



Community-Based Insecticide-Treated Nets Distribution Guide

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Scaling Up Vector Control for Malaria Prevention

Contents

Acknowledgments	iii
Abbreviations	iv
Summary	1
Scale and Results	1
Role of Community-Based Distribution in an Overall ITN Distribution Strategy.....	1
Main Strengths	1
Main Weaknesses	2
Appropriate Contexts	2
Recommendations for Design.....	2
Implementation Challenges.....	3
Monitoring and Evaluation	4
Knowledge Gaps and Priorities for Programmatic Research	4
Main Lessons Learned.....	5
Conclusions.....	5
Background	7
About this Document	7
Planning for a Mix of Delivery Options.....	7
Push and Pull Continuous Distribution.....	8
Community-based ITN Distribution Defined	9
Country Experiences	11
What Community-based ITN Delivery Can Bring to an Overall ITN Strategy	17
Reaching Additional Households.....	17
Adding a “Pull” Option	17
Flexibility to Act as the Main Distribution Mechanism or as a ‘Top-Up’ to Other Mechanisms	18
Opportunities and Challenges of Community-Based ITN Delivery	20
Opportunities.....	20
Challenges:.....	20
Appropriateness of Community-Based ITN Delivery in Different Contexts	22
More Appropriate Settings	22
Less Appropriate Settings	22
Inappropriate Settings.....	22
Deciding Whether to Carry Out Community-Based ITN Distribution	25
Discussion 1: Does community-based distribution have the potential to add something useful to the overall ITN strategy? Or are the other delivery channels, either planned or in use, sufficient?	26
Discussion 2: You have decided that community-based distribution may have a useful role to play in helping to fill a coverage gap. The next step is to decide whether this approach is the right one to choose for your setting.....	27
How to Plan and Carry Out Community-Based ITN Distribution	29
Strategy Design.....	29
Choice of Eligibility Criteria.....	31
Quantification and Procurement.....	33
Timelines.....	33
Coordination and Stakeholder Involvement	34
Selecting Partners and Community Distributors.....	34

Selecting Redemption Points	35
Transport and Restocking	36
Training	38
Supervision	39
Monitoring	40
Acting on Findings.....	43
Verifying Eligibility and Ensuring Accountability	44
Social and Behavior Change Communication	46
Evaluation.....	47
Recommendations for Further Exploration.....	50
Conclusions	52
Annex 1: Summary of Country Pilot Projects.....	54
Nigeria.....	54
South Sudan	57
Madagascar.....	60
Zanzibar	62
Annex 2: Resource People and Persons Interviewed	64
Annex 3: Bibliography and resources	65
Other sources of support for country planners:.....	66

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Abbreviations

ANC	Antenatal care
BHC	Boma health coordinator
CDD	Community drug distributor (Nigeria)
EPI	Expanded Program on Immunization
HH	Household
CCP	Johns Hopkins Bloomberg School of Public Health, Center for Communication Programs
LGA	Local government authority
ITN	insecticide-treated nets
MAPS	Malaria Action Plan for States
M&E	Monitoring and evaluation
MoH	Ministry of Health
NGO	Nongovernmental organization
NMCP	National Malaria Control Program
ODDIT	Organe de Developpement du Diocese de Toamasina
PMI	President's Malaria Initiative
SBCC	Social and behavior change communication
USAID	United States Agency for International Development

Summary

This document presents information on the delivery of insecticide-treated nets (ITNs) through community-based networks. This distribution model makes ITNs available on a continuous basis to community members who meet certain agreed criteria. Eligible people may approach community agents who distribute coupons that can be redeemed for an ITN at a nearby redemption point.

An initial summary gives a reminder of why continuous distribution through a mix of distribution models is important for maintaining ITN ownership levels. An overview of the opportunities and challenges of community-based distribution is presented and followed by guidance on how to decide whether this approach could be useful and feasible in a given setting. Practical guidance on the implementation steps involved is given.

Recommendations and suggestions are based on current international guidance, expert opinions, and recent country experiences. Practical lessons on design and implementation are drawn from community distribution schemes in Madagascar, Nigeria, South Sudan, and Zanzibar. Valuable experience is also included from representatives who discussed and considered a community-based option yet decided that this approach was not appropriate or useful for their setting.

A summary of the findings and recommendations are given below.

Scale and Results

- Community-based distribution was successful in all the pilot projects, although the level of success and impact has varied.
- Despite challenges in some settings, the pilot projects saw:
 - Community-based distribution established as a functional mechanism
 - High community acceptance and support
 - A measurable and important effect on ownership¹
 - High redemption rates of coupons

Role of Community-Based Distribution in an Overall ITN Distribution Strategy

- Community-based distribution is most commonly used as a "pull" channel (i.e. a request by a household for new ITN or additional nets initiates the process). As such, it can help expand the pull component of an overall ITN strategy, which often is largely made up of "push" models such as antenatal care (ANC) clinics, where distribution is driven by attendance of a specific service.
- The flexibility of the design in terms of choice of target groups and the number of nets that can be delivered means it can fill coverage gaps left by other push models.
- In the pilot projects, different continuous distribution models with carefully selected eligibility criteria were shown to be largely complementary with little overlap between them.

Main Strengths

- Flexibility of design
- High level of accessibility
- Adds a pull option to the overall ITN strategy
- Often involves direct contact at point of use (households) with net recipients, meaning tailored advice and social and behavior change communication (SBCC) messaging can be given to net

¹ Zanzibar has yet to conduct a quantitative evaluation

recipients. It is known that exposure to multiple platforms of behavior change communication fosters better attitudes toward ITN care and to the condition of the ITNs themselves²; and some data suggest that delivery of ITNs to the point of use may improve use rates.³

- If designed well (i.e., to avoid creating too much additional burden), community-based distribution can be integrated with other community-based systems and/or lower levels of the health system.

Main Weaknesses

- Management-intensive. This method of distribution is designed to make coupons and ITNs available at the community level. It therefore involves a massive network of community agents and distribution points. Engaging, training, and supervising this network of people requires time and effort. Ensuring consistent commodity availability at coupon points and ITN redemption points also requires considerable logistical management.
- Higher costs. Although cost analysis data is not yet available for most of the pilots, a high number of people involved means training and supervision costs can be high. To minimize costs, community distribution activities should be piggy-backed onto existing supervision and training platforms. The use of community volunteers also keeps costs down.
- Accountability challenges. Whilst possible to maintain solid accountability documentation it can be more challenging than for other distribution channels given the large number of people involved at the community level and the prohibitive cost of maintaining regular supervision of all involved. This is further exacerbated by difficulties in verifying eligibility criteria. The wide-ranging criteria used include some that are less easily verifiable than eligibility of other distribution channels. This gives rise to increased potential for diversion (intentional or otherwise) to non-target groups.

Appropriate Contexts

- Community-based distribution is appropriate only if it can increase coverage without too much overlap with other continuous distribution models. Where school-based distribution is already implemented and contributing to an effective level of coverage, community-based distribution may not be needed and may be too much of an additional administrative and management burden.
- Community-based distribution is appropriate only if there is a proven and well-functioning existing community-based organization or network (which could be the health facility network) that can oversee community-based activities. This network should have a strong track record and ideally have experience in delivery of health services or interventions. A field assessment of capacity should be conducted before a final decision is made about the appropriateness of community-based distribution. If such a network is not in place, other channels (e.g., schools) could be more successful.

Recommendations for Design

Communities should be involved in decision-making around choice of coupon or net distributors, ITN stockholders, and eligibility criteria.

- All pilot projects so far have opted to have households receive coupons rather than ITNs. Two issues have driven this decision: the benefit of having an extra layer of accountability by separating coupon delivery from ITN delivery, and the easing of logistical issues by removing the need to

² Koenker H. et al. (2015) Impact of a behaviour change intervention on long-lasting insecticidal net care and repair behaviour and net condition in Nasarawa State, Nigeria, *Malar J*, 14: 18.

³ URC (2012) A Door-to-Door Delivery and Hang-Up Campaign Brings Dramatic Increase in Long-Lasting Insecticidal Net Ownership and Use in the Northern Region of Ghana [Online] Available from: www.urc-chs.com/file/716/download?token=n_NEd4-V

deliver ITNs down to households. Direct distribution of ITNs may be feasible and appropriate in some areas though additional measures to strengthen accountability may be warranted.

- Redemption points should be as close to communities as possible. Where storage is an issue, provision of lockable trunks or containers may be considered.
- Where the number of redemption points leads to high restocking costs, options to keep costs down but retain the redemption points should be considered. One option is to use less costly transport such as motorcycles, instead of pickup vehicles or trucks.
- Cascade training can be used to lower training costs. However, supervisors will need on-the-job refresher training and mentoring; this may be particularly important in some settings where attrition of community agents is a problem.
- Limiting supervision to cut costs can lead to poor adherence to procedures and is unwise. Most pilot projects increased supervision activities following early concerns about poor adherence to guidelines. Costs can be kept down by integrating supervision with other activities; this is easiest if the partner chosen to play this role already conducts similar activities. Choice of partners will be important in determining costs and sustainability.

Implementation Challenges

Verifying eligibility

- Eligibility criteria are central to the program design. Several eligibility criteria may exist and include some that are easy to verify, whereas others are more difficult to verify. It is important to factor in the feasibility of verifying participants' eligibility when selecting criteria.
- Many pilots found household visits useful to help verify the eligibility of a person who approached a coupon distributor.
- Key informants reported that verification of eligibility was manageable. However, none of the pilot evaluations have explored this issue in any detail.
- If evaluations show that coverage is being positively affected and overlap with other distribution schemes is low, then errors in correct verification of eligibility may be an acceptable risk.

Other accountability issues

- Coupon distributors may feel obliged to relax eligibility criteria at times within their own communities. Open discussions on the role of supervision and monitoring should help address these and similar implementation challenges.
- All community-based distribution pilot projects opted to use a coupon system, largely to improve opportunities to check and demonstrate accountability. Coupon stubs or counterfoils can act as a tool to compare coupon distribution with ITN distribution.

Keeping materials and stock available

- All pilot projects used a parallel, stand-alone transport system for nets and coupons. Nets and coupons were not integrated with existing supply chain structures for health and other commodities. Maintaining coupon and data recording supplies, and ITNs stocked at available redemption points is challenging in a system with such a broad network of service points. All pilot projects found this difficult and it was a frequent issue discussed during monitoring visits and mid-project or end-of-project evaluations. Close and frequent coordination and stock monitoring is essential.

- Levels of initial stocks should be realistically quantified. It is very likely that initial demand will be far higher than routine demand. This will be particularly so if considerable time has passed since a mass distribution campaign occurred.
- Responsive supervision and monitoring were able to identify supply chain issues. A variety of approaches were developed to improve the supply chain, including delivering supplies less frequently but in greater quantity each time, higher resupply thresholds, and providing lockable containers that are not accessible by redemption point staff.

Monitoring and Evaluation

- Monitoring should include supervisory contact between community agents, ITN redemption personnel, and their supervisors as regularly as possible, ideally once per month, more realistically once per quarter. This could be conducted at the community level, or by bringing community agents together to conduct joint supervision sessions that can also act as refresher training opportunities and problem-solving group discussions. Data should be reviewed and discussed to ensure any accountability questions can be addressed.
- Distribution data should be frequently collated and analyzed to guide supervision or other intervention needs. Health facilities or other supervision hubs should examine coupon distribution data monthly to check for unexpected patterns or inconsistencies that may warrant a quick follow-up to determine the reason. At higher levels, data should be examined quarterly and should continue a review of distribution patterns and inconsistencies, records of supervision, and stock availability issues.
- Some pilot projects included quantitatively robust and wide-ranging evaluations; others focused on process review, stakeholder perspectives, and a few key quantitative outputs; others placed little emphasis on evaluation. Evaluation should be planned from the outset to ensure that planners have sufficiently useful feedback on the new delivery option and whether it is functioning as it was intended. Important issues to consider are:
 - Impact on coverage rates
 - Numbers of coupons being issued and redeemed, over time
 - Equity of access
 - Qualitative exploration of issues for non-access and (if relevant) non-redemption
 - Costs and cost-effectiveness
 - Adherence to eligibility criteria

Knowledge Gaps and Priorities for Programmatic Research

- Information on costs and cost-effectiveness of this model, alone and in comparison with other models, is particularly scarce. This should be a priority for operational research to inform decision-making by planners.
- Only one pilot project included a detailed examination of equity of access.
- Are there locations where coupons are not needed (i.e., could ITNs be held and distributed directly at the community level)? Would this have cost savings? Is the coupon component too important for checks and balances to remove it?
- Is community-based distribution more efficient at supplying the right amount of nets (not too many or too few) than other channels?
- Is community-based distribution more effective at replacing nets at the right time—when families need a new net—compared with other methods of distribution?
- Evaluations will be needed to understand how well community-based distribution schemes function as they become more established and as technical, implementation, and logistic support from external organizations is withdrawn.

Main Lessons Learned

- Community-based distribution is feasible where health systems are strong enough to supervise the scheme, and where health systems are weak or cannot be accessed, but a strong community-based organization or platform is available to manage logistics and supervision.
- Community-based distribution does not need an existing network of community-based health workers. Using community leaders, religious leaders, or other volunteers as community agents has been equally successful.
- Ensuring ITN redemption points are as close to communities as possible is important to success and achieving high redemption rates.
- The quality of implementation had a huge effect on results. Pilot projects such as those in South Sudan and Madagascar, which were well-funded and had strong partnerships and strong supervision, were the most successful.
- Frequent supervision, proactive use of monitoring data, and good oversight and support for stock flow were critical reasons for success.

Conclusions

Community-based distribution is based on the simple idea that maintaining coverage levels will be far easier if the people who need a new net from time to time are able to access one locally as and when they wish. Engaging communities to take the lead in defining criteria for people who are most likely to need to access the model, and on who best to act as community agents and redemption points, has shown that it is possible to create distribution mechanisms that can be highly functional and achieve excellent uptake. Overlap with other distribution schemes, leading to oversupply, has not been a problem. Experience so far has shown that this model has important potential.

