ACTWATCH LITE CAMEROON 2024

Survey of the private market for antimalarial drugs and malaria rapid diagnostic tests (RDTs) in Cameroon 2024

October 2024 (English language version)

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Suggested quote
PSI/ACTwatch Lite & Association Camerounaise Pour le Marketing Social (ACMS), 2024. ACTwatch Lite Cameroon 2024: Survey of the private market for antimalarials and malaria rapid diagnostic tests in Cameroon [English report]. Washington, DC: PSI.

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ACRONYMS

ACMS	Association Camerounaise pour le Marketing Social (Cameroon Association for Social Marketing)
AL	Artemether lumefantrine
AMFm	Affordable Medicines Facility - malaria
MA	Marketing authorization
ASAQ	Artesunate amodiaquine
CQ	Chloroquine
PMC	Perennial malaria chemoprophylaxis
ACT	Artemisinin-based combination therapy
DHAPPQ	Dihydroartemisinie-piperiquine
DROS	Division de la Recherche Opérationnelle en Santé (Operational Health Research Division)
DPML	Direction de la Pharmacie, du Médicament et des laboratoires (Department of Pharmacy, Medicines and Laboratories)
DHS	Demographic and Health Survey
GF	Global Fund
GPS	Global Positioning System
GTS	Global Technical Strategy
LSHTM	London School of Hygiene and Tropical Medicine
LLIN	Long-lasting insecticidal net
WHO	World Health Organization
NGO	Non-governmental organization
POS	Point of sale
PMI	President's Malaria Initiative
NMCP	National Malaria Control Program
PPS	Probability proportional to size
PSI	Population Services International
SP	Sulfadoxine-Pyrimethamine
RDT	Rapid diagnostic test

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DEFINITIONS

Antimalarial	Medicines used in the short-term treatment and prevention of malaria. Medicines used solely for the prevention of malaria have been excluded from the analysis of key indicators in this report.
Artemisinin monotherapy	An antimalarial drug with a single active compound, where the active compound is artemisinin or one of its derivatives.
Artemisinin and its derivatives	Artemisinin is a plant extract or synthetic plant extract used in the treatment of malaria. The most common artemisinin derivatives used to treat malaria are artemether, artesunate and dihydroartemisinin.
Oral artemisinin monotherapy	Artemisinin or one of its oral derivatives. These include tablets, suspensions and syrups, but exclude suppositories and injections.
Prequalified artemisinin-based combination therapies (ACTs)	Pre-qualified ACTs comply with the WHO quality assurance policy. A pre-qualified ACT is any ACT that was on the WHO indicative list prior to data collection (see : https://extranet.who.int/prequal/medicines/prequalified/finished-pharmaceutical-products) or previously had C status in a previous Global Fund quality assurance policy. An antimalarial drug that is not WHO prequalified does not necessarily mean that it is not of good quality.
ACTs registered nationwide	ACTs registered with the DPML (*Direction de la pharmacie du médicament et des laboratoires*), Cameroon's national pharmaceutical regulatory authority, and authorized for sale or distribution in Cameroon. Each country determines its own criteria for including a drug on its national list.
Adult equivalent treatment dose (AETD)	An AETD is the dosage (total number in milligrams (mg)) of an antimalarial drug needed to treat a 60 kg adult (see Appendix).
Booster sample	A "booster" sample was selected by extending the primary sampling unit to a higher administrative unit for sampling certain types of outlets. This extension provided a larger sample size for specific outlets. For this survey, a "booster" sample was selected for pharmacies and pharmaceutical depots. The administrative unit for these types of outlets was extended beyond the arrondissement to the commune. See Appendix 3 for a detailed description of sampling methods.
Cluster	The primary sampling unit, or cluster, for the exit survey. In Cameroon, the cluster was defined as the “health area”. This is an administrative unit determined by the Ministry of Health, with a population of around 5,000 to 10,000 in rural areas and 10,000 to 30,000 in urban areas.
Census area	A health area (“*zone sanitaire*”) where field teams carried out a complete census of all outlets likely to sell anti-malarial drugs.
Monotherapy	An antimalarial drug with a single mode of action. It may be a drug with a single active compound, or a synergistic combination of two compounds with related mechanisms of action.
Point of sale (POS)	Any point of service or point of sale for goods. Points of sale are not limited to fixed outlets and can include mobile units or individuals.
Retail outlets eligible for the study	Outlets received a full questionnaire if they met at least one of the following three inclusion criteria: (1) had one or more antimalarials in stock at the time of the survey; or (2) had one or more antimalarials in stock during the previous three months; or (3) provided blood tests for malaria diagnosis (microscopy or rapid tests) without having antimalarials in stock. Outlets providing services

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	to specific populations (e.g. the army and military clinics) were excluded from the study.
Dosage/therapeutic regimen	The dosage or administration time and number of doses of an antimalarial drug used to treat malaria. This schedule often varies according to the patient's weight.
Prequalified RDT	Prequalified RDTs are RDTs that comply with WHO quality assurance policy. A pre-qualified RDT is one that was on the WHO indicative list prior to data collection (see https://extranet.who.int/prequal/vitro-diagnostics/vitro-diagnostics-lists).
Artemisinin-based combination therapy (ACT)	An antimalarial drug that combines artemisinin or one of its derivatives with one or more antimalarial drugs from a different class.
First-line treatment	The NMCP recommends a choice of the following molecules as first-line treatment: artemether-lumefantrine (AL), artesunate amodiaquine (ASAQ), dihydroartemisinin piperaquine (DHAPPQ) and artesunate pyronaridine (ASPY) for the northern regions, and AL and APYR for the Far North and North regions.
Severe malaria treatment	The WHO recommends intravenous or intramuscular artesunate as first-line treatment in the management of severe P. falciparum malaria. If artesunate is not available, artemether should be used in preference to quinine to treat severe malaria. Rectal artesunate is suitable for pre-referral treatment of children under 6 years of age.
Non-artemisinin treatment	An antimalarial drug that does not contain artemisinin or one of its derivatives.

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Sales outlet types

Faith-based/ private not-for-profit health facilities	Faith-based hospitals or clinics run by qualified health professionals registered with the Ministry of Health. A service fee is usually charged.
Private for-profit healthcare facilities	Private hospitals, clinics and diagnostic laboratories operated by healthcare professionals trained and registered with the Ministry of Health. Medical consultations, diagnosis and treatment are provided at cost price.
Pharmacies (Approved pharmacies)	Pharmacies are authorized and regulated by the Direction de la Pharmacie, du Médicament et des Laboratoires (DPML) to dispense health products on prescription and by advice at a commercial rate. They are run by pharmacists and are generally located in urban areas.
General retailers	Grocery stores, stores, mini-markets, kiosks and market stalls selling fast-moving consumer goods.
Itinerant vendors	Mobile vendors generally operate in urban markets. They are not registered with any national regulatory authority.
Wholesalers	ACTwatch Lite has identified a number of officially registered importer-wholesalers. These are large organizations whose official mandate is to import and supply pharmaceutical products to Cameroon. These wholesalers are likely to have a main office in a major city and branches elsewhere in the country.
Other suppliers	Outlets other than importer-wholesalers have played a role in the supply of antimalarials in Cameroon. These were either identified by other outlets as their source of supply, or identified themselves during the outlet survey as suppliers to other types of outlets. These outlets were often pharmacies supplying private non-profit or for-profit health establishments.
Formal sector	In this report, we present some results for the "formal private sector" as a whole. The formal private sector is defined here as the following types of outlets: Faith-based / private not-for-profit healthcare facilities; Private for-profit healthcare facilities and Pharmacies
Informal sector	In this report, we present some results for the "informal private sector" as a whole. The private informal sector is defined here as the following types of outlets: General retailers; and itinerant vendors

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INTRODUCTION

This report details the ACTwatch Lite 2024 survey in the Center and Littoral regions of Cameroon. This is the second ACTwatch Lite survey (after the 2023 survey in Benin[1]) and the first of its kind in Cameroon.

Cameroon is one of 11 countries that together account for 70% of the global burden of malaria cases and deaths.[2] Despite a reduction in cases and deaths between 2005 and 2011, these figures have since increased, particularly with the onset of the COVID-19 pandemic. The Global Malaria Strategy 2020 targets call for a reduction in malaria incidence and mortality rates of at least 40% between 2015 and 2020; unfortunately, results for Cameroon have remained unchanged over this period, and malaria remains one of the leading causes of morbidity and mortality, with 6.9 million cases and 15,000 deaths estimated in 2020.[3]

Cameroon's entire population of 26.8 million is at risk from malaria. Nationwide, one in four children aged between 6 and 59 months tested positive for malaria using a rapid diagnostic test (RDT) during the 2018 Demographic Health Survey (DHS), with malaria prevalence highest in rural areas (32%) and the Center region (47%). The statistics reported for treatment of fever in children in 2018 (61%) were close to the median figures for sub-Saharan Africa for 2015-2019 (69%). However, the figures reported for diagnostic tests (21%) and use of Artemisinin-based Combination Therapy (ACT) in children receiving a diagnostic test (17%) were low compared with regional medians. These results probably reflect the fact that 20% of fever cases in children involved care from informal or traditional sources. Among children with a fever for whom care or treatment was sought, 70% reported care seeking in the private health sector, including informal health facilities.

The private healthcare sector in Cameroon comprises not-for-profit health facilities, for-profit private healthcare establishments (clinics, general practitioner offices), pharmacies (which are registered and licensed by the national regulatory authority, DPML (*Direction de la pharmacies du médicament et des laboratoires*) and informal retailers (known as *street pharmacies* or *officines de la rue*, and largely made up of kiosks and market stalls, with a relatively smaller number of itinerant vendors). The vast majority of private, for-profit healthcare services are located in Cameroon's Center and Littoral regions, home to the country's two largest cities, Yaoundé and Douala. These two regions accounted for 76% (1,930/2,535) of registered for-profit healthcare facilities (DHIS2 Ministry of Health 2020 output), and 95% (38/40) of pharmaceutical distributors listed with DPML in 2019.

Very little data is available on the market for antimalarial tests and diagnostics in Cameroon. Cameroon was not eligible to participate in the Affordable Medicines Facility - malaria (AMFm) and did not participate in the Global Fund's co-payment mechanism for ACTs. Data from the 2018 DHS household survey revealed that among children receiving an antimalarial, quinine in tablet (32%) and injection (11%) form was more common than ACT treatment (21%), and treatment with other non-ACT treatments was common, including SP (9%) and amodiaquine (9%). It is also of concern to note that rectal artesunate (10%) and artesunate injection (13%) were common at a higher level than would be expected for the treatment of severe malaria. The diversity of antimalarial drug classes indicated by DHS 2018 suggests a large and complex market, like those documented in other West and Central African countries through previous ACTwatch surveys. Cameroon's National Malaria Strategic Plan 2019-2023 notes that many unauthorized antimalarials circulate on the market. The current state of the market for malaria diagnosis and treatment in the private sector, and the relevant drivers of market performance, are not fully understood.

ACTwatch Lite (www.actwatch.org) is a pilot research project implemented by Population Services International (PSI) designed to provide timely, relevant and high-quality evidence on the antimalarial market. The Cameroon 2024 ACTwatch Lite is a private sector malaria market study conducted in the Central and Littoral regions using methods adapted from the ACTwatch project.

1 https://www.psi.org/publication/actwatch-lite-benin-2023-report/
[2] World Health Organization (2021). World Malaria Report 2021
[3] President's Malaria Initiative, Malaria Operational Plan 2022

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The aim of this study is to provide data that will inform national and global policies, strategies and funding decisions aimed at improving malaria case management. In addition, the project will ultimately develop a standardized toolkit and set of approaches for data sampling, collection and analysis to provide comparable data across countries and over time, which aim to be available and used by other stakeholders wishing to conduct similar studies.

The Center and Littoral regions were selected based on a combination of the relative size of the private health sector and the malaria burden in these locations. Other regions of Cameroon have a higher malaria burden than Littoral (e.g. East: 35%; South: 33%; Adamawa: 32%) but have relatively few health facilities registered in the private sector.[4] The West region has the third highest proportion of private outlets, but a lower malaria burden.

The report is the first large-scale private-sector malaria market survey of its kind in Cameroon and aims to provide results for indicators including antimalarial drug availability, price and market share, and antimalarial blood test availability and price. The survey collects data on supply chain characteristics, including national, regional and local distribution footprint, surveillance and digital engagement readiness, and digital capacity.

Study design

All formal and informal outlets in the private health sector likely to sell or distribute antimalarials and/or diagnostic tests were approached for participation in the study. Outlets were eligible to be interviewed and audited for antimalarial products if they met at least one of the following three criteria: i) had one or more antimalarials in stock on the day of the survey; ii) had one or more antimalarials in stock in the three months prior to the survey; and/or iii) provided blood tests for malaria diagnosis (microscopy or RDT).

Among wholesalers, the following outlets were approached for inclusion: all pharmaceutical and medical supply companies that wholesaled antimalarial drugs and/or malaria rapid diagnostic tests (mainly to retail outlets) in the three months prior to the survey.

The ACTwatch Lite survey employed a cluster sampling approach used by ACTwatch and other market surveys. The primary sampling approach adopted for point-of-sale surveys is to sample a set of administrative units (geographical clusters) with a corresponding population of around 5,000 to 10,000 in rural areas and 10,000 to 30,000 in urban areas – see appendix for more information. The appropriate administrative unit in Cameroon corresponding to the desired population size is the health area.

A note on the presentation of results in this report:

This document is a comprehensive reference for the 2024 study. Please consult the appendices for more information on the background, design, implementation and data analysis of the study.

Gray text for data appearing in report tables indicates that the estimate provided has been derived from a small N. Specifically, gray text is used to indicate point estimates derived from an N of less than 50 and median prices derived from an N of less than five.

[4] Global Fund: Funding request form 2020-22

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Figure 1 Map of study sites

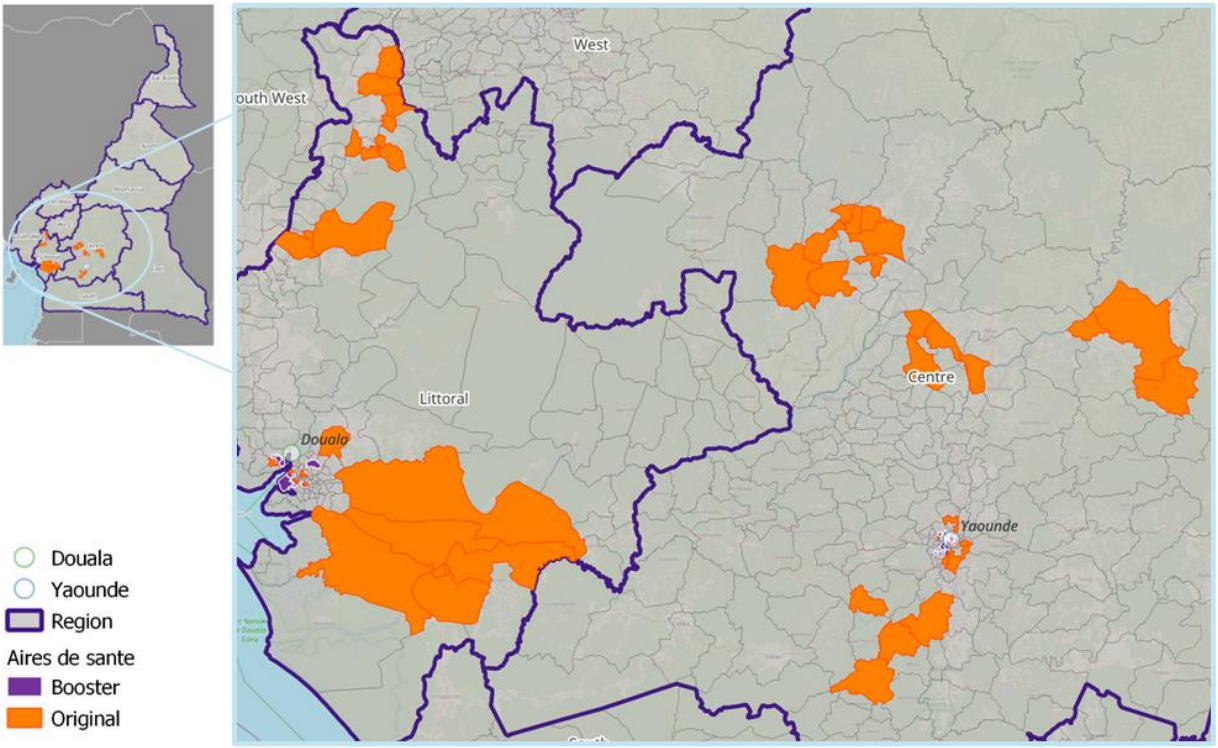
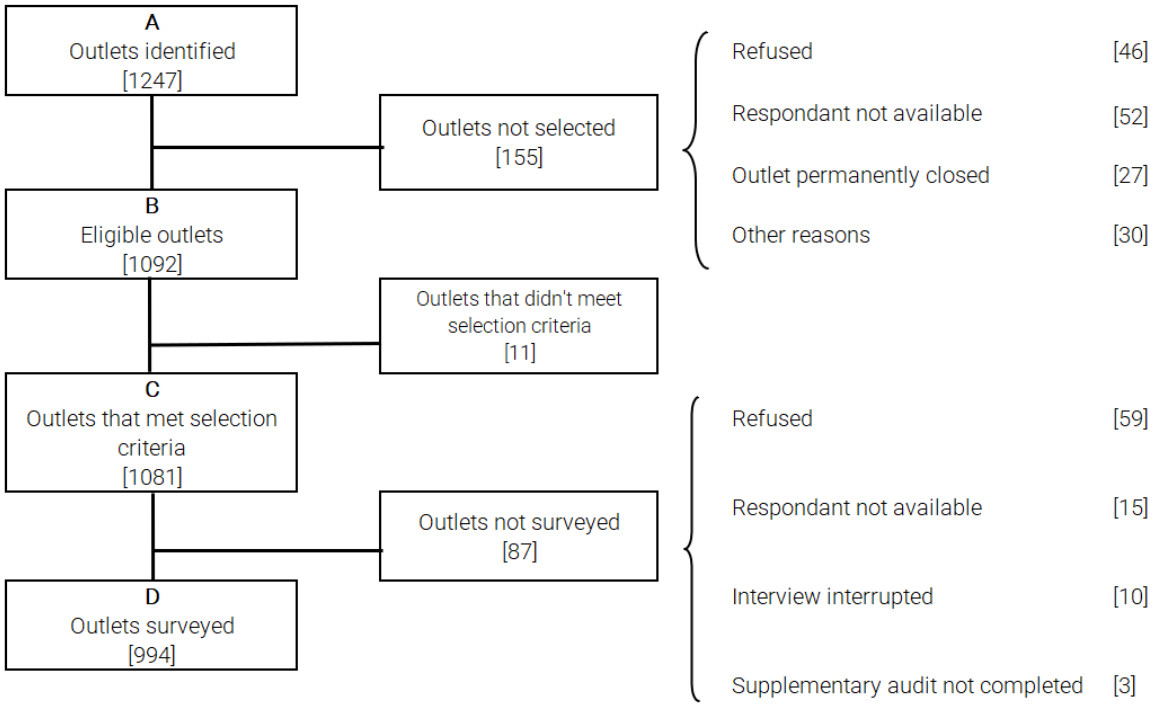


