tenders	Once baseline funding has been secured, the development of a structured procurement plan is essential. This will contain information on the requirements for goods or contracts, the method of procurement and procedures for review of the plan. The method of procurement needs to be decided, based on donor guidelines and country policy, and a timeline for the whole
	Quality assurance/quality control	
	Bid opening (bid evaluation committee)	
	Outsourcing to third party procurement agency	
	Official announcement of successful bids	
	LLINs (including string, nails, hooks, etc. depending	

	on the hang up strategy)	procurement process, from initial research to receipt by beneficiary must be determined. Different funding agencies have their own timelines and it is essential to be guided by the donor's own processes and procedures.
	International shipping	
	Trainings (participation in PSM WG or other training)	
	Technical support	

Logistics

Port costs and customs clearance	Demurrage	Procurement and pipeline monitoring, which should be handled by the logistics sub-committee and/or the central logistics team (CLT), consist of maintaining an updated global picture of how many nets have been procured and by whom, how many nets have been shipped, received, cleared and transported to final destinations.
	Scanning (containers/transport vehicles)	
	Port storage	
	Waybills and documentation completion	
	Handling and transport (moving containers)	
	Container inspection	
	Insurance	
	Administrative fees for port authority	
	Clearing agent fees	
Coordination and handling	Warehousing rental per month and security	Regardless of where the first level of storage occurs (e.g. central, regional, district, etc.) the central logistics team will need to locate and secure appropriate warehouse(s) with adequate capacity to store the nets. Proper identification and management of warehousing is of primary importance.
	Logistics team per diem and travel (to central import location [port]/storage)	
	Transportation (including vehicle rental if necessary)	
	Offloading containers/loading trucks at warehouse	
	Offloading trucks at storage points	
	Telephone top-up cards	
Training of logistics team and personnel for supply chain*	Per diem and travel costs	Logistics personnel are trained in the essential and systematic use of the tracking tools (waybills, stock sheets and tally sheets) in order to record and track all movement of the nets during every stage of the supply chain.
	Accommodation	
	Transportation (including vehicle rental if necessary)	
	Room rental/tea/lunch	
	Training package for participants	
	Supervision of training (per diem, travel,	

	accommodation)	
Micro-planning	Stationery/photocopying	Logistics micro-planning is critical to finalizing need estimation, timelines and, importantly, the global campaign budget. It occurs at the district level, based on guidelines set at the national level and using tools and templates developed to collect the necessary information from the lowest points in the supply chain.
	Per diem and travel costs	
	Accommodation	
	Transportation (including vehicle rental if necessary)	
	Telephone top-up cards	
Transportation and security (to distribution point)	Advertising – call for tenders	A precise transport plan to the districts should identify transport routes/axes in order to optimize truck capacity and take best advantage of the road network, and define a dispatch plan with fixed dates. From this, truck-loading schedules, rotations and reloading can be organized.
	Contracting transport companies	
	Transportation for supervision (including vehicle rental if necessary)	
	Per diem and travel	
	Telephone top-up cards	
	Conveyors (training/per diem/accommodation/telephone top-up cards)	
Storage and security	Chains/locks	Proper identification and management of warehousing is of primary importance. Some basic criteria to be used in warehouse selection are: (1) overall capacity, (2) location, (3) accessibility (unloading/loading docks/ramps – number of entry points/doors), (4) condition (dry and protected from weather elements), and (5) proper security (lockable doors and windows, exterior lighting, guards and access control).
	Stipend/salary for guards	
	External lights (if applicable)	
	Small generator (if applicable)	
	Telephone top-up cards	
	Repair to infrastructure	
	Warehouse insurance on goods (if applicable)	
Management and administration tools	Printing (stock books, warehouse journals, waybills)	Three essential tracking tools will be used throughout the operation: the waybill, the warehouse stock sheet and the distribution tally sheet.
	Office supplies/photocopying	
	Telephone top-up cards	
Planning, supervision and monitoring missions	Per diem and accommodation	The aim of supervision and monitoring is to ensure that activities are carried out according to the plans and against designated
	Transportation (including vehicle rental if necessary)	

	Stationery/photocopying	timelines, and to check that tools are being used correctly to ensure later tracking of LLINs.
	Telephone top-up cards	
Insurance	Insurance and liability for loss, theft or damage	For the GFATM, there is a clause in the standard grant agreement that should be taken into account, planned and budgeted for.
	Transport and storage	
Commodity management assessment (CMA)	Evaluation and use of supply chain management tools	The purpose of CMA is to measure the level of accountability and transparency achieved in the management and distribution of LLINs.
Technical support		

* At all levels – central to lowest storage point

Communication: advocacy, social mobilization and behaviour change communication

Micro-planning	Stationery/photocopying	Communication micro-planning should be carried out in conjunction with the technical and logistics micro-planning. The plan should include a distribution plan, specifying who the target recipients are and who will distribute the various materials.
	Per diem and travel costs	
	Accommodation	
	Transportation (including vehicle rental if necessary)	
Advocacy	Production and printing of international/national advocacy kit	At the lower levels, advocacy helps ensure that every health management team, whether at a health post, health centre, district or regional facility, is informed about the campaign, is ready to support activities, and has the tools needed from the national and regional levels to manage the process effectively.
	Campaign launch (national, regional, district)	
	Radio/television featuring key figures	
	Net handover or other events	
	Media coverage (print, radio, television)	
	Production of media kit	
	Briefing sessions with government departments and	

	key stakeholders*	
	Press conferences	
Training**	Per diem and travel costs	Good training and training materials are vital to good social mobilization and for the campaign success overall. Make sure all volunteers have the correct information and can disseminate it by the time they finish the training. Volunteer job aids or checklists will help to ensure that clear and consistent messages are passed to community members.
	Accommodation	
	Transportation (including vehicle rental if necessary)	
	Room rental/tea/lunch	
	Training package for participants	
	Training materials, social mobilization guide and volunteer job aids	
	Supervision of training (per diem, travel, accommodation)	
Social mobilization and BCC	Volunteer per diem	The radio: national and community radio are both very effective communication channels. Radio messages should be translated into two or three of the most spoken languages in a country. Avoid translating messages into all languages, bearing in mind that the time and financial expenditure is large for limited results.
	Supervision of social mobilization and BCC (per diem, travel, accommodation)	
	Printing of rapid monitoring forms and supervision checklists	
	Media briefing	
	Briefing of influential figures (religious, traditional, etc.)	
	Production and pre-testing of radio and television spots	
	Mass media (radio, television, print)	
	Purchase of megaphones/batteries	
	Traditional communicators (e.g. town criers)	
	Print materials	
	Volunteer identification (e.g bibs) and job aid	
Hang-up	Volunteer per diem	Hang-up campaigns are a time-limited activity that use door-to-door visits and interpersonal communication by community volunteers to assist households with physically hanging up the
	Supervision of hang-up (per diem, travel, accommodation)	

