

Original Article

Knowledge and practices of community drug distributors and health facility workers during the 2021 spot-check survey of seasonal malaria chemoprevention in Adamawa and Yobe states amid the COVID-19 pandemic.

Jose P. Ambe,¹ Bello A. Ibrahim,¹ Asheikh M. Masu,¹ Saleh A. Saidu,² Abdulhamid M. Gulani,³ Ibrahim Musa,⁴ Emmanuel H. Malgwi,⁵ Francis F,⁶ Judah Nwaozuzu,⁷ Ogbulafor N,⁸ Shekarau Emmanuel,² L Ozor,⁹ I Ibisi,⁹ A Oyefabi,⁹ Sadiq A,⁹ Iniabisi N. Nglass⁹

¹Department of Paediatrics, College of Medical Sciences, University of Maiduguri, ²Borno State Ministry of Health, Maiduguri, ³Yobe State Ministry of Health, Damaturu, ⁴Department of Biological Sciences, University of Maiduguri, ⁵Hill-Top Model School, Maiduguri, ⁶Adamawa State, Ministry of Health, Yola. ⁷Djente Pharmacy and Global Ventures, Damaturu, Yobe State, ⁸National Malaria Elimination Programme (NMEP), Federal Ministry of Health, Federal Secretariat Abuja. ⁹WHO, Nigeria.

Correspondence to: Jose P. Ambe, Department of Paediatrics, College of Medical Sciences, University of Maiduguri, Maiduguri, Borno State, Nigeria. Email: jpambe58@unimaid.edu.ng. Phone: +2348033796463

Abstract

Background: Seasonal Malaria Chemoprevention (SMC) is recommended by the World Health Organisation (WHO) and has become a critical strategy to prevent malaria in high-transmission areas during the rainy season. The governments of Adamawa and Yobe States in Nigeria have implemented the SMC campaign with support from Community Drug Distributors (CDDs) and Health Facility (HF) workers in Adamawa and Yobe states. **Objectives:** This study was conducted to assess the practices and knowledge of CDDs and health workers in the designated health facilities regarding COVID-19 Infection Prevention and Control (IPC). **Methodology:** Pre-tested, structured questionnaires were used to obtain information from CDDs and HF workers on SMC guidelines and COVID-19 IPC protocols. Trained assistants conducted the interviews, and the data were analysed using IBM SPSS version 23. **Results:** A total of 290 CDDs (169 in Adamawa, 121 in Yobe) and 196 HF informants (115 in Adamawa, 81 in Yobe) participated. Many CDDs did not have formal medical training, and most HF workers were CHEWs. Unfortunately, very few HF respondents could correctly outline the steps for assessing febrile children. Most CDDs employed COVID-19 IPC measures; however, physical distancing was often not observed, especially in Yobe State, due to cultural reasons and because administering the SPAQ requires proximity to the child. **Conclusions:** CDDs and HF workers had observed most of the COVID-19 IPC during the SMC campaign. However, there is a need for increased training of HF workers on proper information dissemination during public health emergencies.

Keywords: Children, Covid-19, Drug Distributors, Health Workers, Malaria, Seasonal Malaria Chemoprevention.

Introduction

Seasonal Malaria Chemoprevention (SMC) is one of the strategies recommended by the World Health Organisation (WHO) for the control and elimination of malaria. ^{1,2} SMC is a complete chemopreventive treatment course with a fixed-dose combination of sulfadoxine-pyrimethamine and amodiaquine (SPAQ) given at monthly intervals to children aged 3–59 months during the peak period of malaria

transmission (usually from July to October) with distribution cycles 28–35 days apart for 4 months. ^{3,4} The delivery of the medication is primarily door-to-door in most countries, and this strategy has significantly improved coverage in the areas where the exercise was conducted. SMC is routinely used in some Sahel states in northern Nigeria. The spot-check survey was introduced to assess the

