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# SUNMAP 2 LONGITUDINAL STUDY QUARTERLY REPORT ON MALARIA SERVICE PROVISION

Kano (January – March 2021)

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

malaria consortium
disease control, better health

SuNMaP 2
SUPPORT TO THE NATIONAL MALARIA PROGRAMME

**Suggested Citation:** Marks, S., and Avan, B. (2021). SuNMaP 2 longitudinal study: Quarterly report on malaria service provision, Kano (January-March 2021). London, London School of Hygiene & Tropical Medicine.

**Acknowledgements:** Many thanks to Malaria Consortium Nigeria for managing the data collection, with particular thanks to Chinazo Ujuju (Senior MEAL Specialist) and Mansur Darma (Data Analysis Specialist).

We would also like to thank the Kano data collection supervisor, Muhammad Kassim, and team: Muhammad Umar Aminu; Umar Audi; Maryam Bature; Khadija Bilal; Yusuf Nasir Darma; Maryam Musa Garba; Zahrau Ibrahim; Amina Kasim; Abdullahi Lawal Mohammed; and Asmau Ibrahim Zubairu.

Lastly, our greatest thanks goes to all the households and health providers that participated in the SuNMaP 2 Longitudinal Study.

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**Cover Image:** Distribution of insecticide treated mosquito nets to pregnant women through the UK Foreign, Commonwealth, and Development Office's Support to the National Malaria Programme in Nigeria. Copyright: Malaria Consortium.

**Funded by:** UK Foreign, Commonwealth, and Development Office (FCDO).

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# CONTENTS

# 1. INTRODUCTION

Support to the National Malaria Programme phase II (SuNMaP 2) is a six-year programme (2018-2024) funded by the UK Foreign, Commonwealth, and Development Office (FCDO) and implemented in six states - Jigawa, Kaduna, Kano, Katsina, and Yobe in Northern Nigeria and Lagos. The programme is led by Malaria Consortium in partnership with the National and State Malaria Elimination Programmes, Abt Britain, Federation of Muslim Women's Association in Nigeria, the Health Policy Research Group of the University of Nigeria, Innovision, Mannion Daniels West Africa, Nigeria Interfaith Action Association, and Springfield Centre.

SuNMaP2 aims to sustainably address current programmatic and technical gaps in Nigeria's malaria control programme to facilitate the UK FCDO's eventual and responsible exit from bilateral malaria support in Nigeria. It is anticipated that SuNMaP 2 activities build on the successes of phase I (2008-2016) and lead to sustainable gains, including lives saved beyond the programme timeline. This will be facilitated by gradually phasing out support over the course of the programme - from capacity building in the initial years of the programme to mentoring in the final years of SuNMaP 2.

London School of Hygiene & Tropical Medicine (LSHTM) is leading a four-year longitudinal study of SuNMaP2 in two of the six SuNMaP 2 states, Kaduna and Kano. The primary objective of the longitudinal study is to assess SuNMaP 2's theory of change to inform the effectiveness of the UK FCDO's exit strategy from bilateral malaria funding in Nigeria. As part of the longitudinal study LSHTM is conducting ongoing quarterly assessments of malaria service provision. These quarterly assessments are intended to provide information to the State Malaria Elimination Programmes (SMEPs) in Kaduna and Kano, and SuNMaP 2 partners, on the degree to which the quality and coverage of malaria control interventions are being implemented; and whether coverage is sustained as partner support to the government is reduced. The results will be regularly shared in reports such as these with the SMEPs in Kaduna and Kano on a quarterly basis, and to the National Malaria Elimination Programme (NMEP) on an annual basis.

For further information about the SuNMaP 2 longitudinal study visit:
https://www.lshtm.ac.uk/research/centres-projects-groups/sunmap2-longitudinal-study

## 2. METHODOLOGY

The quarterly assessments of malaria service provision are undertaken using continuous survey methodology. The continuous survey consists of quarterly cross-sectional surveys of households and the health services catering to those households, including both primary and secondary care, as well as community-based care such as community health workers (CHWs), retail pharmacies and patent and proprietary medicine vendors (PPMVs). Sampling for the household survey is conducted through a two-stage process. Random cluster sampling is conducted using a primary sampling frame of census area units from the National Population Commission of Nigeria, stratified by local government area (LGA) and 30 census area units are independently selected for a different LGA in each state every quarter, starting October 2020 and ending March 2024.

Within each selected census area unit, a complete household listing of residences is conducted using census area mapping of households from the National Population Commission of Nigeria as a guide. This household listing for the census area is the second sampling frame, from which a random sample of 55 households are selected in the field.

During the continuous survey, quantitative data is collected on demand and supply side indicators of malaria service provision. Continuous survey data was exported from the electronic data collection forms and analysed using STATA 16 (StataCorp, Texas, USA). For this quarterly report small-area indicator estimates were calculated at LGA level from household and service delivery site data. Household data is presented by age, gender, and socio-economic group. Service delivery site data is presented by service delivery type. These LGA indicator estimates are based on data from a small sample of 30 clusters, therefore the quarterly estimates are for programme management purposes only.

Ethics approval for this study has been received from Kaduna State Health Research Ethics Committee; Kano State Health Research Ethics Committee; National Health Research Ethics Committee of Nigeria (Reference: NHREC/01/01/2007-02/10/2020); and LSHTM ethics (Reference: 18052).

Further information on the methods can be found in the study protocol available at:
www.lshtm.ac.uk/research/centres-projects-groups/sunmap2-longitudinal-study#other-materials

# 3. LGA CONTEXTUAL OVERVIEW

During January to March 2021 data was collected from Ungogo LGA in Kano state. A brief summary of contextual information for Ungogo LGA is summarised in figure 3.1, the information for which was obtained from district officials.


Map of Kano state with Ungogo LGA highlighted in orange.

| | |
|---|---|
| | **LGA:** UNGOGO |
| | **OFFICIAL POPULATION:** - |
| | **CHILDREN UNDER 5 YEARS:** - |
| | **WOMEN OF REPRODUCTIVE AGE:** - |
| | **PEAK MALARIA TRANSMISSION:** JULY-SEPT |
| | **OTHER MALARIA PROGRAMMES:** GLOBAL FUND |

**Figure 3.1. Infographic summarising contextual information for Ungogo LGA**

Source: District Officials, SuNMaP 2 Longitudinal Study (Official LGA population information was unknown at time of interview).

# 4. HOUSEHOLD SURVEY COVERAGE

An overview of the households surveyed this quarter are summarised in tables 4.1 – 4.2.

### Table 4.1. Overview of the household and individuals surveyed

| Result | Eligible | Total Interviewed | |
|---|---|---|---|
| | | # | % |
| **Households** | 1650 | 1625 | 98.5% |
| **Women aged 15-49 years** | 2168 | 1805 | 83.3% |
| **Children <5 years** | 1455 | 1329 | 91.3% |

### Table 4.2. Household composition of those interviewed

| Characteristic | Total |
|---|---|
| **Mean size of households** (N=1625, SD=3.7) | 7.0 |
| **Household headship** | |
| Male | 57% |
| Female | 43% |
| **Households with pregnant women** | 4% |
| **Households with children <5 years** | 32% |

# 5. DEMAND

## 5.1. MALARIA KNOWLEDGE

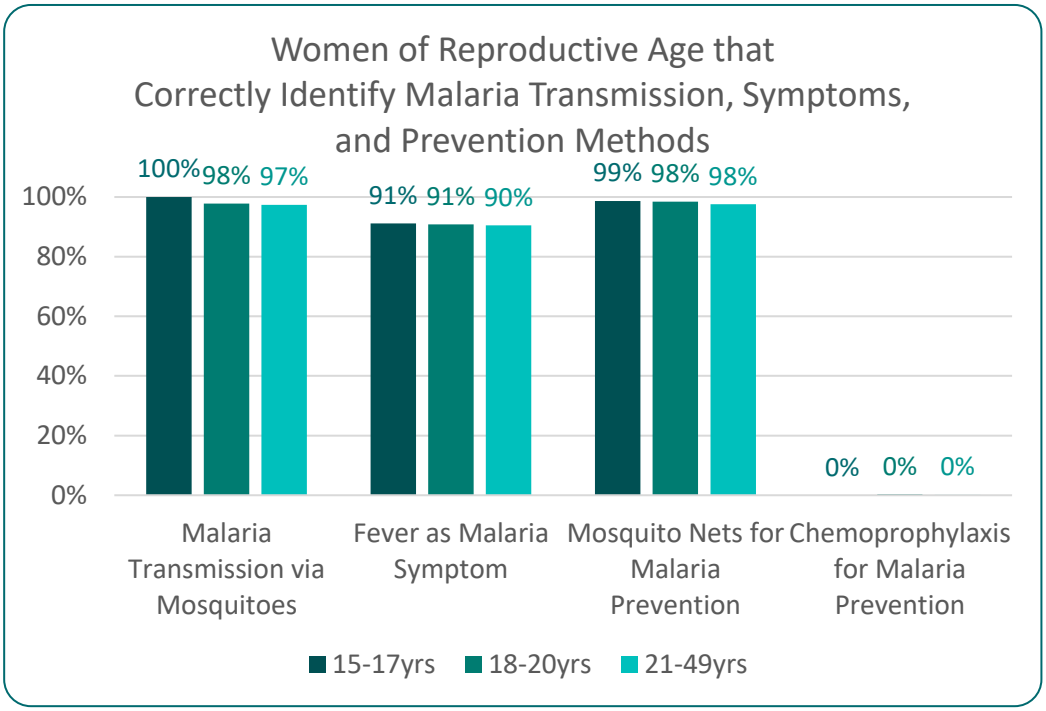



**Figure 5.1.1**
Women 15-17yrs (N=227); Women 18-20yrs (N=315); Women 21-49yrs (N=1263)
Source: Household Survey, SuNMaP 2 Longitudinal Study