	Printing of rapid monitoring forms and supervision checklists	nets they received during the campaign, and encouraging net use, care and repair. Hang-up activities can also involve community mobilization meetings with leaders and beneficiaries.
	Radio messages	
	Traditional communicators (e.g. town criers)	
	Community events	
	Data collection and summary forms (door-to-door hang-up)	
	Print materials	
	Volunteer identification (e.g. bibs) and job aid	
	Materials for hanging or repair (string, nails, hammers, sewing kits, etc.)	
	Chalk/stickers/cards for marking households	
Management and administration	Telephone top-up cards	
Technical support		

*Briefing sessions with government departments and key stakeholders should be done at all levels (national, regional, district, etc.)
**Training should be done at all levels (national, district, health facility and community) and for all communication activities (pre, during and post-campaign).

Household registration and identification of beneficiaries

Micro-planning	Stationery/photocopying	During micro-planning, it can be helpful to use existing health facility catchment area maps to get information about hard-to-reach areas, scattered communities, etc. For improved planning, mapping of partners and existing organizations should be undertaken in order to take advantage of any available resources and to plan for potential challenges.
	Per diem and travel costs	
	Accommodation	
	Transportation (including vehicle rental if necessary)	
Management and	Printing of household registration forms/booklets	In the case of universal coverage distributions that are using a

administration	Printing of summary forms for all levels (health facility, district, region)	fixed site strategy, it is critical to establish a means of identifying beneficiaries at distribution points early in the planning process to allow for appropriate budgeting and timely procurement of any unique identification tools (plus 10%). For the purposes of estimating requirements for personnel and the concomitant supports for data collection and training, a 10% buffer should be added to the estimated number of households to be reached.
	Procurement of wristbands/vouchers	
	Procurement of chalk or other means for marking households	
	Telephone top-up cards – supervision	
Training*	Per diem and travel costs	Set an upper limit on the number of participants in a single training session in order for the training to be interactive and to facilitate learning. Training sessions should be long enough to include practical experience with the data collection tools, including visits to households or simulated role-plays for household registration. For household registration, a minimum of two days is recommended for the training.
	Accommodation	
	Transportation (including vehicle rental if necessary)	
	Room rental/tea/lunch	
	Training package for participants	
	Training materials – household registration guide – and volunteer job aids	
	Supervision of training (per diem, travel, accommodation)	
Household registration	Volunteer per diem	To calculate the number of people needed to reach all households during household registration, the following estimates should be used: 25—30 households per person per day in urban areas and 20—25 households per person per day in rural areas. Supervisors should be estimated at 1 for every 10-15 volunteers.
	Supervision of hang-up (per diem, travel, accommodation)	
	Printing of rapid monitoring forms and supervision checklists	
	Volunteer identification (e.g. bibs) and job aid	
Data management	Telephone top-up cards (if SMS data management)	Where countries have mobile phone coverage over the majority of the area where the campaign will take place, it may be possible to design a data management system where data are transferred through the levels by text message (SMS),
	Incentive for district or regional HMIS staff for data entry	
	In and end process monitoring	

*Training should be done at all levels (national, regional, district, health facility and community) and for all activities (pre, during and post-campaign).

Distribution of LLINs

Micro-planning	Stationery/photocopying	The central level teams that will be supporting micro-planning should consist of MoH and partner organization staff. Preferably, each team will be multidisciplinary and consist of logisticians, programme staff and communication experts. At the district level, participants should include health facility staff, NGO/CBO representatives and other key stakeholders.
	Per diem and travel costs	
	Accommodation	
	Transportation (including vehicle rental if necessary)	
Management and administration	Printing of tally sheets for distribution points	During the distribution, site personnel will use a tally sheet to record the number of LLINs distributed. The calculation for tally sheets required should be based on the number of sites and the number of days of distribution (a new sheet should be used each day) plus a 10% margin of error.
	Printing of summary forms for all levels (health facility, district, region)	
	Procurement of boxes for collection of vouchers/wristbands	
	Procurement of distribution point materials (scissors, knife, pens, etc.)	
	Telephone top-up cards – supervision	
Training*	Per diem and travel costs	During the training at each level, participants will be provided with various materials and should be given practical training in their use. At central, regional, district and health facility levels, all trainees should be provided with a training manual, data collection and summary sheets, supervision and monitoring checklists and volunteer job aids in order to ensure quality of training throughout the various cascade levels and during implementation of activities. For the training of volunteers at the community level, where literacy may be lower than at the higher levels, job aids relevant to each phase or activity should be provided, in addition to data collection and summary sheets.
	Accommodation	
	Transportation (including vehicle rental if necessary)	
	Room rental/tea/lunch	
	Training package for participants	
	Training materials – LLIN distribution guide – and volunteer job aids	
	Supervision of training (per diem, travel, accommodation)	
LLIN distribution	Site personnel per diem • Site supervisor • Crowd control/organization of sites	Certain materials are required at distribution sites to facilitate the work of the distribution teams. These materials include scissors, a cutting device (many bales are now strapped with metal and

