Introduction
The purpose of the malaria bulletin is to present the current situation of malaria in the state, encourage the use of routine malaria data for decision making, strengthen malaria surveillance, and help monitor key malaria indicators over time.

The information in this bulletin is from all public health facilities in 44 LGAs in Kano State, comparing the 20 NSTOP Malaria Frontline Project implementing LGAs with the remaining 24 non-implementing LGAs in the state. The implementation LGAs include: Bichi, Dala, Dambatta, Dawakin-Tofa, Doguwa, Fagge, Gezawa, Gwale, Gwarzo, Kano Municipal, Kiru, Kumbotso, Makoda, Nassarawa, Takai, Tarauni, Tofa, Tsanyawa, Ungogo and Wudil.

The 2018 Projected population for Kano state is 13,854,062
For this reporting period, the malaria burden for the state is as follows:
- Total OPD cases: 505,098
- Total fever cases: 211,037
- Total fever cases tested for malaria: 204,535
- Total fever cases tested positive for malaria: 122,483

Fever cases constituted 42% of OPD attendance; 97% of fever cases were tested for malaria; 60% of fever cases tested positive for malaria; malaria cases formed 24% of total OPD cases.

Note:
*Q2 will refer to quarter 2 of 2018 throughout the document.
**All the data below represents all the public health facilities in the 44 LGAs in Kano state.
***Data presented in this bulletin is as at 31st July 2018
*****State population figure from the National Population Commission (FGN Gazette No. 2 Vol. 96)
Malaria Diagnosis (RDT and Microscopy)

Figure 1 represents the proportion of fever cases tested for malaria with RDT and microscopy for Q2, comparing implementing and non-implementing LGAs.

- The proportion of fever cases tested has remained steady from 99% to 100% in the implementing LGAs while in the non-implementing LGAs, fever cases tested steadily increased from 93% in April to 96% in June. Averagely, 99% of all fever cases reported in the implementing LGAs was tested using either RDT or microscopy compared to 95% in the non-implementing LGAs. Supportive supervision and on-site mentoring of healthcare workers contributed to improved adherence to national guidelines in testing all fever cases and improved commodity supply. Emergency request is made for some LGAs to avoid total stock out.

![Graph showing fever cases tested for malaria with RDT and microscopy in Kano State, Q2 2018.](image)

**Figure 1a. Fever cases tested for malaria with both RDT and microscopy in Kano State, Q2 2018**
- The proportion of fever cases tested by microscopy remains low with an average of 6% and 2% in the implementing and non-implementing LGAs respectively. The increase to 7% and 3% in the implementing and non-implementing LGAs respectively in April could be due to stock out of RDTs in secondary health facilities. Most of the health facilities in the state are PHCs which do not conduct microscopy.

- The proportion of fever cases tested by RDT is much higher than that using microscopy across all the LGAs in Q2 with an average of 99% and 93% in both the implementing and non-implementing LGAs respectively.

Overall, significant proportion of fever testing was done using RDT in Q2 in both the implementing and non-implementing LGAs. This is because facilities receive RDTs free from the national/state programs but not laboratory reagents for malaria microscopy.
**Test Positivity Rate**

Test positivity rate (TPR) is the proportion of fever cases that tested positive for malaria.

Figure 2 represents, TPR by RDTs and microscopy for both implementing and non-implementing LGAs.

- The TPR by microscopy is higher than by RDT in the implementing LGAs. In the non-implementing LGAs the TPR is lower by microscopy in May. Continuous on-the- job training was provided to laboratories and health workers on correct procedure for RDT and result interpretation in some LGAs. Overall, TPR by RDT showed a consistent increase from April to June (implementing LGAs: 49% to 62%; non-implementing LGAs: 61% to 69%) which is in keeping with the malaria reporting incidence in the state due to high transmission season. TPR by microscopy also showed an increase from April to June for both implementing and non-implementing LGAs (implementing LGAs: 59% to 72%; non-implementing LGAs: 61% to 80%), there is a gradual increase April to May but a marked increase in June among implementing LGAs.

- It is very important to conduct trainings on standard microscopy procedure and refresher trainings on RDTs for laboratory personnel to maintain good quality control and confidence in laboratory results.