Background

About this Document

To reduce malaria transmission, the World Health Organization (WHO) recommends that countries aim for universal coverage with insecticide-treated nets (ITNs).⁴ WHO recommends that both large-scale mass distribution campaigns and continuous distribution both occur as part of a multi-channel strategy to achieve and maintain universal access to ITNs.⁴ Continuous distribution occurs within the routine health care system such as ANC clinics and those that provide services under the Expanded Program on Immunization (EPI), and through other distribution points such as schools and community outlets.

Community-based distribution of ITNs may have a useful role to play as part of an overall strategy to maintain ITN coverage levels. The potential for community distribution to provide “pull” mechanisms to complement and fill gaps from “push” distribution is particularly attractive. (See Section 1.3 for further explanation of the concept of push and pull net distribution.) Community-based distribution may also be particularly important for ensuring that coverage levels remain high in areas where people have poor access to other routine distribution options.

Recently, community-based ITN distribution has occurred in Madagascar, Nigeria, South Sudan, and Zanzibar (a semi-autonomous part of Tanzania) in settings with very limited infrastructure and where the logistics of net supply and distribution were a challenge. Experience in these settings offers important lessons for effective planning of efficient community distribution.

The purpose of this document is to ensure that planners considering community-based ITN distribution benefit from the lessons that have been learned through experiences in these four locations. The document aims to present information that will help planners decide whether community-based distribution is an appropriate option for their setting, and to offer practical recommendations for developing a system of community-based distribution.

The [ITN continuous distribution eToolkit](https://www.k4health.org/toolkits/continuous-distribution-malaria) is an essential resource for planners who need to review a variety of delivery options and needs for their setting. It can be accessed at the following website: <https://www.k4health.org/toolkits/continuous-distribution-malaria>. Along with documents to guide planning and implementation, the website also includes case studies of various delivery models in different settings, and access to many implementation materials used in these case studies.

Planning for a Mix of Delivery Options

[Box 1](#) contains a brief reminder about why and how continuous distribution, through a mix of distribution activities, should be planned.

The document [Continuous Long-lasting Insecticidal Net Distribution: A Guide to Concepts and Planning](#)⁵ can be found part of the [eToolkit](#) described above. It presents an overview of concepts and the high-level considerations for choosing and planning the integration of continuous distribution and offers guidance for selecting activities and options that best fit local contexts.

⁴ WHO (2013) WHO recommendations for achieving universal coverage with long-lasting insecticidal nets in malaria control. Available from: http://www.who.int/malaria/publications/atoz/who_recommendation_coverage_llin/en/. Accessed 26 May, 2015.

⁵ <https://www.k4health.org/toolkits/continuous-distribution-malaria/continuous-llin-distributions-guide-concepts-and-planning>

Box 1: The Importance of a Mix of Delivery Channels

Large-scale ITN distribution campaigns can achieve rapid, high coverage with ITNs, but maintaining this coverage appears to require a more complex mix of delivery options.¹ ITN coverage begins to decline rapidly after campaigns as a result of ITN damage, loss, or population growth. More frequent deliveries, either continuously or at regular intervals, are critical for keeping coverage sufficiently high between campaigns¹. Having a mix of different delivery activities is important for two main reasons:

- To make enough ITNs available for families that need new or replacement ITNs to keep family members covered. One channel may not distribute sufficiently high numbers of ITNs into families.
- To make ITNs as equitably available as possible. Certain population subgroups—be they socioeconomic strata or geographically defined groups—may not access some potential ITN distribution channels. To maintain the equitable coverage that mass campaigns achieve, a mix of approaches to continuous delivery will need to consider equity of access.

The most appropriate mix of channels for any setting will depend on four main considerations:

- **Quantities:** the mix of channels should be expected to lead to ITN turnover that is sufficient to meet replacement ITNs needs but without over-supplying.
- **Equity of access:** the combination of channels should provide good access across the population.
- **Practicality:** the mix of channels must not create too many logistical challenges; these will affect affordability and whether predicted distribution quantities are achieved.
- **Affordability.**

¹ Roll Back Malaria (2011) 'RBM Vector Control Working Group Continuous Distribution Workstream: Consensus statement on continuous distribution systems for insecticide treated nets.' [Online] Available from: http://www.allianceformalariaprevention.com/resources/R10-1a_RBM%20Continuous%20Distribution%20Consensus_statement.pdf. (Accessed: 13th February, 2014).

Push and Pull Continuous Distribution

ITN distribution can occur through “push” or “pull” mechanisms.

A **push mechanism** puts the onus on implementers to directly distribute ITNs to eligible households. The person who receives the ITN does not need to have made any decision about whether or not they need a new net. The mechanism is therefore not driven by household demand; rather, it is driven by level of access to the routine services offering the nets. For example:

- Under a scenario in which nets are distributed through ANC clinics, pregnant women who visit an ANC clinic for a routine visit will be actively offered and given an ITN. The woman took no active steps to specifically request the ITN; she was visiting the ANC clinic for other reasons (i.e., her pregnancy or child).
- Under a school-based distribution scenario, ITNs are offered to and given to pupils at schools on the basis of lists of which pupils are eligible to receive a net. The pupils do not need to take any proactive steps to obtain an ITN; it is handed to them in a location where they would have been otherwise.



Under the community based 'pull system' in South Sudan, this man was able to approach his coupon distributor for a coupon, and then travel to the nearest redemption point to receive his net. To make the journey more worthwhile he brought coupons from his neighbors for redemption at the same time Photo credit: Malaria Consortium South Sudan.

In contrast, a **pull mechanism** requires an eligible person or household to decide they need or want a new net and then take active steps to seek one; in this way the mechanism is driven by household demand. For example:

- A family decides they need a new ITN and go to a shop to buy one.
- A family decides they need a new ITN and seek a community volunteer who is able to provide them a coupon to exchange for an ITN.

A continuous distribution system that only uses push channels may lead to significant oversupply and undersupply, because it does not account for true consumption rates. Oversupply and undersupply are clearly an inefficient use of resources. It is thus recommended that a continuous distribution strategy includes some pull mechanisms to complement the push mechanisms. As coverage levels reach universal levels, pull mechanisms that can achieve good and equitable reach are the ideal choice for bridging the final coverage gap.

Community-based ITN Distribution Defined⁶

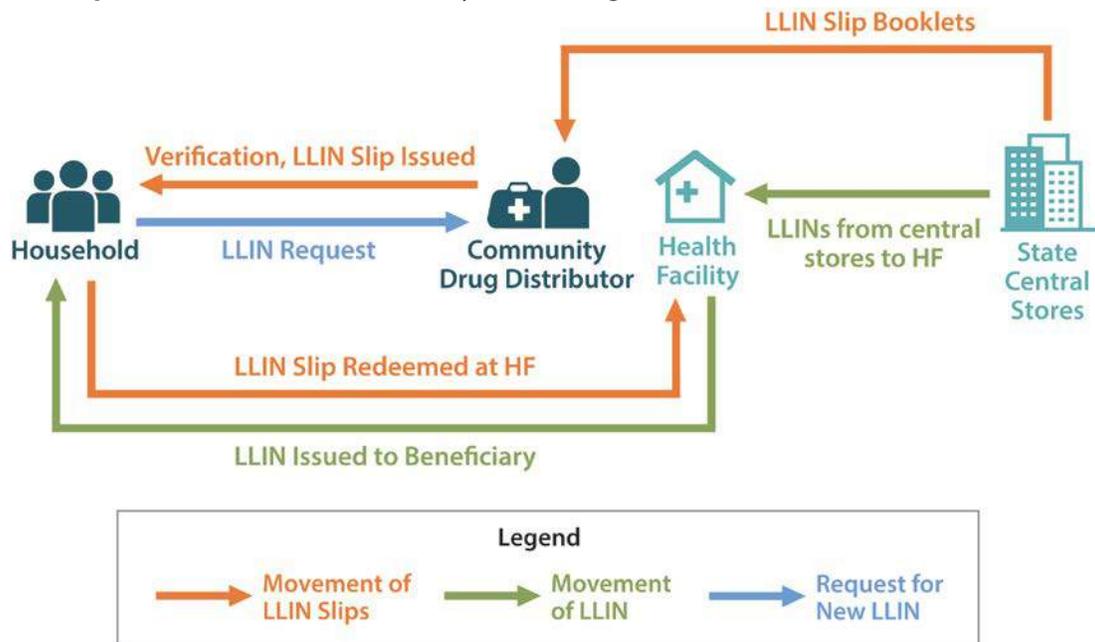
Community-based distribution is a pull system. It depends on families taking the initiative to request new ITNs, typically by redeeming a coupon. The goal is to have new nets available within the community on an ongoing basis. Accountability is strengthened by separating the process of coupon issuance from that of redemption, by reconciling population statistics with usage data, and by empowering communities and supervisors to use population and usage data to monitor the program.

⁶ Section replicated from Networks (nd) *Continuous distribution: filling gaps to sustain gains*. Networks summary series. Available from: https://www.k4health.org/sites/default/files/networks_summary_continuous_distribution_2015-jan.pdf.

The basic distribution process is outlined below:

1. A family member requests a net from a community agent, such as a religious leader or a community health worker.
2. The agent verifies the need and issues a coupon. Verification of need is normally a process of determining whether the person or family meets one of the predefined eligibility criteria, which will vary from setting to setting, but may include whether or not family members have uncovered sleeping places; whether a woman recently delivered a baby and did not receive a net through her ANC clinic; whether the family's nets are old or worn out; whether a couple is recently married, etc.
3. The family member takes the coupon to a designated redemption point to receive a net. This may be a health facility, other government structure, or a private facility.

Figure 1. Simplified overview of a community-based design.



Country Experiences

A summary of the community-based distribution schemes conducted in the four pilot programs in Madagascar, Nigeria, South Sudan, and Zanzibar is shown in [Table 1](#). More detailed descriptions are provided by country in [Annex 1](#). Additional boxes in the annex contain more information on the design and evaluation processes of the pilot projects as well as operational aspects such as approaches to training, accountability, supervision, SBCC, and so on.

Table 1. Summary of Pilot Community-based Distributions Schemes

	NIGERIA	S. SUDAN	MADAGASCAR	ZANZIBAR
SCALE	102,132 ITNs distributed in first year; state-wide in one State	28,686 ITNs distributed in one county of one State	43,498 ITNs distributed in 17 communes in one district.	163,829 ITNs distributed over 17-months in 339 communities.
MODEL DESIGN	Household (HH) requests coupon, coupon distributor visits HH to assess net need and gives coupon if appropriate. Coupon may be redeemed at a nearby participating health facility.	HH requests coupon, coupon distributor visits HH to assess net need and gives coupon if appropriate. Coupon may be redeemed at a nearby participating health facility.	HH requests coupon, coupon distributor visits HH to assess net need and gives coupon if appropriate. Coupon may be redeemed at a nearby redemption point.	HH requests coupon, coupon distributor visits HH to assess net need and gives coupon if appropriate. Coupon can be redeemed at a nearby participating health facility.
APPROACH TO DEMAND GENERATION	Interpersonal communication by personnel directly involved in the community-based distribution program with some additional support from other community-based representatives.	Conversations initiated by social mobilizers, clergymen, community health workers, and health facility staff.	Conversations initiated by community health workers, local leaders, and local radio.	Mass media campaigns using radio and television were used to raise awareness in the communities. Print materials were produced and distributed to all households; these showed the range of continuous distribution activities available and who could access them. All educational and SBCC activities referred to the range of continuous distribution activities to raise awareness overall.
STRUCTURES INVOLVED	Existing network of community drug distributors (CDDs) served as coupon distributors; health facilities served as redemption points.	The county health department was the key partner. Additional managerial and technical oversight was provided by an NGO (non-governmental organization), Malaria Consortium. Net coupon holders were community volunteers specific to this project; nominated by communities through local steering committees. Health facilities were used as redemption points.	No link to the formal health system. Local religious leaders served as coupon distributors; higher-level religious leaders offered their houses as redemption points. A community-based civil society organization, Organe de Developpement du Diocese de Toamasina (ODDIT) provided supervisors and logistics managers, ensuring that net redemption points were resupplied.	Village leaders and their assistants served as coupon distributors. Health facilities served as redemption points.
ELIGIBILITY CRITERIA	Uncovered sleeping places.	Owning a net that is damaged, more than two people sharing one net, recent delivery of a baby but	Sleeping space not covered, newly married couple, just moved to the village, damaged net, pregnant	Widows, orphans, disabled people, families affected by natural

	NIGERIA	S. SUDAN	MADAGASCAR	ZANZIBAR
KEY RESULTS	<ul style="list-style-type: none"> • Redemption rate of 71.8% was lower than other pilot projects. This was linked to stock-outs of materials and ITNs and possibly to insufficient sensitization and distance to redemption points. • Families in the middle-wealth quintiles were the primary recipients of new nets; this was driven by low awareness of the program among families in the lowest-wealth quintile and a tendency by families in the upper quintiles to not request coupons even though they were aware of the program. • Households that were aware of the community-based distribution program were significantly more likely to have an ITN, and more likely to have sufficient ITNs for the entire household, than those who were unaware. • In 2009, immediately after a mass distribution campaign, HH ownership of at least one ITN was 63% (58% of HH owned a net received through the mass campaign from the campaign). Five years later at the end of this community-based distribution pilot; HH ownership of at least one ITN was 37%; but only 17% had retained the ITN from the mass 	<p>did not receive an ITN through an ANC clinic.</p> <ul style="list-style-type: none"> • Redemption rate of 94% • Community-based distribution was the most important source of new ITNs, with 70% of households receiving a net. Community-based distribution was the only source of nets for 53% of households. • The national target of 80% of households with at least one ITN was reached. • The proportion of households with enough ITNs for all members doubled from 31% to 63%. • Oversupply was low, with only 8% of households having one or more ITN for every person. • The percentage of people with access to a net who used it the previous night increased from 60% to 81%. • Overall costs were relatively high (i.e. \$16.52 per ITN delivered, of which direct costs were \$6.87). The cost of coupons, registry books and ITN transport/storage came to \$1.34 per ITN. If pilot costs for training, supervision, and SBCC are halved in a routine program, operating costs could be estimated to be \$2.31 per ITN delivered. 	<p>woman, child has completed vaccinations.</p> <ul style="list-style-type: none"> • Redemption rate of 96.5% • Redemption pattern closely followed coupon distribution pattern, with no evidence of significant delay between coupon distribution and redemption. • Increase in ITN ownership: end-point evaluation showed that where community-based distribution occurred, 83.8% of the population had access to an ITN compared with 55.4% in the comparator areas with no community-based distribution efforts. • More people in the lowest two socioeconomic quintiles than the higher quintiles received a net through community-based distribution. 	<p>disasters, old or worn-out net, new inhabitants of a community.</p> <ul style="list-style-type: none"> • The process evaluation found that redemption was variable. A related point raised in interviews was that using health facilities as redemption points may affect redemption – the opening hours and long waiting times may discourage some. • Reported seasonal fluctuations in demand for coupons, though data not available. • Process evaluation found a high level of support for the program from communities, health system personnel and government.

