



A cross-sectional survey to assess the feasibility and acceptability of seasonal malaria chemoprevention among nomadic pastoralist population; The case of Karamoja, region in Uganda

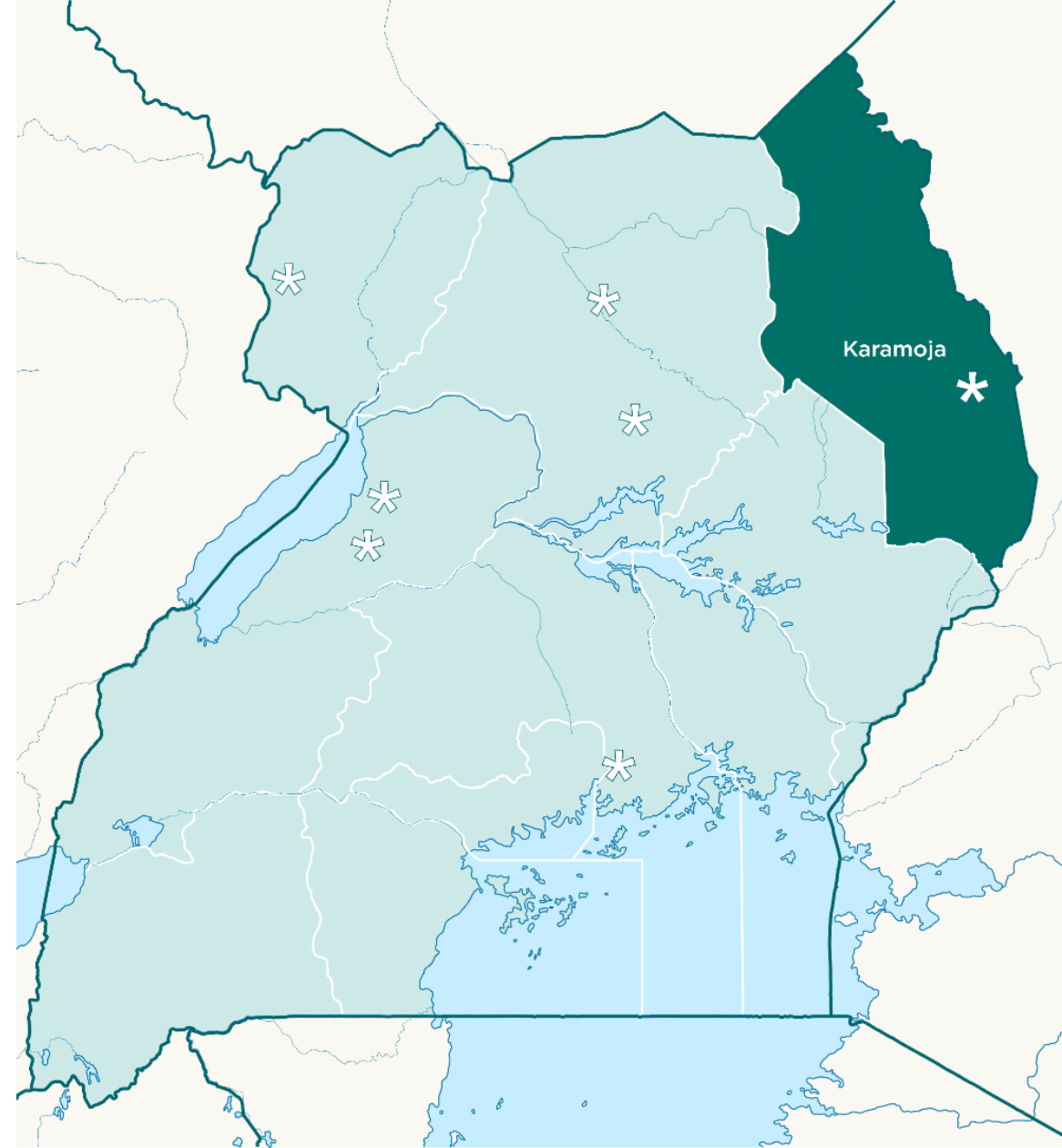
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Background

