



# LONG LASTING INSECTICIDE NET POST DISTRIBUTION REPORT, OYAM DISTRICT, LORO SUBCOUNTY

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RURAL INITIATIVE FOR COMMUNITY TRANSFORMATION –  
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## ABBREVIATIONS

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DHIS: District Health Information System

DHO: District Health Officer

DPs: Distribution Points

IRS: Indoor Residual Spraying

LLIN: Long-Lasting Insecticide-Treated Net

OVCs: Orphans and Vulnerable Children

PLWs: Pregnant and Lactating women

RICOT: Rural Initiative for Community Transformation

UBOS: Uganda Bureau of statistics

VHT: Village Health Team

## 1.0 BACKGROUND

Malaria is a leading cause of morbidity and mortality in Uganda. In July 2020, malaria cases surged in Oyam District, Northern Uganda, exceeding expected limits and thereby requiring epidemic response. We investigated this outbreak to estimate its magnitude, identify exposure factors for transmission, and recommend evidence-based control measures. Methods: We defined a malaria case as onset of fever in a resident of Loro subcounty, Kamdini subcounty, and Loro Town Council, Oyam District, with a positive rapid diagnostic test or microscopy for malaria from 1 July to 15<sup>th</sup>, September 2020. We reviewed medical records in all health facilities of affected subcounties to find cases. In a case-control study, we compared exposure factors between case-persons and asymptomatic controls matched by age and village. We also conducted entomological assessments on vector density and behavior.

Results: We identified 2,574 case-persons (attack rate [AR] = 5.8%) and two deaths (case-fatality rate = 5.2/10,000). Females (AR = 7.1%) were more affected than males (AR = 4.5%) ( $p < 0.0001$ ). Of all age groups, children under-fives (AR = 7.6%) were most affected followed by pregnant and lactating women who had (AR=6.2%) and Orphans and Vulnerable children 5-17 years had (AR=5.4%). Heavy rain started in early March 2020, and a propagated outbreak followed in the first week of March 2020. In the case-control study, 65% (65/100) of case-persons and 15% (15/100) of controls had stagnant water around households for several days following rainfall (ORM-H = 5.6, 95% CI = 3.0-11); 35% (35/100) of case-persons and 50% (50/100) of controls wore full extremity covering clothes during evening hours (ORM-H = 0.30, 95% CI = 0.20-0.60); 68% (68/100) of case-persons and 75% (75/100) of controls slept under a long-lasting insecticide-treated net (LLIN) 14 days before symptom onset (ORM-H = 0.43, 95% CI = 0.22-0.85); 40% (40/100) of case-persons and 45% (45/100) of controls had access to at least one LLIN per 2 household members (ORM-H = 0.54, 95% CI = 0.30-0.97).

Entomological assessment indicated active breeding sites in the entire study area; *Anopheles gambiae* sensu lato species were the predominant vector. Conclusion: Increased vector-breeding sites after heavy rainfall and inadequate malaria preventive measures were found to have contributed to this outbreak. We recommended increasing coverage for LLINs and larviciding breeding sites in the area.