Figure 2 Survey flow chart



*Identified as outlets likely to sell or distribute antimalarials and/or perform malaria blood tests during census or recall sampling. (Private not-for-profit facilities n=37; private for-profit health facilities n=464; pharmacies n=163; informal sector n=543, distributor n=40)
**Questions were asked to assess the current or recent availability (previous 3 months) of antimalarial drugs and blood tests for malaria (microscopy or rapid diagnostic test).
*** A partial or complete interview was carried out with a sales representative.

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SECTION A: KEY RESULTS

This section of the report highlights the main findings of the ACTwatch Lite Cameroon 2024 study.

Table 1 Main results

	Outlets						Wholesalers
	Formal				Informal		
	Private not-for-profit facilities[1]	Private for-profit facilities[2]	Pharmacies[3]	Formal vendors Total[1+2+3]	Informal vendors Total[4]	Outlets Total[1+2+3+4]	Wholesalers^ Total
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Percentage of screened outlets * stocking	N=37	N= 464	N= 163	N= 664	N= 543	N= 1207	N= 40
At least one malaria diagnostic test (microscopy or RDT) available on the day of the survey	85.3 [62.6; 95.2]	78.5 [71.1; 84.4]	10.4 [3.9; 24.5]	59.1 [51.9; 65.9]	9.2 [5.5; 15.0]	33.2 [27.9; 38.9]	11.6 [4.8; 25.6]
At least one antimalarial available on the day of the survey	92.1 [81.2; 96.9]	75.0 [68.1; 80.9]	80.7 [72.1; 87.2]	78.5 [73.3; 82.9]	68.9 [58.7; 77.6]	73.5 [67.0; 79.1]	11.6 [5.0; 24.7]
At least one ACT	78.9 [56.6; 91.5]	61.8 [53.5; 69.6]	79.7 [70.9; 86.3]	68.9 [62.8; 74.4]	65.5 [55.2; 74.6]	67.1 [60.1; 73.4]	7.2 [3.4; 14.7]
At least one nationally approved ACT#	35.6 [18.2; 57.9]	33.3 [25.8; 41.7]	79.1 [70.2; 85.9]	47.0 [41.6; 52.6]	18.8 [15.1; 23.1]	32.4 [28.6; 36.3]	4.8 [1.9; 11.5]
At least one WHO-prequalified ACTY	10.2 [4.3; 22.0]	25.4 [20.4; 31.2]	73.5 [63.1; 81.9]	38.0 [32.6; 43.8]	6.0 [3.9; 8.9]	21.4 [17.1; 26.4]	0.0
Sulfadoxine pyrimethamine (SP)	26.2 [10.2; 52.6]	11.1 [7.8; 15.5]	43.9 [34.8; 53.4]	22.3 [17.4; 28.2]	13.5 [9.9; 17.9]	17.7 [14.3; 21.8]	0.0
At least one treatment for severe malaria	85.6 [70.6; 93.6]	67.5 [61.1; 73.3]	43.7 [31.3; 57.0]	62.4 [56.2; 68.2]	23.7 [17.0; 32.0]	42.3 [36.3; 48.4]	9.2 [3.4; 22.4]
Percentage of antimalarial-stocking outlets with:	N= 31	N= 362	N= 128	N= 521	N= 397	N= 918	N= 4
Any malaria-related blood test	90.0 [58.6; 98.3]	90.8 [81.1; 95.8]	12.8 [4.8; 30.1]	67.1 [58.7; 74.5]	13.3 [8.1; 21.0]	40.9 [34.7; 47.3]	37.8 [6.0; 85.2]
At least one ACT	85.7 [59.6; 96.1]	82.4 [73.1; 89.0]	98.7 [91.2; 99.8]	87.8 [82.6; 91.5]	95.0 [90.9; 97.4]	91.3 [87.9; 93.8]	62.2 [14.8; 94.0]
At least one nationally approved ACT#	38.7 [19.6; 62.0]	44.4 [35.7; 53.5]	97.9 [92.3; 99.5]	59.9 [53.8; 65.7]	27.3 [22.3; 32.9]	44.0 [39.5; 48.7]	41.5 [8.9; 83.7]
At least one WHO-prequalified ACTY	11.0 [4.7; 23.9]	33.9 [27.5; 41.0]	91.1 [77.7; 96.8]	48.5 [41.1; 55.9]	8.6 [5.5; 13.4]	29.1 [22.8; 36.3]	0.0

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	Outlets						Wholesalers
	Formal				Informal		
	Private not-for-profit facilities[1]	Private for-profit facilities[2]	Pharmacies[3]	Formal vendors Total[1+2+3]	Informal vendors Total[4]	Outlets Total[1+2+3+4]	Wholesalers^ Total
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Sulfadoxine pyrimethamine (SP)	28.4 [11.1; 55.8]	14.8 [10.5; 20.4]	54.3 [44.8; 63.6]	28.4 [22.3; 35.4]	19.5 [14.5; 25.8]	24.1 [19.7; 29.0]	0.0
At least one treatment for severe malaria	93.0 [75.8; 98.2]	90.0 [85.5; 93.2]	54.2 [38.7; 68.8]	79.5 [73.1; 84.7]	34.4 [27.0; 42.5]	57.5 [51.5; 63.3]	79.3 [29.3; 97.2]
Market share, by type of outlet	%	%	%	%	%	%	
WHO-prequalified ACT[Y]	1%	11%	25%	17%	1%	12%	-
Price in FCFA	Median [IQR] (N)	Median [IQR] (N)	Median [IQR] (N)	Median [IQR] (N)	Median [IQR] (N)	Median [IQR] (N)	Median [IQR] (N)
1 AETD± adult ACT prequalified by WHO [Y]	3400.00 CFA [500.00; 4000.00] (4)	1600.00 CFA [1000.00; 2625.00] (159)	3133.33 CFA [2815.00; 3500.00] (917)	3050.00 CFA [2490.00; 3500.00] (1080)	2000.00 CFA [1000.00; 2800.00] (58)	3030.00 CFA [2475.00; 3500.00] (1138)	-
1 AETD± adult SP	500.00 CFA [500.00; 500.00] (3)	300.00 CFA [300.00; 500.00] (22)	650.00 CFA [600.00; 1045.00] (114)	600.00 CFA [500.00; 1045.00] (139)	300.00 CFA [250.00; 500.00] (71)	500.00 CFA [300.00; 800.00] (210)	-
Pre-packaged (pre-qualified) pediatric AL [Y]	-	500.00 CFA [500.00; 1000.00] (17)	1220.00 CFA [1200.00; 1700.00] (137)	1220.00 CFA [1100.00; 1300.00] (154)	500.00 CFA [500.00; 500.00] (1)	1220.00 CFA [1100.00; 1300.00] (155)	-

Abbreviations: RDT, Rapid diagnostic test; ACT, Artemisinin-based combination therapy; AETD, Dosage equivalent for the treatment of a 60kg adult.
* The denominator includes all POS tested, including 84 POS who met the selection criteria for a full interview, but did not complete the full interview (i.e. were not interviewed or only completed a partial interview).
^ the "distributors" category includes wholesalers, who supply only outlets, and "other suppliers", who are outlets that supply both other outlets and the public.
[Y] Prequalified ACTs are products that appear on the WHO prequalified list.
The ACTs approved at national level are those on the Cameroon homologation list.
± See appendix for AETD calculations

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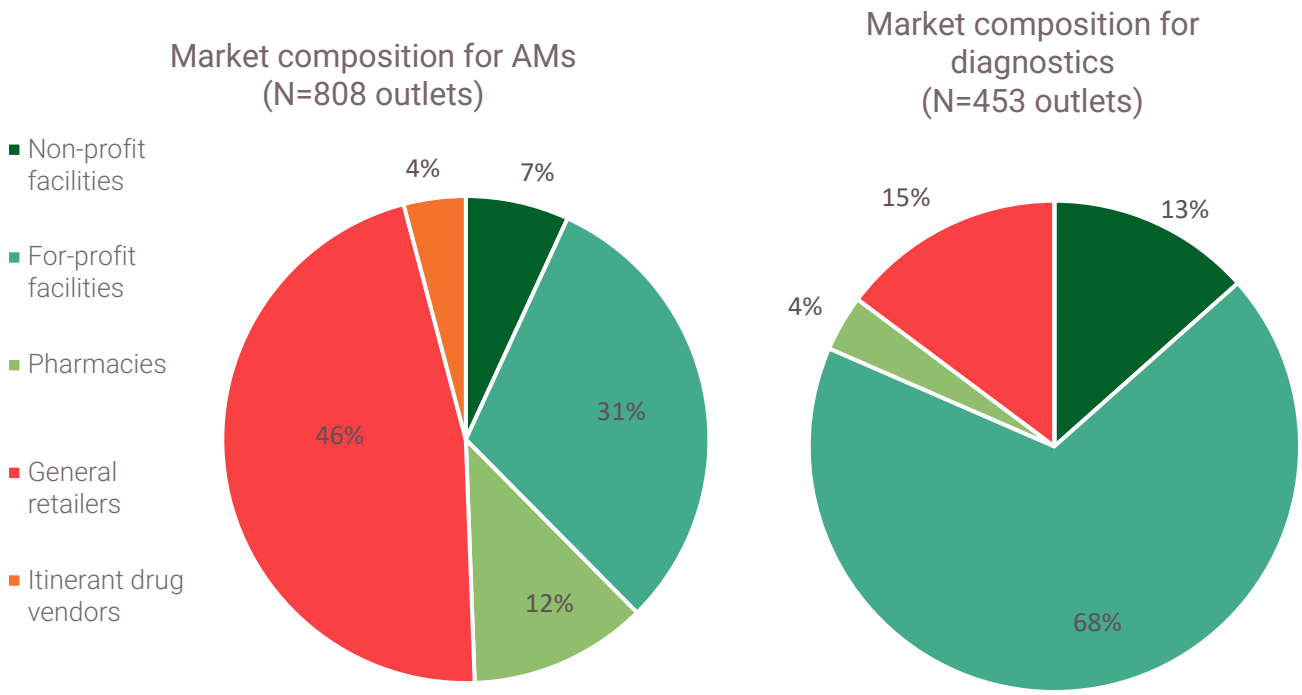
Figure 3 Market composition: distribution of anti-malarial and diagnostic retail outlets, Cameroon 2024

Among all retail outlets with at least one a) antimalarial or b) malaria diagnostic in stock on the day of the survey



Nearly half (46%) of the private-sector antimalarial outlets identified in the study areas of Cameroon's Central and Littoral regions were general retailers. Private for-profit health facilities accounted for 31% of outlets. Pharmacies accounted for 12% of anti-malarial outlets, while itinerant vendors and church health facilities represented 4% and 7% respectively. The composition of the diagnostic market was mainly made up of private for-profit health facilities (68%), followed by general retailers (15%) and faith-based health facilities (13%). Only 4% of outlets supplying diagnostic tests were pharmacies.

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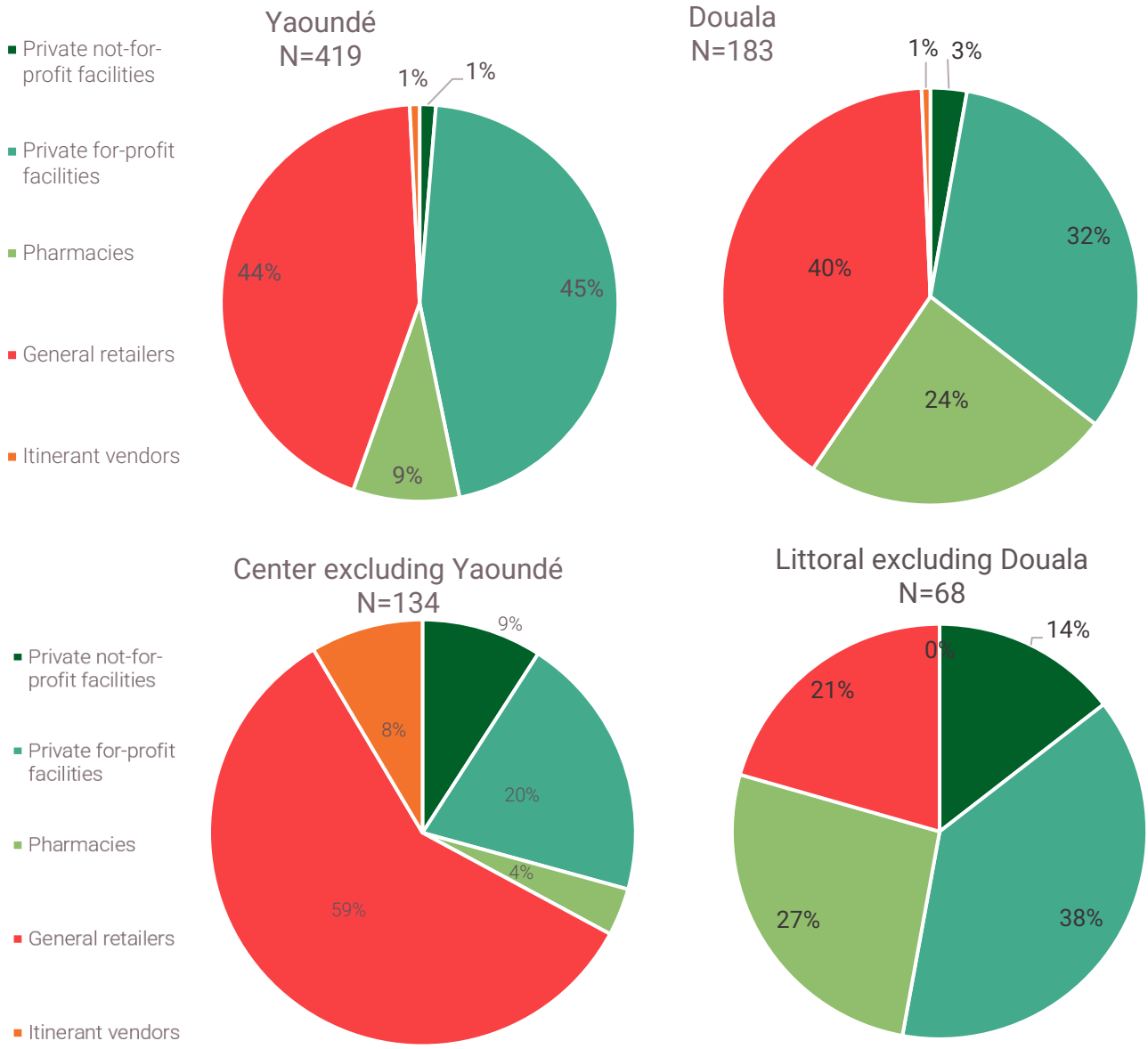
Figure 4 Market composition: breakdown by type of outlet

Among all outlets with at least one antimalarial in stock on the day of the survey



The composition of the anti-malarial market showed a certain variability according to strata. Of the 419 outlets selling antimalarials in Yaoundé, 45% were private for-profit health facilities, 44% general retailers and 9% pharmacies, while faith-based health facilities and itinerant vendors each accounted for 1% of the market. In the city of Douala, of the 183 outlets selling anti-malarial products included, 40% were general retailers, 32% were private for-profit health facilities and 25% were pharmacies.