	• Screening/registration/tallying • Distribution • IEC/BCC	require a sharp tool for cutting), rope (to form lines for more effective crowd control and to provide a barrier between the distribution site and the LLIN storage area) and writing materials.
	Supervision of LLIN distribution (per diem, travel, accommodation)	
	Printing of rapid monitoring forms and supervision checklists	
	Volunteer identification (e.g. t-shirts, bibs) and job aid	
Data management	Telephone top-up cards (if SMS data management)	The number of supervision and monitoring checklists, as well as the number of rapid surveys to be printed will depend on the number of personnel and the protocol for implementation of the rapid survey. Supervisors and monitors should receive a number of forms per day plus a buffer stock.
	Incentive for district or regional HMIS staff for data entry	
	In and end process monitoring	
Waste management	Transport of LLIN packaging to incinerator/burial site	Each site should have a box for collection of vouchers or wristbands and large bins or bags for the collection of waste at the distribution point. For budget purposes, it is also necessary to estimate the transportation requirement if net packages are being moved to a location with an incinerator or to a central point for burying. This should be estimated in conjunction with the logistics team as the process is "reverse" logistics.
	Large sacks for collecting all distribution point waste	

*Training should be done at all levels (national, regional, district, health facility and community) and for all activities (pre, during and post-campaign).

Monitoring and evaluation

International consultants	Consultant fees Travel, per diem, lodging, insurance Transportation	An M&E strategy focused on a campaign must be consistent with, and complementary to, the country's overall malaria M&E plan. However, each campaign needs a specific M&E plan to ensure data are collected to determine if it has met its objectives, to assess the strategies used and to provide lessons for future activities. A campaign-specific population-based survey can be quite expensive, so if there are already planned population-based surveys (such as MICS or DHS), integrating campaign-specific questions into the questionnaire may be a more cost-effective option.
Contracting an international organization	Fees, overhead	
National consultants	Consultant fees Travel, per diem, lodging, insurance	
Contracting a national organization	Fees, overhead	
Training, materials development and pre-testing	Room rental/tea/lunch	
	Per diem facilitators/participants	
	Accommodation facilitators/participants	
	Transportation for facilitators/participants	
	Field test vehicles (including driver, fuel)	
	Stationery/photocopying	
Survey implementation	Ethical approval (if costs to be incurred)	
	Per diem supervisors/survey teams	
	Accommodation supervisors/survey teams	
	Transportation for supervisors/survey teams	
	Vehicle rental	
	Local guides/volunteers (mapping, translation)	
	Central level supervision (per diem, accommodation, transportation)	
	Vehicle maintenance and repairs (oil, spare parts, etc.)	

	Mobile phones and top-up cards	
	Security and insurance	
Materials/equipment	Maps/statistical information	
	Telephone top-up cards	
	Stationery/photocopies/PDA/mobile phones	
	Statistical software	
	Computer and printer rental	
Analysis, report writing and dissemination	Data management and analysis	
	Post-campaign review meeting (venue, per diem, photocopying, stationery)	
	Printing of final report	
	Dissemination of final report	
	Press/media briefing on results	
Coordination	Coordination personnel	
	Administrative and technical support	
	Stationery/photocopying	

Appendix 3B: Activities chronogram – LLIN stand-alone distribution campaign

Part 1: One year to four months before distribution

** The number in column 1 refers to the Excel spreadsheet example on the Resources CD

**	Activities	Comments	Responsible / Sub-committee	Months pre-distribution	10 months pre-distribution				9 months pre-distribution				8 months before				7 months before				6 months before				5 months before				4 months before			
7	Secure financing for purchase of LLINs and to cover all campaign activities	Establish committee of NCMP and LLIN scale up partners to ensure sufficient nets are procured	MoH																													
8	Establish LLIN specifications for order	See Chapter 4: Procurement	MoH																													
9	Determine whether LLIN delivery will be centralized or at region/district level before procurement and whether containers will be purchased	See Chapter 5: Logistics	MoH																													
10	Issue validated tender for LLIN procurement, including strict evaluation criteria and deadlines	See Chapter 4: Procurement	MoH																													
11	Select clearing agent and sign contracts (through tenders)	Ensure open and transparent process to avoid incurring delays within the campaign timeline	MoH or procurement agent																													
12	Develop a calendar for LLIN arrival and monitor the pipeline of shipping and deliveries	LLIN arrival times will change and must be monitored by a focal person assigned to this role	LOG																													
13	Establish National Coordination Committee (NCC) with TORs and members clearly defined	Presidential or Ministerial letter to MoH departments and partners	COORD																													
14	Organize NCC meetings where all partners are informed of campaign progress of activities and where the work of sub-committees can be validated. Share minutes from all meetings with all partners.	Establish regular day, time and location for meetings. See Chapter 2: Coordination	COORD																													

15	Establish all sub-committees with clear TORs (Comm, Log, M&E, Tech.) and determine members. Organize regular meetings.	Sub-committees must be established early to ensure that activities take place on time. Establish regular day, time and location for meetings.	COORD																													
16	Decide on distribution strategy (universal coverage, LLINs/persons or households, urban vs. rural, etc.)	Based on macro population data by district according to urban and rural status	TECH/ COORD																													
17	Based on selected strategy, quantify personnel requirements at all levels for all phases and for all activities	Personnel are required for logistics, communication and for the implementation of all activities	TECH/ LOG/ COMM																													
18	Based on selected strategy, quantify tool requirements (campaign tools before-during-after distribution, vouchers, logistic needs, supervision, M&E, training guides, payment vouchers, attendance sheets, etc.)	See Chapter 3: Planning	TECH/ LOG/ COMM																													
19	Develop campaign plan of action (macro-plan) and timeline (chronogram)	Should often be done by a sub-group of NMCP staff and technical partners	COORD																													
20	Develop campaign activities budget (macro budget)	Should often be done by a sub-group of NMCP staff and technical partners with support from financial experts	COORD/ FINANCE																													
21	Develop plans of action for specific sub-committees (M&E, Logistics, Communication, Finance, etc.), including timelines and budgets for activities	See Chapters 3, 5, 6 and 8	TECH/ LOG/ COMM																													
22	Develop and publish tenders for selection of transport companies from central level to regions, districts or health zones (depending on campaign strategy selected, point of delivery of purchased LLINs, and conditions on the ground).	See Chapter 5: Logistics	LOG																													
23	Define financial strategy for funds transfers from central level to peripheral actors and partners, as well as reporting mechanisms and timelines	It is crucial that a system to ensure flow of funds for activities	FINANCE/ MoH																													