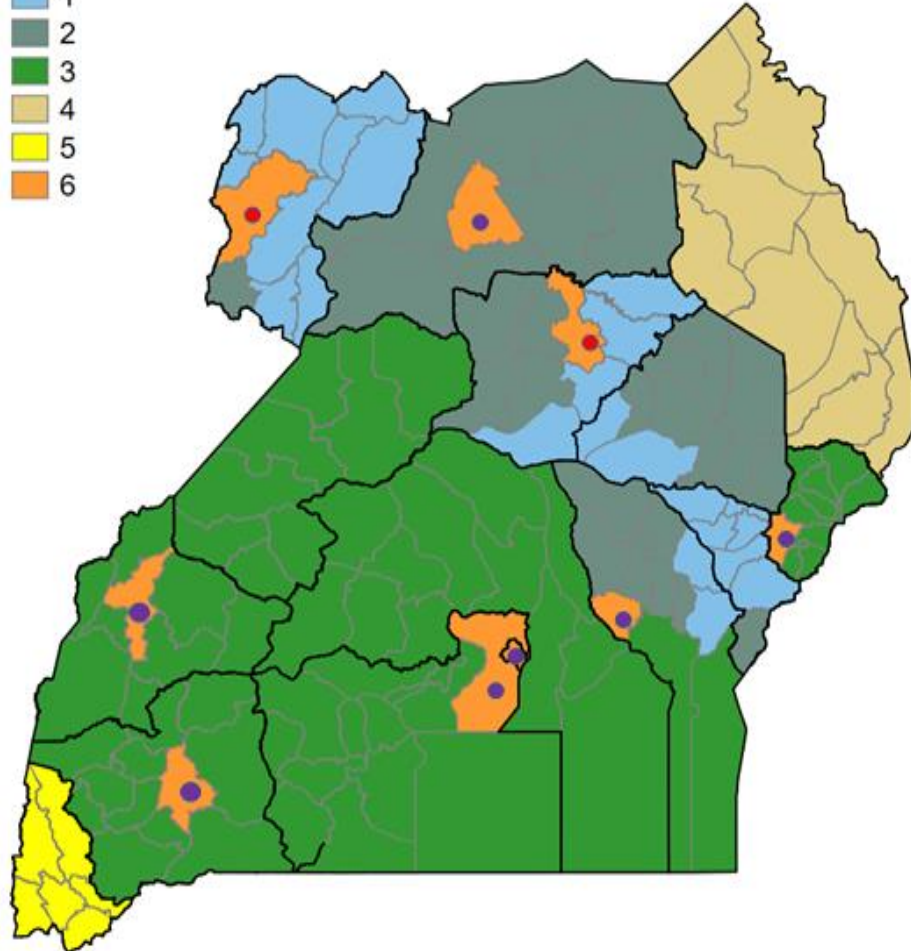
- The Uganda Malaria Reduction and Elimination Strategic Plan 2021–2025 proposes seasonal malaria chemoprevention (SMC), as an approach to accelerate progress towards malaria elimination.
- Karamoja has consistently reported the highest prevalence rates in the country; malaria transmission is seasonal.
- The World Health Organization (WHO) has recommended seasonal malaria chemoprevention as a measure for Malaria control since 2012.