## 5.2. MALARIA BURDEN

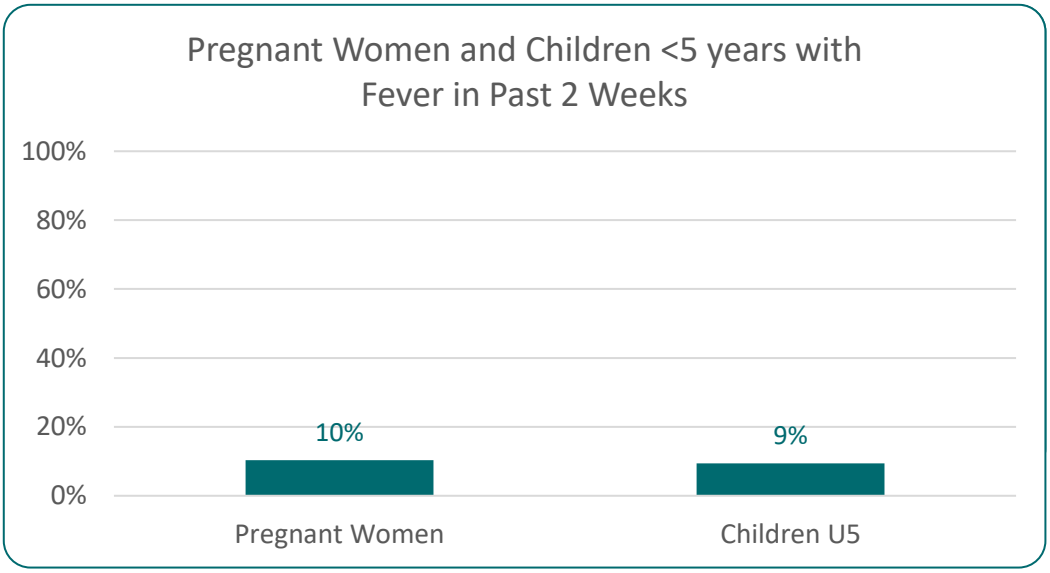
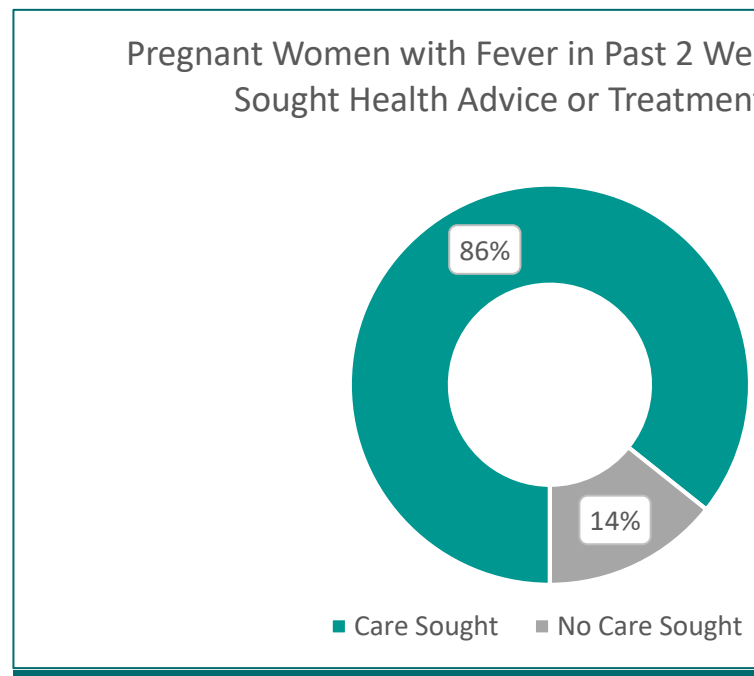


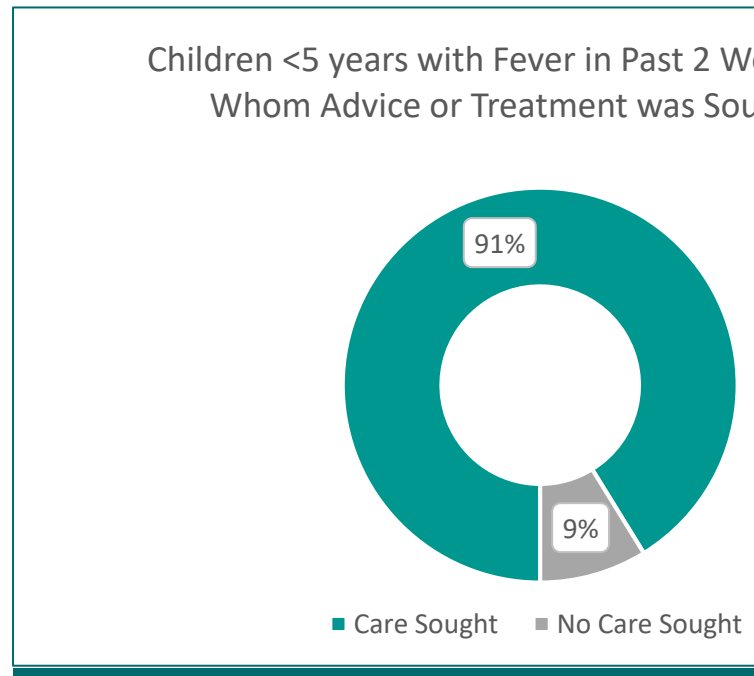

**Figure 5.2.1**
Pregnant women (N=68); Children <5 years (N=1329)
Source: Household Survey, SuNMaP 2 Longitudinal Study

## 5.3. CARE SEEKING BEHAVIOUR




| AVERAGE LENGTH OF TIME BETWEEN FEVER ONSET AND CARE-SEEKING FOR PREGNANT WOMEN: | 2 Days |
|---|---|

**Figure 5.3.1**
Pregnant women with fever (N=7); Mean (N=6, SD=0.9 days)
Source: Household Survey, SuNMaP 2 Longitudinal Study




| AVERAGE LENGTH OF TIME BETWEEN FEVER ONSET AND CARE-SEEKING FOR CHILDREN <5 YEARS: | 1.3 Days |
|---|---|

**Figure 5.3.2**
Children <5 years with fever (N=125); Mean (N=114, SD= 0.7 days)
Source: Household Survey, SuNMaP 2 Longitudinal Study

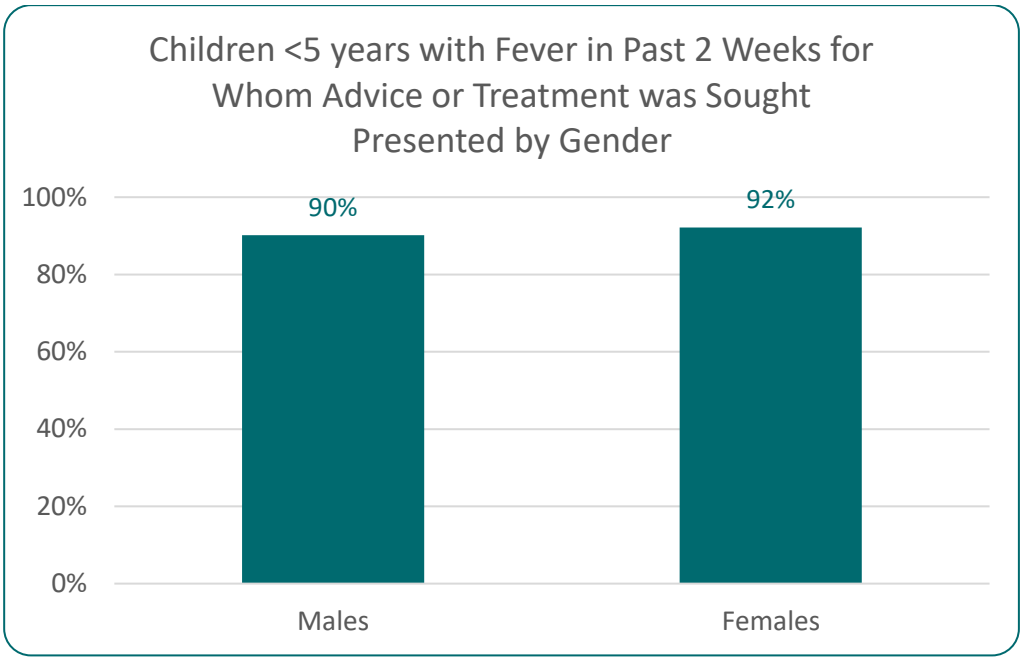



**Figure 5.3.3**

Male children <5 years with fever (N=61); Female children <5 years with fever (N=64)
Source: Household Survey, SuNMaP 2 Longitudinal Study

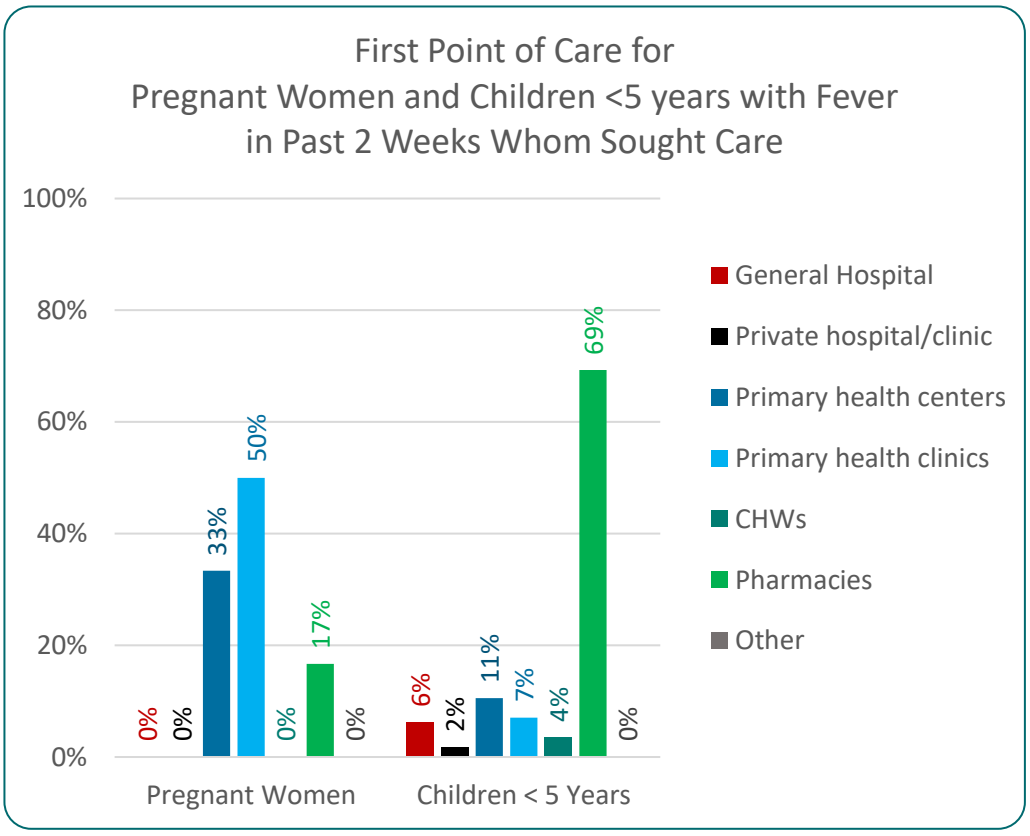



**Figure 5.3.4**

Pregnant women with fever that sought care (N= 6);
Children <5 years with fever that sought care (N= 114)
Source: Household Survey, SuNMaP 2 Longitudinal Study