NIGERIA

S. SUDAN

MADAGASCAR

ZANZIBAR

campaign, therefore, the remainder of households had received ITNs from other sources. Coverage levels appear to have been bolstered by the presence of the community-based distribution channels.

- Households aware of the community-based distribution were significantly more likely to have at least one ITN than other households.

LESSONS LEARNED

- Adherence to quality implementation guidelines requires consistent monitoring and real-time corrections.
- Emphasis on general stock management at health facilities, and on ITN distribution management from the local government agent to the recipient.
- The number of community distributors should be appropriate to the size of the area they cover.
- ITN storage points should be as close to the community as possible.

- High redemption rates can be achieved even in areas with poor transport and serious insecurity.
- Limited service hours for redemption (even when this service was offered only once per week) did not affect redemption rates and could be considered as a strategy to reduce the burden on health facility staff.
- It is possible to achieve good stock consistency. The support of an NGO partner working alongside the county health department was critical in achieving this.

- Working completely outside government and traditional, routine channels is possible and excellent results were achieved.
- Working completely outside existing systems means that costs for some aspects are high because it is not possible to integrate a community-based distribution scheme with other funded activities. Costs will need to be lowered for sustainability or expansion; more integration with routine systems at some level could help with this.
- Community involvement in selecting distribution agents, ITN storage points, and eligibility criteria will improve acceptance, promote high redemption rates, and most likely result in the selection of the most trustworthy individuals.

- A process evaluation was conducted in March – April 2016 and found the following.
- Supply chain management should ensure a focus on smaller health facilities with lower stocks, which often serve more remote and in-need communities. Options include more frequent resupply visits and option for relation of stock from nearby well-stocked facilities (emphasis on this possibility during training and supervision may help smooth the process).
- Supply chain management should give as much emphasis to coupon stocks as to ITN stocks, which had not been the case.
- Communication between the village leaders and health facilities is important to maintain consistency of service and quality reporting.

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- Stock management can be difficult, especially where redemption points were very close to communities with redemption points dedicated to just a few communities. Although this likely drove the very high redemption rates, it was a challenge to maintain stock levels. There were frequent stock-outs in the first half of the pilot.

- Visits (either direction) should be encouraged. Health committees have helped foster this.
- Timeliness and quality of reporting varies but high quality examples are seen. The benefit of having health facilities as the redemption point means all ITNs distributed through ANC, EPI or the community coupon system are reported together through the health facilities electronic reporting system.
 - Village leaders are unused to reporting of this type and rigor. Reports were often late, leading to delays up the supply chain. This could be addressed through increased emphasis on reporting during training and supervision. Sharing more results with village leaders and giving feedback on the quality of data may improve reporting as well.
 - Mass media was extremely successful in raising awareness of the model. A recent knowledge, attitudes, and practices survey showed very high awareness in the population of the different ways to obtain an ITN.

What Community-based ITN Delivery Can Bring to an Overall ITN Strategy

Community-based distribution of ITNs can fulfill two main roles in an overall goal of achieving universal ITN coverage: they reach households that do not have access to an ITN through other means (either because they are not eligible or because accessibility is poor); and they provide a pull mechanism to complement the range of push mechanisms already in place.

In addition to fulfilling these functions, community-based distribution is flexible: it can be added to a mixed-model distribution strategy to complement other distribution schemes, or it can serve as the primary method of continuous distribution by supplying all new and replacement ITN needs in an area where delivery and distribution of ITNs through routine health services or schools is not feasible.

Reaching Additional Households

Community-based distribution can lead to greater ITN accessibility by households that do not or cannot access ITNs through other routine options. Those households may not have eligible household members (e.g., no pregnant women, no infants, no school-aged children), or they do have eligible members but cannot or do not access health services because of their socioeconomic status or geographical accessibility, or the number of eligible members are too few to allow the household to achieve sufficient access.

For example, an ITN strategy may be designed to achieve high coverage through mass distribution campaigns and to maintain coverage by distributing ITNs through clinics that offer ANC and EPI services. Under this model, equity of coverage initially may be high but it declines because coverage is maintained only by households that seek routine health services and have a young child or a pregnant woman; likely a small and inequitable subset of the population. Households such as those would receive an ITN through a campaign but may have limited options for obtaining a new or replacement ITN when necessary. The overall result would be growing disparity in ITN coverage between those subgroups with good access to routine health and social services and those without.

Community-based distribution has the potential to make ITNs available to those households that do not or cannot access the other routine distribution schemes.

Adding a "Pull" Option

A comprehensive ITN delivery strategy aims to achieve and then maintain ITN universal coverage. Mass distribution campaigns play an important role in this, but coverage levels will remain high only if continuous distribution is available to provide an ongoing supply of ITNs for new households, growing households, or to replace worn out or discarded ITNs by existing households ([Box 1](#)). A range of distribution options are available, each with their own strengths and weaknesses for maintaining ITN availability and ensuring they are accessible to those households that need them.

ITN delivery mechanisms can be considered either "push" or "pull" in terms of their role in getting ITNs into households. Push mechanisms are those in which a household needs to take no action to receive an ITN other than to attend or participate in the program through which the nets are distributed or pushed; examples of push campaigns include mass distribution campaigns, ITN distribution to women who attend ANC clinics, and pupils who attend school. Pull mechanisms are those through which a family that decides it needs a new ITN can purchase one, such as through a commercial outlet. ITN strategies in most countries emphasize push mechanisms. Many countries also include a commitment to support the expansion and affordability of ITNs through the commercial sector, though the scale and effectiveness of efforts in this area vary.

Community-based distribution of ITNs could be designed as a push mechanism but it is most commonly designed as a pull mechanism, placing the emphasis on households to approach community agents to request a net.

Flexibility to Act as the Main Distribution Mechanism or as a 'Top-Up' to Other Mechanisms

The flexibility of community-based distribution means that it could be designed to target a small, specific group of households that would not otherwise receive a net via other mechanism, or it could be designed to have a broader scope by acting as a main distribution system instead of having a number of other distribution systems.

Experience in the four pilot projects has shown that community-based distribution can be designed so that overlap between it and other distribution channels is limited and they instead complement each other. This avoids duplication of effort and wasted resources. Achieving this depends on careful selection and adherence to eligibility criteria.

Opportunities and Challenges of Community-Based ITN Delivery

Community-based distribution of ITNs comes with a number of opportunities and challenges that planners should keep in mind, as outlined below.

Opportunities

- Community-based distribution offers a way to deliver a flexible number of ITNs (i.e., the distribution process is not linked to a specific target group such as to pregnant women through an ANC clinic).
- Community-based distribution offers planners the ability to be flexible in deciding who will be a beneficiary and to tailor the distribution process to the needs of the setting.
- Community-based distribution reaches households that, for geographical or sociocultural reasons, do not receive an ITN through routine schemes often linked to health facilities. See [previous section](#).
- Community-based distribution provides a "pull" source of ITNs. Many other commonly used methods for distributing nets are predominantly "push" mechanisms. See [previous section](#).

Challenges:

- Community-based distribution requires a logistical model that puts coupon and ITN stocks in place in communities on an ongoing basis. This is logistically challenging. Although some integration with other distribution supply chain mechanisms can be considered, it may be that a parallel distribution chain is required, at least at the outset when initial stock supplies will be higher. Reaching the last mile to communities will very likely continue to require a stand-alone transport system with the logistical effort that this entails.



Delivering ITNs to redemption points in Madagascar. Photo credit: ODDIT

- Community-based distribution can be expensive to set up and maintain with high costs linked to the very large number of people who need to be trained and supervised.
- Coupon distributors may have difficulty verifying whether a household is eligible to receive a net.
- A high level of accountability comes with higher levels of supervision and higher operational costs. A balance between these must be achieved.

Appropriateness of Community-Based ITN Delivery in Different Contexts

Given the strengths and weaknesses of community-based distribution, there are some contexts in which ITN delivery may be a good option to use to ensure that ITN coverage remains high, and in other settings where it is unlikely to be practical or feasible.

More Appropriate Settings

Community-based distribution would work in the situations and settings described below.

- There is a clear need: other common routine methods of distribution cannot meet demand and maintain coverage to a sufficiently high and equitable level without too much oversupply.
- One or more socially acceptable community-based systems, or structures, exist with good community links. The four pilot projects demonstrated that community volunteers can take on the roles of coupon and/or ITN redemption personnel, but some structure is needed to support and supervise them. The routine health system can fill this role in many contexts; in others, a strong civil society group can play the role. Although the South Sudan pilot took place in a post-conflict context with a weak and nascent government, the existence of community volunteers made the community-based distribution system functional. Similarly, although the Madagascar program was constrained from using government structures due to the political context, the program was able to use religious leaders.
- Supervision and technical assistance can be provided.
- Sufficient SBCC efforts can be integrated. SBCC activities are particularly important given the pull characteristic of community-based distribution.
- Government structures, even if they are not involved in the program, must be supportive of the effort.

Less Appropriate Settings

Community-based distribution may be less appropriate in the following situation:

- The characteristics listed above are met but the number of likely beneficiaries is low (e.g., in areas where only a very small subgroup of people do not access nets through other available means). In these settings the cost and effort of setting up and sustaining a community-based distribution scheme may not be the most cost-effective use of available resources.

Inappropriate Settings

Community-based distribution may be inappropriate in the following settings or situations where:

- The targeted level of ITN coverage is already being maintained by existing distribution schemes. Note that the national average of coverage is not a good indicator for determining whether this is the case. It is important to consider coverage by administrative departments, at as low a level as possible, and by socioeconomic and cultural subgroups. Only an examination of coverage at this level will determine whether the existing distribution schemes are maintaining sufficient, and sufficiently equitable, coverage throughout the population.
- School-based delivery is undertaken; the management burden associated with this method of distribution means that it is likely inadvisable to undertake both it and a community-based distribution method within the same geographical area. In some contexts this may mean a country opts only to do one or the other; in other settings a country may decide one or other channel can be managed in different areas of the country, region, or implementation area, though the burden of developing the materials and systems for each within one country should be taken into consideration. If school-based delivery occurs, the use of additional classes should be explored to

fill any continuing coverage gaps before introducing another channel such as community-based distribution. This can be done with the [NetCALC tool](#).

- No sufficiently strong structures or networks are available to support the program (i.e., the routine health system is too weak or has insufficient coverage and no sufficiently experienced, respected, or functional nongovernmental or civil society organizations are available).

[Box 2](#) summarizes the characteristics that should be in place to make community-based distribution an appropriate choice.

Box 2: Is community-based distribution an appropriate option?

- ✓ There is a clearly defined need: specific geographical areas or population subgroups cannot easily reach standard, routine, distribution outlets, meaning that overall ITN coverage rates and equity coverage are suffering.
- ✓ There are well-functioning community-linked structures or networks that can oversee operations.
- ✓ Government, even if it is not directly involved in net distribution, is supportive of the approach.
- ✓ Available funds will allow sufficient emphasis on supervision and public education.
- ✓ The context allows sufficient SBCC activities to occur.

Deciding Whether to Carry Out Community-Based ITN Distribution

When considering whether to undertake a process of community-based distribution, delivery planners should answer the following two main questions:

- 1) Does community-based distribution have the potential to add something useful to the overall ITN strategy (i.e., are the other delivery methods, either planned or in use, sufficient)?
- 2) Is community-based distribution appropriate to our setting?

Answering these questions will require extensive discussion. The discussions that follow will help planners decide whether to undertake a community-based distribution scheme.

Discussion 1: Does community-based distribution have the potential to add something useful to the overall ITN strategy? Or are the other delivery channels, either planned or in use, sufficient?

Points to keep in mind:

- A continuous distribution strategy should have as few distribution options as possible. The right distribution option, well designed and managed, is better than many poorly functioning ones.
- Adding a new distribution option rather than fixing problems with existing ones is a poor use of resources. Improving or expanding one or more current distribution mechanisms is more efficient and cost-effective than starting up a new one.
- NetCALC* is a valuable tool for planning ITN distribution. It can be used to help better understand whether the current or proposed set of distribution options has the potential to maintain coverage, and whether community-based approaches may fill a useful gap.
- Community based distribution is so flexible in its design options that it could be used as a stand-alone delivery mechanism without the need for other mechanisms to reach other groups. For example, a community distribution option could include eligibility criteria of "being pregnant" and provide nets to women who cannot receive them through an ANC clinic. In these situations, community-based distribution should not replace functioning ANC clinic distribution channels; rather, community-based distribution should be implemented in settings where ANC access and coverage is poor, or where no other distribution options exist.

* NetCALC is an Excel-based modeling tool developed by Albert Kilian and the NetWorks project. It is designed to model several scenarios of continuous distribution approaches based on country-specific data, and provides estimations of the ability of varied channels to overall universal coverage. NetCalc 3.0 Beta can be downloaded from the VectorWorks website: (<http://www.vectorworks.org/resources/netcalc-planning-tool/>).

Issues to discuss:

- 1) Is a coverage gap occurring?
 - Use recent survey data disaggregated by geographic area and socioeconomic group.
 - Involve community leaders and representatives in discussions. They may have a better understanding of who is missing out.
- 2) Are these coverage gaps occurring by geographic group or equity group (e.g., poorer families, more vulnerable families, families that do not or cannot access routine services, nomadic groups etc.)?
 - Involve community leaders and representatives in the discussion. They may have a better understanding of who is missing out.
 - This will help inform discussion in point 3.
- 3) Could improvement or expansion of any of the current mechanisms fill the coverage gap?
 - Eligibility criteria for existing mechanisms could be widened; Coverage could be expanded geographically; the frequency of distribution events could be increased; adherence to operational procedures could be improved through better training, supervision, or monitoring; the extent and effect of educational and SBCC activities could be improved or expanded.