		and reporting on fund expenditures is in place to avoid delays in activities																													
24	Ensure that all required documents are available for LLIN import, clearing and tax exemption	This is crucial to avoid delays in LLIN customs clearance	MoH/ FINANCE/ LOG																												
25	Develop logistics tools (positioning plan, transport plan, storage plan, distribution plan, logistics tools, etc.)	See Chapter 5: Logistics	LOG																												
26	Develop and validate micro-planning canvases and tools, including briefing documents for health and district areas explaining process and required information	Micro-planning is crucial for campaign success	TECH/ LOG/ COMM																												
27	Develop all tools necessary for all phases of campaign implementation (household registration data collection and summary forms, LLIN distribution data collection and summary forms, hang up data collection and summary forms, supervision and monitoring tools)	Limit data collected to what is needed to facilitate data collation and synthesis	TECH																												
28	Determine how data will be collected, transmitted and managed. Identify criteria for selection of data collectors, as well as for data analysts at all levels	An effective data management system is necessary to avoid delays. The data collection and management should not be underestimated.	TECH																												
29	Develop campaign communication key messages, slogans, logos, etc. Develop media briefing kits and press communiqués to raise awareness of distribution, reach out to traditional, religious, local, political and military authorities	See Chapter 6: Communication	COMM																												
30	Release and transfer campaign funds from central level all the way to health facilities as per national and donor guidelines (LLIN transport, training, perdiem, etc.)	Without funds, activities cannot begin	COORD/ FINANCE																												
31	Advocate for resources at all levels, if gaps are identified (national and international) in nets or funds	The communication sub-committee should be engaged to develop advocacy documents and tools	COORD/ COMM																												
32	Request and receive from regions and district health authorities updated list of all health posts with estimated population and distances from main town; introduce upcoming micro-planification for campaign	Early involvement of decentralized levels increases success of the campaign planning	COORD																												

		and implementation																													
33	Submit developed documents (Plan of Action with support sub-committee plans, timeline and estimated budget) for official validation to government, donors and partners for approval and release of campaign funds	All documents need to be validated early to avoid any delays in implementation of activities	COORD/ MoH																												
34	Pre-test campaign messages	See Chapter 6: Communication	COMM																												
35	Receive, review, award and sign contracts with transport companies and develop transport schedules	Delays in identification of operational level actors and signatures of contracts are common	MoH/ COORD/ FINANCE																												
36	Send micro-planning documents to regions, districts and health zones ahead of mission	Early engagement of the regions and districts with micro-planning will ensure that sufficient information is collected prior to the central level mission for micro-planning	COORD																												
37	Validate all campaign tools from sub-committees and NCC	Early validation allows for timely reproduction and transport of necessary materials	COORD																												
38	Order though tenders all campaign tools (vouchers, training guides and manuals, implementation tools, logistics tools, M&E and supervision tools, communication tools, etc.) for all phases of household registration, LLIN distribution and hang-up activities	Delays in tendering will delay training and implementation of activities. Tools are necessary for training to ensure that campaign actors are familiar with them	LOG/ COORD																												
39	Hold central level micro-planning training for teams heading to collect and finalize micro-plans	It is necessary to train or brief the central level personnel involved in the micro-planning to make sure that they are familiar	TECH/ LOG																												

		with the micro-planning tools																														
40	Training of all logistics personnel at all levels, notably for central / regional / district delivery from supplier to warehouse. Ensure all materials printed and available prior to arrival of LLINs	Training is essential to ensure accountability in supply chain management	LOG																													
41	Micro-planning mission at selected level (district or region, depending on country, but head of each health facility needs to be present)	The micro-planning mission should not end until all data have been collected and the templates are largely complete	TECH/ LOG/ COMM																													
42	Calculate specific budget needs for each region, district and health zone based on micro-plans	Verify all figures and make appropriate amendments	TECH/ LOG/ COMM/ COORD																													
43	Engage in advocacy and social mobiliization activities - traditional, religious, local, political and military authorities and any other stakeholders or campaign	Ensure that the target audiences are clear on activities and dates and the specific role that they will play	COMM																													
44	Briefing of media – journalists, radio, television, etc.	Central and regional level	COMM																													
45	Social mobilization, mass media and IEC activities	At all levels depending on the scale of the campaign	COMM																													
46	Synthesis of micro-plans and budgets, central level validation of revised data (and revision of overall strategy if necessary). Send back final plans to regions, districts and health areas	Ensure that the final approved plan and budget are returned to the region / district / health facility	TECH/ LOG/ COMM/ COORD																													
47	Arrival of LLINs centrally or where delivery was requested at time of purchase	LLIN pipeline monitoring and communication to delivery point personnel is important	LOG/ COORD																													
48	Receive and prepare (sort per region, district, health facility) all campaign activity tools (household registration, LLIN distribution, hang up, communication, logistics, supervision and monitoring, etc.)	Ensure adequate personnel and time	Region/ District Health Team																													
49	Central level training of trainers for all campaign activities	Recommended 3-4	Central/																													

	(household registration, LLIN distribution, hang-up). Regions attend centrally.	days, maximum of 45 people. Where possible an additional briefing prior to LLIN distribution should be organized	regional supervisors	

Part 2: Three months before to three months after distribution

*** Where the timeline extends across the two charts, activities have been repeated. The number in column 1 refers to the Excel worksheet.

