



REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH



**MIS
2021**

**ZAMBIA
MALARIA
INDICATOR
SURVEY**

Zambia National Malaria Indicator Survey 2021

This report summarises the findings of the 2021 Zambia National Malaria Indicator Survey carried out between April and May 2021 by the Ministry of Health; Zambia Statistics Agency; PATH Malaria Control and Elimination Partnership in Africa; United States President's Malaria Initiative, including the United States Agency for International Development and the Centers for Disease Control and Prevention; United Nations Children's Fund; and the World Health Organization.

Cover photo courtesy of the National Malaria Elimination Programme.

Contents

List of figures	3
List of tables	5
Abbreviations and acronyms	6
Acknowledgements.....	7
Foreword.....	8
Preface	9
Executive summary.....	10
Summary of key indicators	13
Chapter 1: Introduction and methods	14
Chapter 2: Characteristics of households and women respondents	20
Chapter 3: Coverage of key malaria interventions—vector control.....	26
Chapter 4: Coverage of key malaria interventions—intermittent preventive treatment during pregnancy and case management	50
Chapter 5: Coverage of key malaria interventions—social behaviour change.	63
Chapter 6: Malaria parasite and anaemia prevalence	72
Chapter 7: Discussion/conclusions.....	79
Chapter 8: Key recommendations	81
References.....	83
Appendix A: Sampling for Malaria Indicator Survey 2021	84
Appendix B: Survey personnel	89
Appendix C: Malaria Indicator Survey 2021 questionnaires	94
Household Questionnaire.....	94
Women’s Questionnaire.....	126

List of figures

Figure 1. Age pyramid of sampled population of Malaria Indicator Survey (Zambia 2021)	21
Figure 2. Household ownership of at least one insecticide-treated net (Zambia 2008–2021)	30
Figure 3. Household ownership of at least one insecticide-treated net by province (Zambia 2010–2021).....	31
Figure 4. Household ownership of at least one insecticide-treated net by wealth quintile (Zambia 2008–2021)...	31
Figure 5. Insecticide-treated net use by children under age five years by rural and urban areas (Zambia 2008–2021).....	35
Figure 6. Insecticide-treated net use by children under age five years by province (Zambia 2010–2021).....	35
Figure 7. Insecticide-treated net use by children under age five years by wealth quintile (Zambia 2010–2021)...	36
Figure 8. Insecticide-treated net use by children under age five years by age (Zambia 2006–2021)	36
Figure 9. Insecticide-treated net use among pregnant women (Zambia 2006–2021)	37
Figure 10. Cascade of net and ITN possession, full coverage, and use among children and all household members by national, urban, and rural areas (Zambia 2021)	38
Figure 11. Cascade of net and ITN possession, full coverage, and use among children and all household members by province (Zambia 2021).....	38
Figure 12. Insecticide-treated net use among all household members by age group (Zambia 2021)	39
Figure 13. Average number of sleeping spaces, number of ITNs needed to meet the needs of one ITN per two household members, and average number of ITNs per household by province (Zambia 2021)	39
Figure 14. Percentage of households with an insecticide-treated-net-to-sleeping-space ratio of at least one to one (Zambia 2008–2021).....	40
Figure 15. Percentage of household members using an ITN the night before the survey by level of household ownership of ITNs (Zambia 2021).....	42
Figure 16. Percentage of households by intra-cluster quality of IRS coverage by residence (Zambia 2021).....	44
Figure 17. IRS coverage by wealth quintile (Zambia 2021).....	44
Figure 18. IRS coverage by province (Zambia 2021).....	45
Figure 19. Households sprayed within the previous 12 months by urban and rural areas (Zambia 2008–2021) ..	46
Figure 20. Households sprayed within the previous 12 months by province (Zambia 2010–2021).....	46
Figure 21. Households sprayed in the previous 12 months by wealth quintile (Zambia 2010–2021).....	47
Figure 22. Households reporting either at least one ITN or IRS or both and households with at least one ITN per two people or IRS or both (Zambia 2021)	48
Figure 23. Households reporting either at least one ITN or IRS or both and households with at least one ITN per two people or IRS or both by province (Zambia 2021)	48
Figure 24. Percentage of households with at least one insecticide-treated net and/or indoor residual spraying by wealth quintile (Zambia 2021)	49
Figure 25. Percentage of households with at least one insecticide-treated net and/or indoor residual spraying (Zambia 2008–2021).....	49
Figure 26. Women with recent births reporting coverage of at least two, three, and four doses of intermittent preventive treatment during pregnancy by urban and rural areas (Zambia 2010–2021).....	52
Figure 27. Cascade of treatment seeking, reported fever, reported malaria test positive, and taking antimalarials among febrile children under age five years (Zambia 2021)	55
Figure 28. Average length of time reported before treatment was sought among febrile children under age five years (Zambia 2021)	56
Figure 29. Percentage of febrile children under age five years in rural areas who sought care by source of care (Zambia 2021).....	56
Figure 30. Reported fever prevalence in the preceding two weeks among children under age five years (Zambia 2010–2021).....	57
Figure 31. Among children with fever, trend in promptness of care seeking (Zambia 2006–2021).....	59

Figure 32. Source of antimalarial drugs among febrile children under five years of age (Zambia 2010–2021), unweighted due to low sample size.....	60
Figure 33. Among febrile children taking antimalarial drugs, the percentage of each drug taken (Zambia 2008–2021), unweighted due to low sample size	60
Figure 34. Percentage of reported febrile children under age five years with a reported finger/heel stick for diagnostic testing (Zambia 2010–2021)	61
Figure 35. Percentage of women 15–49 years of age who had heard of malaria (Zambia 2021)	65
Figure 36. Percentage of women 15–49 years of age who had heard of malaria by province (Zambia 2021)	65
Figure 37. Among women ages 15 to 49 years, knowledge of malaria prevention methods (Zambia 2021)	66
Figure 38. Among women ages 15 to 49 years, sources of malaria messaging (Zambia 2021)	68
Figure 39. Among women ages 15 to 49 years, sources of malaria messaging by province (Zambia 2021)	69
Figure 40. Trends in ownership of communication devices (TV, radio, and mobile phone) (Zambia 2018–2021)	69
Figure 41. Among women ages 15 to 49 years, percentage who identified nets or treated nets as a source of malaria prevention (Zambia 2006–2021)	70
Figure 42. Among women ages 15 to 49 years, percentage who reported knowledge of the location and role of their local CHW in malaria activities (Zambia 2015–2021)	70
Figure 43. Map showing percentage malaria parasite prevalence by RDT by province among children under five years of age (Zambia 2021)	74
Figure 44. Malaria parasite prevalence by microscopy among children under age five years by urban and rural areas (Zambia 2006–2021)	74
Figure 45. Malaria parasite prevalence by microscopy among children under age five years by province (Zambia 2010–2021)	75
Figure 46. Malaria parasite prevalence by microscopy among children under age five years by age (Zambia 2006–2021)	75
Figure 47. Malaria parasite prevalence by microscopy among children under age five years by wealth quintile (Zambia 2006–2021)	76
Figure 48. Comparison of vector control coverage and malaria prevalence by province (Zambia 2021)	76
Figure 49. Severe anaemia prevalence among children under age five years by urban and rural areas (Zambia 2006–2021)	77
Figure 50. Severe anaemia prevalence among children under age five years by province (Zambia 2010–2021)	77
Figure 51. Severe anaemia prevalence (Hb <8 g/dl) by age among children under age five years (Zambia 2006–2021)	78
Figure 52. Severe anaemia prevalence among children under age five years by wealth quintile (Zambia 2006–2021)	78

List of tables

Table 1. Household population by age, sex, and urban and rural designation.....	20
Table 2. Household composition	21
Table 3. Household characteristics	22
Table 4. Household durable goods, livestock, and land ownership.....	23
Table 5. Background characteristics of women respondents	24
Table 6. ITNs distributed and structures sprayed through programmatic reporting, 2017–2021	26
Table 7. Household ownership of mosquito nets.....	28
Table 8. Use of mosquito nets by children under five.....	32
Table 9. Use of mosquito nets by women ages 15 to 49 years and pregnant women	33
Table 10. Use of mosquito nets among all household members.....	40
Table 11. Indoor residual spraying (IRS).....	43
Table 12. Use of intermittent preventive treatment (IPTp) by pregnant women	51
Table 13. Prevalence and prompt treatment of fever among children.....	53
Table 14. Type and timing of antimalarial drugs.....	58
Table 15. Source of antimalarial drugs.....	59
Table 16. Prevalence and treatment of reported diarrhoea among children	62
Table 17. General malaria knowledge.....	63
Table 18. Malaria messaging through information, education, and communication strategies	67
Table 19. Malaria parasite prevalence and anaemia in children under age five years	72

Abbreviations and acronyms

AL	artemether lumefantrine
ANC	antenatal clinic
CDC	Centers for Disease Control and Prevention
CHW	community health worker
CI	confidence interval
CSA	census supervisory area
DHAP	dihydroartemisinin-piperazine
DHS	Demographic and Health Survey
EPI	Expanded Programme on Immunization
iCCM	integrated community case management
IPTp	intermittent preventive treatment during pregnancy
IRS	indoor residual spraying
ITN	insecticide-treated net
LLIN	long-lasting insecticide-treated net
MACEPA	PATH Malaria Control and Elimination Partnership in Africa
MDA	mass drug administration
MERG	Monitoring and Evaluation Reference Group
MIS	Malaria Indicator Survey
MOH	Ministry of Health
NMEC	National Malaria Elimination Centre
NMEP	National Malaria Elimination Programme
NMESP	National Malaria Elimination Strategic Plan
ORS	oral rehydration solution
PMI	President's Malaria Initiative
RDT	rapid diagnostic test
SBC	social behaviour change
SEA	standard enumeration area
SP	sulfadoxine-pyrimethamine
WBC	white blood cells
WHO	World Health Organization

Acknowledgements

This report presents the results of the 2021 Zambia National Malaria Indicator Survey (MIS), a comprehensive, nationally representative household survey designed to measure progress towards achieving the goals and targets set forth in the National Malaria Elimination Strategic Plan 2017–2021. The survey represented the efforts of several agencies and many individuals. The Ministry of Health, namely the National Malaria Elimination Programme (NMEP), had the major responsibility of conducting the survey and was responsible for organising survey staff and local coordination and sensitisation efforts. Other agencies instrumental in the survey included the Central Statistical Office (CSO); the United States President’s Malaria Initiative (PMI), including the United States Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC); the PATH Malaria Control and Elimination Partnership in Africa (MACEPA); and the World Health Organization (WHO).

At the Ministry of Health, Dr Kennedy Malama, Permanent Secretary, provided overall survey leadership and guidance. At the NMEP, Dr Mutinta Mudenda, Director; Dr Anthony Yeta, Assistant Director-Technical; Dr Busiku Hamainza, Assistant Director-Program Management; Dr Stephen Bwalya, Case Management Officer; Mr Moonga Hawela, Chief Parasitologist; Mr Jacob Chirwa, Parasitologist; Ms Mercy Mwanza Ingwe, Surveillance and Information Officer; Mr Japhet Chiwaula, Biostatistician; and Mr Ignatius Banda, Surveillance Officer, were responsible for survey operations and coordination. Also within the Ministry of Health, various members assisted with the organisation, community sensitisation efforts, logistics, ordering of supplies, and training. At the CSO, Ms Ngawo Banda, Survey Statistician, provided support for the sample design, sample selection, and analysis. CSO staff also provided support during the survey for the identification of cluster boundaries and the household listing. Their names are included with the survey teams in Appendix B.

From PMI, Dr Paul Psychas of CDC and Ms Jennifer Somtore and Mr Isaac Mwase of USAID provided support for the MIS planning and design, project supervision, and report writing. Dr Caroline Phiri, Mr Chabu Kangale, Ms Marie-Reine Rutagwera, and Mr Chansa Katongo of the PMI project PAMO Plus supported the training and survey activities. At PATH MACEPA, Dr John Miller, Mr Chris Lungu, Mr Kafula Silumbe, Mr Belendia Serda, Ms Mulenga Mwenda, Dr Dan Bridges, Mr Todd Jennings, Ms Tricia Hibwato, Ms Sosenna Assefa, Ms Hazel Chabala, and Mr Kedrick Katongo provided support for logistics, training, survey organization, accounting, design, analysis, and report writing. Mr Manny Lewis edited and formatted the report. From Tulane University, Dr Honelgn Nahusenay Hiruy provided support for the analysis of the data set. Dr Fred Masaninga of WHO provided support for coordination activities, training, and survey work. The Roll Back Malaria Monitoring and Evaluation Reference Group (RBM MERG) developed the questionnaire and survey instruments used. The training materials, methodology, and questionnaires used in the survey were mostly drawn from the work of the RBM MERG, but especially from the work of ORC Macro, which organises the Demographic and Health Survey.

A complete list of the survey teams and individuals involved in the survey is presented in Appendix B.

Foreword

The 2021 Zambia National Malaria Indicator Survey (MIS) is the seventh MIS conducted in Zambia, representing a long-term commitment to benchmarking progress and understanding the successes and challenges of malaria investments.

The findings of the 2021 MIS reflect a different vector control approach as IRS coverage increased nationally since the previous survey in 2018, with 39% of Zambian households sprayed in the 12 months prior to the 2021 survey compared to 35% in 2018. However, the improvements in IRS coverage were not enough to offset a decline in household ITN ownership that was sharper than anticipated.

A number of partners and individuals (noted in the previous section) supported the survey. To all whose tireless efforts enabled the completion of this survey, I express my deep gratitude.

On behalf of the Ministry of Health, we are appreciative of your support in the ongoing fight against malaria and we ask you to remain a steadfast partner and participant as we strive to achieve a malaria-free Zambia.



Prof. Lackson Kasonka
Permanent Secretary – Technical Services
Ministry of Health

Preface

This report, like the previous reports describing the results of malaria indicator surveys conducted in Zambia, not only benchmarks the indicators of malaria interventions and disease burden, it marks another chapter in the evolution of our fight against malaria—an effort that has grown, over time, from a malaria control approach to a prioritisation of elimination.

The 2021 Zambia National Malaria Indicator Survey (MIS), the seventh MIS conducted in Zambia, coincided with the final year of the National Malaria Elimination Strategic Plan, the COVID-19 pandemic, and a new vector control deployment approach that prioritised indoor residual spraying as the primary vector control intervention. The results described in this report will inform the next elimination strategic plan (2022–2026) and future approaches for addressing malaria transmission.

As ever, the effort to eliminate malaria from our country is a collaborative one. I would like to thank the National Malaria Elimination Centre for coordinating this survey, our partners for providing the resources and assistance necessary to conduct it, and to our teams of survey staff who visited households, asked questions, and tested household members for malaria. Throughout the years, these MIS reports have shown us what progress looks like and they have shown that progress is not always linear, that this ongoing battle requires the ability to adapt. So, while course-correction is necessary at times, what is important is that we stay the course. By doing this we will attain our goal of a malaria-free Zambia.

Thank you for all your continued support.



Hon. Sylvia T. Masebo (MP)
Minister of Health

Executive summary

The 2021 Zambia National Malaria Indicator Survey (MIS) is a nationally representative household survey designed to assess the coverage of key malaria interventions and the malaria and anaemia prevalence of children under five years of age. Conducted by the Ministry of Health (MOH) in April and May 2021, the 2021 MIS is the seventh MIS conducted by the MOH. Previous MISs were completed in 2006, 2008, 2010, 2012, 2015, and 2018. All MISs, including the 2021 MIS, have been timed to coincide with the end of the malaria transmission season during April and May.

In conducting the 2021 MIS, the Ministry of Health was supported by several partners, including the Central Statistical Office (CSO); PATH Malaria Control and Elimination Partnership in Africa (MACEPA); the United States President's Malaria Initiative (PMI), including the United States Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC); the World Health Organization (WHO); and the United Nations Children's Fund (UNICEF). Resources for the 2021 MIS were provided by the Global Fund to Fight AIDS, Tuberculosis and Malaria through the Ministry of Health.

The 2021 MIS was based on a nationally representative two-stage cluster sample of 5,175 households selected from 207 standard enumeration areas. A total of 4,621 households were interviewed in the survey, along with 3,930 women of reproductive age, and 3,739 children under the age of five had their fingers pricked for malaria testing. Consenting households and household members were asked a series of questions about their household dwelling as well as standardised questions about malaria interventions including insecticide-treated bednet (ITN) coverage and use, indoor residual spraying (IRS), prevention of malaria during recent pregnancy, and management of fever among children. Children were asked to provide a finger stick blood sample to be tested for malaria and anaemia. Any children found to have malaria or anaemia were treated according to the standard of care offered by the Ministry of Health.

Notably, since the previous MIS in 2018, the national approach to vector control deployment changed. The 2017–2018 mass ITN campaign, conducted prior to the 2018 MIS, was resourced to target universal ITN coverage. However, IRS was prioritised over a three-year period from 2020 to 2022 as the primary vector control intervention. As such, during the 2020–2021 campaign, conducted prior to the 2021 MIS, IRS was resourced to provide increased coverage, with ITNs deployed as a gap-filler. This reflected a deliberate 'mosaic approach' to deploying vector control resources. In 2020, IRS and ITN campaigns were planned jointly by each district, with mapping tools utilised during micro-planning to ensure that each settlement was targeted for at least one intervention, and co-deployment was minimised. This approach was essentially designed to increase the amount of IRS targeting while reducing the overlap with ITNs and the overall coverage of ITNs compared to 2018.

Considering the change in national approach, a decrease in household ITN ownership was to be expected. However, the declines were sharper than anticipated, with household ITN ownership dropping from 80% in 2018 to 53% in 2021. Rural areas saw a decrease from 87% in 2018 to 55% in 2021 and urban areas saw a decrease from 72% in 2018 to 50% in 2021. Reduction in household ownership was noted in all provinces except for Copperbelt, which had the lowest 2018 baseline. Reductions in ownership were greatest for the lowest wealth quintiles and net use also declined among children under five years of age and pregnant women. This is undesirable as it goes against the programme strategy of targeting these populations. Among children under five years of age, ITN use dropped significantly, from 69% in 2018 to 46% in 2021. In rural areas, 46% of children slept under a net compared to 77% in 2018. In urban areas, 45% of children slept under a net in 2021 compared to 57% in 2018. The decline was also steep with regard to pregnant women, 41% of whom slept under a net in 2021 compared to 71% in 2018. In addition to the change in the national approach, an attrition of nets from earlier campaigns and limited supply of ITNs through routine channels and the private sector might have been contributing factors to the decline in household ownership of ITNs.

The prioritisation of IRS did result in slight increases in IRS coverage nationally, with 39% of Zambian households sprayed in the previous 12 months, an increase from 35% in 2018. There were more households sprayed in rural than urban areas but both saw increased coverage compared to the previous survey—44% in rural areas in 2021 compared to 43% in 2018, and 29% in urban areas in 2021 compared to 24% in 2018. By province, Luapula had the highest percentage of households sprayed at 66%, followed by Eastern (61%), while Lusaka had the lowest percentage of households sprayed (14%). Of the households sprayed, almost all were by the government (96% to 100%).

While the increase in the number of households sprayed in Zambia nationally and in rural and urban areas in 2021 shows the benefits of prioritising IRS, the increase in IRS coverage was not large enough to offset the decline in ITN ownership and use across Zambia. Nationally, 71% of households reported having either at least one ITN or IRS in 2021, a decline from 84% of households in 2018 that had either intervention.

In 2021, 68% of pregnant women reported taking three doses of sulfadoxine-pyrimethamine (SP), the recommended regimen for intermittent preventive treatment during pregnancy (IPTp) in Zambia. This represented the latest overall increase nationally in a steady rise from 2010 to 2021 in the coverage of three or more IPTp doses. However, there was an increase of only one percentage point between 2018 and 2021 and the percentage of pregnant women in rural areas who reported taking three doses declined from 67% in 2018 to 65% in 2021. For women living in urban areas who reported taking a third IPTp dose, there was an increase of 8 percentage points from 2018 to 2021. While coverage of the first dose of IPTp was fairly high across provinces (with even the lowest province, Southern, still reporting 68% coverage), there was more variation in coverage of the third dose by province, with Northern Province reporting 84% coverage of the third dose and Southern reporting only 43%. By wealth quintiles, the disparities are greater by the time women report their third and fourth doses, with the higher wealth quintiles having the highest coverage. In general, IPTp coverage for the first, second, and third doses rose with the level of education.

In 2021, 38% of children with reported fever also reported taking an antimalarial drug for the fever, with 25% taking the antimalarial promptly (the same day or the next day)—both increases over 2015 levels of 32% and 21%, respectively. Prompt treatment is critical for many childhood illnesses but particularly with malaria, which can escalate to severe malaria or death very quickly, especially among children whose immune systems are not accustomed to parasite exposure. On average, it took 1.7 days for febrile children in both urban and rural areas to receive antimalarial treatment. This is a reduction from 3.1 days and 2.1 days for urban and rural areas, respectively, reported in the 2018 MIS. In 2018, 22% of febrile children received antimalarial treatment from a community health worker but that percentage dropped sharply to 4% in 2021. Furthermore, in 2021, only 1% of care for febrile children was sought from community health workers, a big decline from 11% in 2018. The vast majority of care was sought through a government health facility (93%) followed by a private pharmacy or shop (5%).

Of antimalarial drugs provided to febrile children in Zambia, nearly all (97%) were reported as artemether-lumefantrine, the recommended first line regimen for uncomplicated malaria during the time of the survey. Fifty-nine percent of Zambian febrile children who sought care were reported as having a finger or heel stick for their fever episode, representing the highest national percentage to date.

Knowledge of malaria, malaria interventions, and where to access services are important indicators to monitor at the community level. Of women 15 to 49 years of age, 83% had heard of malaria and 64% reported fever as an important symptom of malaria. Additionally, 77% reported mosquito bites as the cause of malaria and 79% reported ITNs as a prevention method for malaria. A third of women (33%) reported knowing the location and role of their local community health worker. Nearly half of women (48%) reported hearing messaging about malaria recently. The women who reported hearing a message from government hospitals or clinics was 30%, with the largest provincial increase on this indicator found in Northern, which saw an increase from 15% in 2018 to 48% in 2021. Community

health workers were the source of 16% of the messages, with a significant increase reported by women in Luapula Province, from 8% in 2018 to 19% in 2021.

This MIS reports an increase in parasite prevalence. Prevalence nationally as detected by rapid diagnostic tests was 29% among children under five years of age in 2021, compared to 16% in 2018. An increase was also seen in this indicator in all provinces compared to 2018, but provinces varied markedly and, as in 2018, roughly followed the north-south gradient and rural-urban gradient. Luapula remained the province with the highest malaria prevalence in Zambia as measured by both microscopy and rapid diagnostic test (RDT), while Copperbelt and Eastern had the lowest by microscopy and Southern and Lusaka had the lowest by RDT. Severe anaemia prevalence among children under five years of age was 6% in 2021, a slight increase from the 5% in 2015, marking the first increase in this indicator that had shown a steady decline since 2010.

Contributing factors to the increase in prevalence may include the above-mentioned decline in ITN coverage, as well as co-deployment of IRS and ITNs. While the intention was to minimise co-deployment and target areas with one intervention, any co-deployment may have resulted in areas receiving neither intervention. Another contributing factor to the increase in prevalence may have been the decline in treatment at the community level, as reflected in the decline in treatment sought from and provided by community health workers. It should also be noted that the country experienced erratic distribution of RDTs and artemisinin-based combination therapy due to a host of bottlenecks in the supply chain, among which were inadequate stocks exacerbated by disruptions of shipments during the COVID-19 pandemic. Furthermore, there was no national buffer stock to fall back on during disruptions in the supply chain.

Summary of key indicators

Indicator	DHS 2001/ 2002 ^[1]	MIS 2006 ^[2]	DHS 2007 ^[3]	MIS 2008 ^[4]	MIS 2010 ^[5]	MIS 2012 ^[6]	DHS 2013/ 2014 ^[7]	MIS 2015 ^[8]	MIS 2018 ^[9]	MIS 2021
% of households with at least one insecticide-treated net (ITN)	14	38	53	62	64	68	68	78	80	53
% of children ages 0–59 months who slept under an ITN the previous night	7	24	29	41	50	57	41	59	69	46
% pregnant women who slept under an ITN the previous night	8	24	33	43	46	58	41	N/A	71	41
% of household members who slept under an ITN the previous night	N/A	19	N/A	34	42	49	35	56	64	27
% of households with at least one ITN per sleeping space	N/A	N/A	N/A	33	34	55	N/A	64	47	30
% of households receiving indoor residual spraying (IRS) the previous 12 months	N/A	10	16	15	23	25	28	28	35	39
% of households covered by at least one ITN or recent IRS	N/A	43	N/A	68	73	74	75	81	84	71
% of women ages 15–49 who received two doses of IPTp	N/A	59	66	66	70	72	73	79	81	79
% of children ages 0–59 months who reported fever in the previous two weeks	N/A	33	18	28	34	24	21	17	19	18
% of children ages 0–59 months with fever taking artemisinin-based combination therapy (ACT)	N/A	39	N/A	30	76	85	91	92	96	97
% of children ages 0–59 months with fever reporting a finger/heel stick	N/A	N/A	N/A	11	17	32	49	36	55	59
% of women ages 15–49 years who recognise fever as a symptom of malaria	N/A	65	N/A	71	75	78	N/A	80	71	64
% of women ages 15–49 years who reported mosquito bites as a cause of malaria	N/A	80	N/A	85	85	89	N/A	85	82	77
% of women ages 15–49 years who reported mosquito nets/ITNs as a prevention method	N/A	78	N/A	81	82	86	N/A	92	86	79
% of children ages 0–59 months with malaria parasitaemia by microscopy	N/A	22	N/A	10	16	15	N/A	19	9	N/A
% of children ages 0–59 months with malaria parasitaemia by RDT	N/A	N/A	N/A	16	27	30	N/A	31	16	29
% of children ages 0–59 months with severe anaemia (Hb<8 g/dl)	N/A	14	N/A	4	9	7	N/A	6	5	6

Chapter 1: Introduction and methods

In Zambia, where malaria is endemic and continues to be a significant public health problem in most areas, the key interventions to reduce the burden of the disease are vector control (long-lasting insecticide-treated nets [LLINs] and indoor residual spraying [IRS]); prompt, effective case management (testing, treatment, and intermittent preventive treatment during pregnancy [IPTp]); and social behaviour change (SBC). Efforts to control and eliminate malaria using these interventions have been scaled up in Zambia through coordinated efforts among local and international partners.

The Zambian Government has identified malaria elimination as one of its main public health priorities. This has been emphasised in successive national development plans and national health strategic plans. The Government, through the National Malaria Elimination Programme (NMEP), has developed five-year strategic plans since 2000; the current plan being the National Malaria Elimination Strategic Plan 2017–2021 (NMESP), which states Zambia’s aim of scaling up malaria elimination interventions to achieve the national vision of ‘a malaria-free Zambia [10]’, consolidating on the gains made during the previous strategic plans.

National Malaria Indicator Surveys (MISs) are designed to help countries track progress towards the attainment of national strategic goals, objectives, and intervention coverage across geographical areas (rural and urban) for different social-economic levels. The MIS monitors changes in malaria parasite prevalence, anaemia, fever prevalence, health care-seeking behaviour, testing, and treatment in children under five years of age over time. It also assesses malaria prevention in pregnancy, insecticide-treated net (ITN) ownership and use, and IRS. Additionally, the MIS collects information on malaria knowledge, attitudes, and practice to inform SBC efforts. Since 2006, Zambia has conducted its MIS every two to three years.

The 2021 MIS coincides with the end of the current NMESP (2017–2021) and the findings will contribute to the development of the next strategic plan (2022–2026).

Objectives

The specific objectives of the Zambia National MIS 2021 were:

1. To collect up-to-date information, building on the experience of the previous MISs (2006, 2008, 2010, 2012, 2015, and 2018) on coverage of the core malaria interventions included in the NMESP 2017–2021.
2. To assess malaria parasite prevalence.
3. To assess the status of anaemia among the target populations (in particular children 6–36 months of age).
4. To assess disparities in malaria intervention coverage, and malaria parasite and anaemia prevalence, among the surveyed population by location and other background characteristics.
5. To implement standardised, representative household survey methods.
6. To strengthen the capacity of the NMEP and local agencies to facilitate the implementation of surveys of this type in the future.
7. To generate a national-level map of *Plasmodium falciparum* genetic diversity and drug resistant alleles.
8. To generate a national-level map of exposure to *P. falciparum* and other *Plasmodium* species.
9. To generate a national-level map of exposure to lymphatic filariasis, dengue, corona, and chikungunya viruses.

Timing of the survey

Data collection for the 2021 MIS was conducted between April and May 2021, which corresponded with the end of the rainy season in Zambia and roughly with the expected peak prevalence of parasitaemia and severe anaemia in most provinces. This timing, considered standard practice for MISs in Zambia dating back to the first survey in 2006, is important for interpreting key findings, including comparisons across years, peak expected ITN use, and timing of IRS.

Sample design

The 2021 MIS covered household populations in Zambia. The design for the survey was a representative probability sample to produce estimates for the country as a whole, and for rural and urban populations separately. Zambia is administratively divided into ten provinces and each province is in turn subdivided into districts. For statistical purposes, each district is subdivided into census supervisory areas (CSAs) and these are in turn subdivided into standard enumeration areas (SEAs). The most recent census conducted in 2010 showed a population of 13,045,508 in the country [11]. This population was divided and demarcated with CSAs within wards, wards within constituencies, and constituencies within districts. Information on the number of households and the population was based on the list of SEAs from the 2010 population census. The number of households was used as a measure of size for selecting primary sampling units. Therefore, the sample frame of this survey was the list of SEAs in the census.

Sample sizes were calculated with the assumption that future cross-sectional surveys will be conducted for comparison with these results. Sample size determination was based on an expected reduction in parasitaemia levels among rural populations from the 2018 MIS results and according to MIS Sampling Guidelines documentation [12]. The MIS conducted in Zambia in 2018 showed a national severe anaemia prevalence (measured as hemoglobin less than 8 g/dl) of 5.3% and a malaria parasite prevalence of 9.1% for children under five years of age. For rural areas, the estimates were 5.6% and 13.8%, respectively. With an estimated 77% of households with at least one child under age five (and assuming 46% with a child aged 6–36 months), the sample size used for the MIS was determined using a type 1 error = 5%, 80% power, a design effect of 2.00, and 20% adjustment for non-response (from household refusals or abandoned households). Based on these criteria, a 10% relative standard error requires at least 4,058 households in the rural domain. The 2021 MIS targeted 4,100 households for the national rural domain.

For urban areas of Zambia, a separate domain was based on the remaining budgetary constraints and population proportional to size sample allocation, yielding additional SEAs. This was based on allocating 800 households from among 32 clusters to detect changes in ITN use among children from 56.5% (MIS 2018) and similar sample size parameters for the rural domain except using a response rate of 90% and a 7.5% relative standard error.

An additional sample of 150 households was added to Eastern Province to increase the precision of the provincial estimate for parasite prevalence and to correspond with the expansion of pre-elimination activities in five districts (Chadiza, Chipata, Petauke, Katete, and Sinda). These additional 150 households raised the total number of sampled households in Eastern Province to 750 across both rural and urban domains.

To achieve the national rural and urban sample size totals—and including the oversampling in Eastern Province—5,175 households were selected from 207 SEAs with 25 households per cluster. From these households, approximately 5,629 children under six years of age were expected for malaria testing. In Central, Lusaka, and Southern provinces, all ages were tested for malaria, adding an estimated additional 7,489 persons above six years of age and bringing the total number of individuals tested for malaria to approximately 13,189. Furthermore, among the 5,175 households, approximately 5,350 women of reproductive ages 15–49 were expected to be administered the women's questionnaire.

A first-stage selection of SEAs was conducted by the Central Statistical Office according to the specified domains with the probability of selection proportional to the relative population size of each SEA. Second-stage sampling was conducted at the time of survey activities using hand-held smartphones. All households within an SEA were digitally listed using smartphones fitted with geo-positioning units and a random sample of 25 households from each SEA was selected for interviewing from all households listed during the survey visit by a programme called ODK EpiSample developed by the PATH Malaria Control and Elimination Partnership in Africa (MACEPA) and based on a programme originally developed by the Centers for Disease Control and Prevention (CDC) [13, 14]. Every attempt was made to conduct interviews in the 25 selected households and up to three visits were made to ascertain compliance in case of absence of all household members (or any household members in the case of malaria parasite testing) to minimise potential bias.

Questionnaires

Two questionnaires were used for the 2021 MIS: the household questionnaire and the women's questionnaire. The content of each was based on model questionnaires developed by the MEASURE DHS programme and adopted and recommended for use by the RBM Monitoring and Evaluation Reference Group (MERG) Task Force on Household Surveys [15].

The household questionnaire was used to list all usual members and visitors of the selected households. Some basic characteristics of each person were collected including age, sex, education, and relationship to the head of the household. The main purpose of the household questionnaire was to identify women who were eligible to answer the women's questionnaire. Eligible women were 15 to 49 years of age. Malaria-specific issues covered in the household questionnaire included:

- Fever prevalence and treatment-seeking behaviour for all household members.
- IRS, including whether the household in question was sprayed in the previous year, and who performed the spraying.
- ITNs, including household possession, net treatment status, and the use of nets among all household members. In the 2021 MIS, the use of ITNs was identified in each household by a complete net roster. The net roster identified and listed each mosquito net available in the house, and contained questions assessing the nets' insecticide treatment status as well as questions about each individual that slept under a net the night before the survey. From this net roster method, the questionnaire gathered data on the use of nets the night before the survey for children, pregnant women, and all other household members.

The women's questionnaire was used to collect information from all eligible women 15 to 49 years of age. The following topics were included:

- Background characteristics (e.g., education level and asset-based wealth index).
- Reproductive and birth history and pregnancy status.
- General malaria knowledge.
- IPTp, including usage for their most recent birth in the last two years, number of doses, and whether the mother received IPTp during an antenatal clinic (ANC) visit.
- Fever prevalence among children under five years of age and fever treatment with antimalarial drugs.

Questionnaires were programmed into hand-held smartphones to eliminate the need for paper transcription, allow quicker data tabulation, and facilitate faster interviewing from available skip patterns. For the purposes of the household listing and to facilitate data entry at the time of the interview, all household names were recorded into the hand-held smartphones. Each individual was assigned a unique identification code at the time of questionnaire administration.

Malaria parasite and anaemia testing

All health professionals recruited from the Ministry of Health (MOH) received standardised training to conduct finger pricks for anaemia and malaria parasitaemia among children under six years of age in every household sampled [16]. Every effort was made to prevent secondary infection from the finger stick by using sterile lancets for each child and by cleaning the finger with an alcohol swab. Survey teams were provided with sufficient supplies for this throughout their work. Sampling in children under six years of age ensured that all children under five years of age—the target population—were captured. The purpose of the MIS was explained and if parental consent was given, a finger prick was conducted. The first drop of blood was wiped from the finger, the second drop was used to prepare a thick blood film, the third drop was used in the Hemocue photometer to determine the child's haemoglobin, and the fourth drop was applied to a rapid diagnostic test (RDT). A final drop was placed on filter paper for confirmation of diagnosis and parasite species identification using polymerase chain reaction.

While all children in all provinces received an RDT during implementation of the survey, malaria parasite testing by slide microscopy was not conducted for children in clusters from Southern, Central, and Lusaka provinces. Estimates of parasite prevalence by slide microscopy presented in the tables and figures in this report exclude data from these areas.

Results from the anaemia testing and RDTs were available immediately to the parents or caregivers of the child and to the eligible women participating. Thick smears were collected by survey-assigned laboratory supervisors. All stained slides were read by two independent microscopists masked from RDT results. Slides with discordant RDT results were re-analysed by a third microscopist for final validation.

Diagnosis and treatment algorithm

The NMEP has a policy of expanding the use of RDTs for malaria diagnosis in conjunction with the use of artemether-lumefantrine (AL), an artemisinin-containing combination antimalarial treatment, for the primary treatment of uncomplicated malaria in Zambia. Standard Diagnostics' Bioline P.f HRP2 RDT was used to guide treatment of parasitaemic children during the survey. Thick blood slides were read within one month, if not sooner, after they were prepared during survey activities by qualified laboratory technicians and microscopists.

Anaemia testing was done using the Haemocue HB 201+ ® system. The haemoglobin results were shared with the parent/guardian or participant. Children found with haemoglobin levels of less than 8g/dl and a negative RDT were given an appropriate two-week dosage of daily iron, folate, and mebendazole (chewable) and referred to a health centre, and their parent/guardian was given the written results. Mebendazole was given as a presumptive treatment of helminthic infections and was only given to children at least 12 months of age.

Children with a positive RDT and clinically not fitting into the severe malaria classification (severe anaemia, prostration, impaired consciousness, respiratory distress, convulsions, circulatory collapse, abnormal bleeding, jaundice, and passing black/brown [dark] urine) received immediate treatment for malaria with AL according to Zambia's national treatment guidelines [17]. Treatment was administered by the MOH nurses who were part of the survey team. Furthermore, children with a positive RDT and classified as having simple malaria with mild to moderate anaemia (haemoglobin [Hb] between 8–11.5 g/dl) were treated with AL and given a two-week course of folic acid ONLY and no ferrous sulphate. Children clinically assessed by the survey nurse to have severe malaria were transported immediately to the nearest health centre. Children already treated with an antimalarial within the previous two weeks were referred to the nearest facility for additional evaluation. Children who were found to be seriously ill, as determined by the survey nurses, were provided transportation to the nearest health facility.

Haemocue and RDT testing was done according to manufacturer recommendations. Blood smears were stained with Giemsa stock stain prepared in advance of the survey by the National Malaria Elimination Centre Reference Laboratory. Parasite densities were calculated by counting the number of asexual stage parasites/200+ white blood cells (WBCs), assuming 8,000 WBCs/dl of blood. Where there were less than ten parasites per 100 fields, the slides were read up to a threshold of 500+ WBCs. Blood smears were considered negative if no parasites were found after counting 200 fields.

Data collection and programming

Smartphones were used for the second-stage sampling and recording of questionnaires and malaria parasite and anaemia testing results. Programming of the questionnaires was done using ODK Survey developed for the Android platform [14]. A programme called EpiSample, developed from a programme designed by the CDC, Atlanta, USA, was used for second-stage household sampling. Similar to previous software used in Zambia for the 2018 MIS, EpiSample included a navigation component to facilitate survey staff returning to selected households for interviewing [13, 14].

Community sensitisation

To prepare surveyed communities for the planned survey work, including a finger stick for anaemia and parasite testing, a series of community sensitisation measures were undertaken. These included a general informational letter and accompanying flyer for districts and local communities. These documents provided information about the purpose, procedures, and importance of household participation. Further, a series of radio spots were developed in seven local languages and aired on both national and local community radio stations with service areas matching the selected SEAs. The radio spots contained a 45-second message from the MOH introducing the survey, describing the importance of doing finger sticks to determine parasitaemia and anaemia, and encouraging participation.

Training, pre-test activities, and survey

Eighteen interviewing teams carried out the survey. Each team consisted of four health professionals: two nurses and two laboratory staff selected by district health office teams. Teams were assigned to provinces to conduct the survey.

Training was conducted in early April 2021 and coordinated by the NMEP, President's Malaria Initiative (PMI), PATH MACEPA, World Health Organization (WHO), and other partners as appropriate. The training schedule included sessions on survey background, questioning methods, the questionnaire, testing procedures, and the second-stage cluster-level sampling of households. Smartphones were introduced to the survey staff on the first day of training and were used in all training sessions to familiarise participants with each procedure.

A pre-test of all survey procedures was programmed for the end of the training week in clusters near the training centre. All participants in the training exercise were pre-arranged into groups corresponding with their assignments. During the pre-test, a full enumeration area not otherwise included in the survey sample was listed and interviewed. Each team practised performing the household listing, joining listed households from distinct surveyors' listings, and conducting interviews and testing procedures.

While the survey was conducted during the COVID-19 pandemic, training and work did not take place during the epidemic waves that occurred in Zambia. Despite this, a number of precautions were taken to mitigate the potential transmission of COVID-19. During training and survey work, additional training venue space, masks, and sanitising products were provided so facilitators, supervisors, and survey team staff could adhere to social distancing and infection control guidance provided by the MOH. Rapid antigen tests for COVID-19 were also provided to the survey team

members at multiple points during training and the survey to screen for possible COVID-19 infections and ensure any transmission potential was reduced.

Data analysis

Data manipulation and analysis were conducted in Stata 15 and R 4.1.2. Data were extracted from each phone and combined into master data files, then cleaned and merged as needed. Microscopy data were merged onto this dataset after results became available. Indicators were created based upon the standard MIS indicator definitions. The wealth index was created using the standard DHS procedure from questions about ownership of household goods, ownership of livestock and agricultural land, and household infrastructure (e.g., construction materials, toilet facilities, and water access) [18]. Point estimates for summary statistics and their 95% confidence intervals (CIs) were calculated using the survey package in R 4.1.2. Confidence intervals for indicator point estimates were updated in several charts for previous MIS surveys.

Ethical approval

The research ethics committees of the University of Zambia (Ref: 1548-2021), on behalf of the MOH in Zambia; PATH, on behalf of the MACEPA project; and the CDC reviewed and either approved the protocol or approved it as a non-research evaluation. The survey was also authorised by the National Health Research Authority.

Individual consent was obtained before starting the household and women's questionnaires and finger sticks for blood samples. This consent was based on previously approved and field-tested consent documents used in prior MISs.

Chapter 2: Characteristics of households and women respondents

Characteristics of households

The 2021 Zambia MIS collected data on basic demographic and socioeconomic characteristics of the population in the sampled households as well as information on housing characteristics and conditions. This information was used in constructing an asset-based wealth index to aid the interpretation of survey results. The criteria used to form the wealth index were based on work done previously by the World Bank and ORC Macro through the MEASURE DHS project [18].

For this survey, a household was defined as a person or group of persons, related or unrelated, who live together in the same dwelling unit (under one household head) and share a common source of food. The household questionnaire collected information on all usual residents and visitors who spent the night preceding the survey in the household.

Table 1 presents the de facto household population by five-year age groups according to sex and urban and rural designation. The population under 15 years of age makes up about 42.7% of the total population. For rural populations, 45.2% are under 15 years of age while for urban populations 37.7% are under age 15. **Figure 1** shows the population age-distribution pyramid for Zambia by gender.

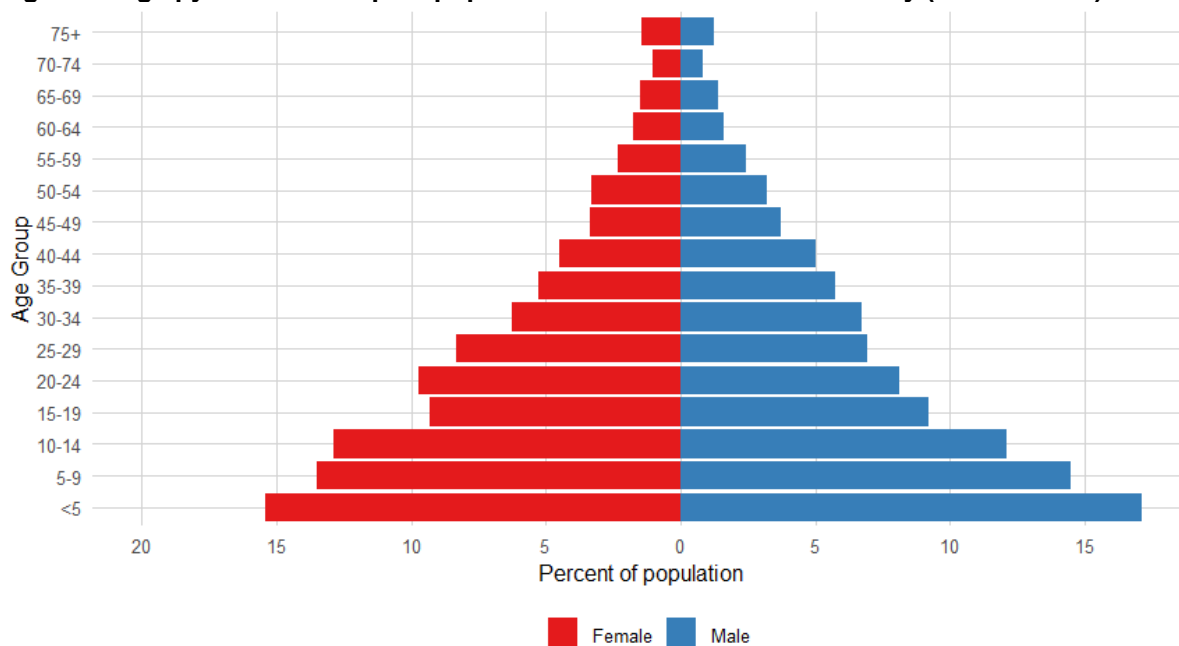
Table 1. Household population by age, sex, and urban and rural designation

Percent distribution of the de facto household population by five-year age groups, according to gender and urban and rural designation, unweighted (Zambia 2021).