## 5.4. COVERAGE OF KEY ANTIMALARIAL INTERVENTIONS

### A. TREATMENT

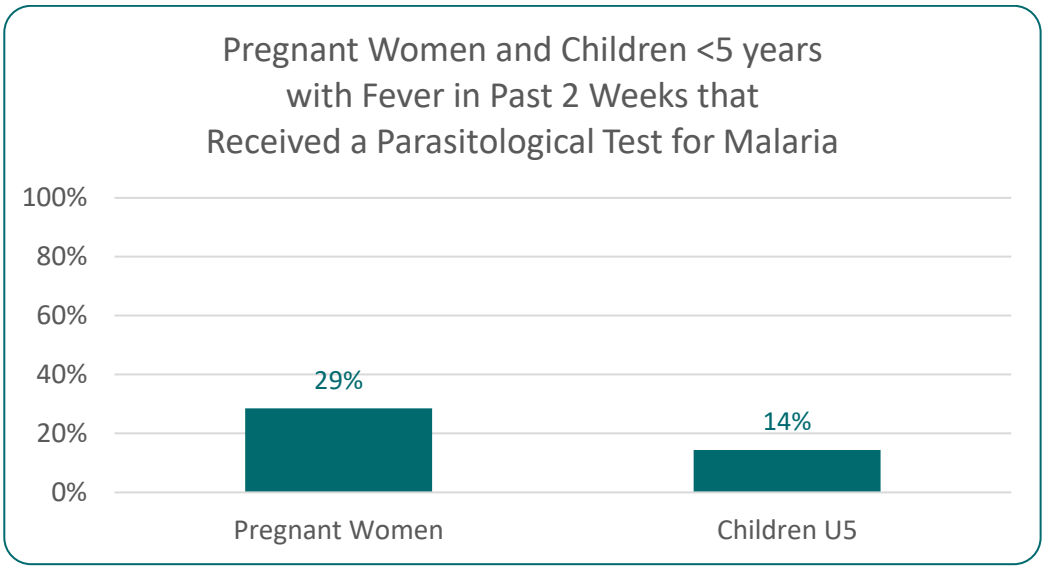



**Figure 5.4.1**

Pregnant women with fever (N=7); Children <5 years with fever (N=125)
Source: Household Survey, SuNMaP 2 Longitudinal Study

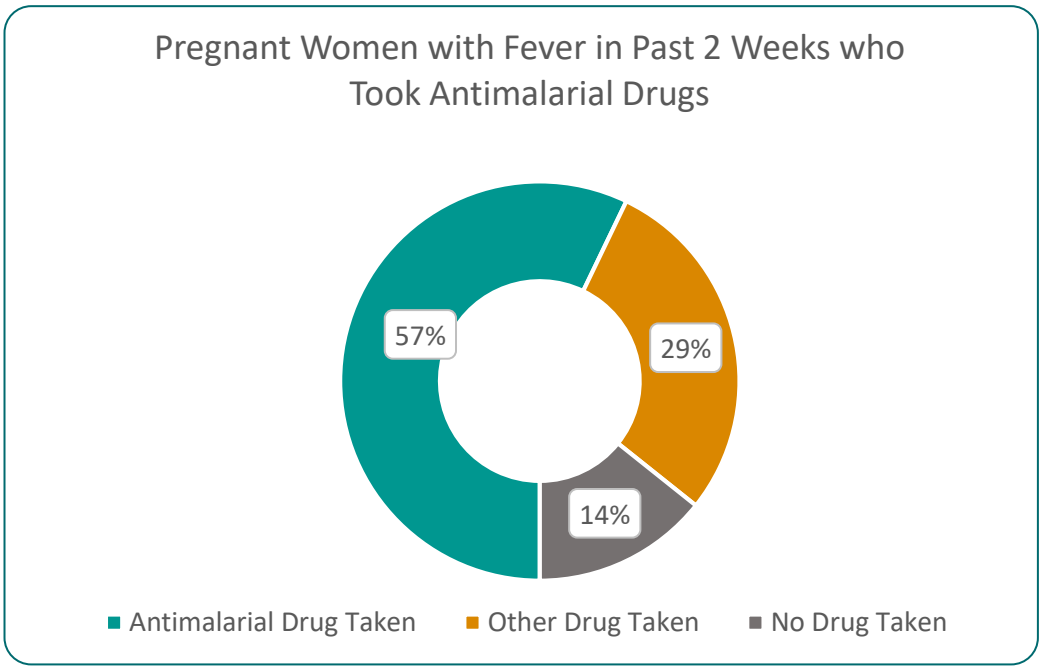



**Figure 5.4.2**

Pregnant women with fever (N=7)
Source: Household Survey, SuNMaP 2 Longitudinal Study

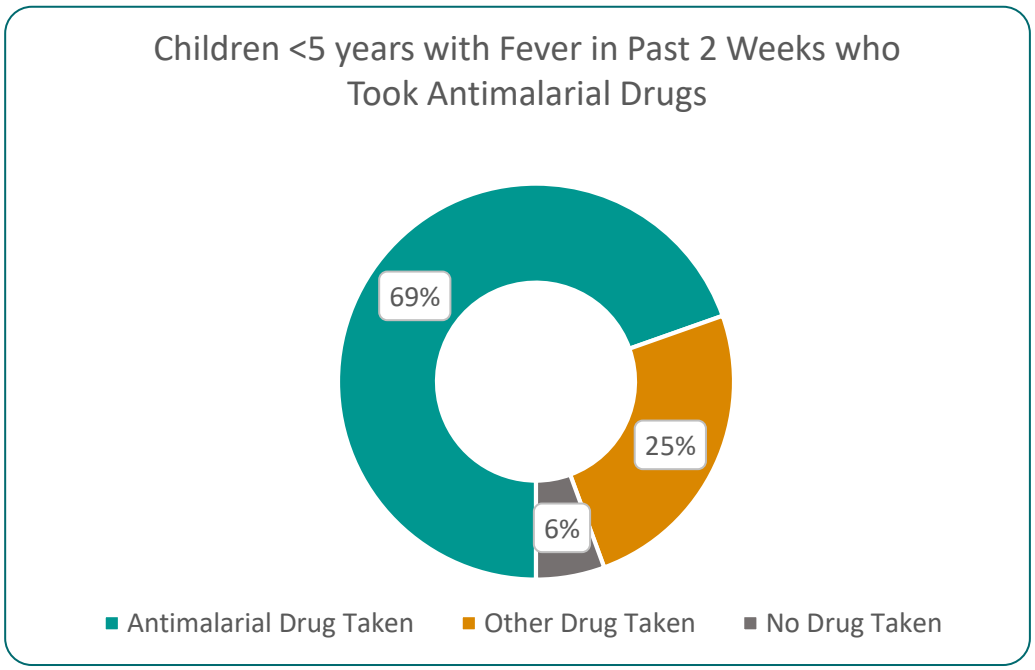



**Figure 5.4.3**

Children <5 years with fever (N=125)
Source: Household Survey, SuNMaP 2 Longitudinal Study