- Philanthropic funding
- ✱ Malaria Consortium office

Response to HBHI: Malaria stratification and intervention delivery approaches

Interventions



1	Indoor residual spraying (IRS), continuous long-lasting insecticidal net (LLIN) distribution, community health worker (CHW) outreach services
2	Campaign and continuous LLIN distribution
3	Campaign and continuous LLINs, intermittent preventive treatment (IPT) in infants (now perennial malaria chemoprevention) and IPT schools evaluations in selected districts
4	Campaign and continuous LLINs, CHWs with outreach services, mobile CHWs for nomadic pastoralist communities, SMC evaluation in selected districts
5	Campaign and continuous LLIN distribution, elimination surveillance
6	Urban areas: targeted mass and continuous LLINs followed detailed microstratification, larval source management, private sector integrated community case management and LLIN social marketing

Note: Standard case management and IPTp nationwide

● City

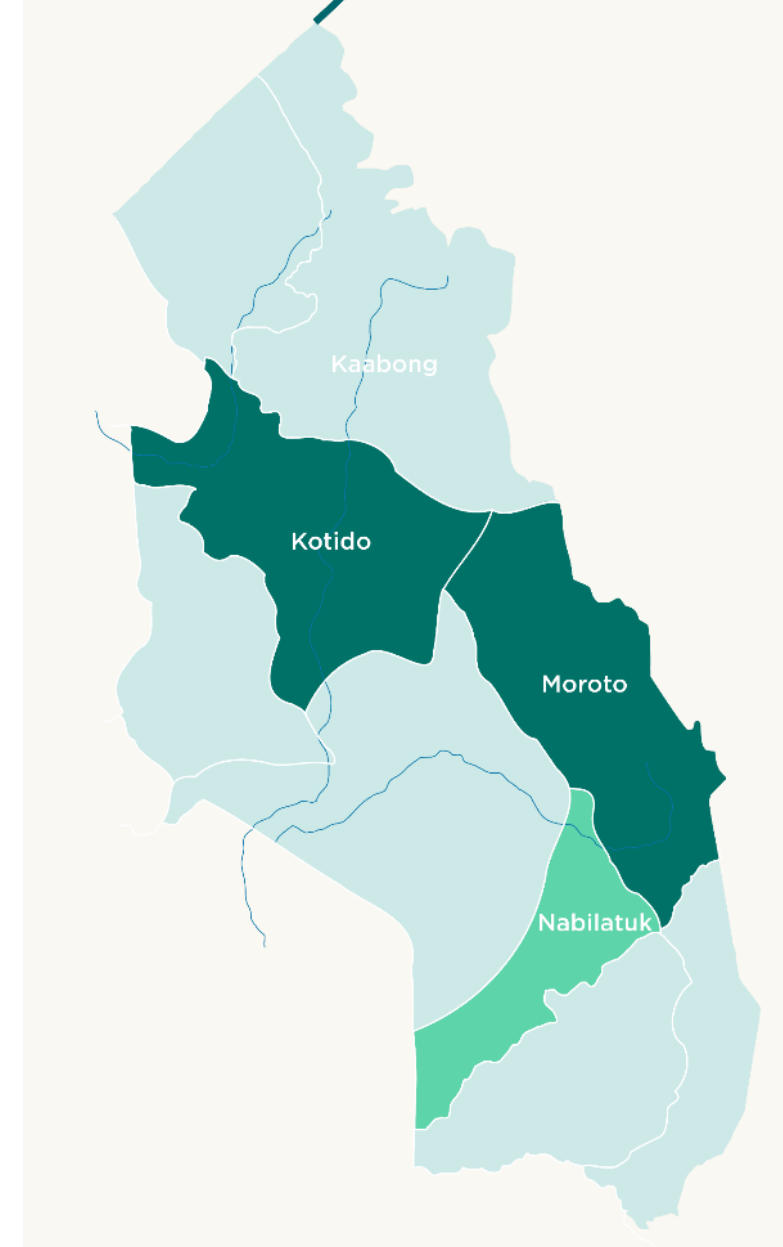
● Districts where rural areas will be covered with IRS

Background

- SMC is the intermittent administration of full treatment courses of antimalarials to children during the malaria season in areas with high transmission.
- It involves administering monthly courses of sulfadoxine-pyrimethamine (SP) and amodiaquine (AQ) during this peak transmission period to those most at risk: children 3–59 months.
- To date, SMC has only been adopted and scaled up in Sahelian countries of West and Central Africa, primarily due to concerns over widespread resistance to SP in many parts of East and southern Africa. However, it has been suggested that SP may retain its protective effectiveness even in areas where resistance is high.
- This study component assessed the feasibility and acceptability of SMC among key stakeholders, including policymakers, implementers and members of a predominantly nomadic pastoralist community.