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implementation of the programme, to ensure that the operational guidelines, in particular the methodological guide and the procedures, planning, and micro-planning documents, are followed and applied by all at different stages of the implementation process of the SMC campaign.⁵⁻⁸ The spot check was able to identify good practices, lessons learnt, and areas of weakness for which recommendations were made to strengthen SMC implementation in the country. The implementation of SMC involves several steps, one of which is the training and engagement of community drug distributors (CDDs). These individuals, often selected from within the community, undergo comprehensive training to administer the antimalarial drugs properly.^{3,4} The CDDs' knowledge, commitment, and proximity to the communities they serve make them an invaluable asset, especially during a time when movement restrictions pose challenges to accessing healthcare facilities. This survey was conducted to assess the practice and knowledge of the CDDs and the health workers in the designated health facilities regarding COVID IPC during SMC campaigns.

Materials and methods

This is a mixed-method (quantitative and qualitative) study in which two sets of structured questionnaires were developed, pre-tested, and validated in some communities in Borno State in 2018 when SMC was carried out. The same questionnaires were then used in Adamawa and Yobe States. Adamawa has 21 Local Government Areas (LGAs), while Yobe has 17 LGAs. Specific LGAs in either state were covered in a rotatory fashion during each month of the SMC cycle until all the LGAs were covered for Adamawa State, except Michika and Madagali, due to insecurity. In Yobe, 4 LGAs were visited during each cycle; they had 3 SMC cycles, while only 4 LGAs had the 4th SMC cycle due to logistical reasons. Four LGAs were not visited during the SMCs because of insecurity (Geidam, Bursari, Gujba, and Yunusari).

In Adamawa, 169 Community Drug Distributors (CDDs) and 115 Health Facilities (HFs) informants were interviewed, while in Yobe state, 121 CDDs and 81 HFs were interviewed. Three CDDs were interviewed, and 1-2 HFs were visited per day each, making a total of 39-44 CDDs and 26-30 HFs for each cycle in Adamawa and 24-34 CDDs and 17-22 HFs in Yobe state, respectively. The survey was for 3 days during each cycle; the CDDs and the HFs were in the selected community.

Ethical considerations

Ethical approval was not required for this programmatic survey, as this is part of the SMC programme implementation.

Respondents are informed of the nature of the survey, benefits, and risks during the COVID-19 pandemic. The survey was conducted according to the existing National Guidelines on COVID-19 during all stages of survey activities, training/workshops for data collectors, meetings, and data collection – including consent taking and interviews. The general guiding principle was to protect all study participants and assessment personnel from infection, including the CDDs, research assistants (RAs), and community members in assessment locations. Measures taken during survey activities included social distancing (maintaining two metres), appropriate use of face masks, frequent hand hygiene, and disinfection of equipment. Operational guidance for implementing SMC in the context of COVID-19, developed by the RBM Partnership, was provided.⁹

Results

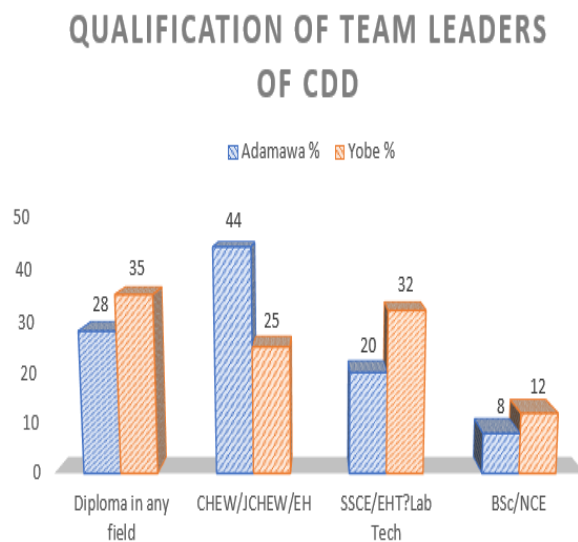
There were 169 CDDs and 115 health facilities in Adamawa, while 121 CDDs and 81 health facilities in Yobe State were surveyed. Only 44% and 25% of the CDDs in Adamawa and Yobe states, respectively, have studied medical-related courses. Figure 1 shows the qualifications of the CDDs in both states.