Age	Urban			Rural			Total		
	Female	Male	Total	Female	Male	Total	Female	Male	Total
<5	11.5	15.3	13.2	17.5	18.0	17.7	15.4	17.1	16.2
5–9	12.7	11.8	12.3	14.0	15.8	14.8	13.5	14.5	14.0
10–14	13.6	10.4	12.2	12.5	13.0	12.7	12.9	12.1	12.5
15–19	9.4	9.9	9.6	9.3	8.9	9.1	9.3	9.2	9.3
20–24	10.7	8.9	9.9	9.2	7.8	8.6	9.7	8.1	9.0
25–29	10.9	9.0	10.0	7.0	5.9	6.5	8.3	6.9	7.7
30–34	7.4	8.3	7.8	5.7	5.9	5.8	6.2	6.7	6.5
35–39	5.3	6.8	6.0	5.2	5.2	5.2	5.3	5.7	5.5
40–44	4.9	6.0	5.4	4.3	4.5	4.4	4.5	5.0	4.8
45–49	3.0	3.5	3.3	3.6	3.9	3.7	3.4	3.8	3.6
50–54	3.2	2.9	3.1	3.4	3.4	3.4	3.3	3.2	3.3

	Urban			Rural			Total		
55–59	2.3	2.2	2.2	2.4	2.5	2.4	2.3	2.4	2.4
60–64	1.3	1.6	1.5	2.0	1.6	1.8	1.8	1.6	1.7
65–69	1.7	1.7	1.7	1.4	1.3	1.3	1.5	1.4	1.4
70–74	0.8	0.9	0.8	1.2	0.8	1.0	1.1	0.8	0.9
75+	1.3	0.7	1.0	1.5	1.5	1.5	1.4	1.2	1.3
Number	1,626	1,297	2,923	8,206	7,398	15,604	9,832	8,695	18,527

Figure 1. Age pyramid of sampled population of Malaria Indicator Survey (Zambia 2021)



Males are predominantly reported as the head of the households in rural areas at 65.8% but this reduces to 55.4% in urban areas (Table 2).

Table 2. Household composition

Percent distribution by sex of head of household and by household size, according to rural and urban designation (Zambia 2021).

Characteristic	Urban	Rural	Total
Sex of head of household			
Male	55.4	65.8	62.3
Female	44.6	34.2	37.7
Number of usual members			
1	13.8	15.2	14.7
2	16.8	14.2	15.0

Characteristic	Urban	Rural	Total
3	16.4	17.3	17.0
4	17.1	15.8	16.2
5	13.4	13.2	13.3
6	7.9	10.2	9.4
7	5.1	6.2	5.8
8	3.7	4.1	4.0
9+	5.9	3.8	4.5
Number	740	3,879	4,619

Over 90% of rural households lack electricity whereas nearly 80% of urban households have electricity (**Table 3**). Rural households reported most often using a borehole or an unprotected well for their source of drinking water whereas urban households reported most often using a public tap or having water piped into their yard or plot. Cement floors were most common in urban households whereas rural households reported usually having natural floors.

Table 3. Household characteristics

Percent distribution of households by household characteristics, according to rural and urban designation (Zambia 2021).

Household characteristic	Urban	Rural	Total
Have electricity			
No	21.1	91.3	67.6
Yes	78.9	8.7	32.4
Source of drinking water			
Piped into dwelling	15.0	1.5	6.0
Piped into yard/plot	31.1	1.4	11.4
Public tap/standpipe	35.2	4.1	14.6
Tube well/borehole	6.0	41.6	29.6
Protected well	6.9	14.9	12.2
Unprotected well	5.7	28.8	21.0
Surface water	*	7.0	4.6
Other	*	0.7	0.5
Sanitation facilities			
Other	0.3	3.7	2.5
Flush to sewer system	22.2	0.3	7.7

Household characteristic	Urban	Rural	Total
Flush to septic tank/latrine/other	19.0	3.2	8.5
Latrine (with slab or ventilated)	47.1	18.4	28.1
Open pit/latrine	9.3	57.1	41.0
No facility/bush/field	2.1	17.3	12.1
Flooring material			
Other	11.1	0.8	4.3
Natural floor	8.2	72.8	51.0
Dung	0.5	3.7	2.7
Palm/bamboo	*	0.2	0.1
Cement	80.2	22.4	41.9
Number	740	3,881	4,621

Table 4 shows a range of household assets across rural and urban areas. Ninety-three percent of urban households reported having a mobile phone compared to less than 60% of rural households. Half of urban households reported having a refrigerator compared to only 4.3% of rural households. One-third of rural households reported having none of the assets listed in the table.

Table 4. Household durable goods, livestock, and land ownership

Percent of households possessing various durable consumer goods, any livestock, and land ownership by rural and urban designation (Zambia 2021).

Household characteristic	Urban	Rural	Total
Radio	70.3	33.4	45.9
TV	72.5	11.1	31.8
Refrigerator	50.4	4.3	19.8
Mobile phone	93.2	59.1	70.6
Non-mobile phone	2.0	2.2	2.1
Land	19.4	69.3	52.4
Livestock	11.7	41.3	31.3
Bicycle	17.6	43.7	34.9
Motorcycle	1.6	2.6	2.3
Car	7.0	2.4	3.9
None	5.8	33.9	24.4
Number	740.0	3,881.0	4,621.0

Wealth index

The wealth index is a proxy measure of the relative standard of living. In the 2021 MIS, the wealth index is based on the reported household ownership of consumer goods and assets, household characteristics such as the type of household toilet facilities and available source of drinking water, and other characteristics that may relate to the household's relative socioeconomic status. The wealth index was created by assigning a factor weight to each asset or characteristic generated through a principal component analysis. The factors were summed for each household, creating a total score, which was subsequently ranked and divided into quintiles from one (lowest) to five (highest). The index was based on data from each household for the entire sample and the wealth index is presented for each set of indicators in the report.

Characteristics of women respondents

Eligible women ages 15 to 49 were interviewed using the women's questionnaire. **Table 5** presents characteristics of women respondents from the survey including their ages, education levels, religious affiliation, ethnicity, and where they live. Of the respondents, 15.3% reported having no schooling, while 39.0% reported having at least a primary school education level, and 39.5% reported having at least a secondary school education level. More than half of women reported being Protestant and nearly one quarter reported being Catholic.

Table 5. Background characteristics of women respondents

Distribution of women ages 15 to 49 years by background characteristics, unweighted (Zambia 2021).

Characteristic	Percent	Number
Age		
15–19	19.6	741
20–24	21.3	841
25–29	18.0	684
30–34	13.2	539
35–39	11.5	484
40–44	9.9	377
45–49	6.4	264
Designation		
Urban	38.5	746
Rural	61.5	3,184
Province		
Central	10.6	411
Copperbelt	15.9	464
Eastern	11.5	628
Luapula	9.6	407
Lusaka	17.1	377

Characteristic	Percent	Number
Muchinga	3.2	287
North-Western	5.4	237
Northern	7.7	321
Southern	13.2	445
Western	5.8	353
Education		
No School	15.3	624
Primary	39.0	1,854
Secondary	39.5	1,268
Higher	6.3	184
Religion		
Other	15.5	766
Catholic	23.7	923
Protestant	56.6	2,062
Muslim	0.4	13
Traditional	3.8	165
Ethnic group		
Bemba	31.4	1,090
Tonga	15.5	543
Lunda	2.3	104
Luvale	1.7	67
Kaonde	4.4	172
Mbunda	0.7	43
Ngoni	5.9	265
Lozi	5.4	293
Chewa	11.3	352
Mambwe	2.5	94
Tumbuka	4.8	253
Other	14.1	653
Number	100.0	3,930

Chapter 3: Coverage of key malaria interventions—vector control

Overview of vector control

In Zambia, the primary method of reducing malaria transmission is through the use of vector control interventions. The principal interventions for vector control are ITNs, IRS, and, where applicable, larval source management delivered within the framework of integrated vector management. The NMESP 2017–2021 strives for universal coverage of vector control tools, primarily ITNs and IRS. These interventions complement each other in that universal coverage is defined as all households having either full coverage of ITNs or having received IRS.

To achieve the intended coverage levels, the NMEP provides annual IRS campaigns in targeted areas to eligible structures as well as periodic mass ITN campaigns (typically every three years). Zambia is unusual in the region in providing IRS resources to essentially all districts in the country. Zambia increased the number of districts in which IRS is deployed from 15 districts in 2005–2006 to over 100 districts in the 2017–2018, 2019–2020, and 2020–2021 spray seasons. This is complemented by routine ITN distribution through the Expanded Programme on Immunization (EPI) and ANC clinics nationwide, and on a pilot basis, through schools in targeted districts. The scope of these distributions since 2017 is indicated in **Table 6**.

Table 6. ITNs distributed and structures sprayed through programmatic reporting, 2017–2021

Programmatic reports of the number of ITNs distributed through mass campaigns and routine sources, the number of districts targeted for IRS, and the number of structures sprayed during IRS campaigns by campaign year.

Campaign year	ITNs distributed in mass campaigns	ITNs distributed through routine channels	Districts targeted for IRS	Structures sprayed
2017–2018	10,060,000	ANC/EPI (2018) 1,003,363	115	PMI: 634,371+ GRZ/GF: 1,083,350+ MACEPA: 198,100 Total: 1,915,821
2018–2019	0	ANC/EPI (2019) 908,072	115	PMI: 476,624+ GRZ/GF: 1,120,320+ MACEPA: 201,429 Total: 1,798,395
2019–2020	0	0	115	PMI: 537,430+ GRZ/GF: 2,085,722+ MACEPA: 225,190 Total: 2,848,342
2020–2021	5,626,000	ANC/EPI (2021) 2,137,104; School-based (2021) 51,434	115	PMI: 648,952+ GRZ/GF: 1,932,635+ MACEPA: 138,892 Total: 2,720,479

The national approach to vector control deployment changed between the 2018 and 2021 MIS surveys. The 2017–2018 mass ITN campaign, conducted prior to the 2018 MIS, was resourced to target universal ITN coverage. However, IRS has since been prioritised as the primary vector control intervention. As such, during the 2020–2021 campaign, conducted prior to the 2021 MIS, IRS was

resourced to provide increased coverage, with ITNs deployed as a gap-filler. This reflected a deliberate ‘mosaic approach’ to deploying vector control resources. In 2020, IRS and ITN campaigns were planned jointly by each district, with mapping tools utilised during micro-planning to ensure that each settlement was targeted for at least one intervention, and co-deployment was minimised. This approach was essentially designed to increase the amount of IRS targeting while reducing the number of available ITNs. This is reflected in the increase in structures sprayed and the reduction in ITNs distributed shown in Table 6.

This chapter presents vector control coverage and use indicators for ITNs and IRS and compares results from 2021 to previous surveys.

Insecticide-treated nets

Ownership of ITNs in 2021

Table 7 shows ownership of ITNs in Zambia. The survey found that 53.3% of households own at least one ITN, and 29.4% have more than one ITN. The average number of ITNs per household is 1.0. ITN ownership in rural areas was 55.1% and 49.9% in urban areas. Although rural areas are intended for preferential targeting in ITN programmes, the average number of ITNs per household in rural enumeration areas (1.1) was only marginally higher than in urban enumeration areas (1.0). Western Province had the highest ITN ownership rates, with 70.9% of households reporting at least one ITN and the average household reporting 1.4 ITNs. Western Province was the last province to complete campaign distribution, and therefore the closest to the MIS survey work. Lusaka Province had the lowest net ownership rate with 30.2%. The urban areas of Lusaka District within Lusaka Province, representing the largest population centre of Zambia, have traditionally not been heavily targeted with vector control campaigns because of the low burden of malaria.

Table 7. Household ownership of mosquito nets

Households with at least one and more than one net, and average number of nets per household (Zambia 2021).

Background characteristic	Percentage of households that have at least one net	Percentage of households that have more than one net	Average number of nets per household	Percentage of households that have at least one ITN ¹	Percentage of households that have more than one ITN	Average number of ITNs per household	Number of households
Designation							
Urban	50.4	27.8	1.0	49.9	27.2	1.0	740
Rural	55.5	30.7	1.1	55.1	30.6	1.1	3,881
Province							
Central	70.8	46.9	1.6	70.8	46.8	1.6	475
Copperbelt	63.9	31.4	1.2	63.4	30.9	1.1	467
Eastern	42.9	16.2	0.7	42.6	16.1	0.7	824
Luapula	47.6	24.6	0.9	46.7	24.6	0.9	461
Lusaka	30.6	13.3	0.5	30.2	12.7	0.5	456
Muchinga	64.6	39.4	1.4	64.6	39.4	1.4	328
North-Western	68.5	40.4	1.5	67.9	40.4	1.5	293
Northern	58.4	35.8	1.1	57.1	34.7	1.1	420
Southern	57.0	39.6	1.3	56.9	39.6	1.3	497
Western	71.5	39.5	1.4	70.9	39.1	1.4	400
Wealth Quintile							
Lowest	42.5	15.8	0.6	42.3	15.8	0.6	925

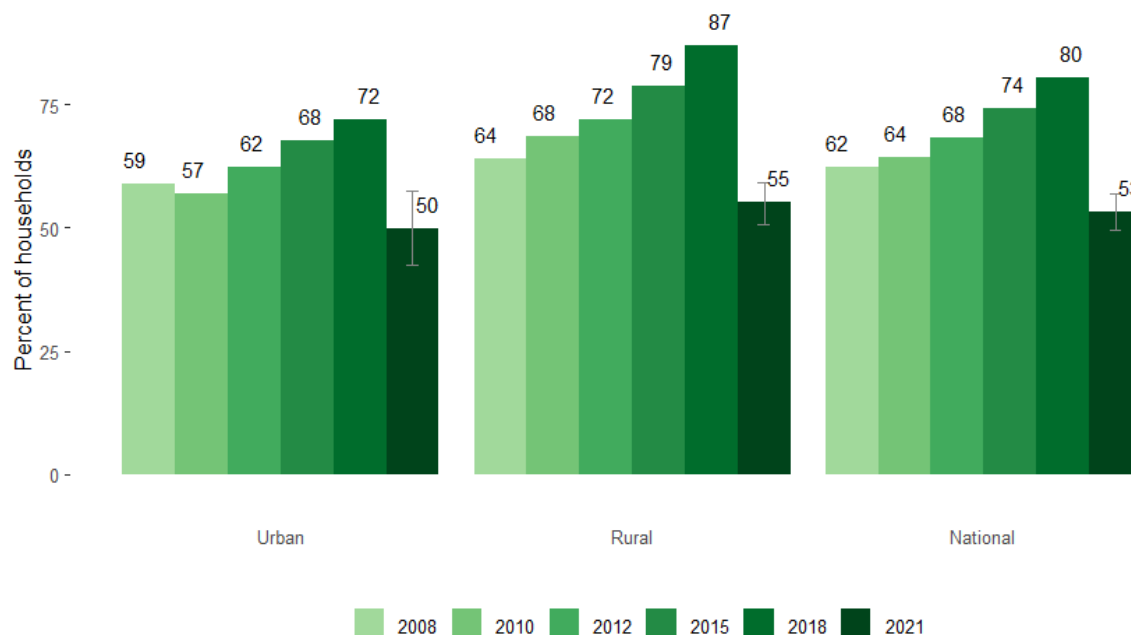
Background characteristic	Percentage of households that have at least one net	Percentage of households that have more than one net	Average number of nets per household	Percentage of households that have at least one ITN ¹	Percentage of households that have more than one ITN	Average number of ITNs per household	Number of households
Second	48.1	23.6	0.8	47.6	23.3	0.8	924
Third	56.3	28.9	1.0	55.6	28.4	1.0	924
Fourth	61.5	36.5	1.3	61.0	36.4	1.3	924
Highest	55.9	35.6	1.3	55.5	35.1	1.2	924
National	53.8	29.8	1.0	53.3	29.4	1.0	4,621

¹ An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any treatment, (2) a pre-treated net obtained within the past 12 months, or (3) a net that has been soaked with insecticide within the past 12 months.

Trends in household ownership of at least one ITN

There was a pronounced drop in household ITN ownership in 2021 compared to 2018, even though the 2020–2021 mass ITN campaign concluded just prior to 2021 MIS data collection. Nationally, household ownership declined from 80% in 2018 to 53% in 2021, with rural areas seeing a decrease from 87% in 2018 to 55% in 2021 and urban areas seeing a decrease from 72% in 2018 to 50% in 2021 (Figure 2).

Figure 2. Household ownership of at least one insecticide-treated net (Zambia 2008–2021)



Reduction in household ownership was noted in all provinces except Copperbelt, which had the lowest 2018 baseline (Figure 3). Reductions in ownership were greatest for the lowest wealth quintiles (Figure 4).

Some degree of decrease was to be expected, considering the aforementioned change in national approach whereby IRS was resourced as the primary vector control intervention and the 2020–2021 ITN mass campaign was intended as a gap-filler for IRS. While declines in ITN ownership should be viewed in the context of an increase in IRS coverage nationally and in both rural and urban areas (see IRS section of this report), the degree of the drop in ITN ownership is notable, as is the reversal in historic trends towards reaching children under five years of age, pregnant women, and lower wealth quintiles. Given that malaria disproportionately affects the poorer rural populations (see Figures 44 and 47), the relatively greater loss of access to ITNs among the lower wealth quintiles and rural EAs is undesirable and contrary to the aim of the NMEP.

Other factors contributing to low household ownership of ITNs might include an attrition of nets from earlier campaigns and limited supply of ITNs through routine channels and the private sector.

Figure 3. Household ownership of at least one insecticide-treated net by province (Zambia 2010–2021)

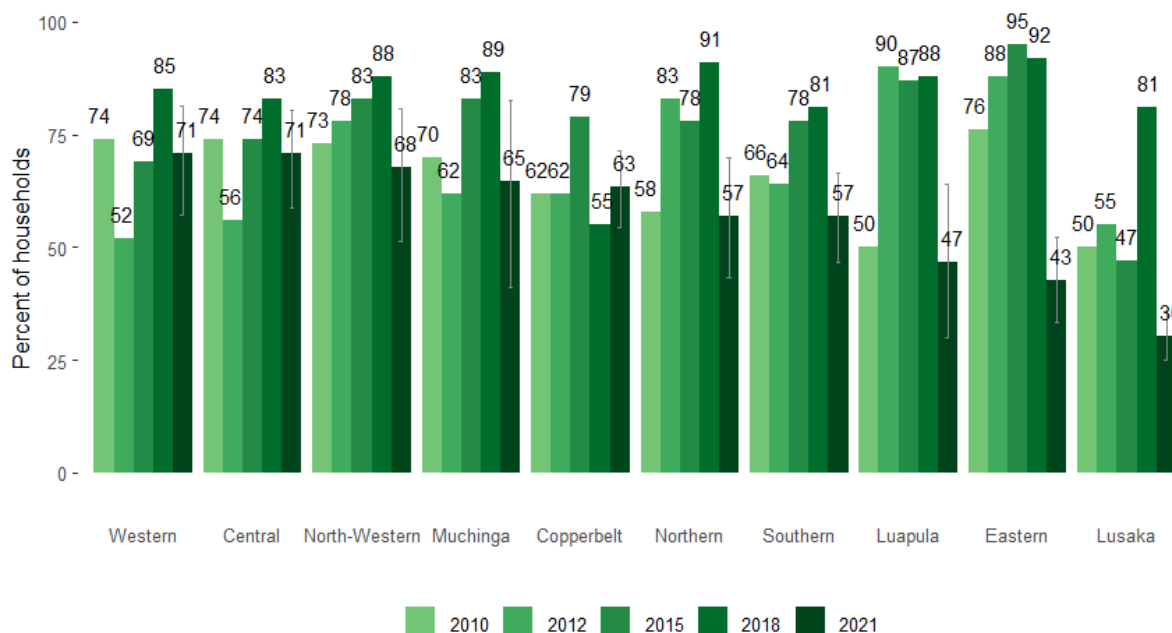
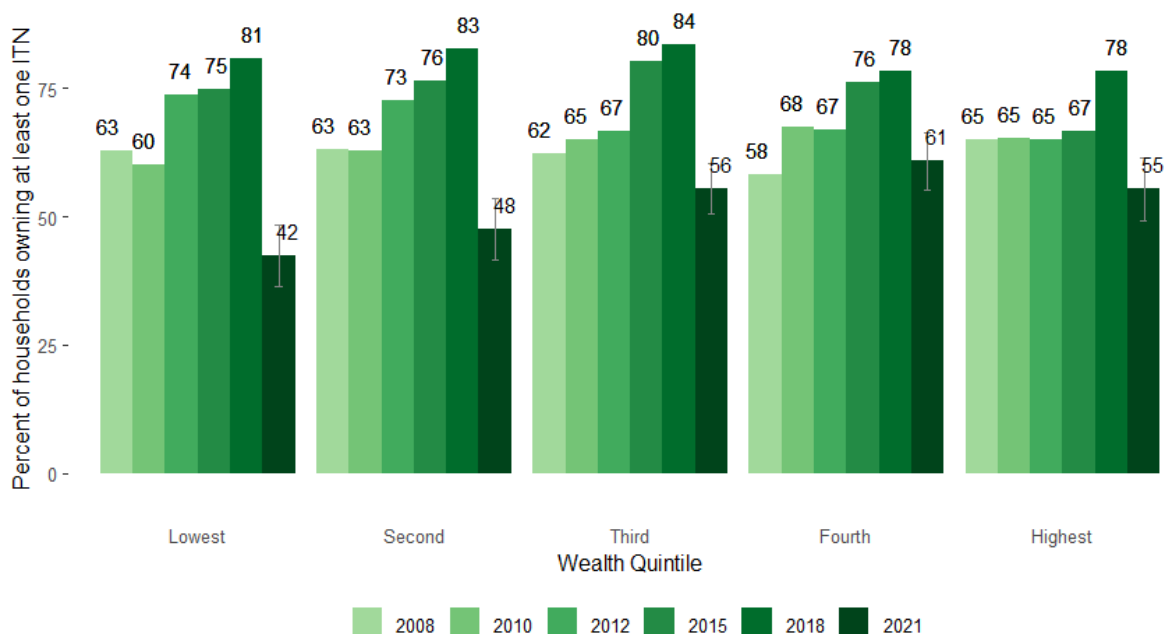


Figure 4. Household ownership of at least one insecticide-treated net by wealth quintile (Zambia 2008–2021)



Use of ITNs by children and pregnant women in 2021

Table 8 shows the use of ITNs (defined as sleeping under an ITN the night before the survey) among children under five years of age in Zambia. The survey found that 45.9% of children used an ITN the previous night. ITN use in rural areas, at 46.4%, was marginally higher than in urban areas, at 44.5%. Muchinga, North-Western, and Southern Province had the highest ITN use at 58% to 60%. Lusaka Province had the lowest ITN use rate at 28.8%. Use among children increased moderately with wealth quintile, from 40.0% among the poorest households to 48.8% among the wealthiest.

Table 8. Use of mosquito nets by children under five

Percentage of children under five years of age who, the night before the survey, slept under a mosquito net, and slept under an insecticide-treated net (ITN) by background characteristics (Zambia 2021).

Background characteristic	Percentage of children who slept under a net previous night	Percentage of children who slept under an ITN ¹ previous night	Total children
Age in months			
0-11	52.8	51.9	562
12-23	49.5	49.1	560
24-35	50.4	49.9	652
36-47	43.4	42.7	657
48-59	38.1	37.8	716
Sex			
Male	46.1	45.4	1,532
Female	46.7	46.3	1,615
Designation			
Urban	45.2	44.5	384
Rural	46.8	46.4	2,763
Province			
Central	40.1	40.1	293
Copperbelt	54.0	53.5	339
Eastern	36.8	36.3	573
Luapula	35.3	34.8	366
Lusaka	29.3	28.8	228
Muchinga	58.2	58.2	219
North-Western	60.8	59.8	249
Northern	56.5	56.2	298
Southern	60.5	59.5	257
Western	57.2	55.9	325
Wealth Quintile			
Lowest	40.2	40.0	613
Second	41.4	41.1	649
Third	48.6	48.0	663

Background characteristic	Percentage of children who slept under a net previous night	Percentage of children who slept under an ITN ¹ previous night	Total children
Fourth	48.8	48.0	703
Highest	49.5	48.8	519
National	46.4	45.9	3,147

¹An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any treatment, (2) a pre-treated net obtained within the past 12 months, or (3) a net that has been soaked with insecticide within the past 12 months.

Table 9 shows the use of ITNs among pregnant women. The survey found that 40.6% of pregnant women used an ITN the previous night. ITN use in rural areas was 41.8.% while it was 37.4% in urban areas. The number of pregnant women in the sample was too low to permit comparisons across provinces. While noting the small sample size, it may be observed that there was no consistent association of wealth quintile with use rates among pregnant women.

Table 9. Use of mosquito nets by women ages 15 to 49 years and pregnant women

All women ages 15 to 49 years and pregnant women who slept under a mosquito net (treated or untreated), an ever-treated mosquito net, or an insecticide-treated net (ITN) the night before the survey by background characteristics (Zambia 2021).

Background characteristic	Percent of women who slept under a net previous night	Percent of women who slept under an ever-treated net previous night	Percent of women who slept under an ITN previous night	Total women	Percent of pregnant women who slept under a net previous night	Percent of pregnant women who slept under an ever-treated net previous night	Percent of pregnant women who slept under an ITN ¹ previous night	Total pregnant women
Designation								
Urban	36.3	35.6	35.6	841	37.4	37.4	37.4	35
Rural	44.5	44.2	44.2	3,553	41.8	41.8	41.8	261
Province								
Central	46.1	46.1	46.1	450	45.4	45.4	45.4	36
Copperbelt	45.8	44.5	44.5	484	28.7	28.7	28.7	29
Eastern	34.9	34.5	34.5	679	33.2	33.2	33.2	48
Luapula	35.0	34.6	34.6	484	34.0	34.0	34.0	42
Lusaka	21.3	21.3	21.3	428	*	*	*	16
Muchinga	54.3	54.3	54.3	314	53.3	53.3	53.3	38
North-Western	55.6	55.0	55.0	301	*	*	*	20
Northern	50.9	49.1	49.1	376	41.0	41.0	41.0	28

Background characteristic	Percent of women who slept under a net previous night	Percent of women who slept under an ever-treated net previous night	Percent of women who slept under an ITN previous night	Total women	Percent of pregnant women who slept under a net previous night	Percent of pregnant women who slept under an ever-treated net previous night	Percent of pregnant women who slept under an ITN ¹ previous night	Total pregnant women
Southern	45.6	45.6	45.6	493	*	*	*	21
Western	61.1	60.3	60.3	385	*	*	*	18
Wealth Quintile								
Lowest	36.8	36.7	36.7	704	35.5	35.5	35.5	76
Second	40.8	40.5	40.5	751	54.0	54.0	54.0	61
Third	44.2	43.8	43.8	834	39.1	39.1	39.1	53
Fourth	47.0	46.6	46.6	983	40.2	40.2	40.2	61
Highest	38.9	38.1	38.1	1,122	36.0	36.0	36.0	45
National	41.4	40.9	40.9	4,394	40.6	40.6	40.6	296

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

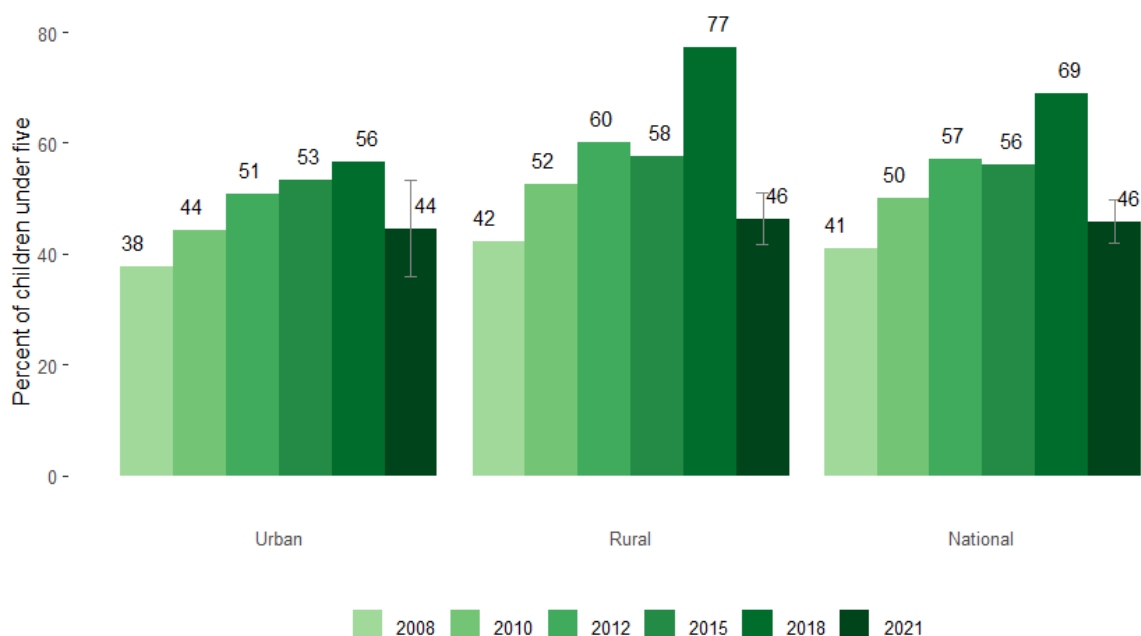
¹An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any treatment, (2) a pre-treated net obtained within the past 12 months, or (3) a net that has been soaked with insecticide within the past 12 months.

Trends in ITN use among children and pregnant women, 2006–2021

The 2021 MIS found that ITN use declined since 2018 among children under five years of age. This was true in both rural and urban households, among all age categories, and in nearly all provinces. The drop in ITN use parallels the drop in ITN ownership, and the decrease was anticipated, in line with the change in national policy that saw the 2020–2021 ITN mass campaign resourced to be a gap-filler for IRS. Thus, in 2021, ITNs were not resourced to achieve universal coverage.

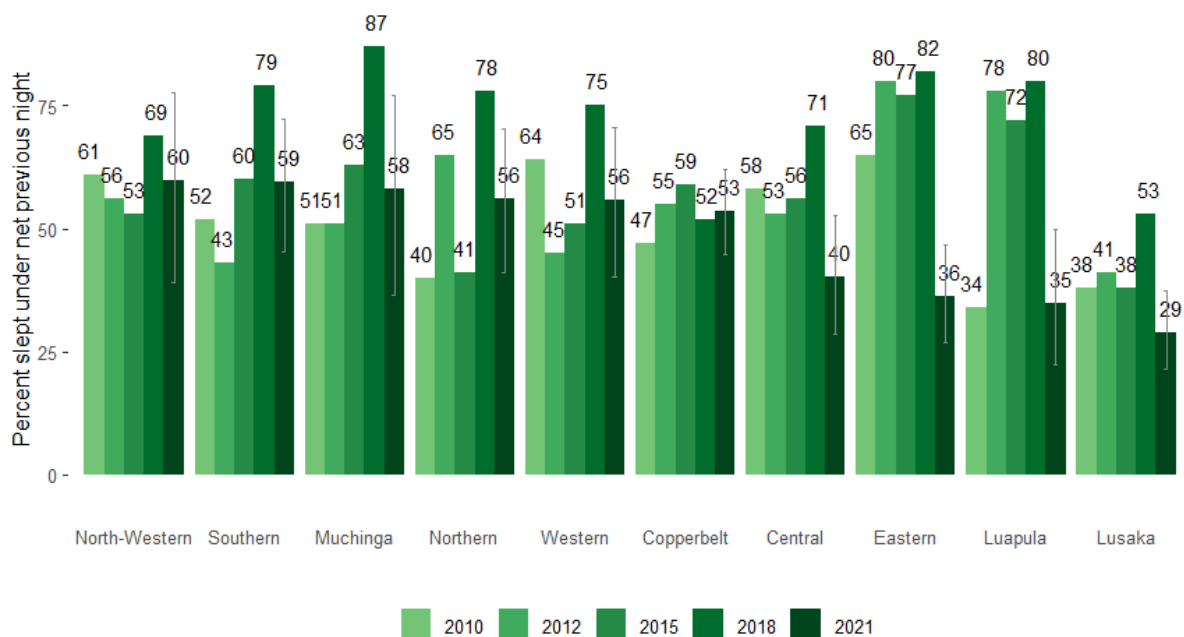
Figure 5 shows that ITN use among children declined nationally from 69% in 2018 to 46% in 2021, with the drop in use more pronounced among children in rural areas (which experienced a drop from 77% in 2018 to 46% in 2021) than urban areas (56% in 2018 to 44% in 2021).

Figure 5. Insecticide-treated net use by children under age five years by rural and urban areas (Zambia 2008–2021)



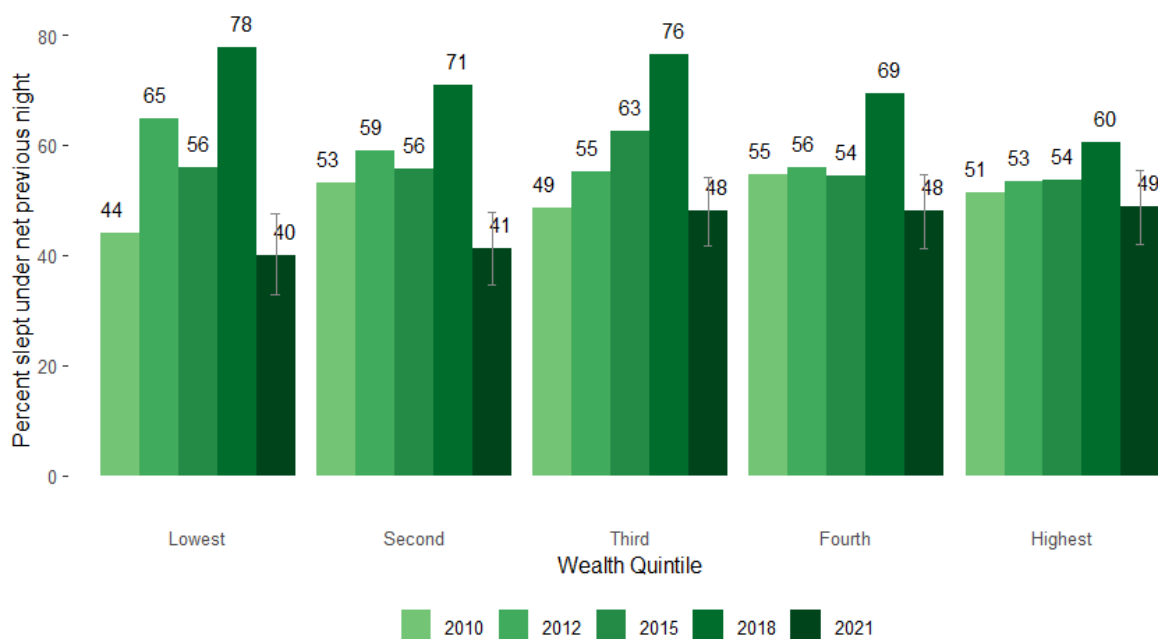
While ITN use by children under five years of age between 2006 and 2018 generally varied across provinces, nearly all provinces saw a sharp decline between 2018 and 2021. Like with ITN ownership, the exception was Copperbelt Province, which had a modest increase from the lowest 2018 baseline (**Figure 6**).

Figure 6. Insecticide-treated net use by children under age five years by province (Zambia 2010–2021)



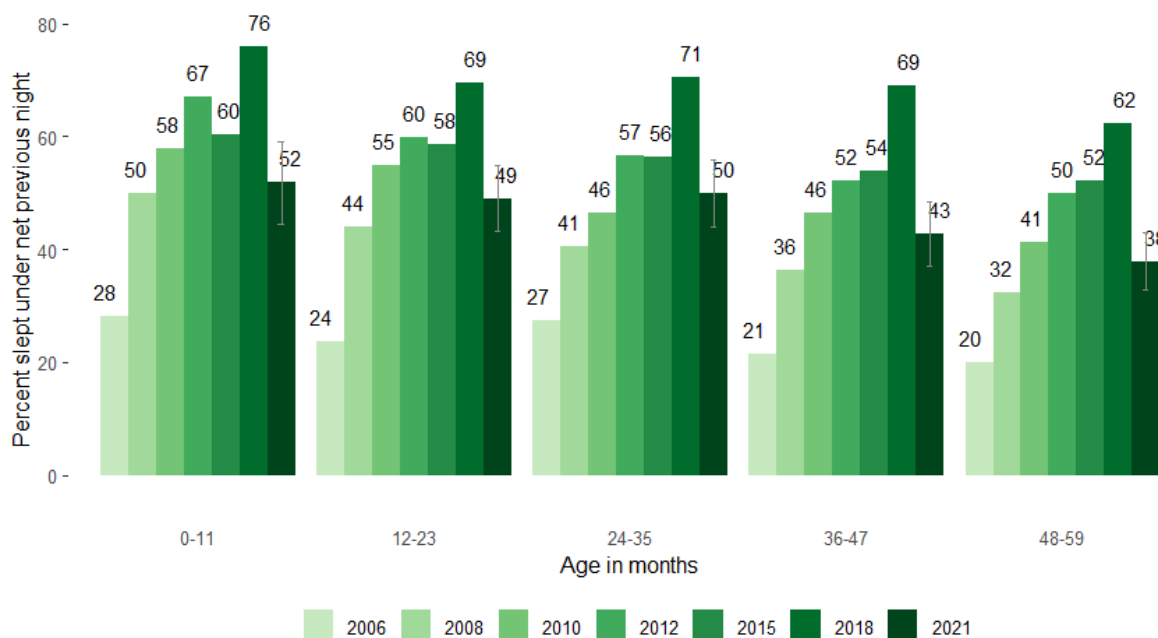
ITN use declined the most among children from the lowest wealth quintile, from 78% in 2018 to 40% in 2021 (**Figure 7**).

Figure 7. Insecticide-treated net use by children under age five years by wealth quintile (Zambia 2010–2021)



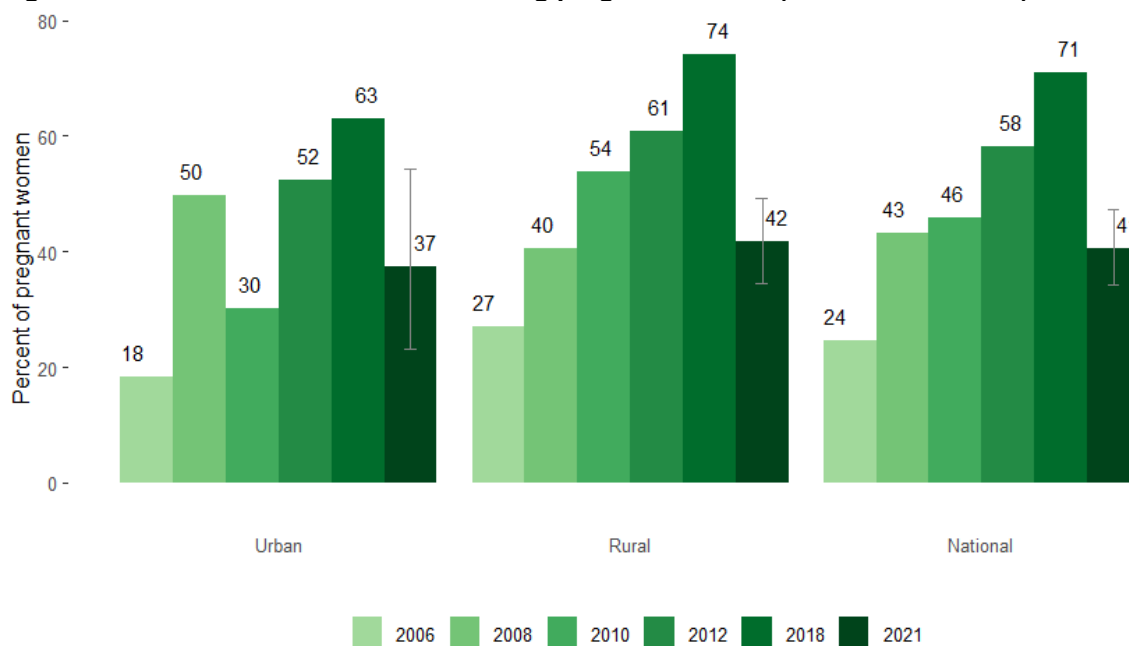
Reversing a fairly consistent trend across age category since 2006, each age category saw a sharp decline in ITN use in 2021 compared to 2018 (Figure 8).

Figure 8. Insecticide-treated net use by children under age five years by age (Zambia 2006–2021)



Use of ITNs among pregnant women, which had seen improvement prior to 2018, declined sharply by 30% in 2021 from 2018 levels with a greater decline among pregnant women from rural areas (74% in 2018 to 42% in 2021) (Figure 9).

Figure 9. Insecticide-treated net use among pregnant women (Zambia 2006–2021)

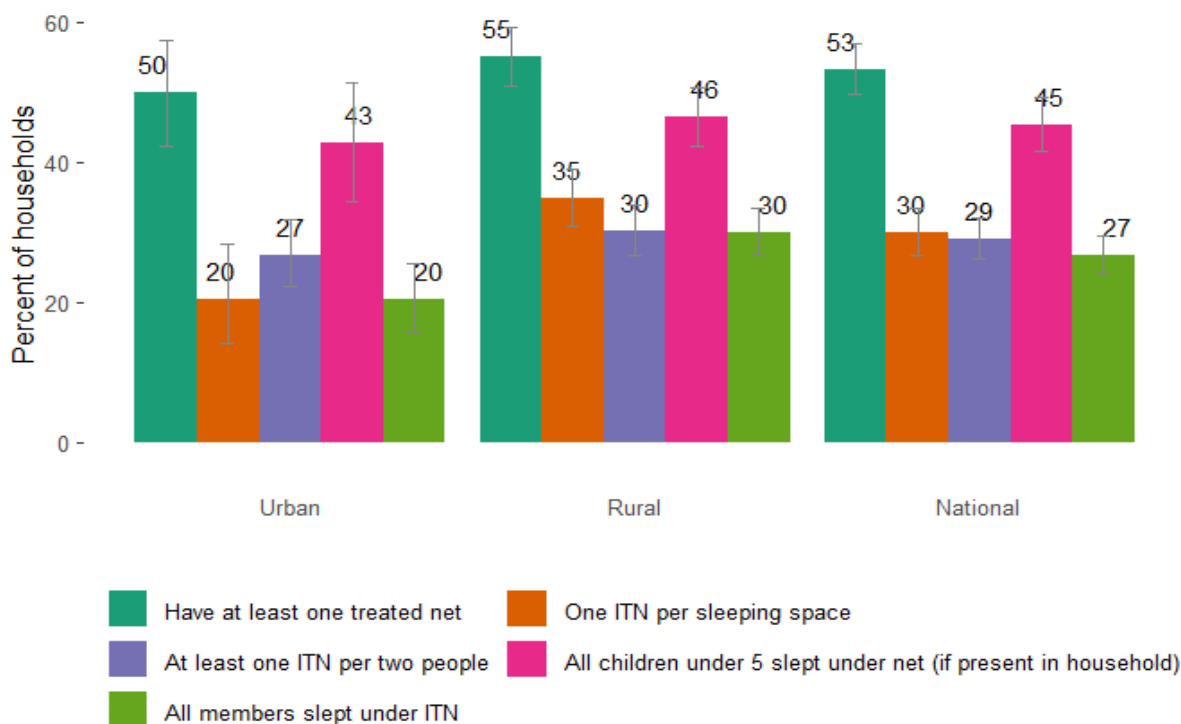


Full coverage of ITNs and use among all household members

In populations targeted for ITNs, maximising the use of ITNs among all household members is a priority for the NMEP. This section examines the availability of ITNs to cover all sleeping spaces in households and the use of ITNs among all household members beyond children under five years of age and pregnant women.