Background: SMC implementation study 2021

- Karamoja is predominantly inhabited by nomadic pastoralists who live in makeshift structures.
- Conventional malaria control interventions (e.g. long-lasting insecticidal nets and indoor residual spraying) are difficult to implement.
- The National Malaria Control Division and Malaria Consortium conducted an SMC implementation study in two districts of Karamoja:
 - Target population: 90,000 children 3–59 months
 - Five SMC cycles with SPAQ: implemented May – September using door-to-door model by village health teams (VHTs).



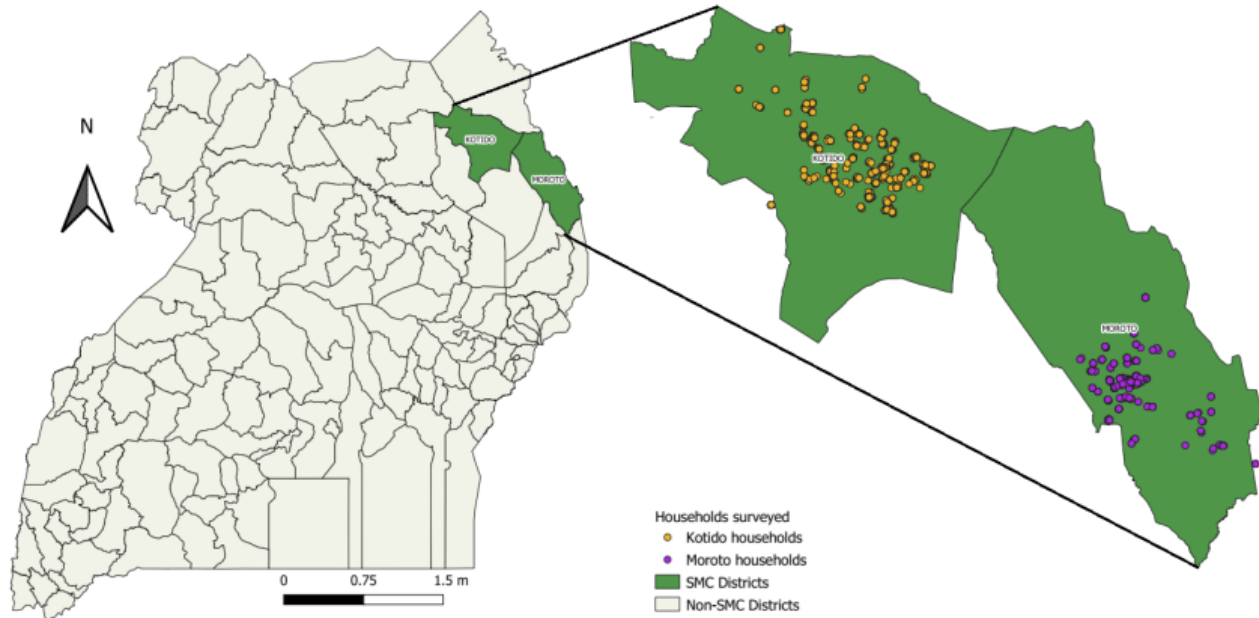
- Intervention districts
- Comparison district