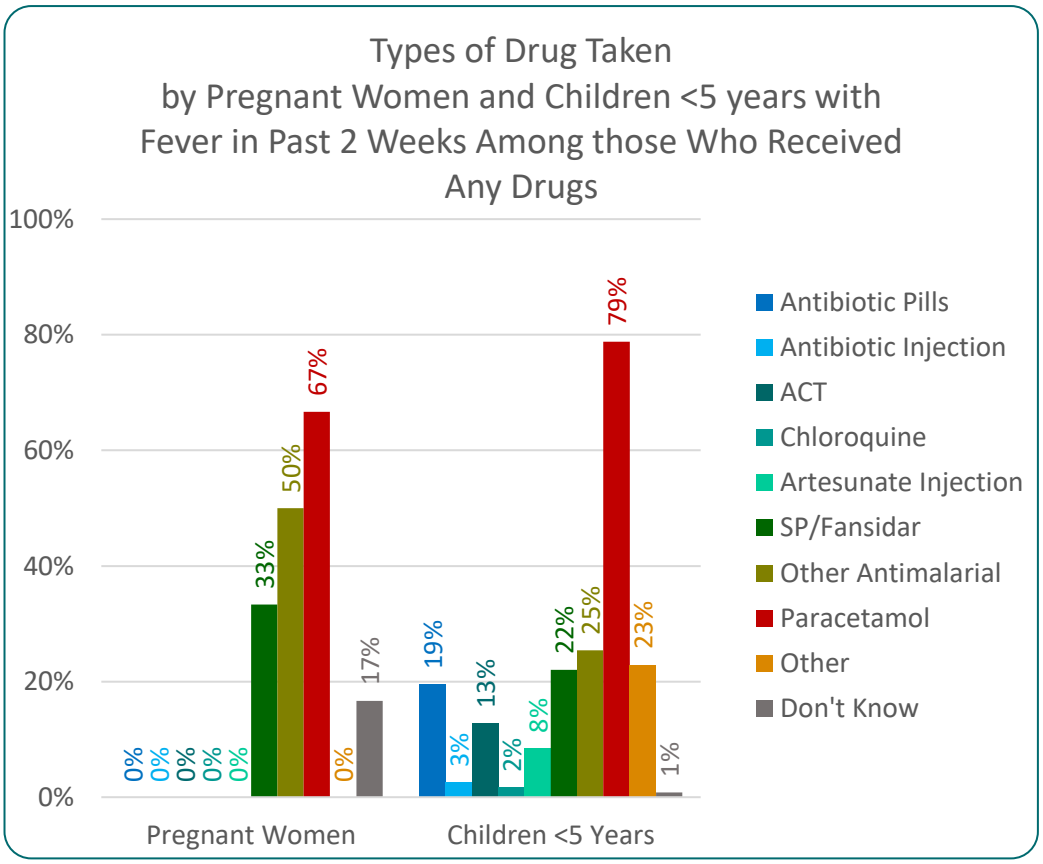


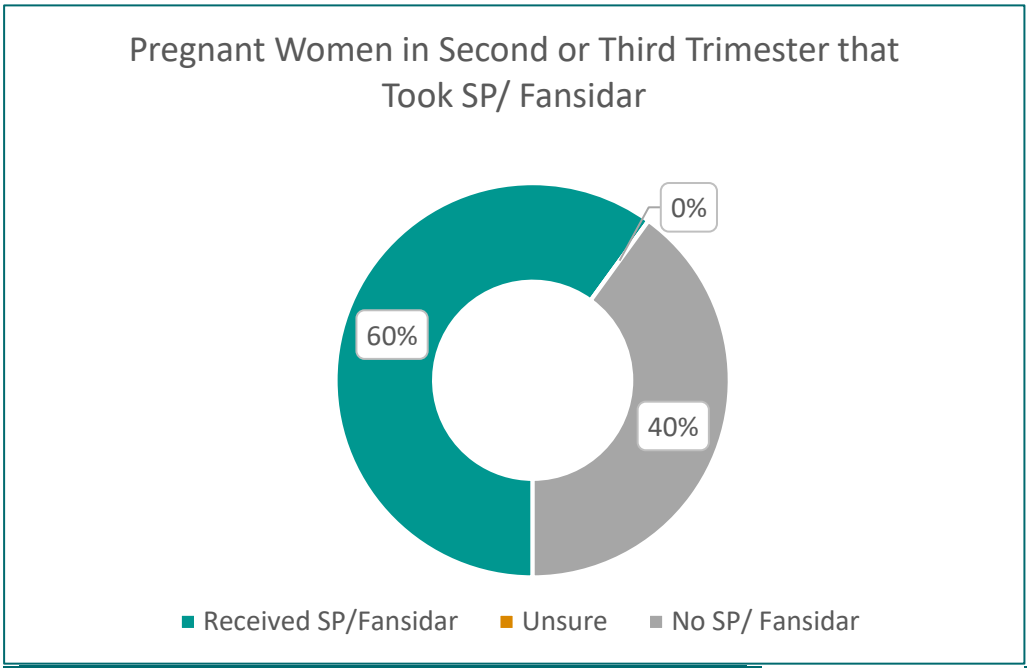

**Figure 5.4.4**

Pregnant women with fever that received drugs (N=6); Children <5 years with fever that received drugs (N=118). Source: Household Survey, SuNMaP 2 Longitudinal Study

## B. PREVENTION

| | |
|---|---|
| HOUSEHOLDS WITH AT LEAST ONE ITN: | 68% |
| PREGNANT WOMEN THAT SLEPT UNDER AN ITN: | 76% |
| CHILDREN <5 YEARS THAT SLEPT UNDER AN ITN: | 76% |

**Figure 5.4.5**
Households (N=1625); Pregnant Women (N=68); Children <5 years (N=1329)
Source: Household Survey, SuNMaP 2 Longitudinal Study




| | |
|---|---|
| AVERAGE NUMBER OF TIMES PREGNANT WOMEN IN 2ND OR 3RD TRIMESTER TOOK SP/FANSIDAR AMONGST THOSE REPORTED TO HAVE RECEIVED SP/FANSIDAR: | 1.2 Doses |

**Figure 5.4.6**
Pregnant women in second or third trimester (N=65); Mean (N=39, SD= 1.4 doses)
Source: Household Survey, SuNMaP 2 Longitudinal Study

## 5.5. EQUITY

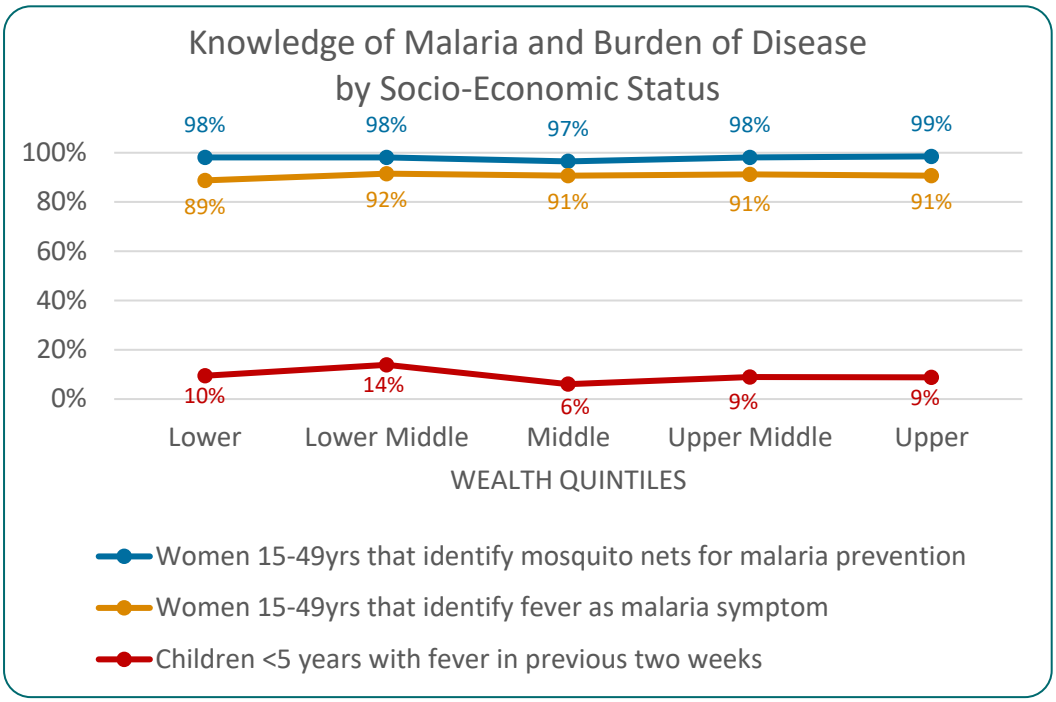



**Figure 5.5.1**

Women 15-49yrs (N=1,805); Children <5 years (N=1,329)
N.B. Pregnant women with fever not shown as sample too small for equity analysis.
Source: Household Survey, SuNMaP 2 Longitudinal Study

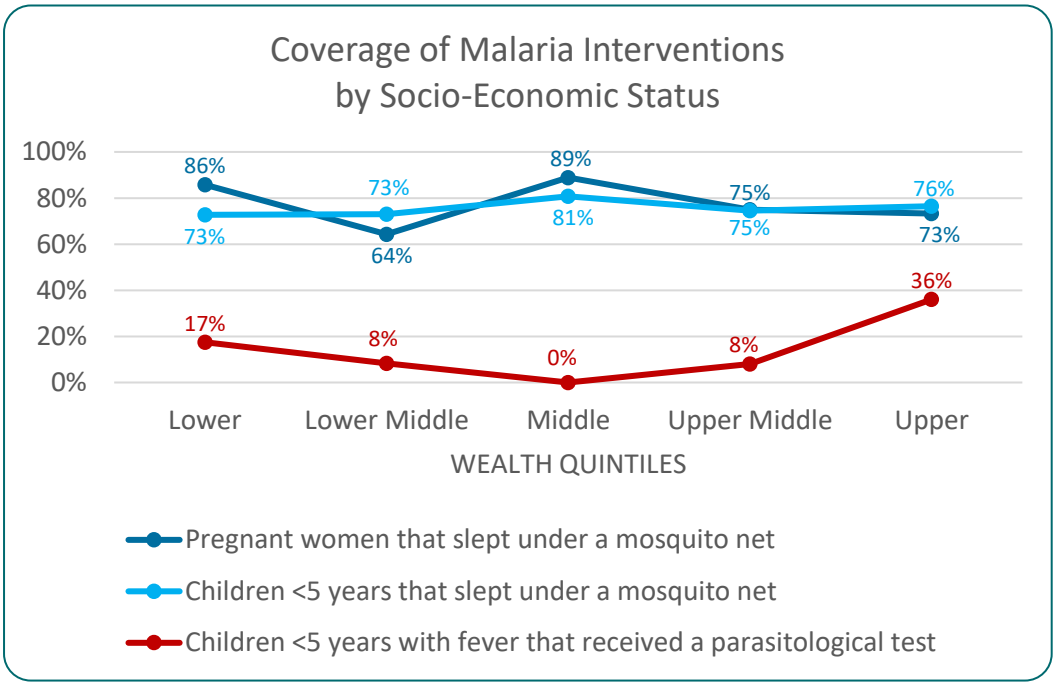



**Figure 5.5.2**

Pregnant Women (N=68); Children <5 years (N=1329); Children <5 years with fever (N=125)
N.B. Pregnant women with fever that received parasitological test not shown as sample too small for equity analysis.
Source: Household Survey, SuNMaP 2 Longitudinal Study

# 6. SURVEY COVERAGE OF HEALTH SERVICES

The number of service delivery sites in Ungogo LGA reported operational by district officials during the time of survey and the number of these sites that were surveyed are summarised in table 6.1. The service delivery sites surveyed were the main Level II, Level I, and community health worker and pharmacy sites identified by the households in the survey areas for malaria services.

**Table 6.1. Overview of the number of operational primary, secondary, and community-based care sites in Ungogo Local Government Area and the number of sites surveyed**

| Health Service Delivery Types | Total Operational^ | No. Surveyed (%) |
|---|---|---|
| **Level II** | **2** | **2** (100%) |
| General Hospitals | 2^^ | 2 (100%) |
| Cottage Hospitals | 0 | 0 (0%) |
| **Level I** | **38** | **20** (53%) |
| Primary Health Centres | 6 | 9 (150%)^^^ |
| Primary Health Clinics | 32 | 11 (34%) |
| **Community-based Care** | **425** | **38** (9%) |
| Community Health Workers (CHWs)* | 88 | 9 (10%) |
| Pharmacies** | 337 | 29 (9%) |

Note: *Community health workers includes community-oriented resource persons (CORPs), community health influencers, promoters, and service (CHIPs) agents, community health extension workers (CHEWs) and junior community health extension workers (JCHEWs). CHEWs and JCHEWs are associated with Level I health facilities but conduct 60% and 80% of their work respectively in the community. Consequently, they have been listed under community-based care in the table as they were surveyed based on their identification as the main community health worker by the households in the areas surveyed. **Pharmacies includes PPMVs and retail pharmacies. ^ Total number operational as reported by the district officials during the time of survey.^^ One general hospital and one cottage hospital was reported by district officials but 2 general hospitals were identified during the survey, there are also 2 general hospitals listed on the Nigeria Health Facility Registry (https://hfr.health.gov.ng/facilities). ^^^This could be due to primary health centres outside the LGA being the primary source of malaria care for the communities surveyed, however we are currently investigating further to confirm.

To note that during this period district officials reported a shortage of insecticide treated nets in the health facilities in Ungogo LGA.