Of the CDDs, 50% in Adamawa and 22% in Yobe State adhered to the infection prevention and control (IPC) protocol of COVID-19 during the SMC 2021 cycles. Specifically, in Yobe state, 56% of the CDDs washed their hands, wore face masks, and used hand sanitiser but did not observe the recommended physical distance from the carers.

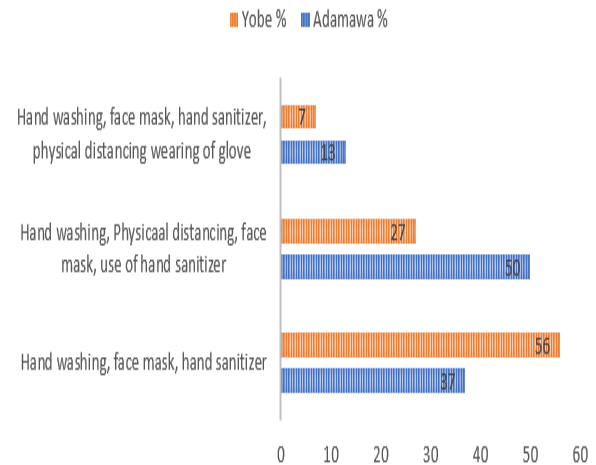
All the CDDs remove their face masks after their day's job and discard them. The messages given by the CDDs to the carer were not complete, as seen in Figure 4, where the majority said SMC is safe, followed by those that said if a child becomes very sick after SMC, carers should take the child to the health facility.

Regarding adverse drug reactions (ADR), 47-59% of the CDDs know what ADR is all about (Figure 5).

Many of the health workers (48-81%) in the designated SMC HFs were CHEW/JCHEWs, followed by nurses/midwives and CHOs, as shown in Figure 6. Males account for 54% and 56% of the HF respondents in Adamawa and Yobe, respectively.

FIGURE 1: QUALIFICATION OF TEAM LEADERS

CHEW = Community Health Extension Worker;
 JCHEW = Junior Community Health Extension Worker;
 SSCE = Senior Secondary School Certificate;
 BSc = Bachelor of Science;
 NCE = National Certificate in Education;
 EHT = Environmental Health Technician.