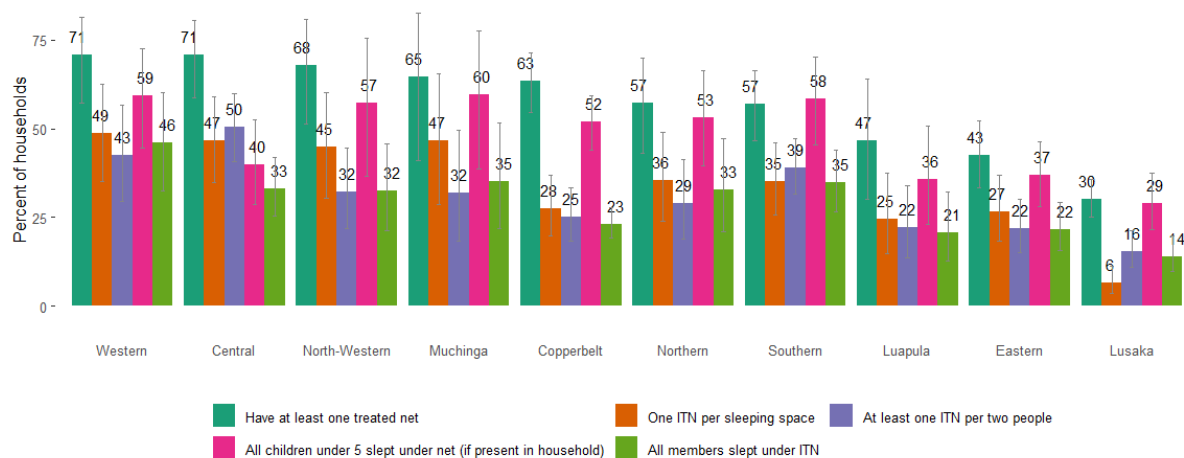
Figure 10 shows that net ownership, coverage, and use was generally higher in rural areas than in urban areas in 2021. Thirty percent of households surveyed nationally had coverage of one ITN per sleeping space (35% in rural areas, 20% in urban areas). When a net was present in the household, 45% of households reported that all children under five years of age slept under a net, with the percentages similar for both rural and urban residents.

Figure 10. Cascade of net and ITN possession, full coverage, and use among children and all household members by national, urban, and rural areas (Zambia 2021)



By province, coverage of one ITN per sleeping space was higher in Central, Muchinga, North-Western, and Western (ranging from 45% to 49%) but lowest for Lusaka (6%) (**Figure 11**). Lusaka Province also recorded the lowest percentages for coverage of household members with a net and usage of nets among all children under five.

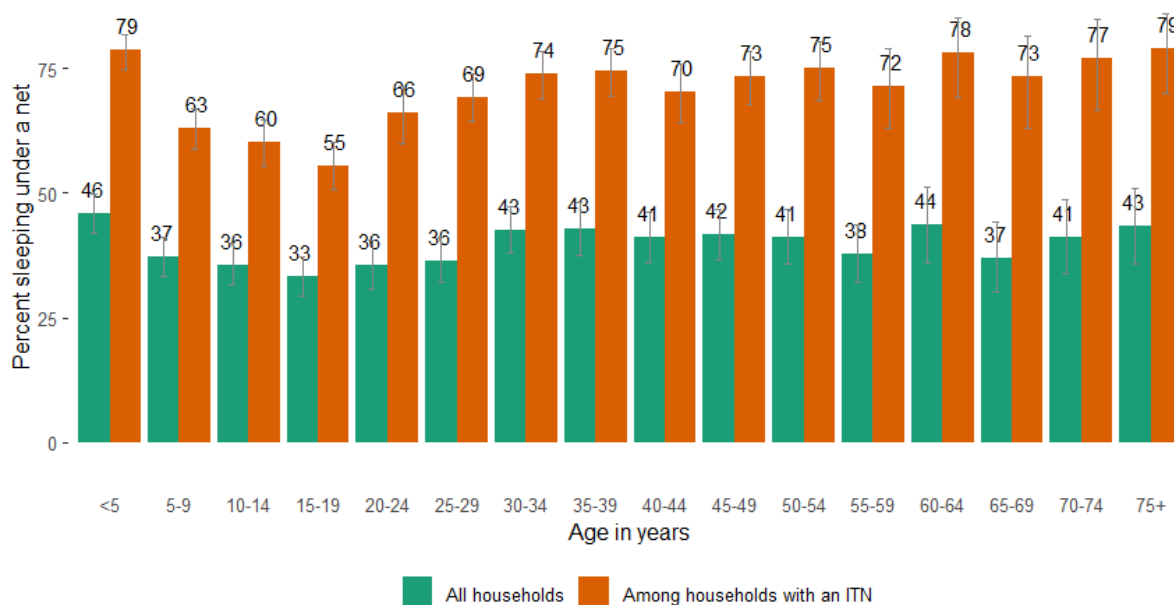
Figure 11. Cascade of net and ITN possession, full coverage, and use among children and all household members by province (Zambia 2021)



Among households that reported having an ITN, ITN use dipped for household members ages 5 to 30 (**Figure 12**). ITN use was highest for children under five years of age and the elderly. Because of the reduction in areas targeted for ITNs in the 2020 ITN campaign, the gap between ITN use by age in all

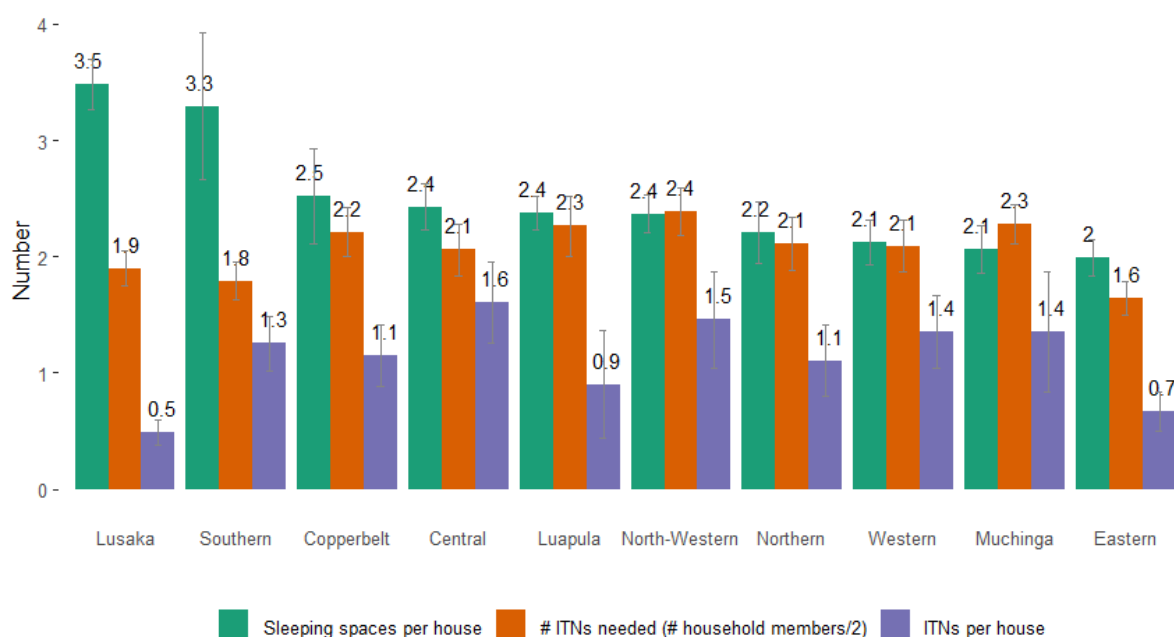
households and households with at least one net was significantly larger in 2021 compared to previous years.

Figure 12. Insecticide-treated net use among all household members by age group (Zambia 2021)



There was a discrepancy between the number of nets needed versus the nets available across all the provinces with Lusaka and Luapula having the highest gap while Southern and Central had the lowest gap (Figure 13).

Figure 13. Average number of sleeping spaces, number of ITNs needed to meet the needs of one ITN per two household members, and average number of ITNs per household by province (Zambia 2021)



Among households with at least one ITN, the percentage of households with an ITN-to-sleeping space ratio of at least 1:1 was highest in Muchinga (72%) and lowest in Lusaka (21%) in 2021 (Figure 14).

Declining trends in ITN-to-sleeping space ratio were observed in Luapula, Copperbelt, and Lusaka provinces, with the largest decline seen in Lusaka between 2018 and 2021 with increases in Southern, Western, and Central provinces.

Figure 14. Percentage of households with an insecticide-treated-net-to-sleeping-space ratio of at least one to one (Zambia 2008–2021)

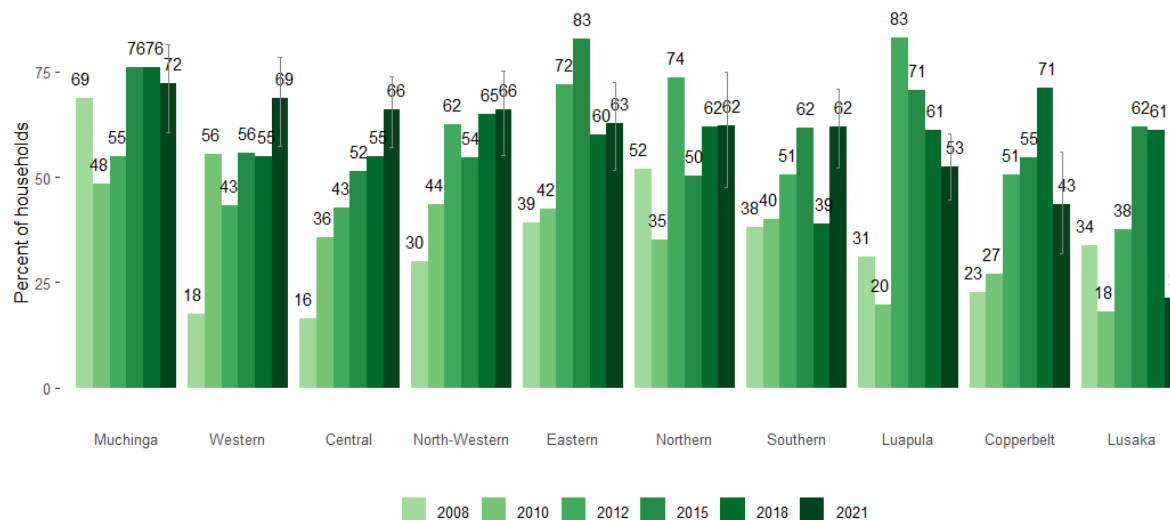


Table 10 shows that in 2021, 39.2% of all household members slept under an ITN in Zambia the night before the survey, most of whom were female (40.3%) and rural residents (41.9%). ITN use was highest in Western Province (55.3%)—followed by Southern (50.4%) and North-Western (50.3%)—and lowest in Lusaka Province (19.6%). Lower ITN utilisation rates were found among the lower income households.

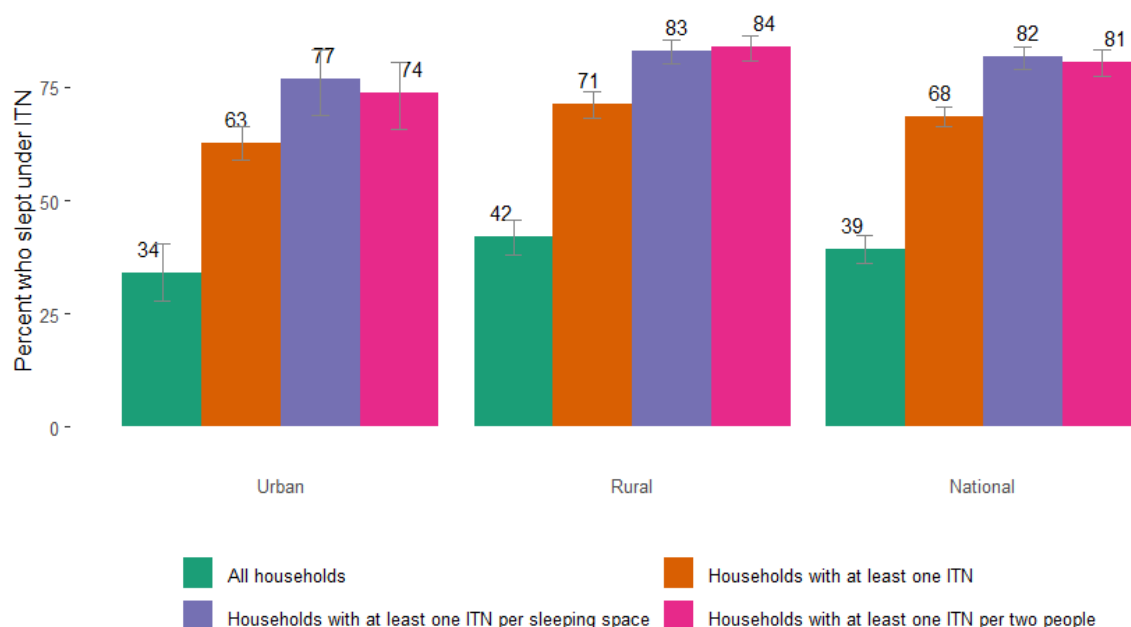
Table 10. Use of mosquito nets among all household members

Background characteristic	Percent of household members who slept under a net previous night	Percent of household members who slept under an ITN ¹ previous night	Total household members
Sex			
Male	38.5	37.9	8,695
Female	40.8	40.3	9,832
Designation			
Urban	35.0	34.0	2,923
Rural	42.1	41.9	15,604
Province			
Central	41.1	41.0	1,941
Copperbelt	43.5	42.1	1,938
Eastern	32.7	32.3	2,805
Luapula	31.5	31.2	1,991

Background characteristic	Percent of household members who slept under a net previous night	Percent of household members who slept under an ITN ¹ previous night	Total household members
Lusaka	19.8	19.6	1,689
Muchinga	50.0	50.0	1,481
North-Western	50.6	50.3	1,444
Northern	49.7	48.2	1,714
Southern	50.5	50.4	1,862
Western	55.8	55.3	1,662
Wealth Quintile			
Lowest	33.9	33.8	2,960
Second	36.4	36.2	3,409
Third	41.2	40.8	3,789
Fourth	44.2	43.9	4,331
Highest	39.6	38.6	4,038
National	39.7	39.2	18,527

¹An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any treatment, (2) a pre-treated net obtained within the past 12 months, or (3) a net that has been soaked with insecticide within the past 12 months.

It was observed that ITN use was associated with level of household ITN ownership (**Figure 15**). The more ITNs available at a household, the greater the potential for more household members to use them. Among households with at least one ITN per sleeping space, 82% of all household members slept under an ITN the previous night. If households with no ITNs are included, 39% of household members reported using an ITN.

Figure 15. Percentage of household members using an ITN the night before the survey by level of household ownership of ITNs (Zambia 2021)

Indoor residual spraying

Households sprayed in the previous 12 months

Indoor residual spraying is another key vector control intervention for reducing malaria transmission. It is targeted to kill female, anopheline mosquitoes who primarily bite and subsequently rest indoors. IRS is applied to the interior walls of household structures in spray campaigns that set high operational coverage targets in targeted areas to achieve maximum impact (typically a minimum of 85% of eligible structures in a local area). Sampling of households in surveys such as the MIS is not necessarily designed to understand targeted area operational coverage but does provide a wider picture of population-based coverage at provincial and national levels.

IRS involves government or, in some cases, privately organised spray teams identifying targeted and eligible structures for IRS campaigns. In Zambia, IRS campaigns are ideally organised just prior to the rainy season, and before anopheline mosquito populations surge. The MIS provides estimates of coverage, reported source of the spray campaigns, and the length of time in months since the spraying occurred.

The 2021 MIS reported 39.0% of Zambian households to have been sprayed in the previous 12 months (**Table 11**). There were more households sprayed in the rural (44.0%) than urban areas (29.3%). By province, Luapula had the highest percentage of households sprayed at 65.6%, followed by Eastern (61.0%), while Lusaka had the lowest percentage of households sprayed (13.9%). Of the households sprayed, almost all were by the government (96% to 100%).

Timing of households receiving IRS in 2020–2021

The national standard in Zambia is to spray early in the rainy season, preferably by early November prior to a surge in the vector population, in order to maximise access to structures and settlements and to improve acceptability of IRS. As data collection for the 2021 MIS was conducted between April and May 2021, the average number of months between the time that IRS activities were conducted and when the survey was held would have ideally been seven months. However, only Eastern Province met this standard (with households reporting being sprayed an average of seven months

prior to the survey). Luapula Province reported the second longest period of time since IRS was conducted, at just under six months. North-Western and Central had on average been sprayed most recently, at approximately five months prior to the survey.

Table 11. Indoor residual spraying (IRS)

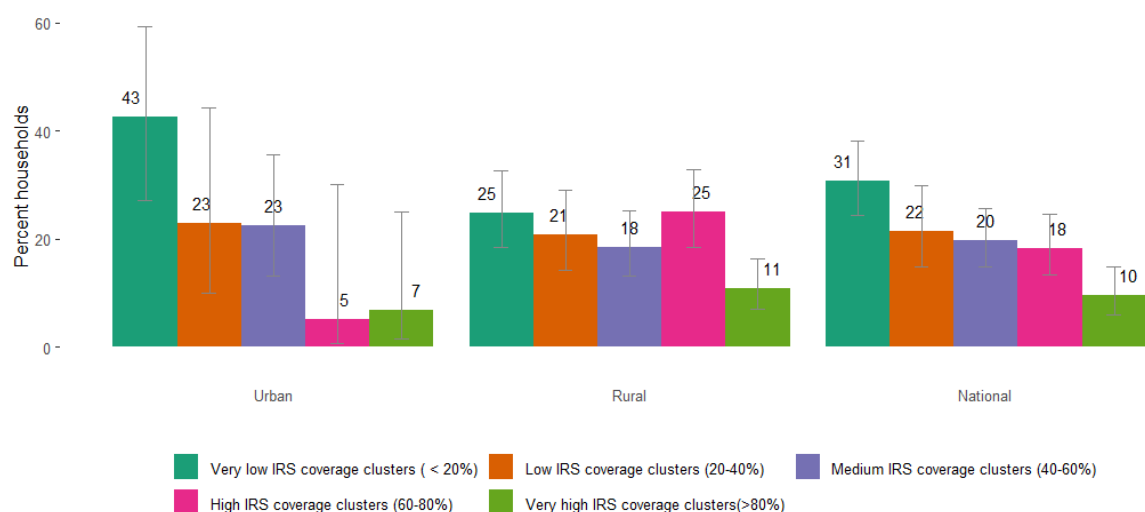
Among all households surveyed, the percentage of households reporting indoor residual spraying in the previous 12 months. And among households that reported spraying, the percentage that reported that the spraying was conducted by public sector and private agents and the average number of months that spraying was conducted prior to the survey by background characteristics (Zambia 2021).

Background characteristic	Percent of households sprayed in the previous 12 months	Number of households	Percent sprayed by Government worker /programme	Percent sprayed by private company	Average number of months ago house sprayed	Number of sprayed houses
Designation						
Urban	29.3	740	95.4	1.0	5.1	228
Rural	44.0	3,881	99.4	0.2	6.0	1,733
Province						
Central	25.7	475	99.9	0.0	5.1	127
Copperbelt	53.3	467	95.6	0.7	5.2	226
Eastern	61.0	824	98.3	0.1	7.1	516
Luapula	65.6	461	99.2	0.8	5.8	293
Lusaka	13.9	456	98.0	0.0	5.7	93
Muchinga	43.3	328	100.0	0.0	5.5	142
North-Western	47.6	293	97.1	1.3	4.6	126
Northern	40.7	420	100.0	0.0	5.7	181
Southern	24.6	497	99.5	0.0	5.5	134
Western	28.1	400	100.0	0.0	5.3	123
Wealth Quintile						
Lowest	46.1	925	100.0	0.0	5.9	432
Second	42.4	924	99.3	0.0	6.0	404
Third	42.4	924	99.3	0.0	6.1	407
Fourth	42.4	924	99.3	0.4	5.8	406
Highest	30.5	924	95.2	1.2	5.3	312
National	39.0	4,621	98.4	0.4	5.8	1,961

Quality of IRS coverage

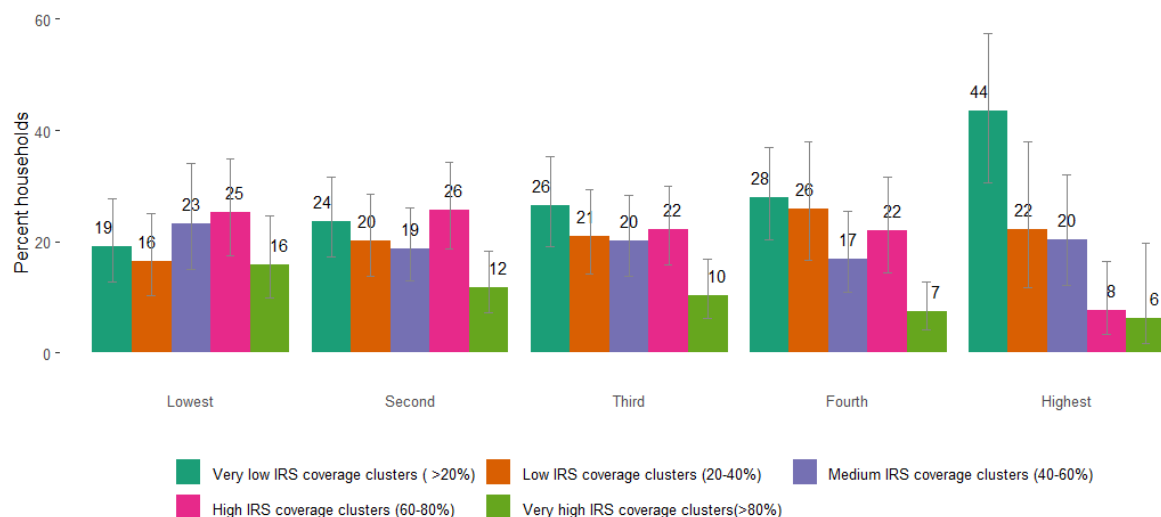
To better understand the quality of Zambia’s IRS programmes, the extent of IRS coverage within survey clusters was analysed. Survey clusters do not always align with IRS targeted areas but at the cluster level, the extent of coverage within clusters provides an idea of how concentrated IRS coverage is being delivered. This can provide some insight into the quality of IRS and the community effect IRS is designed to provide. For this analysis, adequate or very high coverage for IRS was defined as at least 80% of the households within the survey cluster reported as being sprayed. All survey clusters with any IRS were further categorized by 60–80% (high), 40–60% (medium), 20–40% (low), and very low (<20%). In rural areas, only 25% of households reside in clusters with high IRS coverage and 11% in clusters with very high coverage (**Figure 16**), which was higher than both the national average and the average for urban areas. Overall, only 10% of households are located in clusters with adequate IRS coverage.

Figure 16. Percentage of households by intra-cluster quality of IRS coverage by residence (Zambia 2021)



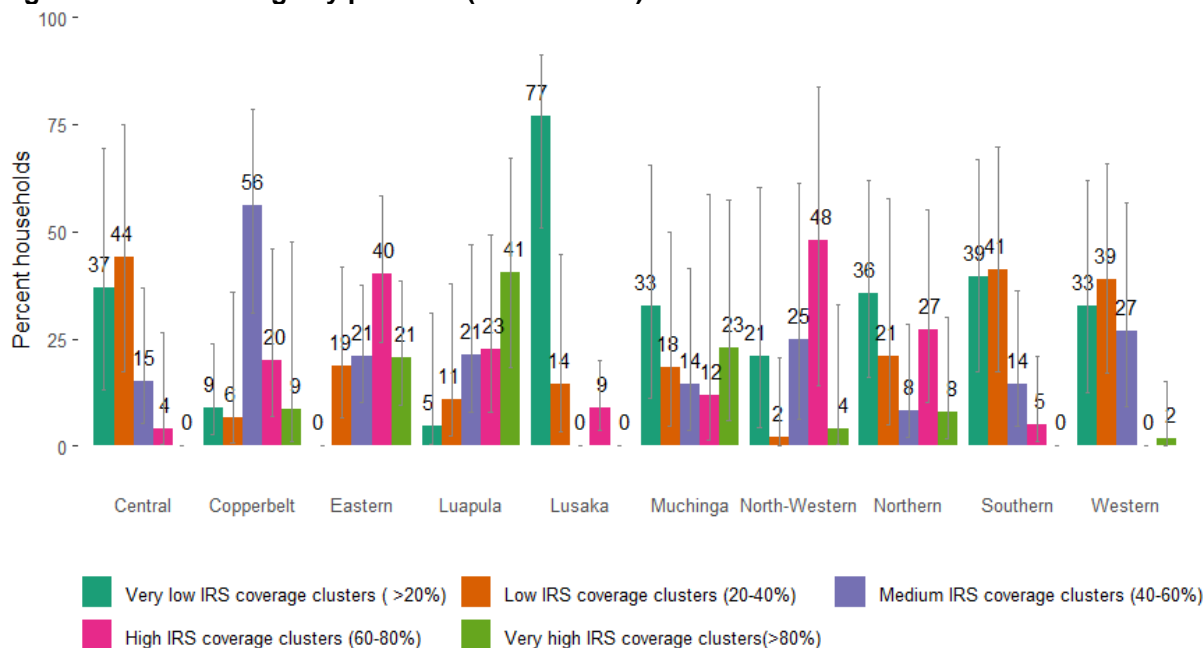
More clusters in the lowest wealth quintile (16%) reported having very high coverage of IRS than the other wealth quintiles (**Figure 17**), and 25% of clusters in the lowest wealth quintile had high IRS coverage (second only to the second wealth quintile, which reported 26%).

Figure 17. IRS coverage by wealth quintile (Zambia 2021)



Luapula Province had the highest percentage of clusters with very high IRS coverage, at 41% (**Figure 18**). Muchinga and Eastern had the next highest percentage with 23% and 21%, respectively. As expected, Lusaka had by far the greatest percentage of clusters with very low IRS coverage.

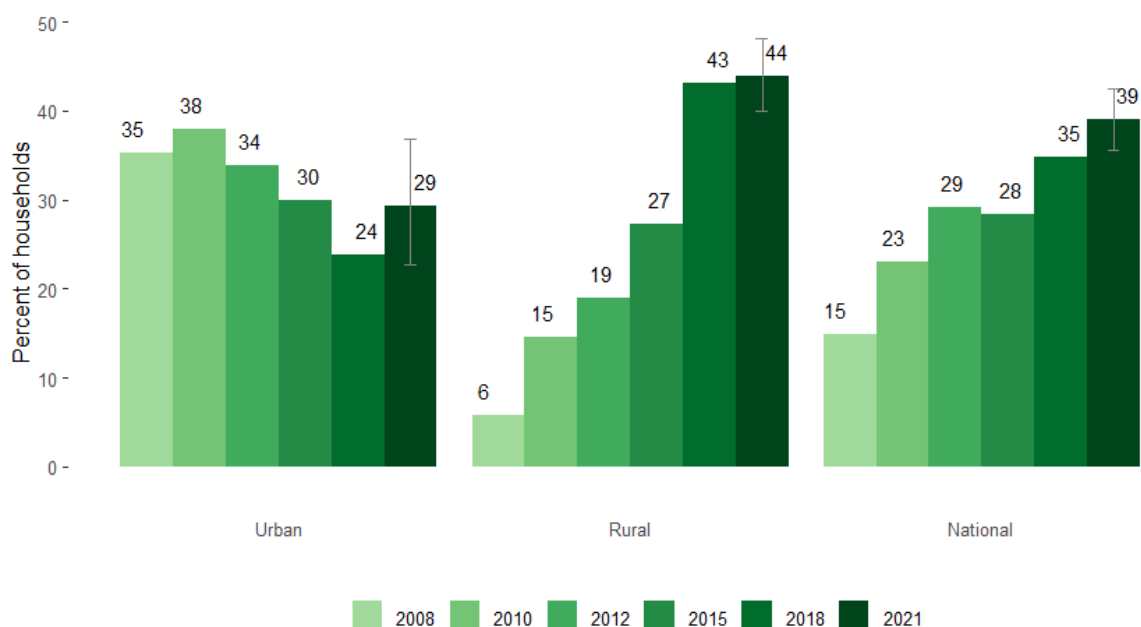
Figure 18. IRS coverage by province (Zambia 2021)



Trends in IRS coverage

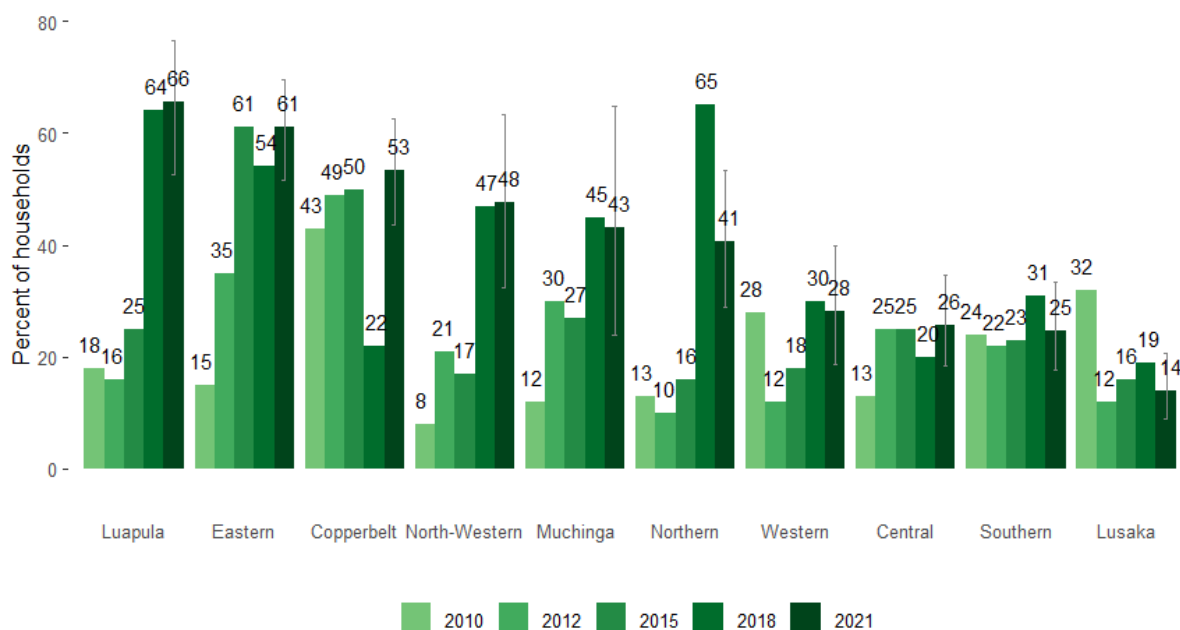
Nationally, reported IRS coverage rates have increased from 15% in 2008 to 39% in 2021, although the increase from 2018 (35%) was modest (**Figure 19**). IRS coverage among households in rural areas increased seven-fold from 6% in 2008 to 44% in 2021 but only a marginal increase from 2018 (43%) was seen. A decline was recorded for households in urban areas, from 35% in 2008 to 29% in 2021, although coverage increased from 24% in 2018.

Figure 19. Households sprayed within the previous 12 months by urban and rural areas (Zambia 2008–2021)



By province, between 2008 and 2021, Eastern, Luapula, Muchinga, and North-Western, provinces saw a large increase of 30% to 48% of households sprayed within the previous 12 months, followed by a 10%-to-15% increase in Central and Copperbelt (**Figure 20**). Southern and Western provinces stagnated with some slight variations over the years, while Lusaka and Northern provinces saw declines in IRS coverage. Notably, after a large drop in 2018, Copperbelt increased its IRS coverage by 31%, making its 2021 coverage level the highest ever in the province since 2008.

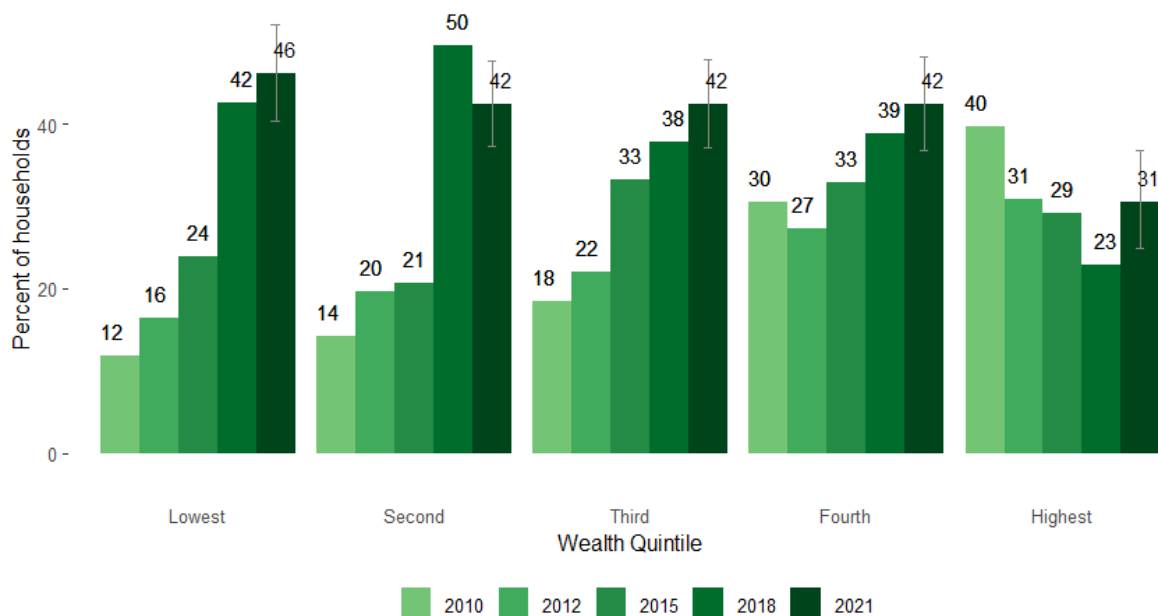
Figure 20. Households sprayed within the previous 12 months by province (Zambia 2010–2021)



In terms of equity, there has been a steady trend towards reaching the lower wealth quintile as evidenced by improvements in IRS coverage among the lowest to fourth wealth quintiles between

2008 and 2021 (**Figure 21**). However, a declining trend is reported in the highest wealth quintile for 2008–2018 with a slight increase in 2021.

Figure 21. Households sprayed in the previous 12 months by wealth quintile (Zambia 2010–2021)

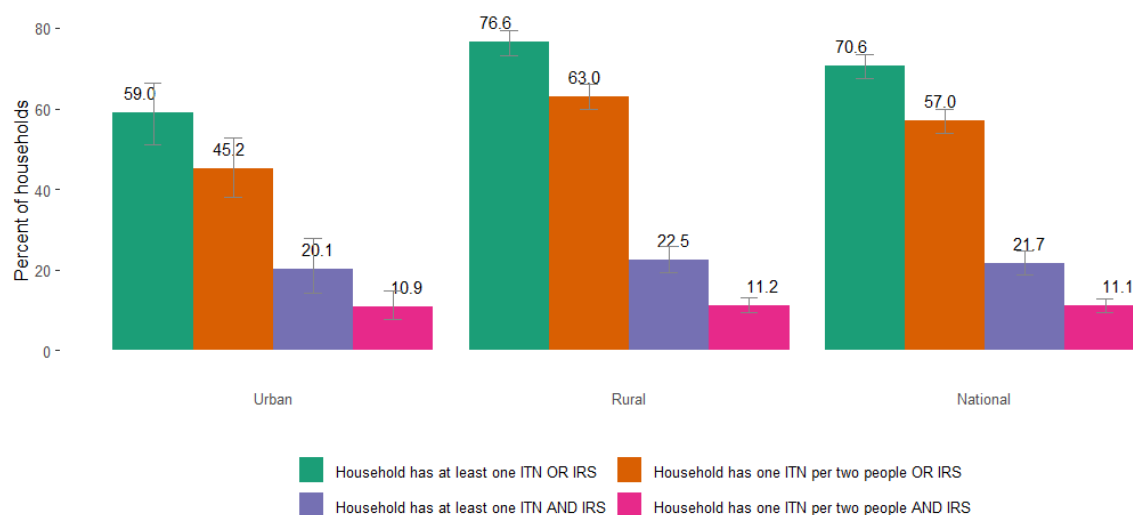


Vector control with ITNs and/or IRS

While the increase in the number of households sprayed in Zambia nationally and in rural and urban areas in 2021 shows the benefits of prioritising IRS, this increase was not large enough to offset the decline in ITN ownership and use across Zambia, which may have contributed to an increase in parasite prevalence in children under five years of age (see Chapter 6). While the intention of a ‘mosaic approach’ to deploying vector control resources was to minimise co-deployment, there were areas where IRS and ITNs were co-deployed, which may have resulted in other areas receiving neither intervention.

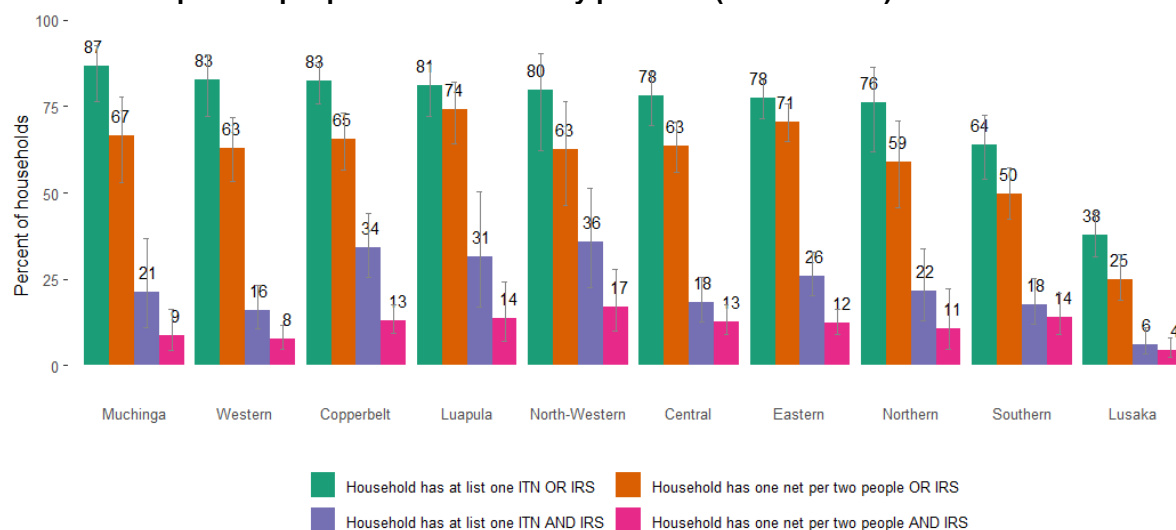
Nationally, 70.6% of households reported having either at least one ITN or IRS in 2021 (**Figure 22**). Having at least one ITN or IRS was higher among rural households (76.6%) than the urban households (59.0%). The percentage of households that reported having at least one ITN and IRS in 2021 was 21.7% nationally, 22.5% for households in rural areas, and 20.1% for households in urban areas.

Figure 22. Households reporting either at least one ITN or IRS or both and households with at least one ITN per two people or IRS or both (Zambia 2021)



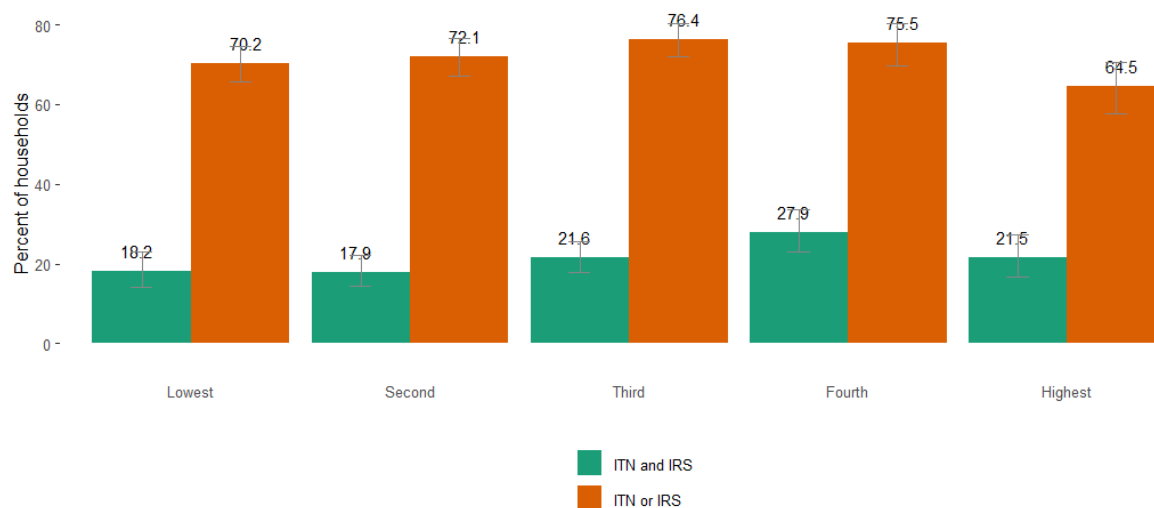
By province, approximately 80% to 87% of households reported having at least one ITN or IRS in Muchinga, Western, Copperbelt, Luapula, and North-Western, while Lusaka (38%) had the lowest percentage of households reporting at least one ITN or IRS (Figure 23).

Figure 23. Households reporting either at least one ITN or IRS or both and households with at least one ITN per two people or IRS or both by province (Zambia 2021)



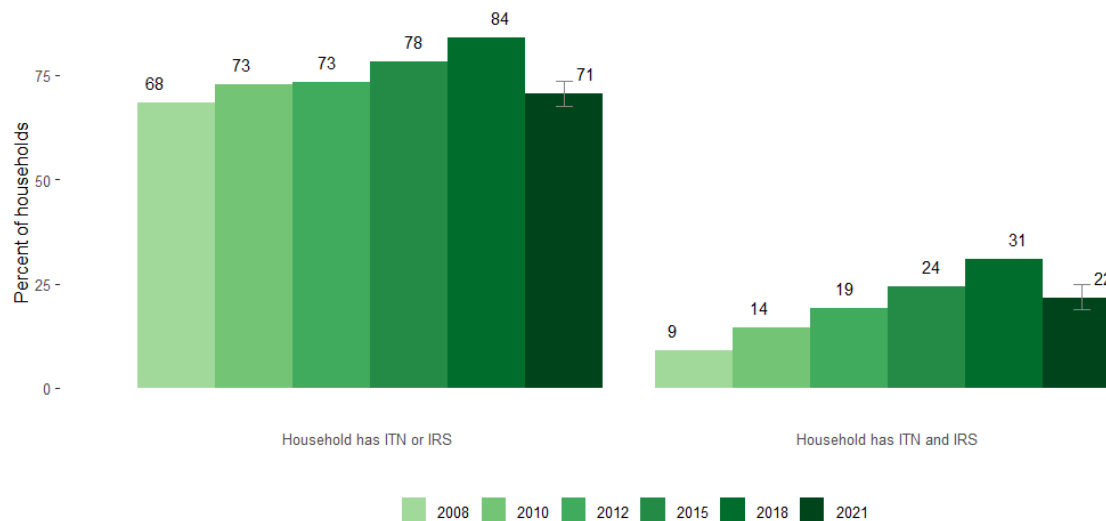
Aside from the highest wealth quintile, the percentage of households that reported having at least one ITN or IRS was fairly consistent, ranging from 70.2% in the lowest wealth quintile to 76.4% in the third wealth quintile (Figure 24).

Figure 24. Percentage of households with at least one insecticide-treated net and/or indoor residual spraying by wealth quintile (Zambia 2021)



While an upward trend for households protected by either IRS and/or ITN was observed from 2008 to 2018, there was a decline from 84% in 2018 to 71% in 2021 (Figure 25).