In the Center region, outside Yaoundé, the informal sector was predominant, with 59% of anti-malarial product outlets being general retailers, and 8% itinerant vendors. Private for-profit and faith-based health facilities accounted for 20% and 9% of the market respectively, while pharmacies accounted for 4%. In the Littoral region outside the city of Douala, private for-profit health facilities were most often cited as stocking antimalarials (38%), followed by pharmacies (27%), general retailers (21%) and church health facilities (14%).

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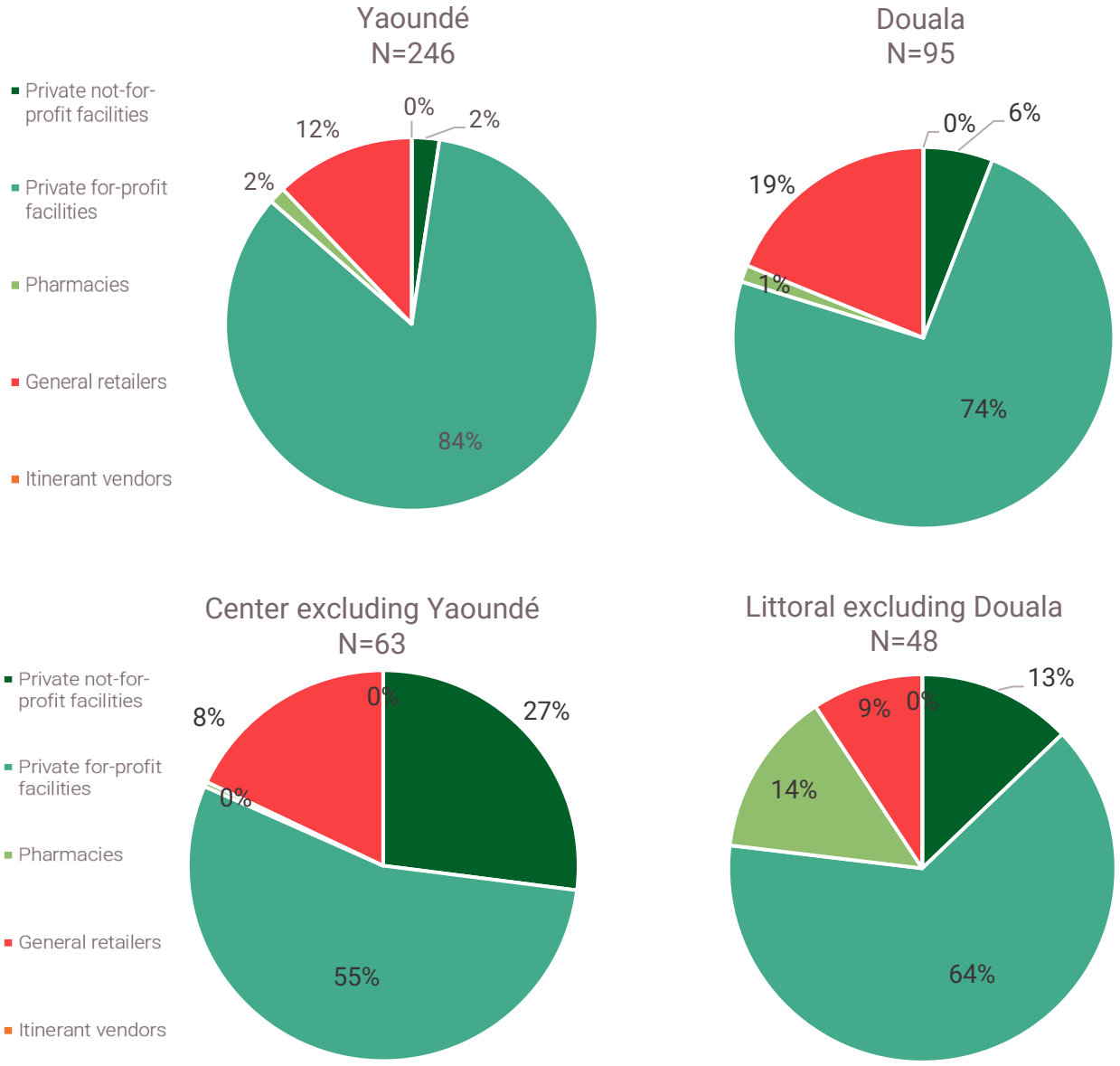
Figure 5 Composition of the diagnostics market, by stratum

Among all outlets with at least one diagnostic test in stock (RDT or microscopy) on the day of the survey



In all four strata, there were fewer outlets selling diagnostics than antimalarials. Private, for-profit health facilities were the most common type of outlet in all four strata (ranging from 84% of the market in Yaoundé to 55% in the Center region outside Yaoundé). Supermarkets accounted for 19% of diagnostic test outlets in Douala, 18% in the Center region excluding Yaoundé, and 12% in Yaoundé. Private not-for-profit facilities accounted for 27% of outlets in the Center region excluding Yaoundé, and 13% in the Littoral region excluding Douala. Pharmacies accounted for 14% of outlets in the Littoral region excluding Douala, but had a negligible presence elsewhere for diagnostic tests.

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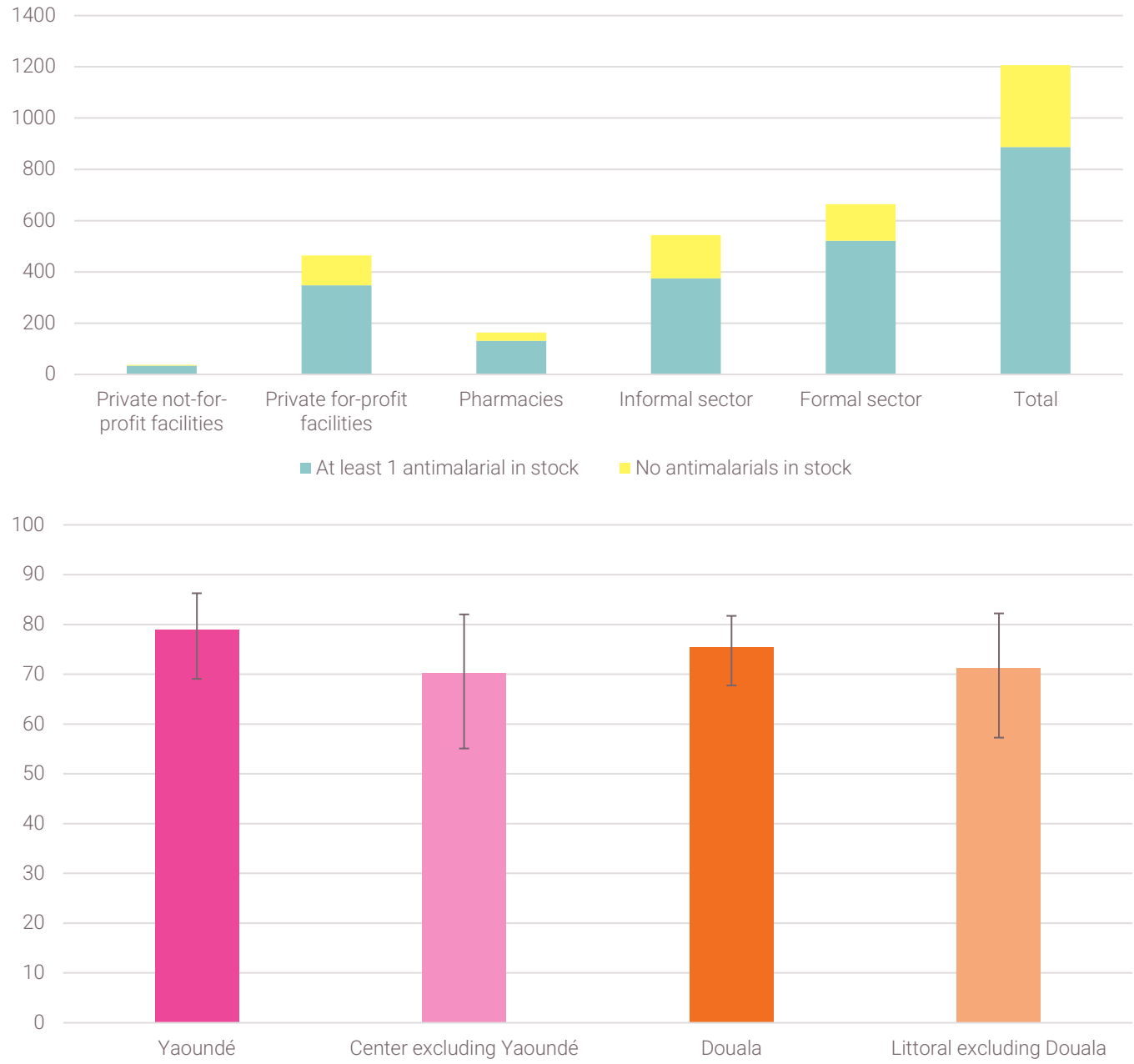
Figure 6 Number and proportion of private-sector outlets with at least one antimalarial in stock on the day of the survey, by outlet type and stratum

Among all audited outlets



In total, 74% of all outlets audited (N=1207) had at least one antimalarial in stock on the day of the study. The first figure, above, shows the proportion of each outlet type with at least one antimalarial in stock, scaled to the relative proportions of each outlet type in the study. The informal sector and for-profit private health facilities were the most frequent outlets. 69% of informal outlets and 75% of for-profit private clinics had at least one antimalarial in stock. Availability of antimalarials was highest in pharmacies (81%) and church health facilities (92%). We found a non-substantial difference in the availability of antimalarial drugs depending on the stratum studied, with between

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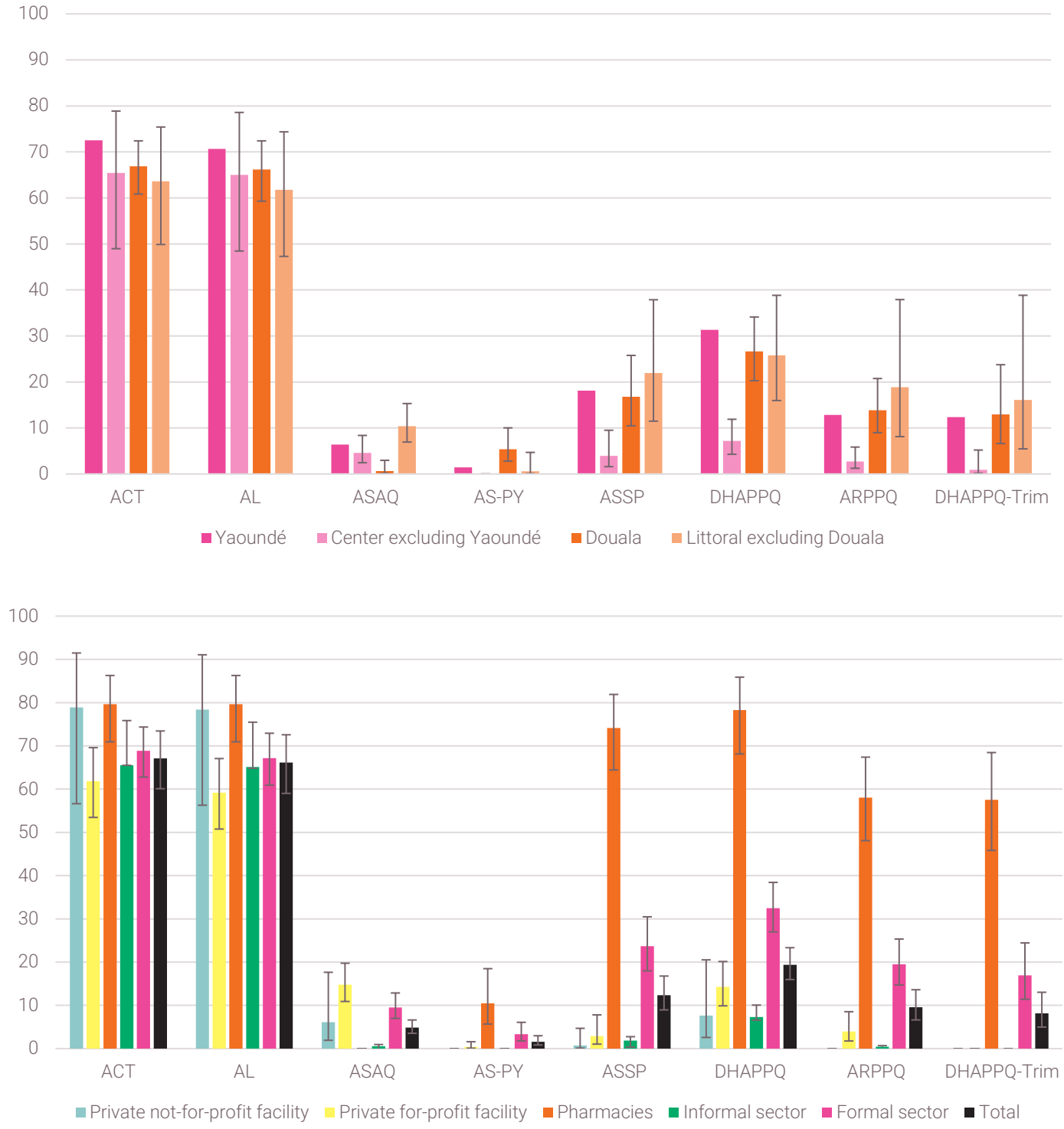
70% and 79% of all outlets surveyed having at least one antimalarial drug in stock (in the Center outside Yaoundé and in Yaoundé, respectively).