PERSONAL OBSERVATION OF THE CDD DURING SMC**FIGURE 3: CDD'S PRACTICE OF DISPOSING OF USED FACEMASKS.**

During COVID - 19, what did you do with the face mask

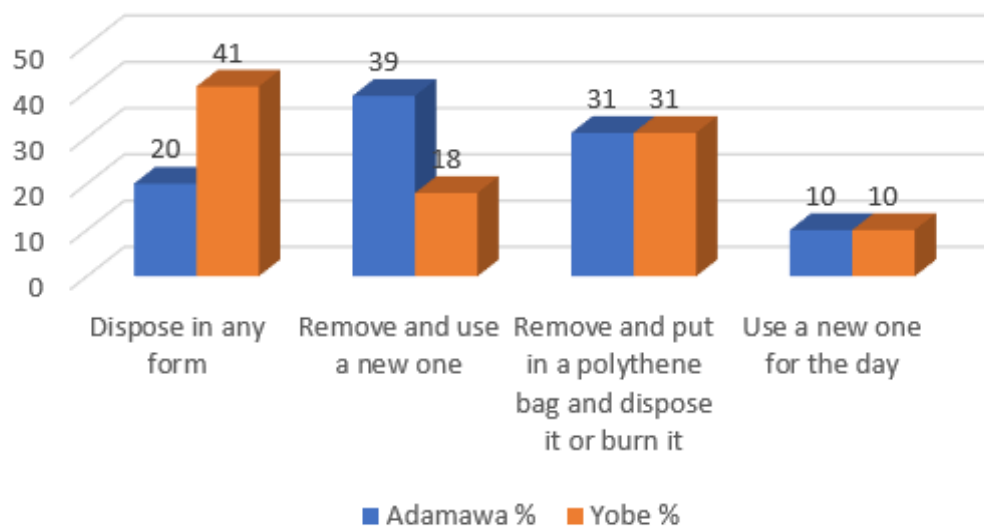
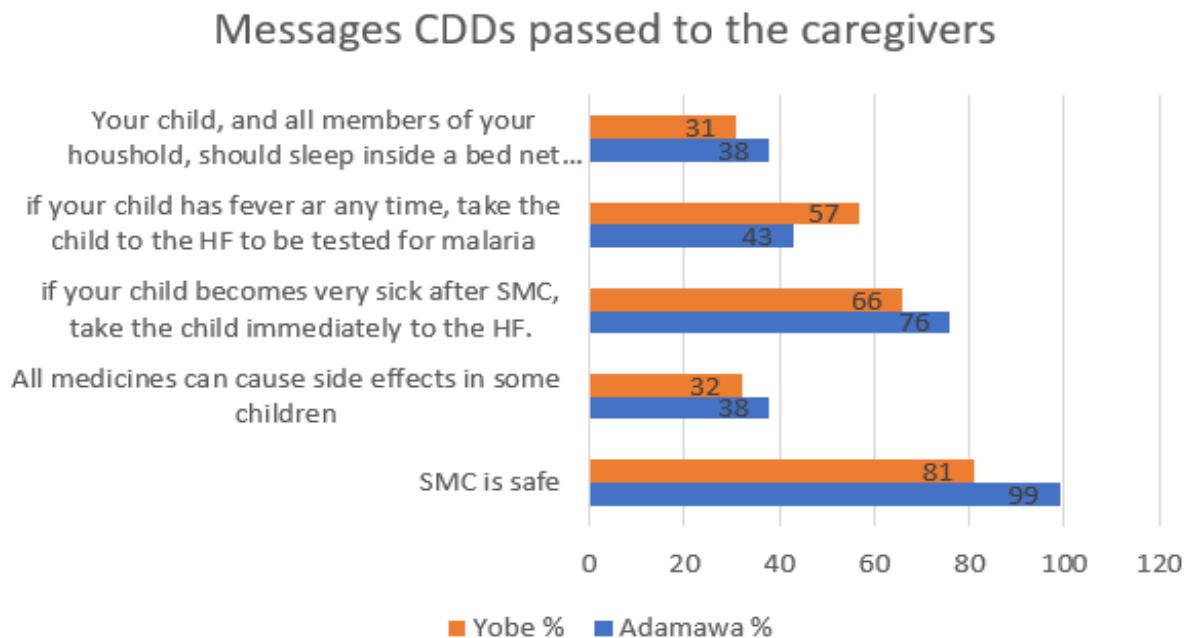


FIGURE 4: MESSAGES PASSED TO CARERS



Most of the health workers (HWs) have been working for 1–5 years in the health facilities (61% in Adamawa and 54% in Yobe States); those who have been working for 6–10 years in the facility are 22–27%, while the remaining HWs have been there for more than 10 years.

Whenever a child comes to an HF with a very high temperature, most health workers in both states will just take a brief history, then check the temperature, pulse rate, and respiratory rate (TPR), examine the child, perform mRDT, and, if positive, treat for malaria. Very few did the right thing in both states

(18% in Yobe, 3% in Adamawa), such as taking history, TPR, examining, tepid sponging, weighing the child, and giving paracetamol injection if the temperature is too high, doing mRDT, and if positive, giving ACT. Details are shown in Figure 7.