***	Activities	Comments	Responsible	3 months before	2 months before	1 month before	Distribution month	1 month after	2 months after	3 months after
14	Organize NCC meetings where all partners are informed of campaign progress of activities and where the work of sub-committees can be validated. Share minutes from all meetings.	Establish regular day, time and location for meetings. See Chapter 2: Coordination	COORD							
30	Release and transfer campaign funds from central level all the way to health facilities as per national and donor guidelines (LLIN transport, training, perdiem, etc.)	Without funds, activities cannot begin	COORD/ FINANCE							
31	Advocate for resources at all levels, if gaps are identified (national and international) in nets or funds	The communications sub-committee should be engaged to develop advocacy documents	COMM							
43	Engage in advocacy and social mobiliization activities - traditional, religious, local, political and military authorities and any other stakeholders or campaign actors	Ensure that the target audiences are clear on activities and dates and the specific role that they will play	COMM							
45	Social mobilization, mass media and IEC activities	At all levels depending on scale of campaign	COMM							
47	Arrival of LLINs centrally or where delivery	LLIN pipeline	LOG							

	was requested at time of purchase	monitoring and communication to delivery point personnel is important		
49	Central level training of trainers for all campaign activities (household registration, LLIN distribution, hang-up). Regions attend centrally.	Recommended 3-4 days, maximum of 45 people. Where possible an additional briefing prior to LLIN distribution should be organized.	Central/ Regional supervisors	
50	Revise transport plans with selected transport companies	Ensure open and transparent process to avoid incurring delays within the campaign timeline	MoH/ COORD/ FINANCE/ LOG	
51	Develop health area-specific transport plans (all the way to selected distribution sites) with micro-plan quantities and selected modes of transportation and budget	Transport plans need to include on and off loading, warehouse and personnel needs, etc.	LOG	
52	Monitor financial expenditure and justifications for payments	Sound financial management is necessary to avoid delays between phases of activity	COORD/ FINANCE	
53	Regional level training of trainers and supervisors for household registration activities	Regional level for district, recommended 2-3 days, max of 35 people per session		
54	District level training for health facility staff and local authorities for household registration	Recommended 1-2 days, max of 30 people per session	District supervisors	
55	Develop supervision plans - define roles and circuits for all campaign activities at all levels	Ensure that areas that are difficult to access receive adequate supervision	Central/ regional/ district supervisors	
56	Health facility training of campaign personnel	Recommended 1-2	Health	

	for household registration	days, max of 30 people per session	facility staff																												
57	Transport LLINs from primary storage (central or decentralized delivery point on arrival) to secondary storage (district or lower level) based on micro-planning data	Establish a calendar of deliveries and communicate it to those responsible for reception	LOG																												
58	Social mobilization for household registration	The population must be informed of the purpose of the household registration and how the information collected will be used	COMM																												
59	Conduct and supervise household registration and distribution of vouchers	Supervision is necessary to ensure quality in implementation.	HH registration personnel																												
60	Undertake rapid monitoring surveys to assess coverage and quality of household registration	Areas of low coverage by campaign personnel should be revisited	Central/ regional/ district/ supervisors																												
61	Collate household registration at health facility level and send to district health management team	Data should be transmitted daily	Health facility staff																												
62	Synthesize household registration data at district, regional and central levels	Time for data management should not be underestimated	DHMT/ RHMT/ Central level																												
63	Adjust quantity of LLINs per health facility based on household registration data and update transport plan	Dates for delivery need to be communicated to all persons responsible for reception	LOG																												
64	Regional level training of trainers and supervisors for LLIN distribution and hang-up activities	Regional level for district, recommended 2-3 days, max of 35 people per session	Central/ regional supervisors																												
65	Transport LLINs from secondary storage to	Nets should not move	LOG																												

	distribution sites (or to health facilities depending on strategy)	early to distribution sites if adequate storage is unavailable																													
66	District level training for health facility staff and local authorities - LLIN distribution and hang-up	Recommended 1-2 days, max of 30 people per session	District supervisors																												
67	Health facility training of campaign personnel - LLIN distribution and hang-up	Recommended 1-2 days, max of 30 people per session	Health facility staff																												
68	Social mobilization for LLIN distribution	Ensure that dates, times and places for the LLIN distribution are well known	COMM																												
69	Official campaign launch (all levels)	Central level, regions, etc	COMM/ COORD																												
70	Distribution of LLINs	Fixed site LLIN distribution for the purposes of this timeline	Distribution agents																												
71	Supervision of LLIN distribution	Use checklists to assess implementation quality and areas for improvement	Central/ regional/ district supervisors																												
72	Collate LLIN distribution data at health facility level and send to district health management team	Data should be transmitted daily	Health facility staff																												
73	Monitoring and rapid evaluation of LLIN distribution	Areas of low coverage may require adjustments to LLIN distribution sites	Central/ regional/ district supervisors																												
74	Synthesize LLIN distribution data at district, regional and central levels	Time for data management should not be underestimated	DHMT / RHMT / central level																												
75	Conduct hang-up activities	Depending on strategy, this may be a mass media campaign and/or door-to-door visits by	Hang-up personnel																												

		campaign personnel to assist with hanging nets																												
76	Supervision of hang-up activities	If hang-up is door-to-door, supervision is important to ensure quality in implementation	Central/ regional/ district supervisors																											
77	Collate hang-up data at health facility level and send to district health management team	Data should be transmitted daily	Health facility staff																											
78	Monitoring and rapid evaluation of hang-up activities	Areas of low coverage may need to be revisited	Central/ regional/ district supervisors																											
79	Commodity management assessment	See Chapter 5: Logistics	LOG																											
80	Synthesize hang-up data at district, regional and central levels	Time for data management should not be underestimated	DHMT / RHMT / central level																											
81	Return undistributed nets to district level (or elsewhere according to NMCP guidelines)	Planning for left-over nets should be done early and budget established for their movement up the supply chain	LOG																											
82	Undertake process evaluation and develop final campaign report	See Chapters 8 and 9																												
83	Develop final logistics campaign report	See Chapter 5: Logistics	LOG																											
84	Develop final communication campaign report	See Chapter 6: Communication	COMM																											
85	Develop final financial report	Financial reporting will be based on donor requirements	COORD/ FINANCE																											
86	Circulate final campaign reports to partner organizations and campaign contributors																													
87	Final meetings to discuss lessons learned and results of campaign at all levels (inverted cascade)																													