Figure 25. Percentage of households with at least one insecticide-treated net and/or indoor residual spraying (Zambia 2008–2021)



Chapter 4: Coverage of key malaria interventions—intermittent preventive treatment during pregnancy and case management

Case management is one of the core interventions for malaria prevention, control, and elimination. The strategic objective of case management is parasitological testing of all suspected cases and prompt, effective treatment with safe and efficacious antimalarial medicines. Microscopy and RDTs are used for malaria diagnosis while the national treatment guidelines specify the use of artemether-lumefantrine (AL) for the treatment of uncomplicated malaria episodes and injectable artesunate for severe cases. Quinine is still used when indicated and where injectable artesunate is not available. These case management services are accessed through health facilities (public and private) and in communities through trained community health workers (CHWs).

The Ministry of Health seeks to scale up malaria case management at the community level through an integrated approach to managing childhood illness: integrated community case management (iCCM). This approach—which includes management of diarrhoea, pneumonia, malnutrition, and malaria—aligns with the MOH mission to provide equitable access to cost effective, quality healthcare services as close to the family as possible. The MIS therefore reports on the status of the management of diarrhoea as part of this integrated package.

To address malaria in pregnancy, the Zambian ANC guidelines, adapted from the 2016 WHO Antenatal Care Guidelines, have a complementary intervention for case management for pregnant women called intermittent preventive treatment during pregnancy (IPTp). IPTp is a full therapeutic course given to eligible pregnant women during antenatal care visits to prevent the adverse outcomes of malaria in pregnancy. Monthly doses of sulfadoxine-pyrimethamine (SP) after quickening over the course of a pregnancy is the recommended regimen for IPTp in Zambia, although to achieve high coverage of more than three doses requires the initiation of ANC visits early in the pregnancy. The NMESP 2017–2021 calls for universal access to malaria treatment and IPTp.

The 2021 MIS reports on the prevalence of fever among children, source of care, as well as the type and source of antimalarial treatments provided during a febrile episode. The reported prevalence of fever and care-seeking behaviour among children in the previous two weeks limits the number of respondents to many demographic divisions presented in the following tables. To obtain information on IPTp, the MIS asked women of reproductive age about their most recent pregnancy, if any, within the previous five years and asked about preventive treatments received during that pregnancy. In addition to malaria treatments and IPTp, the MIS asked the women of reproductive age about diarrhoea episodes among their biological children in the previous two weeks and the types and sources of treatments provided for these episodes.

Intermittent preventive treatment during pregnancy (IPTp) coverage in 2021

Table 12 shows the use of IPTp by pregnant women. In 2021, 86.3% of women who reported being pregnant in the past year took at least one dose of IPTp, and 67.9% of women reported taking three doses. By geographic location, the third dose of IPTp was higher in urban areas (76.0%) than in rural (65.2%) areas. Coverage of the first dose of IPTp was fairly high across provinces, with even the lowest province, Southern, still reporting 68.4% coverage. By wealth quintiles, the disparities are greater by the time women report their third and fourth doses, with the higher wealth quintiles having the highest coverages. There was more variation in coverage of the third dose by province, with Northern Province reporting 84.2% coverage of the third dose and Southern reporting only 43.2%. In general, IPTp coverage for the first, second, and third doses rose with the level of education.

Table 12. Use of intermittent preventive treatment (IPTp) by pregnant women

For the last birth in the five years preceding the survey, the percentage for which the mother took antimalarial drugs for prevention during the pregnancy by background characteristics (Zambia 2021).

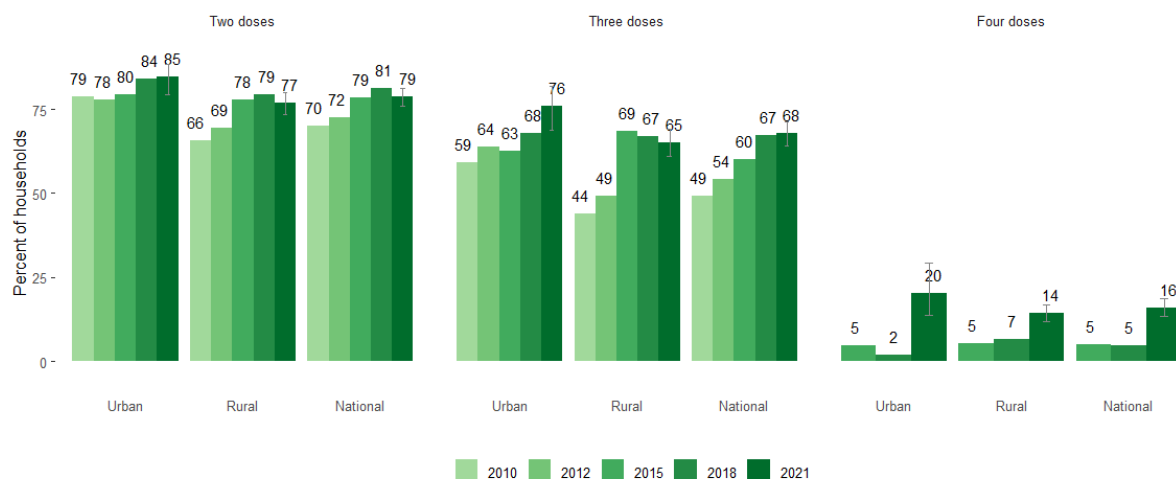
Background characteristic	Percent of mothers who took any antimalarial drug for prevention during their last pregnancy	Percent of mothers who took at least one IPTp ¹ dose	Percent of mothers who took 2+ doses of IPTp	Percent of mothers who took 3+ doses of IPTp	Percent of mothers who took 4+ doses of IPTp	Number of mothers
Designation						
Urban	93.2	90.7	84.6	76.0	20.3	746
Rural	88.1	84.9	76.9	65.2	14.2	3,184
Province						
Central	81.5	76.6	67.4	56.3	9.5	411
Copperbelt	97.3	91.1	88.4	81.9	20.9	464
Eastern	82.5	80.0	72.7	61.9	7.7	628
Luapula	95.3	93.8	86.1	72.9	15.0	407
Lusaka	90.1	88.1	80.0	66.9	15.4	377
Muchinga	95.4	92.3	82.7	69.3	22.6	287
North-Western	89.8	87.6	82.9	76.8	18.0	237
Northern	98.8	97.9	93.7	84.2	36.9	321
Southern	73.3	68.4	58.9	43.2	8.7	445
Western	93.2	92.4	76.2	65.3	8.3	353
Wealth Quintile						
Lowest	92.1	89.2	79.4	65.8	12.5	646
Second	84.6	81.1	71.9	58.0	13.0	670
Third	89.0	85.9	77.5	70.3	15.9	735
Fourth	88.5	85.1	79.3	67.6	13.7	886
Highest	91.5	89.1	83.4	74.3	21.3	993
Education						
No School	78.8	73.6	66.1	58.0	11.2	624
Primary	91.1	88.2	79.1	66.9	13.3	1,854
Secondary	89.8	87.4	81.8	70.5	21.0	1,268
Higher	97.2	94.9	91.1	89.4	15.5	184
National	89.3	86.3	78.8	67.9	15.8	3,930

¹IPTp is intermittent preventive treatment during pregnancy with sulphadoxine-pyrimethamine (SP).

Figure 26 presents IPTp coverage results from 2010 through 2021 for second, third, and fourth doses of IPTp in rural areas, urban areas, and nationally. Data on the fourth dose are presented only for the 2015, 2018, and 2021 MISs.

Nationally, from 2010 to 2021, there has been a steady increase in the coverage of three or more IPTp doses from 49% to 68%; however, there was an increase of only one percentage point between 2018 and 2021. Between 2018 and 2021, there was an increase of eight percentage points in women living in urban areas who reported taking a third IPTp dose, while rural areas saw a reduction of two percentage points.

Figure 26. Women with recent births reporting coverage of at least two, three, and four doses of intermittent preventive treatment during pregnancy by urban and rural areas (Zambia 2010–2021)



Fever prevalence and fever management among children in 2021

Table 13 presents results for prevalence of reported fever among children under five years of age and treatment-seeking behaviour for those who had a reported fever. In 2021, the proportion of children who were reported to have a fever in the two weeks prior to the survey was 17.9%. Children in rural areas had a higher reporting rate of fever than those in urban areas (19.1% versus 13.2%). By province, the highest rates of reported fever were found in Luapula (42.9%) and Muchinga (23.3%) with the lowest in Southern (5.1%) and Lusaka (11.3%). The highest prevalence of fever was seen in children ages 36 to 47 months (20.1%), while the lowest was 0 to 11 months (12.6%). Among children with fever, 58.9% were reported to have had a heel or finger stick when they sought treatment. This indicator is a proxy measure for malaria testing rates.

Prompt treatment is critical in many childhood illnesses but particularly with malaria, which can escalate to severe malaria or death very quickly, especially among children and those whose immune systems are not accustomed to parasite exposure. In the MIS, prompt care or treatment is defined as being sought on the same day or next day from the reference point of when the fever started. **Table 13** shows that 25.1% of children received their antimalarial drug promptly. Prompt care seeking for children with fever is low, as only 29.7% sought treatment from a health facility/provider on the same day or the next day. Promptness of treatment seeking was slightly higher in urban areas (30.8%) than in rural areas (29.5%).

Table 13. Prevalence and prompt treatment of fever among children

Testing, treatment, and care seeking among children under five years of age with fever in the two weeks preceding the survey; and among children with fever, percentage who took antimalarial drugs and who took the drugs the same/next day by background characteristics (Zambia 2021).

Background characteristic	Percentage of children with fever in the last two weeks	Number of children under five years	Among children with fever:				Number of children under five years with fever
			Percent who reported have a finger or heel stick	Percent who took antimalarial drugs	Percent who took antimalarial drugs same/next day	Percent who sought treatment from a facility/provider the same day/next day	
Age (in months)							
0-11	12.6	463	68.1	30.1	19.0	27.2	59
12-23	19.9	447	63.0	39.5	24.1	32.9	91
24-35	18.7	473	50.6	46.4	34.7	35.9	102
36-47	20.1	440	58.4	26.6	16.8	22.1	87
48-59	18.2	455	57.1	44.8	29.2	29.4	90
Sex							
Male	17.9	1,124	63.4	38.4	25.3	32.7	216
Female	17.8	1,154	54.4	37.5	25.0	26.8	213
Designation							
Urban	13.2	212	55.5	6.9	4.0	30.8	29
Rural	19.1	2,066	59.5	43.7	29.0	29.5	400
Province							
Central	12.5	165	*	*	*	*	16
Copperbelt	17.7	188	64.9	17.9	2.9	29.9	42
Eastern	17.0	469	56.4	48.9	34.5	30.7	82
Luapula	42.9	293	56.4	46.4	32.1	36.6	127
Lusaka	11.3	111	*	*	*	*	9
Muchinga	23.3	195	63.8	40.8	29.2	43.7	45
North-Western	13.4	180	61.7	55.2	48.8	39.0	29
Northern	15.4	235	71.3	54.3	31.9	4.8	35
Southern	5.1	196	*	*	*	*	11
Western	12.9	246	48.0	45.3	26.7	21.8	33
Wealth Quintile							
Lowest	27.2	518	57.1	47.6	26.0	24.2	133
Second	19.7	488	60.7	42.1	27.0	27.8	95

Background characteristic	Percentage of children with fever in the last two weeks	Number of children under five years	Among children with fever:				Number of children under five years with fever
			Percent who reported have a finger or heel stick	Percent who took antimalarial drugs	Percent who took antimalarial drugs same/next day	Percent who sought treatment from a facility/provider the same day/next day	
Third	17.8	476	59.7	37.0	33.2	33.0	87
Fourth	15.2	487	59.8	36.6	21.6	30.8	77
Highest	11.1	309	57.5	14.9	14.9	38.3	37
National	17.9	2,278	58.9	38.0	25.1	29.7	429

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Figure 27 provides a cascade of fever management among children reported by their mothers. Of children with fever, 63% reported having sought treatment, 59% reported receiving a finger or heel stick, 36% reported having a positive test for malaria, and 38% reported receiving an antimalarial drug.

Figure 27. Cascade of treatment seeking, reported finger stick, reported malaria test positive, and taking antimalarials among febrile children under age five years (Zambia 2021)

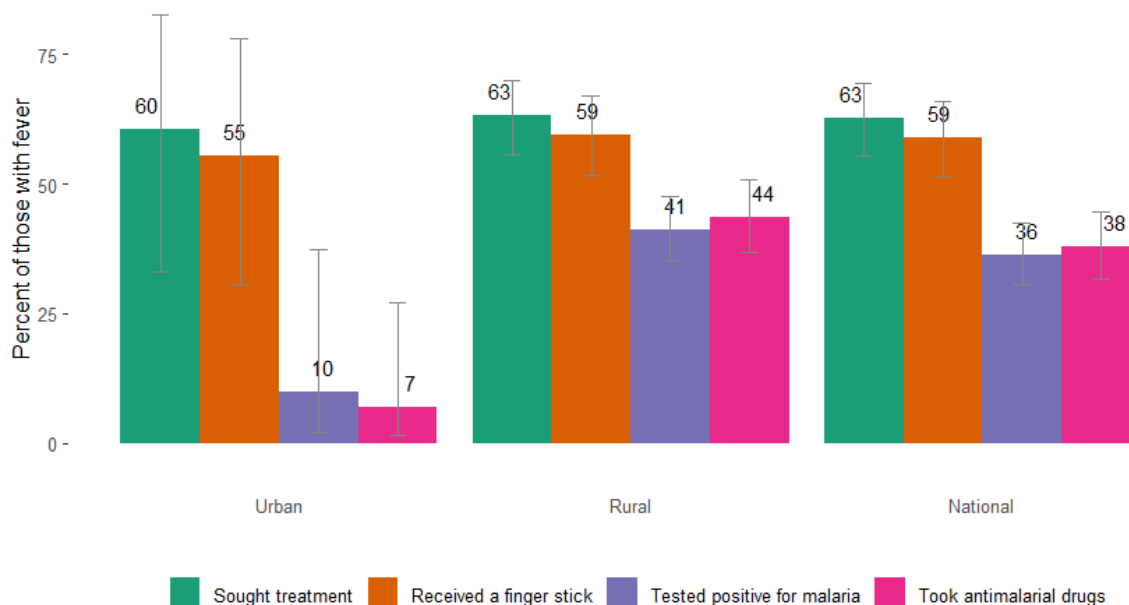
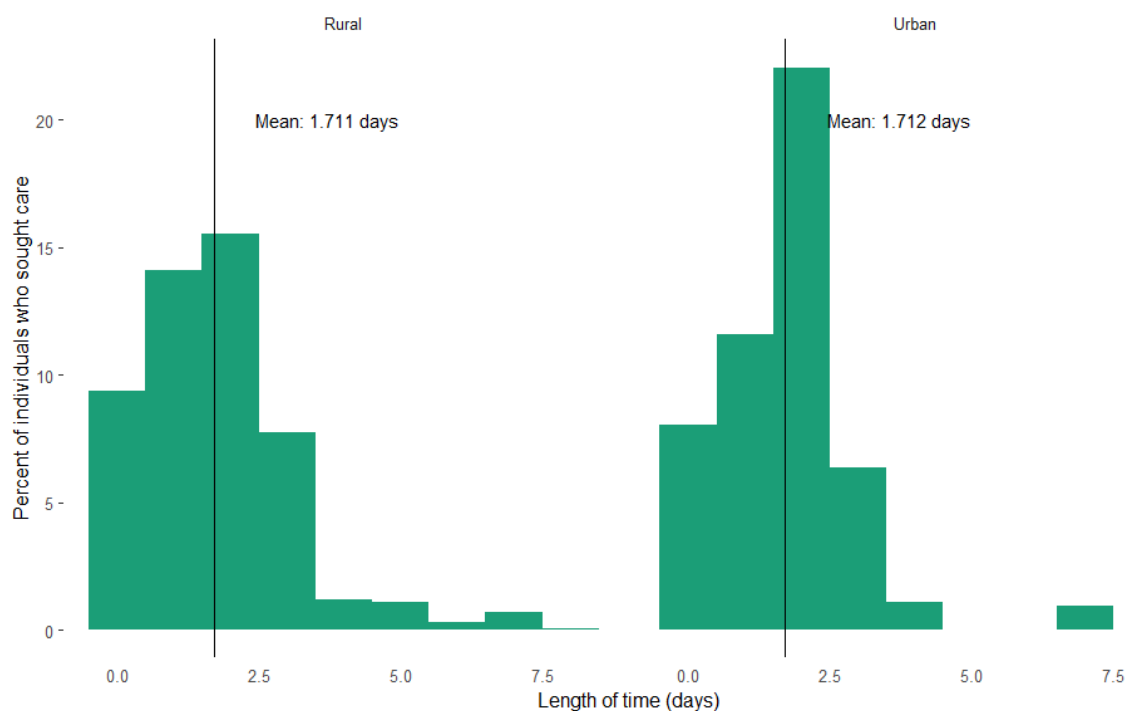


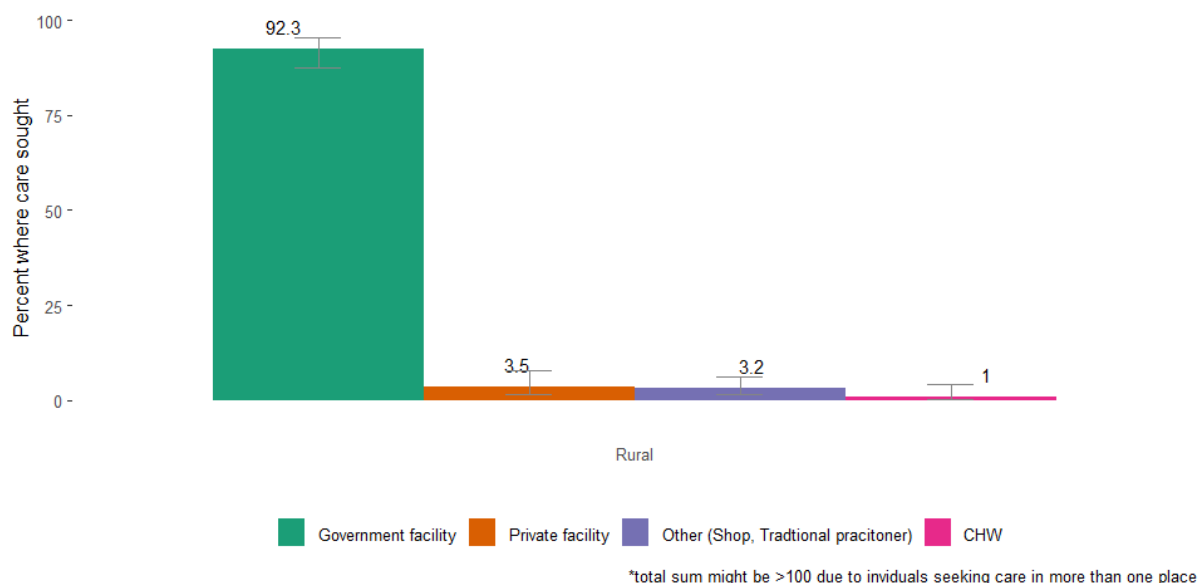
Figure 28 shows the average length of time it took for children with fever to receive their antimalarial treatment in urban and rural areas. On average, it took 1.71 days for febrile children in both urban and rural areas to receive antimalarial treatment. This is a reduction from 3.07 days and 2.09 days for urban and rural areas reported in the 2018 MIS, respectively. The majority of children seek treatment within the first five days.

Figure 28. Average length of time reported before treatment was sought among febrile children under age five years (Zambia 2021)



Nationally, the vast majority of care for febrile children was sought through a government health facility (93.4%), followed by a private pharmacy or shop (5%), and community health workers (0.8%). Respondents in urban areas all reported to have sought care from a government facility. Rural residents sought care mostly from government facilities (92.3%) with a few from private facilities (3.5%) and CHWs (1.0%) (Figure 29).

Figure 29. Percentage of febrile children under age five years in rural areas who sought care by source of care (Zambia 2021)

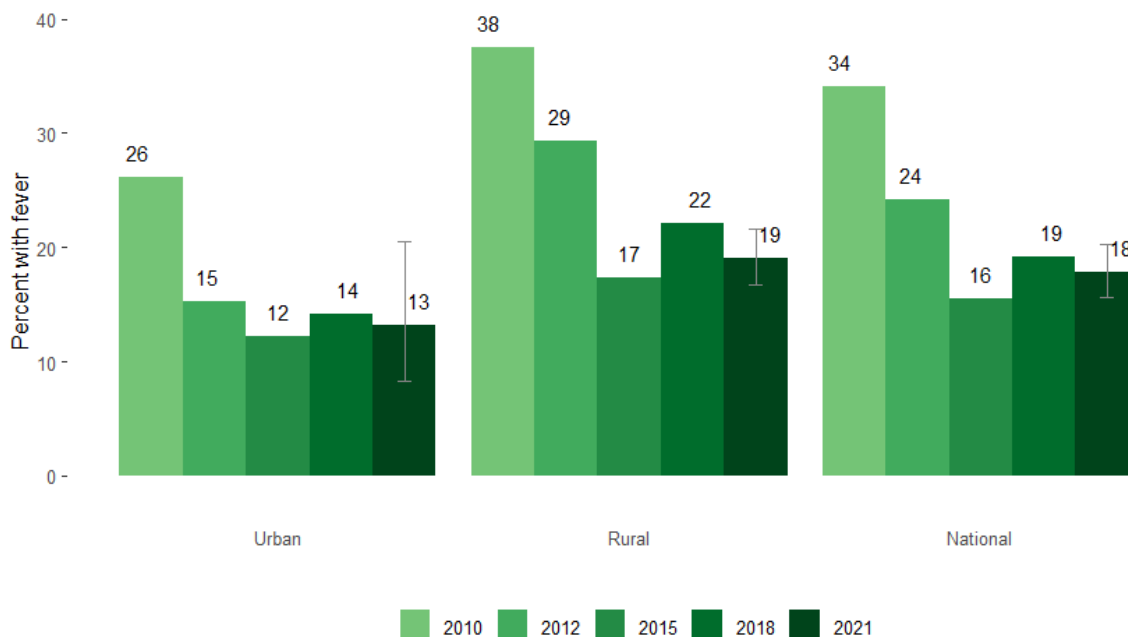


Trends in fever prevalence

Figure 30 represents prevalence of reported fever among children during the two weeks preceding the survey by age and by urban and rural areas from 2010 to 2021. Nationally, while a general reduction in reported fever prevalence was seen from 2018 (19%) to 2021 (18%), this prevalence is still higher

than the 16% reported in 2015. Fever prevalence remains higher in rural areas (19%) than urban areas (13%).

Figure 30. Reported fever prevalence in the preceding two weeks among children under age five years (Zambia 2010–2021)



Antimalarial drug type, timing, and source in 2021

Table 14 presents drugs taken for fever and the percentage taken within 24 hours of symptom onset. AL remains the dominant antimalarial in Zambia as 36.8% of children with fever in the two weeks preceding the survey were treated with it. Use of SP was reported at 1.0% among children. Within 24 hours of the onset of symptoms, 24.2% of people reported taking AL. Rural areas reported more prompt treatment for fever than urban areas.

Table 14. Type and timing of antimalarial drugs

Among children under five years with fever in the two weeks preceding the survey, percentage who took Coartem or another antimalarial, and percentage who took those drugs the same/next day

Background characteristic	Percent of children who took drug					Percentage of children who took drug the next day					Number of children with fever
	AL	Artesunate	SP	Quinine	Other antimalarial	AL	Artesunate	SP	Quinine	Other antimalarial	
Age (in months)											
0–11	30.1	0.0	0.0	0.0	0.0	19.0	0.0	0.0	0.0	0.0	59
12–23	36.3	0.0	3.2	0.0	0.0	21.8	0.0	2.3	0.0	0.0	91
24–35	44.3	0.0	1.3	0.0	0.0	32.6	0.0	1.3	0.0	0.8	102
36–47	26.6	0.0	0.0	0.0	0.0	16.8	0.0	0.0	0.0	0.0	87
48–59	44.8	0.0	0.0	0.0	0.0	29.2	0.0	0.0	0.0	0.0	90
Designation											
Urban	6.9	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	29
Rural	42.3	0.0	1.2	0.0	0.0	27.9	0.0	0.9	0.0	0.2	400
Province											
Central	*	*	*	*	*	*	*	*	*	*	16
Copperbelt	17.9	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	42
Eastern	45.1	0.0	3.8	0.0	0.0	30.7	0.0	3.8	0.0	0.0	82
Luapula	45.7	0.0	0.7	0.0	0.0	32.1	0.0	0.0	0.0	0.0	127
Lusaka	*	*	*	*	*	*	*	*	*	*	9
Muchinga	40.8	0.0	0.0	0.0	0.0	29.2	0.0	0.0	0.0	0.0	45
North-Western	55.2	0.0	0.0	0.0	0.0	48.8	0.0	0.0	0.0	0.0	29
Northern	54.3	0.0	0.0	0.0	0.0	31.9	0.0	0.0	0.0	0.0	35
Southern	*	*	*	*	*	*	*	*	*	*	11
Western	39.6	0.0	2.8	0.0	0.0	21.0	0.0	2.8	0.0	2.8	33
National	36.8	0.0	1.0	0.0	0.0	24.2	0.0	0.8	0.0	0.2	429

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹AL is artemether-lumefantrine; SP is sulfadoxine-pyrimethamine.

Table 15 presents the source of antimalarial drugs given to children under five years of age with reported fever in the two weeks preceding the survey. The majority of antimalarial drugs were obtained from a government health worker or facility (76.7%) followed by a shop (8.8%). Private health facilities or workers were the least reported source of antimalarial drugs (1.6%) aside from Other.

Table 15. Source of antimalarial drugs

Percent distribution of antimalarial drugs given to children under five years of age with fever in the two weeks preceding the survey by source of the drugs (Zambia 2021).

Drug	Already had drug at home	Community health worker	Government health facility /worker	Private health facility /worker	Shop	Other	Number of children who took drug
Coartem	8.7	3.6	76.4	1.6	9.1	0	167
Artesunate	8.5	3.5	76.7	1.6	8.8	0	173
SP	8.7	3.6	76.0	1.6	9.1	0	168
Quinine	8.5	3.5	76.7	1.6	8.8	0	173
Other antimalarial	8.5	3.5	77.0	1.6	8.9	0	172
National	8.4	3.5	76.7	1.6	8.8	0	173

Note: Table excludes children whose fever started less than two days before the interview. AL is artemether-lumefantrine. SP is sulfadoxine-pyrimethamine.

Trends in antimalarial care seeking, source of drugs, and drugs used

Figure 31 shows the trends in promptness of care seeking for children with fever from 2006 to 2021. Compared to 2006, promptness of care seeking decreased nationally, though an improvement was seen in 2021 compared to 2018, with promptness increasing from 20% to 30% nationally, 22% to 31% in urban areas, and 19% to 30% in rural areas. While the rates reported by the 2006 and 2008 MIS reports showed a high proportion of promptness, the proportions have not changed remarkably over the last five MIS, including 2021.

Figure 31. Among children with fever, trend in promptness of care seeking (Zambia 2006–2021)

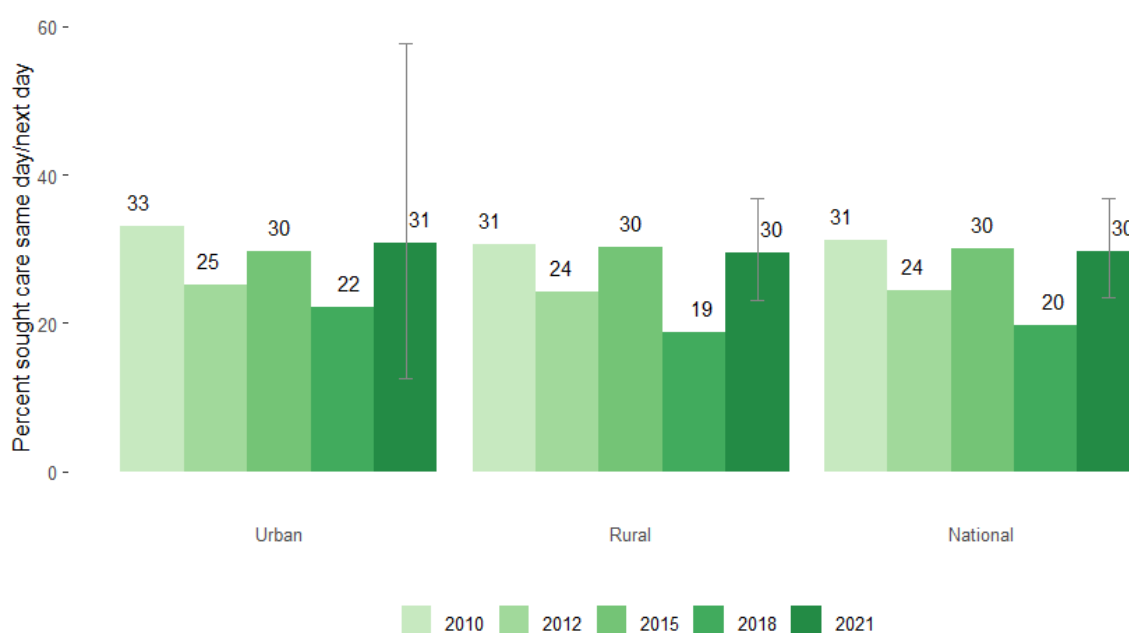


Figure 32 shows the source of antimalarial drugs among febrile children under five years of age. From 2010 to 2021, government facilities have been the primary source of antimalarials. The proportion of respondents reporting a government facility as a source of antimalarials increased from 59% in 2018 to 77% in 2021, whereas those reporting CHWs as a source of antimalarials reduced

from 22% to 4%. The national iCCM programme aims to increase community case management with a nationwide roll-out.

Figure 32. Source of antimalarial drugs among febrile children under five years of age (Zambia 2010–2021), unweighted due to low sample size

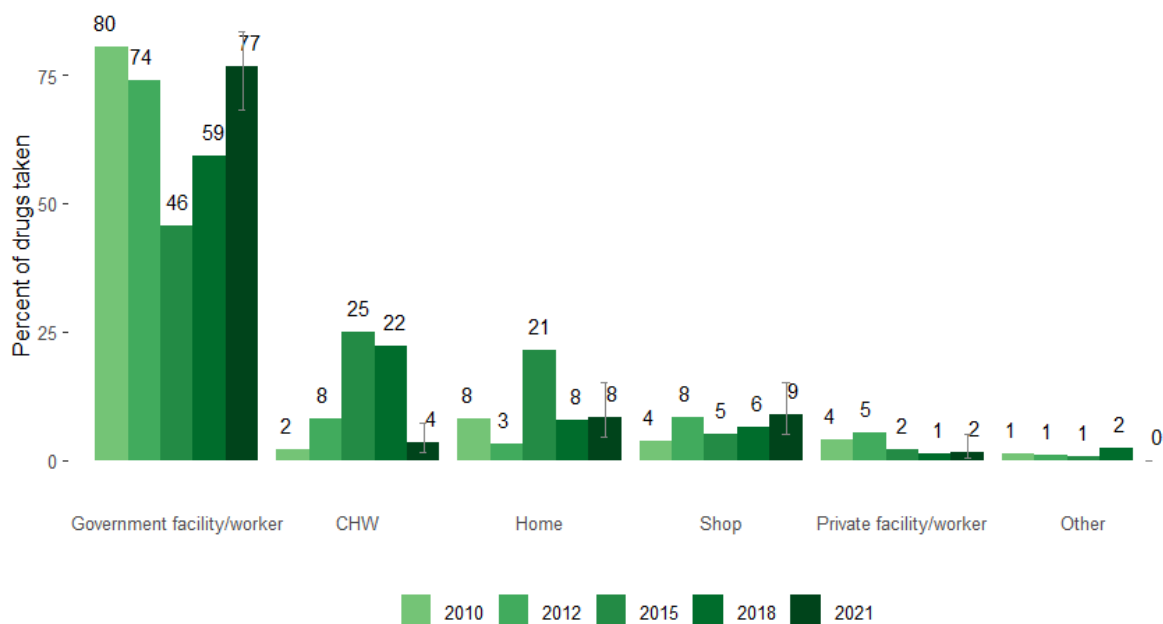
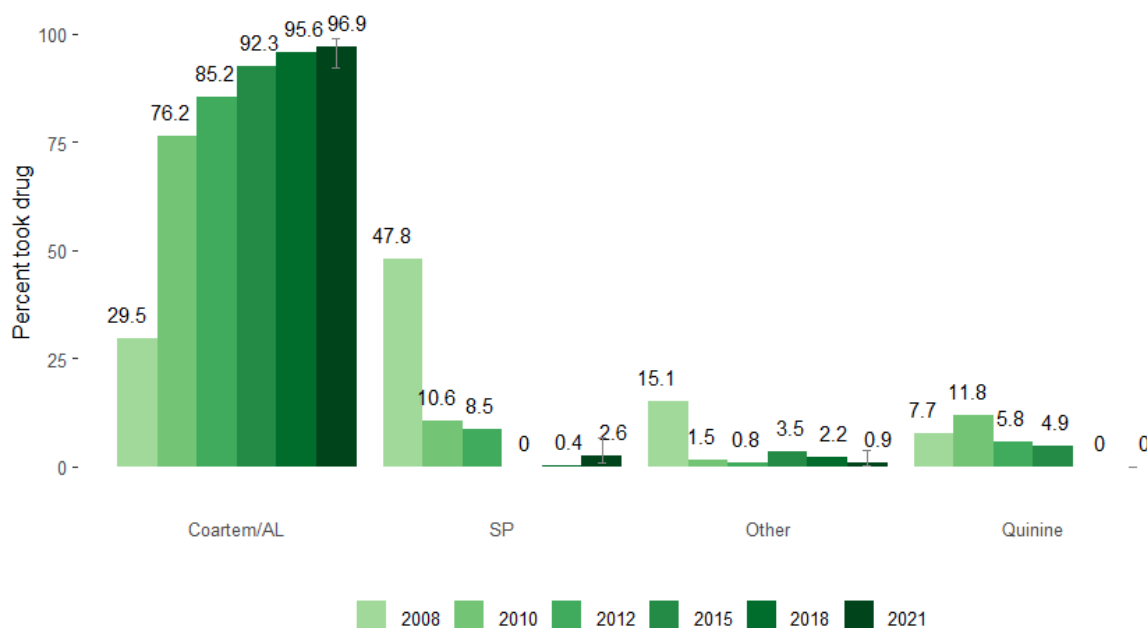


Figure 33 shows an increase nationally in the use of AL—the recommended first line regimen for uncomplicated malaria during the time of the survey—among febrile children taking antimalarial drugs, from 29.5% in 2008 to 96.9% in 2021. A slight increase was also seen between 2018 and 2021, from 95.6% to 96.9%. There was also a notable increase in the reported use of SP for malaria treatment among children under the age of five from 0.4% to 2.6%.

Figure 33. Among febrile children taking antimalarial drugs, the percentage of each drug taken (Zambia 2008–2021), unweighted due to low sample size



Diagnostic testing in 2021 and trends

The MIS asks questions about the prevalence of a finger/heel stick for febrile children for whom care was sought. This provides insight on access to malaria diagnostic testing services and thus parasitological confirmation for children with malaria symptoms. **Figure 34** shows a sustained increase in the percentage of febrile children reported to have a finger/heel stick for diagnostic testing over the course of the past five MISs, with 59% in 2021 representing the highest national percentage to date. It is assumed that many of the finger/heel sticks are likely malaria RDTs, which have been scaled up throughout the country since 2007.

Figure 34. Percentage of reported febrile children under age five years with a reported finger/heel stick for diagnostic testing (Zambia 2010–2021)



Prevalence and treatment of diarrhoea

Table 16 shows that 9.3% of children had diarrhoea in the two weeks preceding the survey, a reduction from 10.2% in the 2018 MIS. Children between zero and 23 months of age were most likely to have diarrhoea, with the highest proportion being 12.8% between zero and 11 months of age. Slightly more than half (53.5%) of the children with reported diarrhoea received the appropriate care, including 47.4% who reported receiving oral rehydration solution (ORS). This proportion is a reduction from the 2018 MIS, where 61.8% received appropriate care and 52.5% received treatment with ORS.

Slightly more children with diarrhoea received appropriate care in rural areas (54.5%) than urban areas (51.1%), despite the generally shorter distances to care in urban areas. This trend is similar to that reported in the 2018 MIS. A notable decline was seen in children receiving appropriate care from a CHW, which reduced from 5.2% in the 2018 MIS to only 0.6% in the 2021 MIS.

Table 16. Prevalence and treatment of reported diarrhoea among children

Children under five years of age with diarrhoea in the two weeks preceding the survey; and, among children with diarrhoea, percentage who received appropriate care, received care from a CHW, or received ORS by background characteristics (Zambia 2021).

Background characteristic	Percent of children with diarrhoea in last two weeks	Number of children under age five years	Among children with diarrhoea				Number of children with diarrhoea
			Percent who received care	Percent who received appropriate care ¹	Percent who received appropriate care from a CHW	Percent who received ORS	
Age (in months)							
0–11	12.8	463	60.0	58.1	1.2	45.4	53
12–23	11.8	447	53.6	53.6	0.0	50.0	61
24–35	9.8	473	48.4	45.8	0.0	61.8	35
36–47	7.7	440	54.3	54.3	0.0	39.3	30
48–59	4.2	455	*	*	*	*	19
Sex							
Male	10.9	1,124	54.4	54.2	0.0	50.4	105
Female	7.8	1,154	54.7	52.5	1.5	43.4	93
Designation							
Urban	13.5	212	51.1	51.1	0.0	56.2	30
Rural	8.2	2,066	56.1	54.5	0.9	43.6	168
Province							
Central	16.0	165	*	*	*	*	24
Copperbelt	19.3	188	51.0	51.0	0.0	46.3	37
Eastern	6.0	469	60.4	60.4	0.0	37.4	31
Luapula	15.2	293	42.6	40.0	0.0	40.0	41
Lusaka	3.8	111	*	*	*	*	2
Muchinga	7.2	195	*	*	*	*	15
North-Western	8.7	180	*	*	*	*	18
Northern	7.1	235	*	*	*	*	15
Southern	2.2	196	*	*	*	*	5
Western	3.7	246	*	*	*	*	10
Wealth Quintile							
Lowest	8.1	518	48.8	43.3	0.0	39.9	43
Second	8.6	488	53.4	53.4	1.8	36.7	38
Third	9.4	476	53.9	53.9	0.0	38.5	39
Fourth	8.8	487	48.7	48.0	1.6	42.3	45
Highest	11.3	309	63.6	63.6	0.0	68.4	33
National	9.3	2,278	54.6	53.5	0.6	47.4	198

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Appropriate care includes public or private healthcare providers but excludes traditional healers.

Chapter 5: Coverage of key malaria interventions—social behaviour change

Overview of social behaviour change

Social behaviour change is fully captured in Zambia’s national communication strategy, which provides guidance on applying SBC malaria interventions and information delivered by trusted sources in a language and format appropriate to the audience. As epidemiological profiles and political commitments in the country shift, SBC strategies adapt to acknowledge and respond to those shifts.

Status of SBC indicators in 2021

Overall, the survey found the vast majority of women of child-bearing age (15–49 years) had heard of malaria (82.5%) and 79.2% understood that nets were used for the prevention of malaria (**Table 17**). Women with a higher level of education reported better knowledge of malaria prevention (90.9%) and those who reported no education scored the lowest in almost all knowledge categories. Knowledge of the location and role of the CHW in their communities was an exception, with less educated women and poorer households more knowledgeable than wealthier and more educated women.

Nationally, 63.8% of women reported fever as a symptom of malaria. Northern Province reported the highest percentage of women who recognized fever as a symptom of malaria at 83.3%, while Lusaka (40.9%) and Southern (36.6%), provinces with generally lower transmission, were by far the lowest. Less educated women reported less knowledge of fever as a symptom of malaria than more educated women.

Only 33.3% of women reported knowing the location and role of their CHW, the indicator in **Table 17** that respondents had the least knowledge of. The percentage aware of their CHW was greater in rural areas (47.8%) than in urban areas (10.1%) and was highest in Western Province at 75.7%, while Lusaka Province recorded the lowest knowledge of the location and role of CHWs at 5.8%. By wealth quintile, knowledge of CHWs was highest in the lowest (52.9%) and second (51.0%) quintiles and lowest in the highest quintile (14.2%).

Table 17. General malaria knowledge

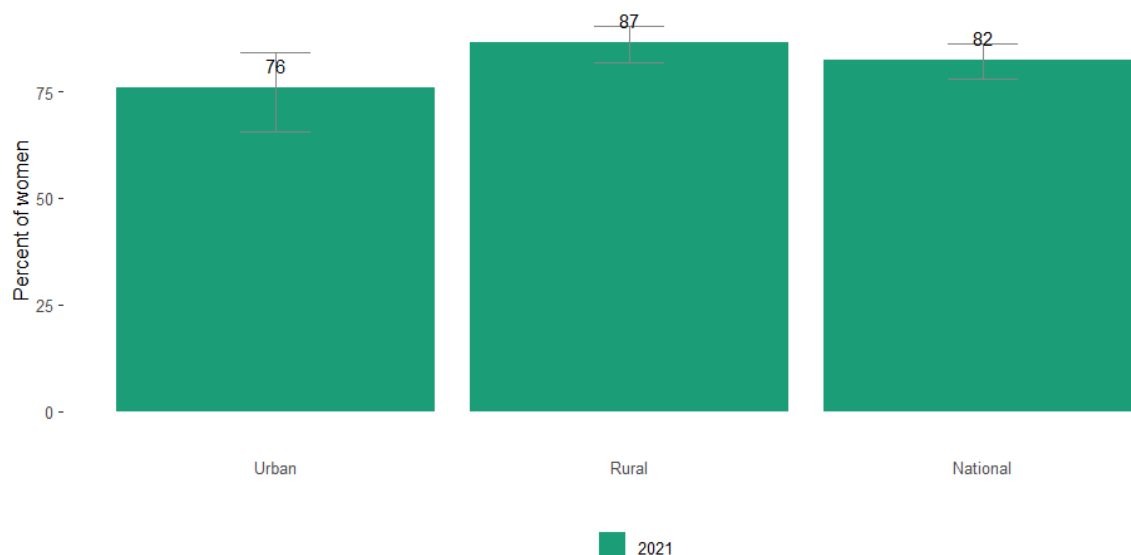
Among eligible women ages 15 to 49 years, the percentage who reported having heard of malaria, recognised fever as a symptom of malaria, reported mosquito bites as a cause of malaria, reported mosquito nets (treated or untreated) as a prevention method for malaria, and knew location and role of local CHW by background characteristics (Zambia 2021).