All HFs test for malaria parasitaemia using either mRDT or microscopy; in Adamawa state, 37% use mRDT and 63% use microscopy. In the Yobe state, 17% use both mRDT and microscopy, while 64% use only mRDT.

FIGURE 5: CDD'S KNOWLEDGE OF ADVERSE DRUG REACTION (ADR)

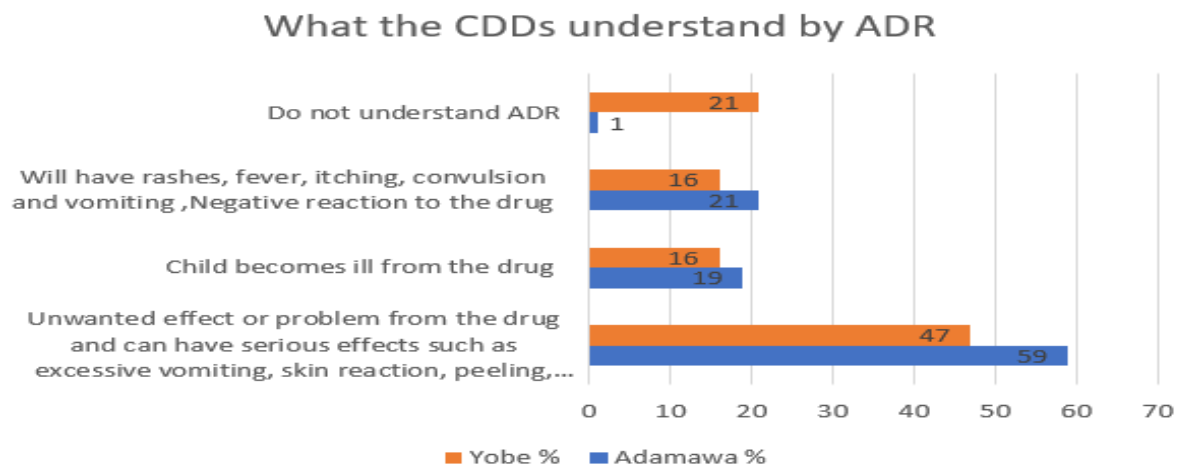
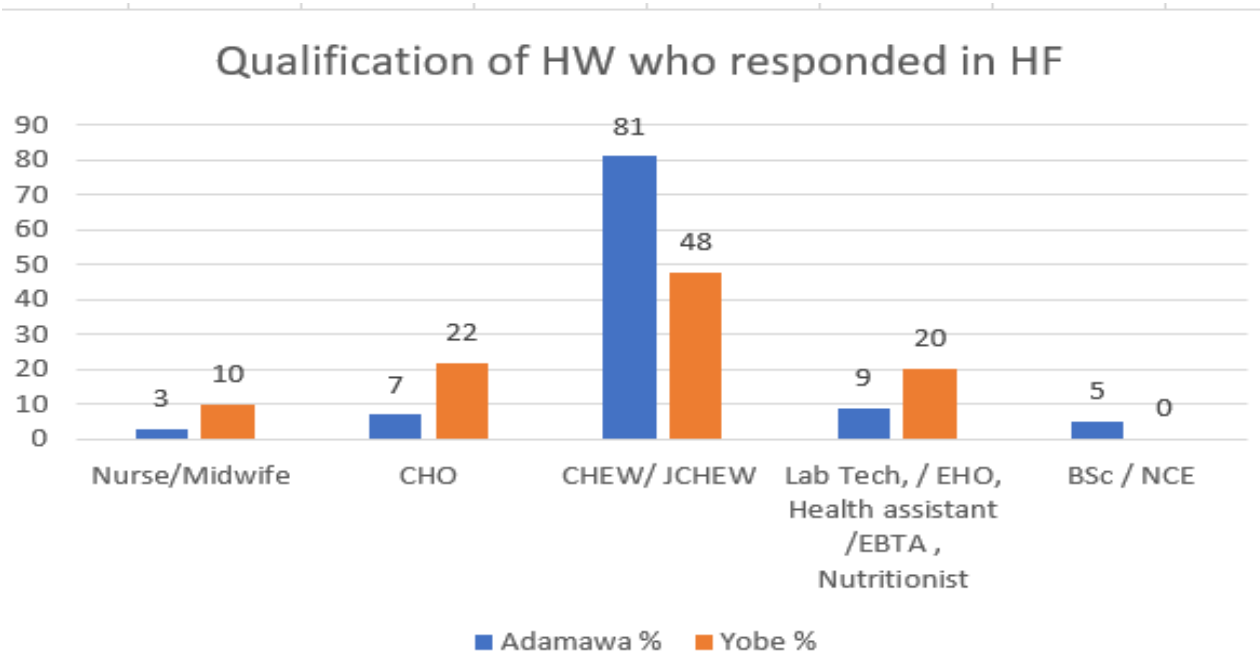