Figure 7 Availability of ACT products, by type of outlet and stratum

Among all audited outlets



ACTs were available in two-thirds of all outlets surveyed (67%), with the highest availability in Yaoundé (73%) and the lowest in Littoral excluding Douala (64%). Availability of ACTs was highest in pharmacies (80%) and lowest in private for-profit health facilities (59%). Artemether-lumefantrine (AL) was the most commonly available ACT in all outlet types. In general, there were few differences in the availability of the different types of ACT across strata. However, for all types of ATC,

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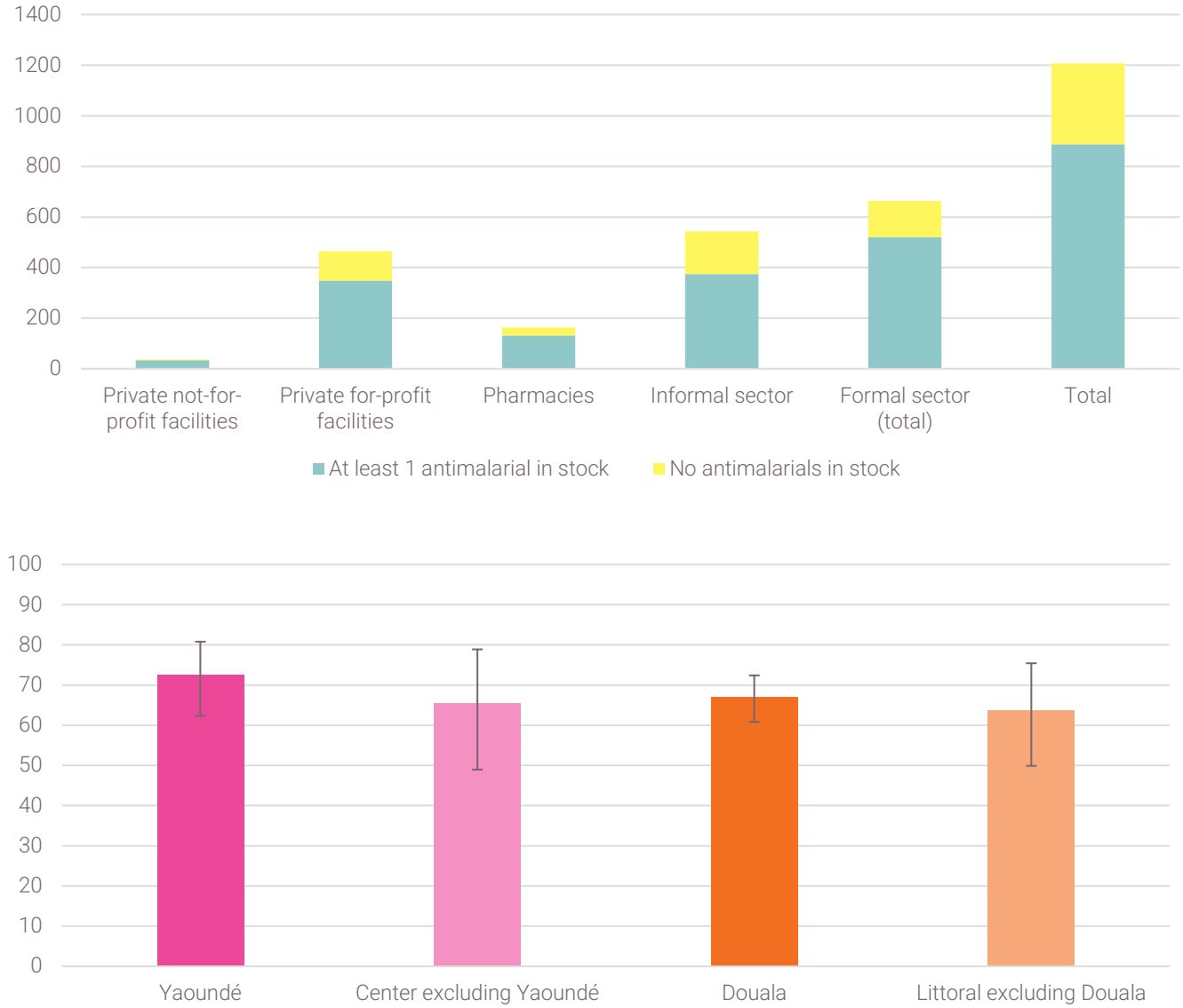
pharmacies tended to have the highest levels of availability, along with ASSP, DHAPPQ, ARPPQ and DHAPPQ-Trim.

Figure 8 Percentage of antimalarial outlets with ACTs in stock on the day of the survey, by outlet type and stratum

Among all audited outlets



Availability of at least one ACT among all outlets surveyed was highest in faith-based health facilities and pharmacies (79% and 80%, respectively) and lowest in private for-profit health facilities and the informal sector (62% and 66%, respectively). Few differences were observed between strata, where ACT availability ranged from 65% in Littoral outside Douala to 73% in Yaoundé.

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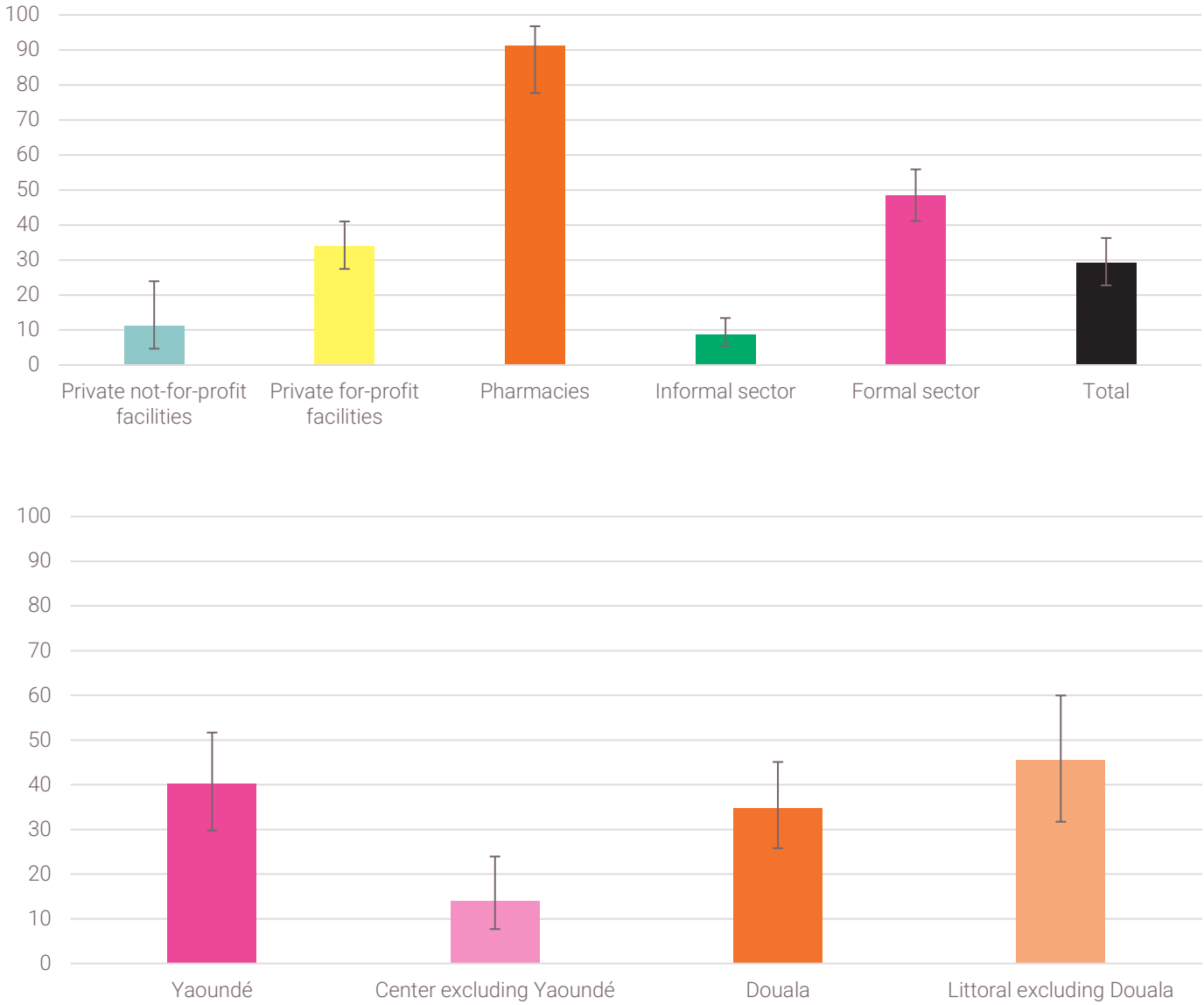
Figure 9 Percentage of antimalarial outlets with WHO-prequalified ACTs in stock on the day of the survey, by outlet type and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



91% of pharmacies had at least one WHO-prequalified ACT on the day of the survey, while 9% of outlets in the informal sector had a prequalified ACT. On the day of the survey, 49% of outlets in the formal sector as a whole (including private for-profit health facilities, faith-based health facilities and pharmacies) had at least one WHO-prequalified ACT. The Littoral stratum excluding Douala had the highest availability of WHO-prequalified ACTs (46%), while the Center region excluding Yaoundé had the lowest (14%).

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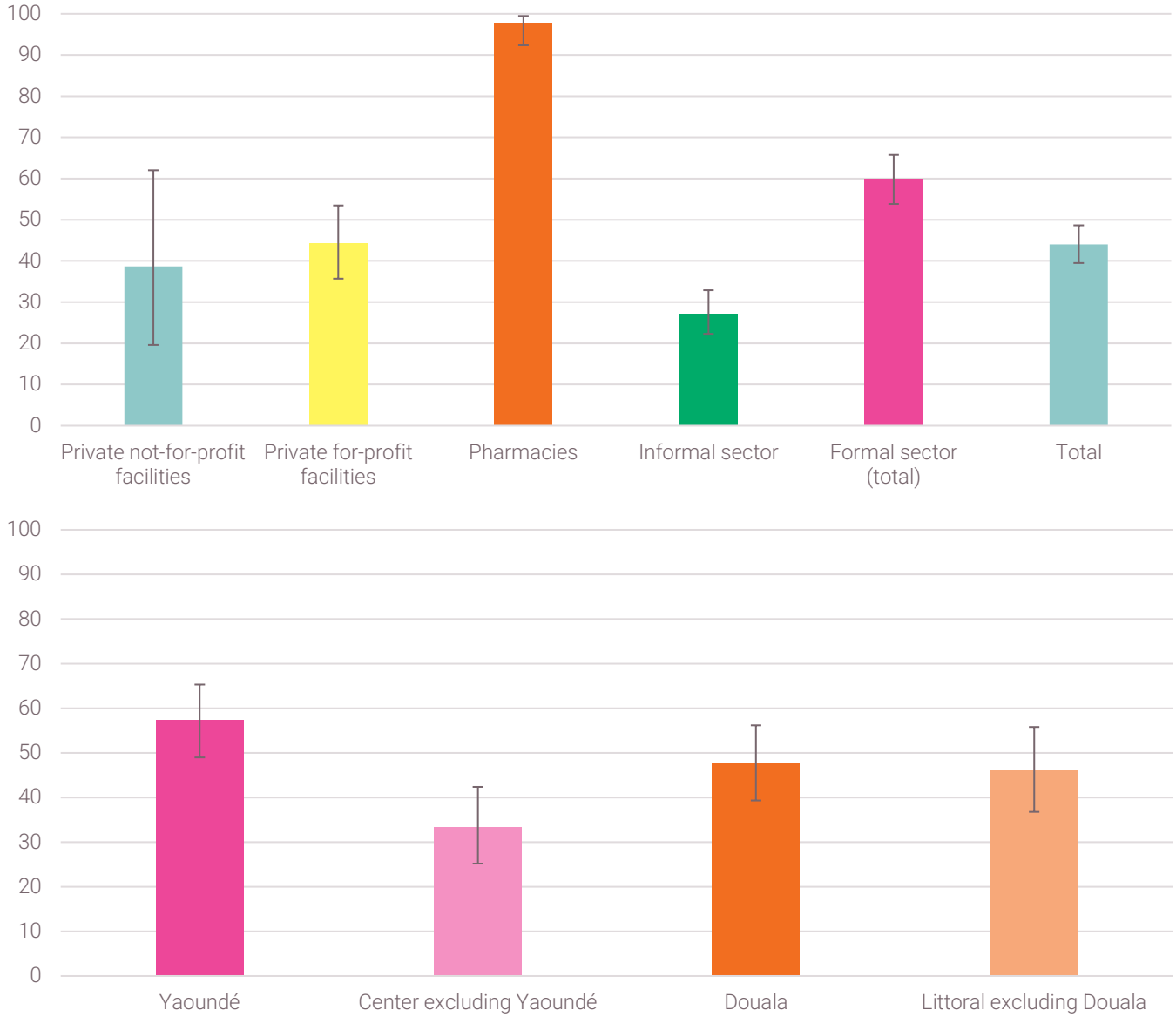
Figure 10 Percentage of antimalarial outlets stocking nationally approved ACTs on the day of the survey, by outlet type and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



Pharmacies were the type of outlet where the availability of nationally-registered ATCs (those on Cameroon's approval list) was highest (98%), while 44% and 39% of private for-profit and faith-based health facilities respectively had nationally-registered ATCs. 27% of outlets in the informal sector had nationally-registered ACTs in stock on the day of the survey. The Yaoundé stratum had the highest level of availability of nationally-registered ATCs (57% of all outlets), while the Center stratum outside Yaoundé had the lowest (33%).

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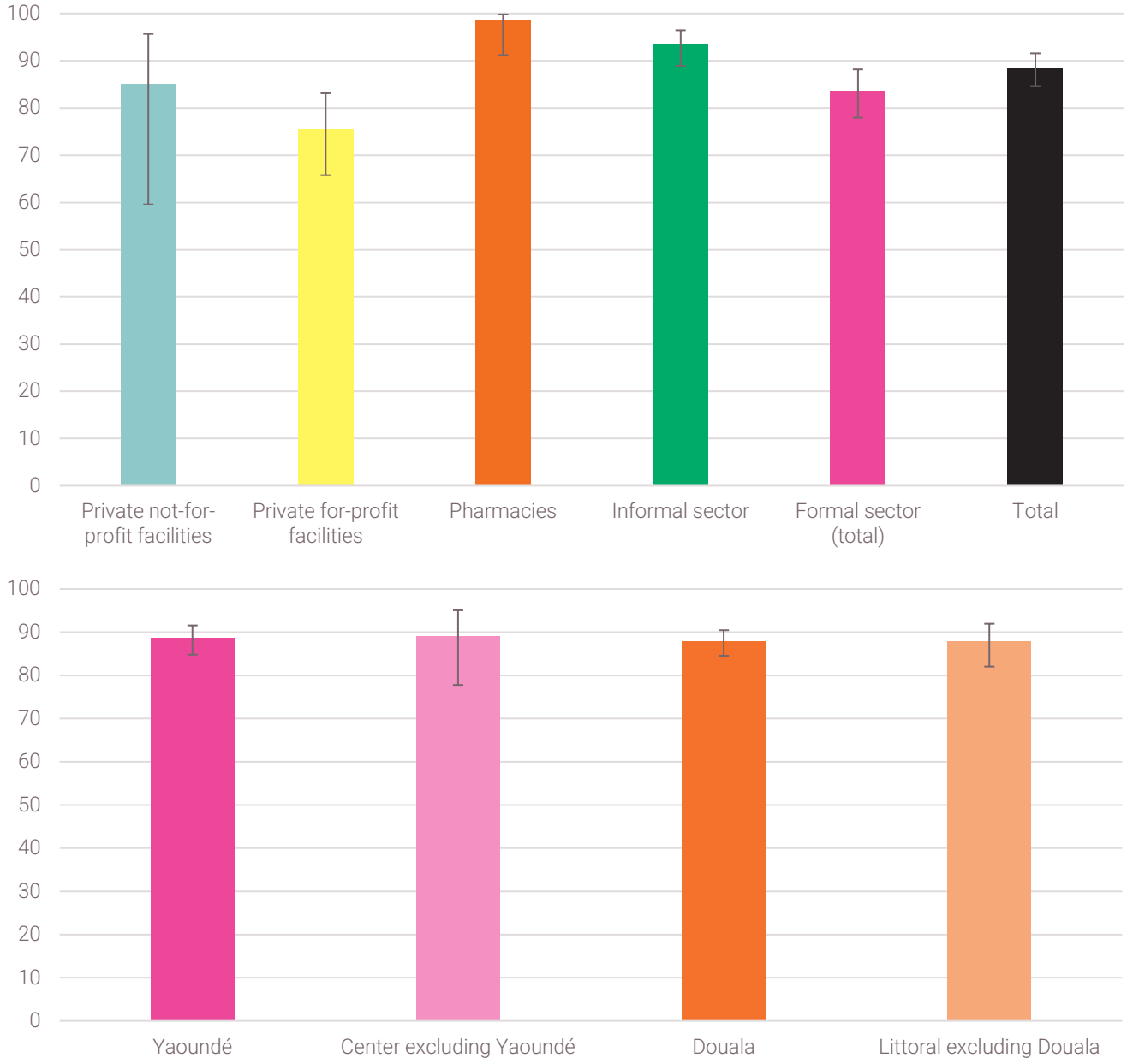
Figure 11 Percentage of antimalarial outlets with non-WHO-prequalified ACTs in stock on the day of the survey, by outlet type and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



Availability of non-WHO-prequalified ACTs was high across all outlet types and strata studied. 94% and 86% of outlets in the informal and formal sectors had at least one non-WHO-prequalified ATC on the day of the study. There was no significant difference in availability by geographic region. Overall, 86% of outlets had at least one non-WHO document.