![Figure 2](image_url)

**Figure 2. Fever cases tested positive for malaria by RDT and microscopy in Kano State, Q2 2018**

**Malaria Cases**

Figure 3 represents the proportions of confirmed versus clinical (presumed and not confirmed by testing) malaria cases for all public health facilities in Kano State for the implementing and non-implementing LGAs.

- The proportion of malaria cases confirmed by using microscopy or RDTs in the state shows an increase from 49% to 59% and 61% to 69% in the implementing LGAs and non-implementing LGAs respectively.

- The proportion of clinically diagnosed malaria cases in the state is generally very low with an average of 1% and 5% in the implementing LGAs and non-implementing LGAs respectively.
The national malaria program does not recommend clinical diagnosis of malaria.

**Figure 3. Malaria cases (confirmed by microscopy or RDT and clinical) in Kano State, Q2 2018**

**Malaria Treatment**

Figure 4 represents the proportion of lab confirmed malaria cases that received Artemisinin-based Combination Therapy (ACTs) in the implementing and non-implementing LGAs for Q2, 2018.

- The proportion of confirmed malaria cases that received ACTs in the implementing LGAs remained steady at 100% throughout the period. However, the proportion of confirmed malaria cases given ACT in the non-implementing LGAs were 96% and 97% in April and May respectively but there are data quality issues in June greater than 100%. This means majority of the clinicians adhere to the national guidelines. Less than 20% of health facilities reported stock out of ACT for seven consecutive days.
Figure 4. Treatment with ACTs for confirmed malaria in Kano State, Q2 2018

Intermittent Preventive Treatment for Pregnant Women

Figure 5 represents the proportion of pregnant women who received first dose of Intermittent Preventive Treatment (IPTp1) during their first Antenatal Care (ANC) and those who received second dose of IPTp (IPTp2) during their ANC in the implementing and non-implementing LGAs for Q2, 2018.

- The proportion of women receiving IPTp1 (first dose of IPT at first ANC visit) increased from 84% in April to 88% in June in the implementing LGAs, though a slight decline to 81% occurred in May. In the non-implementing LGAs IPTp1 uptake declined from 58% in April to 55% in May and then increased to 57% in June. Averagely IPTp1 uptake is 84% in the implementing LGAs compared to 57% in the non-implementing LGAs. IPTp2 uptake average (implementing LGAs: 65%, non-implementing LGAs: 44%) is much lower than IPTp1. There is need to mobilize pregnant women to commence ANC early to benefit from receiving at least 3 doses of IPTp as recommended by the national guideline. There was no SP stock out during the period in any of the LGAs.
Figure 5. Pregnant women receiving IPTp1 and IPTp2 in Kano State, Q2 2018

The consistently lower proportion of IPTp2 compared to IPTp1 is probably due to late commencement of antenatal care by pregnant women. And probably some pregnant women in the same cohort are being missed for IPTp2

**Long-Lasting Insecticidal Nets (LLINs)**

Figure 6 represents the proportion of pregnant women who received LLINs in the implementing and non-implementing LGAs for Q2 of 2018.

- The proportion of pregnant women who received LLINs is highest in April with 9% after which there was a decline to 6% and 7% in May and June respectively in the implementing LGAs. Similar pattern was recorded in the non-implementing LGAs.

The trend in LLIN distribution among pregnant women is dependent on availability of LLINs.
The proportion of children under age 5 who received LLINs on completion of immunization shows a similar pattern like that of pregnant women receiving LLINs. Averagely, 6% and 5% of children under 5 received LLIN in the implementing and non-implementing LGAs respectively. This further buttress the trend being dependent on availability and accountability of LLINs and has programmatic implications. When compared to the proportion of total under 5 children (based on 2006 population census projection for 2018) in the state, less than 1% received LLINs. Though not all under-five born during the period under review would have been taken to health facilities for immunization. This is a fraction of those in age group eligible for immunization and LLIN.