Discussion 2: You have decided that community-based distribution may have a useful role to play in helping to fill a coverage gap. The next step is to decide whether this approach is the right one to choose for your setting.

Points to keep in mind:

- School-based distribution is a common alternative to community based distribution and has some similar characteristics: the size of the target group is flexible, schools often have a very good community reach, schools are far more widespread than health facilities, and there is considerable flexibility in how many ITNs are delivered through it.
- The management effort of setting up and maintaining school- and community-based distribution systems in the same geographic area suggests that having both systems is unwise; planners should specifically discuss and consider whether school-based or community-based distribution is the better option for their setting. Issues to consider are discussed in the next section.

Issues to discuss:

- 1) Is community-based distribution a feasible option?
 - a) How strong is the health facility network? Would it be able to manage logistics and supervision of community-based agents?
 - b) Which community groups are active in the targeted geographic area, and specifically in the localities of interest for community-based distribution?
 - Think beyond just malaria to other groups involved in health activities.
 - Involve stakeholders who have experience working with these groups.
 - Ensure that the perspectives of the various community organizations are represented.
 - 2) Would any of these groups be able to manage logistics and supervision of community-based agents?
 - 3) Are any of these groups sufficiently well respected and acceptable to communities?
- ! If neither the health system nor an alternative community-based organization is available and sufficiently strong and acceptable, then community-based distribution will not be an appropriate option.
- 4) Is school-based distribution the better option? Consider school coverage and school enrollment rates. Use the document [School-based distribution: a short guide based on recent country experience](#) to guide discussions (see the [e-Toolkit](#) discussed in [the Background section](#)).

How to Plan and Carry Out Community-Based ITN Distribution

This section contains guidance for designing a community-based ITN delivery strategy. Operational experiences and recommendations are discussed.

Strategy Design

A variety of different models could be considered for community-based distribution of ITNs, although the practicality and appropriateness of each will vary depending on context.

Some general principles should underpin the design:

- The model should build on existing systems and mechanisms (and it should support and enhance them as much as possible).
- Adjustments to existing networks or systems will likely be needed to allow for the bulkiness of ITNs and to consider various aspects of demand generation and use (i.e., there may be a need for health education and promotion).
- The design should be informed by community perspectives to promote acceptance and effectiveness.
- The number of coupon distributors and redemption points are adequate and accessible to community members.

Characteristics of the model, which can be varied for different designs include the following:

- ITN or coupon: Community agents can distribute coupons to eligible families that request them; or, if it is logistically feasible, community agents may themselves deliver an ITN to a family. This latter option has not been undertaken by any of the pilot projects to date because coupons have been deemed logistically easier. However, in some specific settings, direct delivery of ITNs may be appropriate; perhaps, for example, urban areas where a household member can directly reach an ITN storage and distribution point.
- Target group/eligibility criteria: Specific eligibility criteria must be decided to determine who will receive a net. These criteria must be selected as appropriate to the setting to fill coverage gaps. See Section 7.2.
- Range of communities: The geographic scale of the community-based distribution will be determined by 1) the geographic scope of the coverage gaps the distribution scheme is intended to fill and 2) the area across which the characteristics remain conducive to the use of community-based distribution.
- Timing: ITNs should be available all year, or if it helps with the logistical burden, at certain times of the year such as before the rainy season. Some pilots did see increased demand during certain seasons (e.g. Zanzibar). As with other continuous distribution schemes, this mechanism should ideally start immediately on completion of a mass distribution campaign to most effectively maintain coverage levels.

Country Experience

"In Madagascar we relied on the communities to guide us in a range of decisions including who would be best choices for coupon distributors and to act as net redemption points, as well what eligibility criteria to use. Having them take the lead on these decisions helped both to make sure communities felt some ownership of the system, and supported it; but also just helped us make the right decisions- their opinions were much more informed and relevant than ours!"

Mohammed Sy-Ar, CCP,
supporting the Madagascar
community based pilot

- Availability of redemption services: Planners may opt either for a wider geographical coverage of redemption locations with shorter days or hours available for redemption, or less geographical coverage but far more flexible redemption service hours.
- Structures/ personnel used: Planners may decide to use an existing network of community volunteers or representatives (e.g. religious or political leaders, community health agents) or establish a new network of volunteers. It may be possible to use the same group of people as coupon distributors and redemption points (i.e. a small stock of ITNs is held in the village and managed by the coupon distributor), this was done in the Madagascar pilot. Alternatively, the coupon distributors may be quite separate from the distribution points, which may be other nearby structures such as health facilities (as in three of the four pilots), schools or other meetings points. See [Selecting Partners and Community Distributions](#) and [Selecting Redemption Points](#) for more information.
- Verifying eligibility: The practice by most pilot projects was to give the coupon distributors the authority to determine whether or not a person requesting an ITN was eligible to receive a net. The process of verifying eligibility varied. In all cases coupon distributors visited households to attempt to verify eligibility. In some cases of eligibility the word of the household members was taken (e.g. that they have insufficient ITNs for the sleeping places that can be seen) in other cases neighbors, other community members, and village committees gave information on eligibility (e.g. confirming newcomers, newly married couples, families with new babies, etc.). When eligibility was linked to having a damaged net, a household visit was not considered necessary if the householder brought the old net with them for verification. See [Choice of Eligibility Criteria](#) for more information.

The design process should include the following:

- Wide participation by stakeholders at the design stage. This is helpful to ensure support as the program progresses, and to gather important perspectives and suggestions that may not be obvious to those designing the program. Important stakeholders include representatives of local governments and the Ministry of Health; traditional leaders; village health and development committees; representatives of local NGOs and other community groups, particularly those involved in supporting health issues or community development; and women's groups or youth groups that may already be actively supporting community work.
- Visits to the places where supervision will occur and where ITNs will be stored have proved to be important by influencing a number of design decisions.
- Active and real community involvement in design decisions that include choice of community agents, storage points, redemption points, redemption service availability, and other matters. Experience in the pilot projects showed that community voices were critical to ensuring that practical and sound decisions were made. In Madagascar, for example, communities led the choice of who should act as coupon distributors and ITN stockholders. Religious leaders were considered the most trustworthy and respected choice, and communities were vociferous in expressing their feelings that religious rather than administrative or traditional community leaders should play this role.

Country Experience

"Village health committees led the way in deciding who really would need ITNs the most and who wouldn't be able to get them elsewhere".

Mwinyi Issa Khamis,
Head of SBCC and ITNs,
Zanzibar Malaria Elimination Programme

Choice of Eligibility Criteria

Eligibility criteria will depend on what the community-based distribution scheme is intending to achieve and how many ITNs are available for distribution. The simple but to-the-point eligibility criteria used by the Nigeria pilot (i.e., "the house has uncovered sleeping spaces") cuts straight to the point of what continuous distribution aims to achieve; but in locations with low coverage this may call for a large number of ITNs, which may not be available through this mechanism. In locations that have had very recent campaigns, this simple approach could be an effective way to use community-based distribution to maintain coverage. In areas with well-functioning ANC and EPI clinics, however, the overlap may be too great to make it efficient. In other pilot projects, a more diverse set of eligibility criteria have been used, and with a view to limiting overlap with other distribution schemes.

Examples of eligibility criteria, when they might be appropriate, and options for verification (see [Supervision](#)) are shown in [Table 2](#).

Table 2. Eligibility Criteria

Example eligibility criteria	Contexts	Options for verification
Pregnant women	Appropriate where no ANC clinic exists or where there is little accessibility to an ANC.	Easy to verify visually. No household assessment visit needed.
1-year-old child	Appropriate in an area where ITNs are not distributed through an EPI clinic or where accessibility to one is difficult.	Easy to verify visually or from health card or similar documents. May not need household assessment visit.
Have a worn out or otherwise very damaged net.*	Any context	Easy to verify by visual inspection of the net, if the family still owns it. If an old ITN has already been discarded, then verification is impossible. If no old net is available for verification yet a clear gap in coverage of sleeping places is observed, this could be considered sufficient reason to provide a coupon. This would need to be clear in training and in job aids. No household assessment visit needed if old ITN is brought for inspection.
New household	Any context	Easy to verify through discussion with neighbors or other community members. May need household assessment visit to speak to neighbors.
Has uncovered sleeping spaces in the household	Any context, though issues of potential overlap with other distribution schemes would need to be considered.	Household assessment needed to view sleeping spaces and number of nets already owned to determine whether a coverage gap exists. It is possible that households could hide existing ITNs, but this is unlikely to happen at any scale worth being concerned about.
Households affected by natural disasters	Any context	Often a community-wide eligibility; or verification can be undertaken by the village committee.
Widow- or child-headed households	Any context	Often, village committee will already be aware. Household visit could include discussion with neighbors if household committee is not aware.

*Some pilot projects opt to refer to this as an ITN that can no longer be repaired so as not to discourage net repair.

Quantification and Procurement

Quantifying the number of ITNs that may be delivered through a community-based distribution scheme is far more challenging than it is when the target group has a more predictable size, such as distributing to pregnant women through an ANC clinic. The eligibility criteria will of course underpin the estimates of how many ITNs will be needed; but often it will be difficult to quantify demand under these criteria. Although some rough guesses can be made by using information from local sources, it is difficult to quantify how many nets might be needed when using eligibility criteria such as widow- or child-headed households, households affected by natural disasters, new residents of a village, and exchanging a worn-out ITN for a new one. Easier to quantify are criteria such as households in which a woman recently delivered a baby at home and did not receive a net through an ANC clinic.

Quantification will therefore be based on rough estimates, and the experience of the first year of implementation will be the key to informing ongoing estimates of need. Including thresholds for resupply and ensuring good training on these matters will be critical given the impossibility of making accurate predictions.

In all the pilot projects, initial supply quantifications were based on estimates proposed by people who knew the area. In South Sudan and Madagascar, the local NGOs that led the program had long-standing experience in the locations were relied upon to supply estimates of the number of potential eligible households (with some input from local Ministry of Health personnel in South Sudan). In Nigeria and Zanzibar, district-level Ministry of Health personnel supported the planning discussions and offered personal estimates of demand based on their knowledge of the area.

Planners should take note that initial demand is likely to be far higher than ongoing demand, and this initial higher demand may last weeks or a couple of months. Ensuring a conservatively high number to ensure an initial adequate supply will be important for ensuring that distribution can start smoothly. This was a weakness in the Nigeria and Madagascar projects; early stock-outs could have been avoided. Initial demand will be particularly high if it has been a year or more since the most recent net distribution campaign. The time since the most recent campaign or other information or estimates should be taken into account to plan initial needs.

Some use of the NetCALC tool was made during the quantification exercise. NetCALC is not able to estimate potential target groups for many of the eligibility criteria any more than the personnel involved in planning can do. However, if planners are able to determine estimates using their local knowledge of those who might meet the eligibility criteria, then NetCALC was found to be useful to support the process of translating that into an estimate of ongoing, likely demand.

It is worth noting that as national ITN strategies become more consolidated, it is likely that nations may compile ITN orders for the variety of distribution schemes used in the country. This will allow countries to undertake larger scale procurement, either as a national tender or by opting in to other available pooled procurement mechanisms. When this is the case there should be no need for a specific tender for ITNs for a separate distribution system. However, in some cases, the funding modality, scale, or ownership of activities may mean that channel-specific procurement is required.

Timelines

Continuous distribution needs to be started early—before ownership of nets drops too low after a mass distribution campaign. The more time that passes after the campaign, the longer it will take to reach the targeted coverage level. Initial demand may be very high. It is wise to plan for the initial distribution during the dry season to benefit from better accessibility.

Coordination and Stakeholder Involvement

It is important to include a wide variety of stakeholders at the design stage. Health system partners in the local area will likely have important experiences and suggestions to guide the design of the community-based distribution scheme, and may be potential partners. The most important people to include in the design process are those in the communities who are the intended ITN recipients. The pilot projects consistently showed that listening to perceptions and suggestions from community members was hugely valuable, both in the selection of who should serve as coupon distributors and ITN redemption agents, and in the selection of eligibility criteria.

Other important stakeholders include the following:

- *Traditional leaders and government administrators at district and regional levels.* In some cases these people or their colleagues may be directly involved in the program; in others, they may not be directly involved but may have an important role in encouraging or insisting on support for the program and ensuring that policies and procedures are adhered to. Even in the Madagascar pilot, which was designed to have no links to government institutions (due to the political context at that time), enlisting the support of the local administrative and health authorities was important and helped ensure the program was established and ran smoothly.
- *Women's groups, youth groups, or other community groups* that actively support community development activities.
- Some villages, wards, and communes may have *committees* that are directly mandated to support community development or health issues.

Coordination meetings should be repeated regularly, rather than confined solely to the design period. Quarterly review meetings with appropriate stakeholders are an important part of implementation. The meetings should include reviewing progress and challenges, making recommendations for modifications or interventions as appropriate, reviewing monitoring data; and checking for any issues revealed by these data and making appropriate suggestions.

Selecting Partners and Community Distributors

Choosing a community-based network to oversee eligibility determination and distribution activities is pivotal to the success of a community-based distribution program. The health system may well be chosen as the network of choice for leveraging various opportunities (storage, supervision activities, skills, and experience) and to support the important role of the governmental health structures. However, experience in Madagascar showed that if that is not possible, or not preferred, the model can function well even completely outside the routine health system, with community volunteers and civil society playing all roles from coupon distributors to ITN redemption agents and providing supervisory services. Community perspectives, desires, and insights will be particularly vital during this aspect of design decision-making.

Choosing community coupon distributors, redemption points and agents, and program supervisors can be guided by considering the following questions:

Country Experience

"It is important that any national design document gives guidance but allows flexibility for modification of various points at lower levels. In Nigeria the national document gave suggestions on the number of coupon distributors per number of households, but it was the partners at lower level who determined what would work best, it had to vary depending on local conditions"

Gladys Ogah, former State Neglected Tropical Disease Co-ordinator, Nasarawa State, Nigeria

- Is there an existing system for community engagement and activity implementation?
- Has this system been used in the past to provide health service or interventions?
- How successful was this and can this system be used for net distribution (directly or indirectly)?
- How robust is the reporting and supervision structure for this community-based system? Is reporting and supervision tied to health facilities in community catchment areas? Can this system be used for net distribution?