Background characteristic	Percent who had heard of malaria	Percent who recognized fever as a symptom of malaria	Percent who reported mosquito bites as a cause of malaria	Percent who reported mosquito nets/ITNs as a prevention method	Percent who know location and role of CHW in their community	Number of women
Designation						
Urban	76.0	59.2	71.5	73.8	10.1	746
Rural	86.6	66.6	79.8	82.6	47.8	3,184
Province						
Central	94.3	76.8	85.5	91.5	34.2	411
Copperbelt	97.1	74.8	94.9	92.8	18.5	464

Background characteristic	Percent who had heard of malaria	Percent who recognized fever as a symptom of malaria	Percent who reported mosquito bites as a cause of malaria	Percent who reported mosquito nets/ITNs as a prevention method	Percent who know location and role of CHW in their community	Number of women
Eastern	89.6	74.4	85.4	87.0	56.1	628
Luapula	83.9	74.2	69.1	80.5	32.6	407
Lusaka	54.4	40.9	51.3	53.5	5.8	377
Muchinga	91.7	74.6	85.5	90.2	48.3	287
North-Western	94.7	59.2	86.7	83.3	54.1	237
Northern	99.3	83.3	92.6	95.3	47.2	321
Southern	62.6	36.6	57.0	59.1	27.9	445
Western	94.3	72.6	88.7	92.6	75.7	353
Wealth Quintile						
Lowest	88.5	70.1	78.6	85.5	52.9	646
Second	87.9	69.2	79.1	83.1	51.0	670
Third	85.0	63.4	78.5	81.0	48.0	735
Fourth	81.3	61.4	75.0	77.5	38.9	886
Highest	78.8	61.6	75.4	76.5	14.2	993
Education						
No School	61.5	45.8	54.7	59.3	29.4	624
Primary	87.7	68.1	79.6	83.6	46.3	1,854
Secondary	84.1	64.2	80.0	80.9	24.6	1,268
Higher	90.9	78.1	90.2	90.0	16.8	184
National	82.5	63.8	76.6	79.2	33.3	3,930

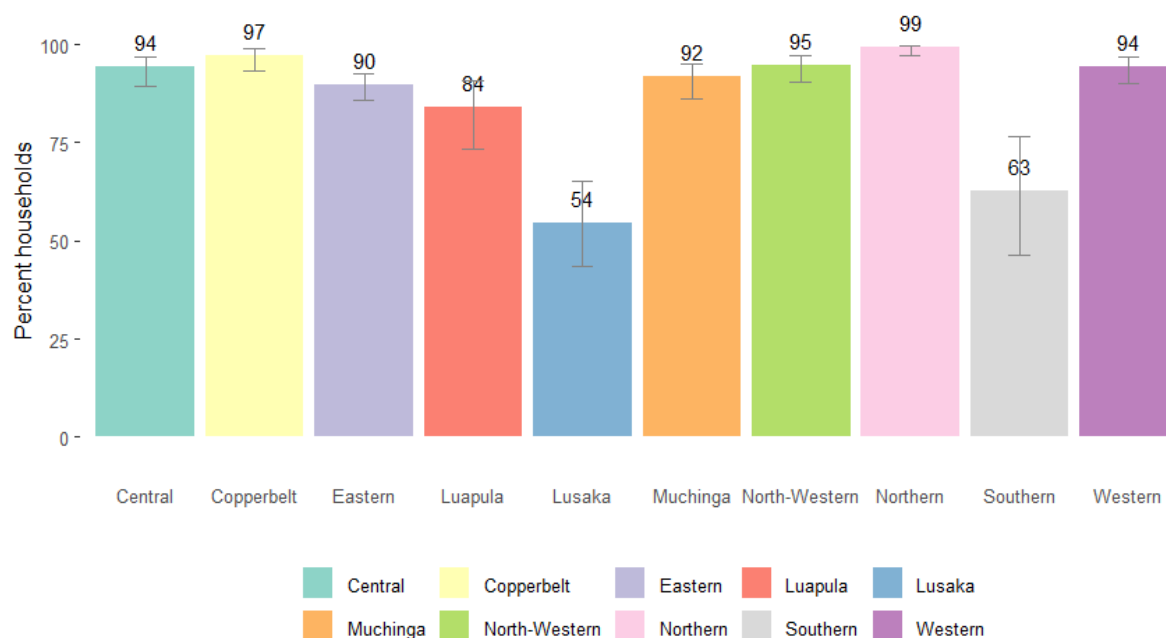
Of women surveyed who live in rural areas, 86.6% had heard of malaria, which was above the national average (**Figure 35**). In urban areas, 76.0% of women had heard of the disease.

Figure 35. Percentage of women 15–49 years of age who had heard of malaria (Zambia 2021)



The lowest percentage of women who had heard of malaria resided in Lusaka and Southern provinces (Figure 36), the provinces with the lowest parasite prevalence in the country. Awareness of malaria was at least 20% higher in every other province.

Figure 36. Percentage of women 15–49 years of age who had heard of malaria by province (Zambia 2021)

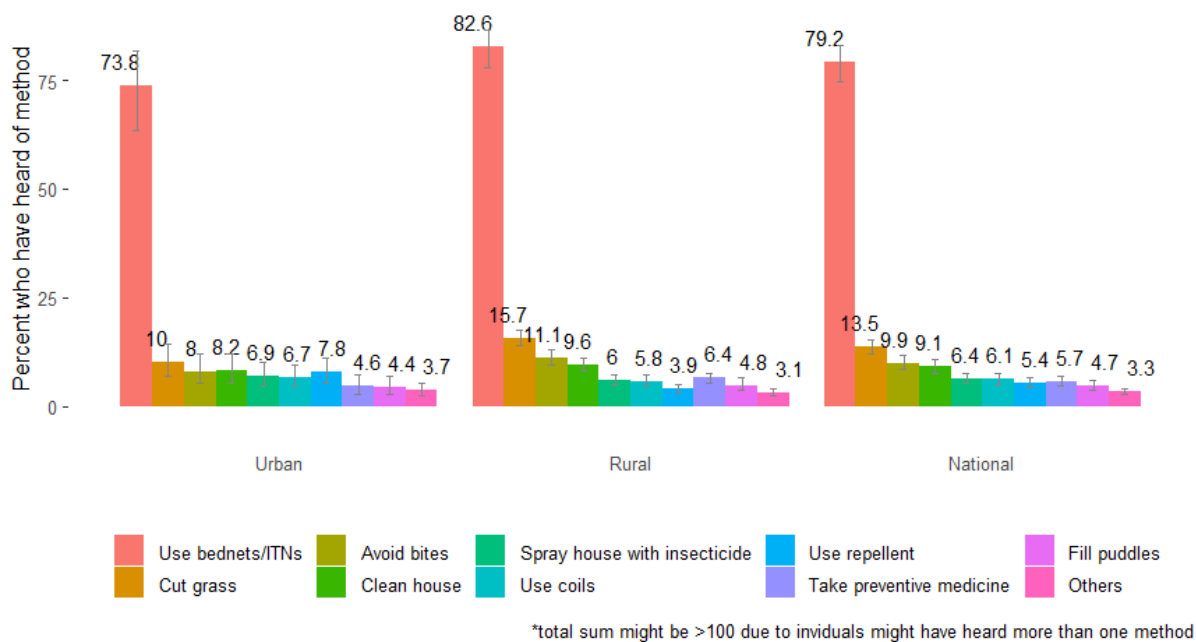


Knowledge on malaria prevention methods

To assess women’s understanding of preventing malaria, the survey asked: *How can someone protect themselves from malaria?* (Figure 37). Respondents were most knowledgeable about the use of a mosquito net or treated net (79.2%), while 9.9% said avoiding mosquito bites and 6.4% said spraying the household with insecticide. Overall, there was little difference between rural and urban responses, with a notable exception being bednet use (82.6% rural, 73.8% urban). In both rural and urban areas, the second highest prevention method was the traditional belief of cutting grass (13.5% nationally). Other misconceptions included avoiding dirty water (1.6%) and bad food (0.6%), and getting soaked in the rain (0.6%). The use of window screens had a low response rate as in previous surveys. Given

the importance of screening doors and windows in the global history of malaria control (e.g., in the American South), this proven method continues to be a missed opportunity in Zambia. Only 0.4% of Zambian respondents mentioned screening of windows.

Figure 37. Among women ages 15 to 49 years, knowledge of malaria prevention methods (Zambia 2021)



Messaging and communication channels for malaria

The survey found that among eligible women ages 15–49, 47.8% reported hearing a message about malaria (**Table 18**), with significant variation by province: Muchinga was the highest at 73.8% and Lusaka the lowest at 31.0%. (In the previous survey, Muchinga was the lowest province at 33.3%.) More people in rural areas reported hearing any message on malaria (48.3%) than urban areas (46.9%). In terms of the percentage of women hearing any message, women with higher education (73.8%) were more likely to report hearing a malaria message.

The percentage of women who reported hearing a message from government hospitals or clinics was 30.4%. The largest provincial increase on this indicator was Northern, from 14.8% in 2018 to 47.6% in 2021.

The percentage of women who reported seeing/hearing a message about the importance of sleeping under a mosquito net varied among provinces with Northern Province recording the highest (39.8%) and Lusaka was the lowest (9.6%).

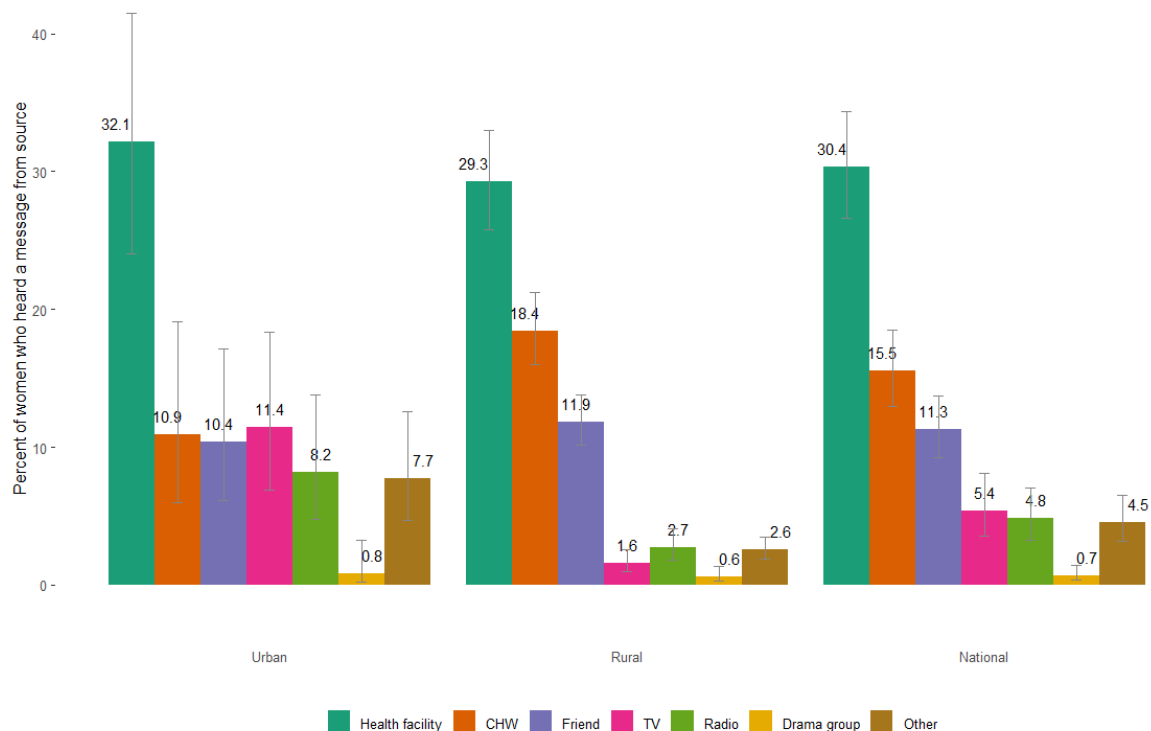
Table 18. Malaria messaging through information, education, and communication strategies

Among women of reproductive age (15–49), the percent who reported hearing a message about malaria, and the source and content of the message (Zambia 2021).

Background characteristic	Percent who reported hearing any message	Percent who reported government health facility as the source of message	Percent who reported CHW as the source of message	Percent who reported seeing/hearing a message about the importance of sleeping under a mosquito net	Number of women
Designation					
Urban	46.9	32.1	10.9	23.3	746
Rural	48.3	29.3	18.4	23.1	3,184
Province					
Central	61.9	40.4	25.5	24.6	411
Copperbelt	52.1	40.2	8.8	34.0	464
Eastern	43.7	28.8	22.5	19.8	628
Luapula	39.2	12.8	18.7	13.3	407
Lusaka	31.0	20.6	7.2	9.6	377
Muchinga	73.8	33.3	11.3	29.6	287
North-Western	39.8	18.0	7.7	14.3	237
Northern	60.6	47.6	16.0	39.8	321
Southern	42.7	21.7	22.9	25.1	445
Western	69.2	52.7	13.6	32.8	353
Wealth Quintile					
Lowest	41.6	26.1	14.7	18.2	646
Second	43.5	28.2	16.4	19.9	670
Third	50.3	31.0	20.1	23.6	735
Fourth	50.5	30.7	19.6	23.2	886
Highest	48.5	31.8	11.7	25.5	993
Education					
No School	30.7	21.1	13.7	14.2	624
Primary	47.2	29.1	18.5	20.6	1,854
Secondary	50.9	32.5	13.6	26.7	1,268
Higher	73.8	47.2	14.1	39.5	184
National	47.8	30.4	15.5	23.2	3,930

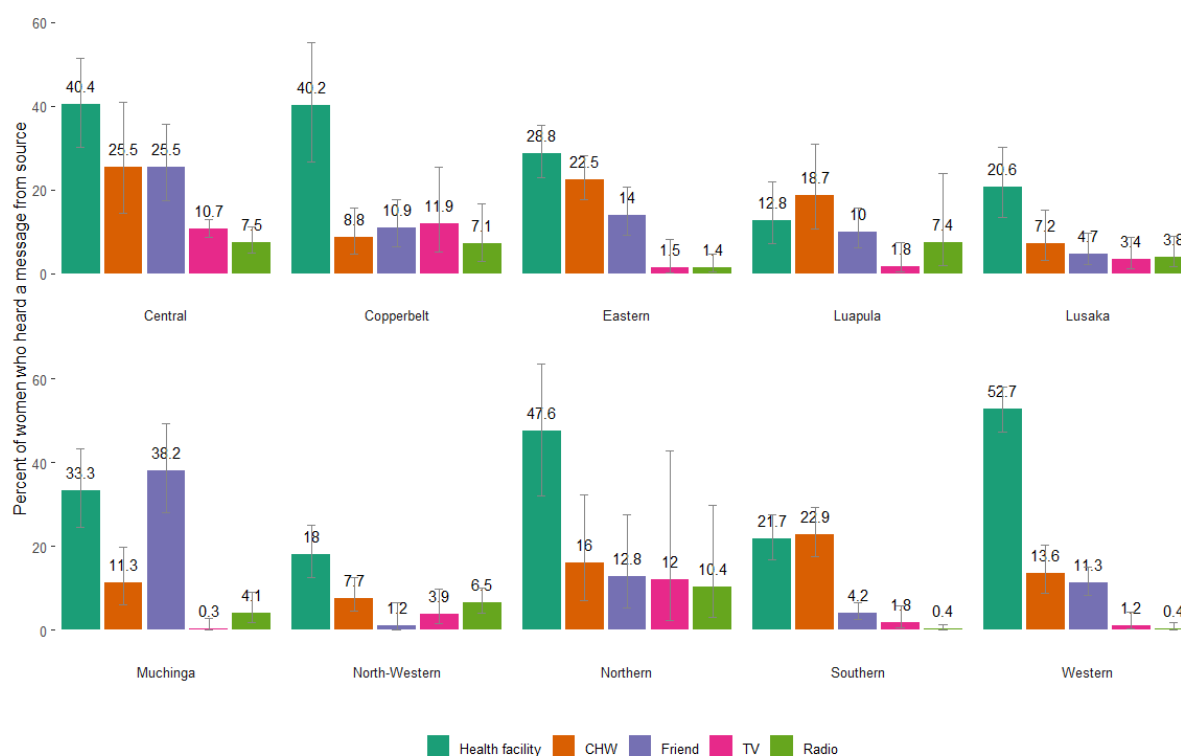
Community health workers were the second most common source of malaria messaging nationally at 15.5% and in rural areas at 18.4% (**Figure 38**). This represents a continued increase in rural, more malarious areas from 9.8% (2015) and 15.2% (2018). As to be expected, in rural areas far fewer respondents reported television and radio as sources of malaria information than in urban areas.

Figure 38. Among women ages 15 to 49 years, sources of malaria messaging (Zambia 2021)



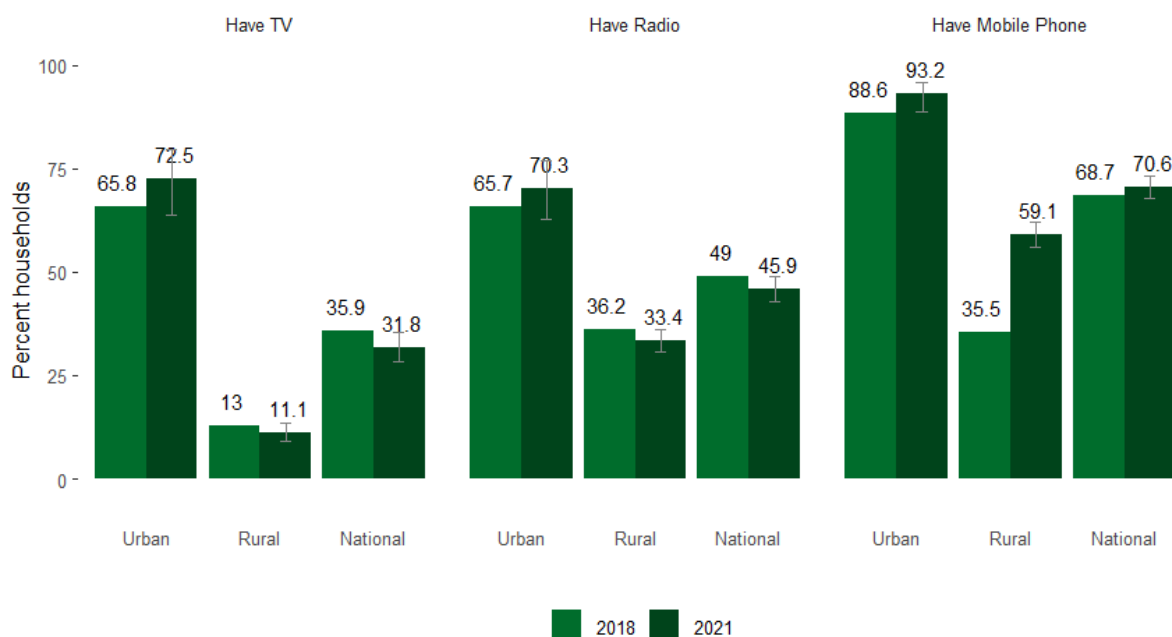
While health facilities were the main source of malaria messaging in seven of the ten provinces, CHWs were the primary source in Luapula (18.7%) and Southern (22.9%) provinces (**Figure 39**). In Luapula, this represents a significant increase from the previous survey when 8.2% of women reported CHWs as a source of malaria messaging. Women in Lusaka and North-Western provinces were the least likely to hear malaria messages from CHWs.

Figure 39. Among women ages 15 to 49 years, sources of malaria messaging by province (Zambia 2021)



The household questionnaire is a good source for understanding ownership of communication devices over time. In this survey, there was no appreciable change reported in the ownership of televisions and radios in urban or rural settings, or even the ownership of mobile phones in urban areas. But the ownership of phones in rural areas increased significantly, from 35.5% in 2018 to 59.1% in 2021 (Figure 40).

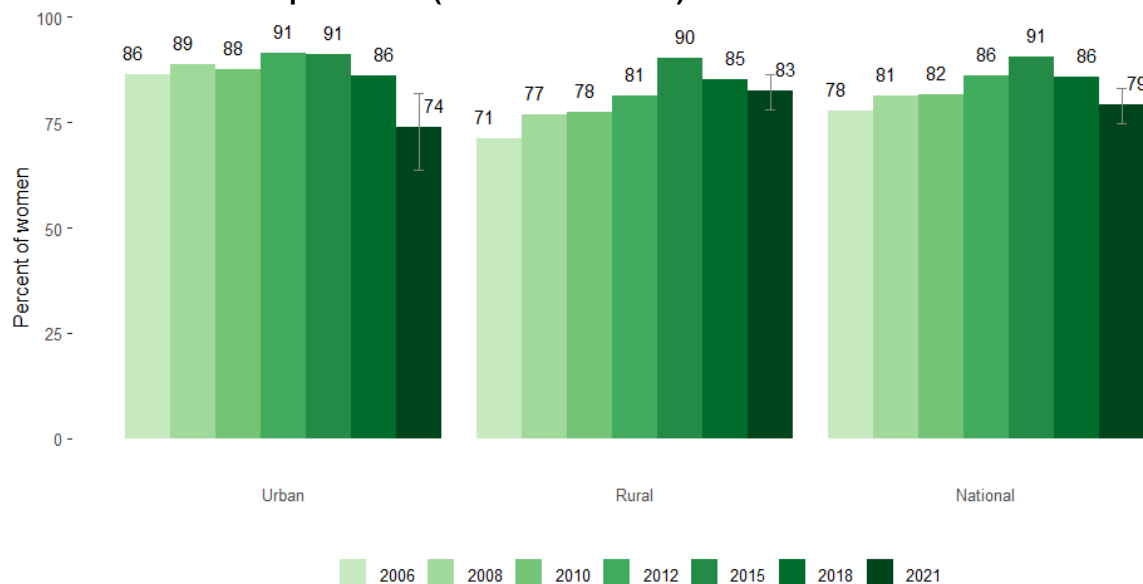
Figure 40. Trends in ownership of communication devices (TV, radio, and mobile phone) (Zambia 2018–2021)



Trends in SBC indicators

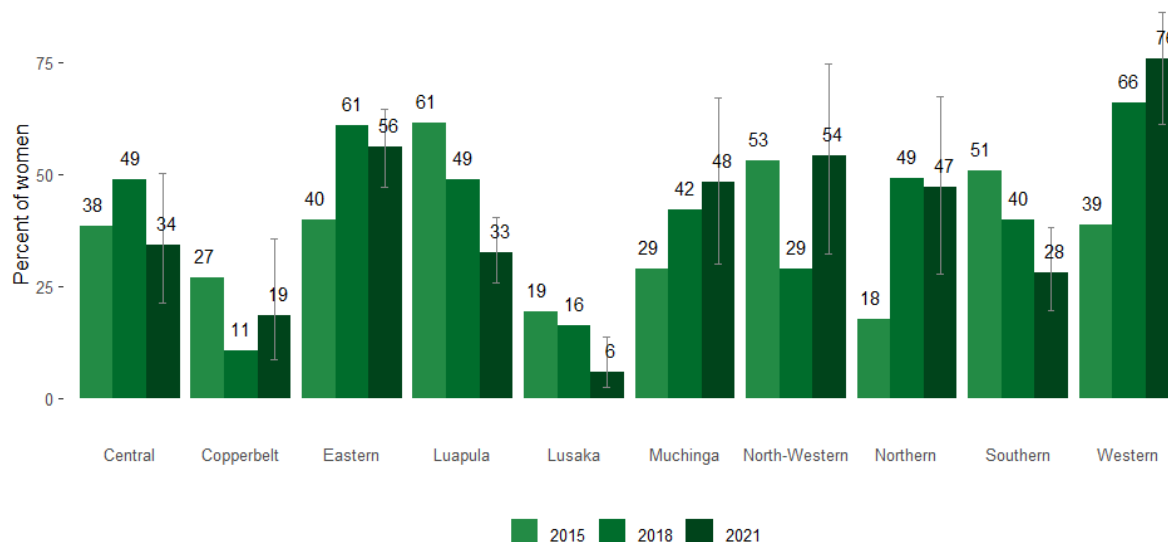
The 2021 MIS builds on several previous MISs to ask questions about the knowledge levels that women of reproductive age have regarding important topics in malaria prevention and treatment as well as malaria-related behaviours. **Figure 41** presents the trends in knowledge among these women regarding ITNs or nets as a method of malaria prevention. This particular knowledge has been consistently high since Zambia’s first MIS in 2006. The previous two surveys, however, have shown a decrease in this area compared to the 2018 MIS, most notably among women in urban areas (from 86% to 74%).

Figure 41. Among women ages 15 to 49 years, percentage who identified nets or treated nets as a source of malaria prevention (Zambia 2006–2021)



Due to the increased investment to expand the number of CHWs providing testing and treatment services, questions were added in 2015 to understand the degree to which women were aware of the location and role of CHWs in malaria activities. Variations by province were observed in this year’s survey (**Figure 42**) with Western again reporting the highest (76%, up from 66% in 2018), and North-Western returning to 2015 levels with an increase from 29% in 2018 to 54% in 2021. Notable decreases in more rural provinces include Central (from 49% in 2018 to 34% in 2021), Luapula (from 49% in 2018 to 33% in 2021), and Southern (from 40% in 2018 to 28% in 2021).

Figure 42. Among women ages 15 to 49 years, percentage who reported knowledge of the location and role of their local CHW in malaria activities (Zambia 2015–2021)



In general, the relationship between knowledge and behaviour change needs to be further explored in order to guide the implementation of SBC activities. Adoption of the new MIS SBC module—with indicators on risk perception, self-efficacy, and attitudes towards malaria behaviours—will enrich the data from this periodic survey. Overall, additional and more frequent analyses need to be conducted to strengthen Zambia’s evidence base for malaria SBC.

Chapter 6: Malaria parasite and anaemia prevalence

Prevalence of malaria and severe anaemia in children under five years of age

As in the previous survey in 2018, malaria prevalence by slide microscopy in 2021 was found to be higher in older children than younger children, similar among boys and girls, higher in rural areas, highest in the lowest wealth quintile, and lowest in the highest wealth quintile. However, while microscopy results provide the commonly accepted standard for comparison of prevalence between areas and over time, microscopy was not conducted for children in clusters from Central, Lusaka, and Southern provinces in 2021. Estimates of parasite prevalence by slide microscopy presented in **Table 19** exclude data from these areas.

RDT results followed the same trends. Malaria prevalence by RDT was found to be higher in older children than younger children and similar among boys and girls. Rural areas of Zambia reported much higher levels of malaria (35.9%) than urban areas (8.0%), and children in the highest wealth category were least likely to test positive while those in the lowest wealth categories were most likely to test positive. By province, Luapula reported the highest level of malaria parasite prevalence, with 63.3% of children testing positive by RDT. North-Western, Western, and Muchinga provinces reported the next highest levels of prevalence with 47.4%, 47.4%, and 43.8%, respectively. Lusaka and Southern provinces both reported the lowest levels of prevalence in children with 3.3% each. National malaria parasite prevalence by RDT was 29.3% among children in 2021 overall (**Table 19**), compared with 16.2% in 2018.

As in 2018, the 2021 MIS measured anaemia and severe anaemia in children under five years of age. A cut-off for the relevant spectrum of malaria-related severe anaemia is defined as haemoglobin less than 8 grams/decilitre. Severe anaemia was reported in 5.7% of children under five compared to 5.3% in 2018, and 64.8% of children in 2021 had anaemia compared to 70.3% in 2018. Children 6–11 months of age had the highest levels of severe anaemia (9.4%), followed by children 12–23 months of age (8.8%). By age four, children reported the lowest level of severe anaemia. There was not much difference in levels of severe anaemia between the males and females (5.7% and 5.8%, respectively) as well as between children in urban and rural areas (5.9% and 5.7%, respectively). The highest proportion of severe anaemia among children was found in Luapula (10.8%) and Northern provinces (9.0%), while Southern Province reported the lowest rates with 0.6%. Therefore, Luapula Province recorded both the highest parasite and severe anaemia prevalence, while Southern Province recorded both the lowest parasite and severe anaemia prevalence.

Table 19. Malaria parasite prevalence and anaemia in children under age five years

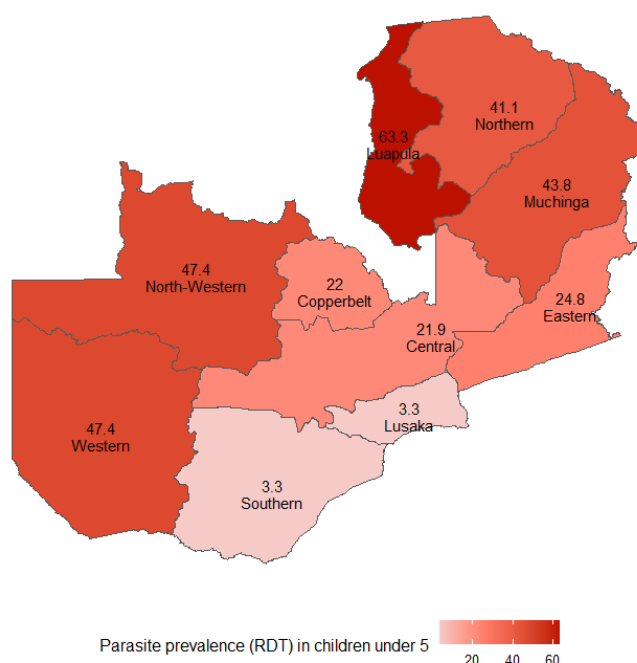
Among children, percentage with malaria parasites by microscopy or RDT, mean haemoglobin (Hb) values, and percentage with any anaemia (less than 11 grams/decilitre) and with severe anaemia (less than 8 grams/decilitre) by background characteristics (Zambia 2021).

Background characteristic	Percent with malaria parasites by microscopy	Percent with malaria parasites by RDT	Mean haemoglobin value	Percent of children with any anaemia	Percent of children with severe anaemia	Number of children
Age (in months)						
6–11	12.2	18.6	10.1	80.6	9.4	433
12–23	15.5	22.1	10.3	75.7	8.8	750
24–35	22.2	33.8	10.7	70.3	6.1	774
36–47	19.9	30.9	11.1	55.7	3.4	803
48–59	22.8	35.0	11.3	52.0	3.3	979
Sex						

Background characteristic	Percent with malaria parasites by microscopy	Percent with malaria parasites by RDT	Mean haemoglobin value	Percent of children with any anaemia	Percent of children with severe anaemia	Number of children
Male	19.6	28.7	10.8	64.7	5.7	1,800
Female	19.1	29.8	10.8	64.9	5.8	1,939
Designation						
Urban	7.3	8.0	11.1	52.6	5.9	392
Rural	22.2	35.9	10.7	68.7	5.7	3,347
Province						
Central	N/A	21.9	10.6	65.3	6.6	384
Copperbelt	9.6	22.0	10.9	60.0	5.8	387
Eastern	9.8	24.8	10.9	63.1	2.7	739
Luapula	36.0	63.3	10.1	80.1	10.8	432
Lusaka	N/A	3.3	11.4	48.4	3.1	216
Muchinga	23.3	43.8	10.4	76.7	7.6	224
North-Western	22.7	47.4	10.7	71.9	7.3	267
Northern	28.9	40.5	10.5	67.9	9.0	330
Southern	N/A	3.3	11.4	51.2	0.6	304
Western	21.8	47.4	10.4	78.9	7.8	456
Wealth Quintile						
Lowest	33.9	54.2	10.5	72.5	7.3	722
Second	27.2	43.5	10.4	70.6	7.6	733
Third	12.9	28.1	10.8	67.3	4.4	777
Fourth	17.3	29.2	10.8	66.9	5.9	946
Highest	3.7	5.7	11.2	52.7	4.5	561
National	N/A	29.3	10.8	64.8	5.7	3,739

By province, the patterns of malaria prevalence by RDT in 2021 are shown in **Figure 43**. The highest malaria prevalence was 63.3% in Luapula followed by 47.4% in North-Western and Western Province. Malaria prevalence by RDT was lowest in Lusaka and Southern Province.

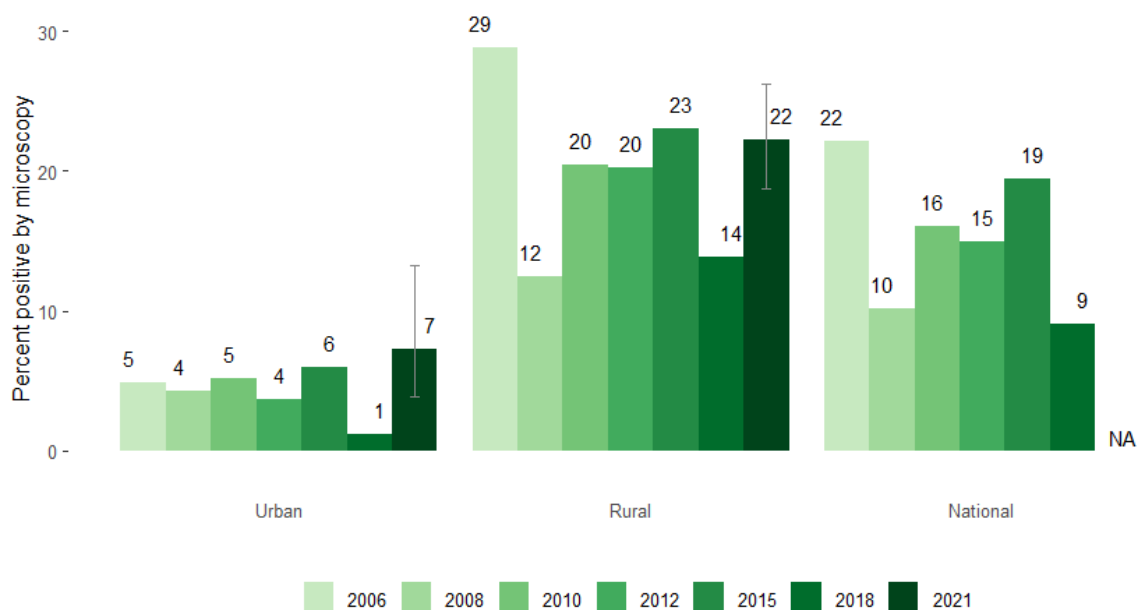
Figure 43. Map showing percentage malaria parasite prevalence by RDT by province among children under five years of age (Zambia 2021)



Trends in malaria parasitaemia and severe anaemia

Malaria parasite prevalence, as measured by slide microscopy, and severe anaemia (Hb<8 g/dl) have changed quite dramatically across the MISs conducted between 2006 and 2021. Despite increases from 2018 to 2021 in both urban and rural areas, malaria parasite prevalence among children under five years of age in rural areas declined from 29% in 2006 to 22% in 2021 (**Figure 44**).

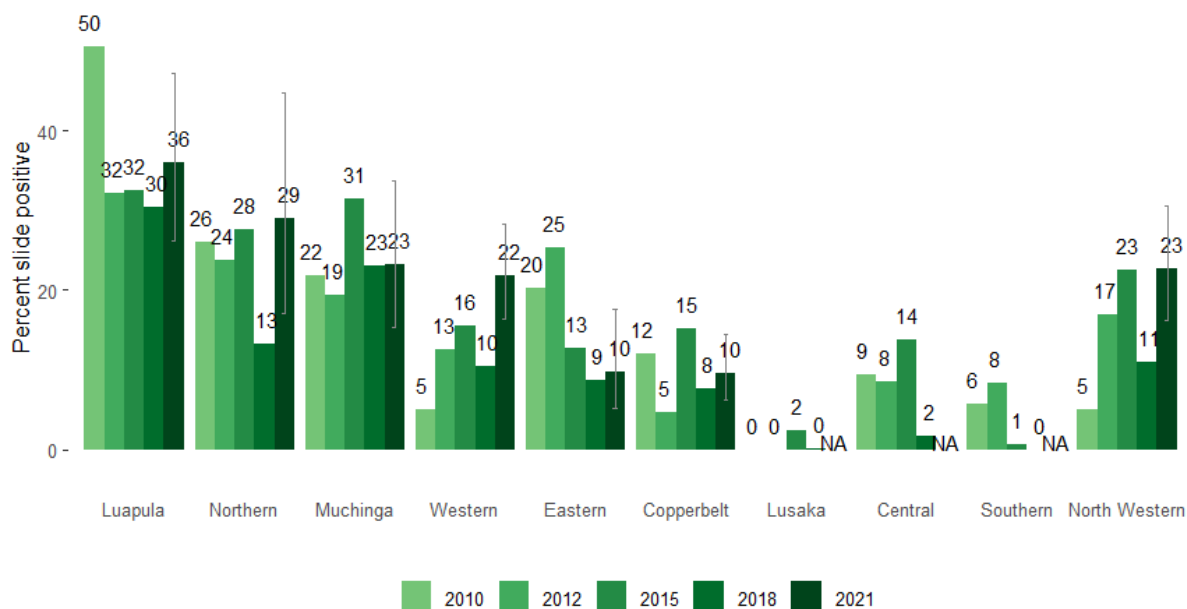
Figure 44. Malaria parasite prevalence by microscopy among children under age five years by urban and rural areas (Zambia 2006–2021)



*Microscopy was not done in Southern, Central and Lusaka province in MIS 2021

Figure 45 shows malaria parasite prevalence by microscopy patterns across the ten provinces in Zambia from 2010 to 2021. Each province (besides Central, Lusaka, and Southern, which did not conduct microscopy in 2021) saw an increase in parasite prevalence compared to the 2018 MIS.

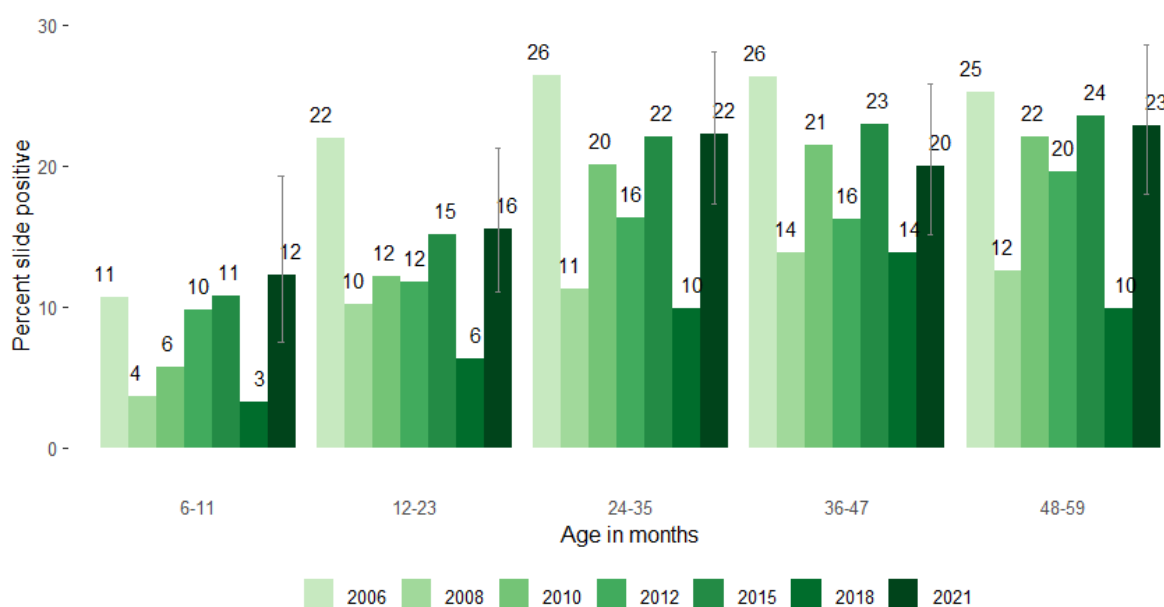
Figure 45. Malaria parasite prevalence by microscopy among children under age five years by province (Zambia 2010–2021)



*Microscopy was not done in Southern, Central and Lusaka province in MIS 2021

Figure 46 shows malaria parasite rates in the first five years of life. After notable declines in 2018, parasite prevalence increased in 2021. A general pattern of higher parasite prevalence among older children was observed in all seven years, even in 2018, when the prevalence rate of each age group was notably lower than in other years.

Figure 46. Malaria parasite prevalence by microscopy among children under age five years by age (Zambia 2006–2021)



*Microscopy was not done in Southern, Central and Lusaka province in MIS 2021

The trends in malaria prevalence by wealth quintile demonstrate that malaria remains a disease heavily influenced by socioeconomic background (**Figure 47**). Trends from 2010 through 2021 suggest lower wealth quintiles consistently have higher malaria prevalence. The increase in prevalence seen broadly throughout the country in 2021 had a heavier impact on the lowest two wealth quintiles than the upper three.

Figure 47. Malaria parasite prevalence by microscopy among children under age five years by wealth quintile (Zambia 2006–2021)

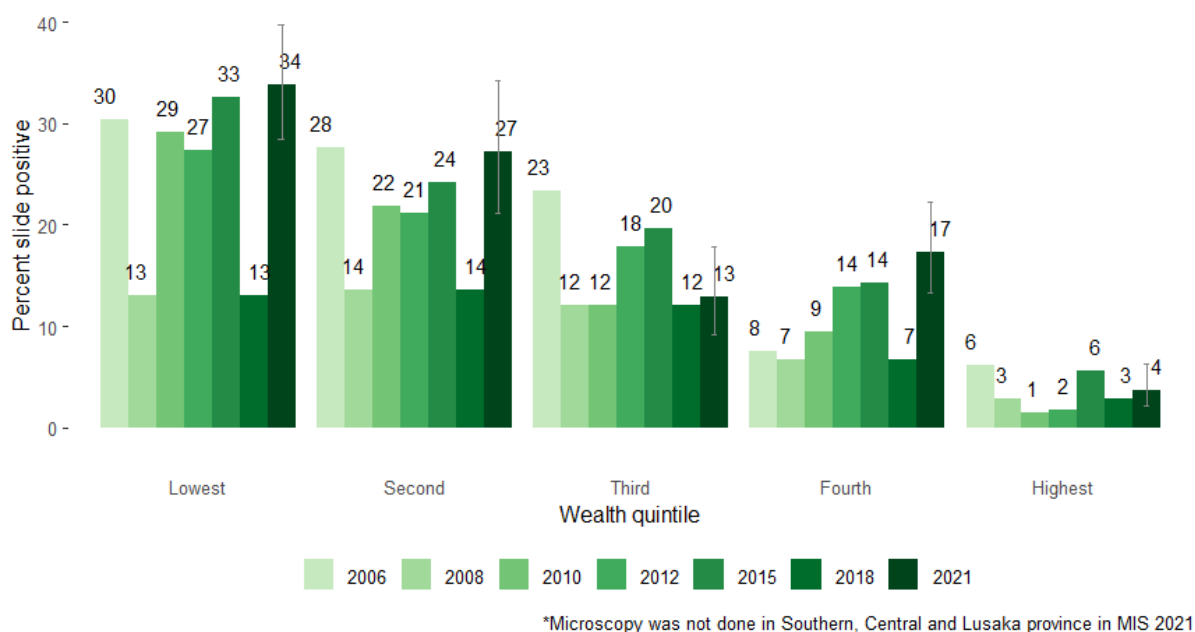
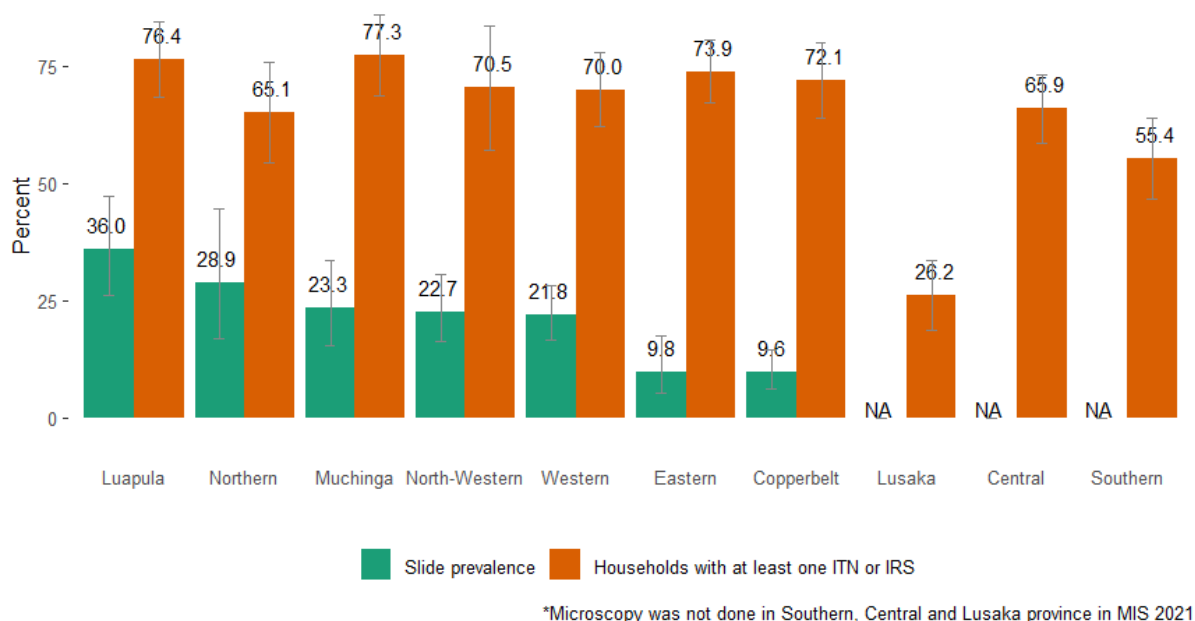


Figure 48 shows the coverage of any vector control and levels of malaria prevalence by microscopy by province. Often vector control is prioritised to areas of the country with the highest levels of malaria. Muchinga and Luapula, which demonstrated high malaria prevalence, also had high rates of coverage. The same was true in 2018.

Figure 48. Comparison of vector control coverage and malaria prevalence by province (Zambia 2021)



Since the MIS was first conducted in 2006, levels of severe anaemia in children under five years of age have generally remained lower and more stable in urban areas compared to rural areas. Nationally, a steady decline was seen from 2006 (13.8%) until 2018 (5.3%), although an increase to 5.8% was seen in 2021 (**Figure 49**).