Study components

Study component	Outcome measure	Participants and sample size
1. End-of-round household survey	Coverage, quality of SMC implementation	1,863 caregivers of children 3–116 months
2. Assessing the feasibility and acceptability of the adapted SMC implementation model	Acceptability among key stakeholders	51 key informant interviews (KIIs) and 26 focus group discussions (FGDs) with caregivers, community leaders, community distributors, health authorities
3. Non-randomised controlled trial (prospective cohort study)	Clinical malaria episodes among SMC-eligible children during the peak transmission season	200 children aged 3–59 months per district (total 600 children)
4. Resistance markers study	Prevalence of common SP and AQ resistance markers before and after SMC implementation	600 children aged 3–59 months per arm before and after annual SMC round

Feasibility and acceptability: Study methods

- Mixed-methods, cross-sectional study approach.
- Study population: caregivers of children 3–59 months.
- **Quantitative study:**
 - Household survey conducted in 1,800 households in 120 villages, Moroto and Kotido districts.
 - Number of respondents: 1863 children total
 - Moroto: 671
 - Kotido: 1,192



Study area

Methods

Qualitative study

- Ten sub-counties (five each from Moroto and Kotido) purposively sampled, taking into account:
 - rural, peri-urban and urban areas
 - area's main economic activity (pastoralist, cultivator and mining communities)
 - economic status (low and middle income);
 - accessibility (easy and hard to reach communities).
- Conducted 51 in-depth KIIs with
 - community leaders
 - health workers
 - district leaders and staff
 - Ministry of Health (MoH) staff and Malaria Consortium staff
 - selected caregivers and selected VHTs.
- Conducted 26 FGDs with
 - caregivers
 - community members
 - VHTs.

Methods

Data analysis

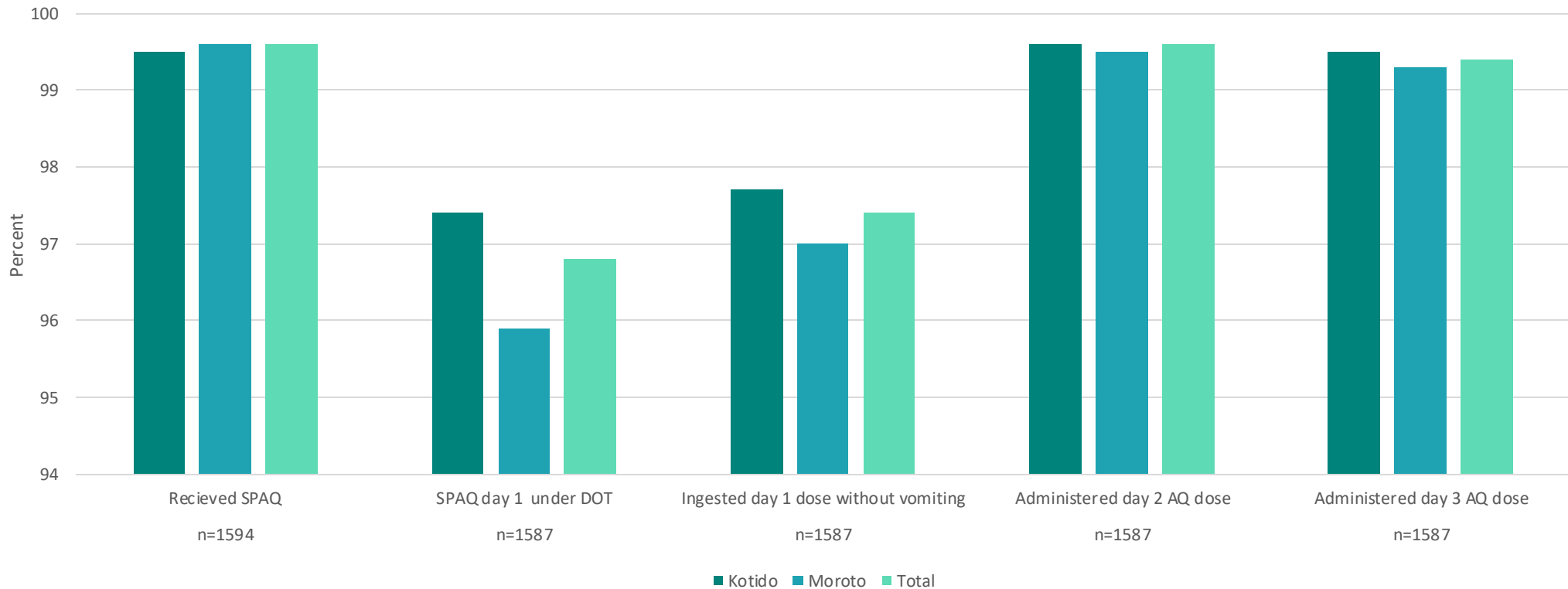
- Quantitative data were exported to STATA, version 14 for analysis. Descriptive statistics formed the basis of analysis using frequencies, means, medians and inter-quartile ranges for non-normally distributed data.
- Qualitative data were transcribed and entered into AtlasTi V.9 for analysis and coded based on both pre-determined themes as well as those that emerged from the data.