Each pilot used a different group of people: Nigeria used a preexisting set of community health workers (community drug distributors—CDDs), South Sudan established a new network of community volunteers, Madagascar used community religious leaders, Zanzibar used the elected village leaders (i.e. political leaders). The decisions were based on an assessment of the opportunities available. In Nigeria, CDDs under the Neglected Tropical Disease program were ideal people to serve as coupon distributors, whereas the health service personnel were best positioned to serve as redemption agents and health service staff were in the best position to serve in a supervision role. In Madagascar, a number of civil society organizations with good community engagement, networks, and supervisory capacity existed, but they did not have the capacity to serve as coupon distributors or redemption agents. Thus a strong community-linked organization took on the oversight role, but newly recruited community volunteers (existing religious leaders, the most well-respected community leaders) were selected to serve as coupon distributors and redemption points.

A major decision may be whether to use the village leaders, which may be an appropriate choice in many cases, though there can be disadvantages in some circumstances. Use of village leaders did work relatively well in Zanzibar with only a few reports of negative impact on the system. These instances were of: a reported reluctance of some community members to approach the village political leader; some non-eligible distribution of coupons to favored community members (though this could be a potential problem with any choice of distributor) and some non-eligible distribution of coupons to community members specifically to avoid an appearance of political bias). In other settings communities have preferred to keep involvement non-political.

These pilot projects contain only a limited experience of the range of possible options for coupon distributors. Other possibilities that could work well in a variety of settings include agricultural extension workers, cell phone top-up retailers, women’s groups, heads of village development committees, or health committee personnel, etc. Planners will need to take community advice and determine what may work best in their setting.

Community guidance on the selection of networks and personnel is critical. For a pull scheme to succeed, acceptance and demand is everything.

Selecting Redemption Points

In the Madagascar pilot project, community religious leaders served both as coupon distributors and redemption agents. In the other pilot projects the formal health facilities served as redemption points.

In a community-based distribution scheme, ITNs need to be placed as near to the community as is practical and affordable to promote good coupon redemption rates. When ITNs are needed near every community, it is unlikely that one would find enough places that are sufficiently secure and large enough to store more than two or three bales of ITNs. In the pilot projects where health facilities served as redemption points, the criterion of having sufficient secure storage for two to three bales of nets was used to determine where redemption points could be located. The pilot project staff in South Sudan, however, later opted to modify this, having found that more redemption points were needed given the insecurity and logistical difficulties of traveling much beyond an individual community. Instead, secure drop boxes or lockable trunks were

installed at more health facilities than were initially involved, and the skeleton personnel who staffed these health facilities had a few hours on one designated day per week when they would redeem a coupon for a net. Even with limited service hours for redemption, this wider geographical presence was thought to help achieve reasonable redemption rates.

Where health facilities were used as redemption points, the health facility's ability to store two to three bales of ITNs was the common factor in deciding how near a supply of ITNs could be delivered to a community. In the Madagascar pilot, religious leaders served as ITN stockholders and redemption agents, and one to two bales of ITNs were stored in their households; this worked well. A storage hub was designated to hold a larger stock, from which those responsible for distributing ITNs could obtain a new stock once they reach a predetermined threshold to prevent a stock-out.

There are pros and cons in using health facilities as redemption points. Supply chain management, supervision to this level and data reporting may be easier and more economical given that these tasks can be integrated into those already being undertaken for ANC and EPI ITN distribution. Potential disadvantages surround the potential impact on redemption rates which may be affected by: the distance for some communities, limited opening hours, expectations of long waiting times (reported in the Zanzibar pilot to impact redemption) and potentially a reluctance to visit health facilities when not ill.

Planners should design a logistical network and restocking plan that seems affordable and appropriate to the setting to ensure that ITNs are delivered as close as possible to the communities where they will be distributed. The experience of the first few months should then be closely examined to determine whether any modifications to the structure are needed.

Transport and Restocking

Commodities needed under this model include the ITNs themselves, the coupons, reporting forms, any leaflets used for job aids or SBCC, and possibly, other supplies for coupon distributors and redemption agents such as stationery, files, and containers. Even if a strong ITN supply chain is in place, the system can fail if, for example, not enough coupons are available or redemption point staff decide to stop redeeming coupons because they have run out of reporting forms. Issues with supply management in Nigeria and Zanzibar were broader than just ITNs and demonstrate that giving sufficient attention to non-ITN supplies is important. A discussion of the initial supply of commodities excluding ITNs should take place at training sessions.



Storage facility for resupplying redemption points in Madagascar.
Photo credit: ODDIT

Most redemption points are unlikely to have sufficient space to store more than a few bales of nets. Where redemption points are in a community member's house, as in Madagascar, this will be particularly true.

Two bales of nets may be the average amount held at a redemption point. Added to this limitation is the known difficulty with accurately forecasting demand (see [Quantification and Procurement](#)).

Setting a solid threshold that indicates the need for restocking is vital to preventing stock-outs. Planners should choose a minimum threshold for resupply (such as 1 month) to ensure that enough nets will be available to cover the demand in the period between reorder and delivery. Minimum thresholds (the number of months' worth of nets to trigger resupply) will depend on the size of the storage space, the catchment area's population, and accessibility (which affects how frequently resupply will be possible). Similarly, the setting of maximum stock levels (such as 3 months) should be based on the consumption rate, storage capacity, and estimated frequency of resupply.

Quantification should have already taken into account the likelihood of a higher initial demand than is expected as the system stabilizes (see [Quantification and Procurement](#)). Planners should bear this in mind and be prepared for more frequent resupply requests, at least initially. It may also be worth considering increasing initial stock levels before the rainy season, for two reasons:

- Redemption rates may peak during the rainy season, or as the rainy season approaches.
- Mobility may be particularly poor during the rainy season in some areas, making it difficult to resupply a community.

Restocking may need to occur more or less frequently depending on the eligibility criteria and the volume of ITNs to be distributed. Regardless, it will be necessary to have a source of ITNs from which it is feasible to restock many redemption points on a regular basis. Storage hubs will need to be established somewhere with good security and sufficient space for sufficient bales of ITNs for all projected resupply needs of redemption points for at least a quarter of a year, perhaps more depending on the plan for resupply of these storage hubs from a central store. Some pilot projects had only two storage points: redemption points and storage hubs. In Madagascar, redemption points close to villages held 3 months' worth of ITNs, whereas storage hubs at the commune level (similar to a district) held a 6-month supply of ITNs. The context will guide what is most appropriate. The Zanzibar pilot showed that smaller redemption points were more at risk of stock outs and that maintaining the supply to these is a bigger challenge. Reallocation of stocks from nearby well-stocked bigger health facilities was seen as a possible solution; though emphasis on this option during training and supervision may be important to ensure this can be carried out without resentment.

Restocking of redemption points is one of the most important parts of the model, but also one of the most time- and cost-intensive. The pilot projects used two approaches. The first approach had supervisors driving in pick-up trucks to deliver new bales to redemption points when the minimum threshold had been reached and redemption point staff had requested a resupply of nets. The second approach had supervisors undertaking resupply visits in combination with supervision visits, but because they traveled by motorcycle, extra bales of ITNs were retained in a lockable storage space to which only the supervisor had access. Redemption point personnel visited the storage locker, filled out paperwork, and handed over the bale to the redemption point stock-keeper. This scheme is unlikely to be feasible when the homes of community volunteers or leaders are used as redemption points, but it may well be feasible when health facilities are used as redemption points.

Redemption points may be health facilities that also store ITNs for distribution through ANC and EPI clinics. To streamline logistics management across the overall ITN distribution strategy, it is important to develop a resupply plan that supports all distribution mechanisms. There is no need to compartmentalize ITNs for different distribution schemes. One stock of ITNs can be held at the health facility and be drawn on as needed for various methods of distribution.

When a community-based distribution program is intended to complement other schemes, such as distribution through ANC or EPI clinics, it is important to ensure that the processes for all schemes are integrated. Forms, reporting mechanisms, and reordering and resupply policies and procedures should be aligned to reduce the burden on staff and prevent confusion or errors.

Training

The following are considered essential personnel and will need to be trained:

- Coupon distributors
- ITN stockholders and distributors (these may be health facility personnel or other individuals)
- Higher-level stock holders
- Supervisors from the lowest level to higher levels as appropriate.

For any program involving personnel at the community level, the number of people who require training can become very large very quickly. All pilot projects included coupon distributors and ITN redemption point staff. All pilot projects therefore opted for cascade training to ensure initial personnel received the proper training. Trainings ranged from 1 to 2 days. Some pilot projects opted to train lower-level personnel together; others trained coupon distributors and ITN stockholders separately. Given that training on the importance and approaches for SBCC messaging will overlap, it may be more economical to combine the groups. In the locations that carried out separate trainings, project staff opted to continue separate trainings given the need to spend more time on logistical and stock-control issues with ITN stockholders and more time discussing issues that might arise during a household visit, such as determining eligibility.

Training content should include the following points:

- Basic design, emphasizing the difference between “pull” and “push.”
- Eligibility criteria, reasons for eligibility, and how to verify these (ideally with role plays and examples).
- Storage and handling issues, emphasizing reordering and restocking processes and how to avoid stock-outs.
- Record-keeping and audit trails, particularly, filling out of forms and reviewing data for accuracy and accountability.
- Addressing community concerns.
- What supervision to expect and how to access support. For supervisors, expectations around supervision and how to provide support.

- SBCC; in particular, the importance of community awareness.

Any materials to support distribution and SBCC, activities should be delivered along with the nets to avoid either the costs of delivering print materials later or their being delivered late.

Training can be a substantial cost in the first year but it does not need to be repeated every year. Costs can be streamlined by keeping trainings short (1 day or less), thus reducing per diem and hotel costs. However, due to turnover, reorientations may be needed. Supervisors should be trained to provide on-the-job orientations for new community-based workers; alternatively, training on community-based distribution can be piggybacked onto planned trainings or orientations for new staff.

Supervision

In some locations, an existing network of personnel may already exist.

Supervision chains used in the pilot projects have included the following:

- Outside the health system:
Coupon distributor (village religious leader) > Redemption point personnel (higher-level village leader) > Local NGO personnel > Donor-funded project staff.

Suggestions following the pilot projects included more use of local oversight structures, which could have been beneficial to allow more supervision than was possible by local NGOs staff. For example, religious leaders who served as redemption agents could have had some oversight by the mayors or other local authorities.

- Within the health system:
Coupon distributor > Low-level health facility personnel > District health supervisors > Donor-funded project staff.

This has the benefit of working through existing supervision systems but may mean that supervision of this specific activity does not receive sufficient attention.

In some settings, community structures can help provide oversight. In Zanzibar, the village health committees play a role in checking data and having issues flagged to them. In Madagascar, the benefits of a greater level of monitoring was highlighted during the program review; suggestions included involving community leaders such as the mayor or other local authorities.

How much supervision can be carried out will largely depend on the availability of personnel and budget; in some cases, security issues will also affect the feasibility of frequent supervision. Ideally, coupon distributors and redemption point personnel should have some level of supervision once a month, data should be reviewed, issues discussed, and on-the-job training given as needed. Pilot projects have shown that consistency of reporting is a challenge and, given the inherent other challenges of accountability, it is



On-the-job training being given by the health center supervisor to community coupon distributors, South Sudan. Photo Credit: Malaria Consortium South Sudan.

important to try to obtain data of good quality. Frequent supervision will help. Most pilot project personnel opted to increase their supervision after the first few months to respond to the need for better field oversight and guidance.

Quarterly supervision from a higher level to review mid-level storage points and redemption points is also useful to ensure a different perspective, fresh eyes, and to support lower-level supervisors with any issues they have been facing.

Monitoring data should be reviewed carefully as part of supervision to guide the understanding of any challenges being faced, issues with accountability, and any possible needs for model modification.

Providing effective supervision is not easy and it is expensive. Unless programs have budgeted and planned appropriately, supervision may not be implemented well. The costs associated with traveling to visit community-based distributors is the greatest challenge. Most supervision systems require supervisors to travel from a health facility to a village. This requires time, access to a working vehicle, fuel, and per diem, so supervision rarely happens as frequently as planned.

In addition, supervision visits can be combined with supervision for other activities, so the net distribution program needs to be emphasized as a priority. Moreover, supervisors may not have adequate training or experience in supervision and may not fully understand the purpose of their visit. Supervisors need training in counseling, problem-solving, use of monitoring data, and quality improvement. Supervisors also need user-friendly job aids or checklists.

Larger health facilities such as hospitals will need careful supervision. Due to the volume of patients and the segmentation of departments, intra-staff coordination over net and coupon stocks, eligibility, and monitoring of the facility's associated community ITN distribution program may be weak. In these settings, it would be helpful to appoint a focal person to manage and monitor ITN distribution.

Examples of supervision checklists can be found in the [eToolkit](#).

Monitoring

Experience from a variety of continuous distribution efforts shows that it is important to create a monitoring and evaluation (M&E) system that will begin at the onset of the program.⁷ The M&E system should provide up-to-date information about whether the schemes are doing what is expected of them in the most efficient way; if they are not, changes can be made.