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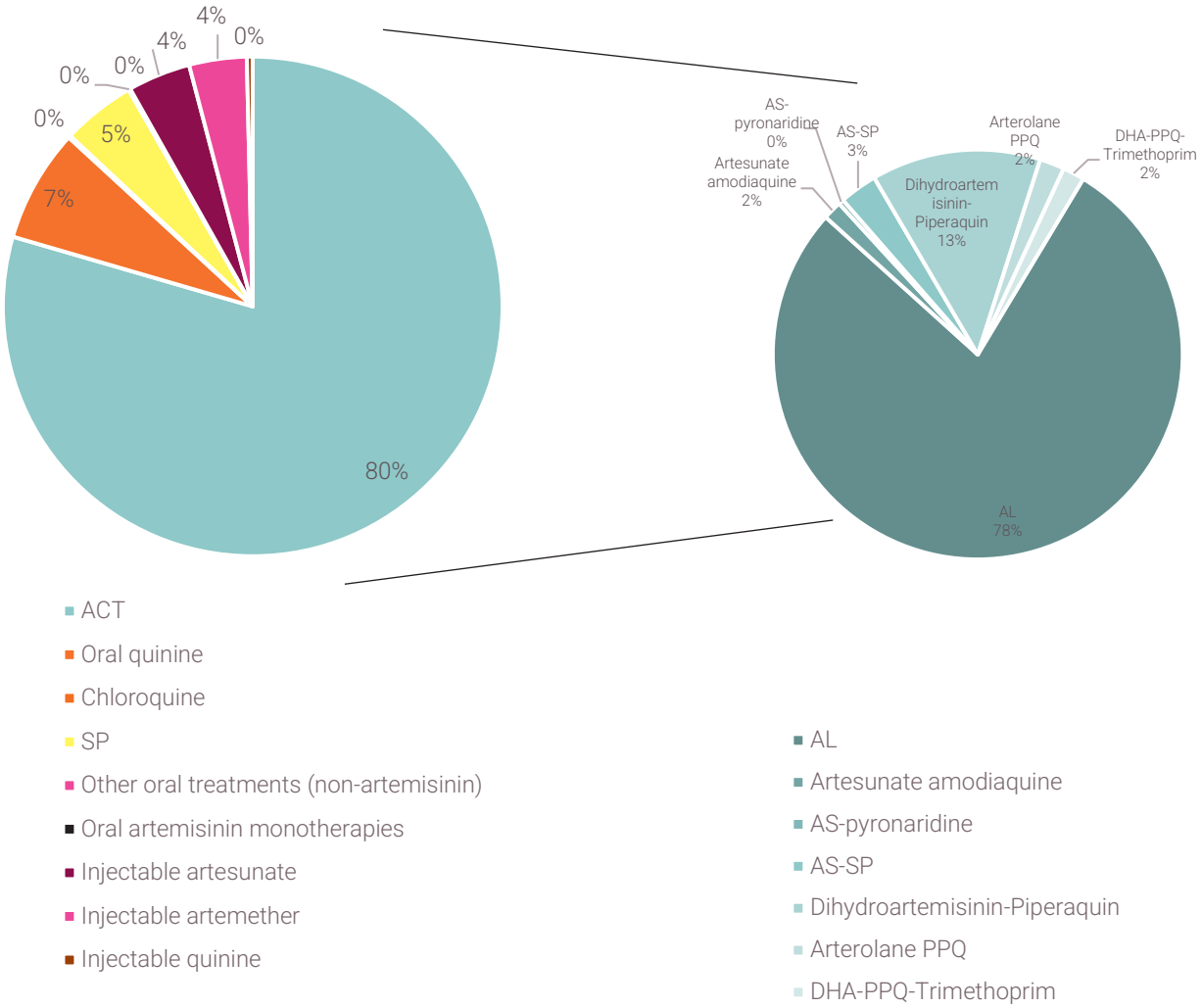
Figure 12 Types of antimalarial drugs audited in private sector outlets, 2024

Among all antimalarial drugs audited, in the private sector as a whole (N = 9269)



ACTs accounted for the majority (80%) of antimalarial products audited in the study, followed by oral quinine (7%) and injectable artemether and artesunate (4% each). AL was the most frequently audited ACT, accounting for 78% of all ACTs. DHAPPQ accounted for 13% of all ACTs found, followed by ASSP (3%).

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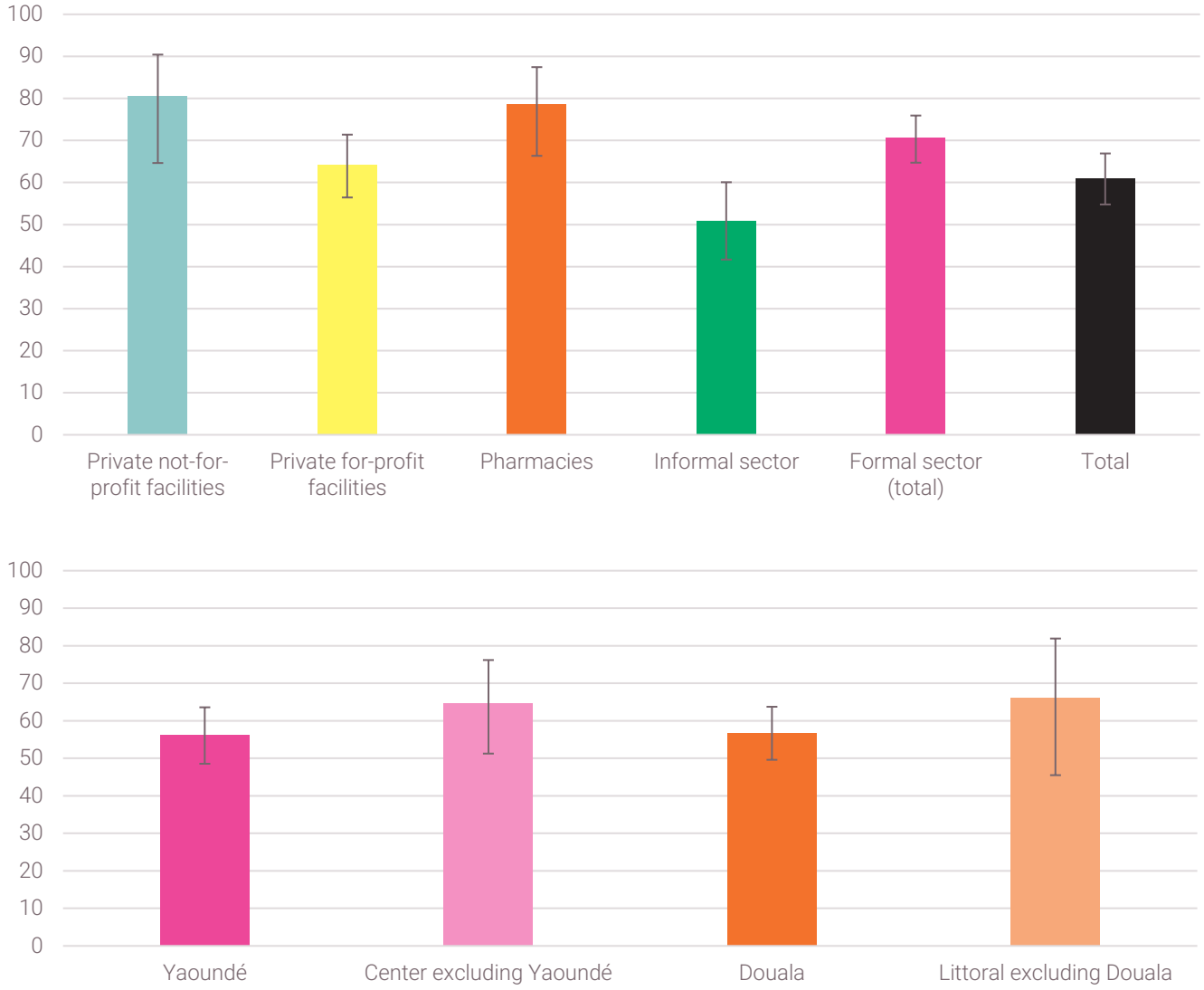
Figure 13 Percentage of antimalarial outlets with non-artemisinin antimalarials in stock on the day of the survey, by type of outlet and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



Non-artemisinin-based antimalarials were found in the majority of outlets, 81%, 64% and 79% of church health facilities, private for-profit health facilities and pharmacies respectively, on the day of the survey. Artemisinin-free treatments were less commonly available in the informal sector, where 51% of outlets had them in stock on the day of the survey. Availability of non-artemisinin antimalarial treatments varied according to the stratum studied, with the highest availability in the Littoral region outside Douala (66%), and the lowest in Yaoundé (56%).

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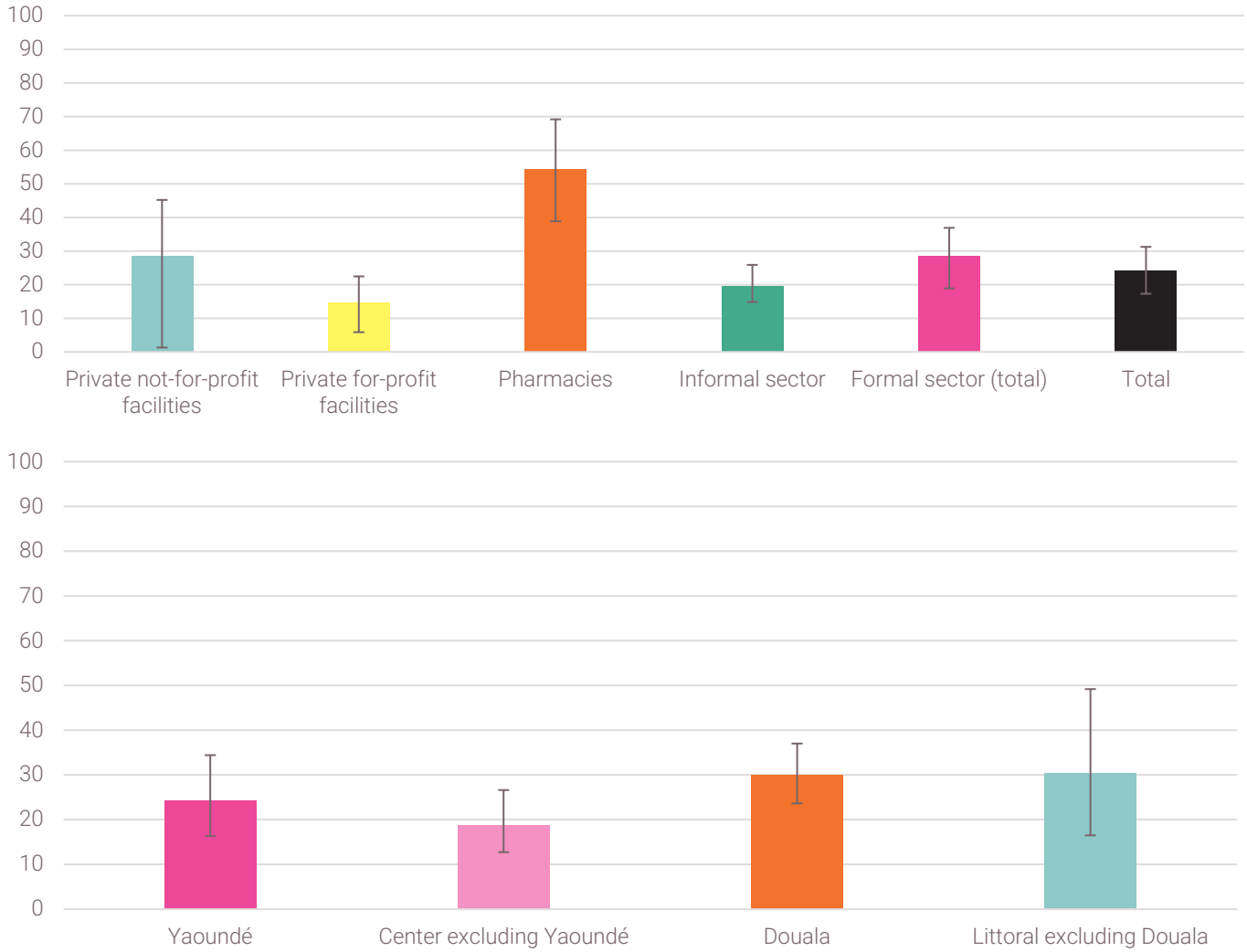
Figure 14 Percentage of antimalarial outlets with SP in stock on the day of the survey, by type of outlet and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



Sulfadoxine pyrimethamine (SP) is not recommended for the treatment of malaria due to high levels of parasite resistance. It is, however, recommended for the perennial chemoprevention of malaria (CPP). MS was found in the majority (54%) of pharmacies, but less frequently in the other types of outlets included in the study. 20% of informal outlets had SP in stock. 28% and 15% of faith-based and for-profit private health facilities respectively had SP in stock. SP availability was relatively low across regions, ranging from 19% to 30% of outlets with SP available in the Center excluding Yaoundé and Littoral excluding Douala strata, respectively.

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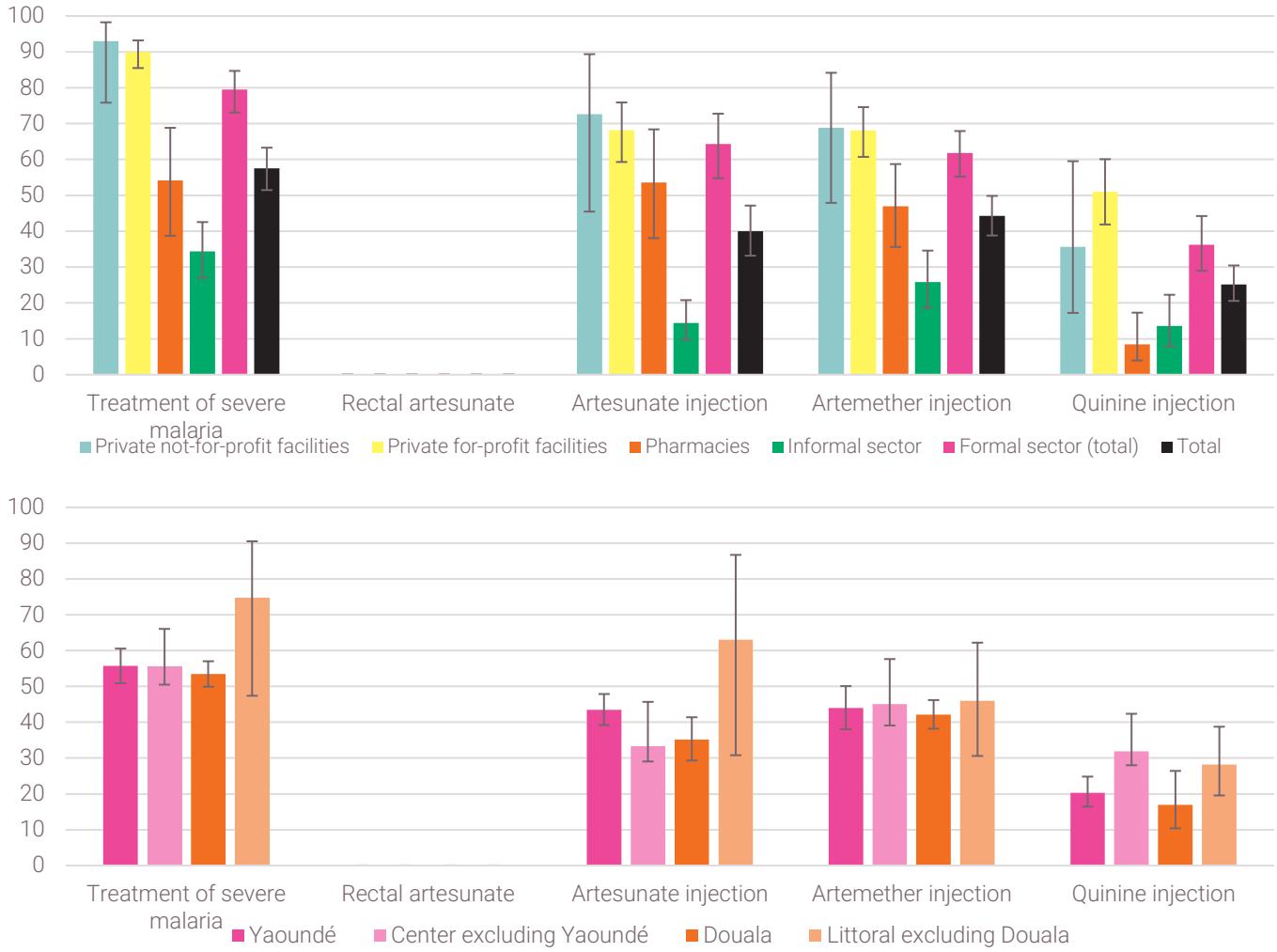
Figure 15 Percentage of antimalarial outlets with treatments for severe malaria in stock on the day of the survey, by type of outlet and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



Private not-for-profit facilities and private for-profit health facilities had the highest levels of availability of all outlets with severe malaria treatment (93% and 90%, respectively), while 54% of pharmacies and 34% of informal outlets had severe malaria treatment in stock on the day of the survey.

Rectal artesunate (artesunate suppositories) is part of the WHO-recommended pre-referral treatment for severe malaria in infants. None were found in the Cameroon study. Injectable artesunate and artemether were found in the majority of outlets in the formal sector. Injectable artesunate was found in 72%, 68% and 54% of church health facilities, private for-profit health facilities and pharmacies, while 14% of informal outlets stocked a treatment for severe malaria. Injectable artemether was found in 69%, 68% and 47% of church health facilities, private for-profit health facilities and pharmacies respectively.