## 1.1 INTRODUCTION

Malaria is a febrile illness caused by infection with the parasite *Plasmodium malariae*, *vivax*, *ovale*, and *falciparum* species. In Uganda, malaria remains a leading cause of morbidity and mortality, accounting for 13 million episodes annually, half of outpatient visits, and a third of hospital admissions nationally. In 2017 alone, the World Health Organization estimated that Uganda had 11,700,000 confirmed indigenous cases and 5,100 reported malaria deaths. Malaria transmission in Uganda occurs in over 95% of the country. The remaining 5% of the country consists of unstable and epidemic-prone transmission areas in the highlands of the south- and mid-west, along the southern border with Rwanda, and the north eastern border with South Sudan. In Uganda, the predominant *Plasmodium* species is *P. falciparum*, accounting for 99% of cases, according to the Uganda Malaria Indicator Survey, 2014. The malaria vectors are mosquitoes of the *Anopheles* family, which breed in fresh water and temporary pools, such as those left by footprints and small ditches in the road. This can be especially true after rainfall and irrigation activities. Uganda has made tremendous progress in malaria control with parasitemia in children under five years reduced from 42% in 2009 to 19% in 2014, while mortality due to malaria reduced from 20,000 persons in 2005 to about 5,000 in 2016. This reduction is a result of substantial investments in malaria control over the years, leading to increased access to key interventions such as long-lasting insecticide-treated nets (LLINs), Indoor residual spraying (IRS), and antimalarial therapies. The northern region of Uganda, where Oyam District is located, has experienced malaria outbreaks during the last decade and has been associated with seasonal variations in the region. As a result, the region has been targeted for integrated vector control interventions, including IRS and distribution of LLINs. The most recent round of IRS in Oyam District was in February 2017, while the last mass LLIN distribution occurred in early 2017. On 29<sup>th</sup>/August/2019, the District Health Officer (DHO) of Oyam District reported an upsurge in the number of malaria cases in the district, an estimated 488,000, nearly 7 out of 10 people have tested positive for malaria at the different health units in the district in the last month according to statistics from the district health officer. Normal channel graphs for malaria cases constructed with data from the District Health Information System (DHIS2) showed that malaria cases had exceeded outbreak thresholds in 3 subcounties (Loro subcounty, Kamdini subcounty, and Oyam Towncouncil). The outbreak thresholds had been established using malaria trends for preceding 5 years at district level. We therefore investigated this outbreak to determine the magnitude of the problem, identify risk factors for transmission, and recommend evidence-based control measures.

Malaria is a life-threatening disease and currently the third largest killer of children after pneumonia and diarrhea, globally. In Uganda, malaria accounts for 14.5 per cent of under-five deaths. Children under five, pregnant and Lactating women are more at risk of contracting the disease. When children contract malaria, their growth is affected and many die. Relatedly, malaria in pregnancy contributes significantly to deaths of mothers and their unborn children. Despite killing thousands, malaria is a preventable and treatable disease.

To wipe out malaria in the most endemic subcounties of Oyam District, RICOT Uganda with financial assistance from US Peace corps is sensitizing communities on malaria prevention, testing and treatment. The activities are implemented under the Strengthening of community Health programme implemented by RICOT Uganda, in Oyam district, Loro and Kamdini subcounty Since the implementation of the programme, malaria cases among children under five and pregnant women have reduced, thanks to the tremendous work by the RICOT Uganda staffs, community Health Volunteers, Village Health Teams who traverse communities to provide first line treatment of malnutrition, malaria, pneumonia and diarrhea as captured in the photographs.





*VHTs in the community supporting LLIN Distribution in Loro Subcounty*



*Pregnant, lactating women, OVCs and children under-fives undergoing verification to receive LLINs at Anyingeanyinga Village-Loro subcounty*

## 1.2 DISTRIBUTION BREAKDOWN STATISTICS

| S/N | Village         | Number of Beneficiaries who received LLINs |                    |      |                  |                       |
|-----|-----------------|--|--------------------|------|------------------|-----------------------|
|     |                 | Total Numbers Served                       | Category Breakdown |      |                  |                       |
|     |                 |  | PLWs               | OVCs | Children under 5 | Other vulnerabilities |
| 1   | Anyinge-Anyinga | 43   | 5                  | 4    | 33               | 1                     |
| 2   | Abongodero      | 73   | 12                 | 3    | 58               | 0                     |
| 3   | Alidi           | 72   | 4                  | 3    | 65               | 0                     |
| 4   | Akaidebe        | 12   | 2                  | 1    | 9                | 0                     |

\* NB. Each beneficiary received 2 pieces of mosquito nets for the Household.