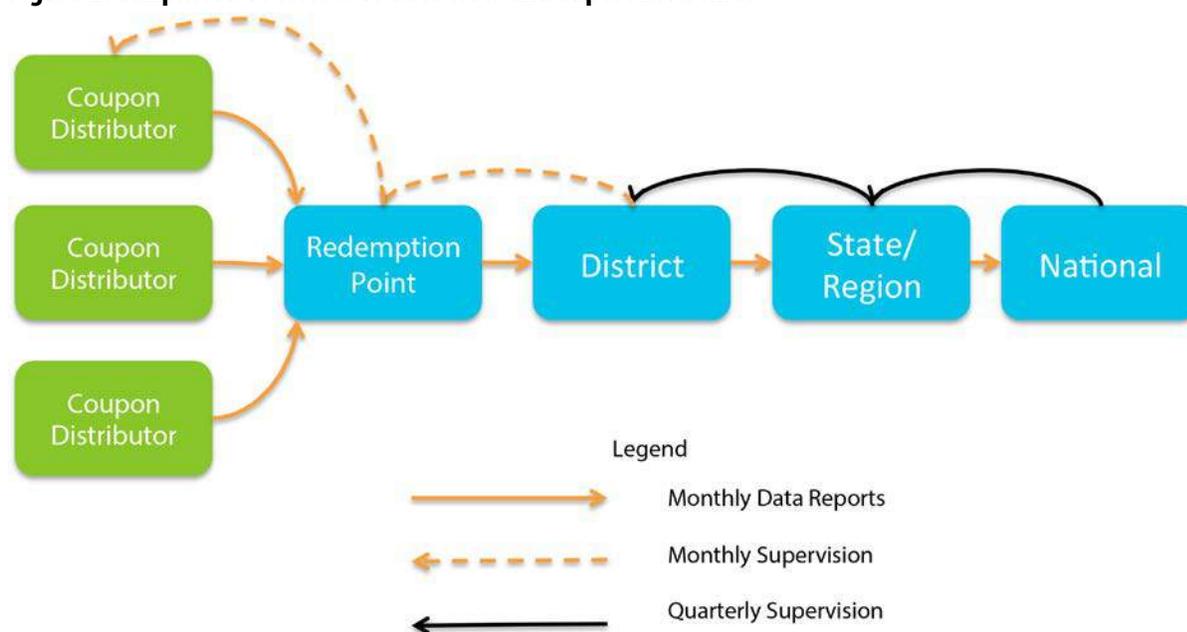
[Box 3](#) describes the monitoring data that were collected in the South Sudan pilot project.

⁷ Networks (n.d.) *Continuous distribution: filling gaps to sustain gains*. Networks Summary Series. Available from: https://www.k4health.org/sites/default/files/networks_summary_continuous_distribution_2015-jan.pdf. (Accessed 2 June, 2015).

Table 3. Information reported by people involved in the community distribution program

Supervisors	Coupon distributors	Redemption point storekeepers	Transporters
Number of coupon books issued	Number of coupons distributed Summary of reasons for coupon distribution	Number of coupons redeemed	Number of ITNs delivered to central stores, regional hubs, and redemption point stores
Number of supervision visits made		Numbers of ITNs issued	
Main outcomes of supervision visits		Number of days of stock-outs Stock level	

Figure 2. Simplified overview of data flow and supervision lines



Monitoring activities should include the following:

- Data submission and review: Submission and review of data from communities to district, regional, and national levels. [Figure 2](#) contains an overview of the monitoring system and flow of data. In this system, data are reported by the redemption point (such as the health facility) and then collated at the district, state/regional, and national levels.
- Process indicators: Several process indicators should be reported by different members of the community-based distribution program. These indicators are summarized in Table 3. Oversight of ITN stock flow: Supervisors should track the flow of ITNs as part of accountability monitoring and to monitor the effectiveness of the stock management system. Stock-outs of ITNs at redemption points must be minimized, so a regular review of these data is important:

- ITN data: The number of ITNs delivered to redemption points should be linked with data on coupon distribution and coupon redemption to give a complete picture of intended beneficiary numbers and actual beneficiary numbers.
- Structured supervision: Supervision includes monitoring the skills and practices of the various people involved in running the delivery channel. Supervision visits should include a review of adherence to procedures, communications activities, and quality of training. Supervision reports should be collated and findings used to inform planning of subsequent rounds.
- Telephone monitoring: Although all the pilot projects had reporting systems on paper, it was not possible to test mobile phone monitoring of either coupon issuance or stock levels, although telephone monitoring has the potential to provide better logistics management and accountability in some contexts. However, careful consideration should be given as to the benefits it would bring and the potential adding parallel or burdensome activities.

Box 3: South Sudan's monitoring data

The South Sudan pilot project collected the following routine data for monitoring purposes:

- Monthly reports from net coupon distributors to their supervisors:
 - Number of coupons distributed
- Monthly report from storekeeper to Boma health coordinators:
 - Number of nets received from the county
 - Number of coupons received
 - Number of nets issued
 - Number of coupon books issued
 - Requisition forms (to the county coordinator, who sits on the Boma Health Coordination (BHC) team)
- County coordinator/BHC to state health department
 - Total nets delivered to payam
 - Total number of ITNs collected
 - Total coupon booklets issued to net coupon holders

Box 4: Examples of data collection and reporting forms used

- **ITN coupon** filled in by coupon distributor.
- **ITN distribution register**, filled in at the point of coupon exchange by the redemption-point staff person. Often the redemption point is a health facility, so this is similar to other health facility registers.
- **Level 1: Monthly summary form** (from the redemption point). Completed by redemption point staff and submitted to supervisors. If the redemption point is a health facility, then this mimics the other monthly reporting forms.
- **Level 2: Monthly summary form** (e.g., district or local government authority) completed by supervisor as a compilation of the monthly reports from all redemption points.
- **Level 3: Monthly summary form** (e.g., regional/state level). Compiled by regional/state supervisors and provided to national level.

Other forms used:

- Household assessment form (used only in one pilot to guide assessment of eligibility criteria. Other pilots included the criteria in the coupon.
- Logistics supply forms:
 - Reordering forms
 - Stock sheets
 - Waybills

Examples of monitoring forms can be found in the [eToolkit](#).

Acting on Findings

Outcomes of monitoring activities and later evaluation studies should be used to inform the implementation process, and lead to changes as appropriate. Monitoring data may raise questions that require follow-up. For example, if redemption rates are lower than expected, some follow-up may be needed to explore the reasons for this, which might include:

- Are net redemption points too far away?
- Are the hours available for redemption too limited?
- Are there frequent net stock-outs?
- Are some families being prompted to receive coupons but have little interest in redeeming it for a net?
- Are families saving coupons for some reason?

The appropriate response to any problem (in this example, low coupon redemption), will clearly be very different depending on the root of the problem. The pilot projects demonstrated that these are areas to pay specific attention to, especially during the early stages:

- Are coupons being redeemed at a high rate?
- Are eligibility criteria being respected?
- Are supervisors reporting on discussions with coupon distributors and their experiences with verifying eligibility?
- Are facilities reordering in a timely way? Are they adhering to the minimum stock thresholds for reordering?

These data and accompanying questions should be discussed at coordination meetings with implementing partners and government agencies responsible for technical performance and accountability.

Verifying Eligibility and Ensuring Accountability

Eligibility criteria are determined during the design stage. It is then the job of the coupon distributor to determine whether a person or family meets one of these criteria. This is easier for some eligibility criteria than others and ease of verification should have been taken into account when selecting eligibility criteria. Some eligibility criteria will be very difficult to verify, and coupon distributors may be pressured by their communities to relax eligibility criteria at times.

[Table 2](#) offers some suggestions on ways to verify different criteria. Verification will be strengthened for some criteria if coupon distributors visit households following a request from a household member. Having a standard household assessment to guide this process will be useful for accountability.

Monitoring activities can be used to help check on adherence to criteria by fostering understanding and open discussions with coupon distributors. Another monitoring approach includes the review of monthly coupon distribution data on “reasons for coupon distribution”. If similar communities have similar reasons for coupon distribution, then this is not in itself evidence of absence of diversion. But the opposite finding—where one community has a very different profile of why coupons are being given out—would mean it might be useful to check whether or not there is a good reason for this. Despite these attempts, it may also be that diversion of nets will go unnoticed during monitoring. Household surveys undertaken as evaluation



A coupon is redeemed for a net in South Sudan with the coupon details noted. Photo credit: Malaria Consortium South Sudan.

activities will therefore also need to explore this issue. Households reporting to have received ITNs via community-based distribution should be asked the reason they were given a net.

It is advisable to include a component that assesses adherence to eligibility criteria in evaluations, with qualitative techniques to attempt to understand the nuances of this issue. If evaluations show that coverage is being positively affected and overlap with other distribution mechanisms is low, then errors in correct verification of eligibility may be an acceptable risk. Accountability monitoring may need to distinguish between instances of loose interpretation of eligibility criteria to the benefit of the recipient household, from actual fraud or theft instigated by personnel in the distribution chain for their own enrichment.

Another monitoring approach is to review the numbers of coupons and nets being issued relative to the size of the population. For example, if the rate of coupon or net issuance is significantly more than the expected need (within a range), then it will be important to conduct a supervision visit to assess reasons for this. Reasons can include fraud, but they can also include errors in reporting or an influx of refugees. Two good time points to review these data are when resupply requests are being processed and during coordination meetings.

Some review of the end delivery point of ITNs is needed to demonstrate accountability to government and donor program managers. In routine health system distribution, standard registers can be used to record ITN deliveries, and data may be collated and reported with other health system data. Audit trails are checked by reviewing logistics records, ITN distribution records, and ITN tracking surveys. All community-based distribution pilot projects opted to use a coupon system, largely to improve opportunities to check and demonstrate accountability. Data included on the coupons varied but included the following (a coupon example is shown in [Figure 3](#)).

- Serial number
- Place for recording reason for issuance (in models with multiple eligibility criteria)

LLIN Slip No: SERIALIZED

REASON: Damaged net
 Expired net
 No Net
 New family



NASARAWA STATE GOVERNMENT
CONTINUOUS DISTRIBUTION OF LLINs THROUGH CDDs
LLIN SLIP

LGA _____

Ward: _____

Village/Community _____

HH Number: _____

Name of HH Head & Sign _____

Collection Point-HH _____

Date Issued LLIN Slip _____ **Date Collected LLIN** _____

1 LLIN Slip = 1 Net





Figure 3. Example of an ITN coupon: this coupon (or 'slip') was used in the Nigeria pilot.

- Location
- Name of household head
- Name of household member eligible for ITN
- Name of person who redeems the coupon (in some pilot projects the coupon was given to a friend or neighbor for redemption)

The net recipient retained a coupon counterfoil or stub, whereas the coupon itself was retained at the ITN redemption point. Coupon distributors collate their own records when they deliver their coupons; ITN redemption point staff collate their own records. These records can be compared and analyzed, and ITNs can be tracked using the coupon and coupon counter foil. However, tracking accountability in this way is more burdensome than in other distribution schemes in which ITNs are routinely handed over at a facility and recorded.

Social and Behavior Change Communication

Demand from the community is key to making any pull ITN distribution scheme effective.

Raising awareness of the program, the eligibility criteria, and the basic steps to obtaining a net is therefore vital, and this process should underpin the entire implementation model. Happily, experience in all recent pilot projects shows that communities are generally delighted by the idea of a community-based distribution model that made ITNs continuously available to households that needed replacements or that were unable to access nets via other means. Enthusiasm is particularly high in areas where ITNs have previously been available only intermittently (e.g., through campaigns) or only to the traditional target groups of pregnant women and children under 5. This supportiveness and eagerness to make the distribution model a success is something that can be built upon and leveraged. Given that this distribution model has the potential to become heavy with management, logistical, and financial needs, community support is very welcome; it can be key to maintaining functionality and keeping costs down.

Educating communities and opinion leaders is a first and vital step that requires financial backing. Experiences suggest, however, that costs need not be high if the process is designed well, given that word appears to spread quickly about programs that are keenly accepted.

One area that needs attention during education activities is how to raise demand among various socioeconomic groups. There will be households in all sectors of the community that can benefit from this distribution and that may not be eligible for ITNs through the other available means. It is therefore important to ensure that families in the lowest, middle, and highest income levels all feel that this model is relevant to them. Keeping this in mind when selecting people who can speak for the community is important.

Community-based distribution is unlikely to be the first continuous ITN distribution mechanism established in a country. Often, ITNs have been distributed through ANC and EPI clinics. Planners will likely want to consider a combined SBCC strategy to achieve the fundamental aim of ensuring that families that need a net know how to obtain one. This means making sure families are aware of all their options.

Health promotion and SBCC messaging are important in any public health activity to ensure implementation leads to tangible health benefits. With ITNs the desired end results are that families access ITNs, use them nightly, and care for them well. A variety of methods for communicating these messages exists from mass media, to community awareness sessions, to word-of-mouth. Many activities will likely already be underway in locations where community-based distribution is being considered. It is unlikely that any new SBCC messages around ITN care and use will be needed. The important consideration for planners is to review the SBCC messages being disseminated, and examine how they might need to be

expanded to ensure that those who access ITNs through the community-based distribution mechanism are also receiving the messages intended for them.

In other settings, community-based distribution may have been chosen due to the lack of coverage through other programs. In some places, ITNs may not yet be a well-recognized and accepted family commodity, and SBCC around community-based ITN distribution will then need to be developed. In South Sudan, ITN use was not yet culturally accepted, and emphasizing the value of net use needed more dedicated input.

All pilot projects used coupon holders to communicate the key messages to target households, thereby maximizing the potential of the household visits that often take place to give to face-to-face information and advice, which can be household specific (e.g., in terms of hanging and care tips) if the coupon holder is sufficiently well trained and motivated. This in-person opportunity to share information, experience, and suggestions is very powerful, and the SBCC strategy should make the most of this opportunity by carefully thinking through what coupon holders can do and say during their household visits to have the most impact. For example, they can provide a tailored and emphatic focus on groups that are not normally targeted by net use SBCC programs, such as school-aged children, adolescents, and women of reproductive age (who may not yet be pregnant or aware that they are pregnant).

Evaluation

In addition to program monitoring and process evaluations, household surveys and net tracking surveys are important for understanding how the program contributes to maintaining ITN ownership and use levels overall.

Evaluation activities should include the following:

- *Review of the ITN audit trail:* Programs may choose to have an audit process to review proper adherence to processes and to verify that logistics and distribution reports are backed by accurate supply chain documents. Annual audits could be considered, but more frequently would be impractical given the time required to do so.
- *Process review:* A process review can provide an opportunity for all stakeholders to offer their opinions on the process, successes, challenges, and lessons learned. Stakeholders and organizations at all levels should be involved. Annual process reviews could be considered, but more regularly would be impractical given the time needed from a variety of stakeholders.
- *Coupon and net tracking/household survey:* Following distribution, an evaluation that assesses the targeting success and the destination of the ITNs should be conducted. Examples of possible designs are included as part of the in-country tools on the NetWorks website. Modified designs for community-based deliveries will be needed to help explore the success of reaching eligible people and families, and access to ITNs by ineligible families. The frequency of tracking surveys should be guided by the implementation schedules. A tracking survey in the first few months of a newly implemented delivery scheme may be useful to understand the efficiency of the system and possible areas in need of strengthening. If the implementation model changes (e.g., either it expands or new communication approaches are included etc.), a follow-up tracking survey may be justified. Once the system is routinely operational, it would be useful to conduct net tracking surveys for monitoring once a year, although if funding is insufficient, once every two years may be enough.