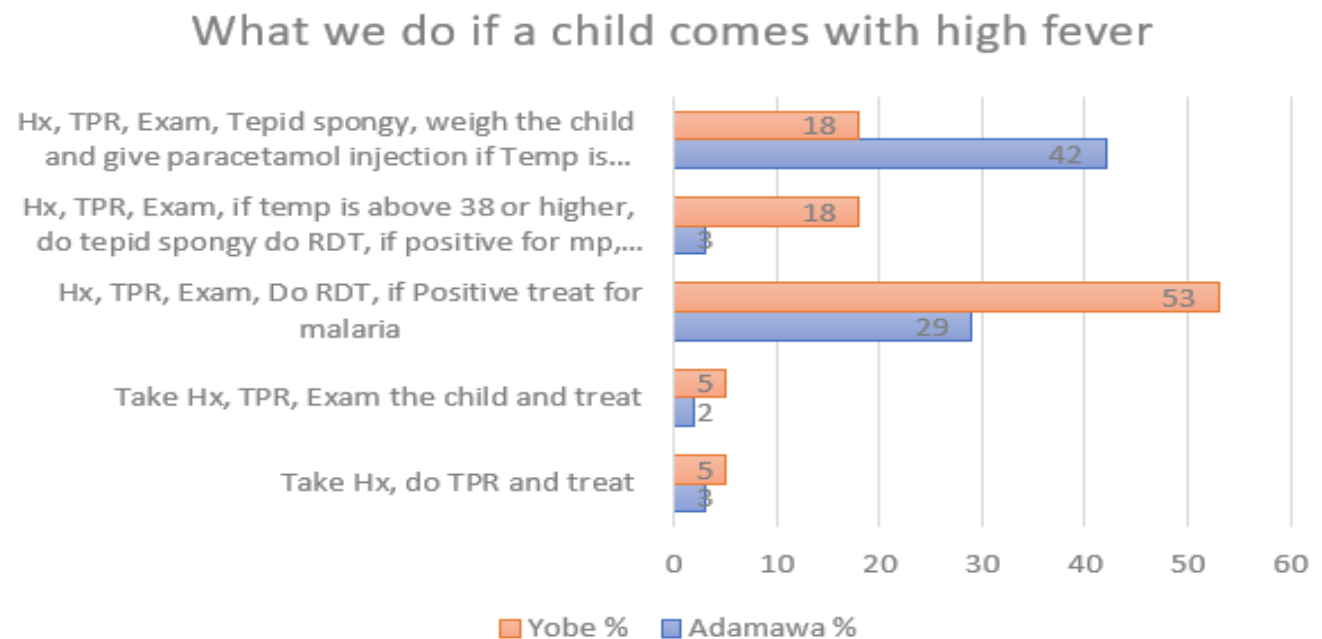


FIGURE 6: QUALIFICATION OF THE HW IN THE DESIGNATED HF IN ADAMAWA AND YOBE STATES



CHO = Community Health Officer; CHEW = Community Health Extension Worker; JCHEW = Junior Community Health Extension Worker; EHO = Environmental Health Officer; BSc = Bachelor of Science; NCE = National Certificate in Education.

