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# Assessing coverage and quality of seasonal malaria chemoprevention before and during scale-up in Uganda

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Seasonal malaria chemoprevention was successfully scaled up in the Karamoja region of Uganda, a new geographical context, achieving good coverage and quality.

## Introduction

In 2021, Uganda introduced seasonal malaria chemoprevention (SMC) using sulfadoxine-pyrimethamine and amodiaquine (SPAQ).<sup>[1]</sup> In 2022, SMC was scaled-up to eight districts in the Karamoja region where malaria transmission is highly seasonal, targeting over 200,000 children 3–59 months. SMC medicines were delivered by village health teams (VHTs) using a door-to-door approach over five monthly cycles. A full course of SPAQ was completed over a three-day period.<sup>[2]</sup> Caregivers administered day 1 doses as directly observed treatment (DOT), supervised by VHTs, while day 2 and 3 doses were administered independently by caregivers.

## Methods

- We assessed coverage, quality of delivery and caregiver perceptions through end-of-round household surveys, which were conducted before scale-up in 2021 and after scale-up in 2022.
- A total of 1,863 SMC-eligible child-caregiver pairs were included in the survey in 2021, and 1,404 were included in 2022.
- Surveys were conducted one month after each round of SMC.

## Results

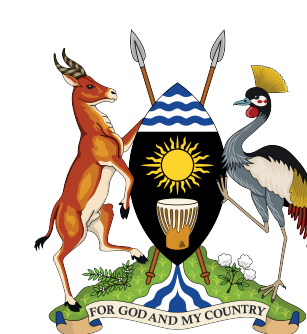
- High receipt and adherence to day 1 doses and the complete three-day course of SMC medicines remained consistent in 2021 and 2022 (>90.0 percent for both indicators).
- The day 1 DOT coverage was high with 99.6 percent in 2021 and 98.6 percent in 2022.
- The proportion of eligible children receiving SMC, in all monthly cycles decreased in 2022 to 78.2 percent compared to 87.2 percent in 2021.
- In total, 90.0 percent of caregivers in 2022 reported awareness of SMC with VHTs as the primary information source.
- Over 90.0 percent of caregivers in both years had knowledge about SMC's purpose, eligibility criteria, SPAQ use, importance of completing the course and responding to adverse events.
- Over 95.0 percent of caregivers believed SMC was effective in 2021 and 2022.

## Conclusion

Although a lower percentage of children received SPAQ in all cycles after scaling up in 2022 (78.2 percent), compared to 2021 (87.2 percent), implementation quality remained high in the Karamoja region and increased access for eligible children.

Table 1 : Selected indicators following assessment of SMC implementation in 2021 and 2022

Year	Children targeted	Variable	District (n=number; percentage [95% CI])									
			Overall	Abim	Amudat	Karenga	Kotido	Moroto	Nabilatuk	Nakapiripirit	Napak	
2022	231,795	Age-eligible children sampled	n=1404	n=150	n=194	n=210	n=156	n=147	n=198	n=198	n=151	
		Day 1 coverage (proportion of age-eligible children who received day 1 dose in the final monthly cycle)	n=1404	n=150	n=194	n=210	n=156	n=147	n=198	n=198	n=151	
			93.1 (91.6–94.3)	81.3 (74.2–87.2)	90.7 (85.7–94.4)	96.2 (92.6–98.3)	94.9 (90.1–97.8)	95.9 (91.3–98.5)	99.0 (96.4–99.9)	93.4 (89.0–96.5)	90.4 (84.9–94.8)	
		DOT adherence (proportion of age-eligible day 1 doses administered as DOT in the final cycle)	n=1307	n=122	n=176	n=202	n=148	n=141	n=196	n=185	n=137	
			98.6 (97.8–99.2)	97.5 (93.0–99.5)	97.2 (93.5–99.1)	99.0 (97–100)	99.3 (96.5–100)	98.6 (96.2–99.9)	99 (96.5–99.9)	98.9 (96.1–99.9)	99.3 (96–100)	
		Adherence to the three-day complete course of SMC medicines (proportion of age-eligible children who received day 1, who went on to receive day 2 and 3 doses in the final cycle)	n=1404	n=150	n=194	n=210	n=156	n=147	n=198	n=198	n=151	
	91.2 (89.5–92.7)	80.3 (72.2–87.0)	85.8 (79.7–90.6)	94.6 (90.5–97.3)	91.2 (85.4–95.2)	94.3 (89.1–97.5)	97.5 (94.1–99.2)	96.2 (92.4–98.5)	83.9 (76.7–89.7)			
	Receipt of SMC in all five cycles (proportion of age-eligible children who received at least one dose of SMC medicines in each and all five cycles)	n=1404	n=150	n=194	n=210	n=156	n=147	n=198	n=198	n=151		
		78.2 (76.0–80.3)	86.7 (80.2–91.3)	82 (75.8–87.1)	78.6 (72.4–83.9)	80.8 (73.7–86.6)	71.4 (63.4–78.6)	92.4 (87.8–95.7)	73.7 (67.0–79.7)	55.6 (47.3–63.7)		
2021	73,464	Age-eligible children sampled	n=1863				n=1192	n=671				
		Day 1 coverage (proportion of age-eligible children who received day 1 dose in the final monthly cycle)	n=1594				n=1030	n=564				
			99.6 (99.2–99.9)				99.5 (99.1–99.9)	99.6 (99.2–100.0)				
		DOT adherence (proportion of age-eligible day 1 doses administered as DOT in the final cycle)	n=1587				n=1025	n=562				
			96.8 (96.0–97.7)				97.4 (96.4–98.3)	95.9 (94.3–97.5)				
		Adherence to the three-day complete course of SMC medicines (proportion of age-eligible children who received day 1, who went on to receive day 2 and 3 doses in the final cycle)	n=1587				n=1025	n=562				
	99.4 (99.1–99.8)				99.5 (99.1–99.9)	99.3 (98.6–100)						
	Receipt of SMC in all five cycles (proportion of age-eligible children who received at least one dose of SMC medicines in each and all five cycles)	n=1137				n=768	n=369					
		87.2 (85.2–89.1)				88.4 (86.1–90.7)	84.6 (80.9–88.2)					



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## References

- Nuwa A et al. A non-randomized controlled trial to assess the protective effect of SMC in the context of high parasite resistance in Uganda. *Malaria Journal*, 2023.
- World Health Organization. Seasonal malaria chemoprevention with sulfadoxine-pyrimethamine plus amodiaquine in children: A field guide, second edition. World Health Organization, 2023.