Coupon and net tracking studies can be used to determine the following:

- Effectiveness of the redemption system: Of those who sought a coupon, what proportion was eligible, what proportion received a coupon, what proportion tried to redeem it, and what proportion successfully redeemed it?
- What proportion of ITNs distributed were used the previous night? (Data on other ITNs and the household structure will depend on understanding whether or not the nets were used because the family already had sufficient ITNs.)
- How many people, and who, in particular, used the ITN?
- What was the final destination of the ITN?
- What messages about ITNs is the family able to recall or the person who received the net?
- What is the equity profile of the households that received ITNs?
- Examine ownership of ITNs from other campaigns to review evidence of overlap between distribution mechanisms.

Household surveys can be used to capture the following information:

- Proportion of households that heard of the program.
- Effectiveness of the system: what proportion of ITNs comes from this distribution method? What proportion of households sought a coupon? What proportion of them were found eligible? Of those found eligible, what proportion received a coupon? Of those that received a coupon, what proportion tried to redeem it and what proportion successfully redeemed it?
- Estimate of coverage of ITNs at individual (access and use) and household level (ownership) after implementation of the distribution (provided adequate control for confounding can be assured).
- Estimate of the proportions of eligible people who received the net.
- Characteristics of the households that were not eligible.
- Equity of access to ITNs through this distribution mechanism.
- Source of ITNs owned and used to understand overlap of distribution models, differences in equity of access between the different models, and any differences in use habits between ITNs distributed via different models.
- Community members' perceptions and experience of the program.

Recommendations for Further Exploration

Although evidence to date suggested that community-based distribution is a promising mechanism for ITN distribution, several questions remain. Answers to the following questions will help project managers decide whether a community-based distribution scheme is the right option for a particular country, location, or context.

Cost analysis: More cost analyses of community-based distribution schemes are needed to explore several questions, such as:

- How much does community-based distribution cost in a variety of contexts?
- How much does community-based distribution cost compared with school-based distribution?
- How can costs be cut while still maintaining sufficient quality? Are there locations where coupons are not needed? Would this have cost savings? Is the coupon component too important to maintain a proper system of checks and balances to remove it?
- What are the costs of an ongoing program (as opposed to a pilot initiative)?
- Which costs can be reduced without compromising quality?

Cost-effectiveness analysis: A cost-effectiveness analysis will help compare school-based and community-based distribution programs given that these programs have some similarities and are often the next options to be considered after distribution programs through ANC and EPI clinics are in place. These analyses should be a priority given their relative importance when a country is considering various delivery and distribution options.

- Is there a role for community-based distribution even when distribution through ANC and EPI clinics and schools is still occurring?
- Could school-based distribution and community-based distribution be sufficiently linked to make it feasible to undertake the logistical and management burden of both systems?

Evaluations: Evaluation of community-based distribution is important, especially as such programs become more established, and as technical, implementation, and logistical support from external organizations is withdrawn.

- What levels of ownership and access can be achieved by different community-based distribution models? How does these compare with coverage targets? What factors were more likely to facilitate their success?
- What is the equity of access using community-based distribution in different settings? (Only one pilot project included a detailed examination of equity of access.) What are some reasons for why a household has ITNs and others do not?
- How successfully is eligibility being verified?
- Is community-based distribution more efficient at supplying the right amount of nets (not too many or too few) than other channels?
- Is community-based distribution more effective at replacing nets at the right time (i.e., when families need a new net) compared with other distribution channels?

Conclusions

A review of the experiences of the four pilot projects leads to a few overarching lessons that have been learned, as outlined below.

- Community-based distribution is feasible where health systems are strong enough to supervise the process of distributing coupons; verifying a household's eligibility; providing a venue for coupon redemption and net distribution; and ensuring that staff and project participants receive adequate training, that reordering and restocking logistics management procedures are followed, and that adequate monitoring and evaluation systems are in place. Where health systems are weak or where clinics are not easily accessible, community-based distribution is feasible when a strong community-based organization is available to manage logistics and supervision.
- Community-based distribution does not depend on a specific existing network of community-based health workers. Using community leaders, religious leaders, or other volunteers as community agents has been successful.
- Ensuring ITN redemption points are as close to communities as possible is important for success and for achieving high ITN redemption rates.
- The quality of implementation has a huge effect on results. Pilot projects, like those in South Sudan and Madagascar, were the most successful because they were well funded and had strong partnerships and strong supervision.
- Frequent supervision, proactive use of monitoring data, and good oversight and support for supply chain management were critical elements of a successful community-based distribution program.

Community-based distribution is based on the simple idea that achieving and maintaining universal coverage will be far easier if the people who need a new net from time to time are able to easily obtain one locally. Engaging communities to take the lead in defining the eligibility criteria (i.e., the people who are most likely to need an ITN) and choosing the best people to act as coupon agents and redemption agents has shown that it is possible to create distribution mechanisms that can be highly functional and achieve excellent uptake. Overlap with other distribution systems leading to oversupply has not been a problem. There are outstanding questions as to how to use this model to its best advantage, but experience so far shows it has potential.

Annex 1: Summary of Country Pilot Projects

Nigeria

Intended Role in Overall ITN Strategy:

Nigeria's National Malaria Elimination Program and Roll Back Malaria Partnership hope to achieve continuous ITN distribution through a model that is strong and productive enough to replace the need for repeated mass net distribution campaigns. Community-based distribution was considered to be a key element in this overall strategy and was to be used in specific locations that needed a rapid injection of ITNs (i.e., places that had not been covered through previous mass distribution campaigns) or where people were unlikely to have good access to other continuous distribution mechanisms.

Scale of Operations:

State-wide in Nasarawa State. This included 13 Local Government Authorities (LGAs) and 147 wards (the initial number of 52 wards was gradually increased over the pilot period).

- 102,132 ITNs were distributed.
- Each community distributor met with between 250 and 2,000 people, depending on population density.
- The initial scope of 52 wards had 260 coupon distributors.
- 52 health facilities (13 general hospitals and 39 primary health care centers) served as redemption points.

Model Overview:

Model development process: Several partners were involved in the design, which included visits to LGAs, health facilities, and communities to help guide the design of the pilot program. The NetCALC tool aided planning.

Model overview: Demand-generation activities laid the groundwork. Households requested an ITN from a coupon distributor. The coupon distributor conducted a household visit to determine eligibility. If the household was eligible, the distributor gave a coupon (or more than one if appropriate). Household members were told where the nearest ITN distribution or redemption center was and that they could redeem their coupons for ITNs at no cost.

Incentives for Personnel:

Project personnel were compensated for attending training sessions. Each community coupon distributor received T-shirts, caps, and bags. Communities sometimes made the decision to offer financial or in-kind support to coupon distributors (in light of this role but also because of their ongoing role as Community Drug Distributors [CDDs]).

Eligibility Criteria:

Uncovered sleeping spaces.

Eligibility Verification:

Coupon distributors visited households after they received a request for a net to determine the number of sleeping spaces and number of nets a house needed. Depending on how many sleeping spaces were covered with a net, the coupon distributor gave the household member enough coupons to ensure that all sleeping spaces would be covered.

How Program Partners Were Selected:

Community level: The project staff hired an existing network of CDDs who had been receiving support from the Carter Center to distribute treatment for onchocerciasis, lymphatic filariasis, and schistosomiasis. CDDs were trained and supervised by staff from health facilities to assess the need for medications in their communities, to request medications from the facilities, and then treat community members.

Nigeria

Additional characteristics made it advantageous as a platform for community-based distribution of ITNs because the CDD network:

- Already existed, even in communities that had not been part of the mass distribution campaigns,
- Already served as an interface between a health facility and the community,
- Had strong linkages with the Ward Development Committee, and
- Had members who were interested in adding ITN distribution to their tasks.

Supervision role and redemption points: Using health facilities as storage facilities for ITNs was considered the most secure and cost-effective way to achieve ITN availability. Accessibility of health facilities was considered sufficient for good coupon redemption rates.

Training:

Training was cascaded from the State, to LGAs, to coupon distribution and health facilities. Coupon distributors and ITN stockholders were trained at separate events given the considerable differences in their tasks. The trainings were leveraged as an opportunity to relay important updates and feedback from the State Malaria Control Program through the LGA Roll Back Malaria focal persons to the health facility staff and community distributors. On-the-job training was then later provided during quarterly monitoring visits to all health facilities and some community distributors.

Social and Behavior Change Communication:

Demand was generated primarily through word-of-mouth conversations between coupon distributors and community members, health facility personnel, Ward Development Committees, other community-based organizations, and volunteers.

Record Keeping:

Standard commodity tracking tools were used to track ITNs to redemption points. CDDs completed an assessment form when they visited a household to confirm a household's eligibility. Coupon distributors retained a counterfoil, and coupons were collected at redemption points. Coupon distributors collated coupon distribution data and assessment forms and submitted these to supervisors. Redemption point distribution data were collated and submitted to supervisors. A review of data and tracking of coupon counterfoils was part of the approach to monitoring.

Supervision:

Technical support personnel from the NetWorks project, the Malaria Action Plan for States (MAPS) project, and Federal representatives of the National Malaria Elimination Program carried out monthly supervision visits of State-level personnel, and State-level personnel and MAPS and NetWorks staff supervised people at the LGA level.

Heads of health facilities were supposed to carry out a weekly supervision visit to CDDs; this system of weekly supervision was already in place and had been generally adhered to well. The supervision process sometimes occurred at the health facility when CDDs visited to obtain new supplies or submit data; and at other times it occurred by telephone when health facility supervisors called to pass on information, check on activities, or resolve bottlenecks.

Monitoring and Evaluation:

Supervisors reviewed coupon distribution data on a monthly basis to check that coupon distribution records and redemption point records were consistent. National monitoring teams conducted two quarterly monitoring and on-the-job training visits to all wards and health facilities, where they conducted interviews and observed the coupon distribution and redemption process.

A qualitative program end-point evaluation focused on the issues of redemption rates, ITN coverage in communities, awareness of the program, equity of access and uptake, and exposure and effect of SBCC messages.

Nigeria

Results:

- Low levels of awareness. Only 48.5% of households surveyed were aware of the community-based ITN distribution program.
- The redemption rate, at 71.8%, was low. This was likely due to stock-outs of forms, coupons, and ITNs, although it also may be linked to an insufficient effect of public education and distance to redemption points.
- 102,132 ITNs were distributed.
- In 2009, immediately after a mass distribution campaign, household ownership of at least one ITN was 63% (58% of households owned a net received through the mass campaign from the campaign). Five years later at the end of this continuous distribution pilot, household ownership of at least one ITN was 37%, but only 17% had retained the ITN from the mass campaign, therefore, the remainder of households had received ITNs from other sources. Coverage levels appear to have been bolstered by the presence of the community-based distribution mechanisms. Clearly, the program was not able to revive ownership levels to national targets, but it appears to have succeeded in ensuring that some households were able to obtain ITNs, whereas they otherwise would not have. Activating continuous distribution at the same time as a mass distribution campaign makes it more feasible to use community channels to maintain coverage.
- Households aware of the community-based distribution were significantly more likely to have at least one ITN than other households.
- Households aware of the community-based distribution program were significantly more likely to have an ITN, and more likely to have enough ITNs for the entire household, than households that were unaware of the program.
- New nets were distributed mainly to people in the middle-wealth quintiles, which was driven by low awareness of the program by people in the lowest wealth quintiles and the tendency by people in the upper quintiles to not request coupons even though they were aware of the program.
- Continuous distribution of ITNs through community-based distribution achieved an increase in ITN ownership without an oversupply, and ITN distribution programs were largely complementary, with very little overlap between ANC clinics, community distribution, or other programs.

Lessons Learned:

- Adherence to quality implementation guidelines requires consistent monitoring and real-time corrections.
- Pull systems depend on community awareness. A range of community networks can support this and should be engaged. Insufficient awareness and lack of public awareness may have affected redemption rates.
- Effectiveness of training should be evaluated and either lengthened or modified for impact as needed.
- Attrition of community distributors is a potential problem and was a concern during design discussions. Attempts to reduce attrition may have helped avoid this problem. These included 1) recognizing that CDDs are volunteers and that some had other forms of income such as a small farm or a trade; and 2) recognition - as a result of the Ward Development Committees publicly supporting and promoting the work of the CDDs the community expressed renewed recognition and appreciation for their volunteer work. CDDs were highly motivated by recognition and this translated into in-kind support from community members directly to CDDs, such as through food donations or help with farm work.
- Stock-out of ITNs at health facilities was a problem. Emphasis on general stock management at the level of the health facility, and on ITN distribution logistics from the LGA to the community is important. Where other health facility-based distributions are running smoothly, this may be less of a problem. One approach is to mobilize communities to take on the responsibility for transporting nets to redemption points, although the feasibility and effectiveness of this has not been determined.
- The number of community distributors should be appropriate to the size of the area they cover. This was not the case in Nigeria, and some distributors were unable to cover the areas assigned to them. This may also have affected the rate of coupon receipt, which was lower in Nigeria than in other pilot countries.
- ITN storage points should be as close to the community as possible. The Nigeria model found that staff at primary health care clinics were far more supportive of coupon redemption than staff at general hospitals. Using formal health facilities as redemption points can limit the options for expanding redemption points, although in some areas, the coverage of even the lowest level of health facilities is not good. In these areas it may be worth considering using add-on redemption points (e.g., in a church or mosque or a community leader's house).

South Sudan

Intended Role in Overall ITN Strategy:

Community-based distribution was considered for communities where no other continuous distribution programs had operated, or they were remote and had poor access to health facilities and schools.

Scale of Operations:

- One county, Lainya, in one State, Central Equatoria.
- 28,686 ITNs were delivered.
- Approximately one coupon holder worked with approximately 700 households.
- Personnel involved: 50 coupon distributors, 11 supervisors, 19 social mobilizers.
- An initial 9 redemption points were expanded to 14 following concerns over accessibility for remote communities.

