**Expression of Interest for participating in an evaluation of impact of Long Lasting Insecticidal Nets (LLINs) use in the North Eastern States**

The National Vector Borne Disease Control Programme (NVBDCP) is an umbrella Programme for prevention and control of vector borne diseases, including Malaria. A key vector control measure is the use of Long lasting insecticidal net (LLIN) for protection of population at risk of malaria, which were introduced in 2010 in the North Eastern states. NHSRC proposes to undertake an evaluation to assess the effectiveness of LLINs in reducing Malaria incidence in the North Eastern states.

Proposals are invited from agencies to undertake an evaluation to assess the impact of Long Lasting Insecticide Nets (LLINs) on the populations residing in Malaria prone areas in the North Eastern States.

**The key objectives of the study are as follows:**

1. To assess the distribution, storage, usage and maintenance and retention of LLINs at the household level in NE states.
2. To assess behaviour change communication approaches undertaken by the health department before, during and after distribution of LLIN.
3. To assess the knowledge, attitude and behavioral practices related to LLINs usage in the community (including among pregnant mothers).
4. To assess the effectiveness of monitoring, reporting and analysis of data related to the utilization of LLINs at community level.
5. To assess the impact of LLIN intervention on reduction of malaria incidence

The overall methodology for this study would be a mixed methods approach, using primary and secondary data analysis. Primary data would include both qualitative and quantitative components . Data would be collected from beneficiaries and service providers at different levels. Secondary data analysis would involve desk review of programme data to assess effectiveness of programme implementation related to use of LLIN and Malaria incidence. The study would be conducted in selected districts of the NE states. The TOR of the evaluation is at annexure 1.

Organizations with a credible track record of conducting evaluations are encouraged to apply. Research organizations, academic institutions and NGOs can apply. A consortium of two or more agencies with a complementary skill mix would also be considered

The agency is expected to develop study tools for field survey and qualitative phase, conduct data collection and analysis, prepare draft reports for discussion and finalize the reports in consultation with NHSRC and National Vector Borne Disease Control Programme (NVBDCP) Division. The stipulated timelines for the completion of the study is around six months from the date of signing of contract.

The application should include -

1. Proposal for conducting the evaluation with detailed methodology, sample size, data collection and analysis protocols.

2. Background of organization, nature of organization, list of board members, demonstration of the necessary skill mix, experience, project management budgets handled, and infrastructure (for data management- data entry and analysis);

3. Details of past experience in conducting research, brief description of nature of research (topic and methodology) and outcomes (publications, dissemination) undertaken in last five years, details of research staff- (in house or demonstrate access to experts on a reliable basis), demonstrate track record of the research team, in data analysis and advanced writing skills.

4. Copies of the most relevant work in recent years, preferably conducted by the researcher teams who are currently in place.

5.Agency should give details of Firm/Institution s Registration, Copy of Service tax registration if applicable, Copy of PAN Card and Copy of last three years IT return.

The last date for receipt of applications is June 20th, 2017. Applications may be sent to The PAO, National Health Systems Resource Centre, NIHFW, Baba Gangnath Marg, Munirka, New Delhi -110067.

**Annexure 1**

**Evaluation of Impact of LLINs Intervention in the North Eastern States- Terms of Reference**

**Background**

The National Vector Borne Disease Control Programme (NVBDCP) is an umbrella programme for prevention and control of vector borne diseases viz. Malaria, Japanese Encephalitis (JE), Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis.

The general strategy for prevention and control of vector borne diseases under NVBDCP is described below:

1. **Integrated Vector Management** including Indoor Residual Spraying (IRS) in selected high risk areas, Long Lasting Insecticidal Nets (LLINs), use of larvivorous fish, anti-larval measures in urban areas including bio-larvicides and minor environmental engineering including source reduction.
2. **Disease Management** including early case detection with active, passive and sentinel surveillance and complete effective treatment, strengthening of referral services, epidemic preparedness and rapid response.
3. **Supportive Interventions** including Behaviour Change Communication (BCC), Inter-sectoral Convergence, Human Resource Development through capacity building.
4. **Vaccination** only against J.E.
5. **Annual Mass Drugs Administration** (only against Lymphatic Filariasis).