Injectable quinine can be used to treat severe malaria in cases where injectable artemisinins are not available or not indicated. It was found in 36%, 51%, 8% and 14% of faith-based health facilities, private for-profit health facilities, pharmacies and informal outlets, respectively.

The Littoral stratum outside Douala had the highest availability of all severe malaria treatments (75%), mainly due to the high levels of availability of injectable artesunate in this area. There was little difference between the other three regions, where severe malaria treatment was found in between 54% and 56% of outlets.

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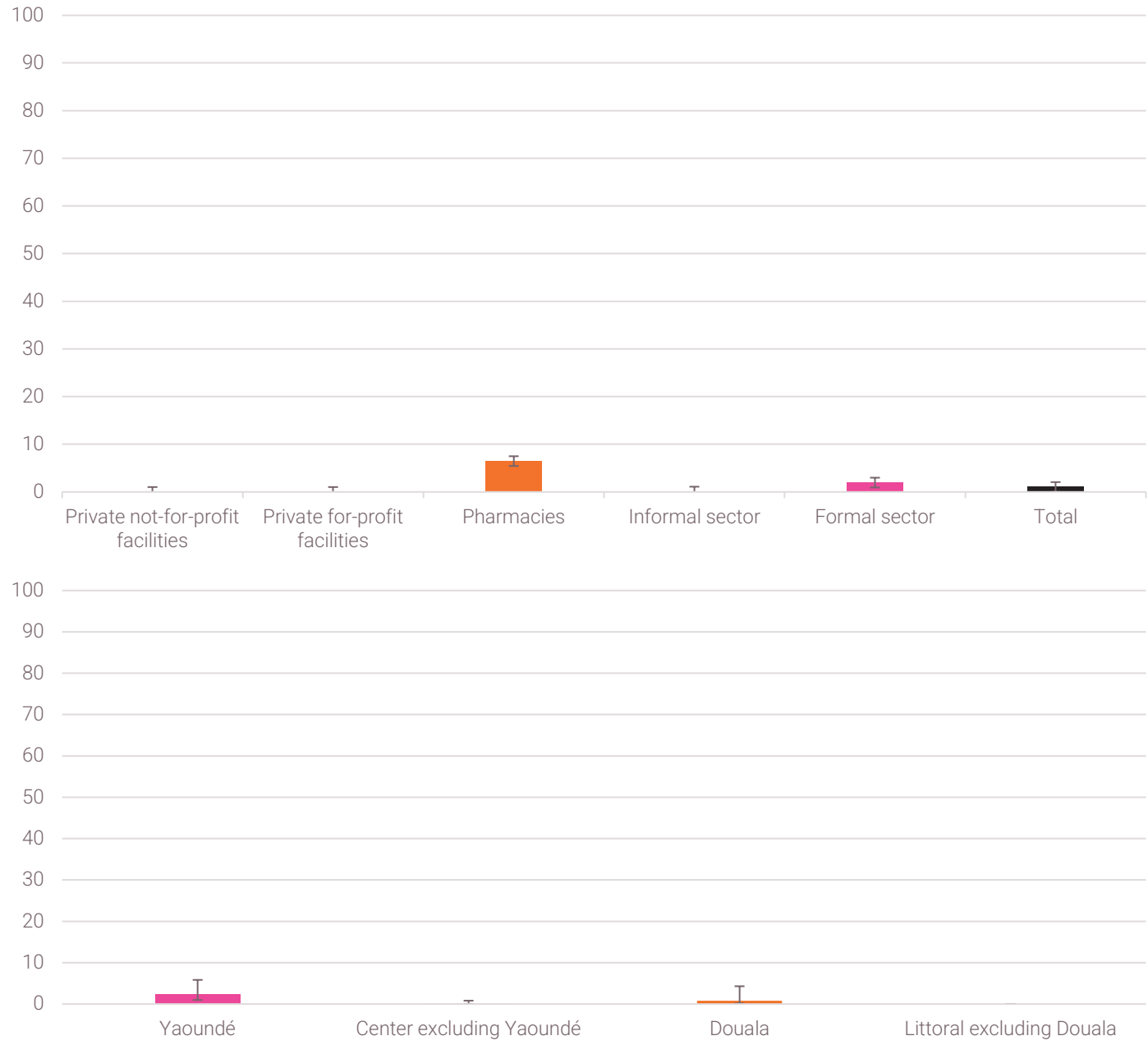
Figure 16 Percentage of antimalarial outlets with oral artemisinin monotherapy, by outlet type and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey



The use of oral artemisinin as monotherapy is not indicated, due to the high risk of treatment resistance. Overall, levels of availability of this product were very low. 6% of pharmacies and less than 1% of informal outlets had this product in stock on the day of the study. In the private sector as a whole, 1% of outlets had oral artemisinin monotherapy in stock. This product was available in 3% of outlets in Yaoundé, 1% in Douala and 0% or almost zero in the other two strata.

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Figure 17 Market share of antimalarial drugs

Relative market volume (sales/distribution) of antimalarial AETDs, by type of antimalarial and by sector

In the private sector as a whole, ACTs accounted for 79.5% of market share, with 62% of the volume of product sales reported in the previous week, while DHAPPQ accounted for around 11% of the private anti-malarial market by volume. ASSP and ARPPQ both accounted for around 2% of the anti-malarial market. SP accounted for around 5% of total sales, and artesunate and injectable artemether together represented around 8% of the total market. Oral quinine (included here in the "other" category) accounted for around 8% of total antimalarial sales volume.

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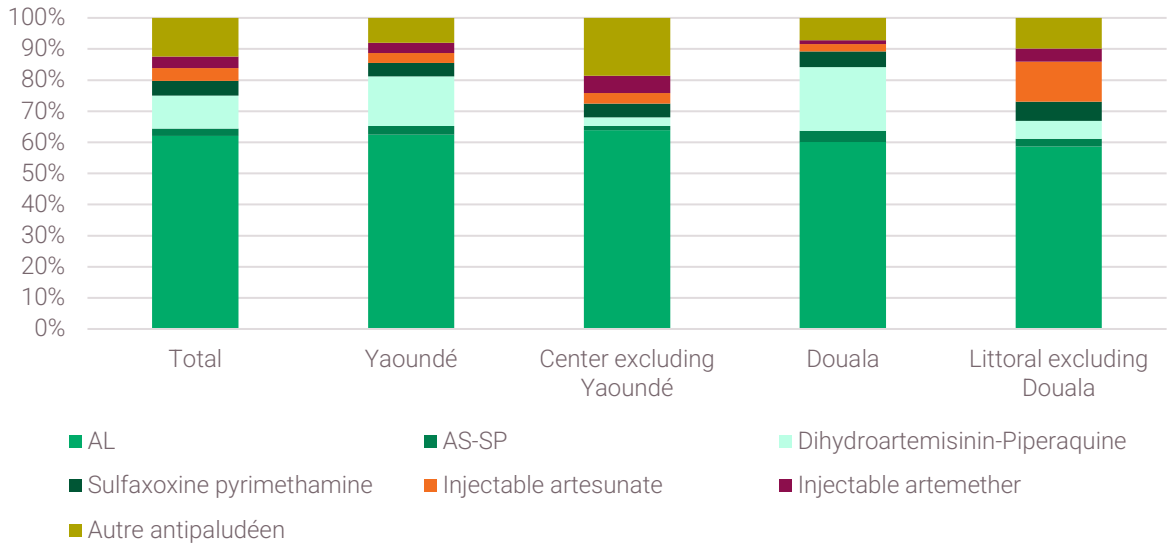
Pharmacies held the largest market share of all outlet types (35% of the total), followed by general retailers (29%) and private for-profit health facilities (28%). Private not-for-profit facilities accounted for around 6% of anti-malarial volumes, while itinerant suppliers represented around 2% of total volume. The types of antimalarial drugs passing through the private sector varied according to the type of outlet. 94% of all sales volumes in pharmacies were ACTs (55% LAs, 26% DHAPPQs and 6% ASSPs), with small sales volumes of severe malaria treatment (1%), while private and faith-based health facilities had 15% and 20% of sales volumes of severe malaria treatment (mainly injectable artesunate). In addition, SP accounted for 18% of the volume of antimalarial services provided by private faith-based health facilities. The informal sector, here disaggregated into general retailers and itinerant vendors, mainly supplied ACTs (83% and 90% of their respective sales volumes).

Relative market share by stratum suggests that the Center region outside Yaoundé has the largest market for antimalarials. In particular, oral quinine accounted for 16% of total volumes in this region, but is generally absent elsewhere.

Figure 18 Market share of antimalarial drugs, 2024

Relative market volume (sales/distribution) of antimalarial AETDs, by antimalarial class and type of outlet



Within each study stratum, ACTs accounted for the majority of sales volumes reported the previous week, ranging from 9% in Douala to 70% in the Center excluding Yaoundé. While AL is the ACT with the largest market share (over 59% in all regions), 21% and 16% of all antimalarials distributed in Douala and Yaoundé respectively were DHAPPQs, and 4% of antimalarial volumes in Douala were ASSPs. Injectable artemisinins (artemether/artesunate) are indicated for the treatment of severe malaria. Together, they represent 8% of the total market, but 17% of antimalarial volumes in the Littoral region outside Douala.

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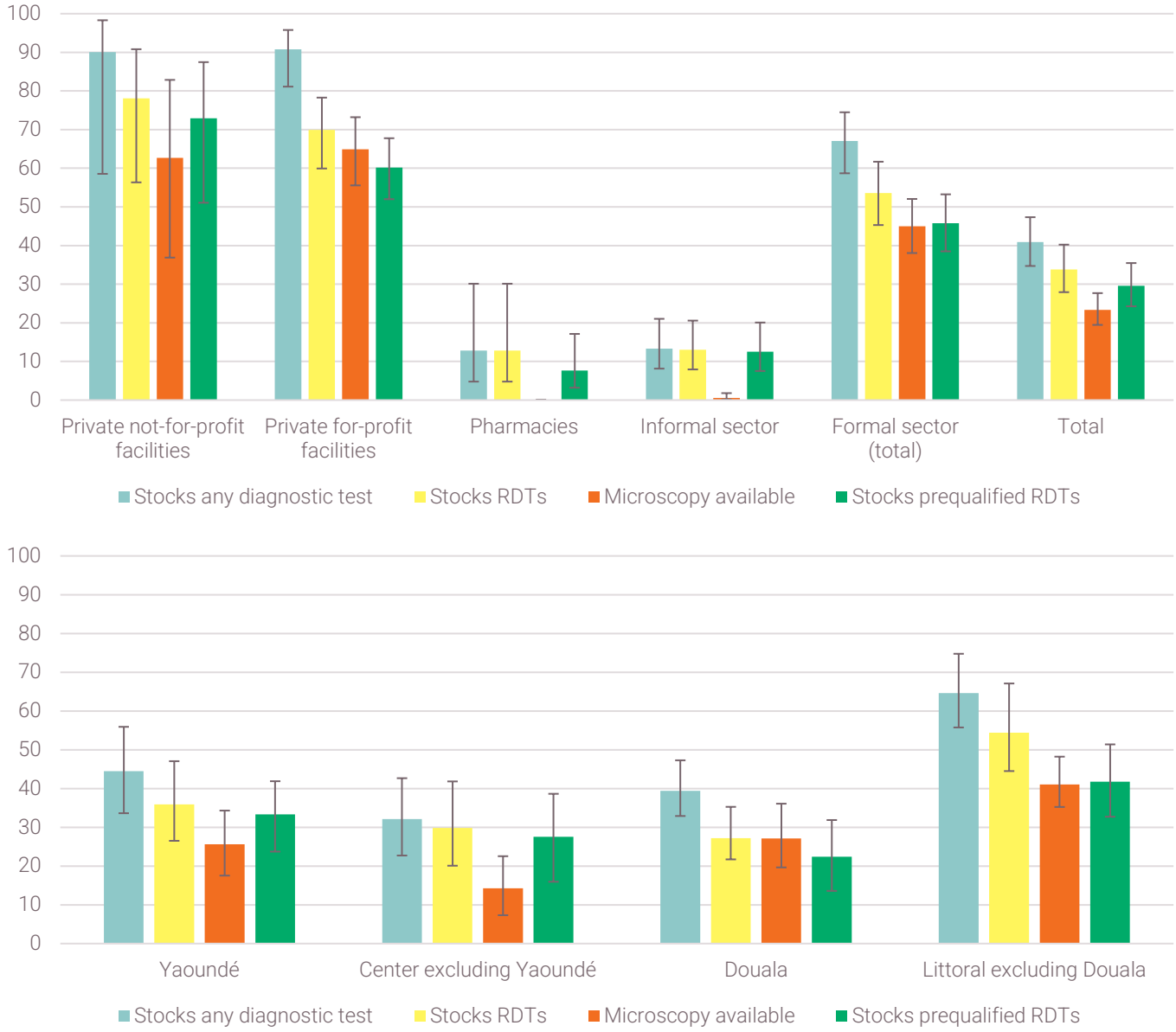
Figure 19 Percentage of outlets stocking antimalarials and offering malaria blood tests, by outlet type and stratum

Among all outlets with at least one antimalarial in stock on the day of the survey or in the last three months



Among all private-sector antimalarial outlets, 41% had at least one malaria diagnostic test (RDT or microscopy) on the day of the survey. Private for-profit and faith-based health facilities had the highest levels, with 91% and 90% respectively having a diagnostic test. 13% of pharmacies and informal outlets had diagnostic tests available on the day of the survey. In all types of outlets, RDTs were more commonly available than microscopy. The Littoral stratum, excluding Douala, had a higher availability of diagnostic tests than the other study areas (65% of outlets with diagnostics in this zone, compared with 45%, 32% and 39% in Yaoundé, Center excluding Yaoundé and Douala, respectively).

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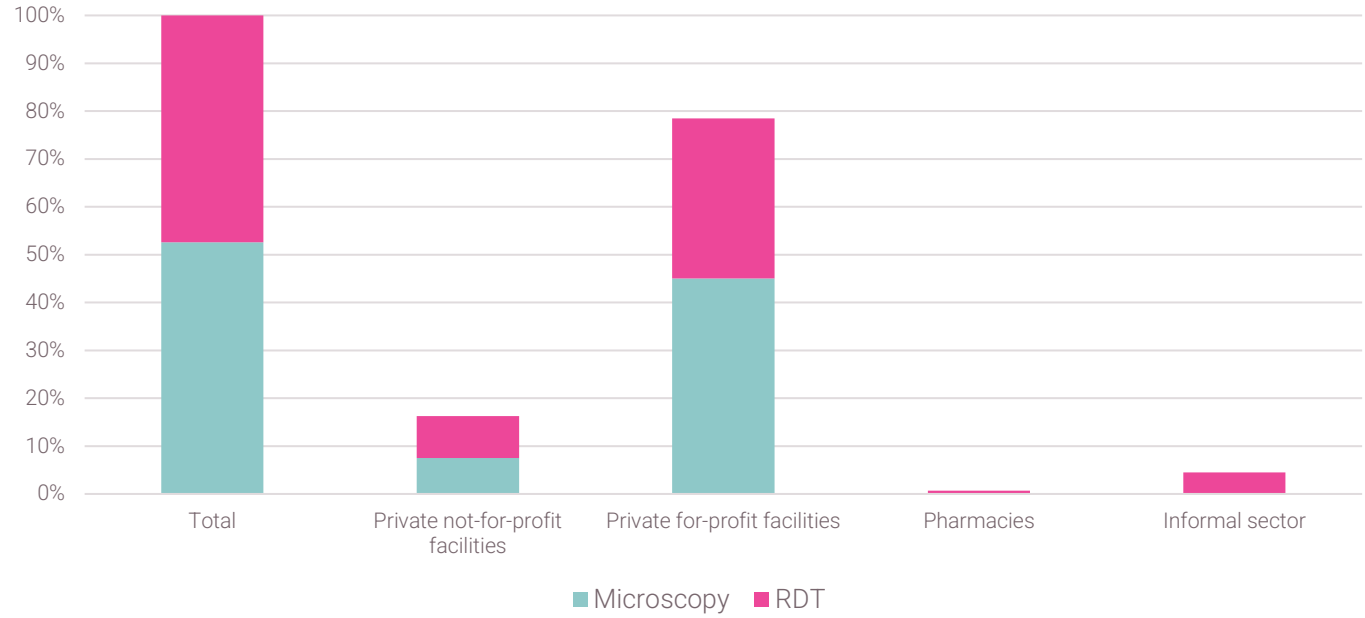
Figure 20 Market share of blood tests for malaria, 2024