88	Conduct survey to measure ownership and use of LLINs	+ 4 months after distribution																											

Appendix 3C: Activities chronogram – LLIN integrated distribution campaign

Part 1: One year to two months before campaign

** The numbers in column 1 refer to the Excel spreadsheet on the Resources CD

**	Activities	Comments	Responsible / Sub-committee	Months before cam-paign	8 months before campaign				7 months before campaign				6 months before campaign				5 months before campaign				4 months before campaign				3 months before campaign				2 months before campaign			
7	Secure financing for purchase of vaccine, LLINs and other interventions and to cover all campaign activities	Establish committee of EPI, NCMP and other partners to ensure sufficient quantities of all interventions are procured	MoH																													
8	Establish LLIN specifications to order	See Chapter 4: Procurement	MoH																													
9	Determine whether LLIN delivery will be centralized or at region/district level before procurement and whether containers will be purchased	See Chapter 5: Logistics	MoH																													
10	Issue validated tender for LLIN procurement, including strict evaluation criteria and deadlines	See Chapter 4: Procurement	MoH																													
11	Order all vaccine and vaccine-related equipment and other interventions as per integration strategy (e.g. vitamin A, albendazole, etc.)	Vaccine needs should be calculated according to WHO guidelines	MoH/ partners																													
12	Select clearing agent and sign contracts (through tenders)	Ensure open and transparent process to avoid incurring delays within the campaign timeline	MoH or procurement agent																													
13	Develop a calendar for arrival of vaccine, LLIN and other interventions and monitor the pipeline of shipping and deliveries	Arrival times will change and must be monitored by a focal person assigned to this role	LOG																													
14	Establish an expanded inter-agency coordinating committee (ICC) with TORs and members clearly defined	Presidential or Ministerial letter to	COORD																													

		MoH departments and partners																													
15	Organize ICC meetings where all partners are informed of campaign progress of activities and where the work of sub-committees can be validated. Share minutes from all meetings with all partners.	Establish regular day, time and location for meetings. See Chapter 2: Coordination	COORD																												
16	Establish all sub-committees with clear TORs (Comm, Log, M&E, Tech.) and determine members. Organize regular meetings.	Sub-committees must be established early to ensure that activities take place on time. Establish regular day, time and location for meetings.	COORD																												
17	Decide on campaign strategy (e.g. door-to-door polio vaccination and distribution of vouchers, fixed site measles vaccination and direct delivery of LLINs etc.) and target population	Based on macro population data by district according to urban and rural status	TECH/ COORD																												
18	Based on selected strategy, quantify personnel requirements at all levels for all phases and for all activities	Personnel are required for logistics, communication and for the implementation of all activities	TECH/ LOG/ COMM																												
19	Based on selected strategy, quantify tool requirements (tally sheets for all interventions, training materials, vouchers, data collection and summary forms, hang-up data collection and summary forms, supervision and monitoring tools)	See Chapter 3: Planning	TECH/ LOG/ COMM																												
20	Develop campaign plan of action (macro-plan) and timeline (chronogram)	Should often be done by a sub-group of EPI and NMCP staff and technical partners	COORD																												
21	Develop campaign activities budget (macro budget)	Should often be done by a sub-group of EPI and NMCP staff and technical partners, with support from financial experts	COORD/ FINANCE																												
22	Develop plans of action for specific sub-committees (M&E, Logistics, Communication, Finance, etc.), including timelines and budgets for activities	See Chapters 3, 5, 6 and 8	TECH/ LOG/ COMM																												
23	Develop and publish tenders for selection of transport companies	See Chapter 5:	LOG																												

	from central level to regions, districts or health zones (depending on campaign strategy selected, point of delivery of purchased LLINs, and conditions on the ground).	Logistics																															
24	Develop and publish tenders for selection of transport companies for moving other interventions (vaccine requires cold chain and its transportation should be separate from the nets)	See Chapter 5: Logistics	LOG																														
25	Define financial strategy for funds transfers from central level to peripheral actors and partners, as well as reporting mechanisms and timelines	It is crucial that a system to ensure flow of funds for activities and reporting on fund expenditures is in place to avoid delays in activities	FINANCE/ MoH																														
26	Ensure that all required documents are available for LLIN import, clearing and tax exemption	This is crucial to avoid delays in LLIN customs clearance	MoH/ FINANCE/ LOG																														
27	Develop logistics tools (positioning plan, transport plan, storage plan, distribution plan, logistics tools, etc.)	See Chapter 5: Logistics	LOG																														
28	Develop and validate micro-planning canvases and tools, including briefing documents for health and district areas explaining process and required information	Micro-planning is crucial for campaign success	TECH/ LOG/ COMM																														
29	Develop all tools necessary for all phases of campaign implementation (tally sheets for all interventions, training materials, vouchers, data collection and summary forms, hang-up data collection and summary forms, supervision and monitoring tools)	Limit data collected to what is needed to facilitate data collation and synthesis	TECH																														
30	Determine how data will be collected, transmitted and managed. Identify criteria for selection of data collectors, as well as for data analysts at all levels	An effective data management system is necessary to avoid delays. The data collection and management should not be underestimated.	TECH																														
31	Develop campaign communication key messages, slogans, logos, etc. Develop media briefing kits and press communiqués to raise awareness of campaign, reach out to traditional, religious, local, political and military authorities	See Chapter 6: Communication	COMM																														
32	Monitor financial expenditure and justifications for payment	Sound financial management is necessary to avoid	COORD/ FINANCE																														

		delays between phases of activity																															
33	Advocate for resources at all levels, if gaps are identified (national and international) in nets or funds	The communication sub-committee should be engaged to develop advocacy documents and tools	COORD/ COMM																														
34	Request and receive from regions and district health authorities updated list of all health posts with estimated population and distances from main town; introduce upcoming micro-planification for campaign	Early involvement of decentralized levels increases success of the campaign planning and implementation	COORD																														
35	Send micro-planning documents to regions, districts and health zones ahead of mission	Early engagement of the regions and districts with micro-planning will ensure that sufficient information is collected prior to the central level mission for micro-planning	COORD																														
36	Submit developed documents (plan of action with support sub-committee plans, timeline and estimated budget) for official validation to government, donors and partners for approval and release of campaign funds	All documents need to be validated early to avoid any delays in implementation of activities	COORD/ MoH																														
37	Receive, review, award and sign contracts with transport companies and develop transport schedules	Delays in identification of operational level actors and signatures of contracts are common	MoH/ COORD/ FINANCE																														
38	Pre-test campaign messages	See Chapter 6: Communication	COMM																														
39	Hold central level micro-planning training for teams heading to collect and finalize micro-plans	It is necessary to train or brief the central level personnel involved in the micro-planning to make sure that they are familiar with the micro-	TECH/ LOG																														