The effective malaria control relies principally on efficient interventions for prevention and case management. Vector control interventions reduce transmission and thus decrease the incidence of malaria. Long lasting insecticidal net (LLIN) is a key vector control intervention for protection of populations at risk of malaria. The LLINs provide protection with the net as well as the insecticide. The WHO endorses the approach of scaled up distribution of LLIN, at no cost to the end-users, and recommends that 100% coverage of the targeted population is achieved to exploit the community protective effect of LLINs.

**The North East Region**

 All North-eastern states except Sikkim are malaria endemic. The forest cover varies from 40 per cent in plain valleys to nearly 80 per cent in hill States of Nagaland and Arunachal Pradesh. Assam is the major constituent State of the northeast with more than 70 per cent population (~32 million) contributing >50 per cent malaria cases. Northeast India shares vast international border with China (South Tibet) in the north, Myanmar in the East, Bangladesh in the southwest and Bhutan to the northwest. The entire population is largely classified as tribal with at least 220 ethnic groups, rich in cultural heritage, fauna and flora and major river systems. The population density varies from 13 per sq. kilometer in Arunachal Pradesh to 340 per sq. kilometer in Assam living predominantly in the countryside (84%), and literacy rate is 68.5 per cent.

**LLINs**

LLINs[[1]](#footnote-1) have proven to be a cost-effective intervention against malaria, and are highly effective against vector mosquitoes which bite indoors at night. They provide not only a physical barrier against the mosquito bites but also kill the mosquitoes or shorten their life span so that they cannot transmit malaria infection. However, for best effectiveness in the community, coverage of population at risk with LLINs must be as close to 100% as possible with high utilization rate (> 80%).

LLINs are manufactured based on two technologies: incorporation of the synthetic pyrethroid insecticide into the net’s fibres or coating or impregnation of the insecticide on the fibre with a wash-resistant binder system. The LLIN is a factory pre-treated mosquito net which retains its insecticidal activity even after 20 washes. These are designed for field use for a minimum of 3 years but their effective life can vary depending on conditions of usage and maintenance. They are more sustainable and effective than conventional Insecticide Treated Nets (ITN) which requires repeated treatments[[2]](#footnote-2).

In India, insecticide-treated nets (ITNs) were first field evaluated against *An. minimus* transmitted malaria in endemic villages of Kamrup district (Dimoria block) in the Brahamaputra Valley of Assam for the northeast sector[[3]](#footnote-3). There was >70% decline in number of *P. falciparum* cases over 2 year study period with concomitant decline in host vector contact. In 2010 LLINs were introduced in the North East Region as part of the Global Fund Malaria programme.

A cross-sectional study was undertaken in three different malaria endemic blocks of Assam. The advent of long-lasting insecticidal nets (LLINs) has proven to be an evidenced-based intervention for disease vector control and the incorporation of program implementation planning by healthcare services[[4]](#footnote-4). Due to the reductions in transmission that have been demonstrated in village-scale field-based studies, LLINs are now being promoted as the mainstay of vector control for prioritized high-risk population groups[[5]](#footnote-5).

A total of 72.48 lakhs LLINs have been distributed across the seven North Eastern States in 2016 by two PRs (Principal Recipients) PR-I i.e. NVBDCP and PR-II i.e. Caritas India.

The breakup of LLIN distribution for the seven North East States as follows:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Arunachal Pradesh | Assam | Manipur | Meghalaya | Mizoram | Nagaland | Tripura | Total |
| Population | 1443697 | 33146748 | 2930000 | 3285439 | 11711491 | 2028463 | 3920268 | **47926106** |
| LLIN allocated (in Lakhs) | 5.78 | 28.58 | 3.96 | 9.41 | 5.28 | 9.41 | 10.06 | **72.48** |

The key objective of the study are as follows

1. To assess the distribution, storage, usage and maintenance and retention of LLINs at the household level in NE states.
2. To assess behaviour change communication approaches undertaken by the health department before, during and after distribution of LLIN.
3. To assess the knowledge, attitude and behavioral practices related to LLINs usage in the community (including among pregnant mothers).
4. To assess the effectiveness of monitoring, reporting and analysis of data related to the utilization of LLINs at community level.
5. To assess the impact of LLIN intervention on reduction of malaria incidence

**Methodology**

The study would adopt a mixed method approach and use primary and secondary data analysis. Primary data would include both qualitative and quantitative components. Secondary data analysis would involve desk review of data from NVBDCP program to identify the performance levels of various districts in terms of program implementation and outcomes.