# 7. SURVEY COVERAGE OF HEALTH SERVICES

## 7.1. SERVICE AVAILABILITY

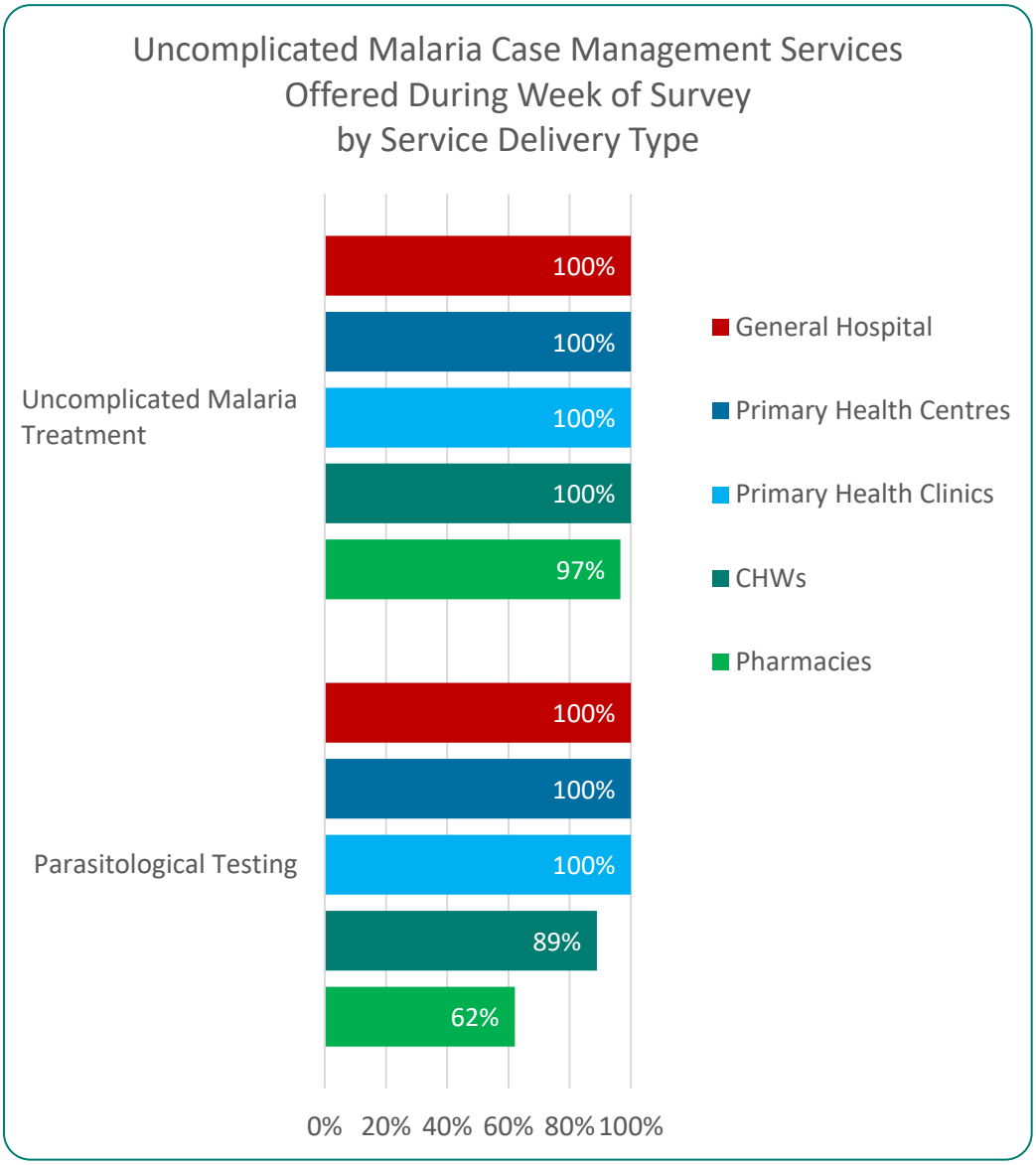



**Figure 7.1.1**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

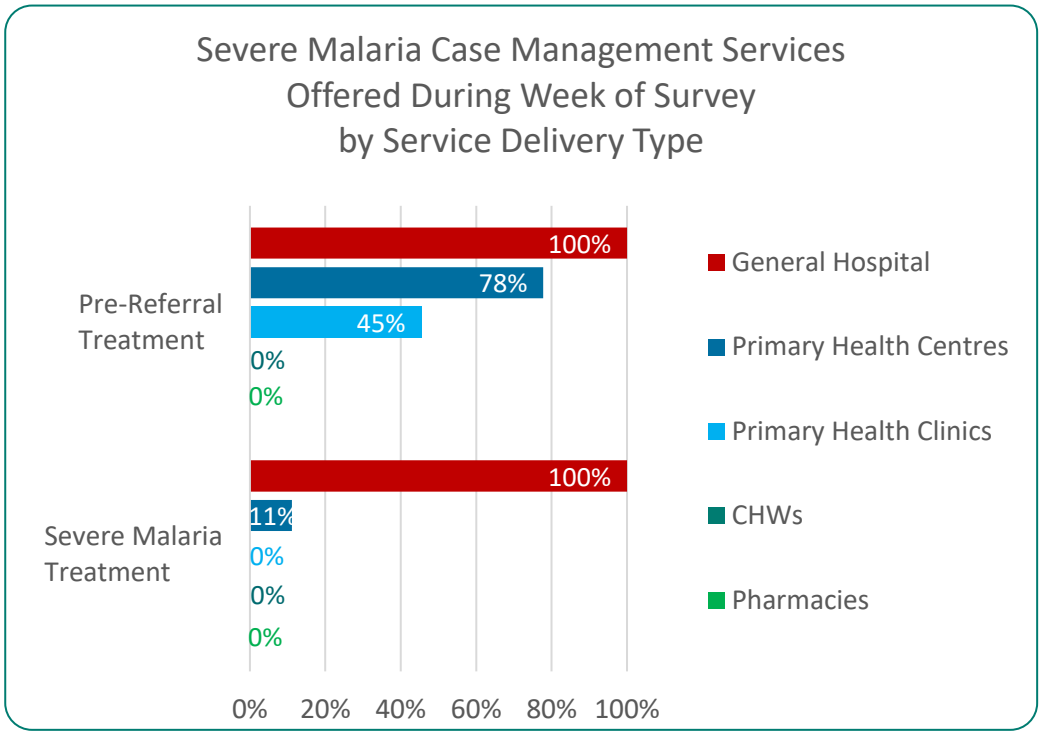



**Figure 7.1.2**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

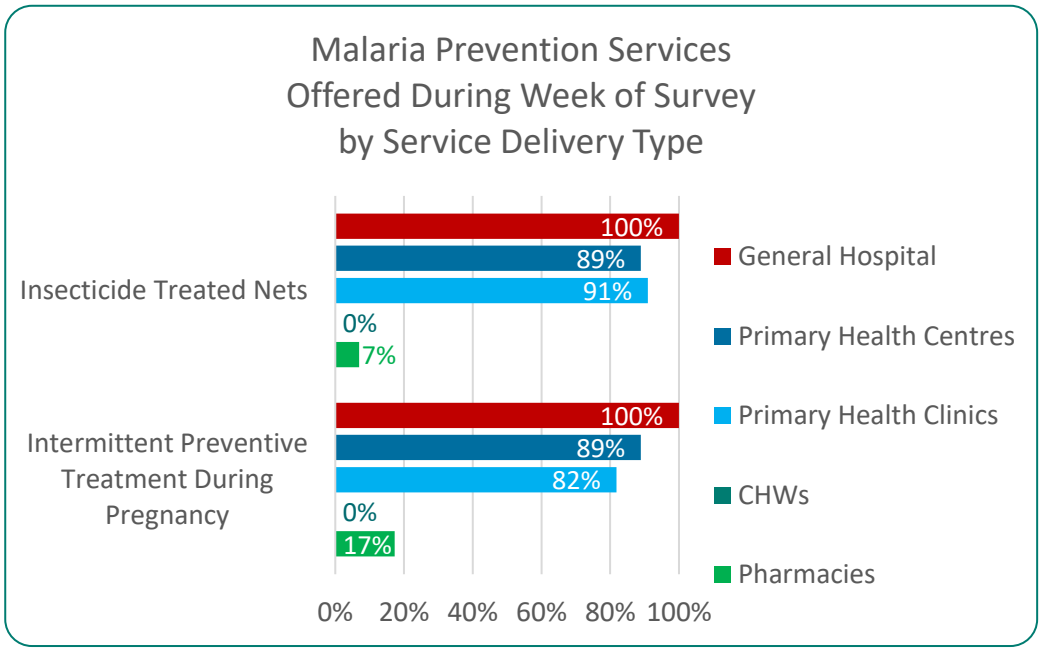



**Figure 7.1.3**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

## 7.2. STOCK-OUTS

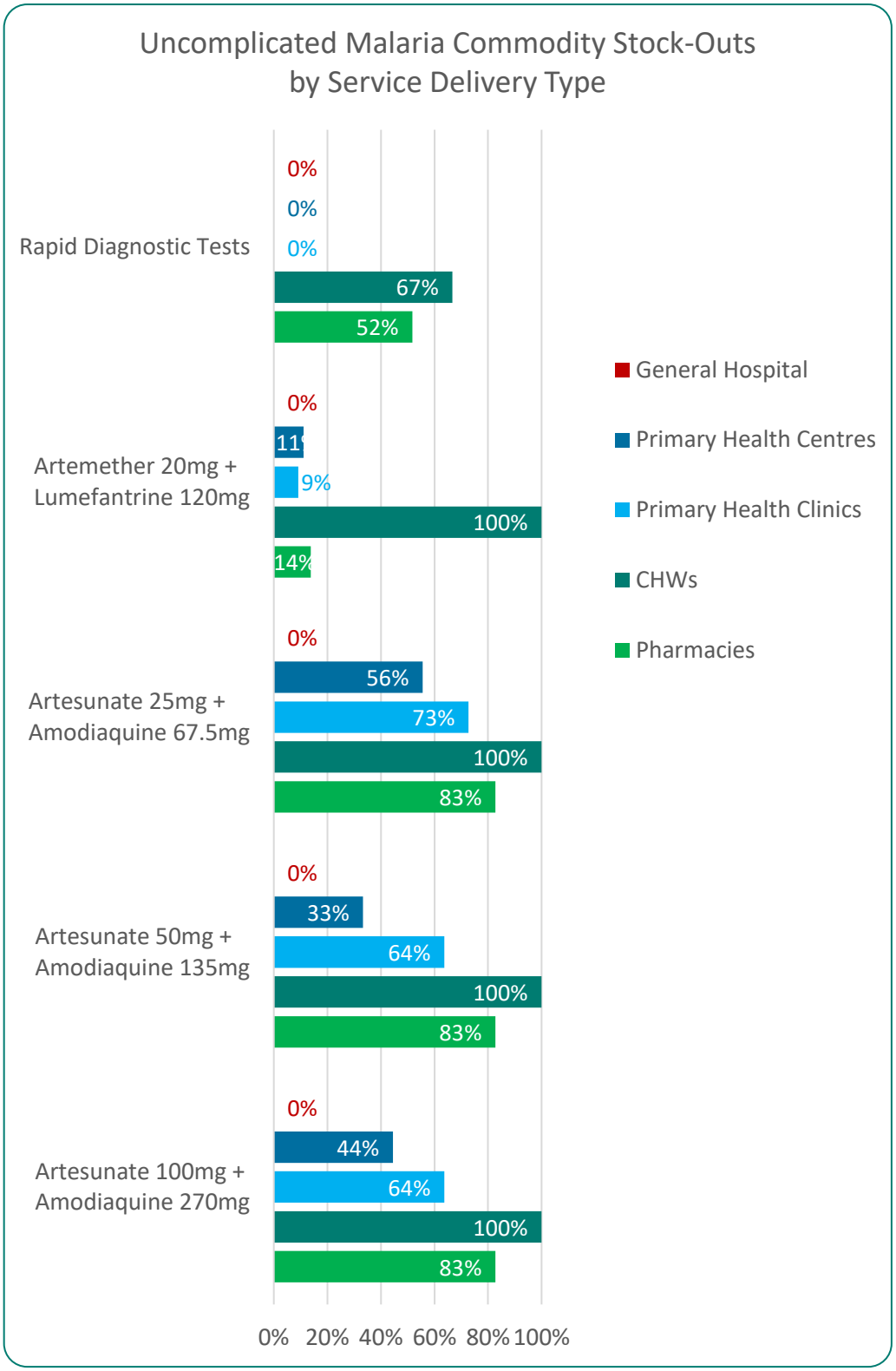



**Figure 7.2.1**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

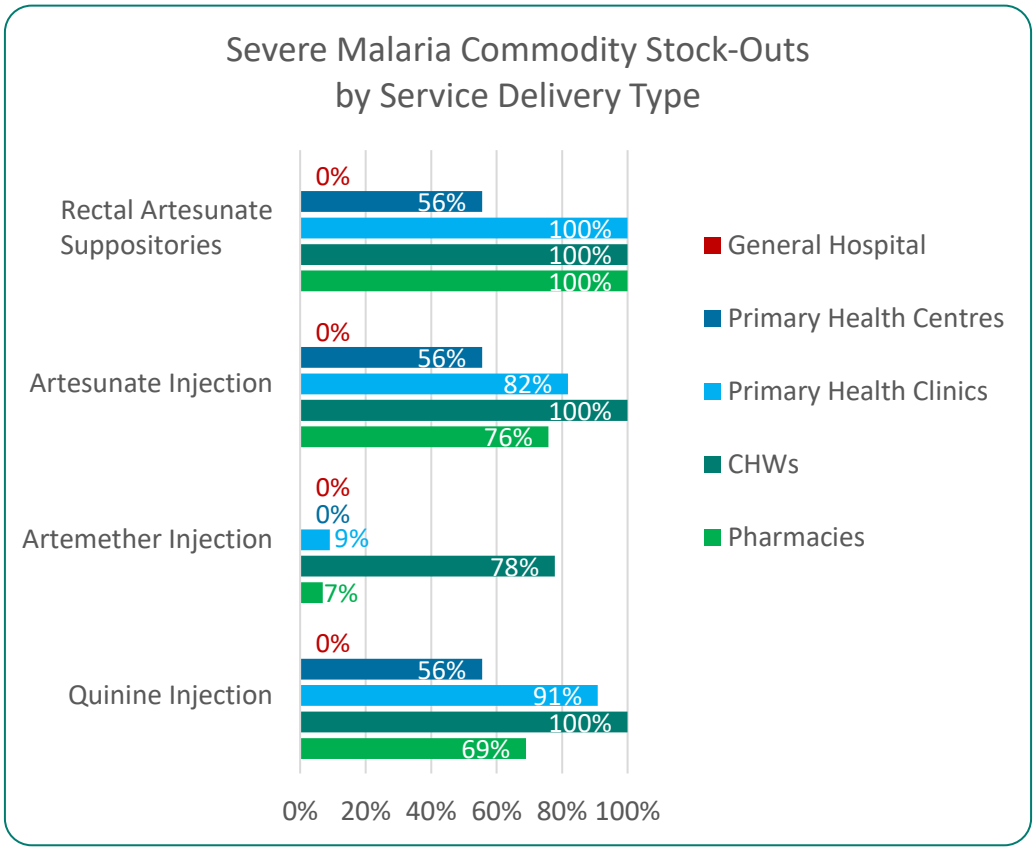



**Figure 7.2.2**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

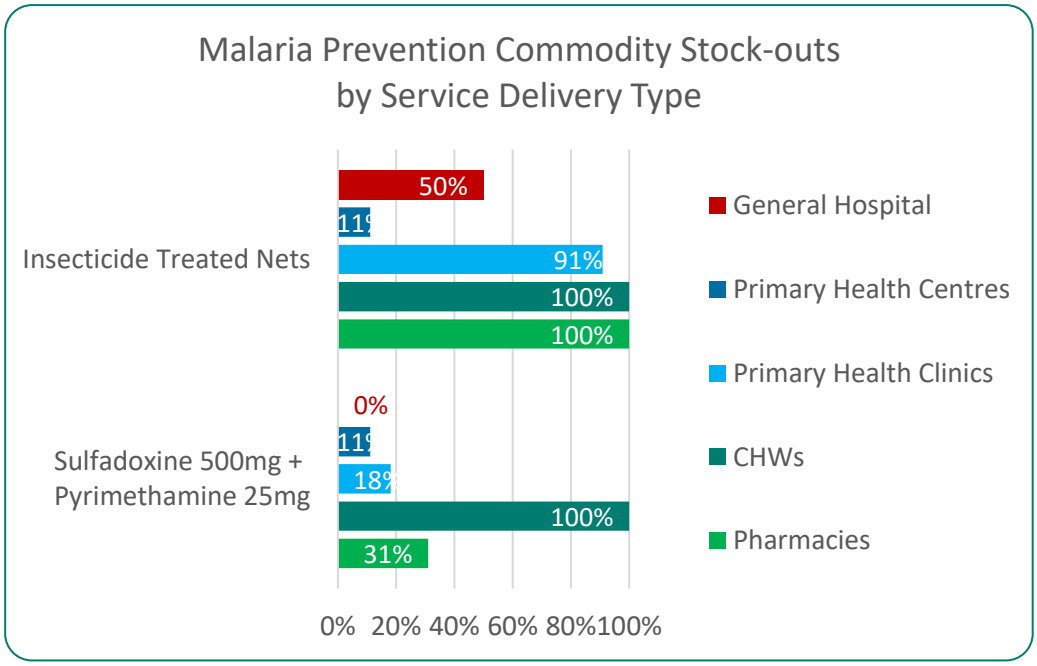



**Figure 7.2.3**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

## 7.3. HEALTH WORKER KNOWLEDGE

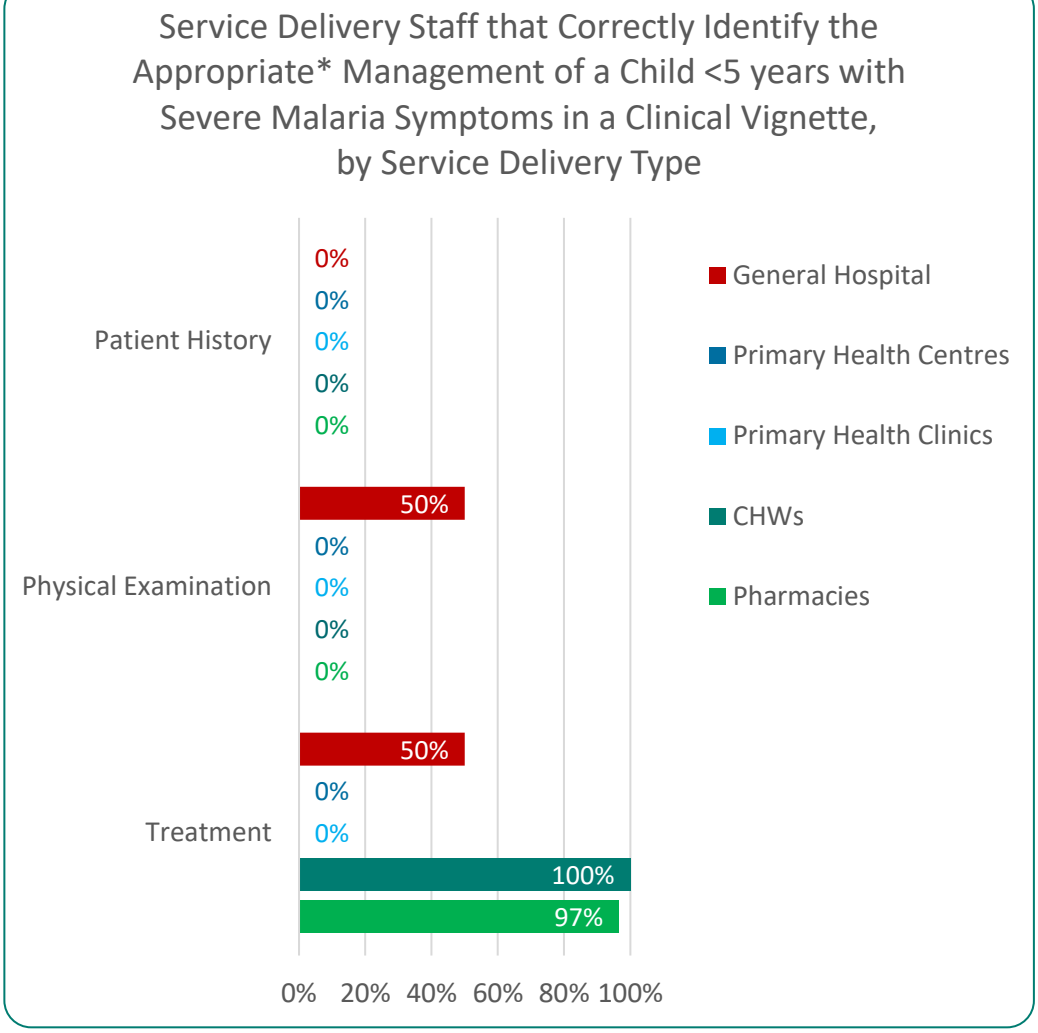



**Figure 7.3.1**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

*Appropriate patient history was defined as enquiries regarding name, age, symptoms, first visit or revisit for same illness, previous prescribed medication for all service delivery types; Appropriate physical examination was defined for community-based care and level I health facilities as checking for general danger signs, temperature measurement, and determining length of fever (given that patients with general danger signs are to be referred to level health facilities for treatment without a malaria test). For level II health facilities correct physical exam was defined the same but with the addition of parasitological testing for malaria. Appropriate treatment was defined as referral to nearest health facility for community-based care with or without pre-referral treatment (first dose rectal artesunate or intramuscular artesunate and first dose of amoxicillin). For level I health facilities this was defined as referral to next level health facility and administration of pre-referral treatment (first dose rectal artesunate or intramuscular artesunate and first dose of amoxicillin). For level II health facilities appropriate treatment was defined as intravenous or intramuscular artesunate for at least 24 hours with or without accompanying antibiotic treatment given that the respondents were not given the result of the parasitological test in the scenario (1). All service delivery types were also permitted to give or not give paracetamol without affecting the outcome of the analysis.