Figure 49. Severe anaemia prevalence among children under age five years by urban and rural areas (Zambia 2006–2021)

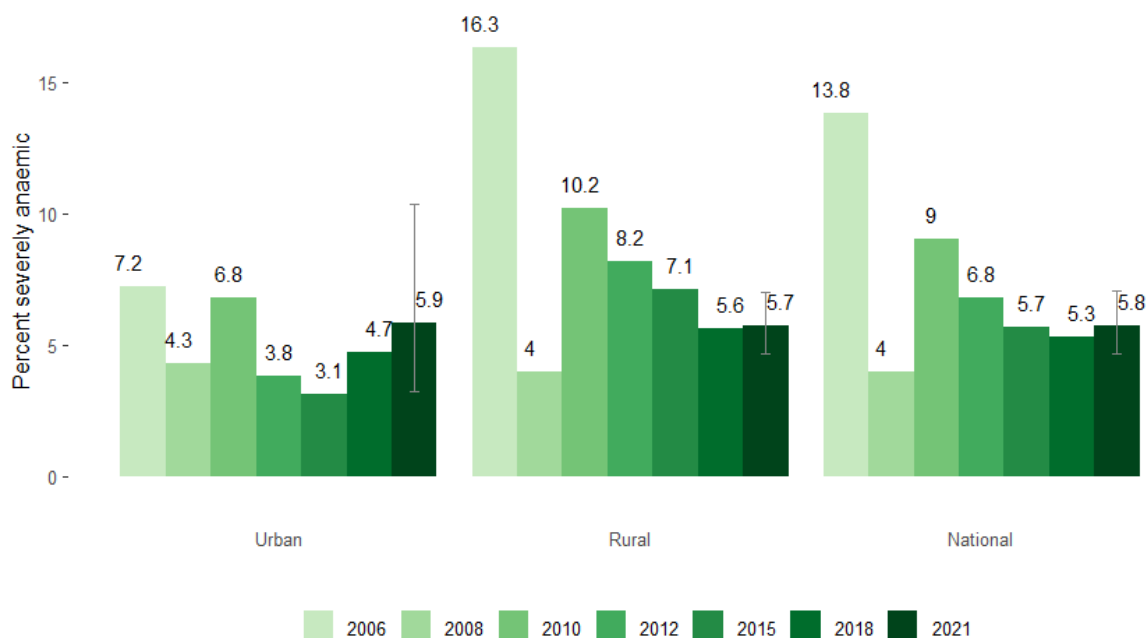
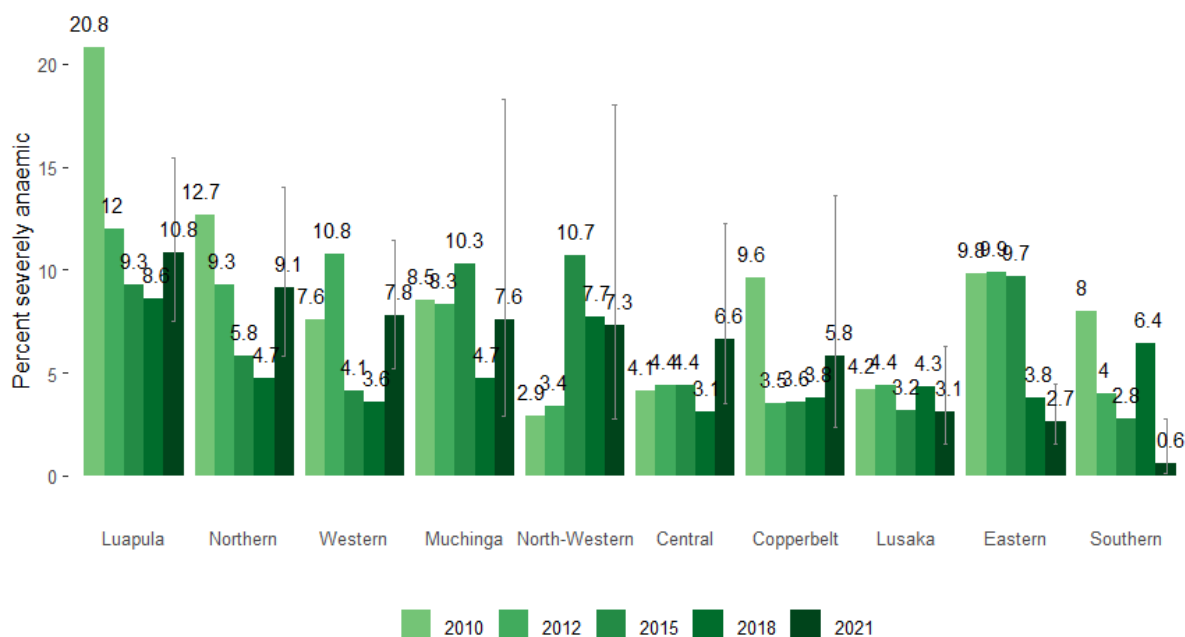


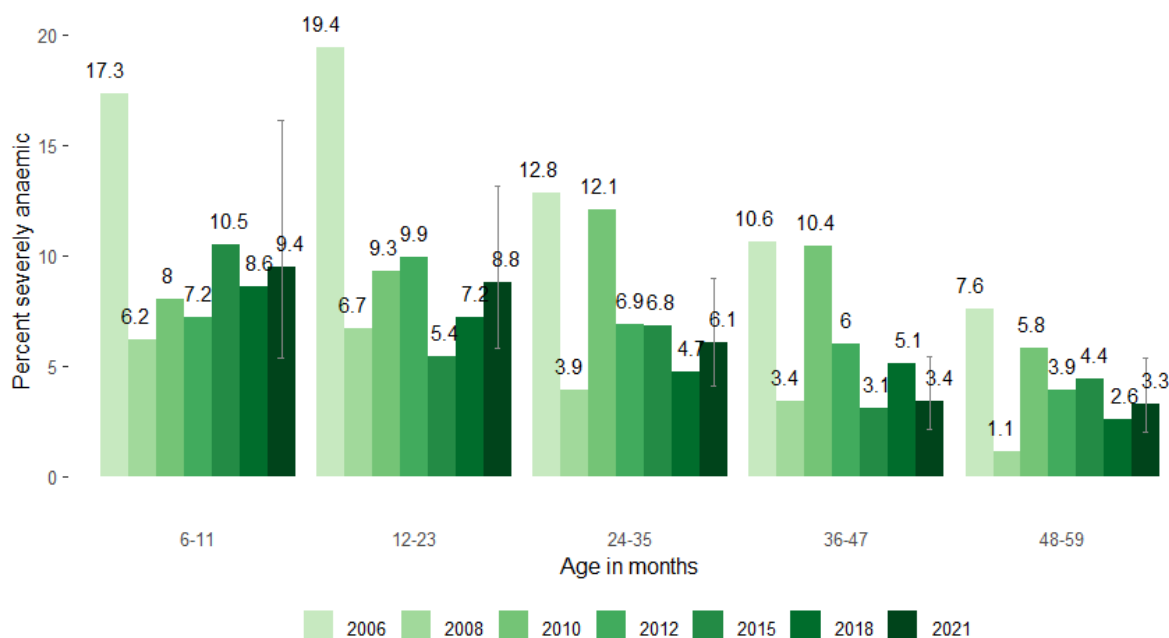
Figure 50 shows a trend of declining severe anaemia prevalence in children under five years of age in Eastern, Lusaka, North-Western, and Southern provinces, with the greatest decline demonstrated in Southern. However, the prevalence of severe anaemia increased in 2021 in Central, Copperbelt, Luapula, Muchinga, Northern, and Western provinces, with the greatest increase seen in Northern Province.

Figure 50. Severe anaemia prevalence among children under age five years by province (Zambia 2010–2021)



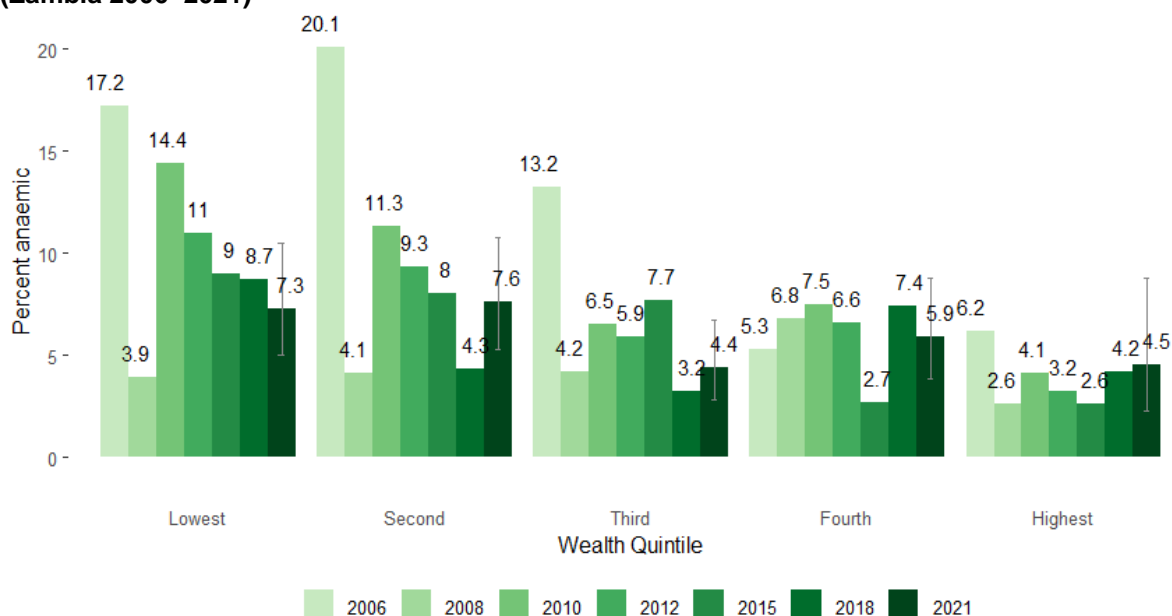
Levels of severe anaemia prevalence among children under five years of age increased across all age categories in 2021, with the exception of children 36 to 47 months of age (**Figure 51**). The results still showed a trend of general decline in severe anaemia with increasing age.

Figure 51. Severe anaemia prevalence (Hb <8 g/dl) by age among children under age five years (Zambia 2006–2021)



Severe anaemia prevalence continues to follow a general pattern of wealthier households having less severe anaemia. However, since 2010, the lowest wealth quintile has seen a continuous decline in severe anaemia prevalence and is the only wealth quintile to demonstrate a consistent decline during that time (Figure 52).

Figure 52. Severe anaemia prevalence among children under age five years by wealth quintile (Zambia 2006–2021)



Chapter 7: Discussion/conclusions

The 2021 Zambia MIS highlighted important trends in the coverage of malaria interventions and the status of malaria and anaemia. While Zambia recorded improvements in IRS coverage, ITN ownership and use declined, leaving some parts of the population vulnerable to malaria. IPTp coverage remains relatively high but has not improved. With regard to case management, testing rates have improved and so has the use of AL for treatment of febrile children, consistent with the country's roll-out of RDTs and AL. While government health facilities are a major source of antimalarial medicines for both urban and rural areas of Zambia, there has been a decline in access to antimalarials through CHWs despite investments to expand iCCM. These are the main conclusions drawn from the results of the 2021 MIS. This section further explores these results.

In 2021, Zambia recorded a decline in ITN ownership across most provinces, more so among low-income groups and rural areas. Consequently, net use also declined among children under five years of age and pregnant women. This is undesirable as it goes against the programme strategy of targeting these populations. The decline is in part due to changes in the deployment strategy, net attrition, and discrepancy between need and availability. Although ITNs were meant to be a gap-filler for IRS, the improvements in IRS coverage (39%) were inadequate to cover the need for vector control. This left some populations unprotected by either ITN or IRS. It is therefore cardinal that the vector control strategy moving forward is reviewed in order to reverse declining access to malaria prevention services and optimise coverage with either ITNs or IRS.

IPTp coverage remained similar to 2018 levels, characterised by lower coverage in rural areas across all doses. Disparities in IPTp coverage were also noted by socio-economic status with lower rates among the lower wealth quintiles. Improving equitable access to IPTp is required to address malaria in pregnancy. Since coverage of four doses of IPTp remains low at 16%, this may signal late ANC presentation, leaving insufficient time during pregnancy within which IPT could be administered. Both supply and demand issues should be explored so the desired IPTp coverage rates can be achieved.

Prompt health care seeking increased among febrile children from 20% in 2018 to 30% in 2021, with improvements reported in both rural and urban areas. However, when compared with the programme targets, these rates have remained low and require further exploration to address access to service delivery points.

In 2021, Zambia recorded improvements in testing rates for malaria in febrile children (59% nationally) with the improvement observed in both urban and rural areas. This indicator has consistently been on an upward trend over time, especially since RDTs have been scaled up countrywide. Appropriate treatment of children with malaria remained high; however, it was noted that the use of SP among children with malaria increased from 0.4% in 2018 to 1.0% in 2021. Could this be attributed to gaps in the availability of the recommended AL? Interrogation of supply chain issues is important to better understand the observed treatment practice, which is contrary to the treatment guidelines for uncomplicated malaria.

Government facilities remain the main source of care for malaria in Zambia. In order to improve access to treatment for malaria, community case management is being expanded by training and deploying more CHWs. However, in 2021, there was a decline in the community level as a source of care, despite the iCCM expansion efforts. The programme experienced stock-outs of RDTs during 2020 due to delays in procurements and shipping as a result of the COVID-19 pandemic and these shortages were most directly observed at the community level in many provinces as supplies were prioritized for facility attendees. It was surprising to observe that there were more rural residents reporting the private sector as a source of antimalarials than urban residents. To understand these observations, further interrogation of the data are necessary.

The prevalence of malaria among febrile children by RDT remains high (29%), more so in rural areas and among those of lower socioeconomic status. Severe anaemia among children ages five and below was 5.7% in 2021, an increase from 2018 levels and higher in regions with high malaria prevalence

and low income. Targeting interventions to address the disproportionate burden of malaria and severe anaemia among rural and low-income households will be key to ensuring equity in malaria programming.

The majority of the women of reproductive age surveyed in 2021 exhibited high knowledge of malaria symptoms, causes, and prevention methods. However, there is a notable declining trend in knowledge levels since 2018. Utilisation of vector control interventions such as ITNs has also declined. Additionally, only a third of the women knew the role and location of CHWs in their communities. Knowledge of malaria, malaria prevention, and channels of communicating information about malaria are important indicators for understanding how communities and households can improve their own ability to contribute to malaria elimination activities. The high ownership of communication devices such as TVs and mobile phones provides an opportunity for channelling communication campaigns in Zambia. Addressing the knowledge action gap and addressing access to appropriate malaria messages is important for maximising utilisation of malaria services and fostering behaviour change.

Malaria prevalence among children under five years of age increased in 2021 compared to 2018. This was most notable in poorer rural households compared to urban and wealthier households. It is likely that 2018 represented an anomalous year in malaria burden due to drought conditions in parts of Zambia resulting in lower-than-expected prevalence compared to trends observed across previous MISs. This survey appears to show backsliding to 2015 levels of prevalence across many demographic characteristics. This situation is not ideal and a closer examination of the factors leading to the increase in malaria are required.

The MIS has been a cornerstone of benchmarking malaria burden since 2006. As malaria burden, intervention implementation, and indicators change, contextual issues need to be documented to accurately describe emerging patterns. Improving routine surveillance systems will remain important in complementing information generated from surveys to inform programme improvements and resource allocation. MISs and other national surveys, however, remain important for understanding the broader trend in intervention coverage and validating programmatic and operational coverage data provided from the malaria activities.

Chapter 8: Key recommendations

Evidence from the 2021 MIS shows that, since 2018, the overall level of vector control coverage in Zambia has fallen while the malaria burden has risen sharply. These results call for significant changes and improvements for malaria service delivery and strategic prioritisation. The key recommendations for the NMEP are as follows:

- Progress towards malaria parasite prevalence goals reversed compared to previous trends. Gains must be protected while we redouble efforts to make further, accelerated progress over the next three years.
- ITN coverage declined significantly in Zambia due to the change in strategic approach of prioritising IRS and reducing ITN coverage. Re-establishing high vector control coverage, especially with ITNs, should be a high priority for the malaria programme, especially utilising upcoming mass campaigns to rapidly expand coverage to populations missed in 2021.
- IRS coverage increased compared to the previous MIS but did not match the decline seen in ITN coverage, especially among more rural, malarious households. IRS coverage increased only slightly in rural households compared to previous trends, while the biggest gain was seen in urban areas. However, coverage of IRS was mixed at cluster level with many clusters reporting insufficient levels of coverage due to the mosaic approach and limitations of IRS reach by the spray programme. Overall coverage of either ITNs or IRS declined from previous trends.
- IPTp coverage showed mixed results. Coverage of two and three doses remained largely unchanged, while the number who received four doses increased in 2021 compared to previous surveys. Understanding and addressing barriers to earlier ANC attendance and IPTp access should be prioritised, including encouraging ANC attendance of four or more visits.
- Expanding access to malaria testing and treatment services through improved health service provision, including through community health workers/volunteers is important to reduce episodes of severe malaria disease and malaria deaths, especially among children.
- The NMEP's efforts to expand iCCM and surveillance at the community level should be accelerated to achieve malaria elimination targets. Improving ways of measuring changes in community level coverage of treatment access should be explored.
- Promptly seeking care for febrile children has improved between 2018 and 2021; a more detailed exploration of the contributing factors for this increase is needed.
- Effective messaging at the community level focused on the importance of seeking malaria testing and treatment services should be increased to improve care-seeking behaviour. The significant expansion of the country's malaria CHW network presents an opportunity for regular household level inter-personal communication—a proven channel of delivering health information—with our primary malaria audience.
- Access to mobile phones in rural areas has significantly increased, allowing greater potential for direct and focal messaging to remote communities using this platform.
- Use the strength of Zambia's stratification to tailor malaria messages, materials, and activities to local behavioural determinants, disease burden, and urban/rural classifications.
- Messages around testing should emphasise that fever is a common symptom of malaria while acknowledging that fever can be caused by other conditions as well. Messages around treatment should emphasise that prompt care is crucial to a good malaria treatment outcome.
- Future communication campaigns must focus on emphasising the connection between mosquito bites, malaria, IRS, and use of ITNs.
- New SBC messaging channels should be trialled to increase knowledge of malaria prevention methods. Simple formative assessments should be conducted on key SBC indicators to regularly collect, analyse, and visualize local barriers and determine effective message delivery channels.
- Private sector partnerships should be leveraged to amplify malaria messaging, including the promotion of the national brand, *Malaria Ends With Me*, and to recognize progress to date with celebrations of subnational malaria -free areas.
- The RBM SBC module should be incorporated into Zambia's next MIS.
- MISs should be supplemented with improved localised malaria surveillance and operations research to improve our understanding of transmission patterns and to aid in targeting malaria interventions in cost-effective ways.
- Future Zambia MISs should ensure collection of specimens for microscopy in all ten provinces.

- In moving towards burden reduction and elimination, the highest burden areas should be provided with additional resources to support the transition to lower levels of transmission and bring elimination within reach.

References

1. Zambia Central Statistical Office, Zambia Central Board of Health, and a.O. Macro., *Zambia Demographic and Health Survey 2001–2002*. 2003: Calverton, MD USA.
2. Ministry of Health, *National Malaria Indicator Survey 2006*. 2006, Ministry of Health, National Malaria Control Centre: Lusaka.
3. Zambia Central Statistical Office, et al., *Zambia Demographic and Health Survey 2007*. 2009: Calverton, MD, USA.
4. Ministry of Health, *National Malaria Indicator Survey 2008*. 2008, Ministry of Health, National Malaria Control Centre: Lusaka.
5. Ministry of Health, *National Malaria Indicator Survey 2010*. 2010, Ministry of Health, National Malaria Control Centre: Lusaka.
6. Ministry of Health, *National Malaria Indicator Survey 2012*. 2012, Ministry of Health, National Malaria Control Centre: Lusaka.
7. Zambia Central Statistical Office, Ministry of Health, and a.I. International., *Zambia Demographic and Health Survey 2013-14*. 2014: Calverton, MD, USA.
8. Ministry of Health, *National Malaria Indicator Survey 2015*. 2015, Ministry of Health, National Malaria Elimination Centre: Lusaka.
9. Ministry of Health, *National Malaria Indicator Survey 2018*. 2019, Ministry of Health, National Malaria Elimination Centre: Lusaka.
10. Ministry of Health, *National Malaria Elimination Strategic Plan, 2017-2021*. 2017, Ministry of Health: Lusaka.
11. Zambia Central Statistics Office, *Zambia: 2010 Census of Population and Housing, Population Summary Report*. 2012, CSO: Lusaka.
12. World Health Organization, UNICEF, MEASURE DHS, MEASURE Evaluation, United States Centers for Disease Control and Prevention, *Malaria indicator survey: basic documentation for survey design and implementation (archived)*, M. Evaluation, Editor. 2005, Calverton, MD USA.
13. Vanden Eng, J.L., et al., *Use of handheld computers with global positioning systems for probability sampling and data entry in household surveys*. *Am J Trop Med Hyg*, 2007. **77**(2): p. 393-9.
14. Serda, B., *EpiSample*. PATH Malaria Control and Elimination Partnership in Africa (MACEPA): Google Play Store.
15. Roll Back Malaria, et al., *Guidelines for Core Population-Based Indicators*. 2009, MEASURE Evaluation: Calverton, MD USA.
16. A., S., *Anemia Testing Manual for Population-Based Surveys*. 2000, Macro International Inc.: Calverton, Maryland, USA.
17. Ministry of Health, *Guidelines for the Diagnosis and Treatment of Malaria in Zambia, 2017*. 2018, National Malaria Elimination Centre.
18. Rutsteine, S.O., *Steps to constructing the new DHS wealth index*. 2018, The DHS Program: Rockville, MD, USA.

Appendix A: Sampling for Malaria Indicator Survey 2021

Introduction

The Malaria Indicator Survey (MIS) 2021 covered the household population in Zambia. A representative probability sample to produce estimates for the country as a whole, rural and urban separately was drawn. Overall a representative sample of 4,900 households was selected. A two-stage stratified cluster sampling design was used to select the sample.

Sampling frame

The sampling frame for the selection of households was constructed from the 2010 census frame. The structure of the census frame is as described below.

There are ten provinces in Zambia and each province is subdivided into districts. For statistical purposes, each district is subdivided into Census Supervisory Areas (CSAs) and these are in turn subdivided into Enumeration Areas (EAs). CSAs are grouped in wards, wards in constituencies, constituencies in districts, and districts in provinces. The listing of EAs has information on the number of households and the population. The number of households was used as a measure of size for selecting primary sampling units (PSU) which are the EAs or clusters.

The sample was selected in two stages. This means the primary sampling units were selected from the census frame in the first stage and the households were selected from the selected enumeration areas in the second stage. The enumeration areas on the frame are stratified by province and by rural and urban

Sample allocation and selection

Initially, 4,900 households were allocated between rural and urban clusters, in proportion to the population of each domain according to the 2010 census results. Adjustments to the proportional distribution were made to allow for reasonable comparison of the sample between the strata. The distribution is given in **Table A1**.

Table A1: Sample distribution of clusters and households for the 2021 MIS

	# of clusters			# of households		
	Rural	Urban	Total	Rural	Urban	Total
Central	19	2	21	475	50	525
Copperbelt	9	10	19	225	250	475
Eastern	29	1	30	725	25	750
Luapula	19	1	20	475	25	500
Lusaka	9	12	21	225	300	525
Muchinga	13	1	14	325	25	350
North-Western	11	1	12	275	25	300
Northern	19	1	20	475	25	500
Southern	20	2	22	500	50	550
Western	16	1	17	400	25	425

	# of clusters			# of households		
	Rural	Urban	Total	Rural	Urban	Total
Total	164	32	196	4,100	800	4,900

The MIS sample was selected using a stratified two-stage cluster design as mentioned earlier. Once the households were allocated to the strata (provinces, rural and urban), the number of clusters (EAs) to be selected were calculated based on an average cluster take of 25 completed interviews of all respondents. Clusters were selected systematically with probability proportional to the number of households.

Special treatment was taken for Eastern Province, where over-sampling was done in order to meet the objectives of the survey. Following the results of the previous survey, interventions were made in this province, hence the need to over-sample.

For oversampling in Eastern Province, an additional six clusters above what was initially drawn were selected. Therefore, the additional clusters in Eastern Province were all rural clusters. Ultimately, 170 rural clusters and 32 urban clusters were selected for a total of 202 clusters countrywide.

The final sample allocation is as follows in **Table A2**.

Table A2: Sample distribution of clusters and households for the 2021 MIS taking into account oversampling in Eastern Province

	# of clusters			# of households		
	Rural	Urban	Total	Rural	Urban	Total
Central	19	2	21	475	50	525
Copperbelt	9	10	19	225	250	475
Eastern	35	1	36	875	25	900
Luapula	19	1	20	475	25	500
Lusaka	9	12	21	225	300	525
Muchinga	13	1	14	325	25	350
North-Western	11	1	12	275	25	300
Northern	19	1	20	475	25	500
Southern	20	2	22	500	50	550
Western	16	1	17	400	25	425
Total	170	32	202	4,250	800	5,050

Selection procedure for clusters

The selection was done using a pre-programmed Excel-based application for stratified systematic sampling. The programme follows the steps outlined below to select the clusters (EAs) in each stratum.

1. Calculate the sampling interval, I , for each stratum

$$I_h = \frac{\sum_{i=1}^{N_h} M_{hi}}{a_h}$$

where M_{hi} is the number of households in EA (or cluster) i and stratum h ,

$\sum_{i=1}^{N_h} M_{hi}$ is the size of the stratum (total number of households in the stratum according to the 2010 census) and a is the number of clusters (EAs) to be selected in the stratum.

2. Calculate the cumulated size of each EA.

3. Calculate the sampling numbers.

$$R, R+I, R+2I, \dots, R + (a-1)I,$$

where R is a random number between 1 and I .

4. Compare each sampling number with the cumulated sizes of the EAs.

The first EA (or cluster) whose cumulated size is equal to or greater than the random number generated in (3) was selected. The next EA to be selected was the one with cumulated size equal to or greater than $R+I$. Each of the rest of the EAs were selected using the same procedure, making sure to add I at each subsequent selection.

Selection of households

A frame of households was determined by listing all the households in all the selected EAs. Upon completion of household listing, the household lists were given new household numbers, which were sampling serial numbers assigned to each household in the cluster. The sampling numbers were assigned sequentially within each EA starting from 1. The total number of households in the EA was equal to the last serial number assigned.

In summary, the following steps were used to select the households:

1. Calculate the sampling interval for each category

$$I = \frac{B}{b}$$

where B is the number of households listed in the selected EA and b is the number of households to be selected in that SEA.

2. Generate a random number (R) between 1 and the interval I ; the first selection will hence be R .
3. Add the interval to the random number to get the next selection.
4. Add the interval repeatedly until you get your desired sample size.

Estimation procedure

Weights

Sampling weights were required to ensure that the sample was representative at the national level. The sampling probabilities at first-stage selection of EAs and probabilities of selecting the households

were used to calculate the weights. The weights of the sample were equal to the inverse of the probability of selection.

The probability of selecting cluster i was calculated as

$$P_{hi} = \frac{a_h M_{hi}}{\sum_{i=1}^{N_h} M_{hi}}$$

The weight or boosting factor is, thus, given as

$$w_{hi} = \frac{1}{P_{hi}}$$

where: P_{hi} is the first-stage sampling probability of (EA), a_h is the number of SEAs selected in stratum h , M_{hi} is the size (households according to the census frame) of the i^{th} EA in stratum h , and SM_{hi} is the total size of stratum h .

The selection probability of the household was calculated as:

$$p_h = \frac{n_h}{N_h}$$

where n_h is the number of households selected from stratum h and N_h is the total number of households in stratum h .

Let y_{hij} be an observation on variable y for the j^{th} household in the i^{th} EA of the h^{th} stratum. Then the estimated total for the h^{th} stratum is:

$$y_h = \sum_{i=1}^{a_h} \sum_{j=1}^{n_h} w_{hi} y_{hij}$$

where, y_h is the estimated total for the h^{th} stratum., w_{hi} is the weight for the j^{th} household in the i^{th} EA of the h^{th} stratum, $i=1-a_h$ is the number of selected clusters in the stratum, and $j=1-n_h$ is the number of sample households in the stratum. The national estimate is given by:

$$y = \sum_{h=1}^H y_h$$

where y is the national estimate, $h=1, \dots, H$ is the total number of strata. For this survey, $H = 2$ (the rural/urban areas are taken as separate domains).

Table A3. Number of interviews and response rates: household and women's sample

Result	Residence		Total
	Urban	Rural	
Household interviews			
Selected households	990	3,435	4,425
Occupied households	960	3,359	4,319
Interviewed households	916	3,261	4,177
Household response rate (HRR)	93	95	94
Interviews with women			
Number of eligible women	1,016	3,083	4,099
Number of eligible women interviewed	885	2,795	3,680
Eligible women response rate	87	91	90
Finger-pricks			
Number of eligible children	568	2,490	3,058
Number of eligible children finger-pricked	517	2,366	2,883
Finger-prick response rate	91	95	94

Appendix B: Survey personnel

Survey coordination, management, analysis and writing	
Dr Mutinta Mudenda	Ministry of Health
Dr Anthony Yeta	Ministry of Health
Dr Busiku Hamainza	Ministry of Health
Mercy Mwanza	Ministry of Health
Moonga Hawela	Ministry of Health
Jacob Chirwa	Ministry of Health
Japhet Chiwaula	Ministry of Health
Brenda Sichone	Ministry of Health
Evans Banda	Ministry of Health
Dr Paul Psychas	PMI USAID
Jennifer Somtore	PMI USAID
Isaac Mwase	PMI USAID
Dr Caroline Phiri	PATH PAMO Plus
Chabu Kangele	PATH PAMO Plus
Reine Rutagwera	PATH PAMO Plus
Chansa Katongo	PATH PAMO Plus
Dr John Miller	PATH MACEPA
Manny Lewis	PATH MACEPA
Chris Lungu	PATH MACEPA
Kafula Silumbe	PATH MACEPA
Sosenna Asefaw	PATH MACEPA
Kedrick Katongo	PATH MACEPA
Dr Honelgn Hiruy	Tulane University
Dr Fred Masaninga	World Health Organization
Sample design and selection	
Nkandu Kabibwa	Zambia Statistics Agency (ZamStats)
Ngawo Banda	Zambia Statistics Agency (ZamStats)

John Miller	PATH MACEPA
Laboratory training and analysis	
Moonga Hawela	Ministry of Health
Jacob Chirwa	Ministry of Health
Mwenda Mulenga	PATH MACEPA
Rachel Kasaro	PATH MACEPA
Tricia Hibwato	PATH MACEPA
Conceptor Mulube	PATH MACEPA
Brenda Mambwe	PATH MACEPA
Martha Manda	
Andy Sinyolo	
Namwezi Namuchimba Kapembwa	
Kapampa Mwape	
Miller Phiri	
Benjamin Kabamba	
Innocent Kaitano	
Cindy Chituta	
Mutinta Sichila	
Episample and ODK programming	
Belendia Serda	PATH MACEPA, Ethiopia

Communication and editing	
Todd Jennings	PATH MACEPA
Emma Lwando	PATH MACEPA
Manny Lewis	PATH MACEPA
Members of the Roll Back Malaria Information, Education, and Communication Working Group	

Survey field teams		
Team	Name	Role
Central 1	Sparkman Chilyabanyama	Lab
Central 1	Julia Shakanza	Nurse
Central 1	Patricia Mwale	Lab
Central 1	Thandiwe Banda	Nurse / team lead
Central 2	Chifwembe Chiyemfya	Lab
Central 2	Bridget Muzyamba	Nurse
Central 2	Stephen Kamukwamba	Lab
Central 2	Gladys Yanduli	Nurse
Copperbelt 1	Nancy A. Litana	Lab
Copperbelt 1	Valerie Mambwe Mhango	Nurse
Copperbelt 1	Abgail K. Maliti	Lab
Copperbelt 1	Try Ndhlovu	Nurse / team lead
Copperbelt 2	Carol Manda	Lab
Copperbelt 2	Margaret Taulo	Nurse
Copperbelt 2	Ray Bwalya	Lab
Copperbelt 2	Majorie Mulawa Chonta	Nurse / team lead
Eastern 1	Future Banda	Lab / team lead
Eastern 1	Milika Tembo Zaza	Nurse
Eastern 1	Chibuye whiteson	Lab
Eastern 1	Theresa Chama Ngulube	Nurse
Eastern 2	Brian Chinango	Lab
Eastern 2	Maggie Mwila	Nurse
Eastern 2	Nicolas Phiri	Lab
Eastern 2	Clara Mulenga	Nurse / team lead
Eastern 3	Chola Anthony	Lab
Eastern 3	Dabwiso Jere	Nurse

Zambia MIS 2021 · Appendix B: Survey personnel

Eastern 3	Sam Lungu	Lab / team lead
Eastern 3	Sarah Mbulo	Nurse
Luapula 1	Mwila Mambwe	Lab
Luapula 1	Margret Kafula C.	Nurse / team lead
Luapula 1	Emma Zyambo	Lab
Luapula 1	Eva Mulenga Silenga	Nurse
Luapula 2	Rita Phiri Bwanga	Lab
Luapula 2	Eunice Mubalu	Nurse / team lead
Luapula 2	Nancy Chishimba	Nurse
Luapula 2	Chuma Mudenda	Lab
Lusaka	Cynthia Chilekwa	Lab
Lusaka	Mutale Chulu	Nurse / team lead
Lusaka	Chimwemwe Harriet Ndhlovu	Lab
Lusaka	Laura Mutale	Nurse
Muchinga	Ivy Mwamungule	Lab
Muchinga	Melody Peshi Chisopo Shawa	Nurse
Muchinga	Arnold Mwape	Lab
Muchinga	Cleopatra Nkatya	Nurse
Northern 1	Ruth Kabwe Miyambo	Lab
Northern 1	Ruth Tawila Sabukube	Nurse
Northern 1	Siakantu Keembe	Lab
Northern 1	Julie Nsamba M.	Nurse / team lead
Northern 2	Tom Shankampwa	Lab
Northern 2	Susan K. Ngoyi	Nurse
Northern 2	William Mubanga	Lab
Northern 2	Josephine Mumbi Chatama	Nurse / team lead
North Western	Chimuka Hamayanda	Lab
North Western	Lyamba Njaya	Nurse / team lead
North Western	Fridah Maambo	Lab
North Western	Fridah Matabishi	Nurse
Southern 1	Moono Chilinda	Lab
Southern 1	Memory Siatwinda	Nurse
Southern 1	Nchimunya Chaambwa	Lab
Southern 1	Shillah Chiyabi	Nurse / team lead
Southern 2	Judith Mwanza	Lab / team lead

Zambia MIS 2021 · Appendix B: Survey personnel

Southern 2	Bester Hampande	Nurse
Southern 2	Darius Sintolongo	Lab
Southern 2	Pamela Mudenda	Nurse
Western 1	Agness Mtonga	Lab
Western 1	Namukolo Mwaangala	Nurse / team lead
Western 1	Jennifer Mwansa	Lab
Western 1	Kufekisa Kayama	Nurse
Western 2	Yvonne Mumba	Lab
Western 2	Florence Lumbala Kayombo	Nurse / team lead
Western 2	Pauline N. Maimbolwa	Lab
Western 2	Angela Mwandu	Nurse
Zamstats	Justine Hambamba	Mapper
Zamstats	Daniel Chongo	Mapper
Zamstats	Agripa Mwinga	Mapper
Zamstats	Daniel Chasala	Mapper
Zamstats	Conrad Mwiimbi Sikanyiti	Mapper
Zamstats	Dickson Mutanda	Mapper
Zamstats	Musonda Rodgers Chansa	Mapper
Zamstats	Paul Potiphar Daka	Mapper
Zamstats	Clymore Siakasungu Kaliyangile	Mapper
Zamstats	Gershom Musenge	Mapper
Zamstats	Lackson Zulu	Mapper
Zamstats	Joseph Silavwe Tanzuka	Mapper
Zamstats	Owen Sikanyiti Mwiimbi	Mapper
Zamstats	Collins Chinyama	Mapper
Zamstats	Fredrick Siwanasoto	Mapper
Zamstats	Patrick Chitengi Kapalu	Mapper
Zamstats	Albert Munkanda	Mapper
Zamstats	Liswaniso Tabakamulamu	Mapper

Appendix C: Malaria Indicator Survey 2021 questionnaires

Zambia Malaria Indicator Survey 2021




Household Questionnaire

Zambia MIS 2021 · Appendix C: Questionnaires
**ZAMBIA MALARIA INDICATOR SURVEY
 MODEL HOUSEHOLD QUESTIONNAIRE**

IDENTIFICATION ¹	
PLACE NAME _____	
NAME OF HOUSEHOLD HEAD _____	
CLUSTER NUMBER HOUSEHOLD NUMBER REGION URBAN/RURAL (URBAN=1, RURAL=2) LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE ² (LARGE CITY=1, SMALL CITY=2, TOWN=3, COUNTRYSIDE=4)	

INTERVIEWER VISITS					
	1	2	3	FINAL VISIT	
DATE	_____	_____	_____	DAY	
				MONTH	
				YEAR	
INTERVIEWER'S NAME	_____	_____	_____	NAME	
RESULT*	_____	_____	_____	RESULT	
NEXT VISIT: DATE	_____	_____			
TIME	_____	_____		TOTAL NO. OF VISITS	
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD	
				TOTAL ELIGIBLE WOMEN	
				LINE NUMBER OF RESPONDENT TO HOUSEHOLD QUESTIONNAIRE	

SUPERVISOR	OFFICE EDITOR	KEYED BY
NAME _____		

DATE _____			
------------	---	---	--

¹ This section should be adapted for country-specific survey design.







² The following guidelines should be used to categorize urban sample points: “Large cities” are national capitals and places with over 1 million population; “small cities” are places with between 50,000 and 1 million population; the remaining urban sample points are “towns.”

HOUSEHOLD LISTING

Now we would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX		RESIDENCE		AGE	TIME INDOORS / OUTDOORS				ELIGIBLE WOMEN
			Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?		To the nearest hour, what time last night did (NAME) go indoors for the evening?	To the nearest hour, what time last night did (NAME) go to bed?	To the nearest hour, what time this morning did (NAME) get out of bed?	To the nearest hour, what time this morning did (NAME) go outdoors?	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7.1)	(7.2)	(7.3)	(7.4)	(8)	
			M F	YES NO	YES NO	IN YEARS	TIME (24 Hours)	TIME (24 Hours)	TIME (24 Hours)	TIME (24 Hours)		
01		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	01	
02		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	02	
03		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	03	
04		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	04	

Zambia MIS 2021 · Appendix C: Questionnaires

05			1 2	1 2	1 2						05
<p>* CODES FOR Q.3 RELATIONSHIP TO HEAD OF HOUSEHOLD: 01 = HEAD 02 = WIFE/HUSBAND 03 = SON OR DAUGHTER 04 = SON-IN-LAW OR DAUGHTER-IN-LAW</p>		<p>05 = GRANDCHILD 06 = PARENT 07 = PARENT-IN-LAW 08 = BROTHER OR SISTER 09 = OTHER RELATIVE 10 = ADOPTED/FOSTER/ STEPCHILD 11 = NOT RELATED 98 = DON'T KNOW</p>									

Zambia MIS 2021 · Appendix C: Questionnaires

FEVER PREVALENCE AND TREATMENT										
LINE NO.	Has (NAME) been ill with a fever at any time in the last 2 weeks? IF NO SKIP TO NEXT PERSON,	How many days ago did the fever start? IF LESS THAN ONE DAY, THEN RECORD '00'.	Did (NAME) seek advice or treatment for the fever from any source?	Where did you seek advice or treatment? Anywhere else? RECORD ALL SOURCES MENTIONED	How many days after the fever began did (NAME) first seek advice or treatment? IF SAME 7 DAY, RECORD '00'.	Is (NAME) still sick with a fever?	At any time during the illness, did (NAME) take any drugs for the fever?	What drugs did (NAME) take? ¹ Any other drugs? RECORD ALL MENTIONED.	How long after the fever started did (NAME) first take DRUG NAME?	For how many days did (NAME) take the DRUG NAME? IF 7 OR MORE DAYS, RECORD '7'
(1)	(9.1)	(9.2)	(9.3)	(9.4)	(9.5)	(9.6)	(9.7)	(9.8)	(9.9)	(9.10)
	YES NO DK	DK = 99	YES NO DK		DK = 99	YES NO DK	YES NO DK	DK = 8	DK = 8	DK = 99
01	1 2 8	<input type="text"/> <input type="text"/>	1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H PHARMACY.....I PRIVATE DOCTOR.....J MOBILE CLINIC.....K FIELD WORKER.....L OTHER PVT. MED.M (SPECIFY) OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHERX (SPECIFY)	DAYS... <input type="text"/> <input type="text"/>	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL....F IBUPROFEN..... G OTHERX DON'T KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8	<input type="text"/> <input type="text"/>
02	1 2 8	<input type="text"/> <input type="text"/>	1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H PHARMACYI PRIVATE DOCTOR.....J MOBILE CLINIC.....K FIELD WORKER.....L	DAYS... <input type="text"/> <input type="text"/>	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL....F IBUPROFEN..... G	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8	<input type="text"/> <input type="text"/>

Zambia MIS 2021 · Appendix C: Questionnaires

				OTHER PVT. MED. _____M (SPECIFY) OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHER _____ X (SPECIFY)				OTHER ...X DONT KNOW.....Z		
03	1 2 8		1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D FIELD WORKER.....F OTHER PUBLIC _____G (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H PHARMACYI PRIVATE DOCTOR.....J MOBILE CLINIC.....K FIELD WORKER.....L OTHER PVT. MED. _____M (SPECIFY) OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHER _____ X (SPECIFY)	DAYS... 	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL...F IBUPROFEN..... G OTHER ...X DONT KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DONT KNOW8	
04	1 2 8		1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D FIELD WORKER.....F OTHER PUBLIC _____G (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H PHARMACYI PRIVATE DOCTOR.....J MOBILE CLINIC.....K FIELD WORKER.....L OTHER PVT. MED. _____M (SPECIFY) OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHER _____ X (SPECIFY)	DAYS... 	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL...F IBUPROFEN..... G OTHER ...X DONT KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DONT KNOW8	
05	1 2 8		1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D FIELD WORKER.....F OTHER PUBLIC _____G (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H PHARMACYI PRIVATE DOCTOR.....J MOBILE CLINIC.....K FIELD WORKER.....L OTHER PVT. MED. _____M (SPECIFY)	DAYS... 	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL...F IBUPROFEN..... G OTHER ...X	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DONT KNOW8	

Zambia MIS 2021 · Appendix C: Questionnaires

				OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHER _____ X (SPECIFY)				DON'T KNOW.....Z		
--	--	--	--	---	--	--	--	---------------------	--	--

Zambia MIS 2021 · Appendix C: Questionnaires

Continued....