**Data Collection Tools**

The data collection will include in depth interviews with programme managers at the State, district and facility (sub-centre) level. Focus Group Discussions will be conducted with MPWs/other community level workers involved in distribution and raising awareness about LLINs to understand their perspectives regarding the distribution, storage and maintenance of LLINs. In-depth interviews with Key Informants and FGDs with beneficiaries will be conducted at the community level (including pregnant women) to understand their knowledge, attitudes and practices in relation to LLINs and extent of interaction with the health systems related to monitoring mechanisms.

**Sample Size-**

All North Eastern states are malaria endemic except Sikkim. Based on the volume of LLINs distributed the study would be conducted in the States of Assam, Meghalaya and Tripura. From each state two districts will be chosen. The criteria for selection of the districts will be :

1. The district which had an API > 1 in 2015 but have now shown significant reduction from 2015 level.
2. The other district where low or no reduction in API reported in spite of the use of LLINs.

This would help us understand the programmatic components and the beneficiary experiences which affect the impact of LLINs on reduction of malaria cases and deaths.

In each of these districts two blocks will be chosen based on similar criteria used for district selection. Similarly, at each block two Sub-centres will be chosen. The villages covered under these sub-centres would be selected for household surveys and community level interviews and FGDs.

The survey questionnaires, interview schedules and FGD guides will be developed with inputs from NVBDCP. A thematic analysis using an inductive process would be used for qualitative analysis. Quantitative data analysis would be done through MS Excel or any another statistical package.

**Timelines:**

* Tool development, translation and field test – 2 months
* Data collection and analysis - 2 months
* Report writing - 1 month
* Finalization of report in consultation with NHSRC and NVBDCP team– 1 month

**Who will conduct the evaluation-**

Organizations with a credible track record of conducting evaluations would be considered eligible to conduct the evaluation. NGOs and academic institutions are eligible to apply to manage the evaluations at the state level. A consortium of two or more agencies with the requisite skill mix could also be considered. NHSRC will anchor the evaluation.

NHSRC will work with the NVBDCP at MoHFW and will be responsible for selection of organizations to be involved, contribute to finalizing data collection instruments and tools, data review and analysis, establish state level linkages, review draft reports and provide inputs as required at various steps of the evaluation process.

NVBDCP will provide the evaluation team with key documents related to the LLIN

1. WHO recommendations for achieving universal coverage with long-lasting insecticidal nets in malaria control, September 2013 (revised March 2014) [↑](#footnote-ref-1)
2. Operational Manual for Elimination in India, 2016 (Version 1), http://nvbdcp.gov.in/Doc/Operational-Manual-Malaria-2016-Version-1.pdf [↑](#footnote-ref-2)
3. Curtis CF, Myamba J, Wilkes TJ. Comparison of different insecticides and fabrics for anti-mosquito bed nets and curtains. Med Vet Entomol 1996; 10: 1-11 [↑](#footnote-ref-3)
4. Dev V, Barman K, Khound K. A cross-sectional study assessing the residual bio-efficacy and durability of field-distributed long-lasting insecticidal nets in malaria endemic ethnic communities of Assam, Northeast India. Journal of Infection and Public Health (2016) 9, 298—307. [↑](#footnote-ref-4)
5. National Vector Borne Disease Control Programme, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India. Action plan for scaling up long lasting insecticidal nets for malaria control in India. http://www.nvbdcp.gov.in/Doc/LLIN-Action-Plan-2009. [↑](#footnote-ref-5)