		planning tools																														
40	Micro-planning mission at selected level (district or region, depending on country, but head of each health facility needs to be present)	The micro-planning mission should not end until all data have been collected and the templates are largely complete	TECH/ LOG/ COMM																													
41	Calculate specific budget needs for each region, district and health zone based on micro-plans	Verify all figures and make appropriate amendments	TECH/ LOG/ COMM/ COORD																													
42	Validate all campaign tools from sub-committees and ICC	Early validation allows for timely reproduction and transport of necessary materials	COORD																													
43	Release and transfer campaign funds from central level all the way to health facilities as per national and donor guidelines (LLIN transport, training, perdiem, etc.)	Without funds, activities cannot begin	COORD/ FINANCE																													
44	Synthesis of micro-plans and budgets, central level validation of revised data (and revision of overall strategy if necessary). Send back final plans to regions, districts and health areas	Ensure that the final approved plan and budget are returned to the region / district / health facility	TECH/ LOG/ COMM/ COORD																													
45	Order though tenders all campaign tools (tally sheets, vouchers, training guides and manuals, implementation tools, logistics tools, M&E and supervision tools, communication tools, etc.) for all phases of activity	Delays in tendering will delay training and implementation of activities. Tools are necessary for training to ensure that campaign actors are familiar with them	LOG/ COORD																													
46	Adjust quantity of vaccine, LLINs and other interventions per health facility based on micro-planning data and update transport plan	Dates for delivery need to be communicated to all persons responsible for reception	LOG																													
47	Revise transport plans with selected transport companies	Ensure open and transparent process to avoid incurring delays within the campaign timeline	MoH/ COORD/ FINANCE/ LOG																													

48	Training of all logistics personnel at all levels, notably for central / regional / district delivery from supplier to warehouse. Ensure all materials printed and available prior to arrival of LLINs	Training is essential to ensure accountability in supply chain management	LOG																													
49	Develop health area-specific transport plans (all the way to selected distribution sites) with microplan quantities and selected modes of transportation and budget	Transport plans need to include on and off loading, warehouse and personnel needs, etc.	LOG																													
50	Engage in advocacy and social mobilization activities - traditional, religious, local, political and military authorities and any other stakeholders or campaign	Ensure that the target audiences are clear on activities and dates and the specific role that they will play	COMM																													
51	Transport LLINs from primary storage (central or decentralized delivery point on arrival) to secondary storage (district or lower level) based on micro-planning data	Establish a calendar of deliveries and communicate it to those responsible for reception	LOG																													
52	Briefing of media – journalists, radio, television, etc.	Central and regional level	COMM																													
53	Social mobilization, mass media and IEC activities	At all levels depending on the scale of the campaign	COMM																													
54	Receive and prepare (sort per region, district, health facility) all campaign activity tools (training, LLIN distribution, hang-up, communication, logistics, supervision and monitoring, data collection and summary forms, etc.)	Ensure adequate personnel and time	Region/ District Health Team																													
55	Central level training of trainers for all campaign activities (social mobilization, vaccination, LLIN distribution, other interventions, hang-up, supervision and monitoring). Regions attend centrally.	Recommended 3-4 days, maximum of 45 people. Where possible an additional briefing prior to LLIN distribution should be organized	COORD/ TECH																													
56	Arrival of LLINs centrally or where delivery was requested at time of purchase	LLIN pipeline monitoring and communication to delivery point personnel is important	LOG/ COORD																													

Part 2: One month before to four months after campaign

*** Where the timeline extends across the two charts, activities have been repeated. The number in column 1 refers to the Excel worksheet.

***	Activities	Comments	Responsible	1 months before	Integrated campaign	1 month after	2 months after	3 months after	4 months after
15	Organize ICC meetings where all partners are informed of campaign progress of activities and where the work of sub-committees can be validated. Share minutes from meetings with all partners.	Establish regular day, time and location for meetings. See Chapter 2: Coordination	COORD						
33	Advocate for resources at all levels, if gaps are identified (national and international) in nets or funds	The communications sub-committee should be engaged to develop advocacy documents and tools	COORD/ COMM						
43	Release and transfer campaign funds from central level all the way to health facilities as per national and donor guidelines	Without funds, activities cannot begin	COORD/ FINANCE						
50	Engage in advocacy and social mobilization activities - traditional, religious, local, political and military authorities and any other stakeholders or campaign actors	Ensure that the target audiences are clear on activities and dates and the specific role that they will play							
53	Social mobilization, mass media and IEC activities	At all levels, depending on the scale of the campaign	COMM						
56	Arrival of LLINs centrally or where delivery was requested at time of purchase	LLIN pipeline monitoring and communication to delivery point personnel is important	LOG/ COORD						
57	Monitor financial expenditure and justifications for payments	Sound financial management is necessary to avoid delays between phases of activity	COORD/ FINANCE						
58	Regional level training of trainers and supervisors for integrated campaign and hang-up activities	Regional level for district, recommended 2-3 days, max of 35	Central/ regional supervisors						