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX		RESIDENCE		AGE	TIME INDOORS / OUTDOORS				ELIGIBLE WOMEN
			Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?		To the nearest hour, what time last night did (NAME) go indoors for the evening? RECORD HOUR ON 24 HOUR CLOCK	To the nearest hour, what time last night did (NAME) go to bed? RECORD HOUR ON 24 HOUR CLOCK	To the nearest hour, what time this morning did (NAME) get out of bed? RECORD HOUR ON 24 HOUR CLOCK	To the nearest hour, what time this morning did (NAME) go outdoors? RECORD HOUR ON 24 HOUR CLOCK	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(7.1)	(7.2)	(7.3)	(7.4)	(8)	
			M F	YES NO	YES NO	IN YEARS	TIME (24 Hours)	TIME (24 Hours)	TIME (24 Hours)	TIME (24 Hours)		
06		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	01	
07		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	02	
08		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	03	
09		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	04	
10		<input type="checkbox"/> <input type="checkbox"/>	1 2	1 2	1 2	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	05	

<p>* CODES FOR Q.3 RELATIONSHIP TO HEAD OF HOUSEHOLD: 01 = HEAD 02 = WIFE/HUSBAND 03 = SON OR DAUGHTER 04 = SON-IN-LAW OR DAUGHTER-IN-LAW</p>	<p>05 = GRANDCHILD 06 = PARENT 07 = PARENT-IN-LAW 08 = BROTHER OR SISTER 09 = OTHER RELATIVE 10 = ADOPTED/FOSTER/ STEPCHILD 11 = NOT RELATED 98 = DON'T KNOW</p>
---	--




Zambia MIS 2021 · Appendix C: Questionnaires

FEVER PREVALENCE AND TREATMENT										
LINE NO.	Has (NAME) been ill with a fever at any time in the last 2 weeks? IF NO SKIP TO NEXT PERSON,	How many days ago did the fever start? IF LESS THAN ONE DAY, THEN RECORD '00'.	Did (NAME) seek advice or treatment for the fever from any source?	Where did you seek advice or treatment? Anywhere else? RECORD ALL SOURCES MENTIONED	How many days after the fever began did (NAME) first seek advice or treatment? IF SAME DAY, RECORD '00'.	Is (NAME) still sick with a fever?	At any time during the illness, did (NAME) take any drugs for the fever?	What drugs did (NAME) take? ¹ Any other drugs? RECORD ALL MENTIONED.	How long after the fever started did (NAME) first take DRUG NAME?	For how many days did (NAME) take the DRUG NAME? IF 7 OR MORE DAYS, RECORD '7'
(1)	(9.1)	(9.2)	(9.3)	(9.4)	(9.5)	(9.6)	(9.7)	(9.8)	(9.9)	(9.10)
	YES NO DK	DK = 99	YES NO DK		DK = 99	YES NO DK	YES NO DK	DK = 8	DK = 8	DK = 99
06	1 2 8	<input type="checkbox"/> <input type="checkbox"/>	1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D COMMUNITY HEALTH WOKER / FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H MISSION HOSPITAL/ CLINIC.....I PHARMACYJ PRIVATE DOCTOR.....K MOBILE CLINIC.....L COMMUNITY HEALTH WOKER / FIELD WORKER.....M OTHER PVT. MED.N (SPECIY) OTHER SOURCE SHOP.....O TRAD. PRACTITIONER.....P OTHERX (SPECIFY)	DAYS... <input type="checkbox"/> <input type="checkbox"/>	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL....F IBUPROFEN..... G OTHERX DON'T KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8	<input type="checkbox"/> <input type="checkbox"/>
07	1 2 8	<input type="checkbox"/> <input type="checkbox"/>	1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D COMMUNITY HEALTH WOKER / FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H MISSION HOSPITAL/ CLINIC.....I	DAYS... <input type="checkbox"/> <input type="checkbox"/>	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL....F	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8	<input type="checkbox"/> <input type="checkbox"/>

Zambia MIS 2021 · Appendix C: Questionnaires

				PHARMACYJ PRIVATE DOCTOR.....K MOBILE CLINIC.....L COMMUNITY HEALTH WOKER / FIELD WORKER.....M OTHER PVT. MED.N (SPECIFY) OTHER SOURCE SHOP.....O TRAD. PRACTITIONER.....P OTHER X (SPECIFY)					IBUPROFEN.....G OTHER ...X DON'T KNOW.....Z		
08	1 2 8		1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D COMMUNITY HEALTH WOKER / FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H MISSION HOSPITAL/ CLINIC.....I PHARMACYJ PRIVATE DOCTOR.....K MOBILE CLINIC.....L COMMUNITY HEALTH WOKER / FIELD WORKER.....M OTHER PVT. MED.N (SPECIFY) OTHER SOURCE SHOP.....O TRAD. PRACTITIONER.....P OTHER X (SPECIFY)	DAYS... 	1 2 8	1 2 8	SP/FANSIDAR.....A QUININE.....B COARTEM.....C DHAP.....D ASPIRIN.....E PARACETAMOL....F IBUPROFEN.....G OTHER ...X DON'T KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8		
09	1 2 8		1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D COMMUNITY HEALTH WOKER / FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H MISSION HOSPITAL/ CLINIC.....I PHARMACYJ PRIVATE DOCTOR.....K MOBILE CLINIC.....L COMMUNITY HEALTH WOKER / FIELD WORKER.....M OTHER PVT. MED.N (SPECIFY) OTHER SOURCE SHOP.....O TRAD. PRACTITIONER.....P OTHER X (SPECIFY)	DAYS... 	1 2 8	1 2 8	SP/FANSIDAR.....A QUININE.....B COARTEM.....C DHAP.....D ASPIRIN.....E PARACETAMOL....F IBUPROFEN.....G OTHER ...X DON'T KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8		

Zambia MIS 2021 · Appendix C: Questionnaires

10	1 2 8		1 2 8	PUBLIC SECTOR GOVT. HOSPITAL.....A GOVT. HEALTH CENTER.....B GOVT. HEALTH POSTC MOBILE CLINIC.....D COMMUNITY HEALTH WOKER / FIELD WORKER.....F OTHER PUBLICG (SPEC) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....H MISSION HOSPITAL/ CLINIC.....I PHARMACYJ PRIVATE DOCTOR.....K MOBILE CLINIC.....L COMMUNITY HEALTH WOKER / FIELD WORKER.....M OTHER PVT. MED.N (SPECIY) OTHER SOURCE SHOP.....O TRAD. PRACTITIONER.....P OTHERX (SPECIFY)	DAYS... 	1 2 8	1 2 8	SP/FANSIDAR..... A QUININE..... B COARTEM..... C DHAP..... D ASPIRIN..... E PARACETAMOL...F IBUPROFEN..... G OTHER ...X DON'T KNOW.....Z	SAME DAY.....0 NEXT DAY.....1 2 DAYS AFTER THE FEVER..2 3 DAYS AFTER THE FEVER..3 4 OR MORE DAYS AFTER THE FEVER.....4 DON'T KNOW8	
----	-------	---	-------	--	---	-------	-------	--	--	---

TICK HERE IF CONTINUATION SHEET USED						<input type="checkbox"/>
Just to make sure that I have a complete listing:						
1)	Are there any other persons such as small children or infants that we have not listed?	YES	<input type="checkbox"/> →	ENTER EACH IN TABLE	NO	<input type="checkbox"/>
2)	In addition, are there any other people who may not be members of your family, such as domestic staff, lodgers or friends who usually live here?	YES	<input type="checkbox"/> →	ENTER EACH IN TABLE	NO	<input type="checkbox"/>
3)	Are there any guests or temporary visitors staying here, or anyone else who stayed here last night, who have not been listed?	YES	<input type="checkbox"/> →	ENTER EACH IN TABLE	NO	<input type="checkbox"/>

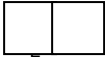
Zambia MIS 2021 · Appendix C: Questionnaires

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
9.11	For the head of household, did he/she ever attend school?	YES NO	1 2 ←10
9.12	For the head of household, what is the highest level of school attended: primary, secondary, or higher? ¹	PRIMARY SECONDARY HIGHER	1 2 3
10	What is the main source of drinking water for members of your household? ¹	PIPED WATER PIPED INTO DWELLING PIPED INTO YARD/PLOT PUBLIC TAP/STANDPIPE TUBE WELL OR BOREHOLE DUG WELL PROTECTED WELL UNPROTECTED WELL WATER FROM SPRING PROTECTED SPRING UNPROTECTED SPRING RAINWATER TANKER TRUCK CART WITH SMALL TANK SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL BOTTLED WATER OTHER _____ (SPECIFY)	11 12 13 21 31 32 41 42 51 61 71 81 91 96
11	What kind of toilet facility does your household use? ¹	FLUSH OR POUR FLUSH TOILET FLUSH TO PIPED SEWER SYSTEM FLUSH TO SEPTIC TANK FLUSH TO PIT LATRINE FLUSH TO SOMEWHERE ELSE FLUSH, DON'T KNOW WHERE PIT LATRINE VENTILATED IMPROVED PIT LATRINE (VIP) PIT LATRINE WITH SLAB PIT LATRINE WITHOUT SLAB/ OPEN PIT COMPOSTING TOILET BUCKET TOILET HANGING TOILET/HANGING LATRINE NO FACILITY/BUSH/FIELD OTHER _____ (SPECIFY)	11 12 13 14 15 21 22 23 31 41 51 61 96
12a	Does your household have: ²		YES NO
	Electricity?	ELECTRICITY	1 2
	A radio?	RADIO	1 2
	A television?	TELEVISION	1 2
	A mobile telephone?	MOBILE TELEPHONE	1 2
	A non-mobile telephone?	NON-MOBILE TELEPHONE.....	1 2
	A refrigerator?	REFRIGERATOR	1 2
	A bed?	BED	1 2
	A chair?	CHAIR.....	1 2
	A table?	TABLE	1 2
	A Cupboard?	CUPBOARD	1 2
	A sofa?	SOFA.....	1 2
	A clock?	CLOCK	1 2
	A fan?	FAN	1 2
	A sewing machine?	SEWING MACHINE.....	1 2
	A cassette player?	CASSETTE PLAYER	1 2
	A plough?	PLOUGH.....	1 2

Zambia MIS 2021 · Appendix C: Questionnaires


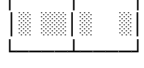

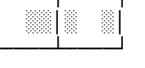
	A grain grinder? A VCR/DVD? A tractor? A vehicle? A hammer mill?	GRAIN GRINDER 1 2 VCR/DVD 1 2 TRACTOR.....1 2 VEHICLE 1 2 HAMMER MILL 1 2	
13	What type of fuel does your household mainly use for cooking?	ELECTRICITY 01 LPG/NATURAL GAS 02 BIOGAS 03 KEROSENE 04 COAL/LIGNITE 05 CHARCOAL 06 FIREWOOD/STRAW 07 DUNG 08 OTHER _____ 96 (SPECIFY)	
¹ Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained. ² Additional indicators of socioeconomic status should be added, especially to distinguish among lower socioeconomic classes.			

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
14a	<p>MAIN MATERIAL OF THE FLOOR.¹</p> <p>RECORD OBSERVATION.</p>	<p>NATURAL FLOOR</p> <p>EARTH/SAND 11</p> <p>DUNG 12</p> <p>RUDIMENTARY FLOOR</p> <p>WOOD PLANKS 21</p> <p>PALM/BAMBOO 22</p> <p>FINISHED FLOOR</p> <p>PARQUET OR POLISHED WOOD 31</p> <p>VINYL OR ASPHALT STRIPS 32</p> <p>CERAMIC TILES 33</p> <p>CEMENT 34</p> <p>CARPET 35</p> <p>OTHER _____ 96 (SPECIFY)</p>	
14b	<p>MAIN MATERIAL OF THE WALL.¹</p> <p>RECORD OBSERVATION.</p>	<p>NATURAL WALL</p> <p>No walls 11</p> <p>Cane/sticks/bamboo/reed 12</p> <p>RUDIMENTARY WALL</p> <p>Bamboo/wood with mud 21</p> <p>Stone with mud 22</p> <p>Uncovered abode 23</p> <p>Plywood 24</p> <p>Carton 25</p> <p>FINISHED WALL</p> <p>Cement 31</p> <p>Stone with lime/cement 32</p> <p>Bricks 33</p> <p>Cement blocks 34</p> <p>Covered Adobe 35</p> <p>Wood planks/shingles 36</p> <p>OTHER _____ 96 (SPECIFY)</p>	
14c	<p>MAIN MATERIAL OF THE ROOF.¹</p> <p>RECORD OBSERVATION.</p>	<p>NATURAL ROOF</p> <p>Thatch/Leaf 11</p> <p>Sticks and mud 12</p> <p>RUDIMENTARY ROOF</p> <p>Rustic mat/plastic sheet 21</p> <p>Reed/bamboo 22</p> <p>Wood planks 23</p> <p>FINISHED WALL</p> <p>Corrugated iron 31</p> <p>Wood 32</p> <p>Calamine/cement fiber 33</p> <p>Cement/concrete 34</p> <p>Roofing shingles 35</p> <p>OTHER _____ 96 (SPECIFY)</p>	
14c1	<p>ARE THE EAVES OF THE HOUSE OR BUILDING OCCUPIED BY THIS HOUSEHOLD OPEN OR CLOSED?</p> <p>RECORD OBSERVATION.</p>	<p>OPEN..... 1</p> <p>CLOSED2</p> <p>PARTIALLY OPEN.....3</p>	
14c2	<p>DOES THE PART OF THE HOUSE OR BUILDING OCCUPIED BY THE HOUSEHOLD HAVE A CEILING?</p> <p>RECORD OBSERVATION.</p>	<p>NONE..... 1</p> <p>PARTIAL/POORLY SEALED/WORN OUT.....2</p> <p>COMPLETE AND SEALED.....3</p>	

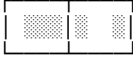
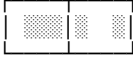
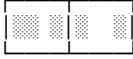
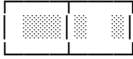
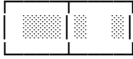
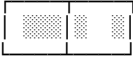
14c3	<p>IF A CEILING IS PRESENT, WHAT TYPE OF MATERIAL IS THE CEILING PRIMARILY CONSTRUCTED OF?</p> <p>RECORD OBSERVATION.</p>	<p>WOOD / PLYWOOD BOARDS..... 1 GYPSUM / PLASTERCASTE.....2 MUD AND WADDLE.....3 WOVEN PALM THATCH.....4 OTHER.....5</p>	
14d	<p>TYPE OF WINDOWS</p> <p>RECORD OBSERVATION.</p>	<p>NO YES</p> <p>ANY WINDOW.....1 2 WINDOWS WITH GLASS..... 1 2 WINDOWS WITH SCREENS...1 2 WINDOWS WITH CURTAINS OR SHUTTERS.....1 2</p>	
14d1	<p>Are the windows and any airbrick gaps in the house or building boarded up, glazed or screened against mosquito entry with netting ?</p> <p>ASK OR RECORD OBSERVATION.</p>	<p>COMPLETE..... 1 COMPLETE WITH HOLES.....2 INCOMPLETE OR BADLY DAMAGED...3 ABSENT.....4</p>	—<14 e
14d2	<p>If windows are boarded up, glazed or screened, what primary material is used to do so ?</p> <p>ASK OR RECORD OBSERVATION.</p>	<p>WOOD BOARDS..... 1 GLASS.....2 METAL NETTING.....3 FABRIC NETTING.....4 PLASTIC NETTING.....5 OTHER.....6</p>	—<14 e
14e	<p>How many separate rooms are in this household?</p> <p>INCLUDE ALL ROOMS, INCLUDING KITCHEN, TOILET, SLEEPING ROOMS, SALON, etc.</p>	<p>NUMBER OF ROOMS</p> 	

14f	How many rooms in this household are used for sleeping? INCLUDE ONLY ROOMS WHICH ARE USUALLY USED FOR SLEEPING.	NUMBER OF SLEEPING ROOMS <input type="text"/> <input type="text"/>	
14g	How many separate sleeping spaces are there in your household? INCLUDE ALL SLEEPING SPACES, INCLUDING IF THERE IS MORE THAN ONE SLEEPING SPACE IN EACH ROOM USED FOR SLEEPING.	NUMBER OF SLEEPING SPACES <input type="text"/> <input type="text"/>	
14h	Does any member of the household own any agricultural land?	YES..... .1 NO..... .2	j <14
14i	How much agricultural land do members of this household own?	Lima..... <input type="text"/> <input type="text"/> Acres..... <input type="text"/> <input type="text"/> Hectares..... <input type="text"/> <input type="text"/> 95 or more hectares.....995 Don't know.....998	
14j	Does this household own any livestock, herds other farm animals, or poultry?	YES..... .1 NO..... .2	
14k	How many of the following animals does this household own? IF NONE, ENTER '0' IF MORE THAN 95, ENTER '95' IF UNKNOWN, ENTER '98': Traditional cattle? Dairy cattle? Beef cattle? Horses, donkeys, mules? Goats? Sheep? Pigs? Chickens? Other poultry? Other livestock?	TRADITIONAL <input type="text"/> <input type="text"/> DAIRY <input type="text"/> <input type="text"/> BEEF <input type="text"/> <input type="text"/> HORSES/DONKEYS/MULES <input type="text"/> <input type="text"/> GOATS <input type="text"/> <input type="text"/> SHEEP <input type="text"/> <input type="text"/>	

15	Does any member of your household own: A watch? A bicycle? A motorcycle or motor scooter? An animal drawn cart? A car or truck? A boat with a motor? A banana boat?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>WATCH</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>BICYCLE</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MOTORCYCLE/SCOOTER</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>ANIMAL-DRAWN CART</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>CAR/TRUCK</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>BOAT WITH MOTOR</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>BANANA BOAT</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	WATCH	1	2	BICYCLE	1	2	MOTORCYCLE/SCOOTER	1	2	ANIMAL-DRAWN CART	1	2	CAR/TRUCK	1	2	BOAT WITH MOTOR	1	2	BANANA BOAT	1	2	
	YES	NO																									
WATCH	1	2																									
BICYCLE	1	2																									
MOTORCYCLE/SCOOTER	1	2																									
ANIMAL-DRAWN CART	1	2																									
CAR/TRUCK	1	2																									
BOAT WITH MOTOR	1	2																									
BANANA BOAT	1	2																									
15A	At any time in the past 12 months, has anyone sprayed the interior walls of your dwelling against mosquitoes? ²	YES..... 1 NO..... <15D 2 DON'T KNOW.....8																									
15B	How many months ago was the house sprayed? ² IF LESS THAN ONE MONTH, RECORD '00' MONTHS AGO.	MONTHS AGO..... <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>																									
15C	Who sprayed the house? ²	GOVERNMENT WORKER/PROGRAM 1 PRIVATE COMPANY 2 HOUSEHOLD MEMBER 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8																									
15D	At any time in the past 12 months, have the walls in your dwelling been plastered or painted?	YES..... 1 NO..... -16 2 DON'T KNOW.....8																									
15E	How many months ago were the walls plastered or painted? IF LESS THAN ONE MONTH, RECORD '00' MONTHS AGO.	MONTHS AGO <input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>																									

15F	Have any of the following been used in your living space over the last week: Mosquito coils? Insecticide spray (eg. DOOM, Rungu, Expel)? Repellents?	Mosquito coils Insecticide spray Repellents	YES 1 1 1	NO 2 2 2
16	Does your household have any mosquito nets that can be used while sleeping?	YES NO		1 2 → 27
17	How many mosquito nets does your household have? IF 7 OR MORE NETS, RECORD '7'.	NUMBER OF NETS		
17a	Has anyone in your household ever sold or given away a mosquito net?	YES, SOLD A MOSQUITO NET YES, GAVE AWAY A MOSQUITO NET NO DON'T KNOW REFUSED		1 2 3 4 5
<p>¹ Categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained. In some countries, it may be desirable to ask an additional question on the material of walls or ceilings.</p> <p>² This question should be deleted in countries that do not have an indoor residual spraying program for mosquitoes.</p>				
18	ASK RESPONDENT TO SHOW YOU THE NET(S) IN THE HOUSEHOLD. IF MORE THAN THREE NETS, USE ADDITIONAL QUESTIONNAIRE(S).	NET #1	NET #2	NET #3
		OBSERVED 1 NOT OBSERVED 2	OBSERVED 1 NOT OBSERVED 2	OBSERVED 1 NOT OBSERVED 2
19	How long ago did your household obtain the mosquito net?	MOS AGO  MORE THAN 3 YEARS AGO 95	MOS AGO  MORE THAN 3 YEARS AGO 95	MOS AGO  MORE THAN 3 YEARS AGO 95
20a	OBSERVE OR ASK THE BRAND OF MOSQUITO NET. IF BRAND IS UNKNOWN, AND YOU CANNOT OBSERVE THE NET, SHOW PICTURES OF TYPICAL NET TYPES/BRANDS TO RESPONDENT.	'PERMANENT' NET ¹ Permanet11 Olyset.....12 MamaSafeNite.....13 NetProtect.....14 Other/Don't Know.....16 'PRETREATED' NET ² ICONET.....21 Fennet.....22 KO Nets.....23 Safinet.....24 Other/Don't Know.....26 OTHER.....31	'PERMANENT' NET ¹ Permanet.....11 Olyset.....12 MamaSafeNite...13 NetProtect.....14 Other/Don't Know.....16 'PRETREATED' NET ² ICONET.....21 Fennet.....22 KO Nets.....23 Safinet.....24 Other/Don't Know. 26 OTHER.....31	'PERMANENT' NET ¹ Permanet.....11 Olyset.....12 MamaSafeNite..13 NetProtect.....14 Other/Don't Know.....16 'PRETREATED' NET ² ICONET.....21 Fennet.....22 KO Nets.....23 Safinet.....24 Other/Don't Know.....26 OTHER.....31 DON'T KNOW

		DON'T KNOW BRAND.....98	DON'T KNOW BRAND98	BRAND.....98
20b	Did you get the net through a mass distribution campaign, school distribution, during an antenatal care visit, or during an under five visit? IF AT THE CLINIC FOR ANC OR UNDER FIVE VISIT, PROBE TO BE SURE IT SURE AT THE ANC OR UNDER FIVE CLINIC	YES, MASS DISTRIBUTION 1 YES, SCHOOL 2 YES, ANC..... 3 YES, UNDER FIVE VISIT 4 NO 5	YES, MASS DISTRIBUTION 1 YES, SCHOOL 2 YES, ANC..... 3 YES, UNDER FIVE VISIT 4 NO 5	YES, MASS DISTRIBUTION 1 YES, SCHOOL 2 YES, ANC..... 3 YES, UNDER FIVE VISIT 4 NO 5
20c	Where did you obtain the net?	GOVERNMENT CLINIC/HOSPITAL NEIGHBORHOOD HEALTH COMMITTEE (NHC) COMMUNITY HEALTH WORKER (CHW) / AGENT RETAIL SHOP PHARMACY WORKPLACE OTHER (SPECIFY)_____ DON'T KNOW	GOVERNMENT CLINIC/HOSPITAL NEIGHBORHOOD HEALTH COMMITTEE (NHC) COMMUNITY HEALTH WORKER (CHW) / AGENT RETAIL SHOP PHARMACY WORKPLACE OTHER (SPECIFY)_____ DON'T KNOW	GOVERNMENT CLINIC/HOSPITAL NEIGHBORHOOD HEALTH COMMITTEE (NHC) COMMUNITY HEALTH WORKER (CHW) / AGENT RETAIL SHOP PHARMACY WORKPLACE OTHER (SPECIFY)_____ DON'T KNOW
20d	Did you purchase the net?	YES1 NO.(skip to 21).....2 NOT SURE.....8	YES.....1 NO.(skip to 21).....2 NOT SURE.....8	YES1 NO.(skip to 21).....2 NOT SURE.....8
20e	How much did you pay for the net when it was purchased?	In Kwacha	In Kwacha	In Kwacha

21	When you got the net, was it already factory-treated with an insecticide to kill or repel mosquitoes?	YES.....1 NO.....2 NOT SURE8	YES 1 NO 2 NOT SURE 8	YES1 NO2 NOT SURE8
22	Since you got the mosquito net, was it ever soaked or dipped in a liquid to kill or repel mosquitoes or bugs?	YES.....1 NO.....2 (SKIP TO 24) =—— NOT SURE8	YES 1 NO 2 (SKIP TO 24) =—— NOT SURE 8	YES1 NO2 (SKIP TO 24) =—— NOT SURE8
23	How long ago was the net last soaked or dipped? IF LESS THAN 1 MONTH AGO, RECORD '>00' MONTHS. IF LESS THAN 2 YEARS AGO, RECORD MONTHS AGO. IF '12 MONTHS AGO' OR '1 YEAR AGO,' PROBE FOR EXACT NUMBER OF MONTHS.	MOS AGO  MORE THAN 2 YEARS AGO 95 NOT SURE 98	MOS AGO  MORE THAN 2 YEARS AGO 95 NOT SURE 98	MOS AGO  MORE THAN 2 YEARS AGO 95 NOT SURE 98
23a	Where was the net soaked or dipped?	HOME.....1 GOVERNMENT CLINIC/HOSPITAL.....2 RETAIL SHOP.....3 PHARMACY.....4 WORKPLACE.....5 OTHER (SPECIFY).....6 DON'T KNOW.....7	HOME GOVERNMENT CLINIC/HOSPITAL RETAIL SHOP PHARMACY WORKPLACE OTHER (SPECIFY)..... DON'T KNOW	HOME GOVERNMENT CLINIC/HOSPITAL RETAIL SHOP PHARMACY WORKPLACE OTHER (SPECIFY)..... DON'T KNOW
23b	Did you pay to soak or dip the net?	YES.....1 NO.(skip to 23d).....2 NOT SURE.....8	YES.....1 NO.(skip to 23d).....2 NOT SURE.....8	YES1 NO.(skip to 23d).....2 NOT SURE.....8
23c	How much did you pay to soak or dip the net?	In Kwacha 	In Kwacha 	In Kwacha 
23d	PLEASE RECORD OR ASK THE GENERAL CONDITION OF THE NET.	1 Good (no holes) 2 Fair (no holes that fit a torch battery) 3 Poor (1-4 holes that fit a torch battery) 4 Unsafe (>5 Holes that fit a torch battery) 5 Unused (still in package) 98 Unknown	1 Good (no holes) 2 Fair (no holes that fit a torch battery) 3 Poor (1-4 holes that fit a torch battery) 4 Unsafe (>5 Holes that fit a torch battery) 5 Unused (still in package) 98 Unknown	1 Good (no holes) 2 Fair (no holes that fit a torch battery) 3 Poor (1-4 holes that fit a torch battery) 4 Unsafe (>5 Holes that fit a torch battery) 5 Unused (still in package) 98 Unknown
23e	PLEASE RECORD OR ASK THE COLOR OF THE NET.	1. Green 2. Blue 3. Red 4. White 5. Black Other _____	1. Green 2. Blue 3. Red 4. White 5. Black Other _____	1. Green 2. Blue 3. Red 4. White 5. Black Other _____

23f	PLEASE RECORD OR ASK THE SHAPE OF THE NET.	1. Conical 2. Rectangular 3. Other _____	1. Conical 2. Rectangular 3. Other _____	1. Conical 2. Rectangular 3. Other _____
23g	In the last month, has the net gotten any new holes?	YES.....1 NO.(skip to 24).....2 DON'T KNOW.....8	YES1 NO.(skip to 24).....2 DON'T KNOW.....8	YES1 NO.(skip to 24).....2 DON'T KNOW.....8
23h	What caused the new holes?	1 Tore or split when caught on object 2 Was burned 3 Was caused by animals 4 Children 5 In another way (specify) _____ 98 Don't Know	1 Tore or split when caught on object 2 Was burned 3 Was caused by animals 4 Children 5 In another way (specify) _____ 98 Don't Know	1 Tore or split when caught on object 2 Was burned 3 Was caused by animals 4 Children 5 In another way (specify) _____ 98 Don't Know
23i	Have you tried to repair the new holes?	YES.....1 NO.(skip to 23k).....2 DON'T KNOW.....8	YES1 NO.(skip to 23k).....2 DON'T KNOW.....8	YES1 NO.(skip to 23k).....2 DON'T KNOW.....8
23j	If yes, what did you use to repair the holes? SKIP TO	1 Stitch 2 Know/tie 3 Patch 5 Other 98 Don't Know	1 Stitch 2 Know/tie 3 Patch 5 Other 98 Don't Know	1 Stitch 2 Know/tie 3 Patch 5 Other 98 Don't Know
23k	If no, what it the main reason you did not try to repair the holes?	1 Too busy 2 Not necessary 3 Don't know how to repair 5 Other 98 Don't Know	1 Too busy 2 Not necessary 3 Don't know how to repair 5 Other 98 Don't Know	1 Too busy 2 Not necessary 3 Don't know how to repair 5 Other 98 Don't Know
23l	Which of these statements best describes the net? PLEASE ASK THE RESPONDENT.	1 Still in good condition 2 Net is beginning to fall apart and should be replaced soon 3 Net is no longer useable and needs to be replaced 98 Don't Know	1 Still in good condition 2 Net is beginning to fall apart and should be replaced soon 3 Net is no longer useable and needs to be replaced 98 Don't Know	1 Still in good condition 2 Net is beginning to fall apart and should be replaced soon 3 Net is no longer useable and needs to be replaced 98 Don't Know
23m	Is the net hanging for sleeping? PLEASE OBSERVE OR ASK IF THE NET IS HANGING	YES.....1 NO.....2	YES1 NO2	YES1 NO2
24	Did anyone sleep under this mosquito net last night?	YES.....1 NO.....2 (SKIP TO 25b) =—— NOT SURE8	YES1 NO (SKIP TO 25b) =—— 2 NOT SURE8	YES1 NO2 (SKIP TO 25b) =—— NOT SURE8

“Permanent” is a factory treated net that does not require any further treatment.
² “Pretreated” is a net that has been pretreated, but requires further treatment after 6-12 months.

		NET #1	NET #2	NET #3
25a	<p>Who slept under this mosquito net last night?</p> <p>RECORD THE RESPECTIVE LINE NUMBER FROM THE HOUSEHOLD SCHEDULE.</p>	<p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p>	<p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p>	<p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p> <p>NAME _____</p> <p>LINE NO <input type="text"/></p>
25b	<p>What is the <u>main</u> reason that nobody slept under this bed net last night?</p> <p>RECORD ONE ANSWER</p>	<p>NO MOSQUITOES 1</p> <p>THERE IS NO MALARIA 2</p> <p>TOO HOT 3</p> <p>DON'T LIKE SMELL 4</p> <p>FEEL 'CLOSED IN' 5</p> <p>NET TOO OLD OR TORN 6</p> <p>NET TOO DIRTY 7</p> <p>NET NOT AVAILABLE LAST NIGHT (WASHING) 8</p> <p>USUAL USER DID NOT SLEEP HERE LAST NIGHT 9</p> <p>NET WAS NOT NEEDED LAST NIGHT 10</p> <p>NO PLACE TO HANG IT 11</p> <p>OTHER (<i>specify</i>) 96</p> <p>DON'T KNOW 98</p>	<p>NO MOSQUITOES 1</p> <p>THERE IS NO MALARIA 2</p> <p>TOO HOT 3</p> <p>DON'T LIKE SMELL 4</p> <p>FEEL 'CLOSED IN' 5</p> <p>NET TOO OLD OR TORN 6</p> <p>NET TOO DIRTY 7</p> <p>NET NOT AVAILABLE LAST NIGHT (WASHING) 8</p> <p>USUAL USER DID NOT SLEEP HERE LAST NIGHT 9</p> <p>NET WAS NOT NEEDED LAST NIGHT 10</p> <p>NO PLACE TO HANG IT 11</p> <p>OTHER (<i>specify</i>) 96</p> <p>DON'T KNOW 98</p>	<p>NO MOSQUITOES 1</p> <p>THERE IS NO MALARIA 2</p> <p>TOO HOT 3</p> <p>DON'T LIKE SMELL 4</p> <p>FEEL 'CLOSED IN' 5</p> <p>NET TOO OLD OR TORN 6</p> <p>NET TOO DIRTY 7</p> <p>NET NOT AVAILABLE LAST NIGHT (WASHING) 8</p> <p>USUAL USER DID NOT SLEEP HERE LAST NIGHT 9</p> <p>NET WAS NOT NEEDED LAST NIGHT 10</p> <p>NO PLACE TO HANG IT 11</p> <p>OTHER (<i>specify</i>) 96</p> <p>DON'T KNOW 98</p>

Zambia MIS 2021 · Appendix C: Questionnaires

26		GO BACK TO 18 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 27.	GO BACK TO 18 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 27.	GO BACK TO 18 IN THE FIRST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE NETS, GO TO 27.
----	--	--	--	--



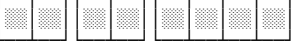

Zambia MIS 2021 · Appendix C: Questionnaires

HAEMOGLOBIN/MALARIA PARASITE MEASUREMENT


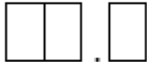



















CHECK COLUMN (7) OF HOUSEHOLD LISTING: RECORD THE LINE NUMBER, NAME AND AGE OF ALL CHILDREN UNDER AGE 6 (or under age 10 for Western province). THEN ASK THE DATE OF BIRTH.

CHILDREN UNDER AGE 6 (or age 10 in Western province) YEARS/HOUSEHOLD MEMBER					CONSENT STATEMENT FOR CHILDREN UNDER SIX (or TEN) (BORN IN 2002 OR AFTER) (AND HOUSEHOLD MEMBERS)	
LINE NUMBER FROM COL. (1)	NAME FROM COL. (2)	Is (NAME) present for a malaria/anemia test?	AGE FROM COL. (7)	What is (NAME's) date of birth? COPY MONTH AND YEAR OF BIRTH FROM 215 IN MOTHER'S BIRTH HISTORY AND ASK DAY. FOR CHILDREN NOT INCLUDED IN ANY BIRTH HISTORY, ASK DAY, MONTH AND YEAR.	LINE NUMBER OF PARENT/ADULT RESPONSIBLE FOR THE CHILD RECORD '00' IF NOT LISTED IN HOUSEHOLD SCHEDULE	READ CONSENT STATEMENT TO PARENT/ADULT RESPONSIBLE FOR THE CHILD
(27)	(28)	(28.5)	(29)	(30)	(31)	(32)
				DAY MONTH YEAR		GRANTED
<input type="checkbox"/>		YES.....1 NO.....2 IF NO, SKIP TO NEXT PERSON.	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	YES.....1 NO.....2
<input type="checkbox"/>		YES.....1 NO.....2 IF NO, SKIP TO NEXT PERSON.	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	YES.....1 NO.....2
<input type="checkbox"/>		YES.....1 NO.....2 IF NO, SKIP TO NEXT PERSON.	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	YES.....1 NO.....2
<input type="checkbox"/>		YES.....1 NO.....2 IF NO, SKIP TO NEXT PERSON.	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	YES.....1 NO.....2
<input type="checkbox"/>		YES.....1 NO.....2 IF NO, SKIP TO NEXT PERSON.	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	YES.....1 NO.....2











Zambia MIS 2021 · Appendix C: Questionnaires



		YES.....1 NO.....2 IF NO, SKIP TO NEXT PERSON.				YES.....1 NO.....2
<p>¹ For fieldwork beginning in 2006, 2007 or 2008, the year should be 2001, 2002 or 2003, respectively.</p>	TICK HERE IF CONTINUATION SHEET USED <input type="checkbox"/>	CONSENT STATEMENT: READ ATTACHED Consent. NOTE: In countries where some enumeration areas are higher than 1,000 meters, altitude information should be collected in a separate form for each enumeration area higher than 1,000 meters so that the anaemia estimates can be adjusted appropriately.				

Zambia MIS 2021 · Appendix C: Questionnaires

LINE NUMBER FROM COL. (1)	HAEMOGLOBIN LEVEL (G/DL)	RESULT 1 MEASURED 2 NOT PRESENT 3 REFUSED 4 OTHER	ANEMIA TREATMENT	RDT RESULT	TREATMENT	BLOODSLIDE 1 DONE 2 NOT PRESENT 3 REFUSED 4 OTHER	BLOODSLIDE NUMBER
(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)
		<input type="checkbox"/>	CoArtem..... 1 Iron..... 2 Albendazole..... 3	Pf positive.....1 NEGATIVE..... .2 NOT VALID.....3 NOT DONE.....4	CoArtem..... ...1 DHAp..... .2 SP..... .3 Quinine..... .4 Artesunate..... 5 No treatment.....6		A  B 
		<input type="checkbox"/>	CoArtem..... 1 Iron..... 2 Albendazole..... 3	Pf positive.....1 NEGATIVE..... .2 NOT VALID.....3 NOT DONE.....4	CoArtem..... ...1 DHAp..... .2 SP..... .3 Quinine..... .4 Artesunate..... 5 No treatment.....6		A  B  
		<input type="checkbox"/>	CoArtem..... 1 Iron..... 2 Albendazole..... 3	Pf positive.....1 NEGATIVE..... .2 NOT VALID.....3 NOT DONE.....4	CoArtem..... ...1 DHAp..... .2 SP..... .3 Quinine..... .4 Artesunate..... 5 No treatment.....6		A  B 
		<input type="checkbox"/>	CoArtem..... 1 Iron..... 2	Pf positive.....1 NEGATIVE..... .2	CoArtem..... ...1 DHAp..... .2		A  B 

Zambia MIS 2021 · Appendix C: Questionnaires

			Albendazole..... 3	NOT VALID.....3 NOT DONE.....4	SP..... .3 Quinine..... .4 Artesunate..... 5 No treatment.....6	
			CoArtem..... 1 Iron..... 2 Albendazole..... 3	Pf positive.....1 NEGATIVE..... .2 NOT VALID.....3 NOT DONE.....4	CoArtem..... ...1 DHAp..... .2 SP..... .3 Quinine..... .4 Artesunate..... 5 No treatment.....6	 A  B
			CoArtem..... 1 Iron..... 2 Albendazole..... 3	Pf positive.....1 NEGATIVE..... .2 NOT VALID.....3 NOT DONE.....4	CoArtem..... ...1 DHAp..... .2 SP..... .3 Quinine..... .4 Artesunate..... 5 No treatment.....6	 A  B

41	<p>CHECK 34:</p> <p>NUMBER OF CHILDREN WITH HAEMOGLOBIN LEVEL BELOW 7 G/DL</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>ONE OR MORE</p>  <p>↓</p> <p>GIVE EACH PARENT/ADULT RESPONSIBLE FOR THE CHILD THE RESULT OF THE HAEMOGLOBIN HAEMOGLOBIN MEASUREMENT, AND CONTINUE WITH 36.¹</p> </div> <div style="text-align: center;"> <p>NONE</p>  <p>↓</p> <p>GIVE EACH PARENT/ADULT RESPONSIBLE FOR THE CHILD THE RESULT OF THE MEASUREMENT AND END THE HOUSEHOLD INTERVIEW.</p> </div> </div>	
42	<p>We detected a low level of haemoglobin in the blood of [NAME OF CHILD(REN)]. This indicates that (NAME OF CHILD(REN)) has/have developed severe anaemia, which is a serious health problem. We would like to inform the doctor at _____ about the condition of [NAME OF CHILD(REN)]. This will assist you in obtaining appropriate treatment for the condition. Do you agree that the information about the level of haemoglobin in the blood of [NAME OF CHILD(REN)] may be given to the doctor?</p>	
	NAME OF CHILD WITH HAEMOGLOBIN BELOW 7 G/DL	NAME OF PARENT/RESPONSIBLE ADULT
		AGREES TO REFERRAL?
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2
		YES.....1 NO.....2

¹If more than one child is below 7 g/dl, read statement in Q.42 to each parent/adult responsible for a child who is below the cutoff point..

Zambia Malaria Indicator Survey 2021

Women's Questionnaire

MODEL WOMEN'S QUESTIONNAIRE

IDENTIFICATION ¹																															
PLACE NAME _____																															
NAME OF HOUSEHOLD HEAD _____																															
CLUSTER NUMBER HOUSEHOLD NUMBER REGION URBAN/RURAL (URBAN=1, RURAL=2) LARGE CITY/SMALL CITY/TOWN/COUNTRYSIDE ² (LARGE CITY=1, SMALL CITY=2, TOWN=3, COUNTRYSIDE=4) NAME AND LINE NUMBER OF WOMAN _____	<table border="1" style="border-collapse: collapse;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>																														

INTERVIEWER VISITS												
	1	2	3	FINAL VISIT								
DATE	_____	_____	_____	DAY <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> MONTH <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> YEAR <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>								
INTERVIEWER'S NAME	_____	_____	_____	NAME <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>								
RESULT*	_____	_____	_____	RESULT <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table>								
NEXT VISIT: DATE	_____	_____		TOTAL NO. OF VISITS <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td></tr></table>								
TIME	_____	_____										
*RESULT CODES: 1 COMPLETED 2 NOT AT HOME 3 POSTPONED	4 REFUSED 5 PARTLY COMPLETED 6 INCAPACITATED		7 OTHER _____ (SPECIFY)									

COUNTRY-SPECIFIC INFORMATION: LANGUAGE OF QUESTIONNAIRE, LANGUAGE OF INTERVIEW, NATIVE LANGUAGE OF RESPONDENT, AND WHETHER TRANSLATOR USED

SUPERVISOR	OFFICE EDITOR	KEYED BY				
NAME _____	<table border="1" style="border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>		
DATE _____	<table border="1" style="border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>			<table border="1" style="border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>		

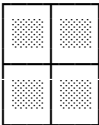
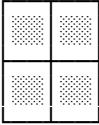
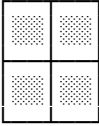

¹ This section should be adapted for country-specific survey design.

² The following guidelines should be used to categorize urban sample points: "Large cities" are national capitals and places with over 1 million population; "small cities" are places with between 50,000 and 1 million population; and the remaining urban sample points are "towns".


Zambia MIS 2021 · Appendix C: Questionnaires

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
108	<p>Now I would like you to read this sentence to me.</p> <p>SHOW CARD TO RESPONDENT.¹</p> <p>IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?</p>	<p>CANNOT READ AT ALL 1</p> <p>ABLE TO READ ONLY PARTS OF SENTENCE 2</p> <p>ABLE TO READ WHOLE SENTENCE 3</p> <p>NO CARD WITH REQUIRED LANGUAGE _____ 4 (SPECIFY LANGUAGE)</p> <p>BLIND/VISUALLY IMPAIRED.....</p> <p>5 2</p>	
109	<p>What is your religion?</p>	<p>CATHOLIC</p> <p>PROTESTANT</p> <p>MUSLIM</p> <p>TRADITIONAL</p> <p>OTHER _____(specify)</p>	
110	<p>What tribe do you belong to?</p>	<p>BEMBA..... 1</p> <p>TONGA..... 2</p> <p>NORTH-WESTERN.....3</p> <p>BAROSTE..... 4</p> <p>NYANJA..... 5</p> <p>MAMBWE..... 6</p> <p>TUMBUKU..... 7</p> <p>OTHER _____(specify)</p>	
<p>¹Each card should have four simple sentences appropriate to the country (e.g., “Parents love their children”, “Farming is hard work”, “The child is reading a book”, “Children work hard at school”). Cards should be prepared for every language in which respondents are likely to be literate.</p>			

Section 2: REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES NO	1 2 ←206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES NO	1 2 ←204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME DAUGHTERS AT HOME	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES NO	1 2 ←206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE DAUGHTERS ELSEWHERE	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES NO	1 2 ←208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD GIRLS DEAD	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL.	NONE.....0 0 TOTAL	←345 
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL ____ births during your life. Is that correct? YES <input type="checkbox"/> NO <input type="checkbox"/> PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208: ONE BIRTH <input type="checkbox"/> TWO OR MORE BIRTHS <input type="checkbox"/>	NONE.....00 <input type="checkbox"/>	←345

Zambia MIS 2021 · Appendix C: Questionnaires

	<p>Was this child born in the last six years? IF NO, CIRCLE '00.'</p>	<p>How many of these children were born in the last six years?</p>	<p>TOTAL IN LAST SIX  YEARS.....</p>	
--	---	--	--	--

211 Now I would like to record the names of all your births in the last six years, whether still alive or not, starting with the most recent one you had. RECORD NAMES OF ALL BIRTHS IN THE LAST 6 YEARS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.									
212	213	214	215	216	217 IF ALIVE:	218 IF ALIVE	219a IF ALIVE:	219b IF DEAD:	220
What name was given to your (most recent/previous) birth? (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETE D YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD).	How old was (NAME) when he/she died? IF '1 YR' PROBE: How many months old was (NAME)?	Were there any other live births between (NAME) and (NAME OF BIRTH ON PREVIOUS LINE)?
01	SING 1 MULT 2	BOY 1 GIRL 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES 1 NO 2 <input type="checkbox"/> (NEXT BIRTH)	AGE IN YEARS <input type="text"/>	YES 1 NO 2	LINE NUMBER <input type="text"/> <input type="checkbox"/> (NEXT BIRTH)	DAYS...1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS...3 <input type="text"/>	
02	SING 1 MULT 2	BOY 1 GIRL 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES 1 NO 2 <input type="checkbox"/> (GO TO 220)	AGE IN YEARS <input type="text"/>	YES 1 NO 2	LINE NUMBER <input type="text"/>	DAYS...1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS...3 <input type="text"/>	YES 1 NO 2
03	SING 1 MULT 2	BOY 1 GIRL 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES 1 NO 2 <input type="checkbox"/> (GO TO 220)	AGE IN YEARS <input type="text"/>	YES 1 NO 2	LINE NUMBER <input type="text"/>	DAYS...1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS...3 <input type="text"/>	YES 1 NO 2
04	SING 1 MULT 2	BOY 1 GIRL 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES 1 NO 2 <input type="checkbox"/> (GO TO 220)	AGE IN YEARS <input type="text"/>	YES 1 NO 2	LINE NUMBER <input type="text"/>	DAYS...1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS...3 <input type="text"/>	YES 1 NO 2
05	SING 1 MULT 2	BOY 1 GIRL 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES 1 NO 2 <input type="checkbox"/> (GO TO 220)	AGE IN YEARS <input type="text"/>	YES 1 NO 2	LINE NUMBER <input type="text"/>	DAYS...1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS...3 <input type="text"/>	YES 1 NO 2

Zambia MIS 2021 · Appendix C: Questionnaires

06	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES 1 NO 2 <input type="checkbox"/> (GO TO 220)	AGE IN YEARS	YES 1 NO 2	LINE NUMBER	DAYS...1 MONTHS...2 YEARS...3	YES 1 NO 2
07	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES 1 NO 2 <input type="checkbox"/> (GO TO 220)	AGE IN YEARS	YES 1 NO 2	LINE NUMBER	DAYS...1 MONTHS...2 YEARS...3	YES 1 NO 2

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
221	Have you had any live births since the birth of (NAME OF MOST RECENT BIRTH)? IF YES, RECORD BIRTH(S) IN BIRTH TABLE.	YES.....1 NO.....2	
222	<p>COMPARE 210 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:</p> <p>NUMBERS ARE SAME <input type="checkbox"/> NUMBERS ARE DIFFERENT <input type="checkbox"/> (PROBE AND RECONCILE)</p> <p>CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED. FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED. FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED. FOR AGE AT DEATH 12 MONTHS OR ONE YEAR: PROBE TO DETERMINE EXACT NUMBER OF MONTHS</p>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
223	CHECK 215 AND ENTER THE NUMBER OF BIRTHS IN 2010 ¹ OR LATER. IF NONE, RECORD '0'.		<input type="checkbox"/>
224	Are you pregnant now?	YES..... 1 NO..... 2 UNSURE..... 8	<input type="checkbox"/> -226
225	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS.	MONTHS..... <input type="text"/>	
226	CHECK 223: ONE OR MORE BIRTHS IN 2010 ¹ OR LATER <input type="checkbox"/>	NO BIRTHS IN 2010 OR LATER <input type="checkbox"/>	<input type="checkbox"/> -345
¹ For fieldwork beginning in 2014, 2015, 2016, 2017 or 2018, the year should be 2009, 2010, 2011, 2012 or 2013, respectively.			