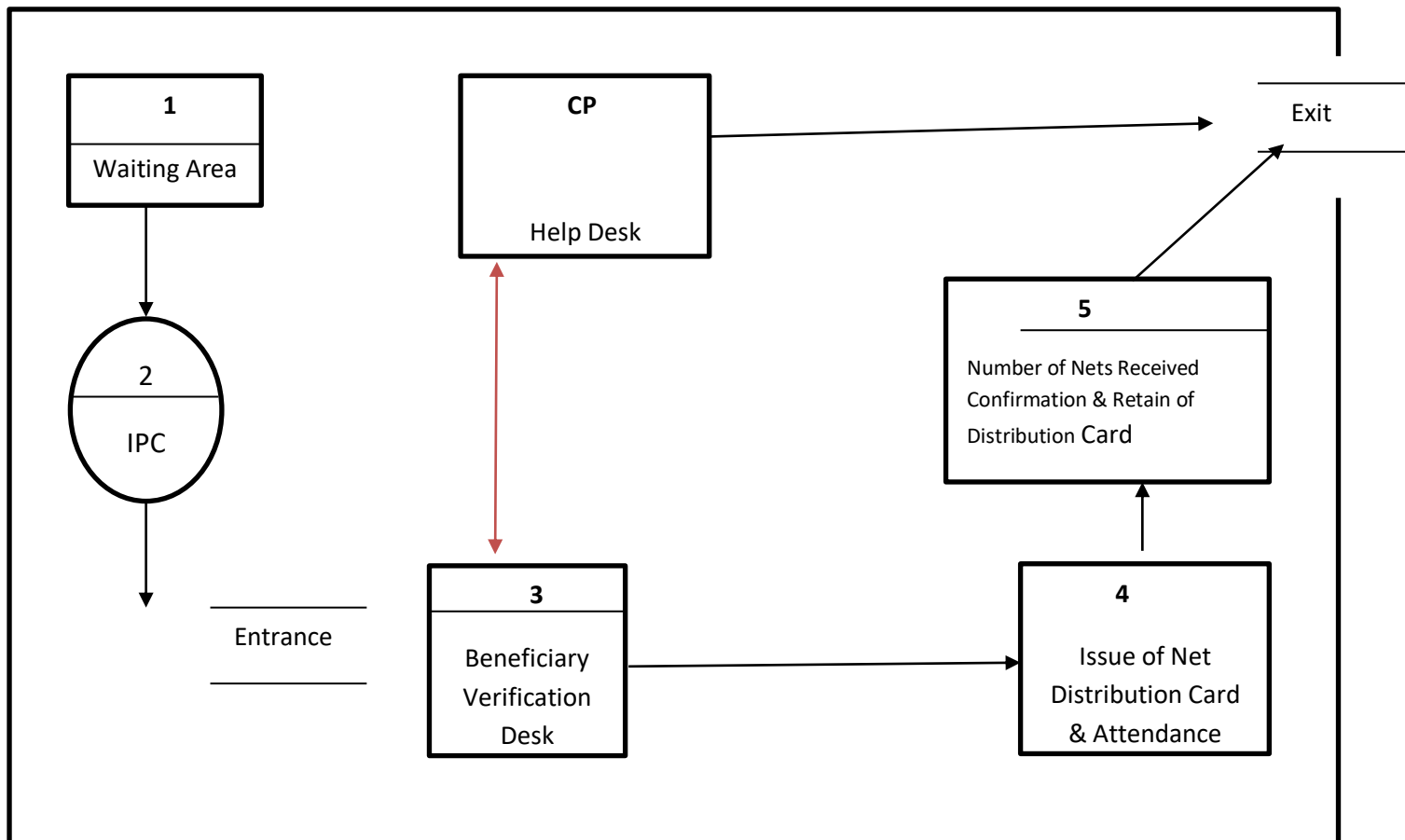
## 1.3 SITUATION ANALYSIS

### 1.3.1 Problem statement

Malnutrition in childhood and pregnancy has many adverse consequences for child survival and long-term well-being. The consequences of malnutrition should be a significant concern for policy makers in Uganda, where 2.2 million children under 5 years (29 percent) suffer from stunting (low height-for-age), according to the most recent Demographic and Health Survey (DHS) (UBOS and ICF 2018). Stunting is the result of growing under limited provision of food, health, and care (USAID Report 2018). Almost one-third of children under 5 years in Uganda are stunted. Stunting increases with age, peaking at 37 percent among children 18-35 months more among children in rural areas (30 percent) than urban areas (24 percent). The prevalence of stunting decreases with increasing levels of the mother's education. About 4 in 10 children born to mothers with no education (37 percent) are stunted compared with 1 in 10 (10 percent) of children born to mothers with more than a secondary education. Childbearing begins early in Uganda and by the age of 19, 54 percent of adolescent girls had begun child bearing. The risk of stunting is 33 percent higher among first-born children of girls under 18 years, and as such, early motherhood is a key driver of malnutrition (Fink et al. 2014). In Oyam district and Loro subcounty the situation of malnutrition is not any better. While it's noted that malnutrition is common in children born to young mothers, Loro and Kamdini subcounty has the highest number of school dropouts and OVC households in Oyam District. With malaria and malnutrition, a common killer of Children under five years.