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

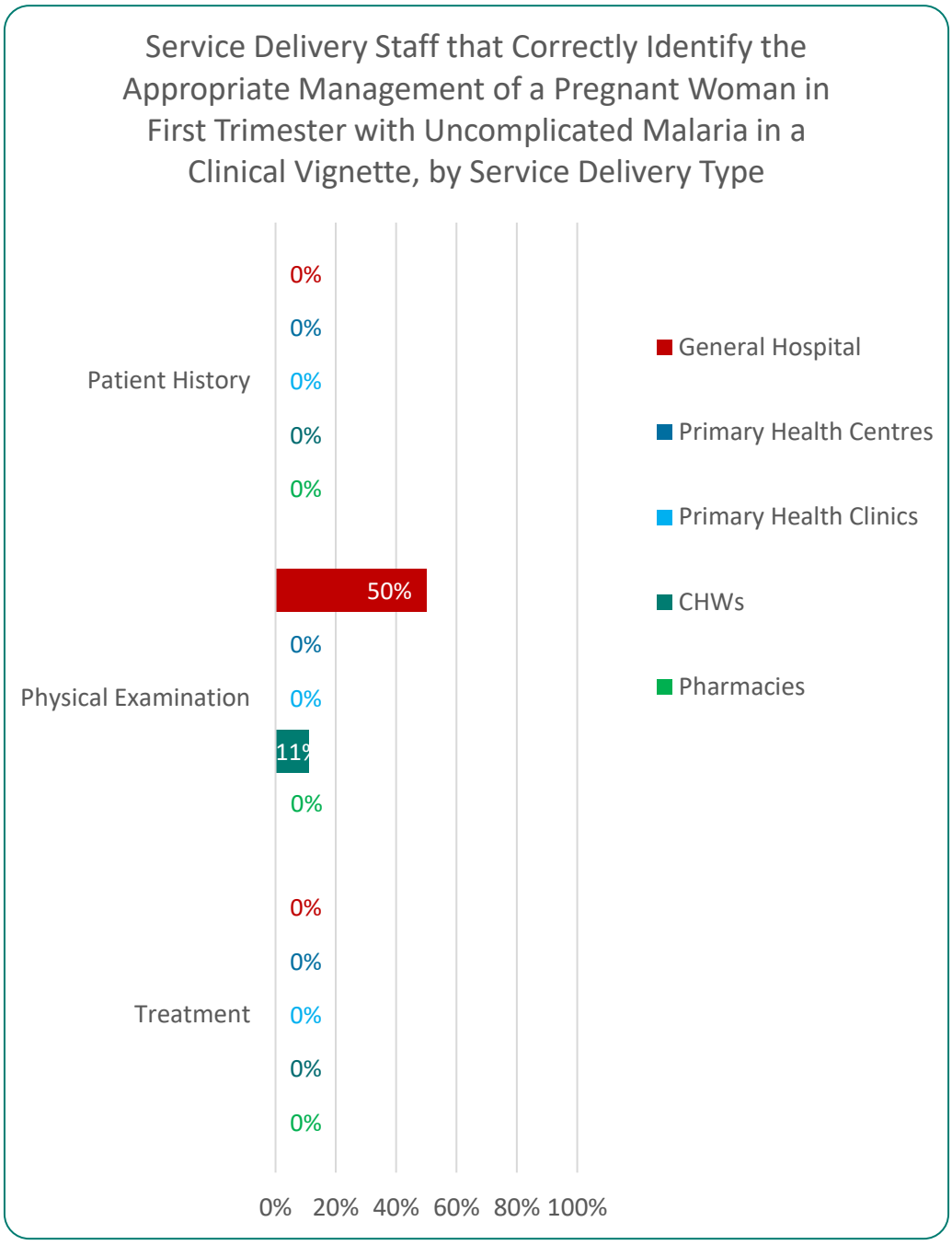



**Figure 7.3.2**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

*Appropriate patient history was defined as enquiries regarding name, age, length of pregnancy, symptoms, first visit or revisit for same illness, and previous prescribed medication, for all service delivery types; Appropriate physical examination was defined for all service delivery types as checking for general and pregnancy danger signs, temperature measurement, determining length of fever, and conducting a parasitological test for malaria. Appropriate treatment for the pregnant woman in her first trimester was defined for all service delivery types as 3 day artemisinin combination therapy (ACT) or quinine tablets (+ clindamycin) for 7 days, with or without paracetamol (1, 2).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

## 7.4. HEALTH SYSTEM SUPPORT

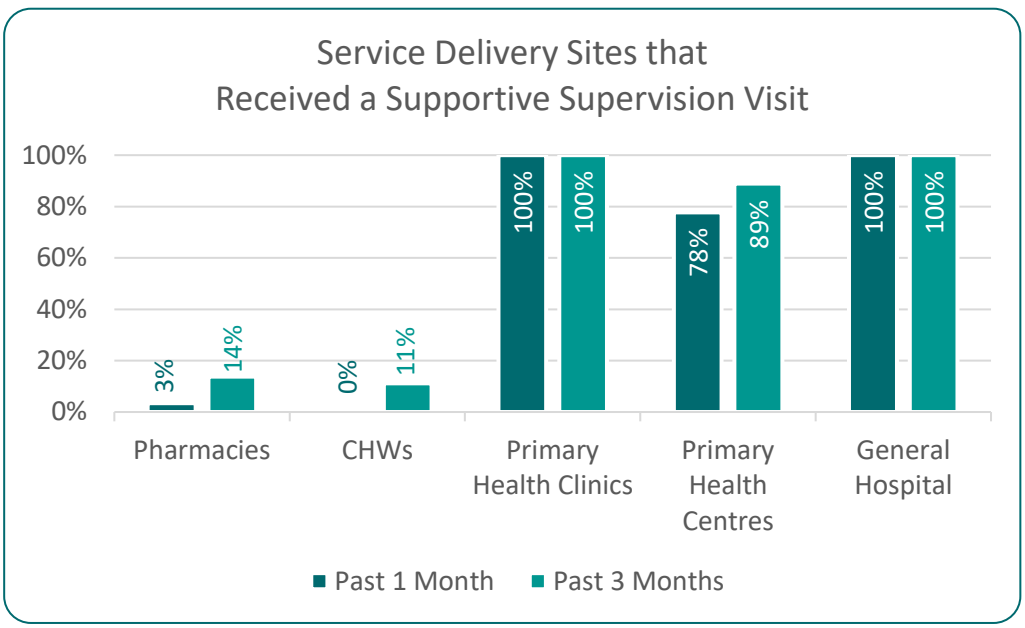



**Figure 7.4.1**

General Hospital (N=2); Primary Health Centres (N=9); Primary Health Clinics (N=11); CHWs (N=9); Pharmacies (N=29).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

| AVERAGE NUMBER OF SUPPORTIVE SUPERVISION VISITS* OF THOSE THAT RECEIVED A VISIT IN THE PAST 3 MONTHS (TO NEAREST VISIT): | |
|---|---|
| GENERAL HOSPITAL: | 4 |
| PRIMARY HEALTH CENTRES: | 5 |
| PRIMARY HEALTH CLINICS: | 9 |
| CHWs: | 2 |
| PHARMACIES: | 1 |

**Figure 7.4.2**

General Hospital (N=2, SD=0.7 visits); Primary Health Centres (N=8,SD=2.8 visits); Primary Health Clinic (N=11, SD= 8.0 visits); CHWs (N=1, SD=N/A visits); Pharmacies (N=4, SD= 0.5 visits).*Monitoring visits in the case of pharmacies.

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

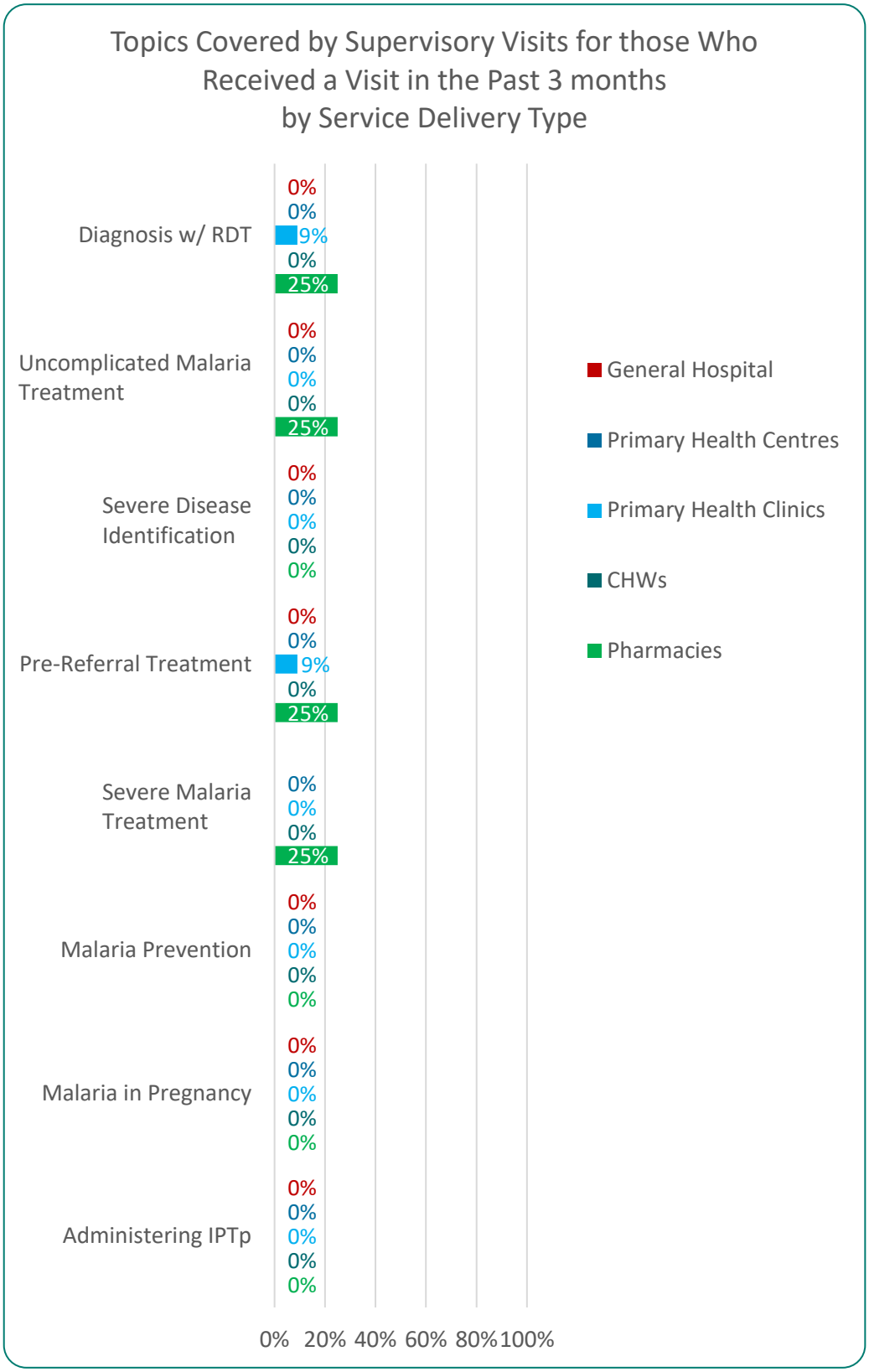



**Figure 7.4.3**

General Hospital (N=2); Primary Health Centres (N=8); Primary Health Clinic (N=11); CHWs (N=1); Pharmacies (N=4).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