Figure 7: WHAT YOU DO IF A CHILD COMES WITH A FEVER.



Discussion

In both states, the community drug distributors were of mixed types; in Adamawa, 44% were CHEW/JCHEW, while in Yobe, they were only 25%, and the rest were not medically inclined. This leaves room for inadequacy, such as not providing much information about serious side effects or insisting on directly observed therapy, compared to the standard laid down by the WHO and some reports.^{1, 10-12} A study has shown that recruiting CDDs from the same locality improves the acceptability of SMC drugs within the community; however, if the CDDs are not medically inclined, some information about SMC drugs may be lacking.¹³

The fact that many of the CDDs did not observe COVID-19-related IPC, especially the social distancing, may be because of their cultural norms, and more so, during the SMC, social distancing may be a bit difficult because the CDDs will have to demonstrate the act of dissolving and administering the SPAQ to the child, which the directly observed therapy entails, to ensure that the child was given the drug. The Malaria Consortium also reported this, where physical distancing was observed by 5.4% to 16.4% of CDDs.¹⁰ Most of the CDDs did not pass complete information to carers, considering the details on the SMC card and the CDD's job aids.¹⁰ This further underscores the need for health-oriented individuals to serve as CDDs.

The understanding of adverse drug reaction (ADR) by the CDD was also looked into; 47–59% know what ADR is all about, as explained in the training manual.

¹⁰ However, it may also be challenging to relate the same to the carers, as evident in this study, where only about a third of the CDDs passed messages related to ADR in both states. It will be appropriate if enough time is given to them to explain to the carers. This also underscores the need to get medically oriented personnel to serve as the CDDs.

The understanding of how to treat a child who arrives at the facility with a high fever was below expectations. The expected response should be taking history, examining the child, taking temperature, pulse and respiration charting (TPR), weighing the child, giving a paracetamol injection if body temperature is 38°C and above, tepid sponging, doing an mRDT, and if positive, treating for malaria parasitaemia using artemisinin combination therapy (ACT).^{14–17} This shows that the management of febrile children in most of the primary health care centres is inadequate; thus, there is a need to re-educate the

HWs in the primary health care centres on the steps to take when a child has a high fever.

All SMC-designated HF conduct malaria parasitaemia tests using mRDT and/or microscopy. This is in line with the National Malaria Eradication Program recommendations; thus, healthcare workers should be encouraged to continue using the national guidelines for the diagnosis and treatment of malaria.¹⁸ It has been shown that mRDT has the sensitivity to detect malaria infection in febrile children.¹⁹

In conclusion, the CDDs have observed most of the COVID-19-related IPC; however, the information they relate to carers, especially regarding ADR, was incomplete. The HF respondents also lack the knowledge of appropriate steps in evaluating febrile children presenting to their HF, despite having malaria diagnostic tools.

We therefore recommend that CDDs be medically inclined or that thorough training be conducted before the commencement of SMC, since they play a vital role in SMC. The HWs should also have refresher training programmes on the steps to take when a child comes with a high fever.

Contribution of the authors

Jose P. Ambe conceptualised the work.

Jose P. Ambe and Iniabisi N. Nglass wrote the initial draft.

Bello A. Ibrahim and Asheikh M. Masu reviewed the draft.

Bello A. Ibrahim, Asheikh M. Masu, Saleh A. Saidu, Abdulhamid M. Gulani, Ibrahim Musa, Emmanuel H. Malgwi, Francis F., and Judah Nwaozuzu supervised the data collection in the field and carried out the initial analysis.

Ogbulafor N, Shekarau Emmanuel, L Ozor, I Ibisi, A Oyefabi, and Sadiq A reviewed the data for quality assurance.

All authors reviewed the final draft before submission.

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Conflict of interest: None

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