Results

Overall, 96.8 percent of eligible children in cycle 5 received day 1 SPAQ as directly observed treatment (DOT); while 99.4 percent of children who received day 1 SPAQ in cycle 5 completed the three-day course.

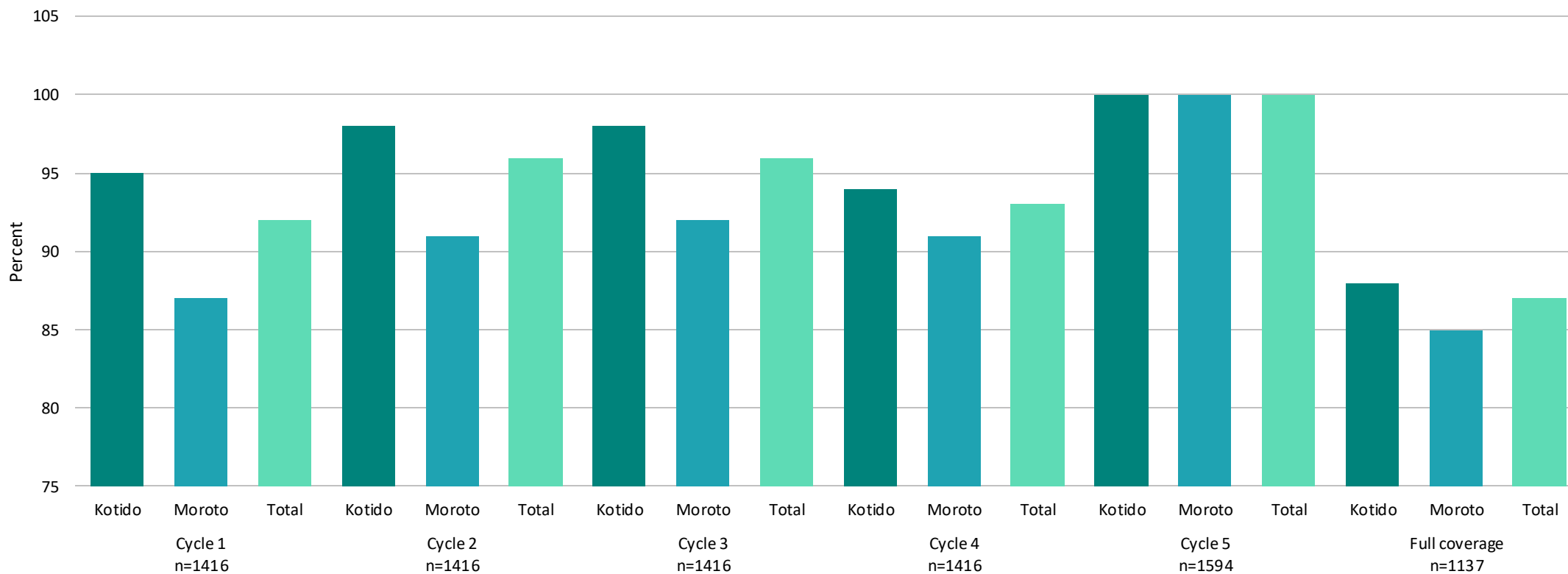
Quality of SMC implementation: Adherence to standard SMC protocols, cycle 5