| | PROPORTION OF SERVICE DELIVERY SITES THAT WERE DISATISFIED WITH THE SUPERVISION RECEIVED IN THE PAST 3 MONTHS: | |
|---|---|---|
| | GENERAL HOSPITAL: | 0% |
| | PRIMARY HEALTH CENTRES: | 0% |
| | PRIMARY HEALTH CLINICS: | 0% |
| | CHWs: | 0% |
| | PHARMACIES: | 0% |

**Figure 7.4.4**

General Hospital (N=2); Primary Health Centres (N=8); Primary Health Clinic(N=11); CHWs (N=1); Pharmacies (N=4).

Source: Health Service Delivery Site Survey, SuNMaP 2 Longitudinal Study

# 8. SUMMARY

## A. DEMAND

### Households

- Awareness of malaria chemoprophylaxis, including intermittent preventive treatment during pregnancy (IPTp) and seasonal malaria chemoprevention, amongst women of reproductive age was very low at 0% across all age groups (**figure 5.1.1**). However, a high proportion of women of reproductive age could correctly identify fever as a main malaria symptom (90%-91%), mosquito nets for malaria prevention (98%-99%), and that malaria is transmitted via mosquitoes (97%-100%). The equity analysis also showed that amongst women of reproductive age identification of insecticide treated nets (ITNs) for malaria prevention and fever as a main symptom of malaria was fairly equitable across all wealth quintiles (**figure 5.5.1**). The high level of malaria awareness amongst women of reproductive age is positive given that they are a key demographic in terms of achieving coverage of malaria interventions amongst the most vulnerable – pregnant women and children under 5 years old (U5).
- Amongst the households surveyed 68% had at least one ITN (**figure 5.4.5**). However, the average household size was 7 members (**table 4.2**) and the recommendation is for at least one ITN per two people in a household (3).

### Pregnant Women

*Treatment*

- Amongst the pregnant women surveyed, 10% reported having fever in the two weeks previous to the survey (**figure 5.2.1**). However only 29% of pregnant women who had fever received a parasitological test for malaria (**figure 5.4.1**). Of those that sought care (86%) (**figure 5.3.1**), the predominant first points of care were primary health clinics (50%) and primary health centres (33%) (**figure 5.3.4**). Average length of time between fever onset and seeking care was 2 days (**figure 5.3.1**).
- Eighty-six percent of pregnant women with fever took drugs, of which 57% took antimalarials (**figure 5.4.2**). The most commonly reported drug was paracetamol (taken by 67%). For antimalarials, the most commonly reported was "*Other Antimalarial*" (50%) (**figure 5.4.4**). The recommended treatment for pregnant women in Nigeria with uncomplicated malaria is artemisinin-based combination therapy (ACT), of which 0% of pregnant women with fever reported receiving (1).

*Prevention*

- Seventy-six percent of pregnant women slept under an ITN the previous night (**figure 5.4.5**). The equity analysis showed some variation in the proportion of pregnant

women that slept under an ITN across quintiles, with the lowest proportion in the lower-middle wealth quintile (64%), and highest in the middle wealth quintile (89%) (**figure 5.5.2**).

- IPTp had been taken by 60% of pregnant women surveyed in their second or third trimester (**figure 5.4.6**). Amongst those who had taken SP the average number of doses was 1.2, below the recommended minimum of 3 (1).

### Children Under 5 Years Old

*Treatment*

- The percentage of children U5 with fever in the two weeks previous to the survey was 9% (**figure 5.2.1**). This was comparative to the burden seen in pregnant women (10%). The equity analysis (**figure 5.5.1**) showed that the percentage of children U5 with fever was fairly comparable across wealth quintiles (6%-14%).
- Amongst children U5 with fever in the two weeks previous to the survey, 14% received a parasitological test (**figure 5.4.1**), lower than the 29% of pregnant women with fever that were tested. Equity analysis showed that despite a similar likelihood of fever in children U5 (**figure 5.5.1**), there was a higher coverage of parasitological testing in the upper wealth quintile (36%) compared to the other wealth quintiles (0%-17%) (**figure 5.5.2**).
- Ninety-one percent of children U5 with fever sought care (**figure 5.3.2**). Careseeking for children U5 with fever was evenly distributed between sexes (**figure 5.3.3**). Of those that sought care, 69% visited a pharmacy as their first point of care (**figure 5.3.4**). Average length of time between fever onset and seeking care was 1.3 days, slightly lower than that of pregnant women (2 days) (**figure 5.3.2**).
- Ninety-four percent of children U5 with fever received drugs, 69% of which took an antimalarial (**figure 5.4.3**). The most commonly reported drug taken was paracetamol (79%) (**figure 5.4.4**). For antimalarials, the most commonly reported was "*Other Antimalarial*" (25%); only 13% received an ACT, the recommended treatment for children U5 with uncomplicated malaria (1).

*Prevention*

- Seventy-six percent of children U5 had slept under an ITN the previous night (**figure 5.4.5**). Furthermore, the equity analysis showed that the proportion of children U5 that slept under an ITN the previous night to the survey was fairly equitable across all wealth quintiles (73%-81%) (**figure 5.5.2**).

## B. SUPPLY

### Treatment

- The survey found lower availability of parasitological testing services amongst community-based care providers, particularly for pharmacies (**figure 7.1.1**). This correlates with the high percentage of stock-outs reported of rapid diagnostic tests (RDTs) amongst community-based care providers (**figure 7.2.1**). Given that pharmacies tended to be the first point of care in the communities surveyed, particularly for children (**figure 5.3.4**), this provides a potential explanation for the lower level of parasitological testing observed amongst children U5 with fever in the two weeks preceding the survey.
- Artemether-Lumefantrine is the primary artemisinin-based combination therapy (ACT) recommended in Nigeria, with Artesunate-Amodiaquine as an alternative (1). Stock-outs of Artemether-Lumefantrine were predominantly focused amongst community health workers (CHWs) (**figure 7.2.1**). However, there was a high percentage of stock-outs reported for all concentrations of Artesunate-Amodiaquine amongst level I health facilities and community-based care providers. Stock-outs of pre-referral treatment and treatment for severe malaria treatment were predominantly focused amongst level I health facilities and community-based care providers (**figure 7.2.2**), apart from Artemether injections, where stock-outs were focused predominantly amongst CHWs only. To note that the 4$^{th}$ Edition of the National Guidelines for Diagnosis and Treatment of Malaria indicates that pre-referral treatment and severe malaria treatment is not provided as part of community-based care, although none of these providers reported they offered these services (**figure 7.1.2**), some did have stocks of these commodities (**figure 7.2.2**) (1).
- Overall, surveyed service delivery staff could not correctly identify the appropriate management of a child U5 with severe malaria symptoms and a pregnant woman with uncomplicated malaria in hypothetical scenarios (clinical vignettes) (**figure 7.3.1** and **figure 7.3.2**). For the hypothetical scenario involving a child U5 with severe malaria, no service delivery sites correctly identified how to collect patient history, conduct a physical examination, and provide appropriate treatment. However, 50% of level II health facilities correctly identified how to conduct the physical examination and identified the appropriate treatment. Furthermore 100% of CHWs and 97% of pharmacies identified the appropriate treatment for community-based care in accordance with guidelines (**figure 7.3.1**) (1). For the scenario involving uncomplicated malaria in a pregnant woman in her first trimester, no service delivery sites correctly identified the steps across all three areas of patient history, physical examination, and appropriate treatment (**figure 7.3.2**). However, 50% of level II health facilities and 11% of CHWs correctly identified the procedures required for the physical examination (**figure 7.3.2**).
- All service delivery levels reported receiving supervision in the last 3 months. Supervision was fairly high amongst level I and level II health facilities, with 100% of

primary health clinics, 78% of primary health centres, and 100% of general hospitals receiving a supportive supervision visit in the month previous to the survey. Whereas only 11% of CHWs and 14% of pharmacies received a visit in the three months preceding the survey. The focus on malaria topics within supervision visits was limited (**figure 7.4.3**). Diagnosis with a rapid diagnostic test (RDT), uncomplicated malaria treatment, pre-referral treatment, and severe malaria treatment being the topics discussed for 25% of pharmacies that received a monitoring visit. For primary health clinics, 9% reported receiving supervision on RDT diagnosis and uncomplicated malaria treatment (**figure 7.4.3**). Whereas none of the primary health centres, general hospitals, and CHWs reported receiving supervision on malaria topics. Of those service delivery sites that received a supervision none were dissatisfied with the supervision received (**figure 7.4.4**).

### Prevention

- IPTp was predominantly reported as being delivered at level I and II health facilities in line with guidelines (**figure 7.1.3**) (1). However, there were reported stock outs of SP at primary health centres (11%) and clinics (18%) (**figure 7.2.3**).
- ITNs were generally provided as part of the services offered at level I and level II health facilities during the time of survey but were largely not being distributed through community-based care providers (**figure 7.1.3**). However, there were reported stock-outs of ITNs at most level I and level II health facilities included in the survey (**figure 7.2.3**), this was also highlighted as an issue by district officials. Furthermore, 100% of community-based providers, including private sector pharmacies did not have ITNs in stock (**figure 7.2.3**).

## 9. REFERENCES


1. National Guidelines for Diagnosis and Treatment of Malaria. Fourth ed. Abuja, Nigeria: Federal Ministry of Health; 2020. p. 1-79.
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