Figure 6. Pregnant women and children under age 5 receiving LLIN in Kano State, Q2 2018
Summary

**Identified Problems**

- LLIN coverage among pregnant women and children under age 5 is very low.
- IPTp uptake is low in the non-implementing LGAs not meeting the national target of 85%.
- IPTp2 coverage is still lower than the IPTp1.
- Data quality issues (Indicators greater than 100%) in the non-implementing LGAs

**Recommendations**

- Exploration of other differential diagnosis of fever should be encouraged among clinicians.
- **The facility, ward and LGA level system of data validation should be adapted by the whole state to improve capacity of the HCWs in terms of improved data quality.**
- SMEP should continue to actively engage Hospitals Management Board on improved data quality, reporting and use for decision making in general hospitals.
- SMEP should continue to sensitize healthcare workers on adherence to national diagnosis and treatment guidelines to improve quality of services.
- There is need to improve IPTp uptake, especially IPTp2, by demand creation to enable early access to ANC services by pregnant women and uninterrupted availability of SPs.
- To address the gaps in LLIN coverage, the state government and partners should urgently review and enforce accountability framework and conduct supply based on need.

**Needed Support from State**

- Consistent supply of malaria commodities to health facilities
- Continue to improve malaria activities in the state, especially supportive supervision
- Release of budgeted fund for malaria activities in the state
- Access funds allotted for malaria activities under the Saving One Million Lives Initiative

**Malaria Elimination Program Updates**

The following activities have been implemented by the SMEP with the support of partners working on malaria elimination; the CDC/AFENET/NSTOP Malaria Frontline Project, WHO, HSDF, CHAI, CRS, MC, SFH, MSH, MNCH2, BMGF/DG and Malaria consortium in Q2 2018:

- Continued supervisory visits and mentoring of Malaria NSLOs and RBMs on malaria interventions.
- Adaption of ward level system of data validation in all non-implementing LGAs after a 3 months pilot in Dawakin-Tofa LGA and subsequent adoption by all implementing LGAs
- Production and distribution by NSTOP malaria frontline project of 2016 Annual and Q1 to Q3 2017 Kano State Malaria Bulletin
- Supported the Catholic Relief Services in the conduct of monitoring and supervisory visit to some selected GF supported health facilities with data quality issues in the state
- Conducted series of refresher trainings targeted to record officers on data entry into the DCTs in both PHCs and GHs and clinicians were reoriented on malaria case management especially discouraging treatment of RDT negative cases with ACTs and use of monotherapy for the treatment of malaria cases.
- SMEP driven integrated supportive supervision visits to health facilities.
- Draft and finalization of the 2018 State Malaria Annual Operational Plan
- Supportive supervision of IPDs conducted.
- Attended and actively participated in Biannual Zonal Data Review/Capacity Building for the NWZ supported by WHO
- Conducted Finished Pharmaceutical Products (FPPs) Sampling for QA/QC activities in collaboration with CRS/NMEP through NAFDAC (ACTs, SPs and Artesunate Injection)
- Capacity strengthening of Community Pharmacists(CPs) and Patent Proprietary Medicine Vendors(PPMVs) in collaboration with NMEP & PCN
- Participated in quarterly Kano LMCU PSM TWG meetings
- Attended and actively participated in the Dissemination of GF malaria NFM Project implementation in the Nigerian Private Sector supported by SFH
- Conducted quarterly Supportive Supervisory visits to PPMVs on Malaria RDT use and correct malaria diagnosis supported by CHAI
- Continued Supportive Supervisory visits to Health facilities on malaria commodities PSM, RDT use and case management
- Conducted House to House Supportive Supervision on LLIN utilization to 1350 HHs in 10 LGAs across 30 wards supported by SOML P4R
- Conducted malaria Data Validation meeting with LGA malaria Focal Persons(RBMS) supported by Malaria consortium

This bulletin was produced by the State Malaria Elimination Program (SMEP) in collaboration with the Malaria Frontline Project of the U.S. Centers for Disease Control and Prevention for its technical support to produce this bulletin
Kano State Malaria Elimination Program Organogram
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<th>S/N</th>
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<td>HMIS reporting rates</td>
<td>Completeness of reporting</td>
<td>Number of monthly reports received from health facilities within stipulated time period</td>
<td>Number of health facility reports expected</td>
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<td>Timeliness of reporting</td>
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<td>Total number of fever cases</td>
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<td>5.</td>
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<td>7.</td>
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<td>Malaria in pregnancy</td>
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<td>Total number of pregnant mothers attending their first antenatal visit</td>
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<td>Routine Immunization (RI) schedule</td>
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