SECTION 3: GENERAL MALARIA KNOWLEDGE / PRACTICES / Media Exposure

240	HOW MANY TIMES IN A WEEK DO YOU READ A NEWSPAPER ?	NONE.....1 ONCE A WEEK.....2 2-3 TIMES PER WEEK.....3 4-5 TIMES PER WEEK.....4 MORE THAN 5 TIMES PER WEEK.....5	
241	HOW MANY TIMES IN A WEEK DO YOU WATCH TELEVISION?	NONE.....1 ONCE A WEEK.....2 2-3 TIMES PER WEEK.....3 4-5 TIMES PER WEEK.....4 MORE THAN 5 TIMES PER WEEK.....5	
242	HOW MANY TIMES IN A WEEK DO YOU LISTEN TO THE RADIO?	NONE.....1 ONCE A WEEK.....2 2-3 TIMES PER WEEK.....3 4-5 TIMES PER WEEK.....4 MORE THAN 5 TIMES PER WEEK.....5	
249	WHAT ARE THE SIGNS OF ILLNESS THAT WOULD INDICATE TO YOU THAT YOUR CHILD NEEDS TO BE TAKEN SOMEWHERE FOR TREATMENT? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	LOOKS UNWELL.....1 NOT PLAYING NORMALLY.....2 NOT EATING/DRINKING.....3 NOT BREASTFEEDING.....4 LETHARGIC.....5 HIGH FEVER.....6 FAST OR DIFFICULT BREATHING.....7 VOMITING.....8 BLOOD IN STOOL.....9 CONVULSIONS.....10 OTHER (SPECIFY).....13 DON'T KNOW.....14	
250	HAVE YOU EVER HEARD OF AN ILLNESS CALLED MALARIA?	YES..... 1 NO..... 2	IF 2, SKIP TO 255C
251	CAN YOU TELL ME THE MAIN SIGNS OR SYMPTOMS OF MALARIA? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	FEVER.....1 FEELING COLD.....2 HEADACHE.....3 NAUSEA AND VOMITING.....4 DIARRHEA.....5 DIZZINESS.....6 LOSS OF APPETITE.....7 BODY ACHE OR JOINT PAIN.....8 PALE EYES.....9 SALTY TASTING PALMS.....10 BODY WEAKNESS.....11 REFUSING TO EAT OR DRINK.....12 OTHER (SPECIFY).....13 DON'T KNOW.....14	
252	IN YOUR OPINION, WHAT CAUSES MALARIA? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	MOSQUITO BITES.....1 EATING IMMATURE SUGARCANE.....2 EATING COLD NSHIMA.....3 EATING OTHER DIRTY FOOD.....4	

		DRINKING DIRTY WATER.....5 GETTING SOAKED WITH RAIN.....6 COLD OR CHANGING WEATHER.....7 WITCHCRAFT.....8 OTHER (SPECIFY).....9 DON'T KNOW.....10	
253	HOW CAN SOMEONE PROTECT THEMSELVES AGAINST MALARIA? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	SLEEP UNDER A MOSQUITO NET.....1 SLEEP UNDER A INSECTICIDE TREATED MOSQUITO NET.....2 USE MOSQUITO REPELLANT.....3 AVOID MOSQUITO BITES.....4 Take preventive medication.....5 SPRAY HOUSE WITH INSECTICIDE.....6 USE MOSQUITO COILS.....7 Cut the grass around the house.....8 Fill in puddles (stagnant water).....9 Keep house surroundings clean.....10 Burn leaves.....11 DON'T DRINK DIRTY WATER.....12 DON'T EAT BAD FOOD (IMMATURE SUGARCANE/LEFTOVER FOOD).....13 PUT MOSQUITO SCREENS ON THE WINDOWS.....14 Don't get soaked with rain.....15 OTHER (SPECIFY).....16 DON'T KNOW.....17	
254	WHAT ARE THE DANGER SIGNS AND SYMPTOMS OF MALARIA? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	SEIZURE / CONVULSIONS.....1 GOES UNCONSCIOUS.....2 ANY FEVER.....3 VERY HIGH FEVER.....4 STIFF NECK.....5 WEAKNESS.....6 NOT ACTIVE.....7 CHILLS/SHIVERING.....8 NOT ABLE TO EAT.....9 VOMITING.....10 FAINTING.....11 CRYING ALL THE TIME.....12 RESTLESS, WON'T STAY STILL.....13 DIARRHEA.....14 OTHER (SPECIFY:.....15).....16 DON'T KNOW.....16	
255A	IN YOUR OPINION, WHICH PEOPLE ARE MOST AFFECTED BY MALARIA IN YOUR COMMUNITY? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	CHILDREN.....1 ADULTS.....2 PREGNANT WOMEN.....3 OLDER ADULTS.....4 EVERYONE.....5 OTHER (SPECIFY).....6 DON'T KNOW.....7	

Zambia MIS 2021 · Appendix C: Questionnaires

255B	IN THE PAST YEAR, HOW OFTEN HAVE YOU SPOKEN WITH FAMILY AND FRIENDS ABOUT THE PROBLEM OF MALARIA IN YOUR COMMUNITY?	VERY OFTEN.....1 SOMETIMES.....2 NOT VERY OFTEN.....3 NEVER.....4	
255C	In the past 6 months, have you heard, read, or seen any information and health-related matters?	YES1 NO2	IF 2, SKIP TO 255E
255D	Where did you see or hear that information? <i>PROBE: ANY PLACE ELSE? [Do not read responses]</i> <i>MULTIPLE RESPONSES POSSIBLE.</i> <i>RECORD ALL ANSWERS</i> SOCIAL MEDIA WOULD INCLUDE WHAT'S APP, FACEBOOK, INSTAGRAM, SNAP CHAT, TWITTER TEXT MESSAGES WOULD INCLUDE SMS.	GOVERNMENT CLINIC/HOSPITAL.....1 COMMUNITY HEALTH WORKER.....2 FRIENDS/FAMILY.....3 WORKPLACE.....4 DRAMA GROUPS.....5 PEER EDUCATORS.....6 POSTERS/BILLBOARDS.....7 ON TV.....8 ON THE RADIO.....9 IN THE NEWSPAPER.....10 T-SHIRT.....11 LEAFLET/FACTSHEET.....12 TEXT MESSAGE.....13 SOCIAL MEDIA.....14 INTERNET SEARCHES.....15 OTHER (SPECIFY).....16 DON'T KNOW.....17	
255E	Have you ever used the internet?	YES1 NO2	IF 2, SKIP TO 256
255F	In the last 12 months, have you used the internet? IF NECESSARY, PROBE FOR USE FROM ANY LOCATION, WITH ANY DEVICE	YES1 NO2	
255G	During the last one month, how often did you use the internet: almost every day, at least once a week, less than once a week, or not at all?	ALMOST EVERY DAY1 AT LEAST ONCE A WEEK2 LESS THAN ONCE A WEEK3 NOT AT ALL4	
255H	In the last 12 months, have you used the internet to get information on any health issues?	YES1 NO2	
256	HAVE YOU EVER HEARD OR SEEN ANY MESSAGES / INFORMATION ABOUT MALARIA?	YES.....1 NO.....2	IF 2, SKIP TO 260
257	WHERE DID YOU SEE OR HEAR THESE MESSAGES/INFORMATION? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	GOVERNMENT CLINIC/HOSPITAL.....1 COMMUNITY HEALTH WORKER.....2 FRIENDS/FAMILY.....3 WORKPLACE.....4 DRAMA GROUPS.....5 PEER EDUCATORS.....6 POSTERS/BILLBOARDS.....7 ON TV.....8 ON THE RADIO.....9 IN THE NEWSPAPER.....10 T-SHIRT.....11 LEAFLET/FACTSHEET.....12	

		OTHER (SPECIFY) _____13 DON'T KNOW.....14																																	
258	HOW LONG AGO DID YOU SEE OR HEAR THESE MESSAGES?	MONTHS..... <input type="text"/> <input type="text"/>																																	
259A	WHAT TYPE OF MALARIA MESSAGES/INFORMATION DID YOU SEE OR HEAR? MULTIPLE RESPONSES POSSIBLE PROBE ONCE (ANYTHING ELSE?)	MALARIA IS DANGEROUS.....1 MALARIA CAN KILL.....2 MOSQUITOES SPREAD MALARIA.....3 SLEEPING UNDER MOSQUITO NET IMPORTANT.....4 WHO SHOULD SLEEP UNDER MOSQUITO NET.....5 SEEK TREATMENT FOR FEVER.....6 SEEK TREATMENT FOR FEVER WITHIN 24 HOURS/PROMPTLY.....7 IMPORTANCE OF HOUSE SPRAYING...8 NOT PLASTERING WALLS AFTER SPRAYING.....9 ENVIRONMENTAL SANITATION ACTIVITIES.....10 OTHER(SPECIFY).....11 DON'T KNOW.....12																																	
259B	DO YOU HAVE A COMMUNITY HEALTH WORKER WORKING IN YOUR COMMUNITY?	YES.....1 NO.....2 (IF 'NO' SKIP TO 260) DON'T KNOW.....3																																	
259B	DO YOU KNOW WHERE THE COMMUNITY HEALTH WORKER IS LOCATED IN YOUR COMMUNITY?	YES.....1 NO.....2 DON'T KNOW.....3																																	
259C	DOES YOUR COMMUNITY HEALTH WORKER PROVIDE ANY OF THE FOLLOWING SERVICES?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Y</th> <th style="text-align: center;">N</th> <th style="text-align: center;">DK</th> </tr> </thead> <tbody> <tr> <td>MALARIA TESTING.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td>MALARIA TREATMENT.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td>ANTIBIOTIC TREATMENTS..</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td>OTHER TREATMENTS.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td>HEALTH EDUCATION.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td>OTHER.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">8</td> </tr> <tr> <td colspan="4">(PLEASE SPECIFY _____)</td> </tr> </tbody> </table>		Y	N	DK	MALARIA TESTING.....	1	2	8	MALARIA TREATMENT.....	1	2	8	ANTIBIOTIC TREATMENTS..	1	2	8	OTHER TREATMENTS.....	1	2	8	HEALTH EDUCATION.....	1	2	8	OTHER.....	1	2	8	(PLEASE SPECIFY _____)				
	Y	N	DK																																
MALARIA TESTING.....	1	2	8																																
MALARIA TREATMENT.....	1	2	8																																
ANTIBIOTIC TREATMENTS..	1	2	8																																
OTHER TREATMENTS.....	1	2	8																																
HEALTH EDUCATION.....	1	2	8																																
OTHER.....	1	2	8																																
(PLEASE SPECIFY _____)																																			
260	HAS ANYONE EVER PROVIDED YOU WITH EDUCATION / INFORMATION ON MALARIA AT YOUR HOME?	YES..... 1 NO.....2	IF 2, SKIP TO 264																																
261	FROM WHOM DID YOU RECEIVE THIS EDUCATION / INFORMATION AT YOUR HOME? PROBE, BUT DO NOT PROVIDE ANSWERS	HEALTH CARE WORKER.....1 COMMUNITY HEALTH WORKER.....2 FRIENDS/FAMILY.....3 EMPLOYER.....4 PEER EDUCATORS.....5 OTHER (SPECIFY).....6 DON'T KNOW.....7																																	
262	HOW LONG AGO DID SOMEONE VISIT YOUR HOME TO PROVIDE EDUCATION / INFORMATION AT YOUR HOME?	MONTHS..... <input type="text"/> <input type="text"/> <input type="text"/>																																	

263	<p>WHAT TYPE OF INFORMATION/EDUCATION ABOUT MALARIA DID YOU RECEIVE AT YOUR HOME?</p> <p>PROBE, BUT DO NOT PROVIDE ANSWERS. MULTIPLE ANSWERS POSSIBLE. POSSIBLE ANSWERS INCLUDE:</p>	<p>MALARIA IS DANGEROUS.....1 MALARIA CAN KILL.....2 MOSQUITOES SPREAD MALARIA.....3 SLEEPING UNDER MOSQUITO NET IMPORTANT.....4 WHO SHOULD SLEEP UNDER MOSQUITO NET.....5 SEEK TREATMENT FOR FEVER.....6 SEEK TREATMENT FOR FEVER WITHIN 24 HOURS/PROMPTLY.....7 IMPORTANCE OF HOUSE SPRAYING...8 NOT PLASTERING WALLS AFTER SPRAYING.....9 ENVIRONMENTAL SANITATION ACTIVITIES.....10 OTHER(SPECIFY).....11 DON'T KNOW.....12</p>	
264	<p>HAS THE COMMUNITY HEALTH WORKER IN YOUR VILLAGE EVER HELPED HANG A MOSQUITO NET IN THIS HOUSE?</p>	<p>YES.....1 NO.....2 DON'T KNOW.....3</p>	
265	<p>HAVE ANY MOSQUITO NETS IN THIS HOUSE BEEN USED FOR ANY REASON OTHER THAN SLEEPING?</p>	<p>YES.....1 NO.....2</p>	IF 2 SKIP TO 267
266	<p>WHAT WAS IT USED FOR?</p> <p>PROBE, BUT DO NOT PROVIDE ANSWERS. MULTIPLE ANSWERS POSSIBLE. POSSIBLE ANSWERS INCLUDE:</p>	<p>FISHING.....1 COVERING / PROTECTION.....2 SCREENS FOR WINDOWS.....3 CLOTHING, WEDDING VEILS.....4 OTHER.....5 DON'T KNOW.....6</p>	
267	<p>WHAT MOSQUITO NET COLOR DO YOU PREFER?</p> <p>PROBE, BUT DO NOT PROVIDE ANSWERS. MULTIPLE ANSWERS POSSIBLE. POSSIBLE ANSWERS INCLUDE:</p>	<p>BLUE.....1 GREEN.....2 RED.....3 WHITE.....4 BLACK.....5 OTHER.....6</p>	
268	<p>WHAT MOSQUITO NET SHAPE DO YOU PREFER?</p> <p>PROBE, BUT DO NOT PROVIDE ANSWERS. MULTIPLE ANSWERS POSSIBLE. POSSIBLE ANSWERS INCLUDE:</p>	<p>CONICAL.....1 RECTANGULAR.....2 OTHER.....3</p>	
269	<p>IN GENERAL, HOW OFTEN DO YOUR CHILDREN SLEEP UNDER A MOSQUITO NET?</p>	<p>ALWAYS 1 SOMETIMES..... 2 NEVER..... 3</p>	
270	<p>WHY DO THE CHILDREN WHO SLEEP IN THIS HOUSE SOMETIMES NOT SLEEP UNDER A MOSQUITO NET?</p> <p>MULTIPLE RESPONSES PROBE ONCE (ANYTHING ELSE?)</p>	<p>THEY ALWAYS DO SLEEP UNDER NET.....1 TOO HOT.....2 TOO COLD.....3 CHILD CRIES.....4 CHILD AFRAID.....5 NOT ENOUGH NETS.....6 NET NOT HUNG UP.....7 USED BY ADULTS.....8 NET NOT USED WHEN TRAVELING....9 NET WORN OUT / POOR CONDITION..10 NETS BAD FOR CHILDERS' HEALTH...11 OTHER (SPECIFY)..... 1 2 DON'T KNOW.....13</p>	

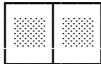
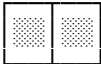
271	HOW OFTEN DO YOU DISCUSS SLEEPING UNDER MOSQUITO NETS WITH YOUR FAMILY OR FRIENDS>	VERY OFTEN.....1 SOMETIMES.....2 NOT VERY OFTEN.....3 NEVER.....4	
272	GENERALLY, IN HOW MANY HOUSEHOLDS IN YOUR COMMUNITY DO PEOPLE SLEEP UNDER MOSQUITO NETS?	ALL HOUSEHOLDS.....1 MOST HOUSEHOLDS.....2 AT LEAST HALF OF THE HOUSEHOLDS.....3 FEWER THAN HALF OF THE HOUSEHOLDS.....4 NONE.....5	
273	NOW I WOULD LIKE YOU TO THINK OF PEOPLE OUTSIDE YOUR HOUSEHOLD WITH WHOM YOU TALK ABOUT PERSONAL MATTERS. HOW MANY OF THESE PEOPLE DO YOU THINK SLEEP UNDER A MOSQUITO NET?	ALL1 MOST2 AT LEAST HALF.....3 FEWER THAN HALF.....4 NONE.....5	

Section 3A. PREGNANCY AND INTERMITTENT PREVENTIVE TREATMENT

301	ENTER IN 302 THE NAME AND SURVIVAL STATUS OF THE MOST RECENT BIRTH. Now I would like to ask you some questions about your last pregnancy that ended in a live birth, in the last 6 years.		
302	FROM QUESTIONS 212 AND 216 (LINE 01)	<p style="text-align: center;">LAST BIRTH</p> NAME _____ LIVING DEAD <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
303	When you were pregnant with (NAME), did you see anyone for antenatal care? ¹ IF YES: Whom did you see? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR A NURSE/MIDWIFE B AUXILIARY MIDWIFE C OTHER PERSON TRADITIONAL BIRTH ATTENDANT..... D COMMUNITY/VILLAGE HEALTH WORKER..... E OTHER _____ X (SPECIFY) NO ONE Y	
304	During this pregnancy, did you take any drugs in order to prevent you from getting malaria?	YES 1 NO 2 DON'T KNOW 8	<input type="checkbox"/> →310
305	Which drugs did you take to prevent malaria? ² RECORD ALL MENTIONED. IF TYPE OF DRUG IS NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.	SP/FANSIDAR.....A CHLOROQUINE B OTHER X (SPECIFY) DON'T KNOW Z	
306	CHECK 305: DRUGS TAKEN FOR MALARIA PREVENTION	CODE 'A' CIRCLED CODE 'A' NOT CIRCLED <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/>	→310
307	How many times did you take SP/Fansidar during this pregnancy?	TIMES	<input type="checkbox"/> <input type="checkbox"/>
<p>¹Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained. Include all drugs or drug combinations that are commonly given as separate categories.</p> <p>² Add response categories for additional drugs used to prevent malaria during pregnancy, if any. Repeat Questions 306-309 for any other recommended IPT drugs.</p>			

		LAST BIRTH NAME _____	
308	CHECK 303: ANTENATAL CARE FROM A HEALTH PROFESSIONAL RECEIVED DURING THIS PREGNANCY?	CODE 'A', 'B', OR 'C' CIRCLED <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/>	OTHER <input type="checkbox"/> ←310
309	Did you get the SP/Fansidar during an antenatal visit, during another visit to a health facility, or from some other source?	ANTENATAL VISIT 1 ANOTHER FACILITY VISIT 2 OTHER SOURCE _____ 6 (SPECIFY)	
	Did you purchase the SP/Fansidar?	YES 1 NO 2 DON'T KNOW 8	←310
	How much did you pay for the SP/Fansidar?	In Kwacha <input type="text"/>	
310	CHECK 215 AND 216: <input type="checkbox"/> ONE OR MORE LIVING CHILDREN BORN IN 2003 ¹ OR LATER <input type="checkbox"/> NO LIVING CHILDREN BORN IN 2003 ¹ OR LATER		←345
<p>¹ For fieldwork beginning in 2006, 2007, or 2008, the year should be 2001, 2002, or 2003, respectively.</p>			

SECTION 4. FEVER IN CHILDREN

311	ENTER IN THE TABLE THE LINE NUMBER AND NAME OF EACH LIVING CHILD BORN IN 2010 ¹ OR LATER. (IF THERE ARE MORE THAN 2 LIVING CHILDREN BORN IN 2010 ¹ OR LATER, USE ADDITIONAL QUESTIONNAIRES). Now I would like to ask you some questions about the health of all your children less than 5 years old. (We will talk about each one separately.)		
312	NAME AND LINE NUMBER FROM 212	YOUNGEST CHILD LINE NUMBER  NAME _____	NEXT-TO-YOUNGEST CHILD LINE NUMBER  NAME _____
312a	Has (NAME) had diarrhea at any time in the last 2 weeks?	YES 1 NO 2 (GO TO 312a FOR NEXT CHILD OR, IF NO MORE CHILDREN, SKIP TO 313) DON'T KNOW 8	YES 1 NO 2 (GO BACK TO 312a FOR NEXT CHILD OR, IF NO MORE CHILDREN, SKIP TO 313) DON'T KNOW 8
312b	Now I would like to know how much (NAME) was given to drink during the diarrhea (including breastmilk). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she given much less than usual to drink or somewhat less?	MUCH LESS 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE 4 NOTHING TO DRINK 5 DON'T KNOW 8
312c	When (NAME) had diarrhea, was he/she given less than usual to eat, about the same amount, more than usual, or nothing to eat? IF LESS, PROBE: Was he/she given much less than usual to eat or somewhat less?	MUCH LESS 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS 1 SOMEWHAT LESS 2 ABOUT THE SAME 3 MORE 4 STOPPED FOOD 5 NEVER GAVE FOOD 6 DON'T KNOW 8
312d	Did you seek advice or treatment for the diarrhea from any source?	YES 1 NO 2 (SKIP TO 312g) =———	YES 1 NO 2 (SKIP TO 312g) =———
312e	Where did you seek advice or treatment? ² Anywhere else? RECORD ALL SOURCES MENTIONED. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE _____ (NAME OF THE PLACE(S))	PUBLIC SECTOR GOVT. HOSPITAL A GOVT. HEALTH CENTER B GOVT. HEALTH POST C MOBILE CLINIC D COMMUNITY HEALTH WORKER or FIELD WORKER F OTHER PUBLIC _____ G (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC H PHARMACY I PRIVATE DOCTOR J	PUBLIC SECTOR GOVT. HOSPITAL A GOVT. HEALTH CENTER B GOVT. HEALTH POST C MOBILE CLINIC D COMMUNITY HEALTH WORKER or FIELD WORKER F OTHER PUBLIC _____ G (SPECIFY) PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC H PHARMACY I PRIVATE DOCTOR J

		MOBILE CLINIC K FIELD WORKER L OTHER PVT. MEDICAL _____ M (SPECIFY) OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHER _____ X (SPECIFY)	MOBILE CLINIC K FIELD WORKER L OTHER PVT. MEDICAL _____ M (SPECIFY) OTHER SOURCE SHOP.....N TRAD. PRACTITIONER.....O OTHER _____ X (SPECIFY)																																
312f	Where did you first seek advice or treatment? USE LETTER CODE FROM 312e	FIRST PLACE <input type="checkbox"/>	FIRST PLACE <input type="checkbox"/>																																
312g	Was he/she given any of the following to drink at any time since he/she started having diarrhea: a) Fluid made from a special packet called [ORS]? b) A pre-packaged ORS liquid? c) A government-recommended home-made fluid for diarrhea?	<table border="0"> <thead> <tr> <th></th> <th>Y</th> <th>N</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>Fluid from ORS Packet</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>ORS LQD</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Homemade fluid</td> <td>1</td> <td>2</td> <td>8</td> </tr> </tbody> </table>		Y	N	DK	Fluid from ORS Packet	1	2	8	ORS LQD	1	2	8	Homemade fluid	1	2	8	<table border="0"> <thead> <tr> <th></th> <th>Y</th> <th>N</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>Fluid from ORS Packet</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>ORS LQD</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>Homemade fluid</td> <td>1</td> <td>2</td> <td>8</td> </tr> </tbody> </table>		Y	N	DK	Fluid from ORS Packet	1	2	8	ORS LQD	1	2	8	Homemade fluid	1	2	8
	Y	N	DK																																
Fluid from ORS Packet	1	2	8																																
ORS LQD	1	2	8																																
Homemade fluid	1	2	8																																
	Y	N	DK																																
Fluid from ORS Packet	1	2	8																																
ORS LQD	1	2	8																																
Homemade fluid	1	2	8																																
312h	Was anything (else) given to treat the diarrhea?	YES 1 NO 2 (If 'NO' GO TO 313) DON'T KNOW 8	YES 1 NO 2 (If 'NO' GO TO 313) DON'T KNOW 8																																
312i	What (else) was given to treat the diarrhea? Anything else? RECORD ALL TREATMENTS MENTIONED	PILL OR SYRUP ANTIBIOTIC A ANTIMOTILITY B ZINC C OTHER D UNKNOWN PILL OR SYRUP E INJECTION ANTIBIOTIC F NON_ANTIOTIC G UNKNOWN PILL OR SYRUP H (I.V.) INTRAVENOUS I HOME REMEDIES/HERBAL MEDICINES J OTHER _____ X (specify)	PILL OR SYRUP ANTIBIOTIC A ANTIMOTILITY B ZINC C OTHER D UNKNOWN PILL OR SYRUP E INJECTION ANTIBIOTIC F NON_ANTIOTIC G UNKNOWN PILL OR SYRUP H (I.V.) INTRAVENOUS I HOME REMEDIES/HERBAL MEDICINES J OTHER _____ X (specify)																																
313	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES 1 NO 2 (GO TO 313 FOR NEXT CHILD OR, IF NO MORE CHILDREN, SKIP TO 345) DON'T KNOW 8	YES 1 NO 2 (GO BACK TO 313 FOR NEXT CHILD OR, IF NO MORE CHILDREN, SKIP TO 345) DON'T KNOW 8																																

314	How many days ago did the fever start? IF LESS THAN ONE DAY, RECORD '00'.	DAYS AGO <input type="text"/> <input type="text"/> DON'T KNOW.....98	DAYS AGO <input type="text"/> <input type="text"/> DON'T KNOW.....98
315	Did you seek advice or treatment for the fever from any source?	YES 1 NO 2 (SKIP TO 316c) = _____	YES 1 NO 2 (SKIP TO 316c) = _____

316a	Where did you seek advice or treatment? ² Anywhere else? RECORD ALL SOURCES MENTIONED. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE _____ (NAME OF THE PLACE(S))	<p>PUBLIC SECTOR</p> <p>GOVT. HOSPITAL A</p> <p>GOVT. HEALTH CENTER B</p> <p>GOVT. HEALTH POST C</p> <p>MOBILE CLINIC D</p> <p>COMMUNITY HEALTH WORKER or FIELD WORKER F</p> <p>OTHER PUBLIC G</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC H</p> <p>PHARMACY I</p> <p>PRIVATE DOCTOR I</p> <p>J</p> <p>MOBILE CLINIC K</p> <p>FIELD WORKER L</p> <p>OTHER PVT. MEDICAL M</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP.....N</p> <p>TRAD. PRACTITIONER.....O</p> <p>OTHER X</p> <p>(SPECIFY)</p>	<p>PUBLIC SECTOR</p> <p>GOVT. HOSPITAL A</p> <p>GOVT. HEALTH CENTER B</p> <p>GOVT. HEALTH POST C</p> <p>MOBILE CLINIC D</p> <p>COMMUNITY HEALTH WORKER or FIELD WORKER F</p> <p>OTHER PUBLIC G</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC H</p> <p>PHARMACY I</p> <p>PRIVATE DOCTOR I</p> <p>J</p> <p>MOBILE CLINIC K</p> <p>FIELD WORKER L</p> <p>OTHER PVT. MEDICAL M</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP.....N</p> <p>TRAD. PRACTITIONER.....O</p> <p>OTHER X</p> <p>(SPECIFY)</p>
316b	Where did you first seek advice or treatment? USE LETTER CODE FROM 316a	FIRST PLACE <input type="text"/>	FIRST PLACE <input type="text"/>
316c	How many days after the fever began did you first seek advice or treatment for (NAME)? IF THE SAME DAY, RECORD '00'.	DAYS <input type="text"/> <input type="text"/>	DAYS <input type="text"/> <input type="text"/>

¹ For fieldwork beginning in 2016, 2017, or 2018, the year should be 2011, 2012, or 2013, respectively.

² Coding categories to be developed locally and revised based on the pretest; however, the broad categories must be maintained.

		YOUNGEST CHILD NAME _____	NEXT-TO-YOUNGEST CHILD NAME _____
--	--	------------------------------	--------------------------------------

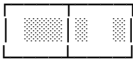
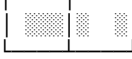


Zambia MIS 2021 · Appendix C: Questionnaires

316d	Did (NAME) receive a finger stick or heel stick to test the fever/illness?	YES NO DON'T KNOW	1 2 8	YES NO DON'T KNOW	1 2 8
316e	Was a diagnostic blood test for malaria performed?	YES NO DON'T KNOW (2 or 8 THEN SKIP TO 317) =_____	1 2 8	YES NO DON'T KNOW 2 or 8 THEN SKIP TO 317 =_____	1 2 8
316f	Did you request the test or was it offered to you?	OFFERED REQUESTED	1 2	OFFERED REQUESTED	1 2
316g	What type of diagnostic blood test for malaria performed?	Microscopy Malaria test kit/ rapid diagnostic test DON'T KNOW	1 2 8	Microscopy Malaria test kit/ rapid diagnostic test DON'T KNOW	1 2 8
316h	Was the result of the diagnostic blood test for malaria shared with you?	YES NO DON'T KNOW (2 or 8 THEN SKIP TO 317) =_____	1 2 8	YES NO DON'T KNOW 2 or 8 THEN SKIP TO 317 =_____	1 2 8
316i	What was the result of the diagnostic blood test for malaria?	Positive for malaria Negative for malaria DON'T KNOW	1 2 8	Positive for malaria Negative for malaria DON'T KNOW	1 2 8
317	Is (NAME) still sick with a fever?	YES NO DON'T KNOW	1 2 8	YES NO DON'T KNOW	1 2 8
318	At any time during the illness, did (NAME) take any drugs for the fever?	YES NO 344) =____ (SKIP DON'T KNOW..... 8	1 2	YES1 NO2 (SKIP 344) =____ DON'T KNOW.....8	1 2

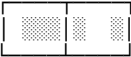
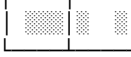
319	What drugs did (NAME) take? ¹ Any other drugs? RECORD ALL MENTIONED. ASK TO SEE DRUG(S) IF TYPE OF DRUG IS NOT KNOWN. IF TYPE OF DRUG IS STILL NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.	ANTIMALARIAL SP/FANSIDAR A CHLOROQUINE B AMODIAQUINE C QUININE D ARTESUNATE..... E AL/COARTEM/LUMET..... F DHAP..... G OTHER ANTIMALARIAL..... H (SPECIFY) ANTIBIOTIC DRUGS PILLS/SYRUP I INJECTIONJ OTHER DRUGS ASPIRIN K	ANTIMALARIAL SP/FANSIDAR A CHLOROQUINE B AMODIAQUINE C QUININE D ARTESUNATE..... E AL/COARTEM/LUMET..... F DHAP..... G OTHER ANTIMALARIAL..... H (SPECIFY) ANTIBIOTIC DRUGS PILLS/SYRUP I INJECTIONJ OTHER DRUGS ASPIRIN K
-----	---	---	---

		ACETAMINOPHEN/ PARACETAMOLL IBUPROFEN M OTHER _____ X _____ (SPECIFY) DON'T KNOW Z	ACETAMINOPHEN/ PARACETAMOLL IBUPROFEN M OTHER _____ X _____ (SPECIFY) DON'T KNOW Z
320	CHECK 319: ANY CODE A-F CIRCLED?	YES <input type="checkbox"/> NO <input type="checkbox"/> (GO BACK TO 313 IN NEXT COLUMN; OR IF NO MORE <input type="checkbox"/> BIRTHS, SKIP TO 344)	YES <input type="checkbox"/> NO <input type="checkbox"/> (GO BACK TO 313 IN NEXT COLUMN; OR IF NO MORE <input type="checkbox"/> BIRTHS, SKIP TO 344)
320A	CHECK 319: SP/FANSIDAR ('A') GIVEN?	CODE 'A' CIRCLED <input type="checkbox"/> CODE 'A' NOT CIRCLED <input type="checkbox"/> <input type="checkbox"/> (SKIP TO 324)	CODE 'A' CIRCLED <input type="checkbox"/> CODE 'A' NOT CIRCLED <input type="checkbox"/> <input type="checkbox"/> (SKIP TO 324)
321	How long after the fever started did (NAME) first take SP/Fansidar?	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8
<p>¹ Revise list of drugs as appropriate; however, the broad categories must be maintained. Include all drugs or drug combinations that are commonly given as separate categories.</p>			

		YOUNGEST CHILD NAME _____	NEXT-TO-YOUNGEST CHILD NAME _____
322	For how many days did (NAME) take the SP/Fansidar? IF 7 OR MORE DAYS, RECORD '7'.	DAYS <input type="checkbox"/> DON'T KNOW 8	DAYS <input type="checkbox"/> DON'T KNOW 8

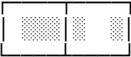
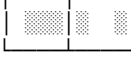


323	<p>Did you have the SP/Fansidar at home or did you get it from somewhere else?</p> <p>IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the SP/Fansidar first?</p>	<p>AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8</p>	<p>AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8</p>
339a	<p>Did you purchase the SP/Fansidar?</p>	<p>YES 1 NO 2 If NO, Skip to 340</p>	<p>YES 1 NO 2 If NO, Skip to 340</p>
339b	<p>How much did you pay for the SP/Fansidar?</p>	<p>In Kwacha </p>	<p>In Kwacha </p>
324	<p>CHECK 319: WHICH MEDICINES?</p>	<p>CODE 'B' CIRCLED <input type="checkbox"/> CODE 'B' NOT CIRCLED <input type="checkbox"/> (SKIP TO 328)</p>	<p>CODE 'B' CIRCLED <input type="checkbox"/> CODE 'B' NOT CIRCLED <input type="checkbox"/> (SKIP TO 328)</p>
325	<p>How long after the fever started did (NAME) first take chloroquine?</p>	<p>SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8</p>	<p>SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8</p>
326	<p>For how many days did (NAME) take chloroquine? IF 7 OR MORE DAYS, RECORD '7'.</p>	<p>DAYS  DON'T KNOW 8</p>	<p>DAYS  DON'T KNOW 8</p>
327	<p>Did you have the chloroquine at home or did you get it from somewhere else?</p> <p>IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the chloroquine first?</p>	<p>AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8</p>	<p>AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 88</p>

Zambia MIS 2021 · Appendix C: Questionnaires

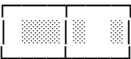



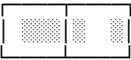
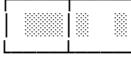
327a	Did you purchase the cholorquine?	YES NO If NO, Skip to 340	1 2	YES NO If NO, Skip to 340	1 2
327b	How much did you pay for the choloquine	In Kwacha		In Kwacha	
328	CHECK 319: WHICH MEDICINES?	CODE 'C' CIRCLED <input type="checkbox"/> <input type="checkbox"/>	CODE 'C' NOT CIRCLED <input type="checkbox"/> (SKIP TO 332)	CODE 'C' CIRCLED <input type="checkbox"/> <input type="checkbox"/>	CODE 'C' NOT CIRCLED <input type="checkbox"/> (SKIP TO 332)
329	How long after the fever started did (NAME) first take Amodiaquine?	SAME DAY NEXT DAY TWO DAYS AFTER THE FEVER THREE DAYS AFTER THE FEVER FOUR OR MORE DAYS AFTER THE FEVER DON'T KNOW	0 1 2 3 4 8	SAME DAY NEXT DAY TWO DAYS AFTER THE FEVER THREE DAYS AFTER THE FEVER FOUR OR MORE DAYS AFTER THE FEVER DON'T KNOW	0 1 2 3 4 8

		YOUNGEST CHILD NAME _____	NEXT-TO-YOUNGEST CHILD NAME _____
330	For how many days did (NAME) take Amodiaquine? IF 7 OR MORE DAYS, RECORD '7'.	DAYS DON'T KNOW	DAYS DON'T KNOW
331	Did you have the Amodiaquine at home or did you get it from somewhere else? IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the Amodiaquine first?	AT HOME COMMUNITY HEALTH WORKER...2 GOVERNMENT HEALTH FACILITY/WORKER PRIVATE HEALTH FACILITY/WORKER SHOP OTHER _____ 6 (SPECIFY) DON'T KNOW	1 1 3 4 5 6 (SPECIFY) 8

Zambia MIS 2021 · Appendix C: Questionnaires





331a	Did you purchase the Amodiaquine?	YES NO If NO, Skip to 340	1 2	YES NO If NO, Skip to 340	1 2
331b	How much did you pay for the Amodiaquine?	In Kwacha		In Kwacha	
332	CHECK 319: WHICH MEDICINES?	CODE 'D' CIRCLED <input type="checkbox"/> <input type="checkbox"/>	CODE 'D' NOT CIRCLED <input type="checkbox"/> (SKIP TO 336)	CODE 'D' CIRCLED <input type="checkbox"/> <input type="checkbox"/>	CODE 'D' NOT CIRCLED <input type="checkbox"/> (SKIP TO 336)
333	How long after the fever started did (NAME) first take Quinine?	SAME DAY NEXT DAY TWO DAYS AFTER THE FEVER THREE DAYS AFTER THE FEVER FOUR OR MORE DAYS AFTER THE FEVER DON'T KNOW	0 1 2 3 4 8	SAME DAY NEXT DAY TWO DAYS AFTER THE FEVER THREE DAYS AFTER THE FEVER FOUR OR MORE DAYS AFTER THE FEVER DON'T KNOW	0 1 2 3 4 8
334	For how many days did (NAME) take Quinine? IF 7 OR MORE DAYS, RECORD '7'.	DAYS DON'T KNOW	 8	DAYS DON'T KNOW	 8
335	Did you have the Quinine at home or did you get it from somewhere else? IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the Quinine first?	AT HOME COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER PRIVATE HEALTH FACILITY/WORKER SHOP OTHER _____ 6 (SPECIFY) DON'T KNOW	1 3 4 5 6 8	AT HOME COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER PRIVATE HEALTH FACILITY/WORKER SHOP OTHER _____ 6 (SPECIFY) DON'T KNOW	1 3 4 5 6 8
335a	Did you purchase the Quinine?	YES NO If NO, Skip to 340	1 2	YES NO If NO, Skip to 340	1 2

Zambia MIS 2021 · Appendix C: Questionnaires

335b	How much did you pay for the Quinine?	In Kwacha 	In Kwacha 
336	CHECK 319: WHICH MEDICINES?	CODE 'E' CIRCLED <input type="checkbox"/> 	CODE 'E' NOT CIRCLED <input type="checkbox"/> (SKIP TO 340)
337	How long after the fever started did (NAME) first take Artemether-lumefantrine (AL or COARTEM or LUMET)?	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8
338	For how many days did (NAME) take AL/COARTEM/LUMET ? IF 7 OR MORE DAYS, RECORD '7'.	DAYS  DON'T KNOW 8	DAYS  DON'T KNOW 8
339	Did you have the AL/Coartem/Lumet at home or did you get it from somewhere else? IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the ACT first?	AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8
339a	Did you purchase the AL/Coartem/LUMET?	YES 1 NO 2 If NO, Skip to 339c	YES 1 NO 2 If NO, Skip to 339c
339b	How much did you pay for the AL/Coartem/LUMET ?	In Kwacha 	In Kwacha 

339c	CHECK 319: WHICH MEDICINES?	CODE 'E' CIRCLED <input type="checkbox"/>	CODE 'E' NOT CIRCLED <input type="checkbox"/> □(SKIP TO 340)	CODE 'E' CIRCLED <input type="checkbox"/>	CODE 'E' NOT CIRCLED <input type="checkbox"/> □(SKIP TO 340)
339d	How long after the fever started did (NAME) first take DHAP?	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8		
339e	For how many days did (NAME) take DHAP? IF 7 OR MORE DAYS, RECORD '7'.	DAYS <input type="text"/> DON'T KNOW 8	DAYS <input type="text"/> DON'T KNOW 8		
339f	Did you have the DHAP at home or did you get it from somewhere else? IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the ACT first?	AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8		
339g	Did you purchase the DHAP?	YES 1 NO 2 If NO, Skip to 340	YES 1 NO 2 If NO, Skip to 340		
339h	How much did you pay for the DHAP?	In Kwacha <input type="text"/>	In Kwacha <input type="text"/>		
340	CHECK 319: WHICH MEDICINES?	CODE 'F' CIRCLED <input type="checkbox"/>	CODE 'F' NOT CIRCLED <input type="checkbox"/> □(SKIP TO 344)	CODE 'F' CIRCLED <input type="checkbox"/>	CODE 'F' NOT CIRCLED <input type="checkbox"/> □(SKIP TO 344)

Zambia MIS 2021 · Appendix C: Questionnaires

341	How long after the fever started did (NAME) first take (NAME OF OTHER ANTIMALARIAL)?	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8	SAME DAY 0 NEXT DAY 1 TWO DAYS AFTER THE FEVER 2 THREE DAYS AFTER THE FEVER 3 FOUR OR MORE DAYS AFTER THE FEVER 4 DON'T KNOW 8
342	For how many days did (NAME) take (NAME OF OTHER ANTIMALARIAL)? IF 7 OR MORE DAYS, RECORD '7'.	DAYS  DON'T KNOW 8	DAYS  DON'T KNOW 8
343	Did you have the (NAME OF OTHER ANTIMALARIAL) at home or did you get it from somewhere else? IF SOMEWHERE ELSE, PROBE FOR SOURCE. IF MORE THAN ONE SOURCE MENTIONED, ASK: Where did you get the (NAME OF OTHER ANTIMALARIAL) first?	AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	AT HOME 1 COMMUNITY HEALTH WORKER....2 GOVERNMENT HEALTH FACILITY/WORKER 3 PRIVATE HEALTH FACILITY/WORKER 4 SHOP 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8
344		GO BACK TO 313 IN NEXT COLUMN, OR, IF NO MORE CHILDREN, GO TO 345.	GO BACK TO 313 IN FIRST COLUMN OF NEW QUESTIONNAIRE, OR, IF NO MORE CHILDREN, GO TO 345.
345	RECORD THE TIME.	HOUR  MINUTES 	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF THE SUPERVISOR: _____ DATE: _____

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF THE SUPERVISOR: _____ DATE: _____