Model Overview:

Model development process: Stakeholders at the national level were consulted initially; design discussions occurred with community members at the county level.

Model overview: Social mobilizers, clergymen, community health workers, and health facility staff talked about and advertised the availability of nets. A household member requested a coupon from a net coupon holder and was given one if they met the eligibility criteria. Coupons could be redeemed at a coupon redemption point at a nearby health facility and exchanged for an ITN. The health system played a supervisory role. Representatives of the NGO Malaria Consortium served in technical oversight and supervisory roles and undertook logistics responsibility for restocking redemption points.

Incentives: Coupon distributors, social mobilizers, and supervisors received no financial incentive other than compensation for attending meetings.

Eligibility criteria: Need to replace a damaged net, more than two people share one net, a women has recently delivered a baby and did not receive an ITN through her ANC clinic.

Eligibility verification: The coupon distributor decided whether the household was eligible for a net. To demonstrate eligibility, a family member could present a damaged net, otherwise, coupon distributors were encouraged to visit households to check for evidence of eligibility. No formal household visit/assessment form was used and it was accepted that the coupon distributor would not always be able to verify eligibility and would at times have to take a household member's word that they needed a net.

How Partners Were Selected:

The county health department was the key partner in the pilot program through which program staff were able to leverage storage facilities, skills, supervision, and other opportunities.

Malaria Consortium, an NGO with a long history of working in South Sudan, and which had good links with personnel in the health department and with NetWorks project staff, was asked to provide additional managerial and technical oversight.

Coupon distributors were nominated by community members through steering committees composed of community leaders, representatives of village health committees, and personnel who were in charge of health facilities.

South Sudan

Training:

Cascade training by project staff to county officials and by county health staff to community members. Coupon holders, supervisors, social mobilizers, storekeepers, and clergy attended a two-day training. Assistant storekeepers who later became involved were given on-the-job training. Supervision visits later revealed inconsistencies in coupon distribution and net redemption at community and health facilities. This was addressed by distributing laminated job aides and refresher training.

Supervision:

County health department personnel were responsible for carrying out monthly supervision visits. Malaria Consortium personnel also carried out active and regular supervision visits. Supervision was, however, constrained by security issues in South Sudan.

Social and Behavior Change Communication:

Social mobilizers promoted the pilot project activity in various communities. Clergymen, community health workers, and health facility staff were also involved in promoting the project. Messages were delivered through a variety of activities and venues including markets, community meetings, mosque services, and word of mouth.

Monitoring and Evaluation:

Monitoring data collated on a monthly basis included the number of ITNs issued at redemption points and number of coupons issued by coupon distributors. Coupon records included the reasons why a coupon was being given away. These data were collated and reviewed on a monthly basis by representatives of Malaria Consortium, whose representatives were better able to do so given the constraints of the county health department. Problems that arose were reported back to the county health department and discussed with those personnel.

Baseline and end-point survey data were evaluated. A detailed cost analysis was also conducted at the end of the pilot.

Results:

- 94% coupon redemption rate.
- 78.3% of households surveyed at the end-point survey had heard of the community distribution program.
- 88% of survey respondents believed the process (and eligibility) was fair.
- 70% of households were contacted through the community-based distribution pilot project. The pilot project was the only source of nets for 53% of households.
- The national target of 80% of households owning at least one ITN was achieved.
- The percentage of households with enough ITNs for all members doubled from 31% to 63%.
- Oversupply was low (only 8% of households owned one or more ITN for every person).
- The percentage of people with access to a net who used it the previous night increased from 60% to 81%.
- There was a clear association between exposure to message, intention to use nets regularly, and actual use.
- Overall costs were relatively high (\$16.52 per ITN delivered), with direct costs of \$6.87, respectively. The most essential delivery cost (coupons, registry books and ITN transport/storage) was \$1.34 per ITN. If pilot costs for training, supervision, and SBCC are halved, routine program operating costs are to be estimated \$2.31 per ITN delivered.

South Sudan

Lessons Learned:

- High redemption rates can be achieved even where transport networks are poor and serious insecurity exists. It may be necessary to find flexible solutions to expand the redemption point network if early monitoring data show lower redemption rates. Use of lockable drop boxes used to provide once-per-week redemption services in low-level health facilities worked well.
- Limited service hours for redemption (even when this service was offered only once per week) did not affect redemption rates and could be considered as a strategy to reduce the burden on health facility staff.
- No major stock-outs occurred, thus this pilot project demonstrated that it is possible to achieve good stock consistency. The financial and technical support from Malaria Consortium, working alongside the county health department, was critical in achieving this.
- Do not underestimate the amount of enthusiasm with which a community-based distribution project with well-designed eligibility criteria will be received. In locations such as South Sudan where the availability of private sector ITNs are nearly nonexistent, net distribution campaigns previously had been intermittent or they targeted only pregnant women or young children. In South Sudan, people vocalized their relief at having ITNs continually available to the people who were most likely to need one.

Madagascar

Role in Overall ITN Strategy:

The pilot project aimed to improve accessibility to ITNs for households in remote communities where there were no health projects or health facilities, and where nets were not commercially available. The political situation following the military coup in 2009 meant that partners that wanted to expand ITN distribution could not work through governmental systems, and would thus need to use an NGO to help manage the program.

Community members chose religious leaders to serve as agents for coupon distribution and net redemption. Community members expressed an interest in not using community political leaders to avoid the nets being used as political tools.

Scale of Operations:

- One district (Toamasina II, in Atsinanana Region) with 17 communes
- 43,498 ITNs delivered

Model Overview:

Model development process: The design process included engaging with community representatives to understand their perspectives on ideas for coupon distributors and redemption points. A team of stakeholders considered all realistic options for a management partner (which included examining different partners' track records, working procedures, capacity, etc.). Community perception of the various organizations was strongly taken into account. The organization that was ultimately selected had a long history of supporting community health programs and had been highly regarded by communities.

Model overview: Community health workers, local leaders, and local radio were used to raise awareness of the project and to distribute SBCC messages. Household members requested a coupon from a coupon holder or a local religious leader, and if they met the eligibility criteria, could redeem the coupon for a net at the local redemption point, which was the home of a higher-level religious leader located one administrative level above the community. A community-based civil society organization, ODDIT, served as the supervisory and logistics management partner, ensuring resupply of net redemption points.

Incentives: No financial incentives were provided to religious leaders other than during training meetings.

Eligibility criteria: Sleeping space not covered, newly married couple, just moved to the village, damaged net, pregnant woman, a child who had completed vaccinations.

Eligibility verification: Coupon distributors visited households to assess eligibility, including assessing ITNs for damage.

Training:

Coupon distributors and net redemption agents underwent a two-step cascade training at the local level to reduce travel costs and per diems.

Supervision:

Coupon distributors and net redemption agents met monthly to share experiences, discuss problems, and report on what had been working. Later, these were also used as opportunities to provide new stocks of materials or nets; provided the bales could be carried. NetWorks Project staff who worked at central and regional locations also played an important supervisory role by examining issues that ranged from adherence to procedures and eligibility criteria, to stock management and community perceptions.

Madagascar

Social and Behavior Change Communication:

Local radio, community leaders, and community health workers relayed information to others about the pilot project; eligibility criteria; and net availability, use, and care.

Monitoring and Evaluation:

Monitoring data were reviewed during monthly supervision meetings. An end-of-pilot household survey served as the evaluation. This survey examined the effectiveness of the pilot project, the effect on ITN ownership, use rates, and reasons why some people were not able to access an ITN.

Results:

- Redemption rate, 96.5%.
- The end-point evaluation showed that where the community-based distribution scheme had occurred, 83.8% of people had access to an ITN compared with 55.4% of people in comparator areas where community-based distribution had not occurred.
- More people in the lowest two socioeconomic quintiles obtained nets through the pilot project than people in higher quintiles.

Lessons Learned:

- Working completely outside government and the traditional, routine health system is possible, and excellent results were achieved.
- Working completely outside existing systems means that costs for some aspects of the project were high because it was not possible to integrate the project with other funded activities. Costs will need to be lowered if the project is to be sustained or expanded; more integration with routine systems at some level could help with this.
- Community involvement in selecting distribution agents, ITN storage points, and eligibility criteria can be useful for improving acceptance, promoting high redemption rates, and selecting the most trustworthy individuals.
- Stock management proved to be difficult, especially where redemption points were many and disparate. Although this likely drove the very high rates of redemption, it was a challenge to maintain adequate stock levels. There were frequent stock-outs in the first half of the pilot.

Zanzibar

Role in Overall ITN Strategy:

The continuous distribution strategy for Zanzibar was designed to have four aspects: distribution through ANC and EPI clinics, community-based distribution, and distribution of nets to individuals with malaria who are found through active case detection. The community-based distribution scheme, with specific eligibility criteria, was considered an important complement to routine health services.

Scale of Operations:

- 159 public and private health facilities served as ITN storage and redemption points.
- 339 communities were covered.
- 163,829 ITNs were distributed

Model Overview:

Model development process: Consultations were carried out with a broad range of stakeholders to establish the basic design features of the scheme. This included particularly strong representation from the community.

Model overview: Households that wanted a new ITN approached village leaders or their assistants and, if they were eligible, were given a coupon and told where to redeem it for an ITN. Redemption points were health facilities in the region.

Incentives: Coupon and redemption personnel were compensated for attending orientation meetings. No other incentives were provided.

Eligibility Criteria:

Widows, orphans, disabled people, families affected by natural disasters, old or worn-out net, new residents.

Eligibility Verification:

Village leaders and their assistants verified eligibility when approached for a coupon. If eligibility was unclear, village health committees were given the flexibility to expand the criteria if they decided that a household had a clear need for a net.

Training:

Coupon and redemption personnel participated in a cascade training. Three leaders or three assistants in each village and three members of each health facility received training. The length of the training varied.

Supervision:

The Ministry of Health's reproductive and child health coordinator in each district supervised ITN distribution in their district. One program officer was also assigned to each district and took on a supervisory role. Health facility personnel provided some supervision to community coupon distributors though it was generally thought that more supervision would have been useful.

Zanzibar

Social and Behavior Change Communication:

Central- and district-level public awareness meetings were held with a wide range of stakeholders. Mass media campaigns using radio and television were used to raise awareness in communities. Print materials were produced and distributed to all households explaining who was eligible to receive an ITN. A recent knowledge, attitudes, and practices survey in Zanzibar showed that awareness of the various ways one could obtain an ITN was very high.

Monitoring and Evaluation:

On-going monitoring took place as part of supervision visits and by quarterly monitoring visits by central teams to districts, health facilities, and selected communities. Those activities led to some changes in the model, in particular in the reporting processes. A process evaluation was carried out 17 months following the start of the distribution.

Results:

- Redemption rates are reported to be generally high though low in some communities; figures are still being analyzed.
- Support for the community distribution is high from all groups interviewed: community, coupon distributors, health facility personnel.
- Data reporting is generally good from health facilities upwards (reporting is integrated into the reporting for the ANC and EPI channels, which in turn are integrated into routine monthly reports).
- Data reporting from village level to health facility level is far more variable with some important weaknesses in quality and timeliness. This has a knock-on effect on the whole system.
- Stock outs were seen of both ITNs and coupons, both resulting in interruptions to the distribution. Stock outs were a particular problem in smaller health facilities where storage capacity means limit stock can be held. Reallocation from other larger health facilities (with sufficient stocks) was helpful in responding to stock outs.

Lessons Learned:

- Community-based distribution requires higher levels of monitoring than other methods of distribution, given the additional level of community personnel involved.
- The quality of data being reported by community representatives to health facility personnel has been variable, and sometimes incomplete and late. This is not a task that village leaders are used to doing, so more training and emphasis on this may be needed when selecting personnel for this role. More feedback from health facilities to communities on results of reporting and general results and performance of the operations may also strengthen reporting.
- Strong and on-going communication between villages and health facilities is important and should be emphasized during training and be built into the operational model. Direction of visits can be either way. Better relationships may also support better data reporting.
- Mass media was extremely successful in raising awareness of the pilot project. A recent knowledge, attitudes, and practices survey showed very high awareness among people of the various options for obtaining an ITN.
- In some settings (as experienced here) it is possible to use community leaders (political leaders) as coupon distributors without too many problems. Only infrequent problems related to this choice were experienced here. Experience with this will, however, likely vary considerably from context to context.

Annex 2: Resource People and Persons Interviewed

Country	Name	Affiliation
Zanzibar	Mwinyi Issa Khamis	Zanzibar Malaria Elimination Program
	Waziri Nyoni	CCP
Madagascar	Mohamad Sy-ar	CCP
	Felicien Paul Randriamanantenasoa	Former, Catholic Relief Services Madagascar
South Sudan	Lisa Nicol Woods	Formerly, Malaria Consortium South Sudan
	Emmanuel Obi	Formerly, Malaria Consortium Nigeria
Nigeria	Gladys E. Ogah	Previous State Neglected Tropical Disease Coordinator, Nasarawa State
	Grace Akpu	Nasarawa State Malaria Control Program M&E Officer
	Joseph Agu	Former Nasarawa State RBM Manager
Senegal	Mike Toso	CCP
	Angela Acosta	CCP
Other	Andrea Brown	CCP
	Albert Kilian	Tropical Health, LLP
	Richmond Ato Selby	CCP

Annex 3: Bibliography and resources

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Other sources of support for country planners:

At the international level, the RBM Vector Control Working Group (VCWG) has a work stream that focuses specifically on continuous ITN distribution systems. Advice on appropriate sources of support can be sought from these groups.

RBM VCWG: <http://www.rollbackmalaria.org/architecture/working-groups/vcwg>

RBM VCWG Continuous ITN Distributions Work Stream: <http://www.rollbackmalaria.org/architecture/working-groups/vcwg> (Select 'Overview' then 'Continuous ITN Distribution Systems')

The K4Health Toolkits website contains a repository of tools and other publications relating a range of subjects. There is a specific section on continuous distribution of ITNs. Within this there is a section on community-based distribution that includes case studies, documents on lessons learned, and implementation tools used by countries implementing community-based ITN distribution. This toolkit will be updated as new documents become available.

Continuous Distribution of ITNs for Malaria Control: <https://www.k4health.org/toolkits/continuous-distribution-malaria>.



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