Results

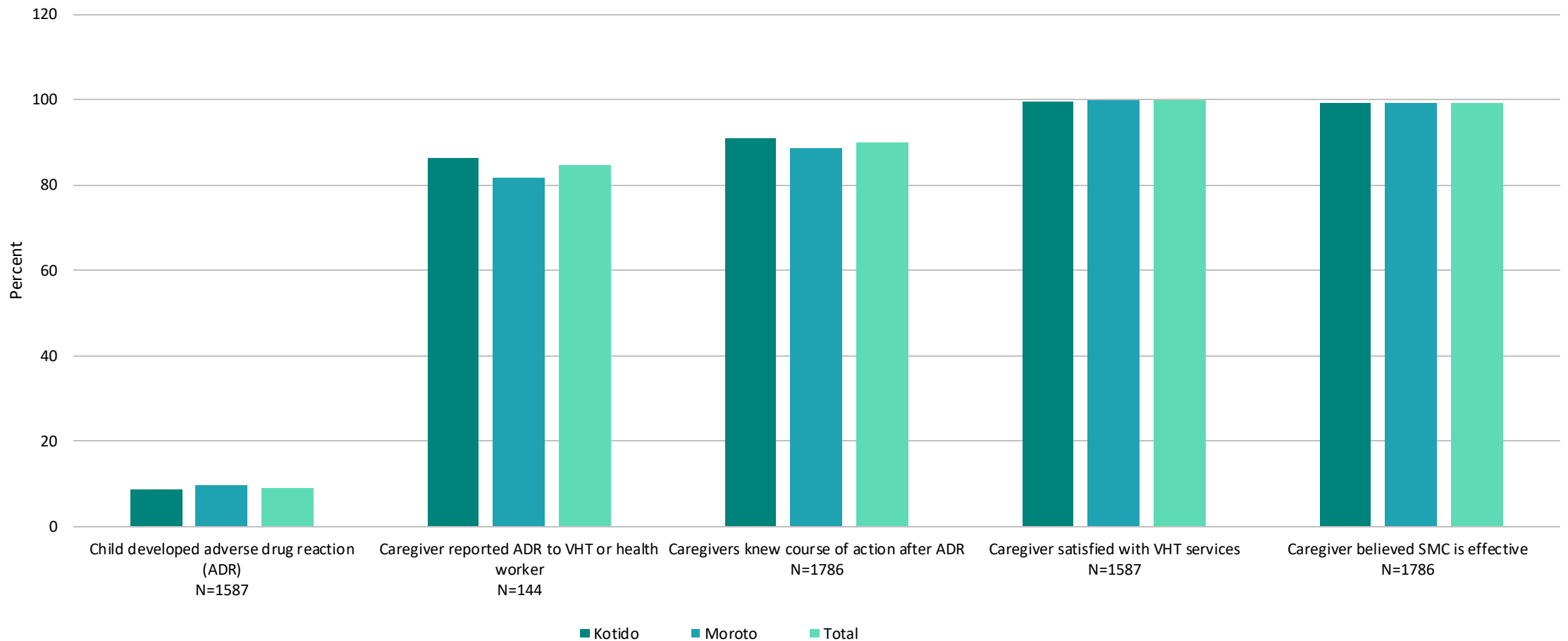
Over 95 percent of eligible children received SMC every cycle.
A total of 87 percent of children received all five cycles of SMC.