		people per session		
59	District level training for health facility staff and local authorities for integrated campaign and hang-up activities	Recommended 1-2 days, max of 30 people per session	District supervisors	
60	Transport LLINs from secondary storage to distribution sites (or to health facilities depending on strategy)	Nets should not move early to distribution sites if adequate storage is unavailable	LOG	
61	Health facility training of campaign personnel for integrated campaign and hang-up	Recommended 1-2 days, max of 30 people per session	Health facility staff	
62	Social mobilization for integrated campaign	Ensure that the dates, times and places for the integrated campaign are well known	COMM	
63	Official campaign launch (all levels)	Central level, regions, etc	COMM/ COORD	
64	Integrated campaign	Fixed site integrated campaign for the purposes of this timeline	Campaign personnel	
65	Supervision of integrated campaign	Use checklists to assess implementation quality and areas for improvement	Central/ regional/ district supervisors	
66	Collate tally sheet data for all interventions at health facility level and send to district health management team	Data should be transmitted daily	Health facility staff	
67	Monitoring and rapid evaluation of integrated campaign	Areas of low coverage may require adjustments to campaign tactics	Central/ regional/ district supervisors	
68	Synthesize intervention coverage data at district, regional and central levels	Time for data management should not be underestimated	DHMT / RHMT / central level	
69	Conduct hang-up activities	Depending on strategy, this may be a mass media campaign and/or door-to-door visits by campaign personnel to assist with hanging nets	Hang-up personnel	

70	Supervision of hang-up activities	If hang-up is door-to-door, supervision is important to ensure quality in implementation	Central/ regional/ district supervisors																													
71	Collate hang-up data at health facility level and send to district health management team	Data should be transmitted daily	Health facility staff																													
72	Monitoring and rapid evaluation of hang-up activities	Areas of low coverage may need to be revisited	Central/ regional/ district supervisors																													
73	Commodity management assessment	See Chapter 5: Logistics	LOG																													
74	Synthesize hang-up data at district, regional and central levels	Time for data management should not be underestimated	DHMT / RHMT / central level																													
75	Undertake cluster surveys to assess coverage with vaccine, LLINs and other interventions																															
76	Return undistributed nets to district level (or elsewhere according to NMCP guidelines)	Planning for left-over nets should be done early and budget established for their movement up the supply chain	LOG																													
77	Undertake process evaluation and develop final campaign report	See Chapters 8 and 9	TECH																													
78	Develop final logistics campaign report	See Chapter 5: Logistics	LOG																													
79	Develop final communication campaign report	See Chapter 6: Communication	COMM																													
80	Develop final financial report	Financial reporting will be based on donor requirements	COORD/ FINANCE																													
81	Circulate final campaign reports to partner organizations and campaign contributors	The final campaign report should include logos from all participating organizations	COORD																													
82	Final meetings to discuss lessons learned and results of campaign at all levels (inverted cascade)	Minutes and key points from the meetings should be transferred back to the central level for collation	DHMT/ RHMT/ Central level																													

83	Conduct survey to measure ownership and use of LLINs	Survey to be conducted during next high transmission season. Often, vaccination is not included given the time lag and possible recall bias. Where a campaign card is used, it can verify participation	COORD/ TECH																												

Endnotes

[a] www.allianceformalariaprevention.com.

[b] www.rollbackmalaria.org/eupdate/rbmEupdate.html.

[c] Kilian A, Wijayanandana N, Ssekitoleeko J. Review of delivery strategies for insecticide treated mosquito nets – are we ready for the next phase of malaria control efforts? Available at: www.malariaconsortium.org/.../ Review%20of%20delivery%20strategies%20for%20ITNs.pdf.

[d] Current guidelines (2011) define "high" as over 30 per cent. Those countries with under 30 per cent coverage should not account for existing nets.

[e] A copy may be downloaded from www.allianceformalariaprevention.com/resources-view.php?categoryID=7.

[f] "Universal coverage and utilization is defined as every person at risk sleeping under a quality ITN or in a space protected by IRS and every pregnant woman at risk receiving at least one dose of IPTp during each of the second and third trimesters (in settings where IPTp is appropriate)."
Recommended GMAP Objectives, Targets, Milestones and Priorities Beyond 2011. Roll Back Malaria Task Force.

[g] "When two nets are allocated to households, the percentage of households receiving one net for every two household members ranges from a low of 11.3 per cent to a high of 35 per cent. When three nets are allocated, the percentage of households receiving one net for every two household members ranges from 15.7 per cent to 43.3 per cent. In nearly all countries, an allocation of two nets per household provides an insufficient number of nets to achieve universal coverage, while an allocation of three nets provides households with too many nets and is an inefficient use of resources." Kilian A, Boulay M, Koenker H, Lynch M, *How many mosquito nets are needed to achieve universal coverage? Recommendations for the quantification and allocation of long-lasting insecticidal treated nets for mass campaigns*. Malaria Journal 2010 9:330. Available at: www.malariaconsortium.org/userfiles/file/Malaria%20resources/Netscoverage.malariajournal.pdf.

[h] Ibid.

[i] Kilian et al. Op cit.

[j] See: www,who.int/malaria/publications/atoz/malaria_gf_proposal_dev_who_policy_brief/en/index.html.

[k] Ibid.

[l] www.allianceformalariaprevention.com.

[m] See Endnote (e).

[n] Source: WHO Global Malaria Plan (draft publication).

[o] Possible sources of data include: Census (projected to total population depending on growth); Central Statistics Office; District Medical Offices; measles/polio data from EPI. It is possible to extrapolate to total population on the basis of percentage of children under five years of age; previous distributions/registrations; school registrations, United Nations: voting/birth registration.

[p] Sources of information include: Demographic Health Survey (DHS). See www.measuredhs.com/aboutsurveys/dhs/start.cfm; Global Fund Proposals. See www.theglobalfund.org/en; Malaria Indicator Survey (MIS). See www.measuredhs.com/aboutsurveys/mis/start.cfm; Malaria Operational Plan (MOP) – PMI. See www.fightingmalaria.gov/countries/mops; Millennium Development Goals country updates. See www.undp.org/mdg/countries/shtml; Multiple Indicator Cluster Survey (MICS). See www.childinfo.org/mics.html; National Health Strategy; National Malaria Strategic Plan; National census documents online; Perry-Castenada Library Map Collection. See www.lib.utexas.edu/maps.

[q] See www.mara.org.za/maps.htm.

[r] See www.rollbackmalaria.org/mechanisms/merg.html.