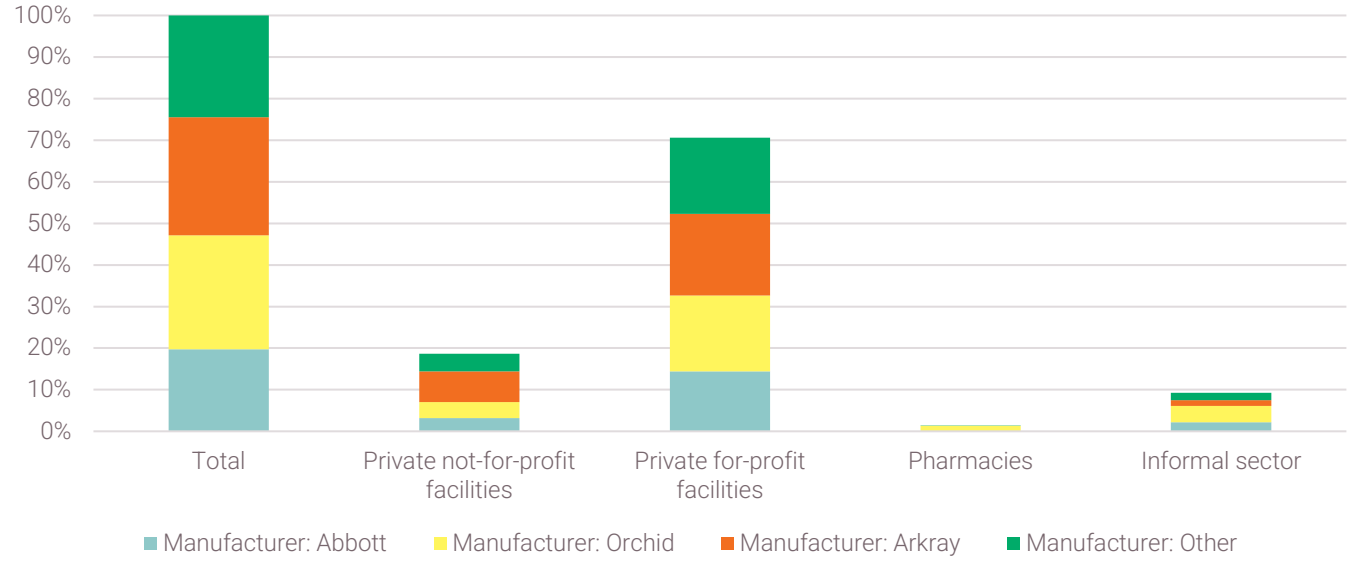
Relative market volume (sales/distribution) of blood tests for malaria by RDT and microscopy, by type of test and by type of point of sale



Overall, the diagnostic market share was split fairly evenly between microscopy (53%) and RDTs (47%). Private, for-profit health facilities held the largest market share for diagnostic tests, accounting for 79% of the total private sector market, followed by faith-based health facilities (16%). Less than 1% of diagnostic test volumes passed through pharmacies.

Figure 21 Market share for RDTs, by manufacturer

Among all outlets offering diagnostic tests



The three most frequently audited RDT manufacturers were Abbott, Orchid and Arkray, with an overall market share of 20%, 27% and 28% respectively.

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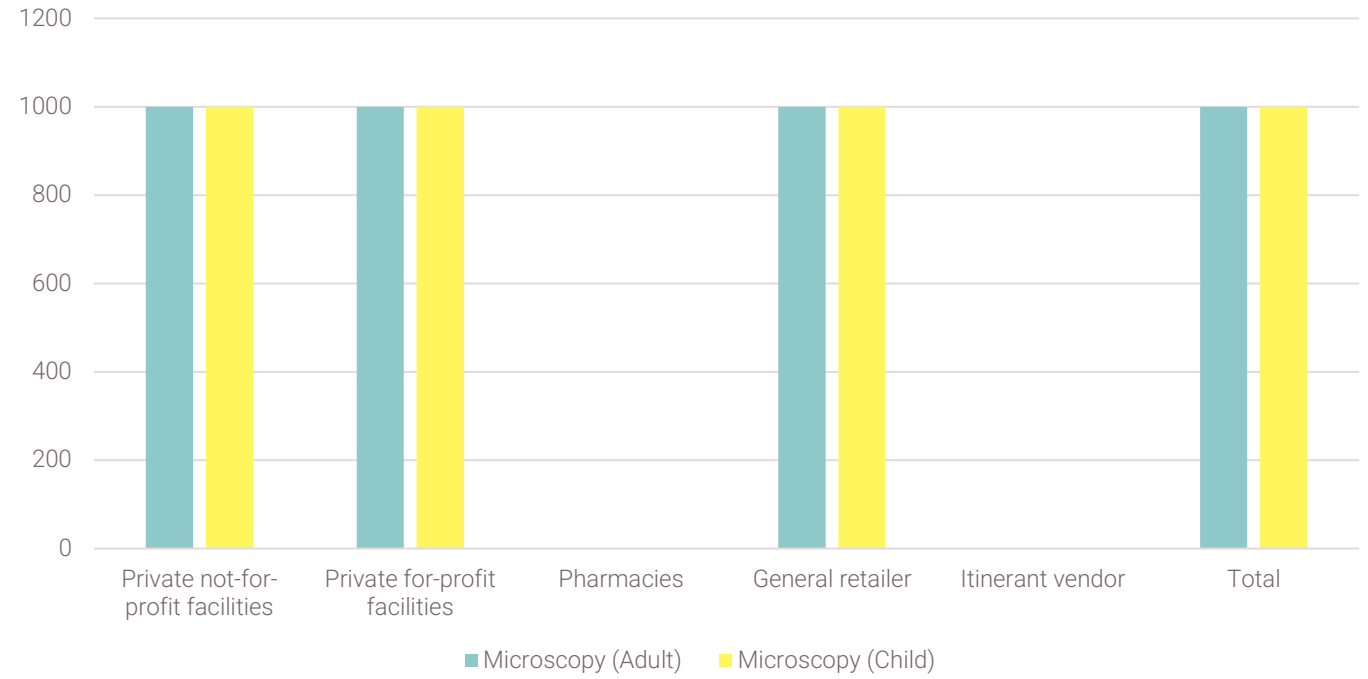
Figure 22 Declared price of malaria microscopy, by type of outlet

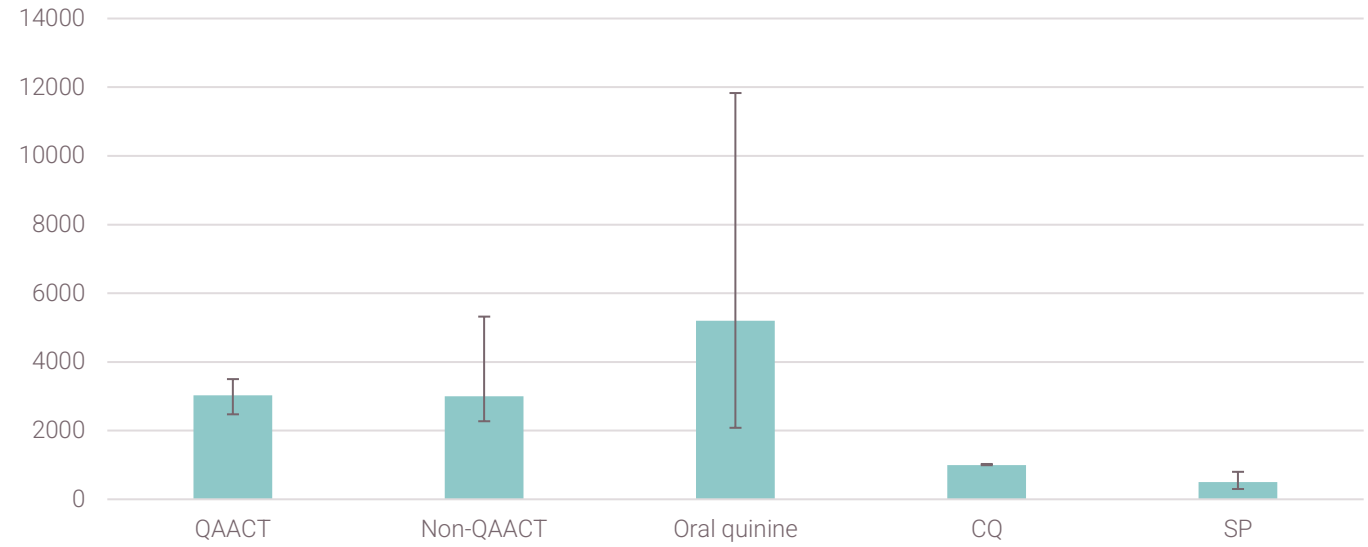
Among all outlets performing microscopy



The median cost of malaria microscopy for an adult or child showed little variability and was the same in all outlet types reporting these data, at 1000 FCFA [interquartile range: 1000; 1000].

Figure 23 Median price for equivalent doses of adult antimalarial treatment (AETD) in the private sector

Among all tablet formulations of ACT without quality assurance (non-prequalified ACT), ACT with quality assurance (prequalified ACT), sulfadoxine-pyrimethamine (SP), oral quinine and chloroquine available in the private sector, in CFA francs



Median prices per AETD (adult equivalent treatment dose) for WHO-prequalified ACTs and non-WHO-prequalified ACTs across the private sector were very similar (3300 FCFA and 3000 FCFA, respectively). Median prices for non-ACTs varied according to product type, ranging from 5204 FCFA per AETD of oral quinine to 998 FCFA for chloroquine and 500 FCFA for SP.

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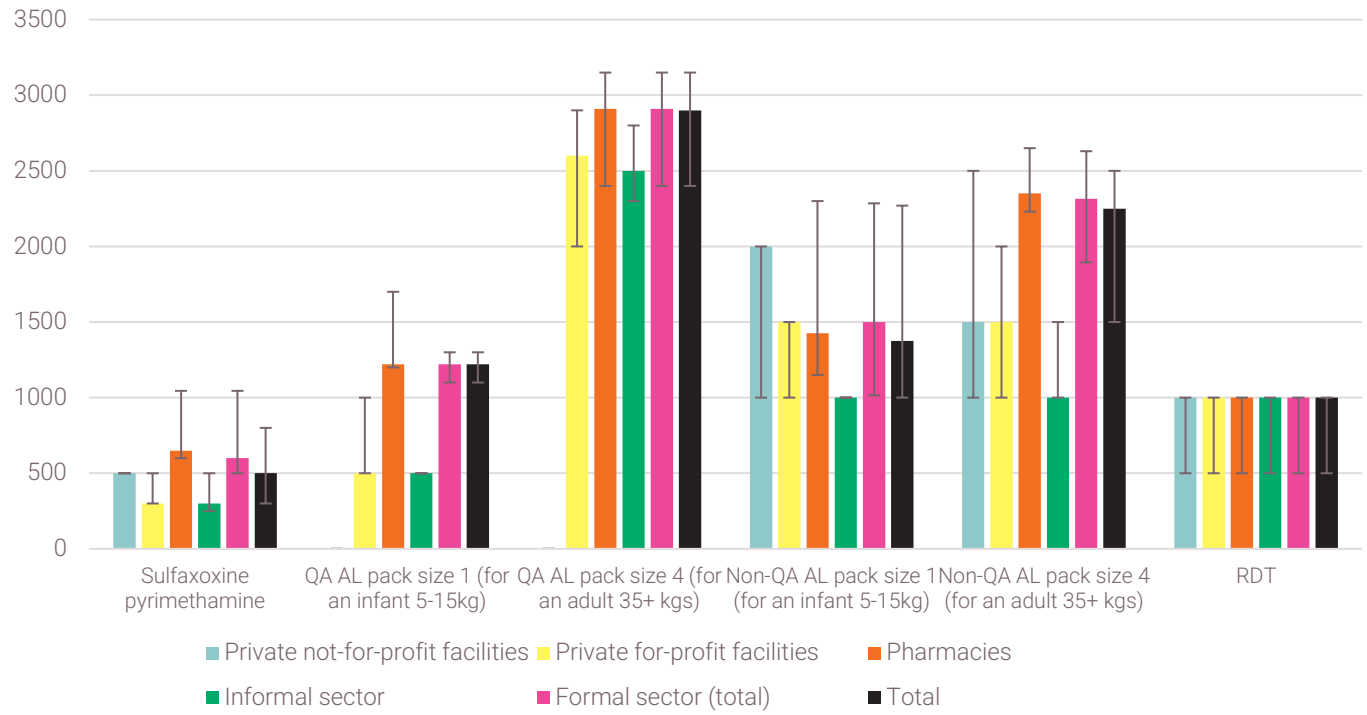
Figure 24 Median private-sector price of prequalified adult equivalent treatment dose (AETD) ACTs and prequalified pediatric pre-packaged ACTs (PP ped AL prequal), 2024

Among all tablet formulations of SP, prequalified ACT (for an adult) and PP ped QA AL (treatment for a child from 5 to 15 kg), available in the private sector, by type of point of sale, in CFA francs



The median price of antimalarial treatments varied to some extent according to the type of outlet. The price of a packet of WHO-prequalified AL to treat an infant weighing between 5 and 15 kg ranged from 500 FCFA in pharmacies and the informal sector to 1220 FCFA in for-profit private health facilities, for example. Non-WHO prequalified pediatric ACTs had a higher median price than WHO prequalified equivalents, but were cheaper for adults. The median price of a SP AETD remained lower than that of pre-packaged ACTs in all outlet types. Median prices for RDTs were consistent across all types of private-sector outlets (1000 FCFA) and were significantly cheaper than WHO-prequalified ACTs for adults (2900 FCFA).

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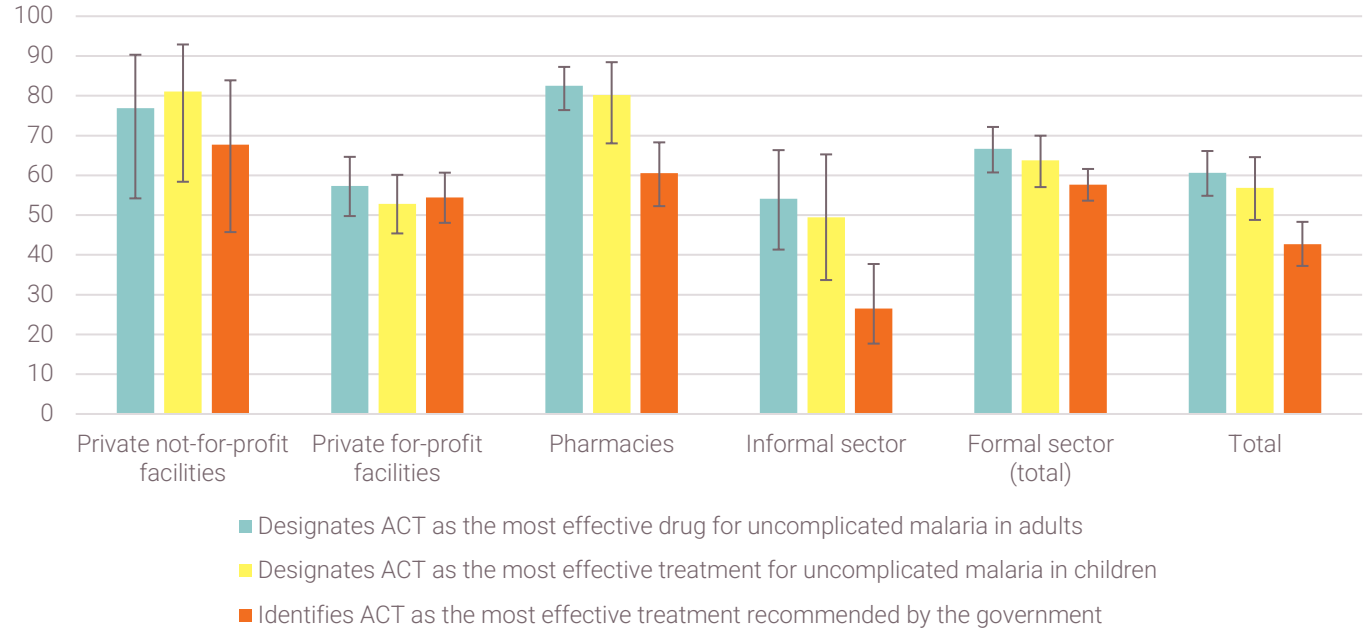
Figure 25 ACT recommendations by service provider, by type of outlet

Among all providers who completed the interview and answered this question (N=992)



Providers participating in the study were asked about their knowledge of malaria treatment. More than half of private-sector providers said they would recommend ACTs to treat uncomplicated malaria, for both adults (61%) and children (57%). The proportion was highest in pharmacies (83% and 80% for adults and children) and lowest in the informal sector (54% and 49%). Around half of care providers in private, for-profit health facilities said they would recommend the use of ACTs for uncomplicated malaria in adults (57%) and children (53%), while 54% of providers in these facilities rated ACTs as the most effective treatment recommended by the government.