Coverage of individual cycles and full coverage of all five cycles in intervention states



High tolerability of SPAQ

Quality of services delivered by village health teams while visiting the household



“This is a pastoralist community; people move from place to place. Today, children are in this *kraal* but tomorrow they will sleep in another and so on. Those are the unique considerations we need to put into account. Secondly, people here live in *Manyattas*, these are small huts which, at times, have got fireplaces inside. There are no beds, yet these mosquito nets are perfect for use on beds. Even though some of these people try to make some beds within their huts using mud, sustaining a mosquito net under such structures is not possible. People would love to use these nets, but the conditions don't permit”

KII — Administrative leader-1, Kotido district

“The district leadership looks at this programme as being very helpful to the community in the fight against malaria and that's why we are solely behind the programme. The top district leadership is involved. It's the reason, we are all involved.”

Political Leader, Kotido district

“I accepted [giving the medicine to my child] because I have been suffering a lot in terms of treatment. Imagine moving from where I stay up to Tapac, how many kilometres? I accepted because I knew my children were going to benefit.”

FGD, Caregivers, Narachuch, Tapac, Moroto district



SMC was accepted by nomadic pastoralists

“The government should supply more of this medicine [SPAQ] because it’s really making wonders for us. It should also be given to older children because they are now more affected by malaria.”

(FGD — Caregivers, Panyangara South division, Kotido district)

“SMC is one of the most viable methods for malaria control in Karamoja. Because you see Manyattas, it is very difficult to hang mosquito bed nets, though a few of them were found hanged. Secondly, there are people who sleep outside keeping guard of their cattle. Also, seeking of medical care is very poor; therefore, what is better is SMC?”

(KII — Local leader, Kidepo, Lowineik, Rupa subcounty, Moroto district)

“Even those mothers who are in distant Kraals, when they hear of the distribution exercise, they immediately return home to bring their children to receive these antimalarial tablets.”

(KII — Political leader-2, Kotido district)

“This programme has helped our children because we move from kraal to kraal and we can not use nets. Since we started my children on this medicines none of them has fallen sick. I wish government could get for us adults too.

(FGD — Community members, Lolelei, Kacheri, Kotido district).

Positive perception about SMC

All stakeholders perceived SMC as highly relevant

“...The community is very grateful. They also rush whenever they hear about the supply of SPAQ. Honestly, the community has responded very well, and they love the programme.”

(FGD — Local leader, Kidepo, Lowineik, Rupa subcounty, Moroto district)

“I think the targeted age category is appropriate because they are the most vulnerable, as their immunity is still developing and mortality among these children is the highest due to malaria. So, we needed to safe guard them.”

(KII — District health management team member-2, Moroto district)

“...It is good because it prevents young children from malaria. Now this programme, why don't they also include all the other children and us adults?”

(FGD — Community members, Entebbe area, Central division, Kotido municipality, Kotido district)





Conclusion

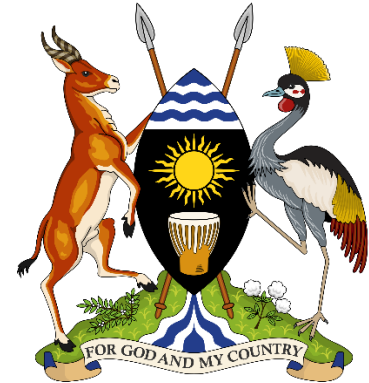
Conclusion and recommendations

- SMC is a feasible, acceptable malaria control intervention among all stakeholders at the national, district and community level, including the nomadic pastoralist communities.
- Levels of acceptability differed slightly across caregiver socio-demographic groups. Women accepted SMC more readily than men, and rural residents were more readily accepting than urban ones. Acceptability increased with each proceeding cycle.
- We recommend more studies to assess the protective effectiveness, cost effectiveness and feasibility of SMC programmes at scale in similar contexts.

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**UGANDA NATIONAL MALARIA
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malaria
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disease control, better health



Thank you

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