## 1.3.2

## mosquito net distribution to the beneficiaries in oyam district, lay out



1. At the distribution site, beneficiaries were assembled at the waiting area, where the RICOT Uganda, District staff/ Community structures (VHTs) shared key messages pertaining to the LLIN Net distribution and Usage. Key information included Number of mosquito nets they were to receive; purpose of the mosquito nets being given and demonstration on the distribution process were shared. Additionally, a brief on COVID19 and the mitigation measures that had been put in place at the Distribution points to ensure infection prevention and control were also shared.
2. Small batches of 10 people were processed at a time beginning with the most vulnerable, where temperature checks, hand washing were done while observing social distancing. Once this was done, beneficiaries were ushered to the Distribution Points (DPs).

3. Once inside the DPs, the first point was the Verification Desk, where the beneficiary authentication was done. Authentication was done based on documents (National ID, Child Health Cards, Antenatal Cards and LC letter) they provided during the registration and the Net Distribution Card that was issued to them. Once verified, the beneficiaries were marked as verified on the distribution list and ushered to the distribution Team.
4. The distribution team verified the Mosquito Net Distribution Card, beneficiaries provided against the distribution list and once it was confirmed the distribution team took the attendance and withdraw the mosquito net distribution cards from the beneficiary and ushered them to Distribution Point.
5. The final stage within the process in the distribution process was the confirmation of the number of mosquito nets received by the beneficiary. The RICOT Uganda/DLG staff asked the beneficiary to count the number of mosquito nets received.
6. If the beneficiary had any questions concerning the number they have received or if their details were not in the distribution list even when they registered or if they lost their mosquito net distribution Card beneficiaries were directed to the help desk who processed each case. The Help Desk was equipped with all the information relating to the distribution (Distribution list). The Help Desk had staffs from RICOT Uganda/Community who were responsible of keeping a log of the cases reported and how they were handled.
7. RICOT Uganda appointed a Team Leader for each Distribution Point (DP) who was overseeing the Mosquito net distribution and reconciliations at the end of the distribution with RICOT Uganda. A copy of the signed reconciliation report was provided to a RICOT Uganda staff on site.

## 1.4 COMMUNITY CONTRIBUTION

The beneficiaries and other community members will contribute time for attending the pre-distribution address, Health and nutrition sensitization on the net usage and malaria prevention, space, furniture (workspace) and poles for the temporary construction of the distribution points to enable easy supervision of crowd control while observing covid-19 Standards of operating procedures.

## 1.5 ENVISAGED CHANGES (OUTCOMES)

This intervention will have far reaching positive health and Behaviour change outcomes that will reduce the health and economic vulnerability of the beneficiaries.

- At least 400 community members (OVC, children under 5 years, pregnant and Lactating women) received insecticide treated mosquito nets and malaria related BCC messaging.
- 4 care groups (each with 30 members) trained on malaria prevention and mosquito net usage at community level
- Reduction in Maternal and Neonatal deaths due to malnutrition and malaria

## CONCLUSION

Malaria is a febrile illness caused by infection with the parasite *Plasmodium malariae*, *vivax*, *ovale*, and *falciparum* species. In Uganda, malaria remains a leading cause of morbidity and mortality, accounting for 13 million episodes annually, half of outpatient visits, and a third of hospital admissions nationally. In 2017 alone, the World Health Organization estimated that Uganda had 11,700,000 confirmed indigenous cases and 5,100 reported malaria deaths. Malaria transmission in Uganda occurs in over 95% of the country. The remaining 5% of the country consists of unstable and epidemic-prone transmission areas in the highlands of the south- and mid-west, along the southern border with Rwanda, and the northeastern border with South Sudan. In Uganda the predominant species is *P. falciparum*, accounting for 99% of cases according to the Uganda Malaria Indicator Survey, 2014. Increased vector-breeding sites after heavy rainfall, together with inadequate malaria preventive measures, contributed to this outbreak. We recommended increasing coverage for LLINs and larviciding breeding sites. Also, district and local leaders should mobilize masses and create awareness on using full extremity covering clothing and door screens, under the Mass Action against Malaria strategy of the Ministry of Health.



We removed abandoned and empty containers around households. We also sensitized community leaders and members on malaria prevention using cost-effective strategies such as consistent use of LLINs, closing windows and doors early, and wearing full extremity covering clothes