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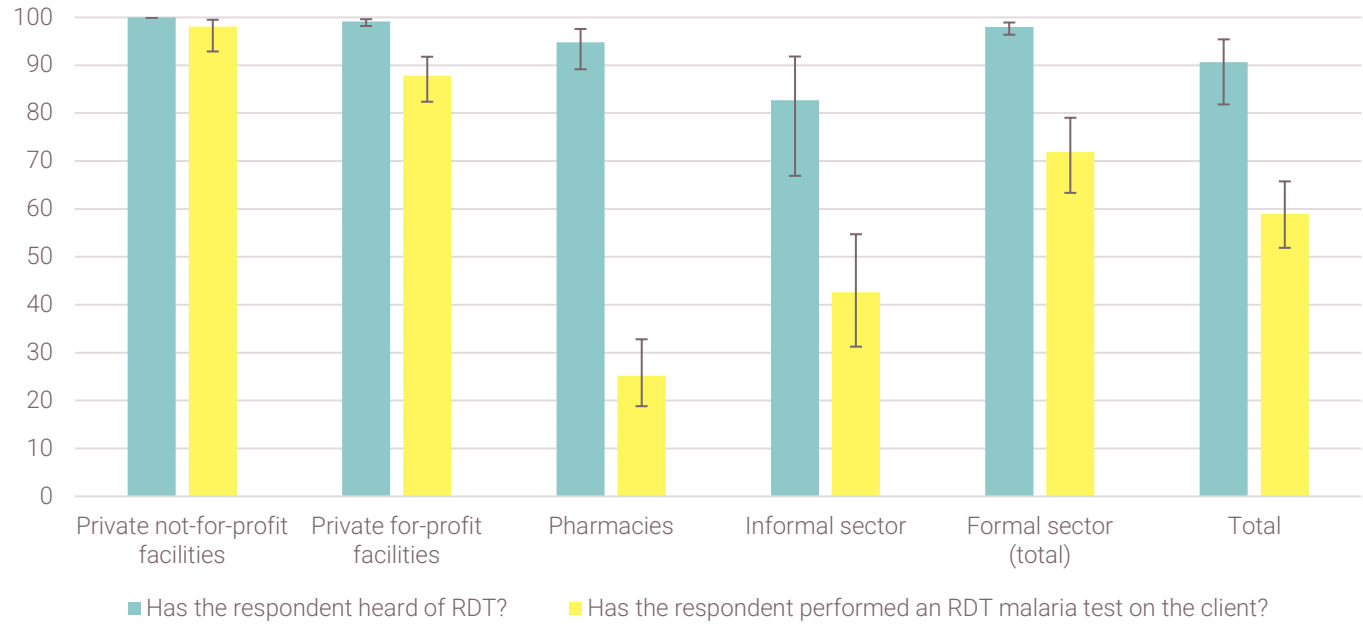
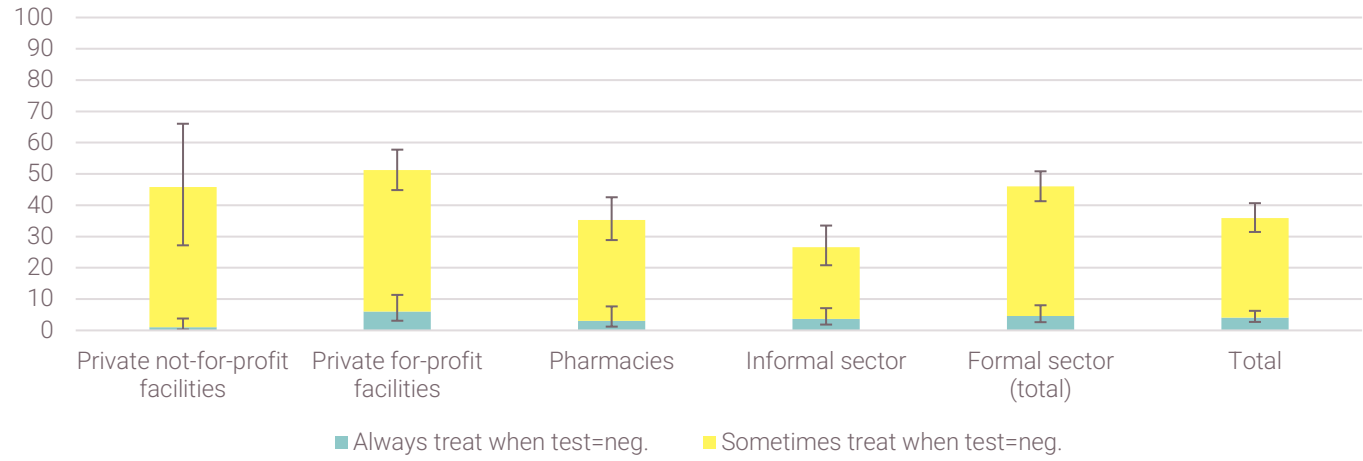
Figure 26 Knowledge of RDTs among providers, by type of outlet

Among all providers who completed the interview and answered this question (N=992)



RDTs were known, with 91% of all providers reporting that they had heard of an RDT (ranging from 100% of faith-based providers to 83% of informal sector providers). However, only 59% of providers had ever used an RDT with a client, ranging from 98% for faith-based providers to 25% for pharmacy providers.

Figure 27 Provider would recommend an antimalarial to a customer with a negative malaria blood test, by type of outlet



Across all private-sector outlets, around a third of providers said they would sometimes (31%) or always (4%) provide malaria treatment in the event of a negative test result. This proportion was higher in private for-profit health facilities (45%; 6%) than in other types of outlets.

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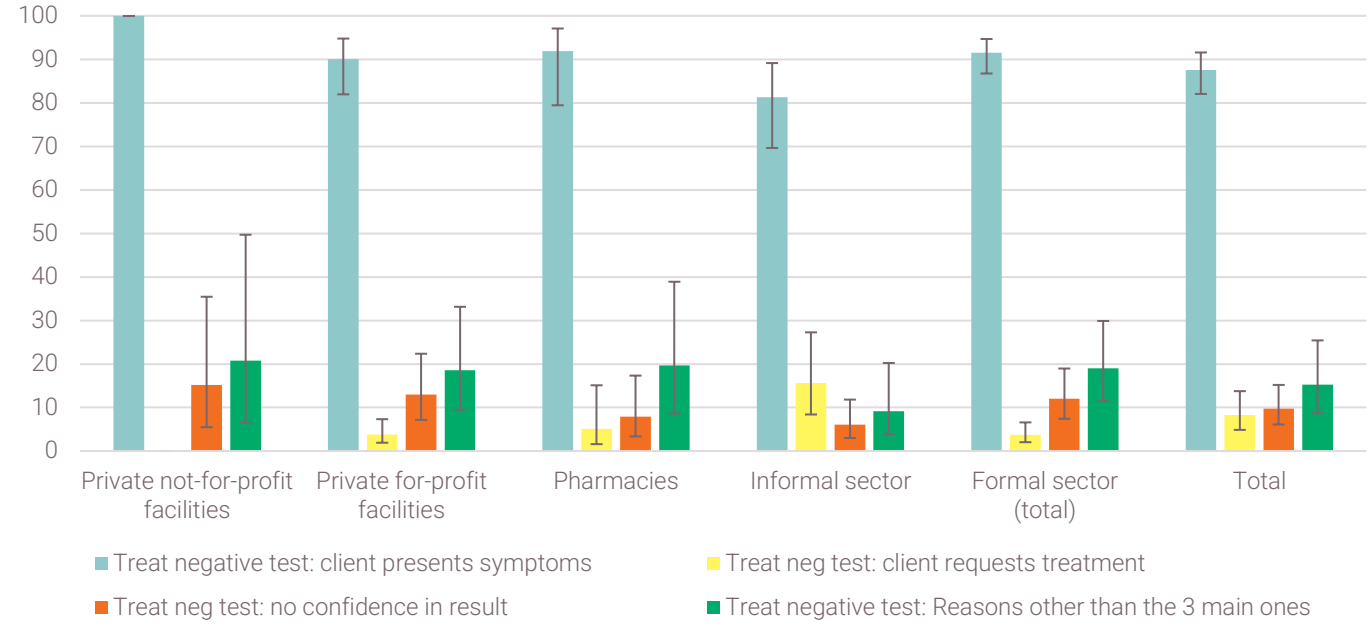
Figure 28 Circumstances evoked for antimalarial treatment of a customer with a negative test, by type of outlet

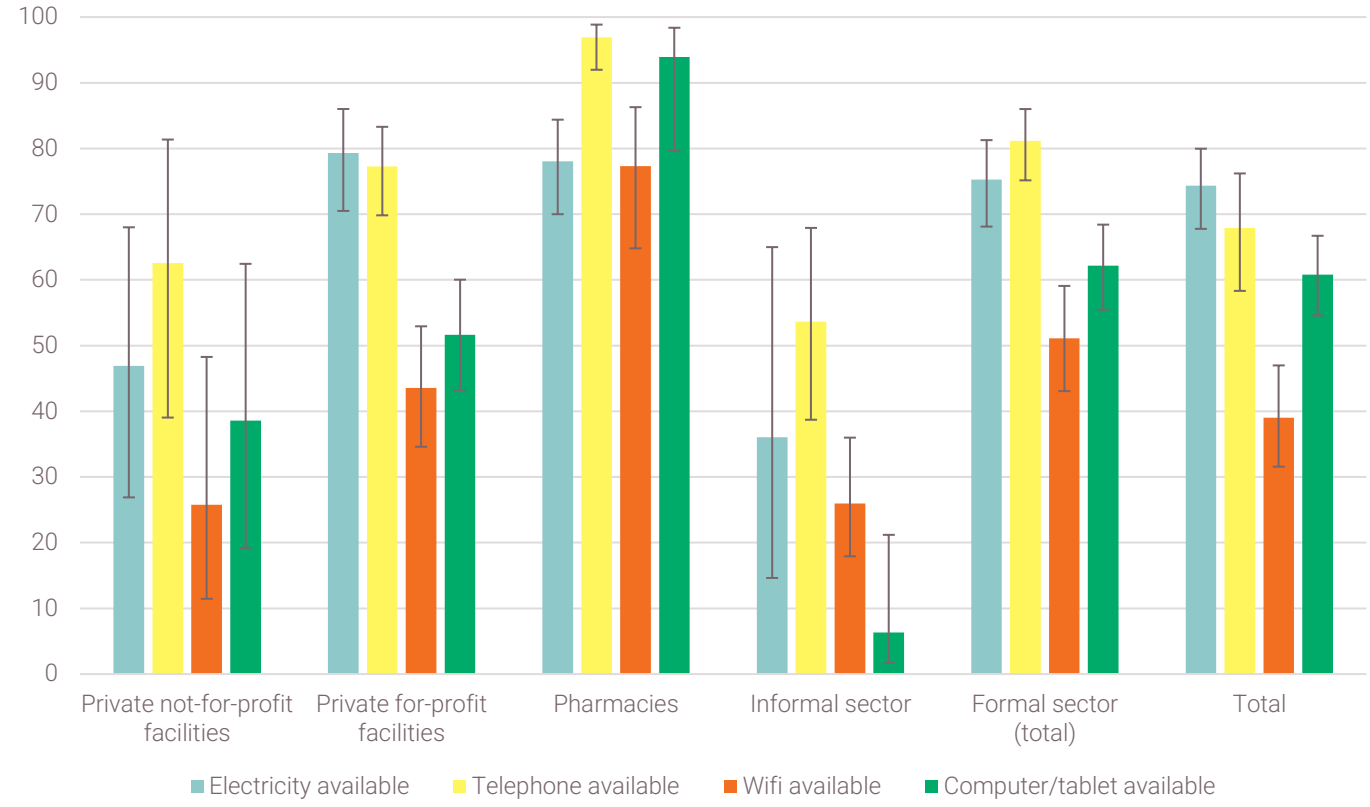
Among providers who responded that they would sometimes or always treat a negative test (N=487)



Among providers who said they would sometimes or always treat malaria in the event of a negative test result, the most frequently cited reason was the case of the client showing malaria symptoms (cited by 88% of providers). Other reasons included clients requiring treatment and providers not trusting the test result.

Figure 29 Proportion of outlets with access to operational technology, by outlet type

Among all providers who completed the interview and answered this question (N=989)



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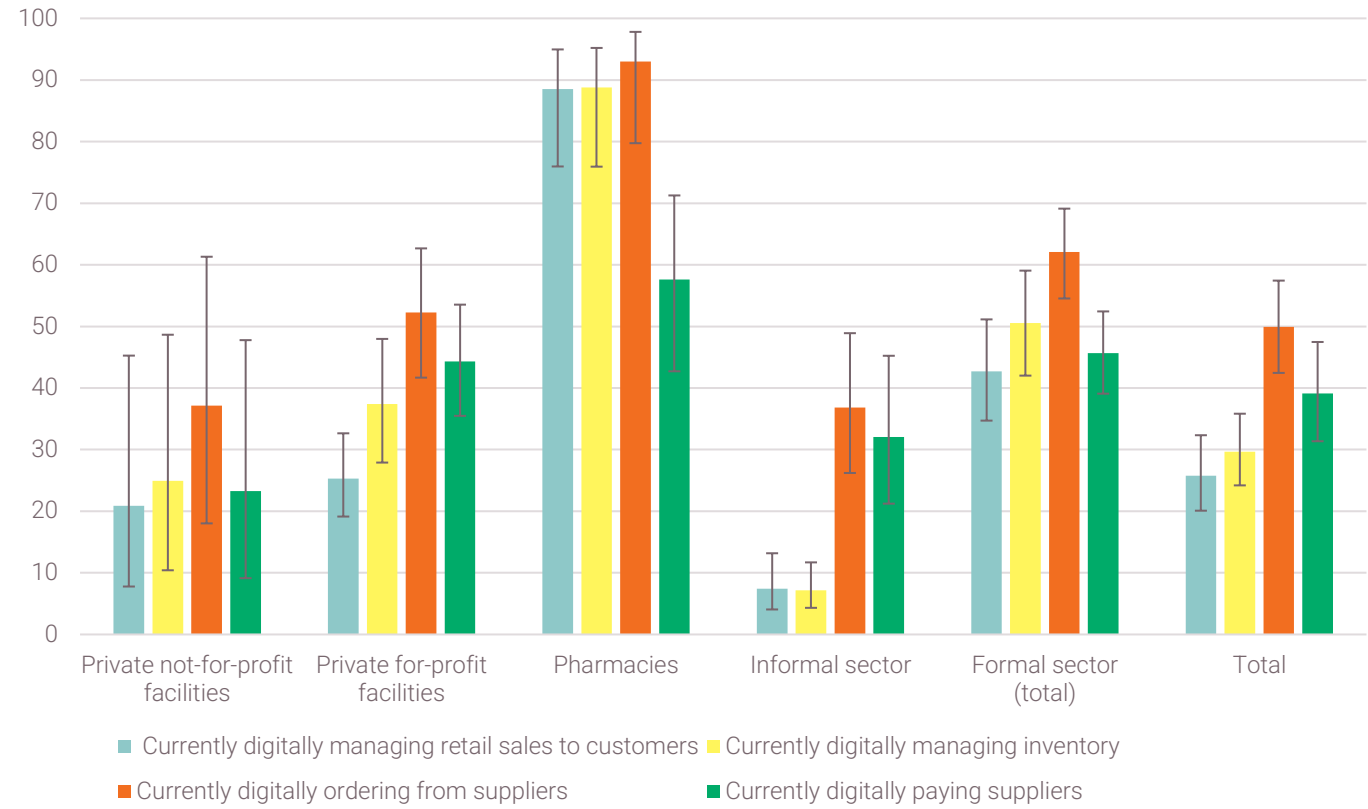
The study collected data on the proportion of outlets with available and functional technology as a measure of current or future ability to engage with digital technologies. Overall, 74% of outlets had a partial power supply on the day of the study, 68% had a working phone (mobile or other), 39% had functional and available Wifi, and 61% had a working laptop or tablet. Overall, pharmacies were the most likely to report having access to these technologies, and the informal sector was the least likely to do so.

Figure 30 Percentage of outlets currently using digital technology, by outlet type

Among all providers who completed the interview and answered this question (N=989)



Pharmacies were the most likely to report ever having used a digital tool to manage sales (89%), inventory (89%), supplier orders (93%) and to pay their suppliers (58%). Lower levels were observed in faith-based and private for-profit health facilities. The informal sector reported the lowest level of use of digital tools.

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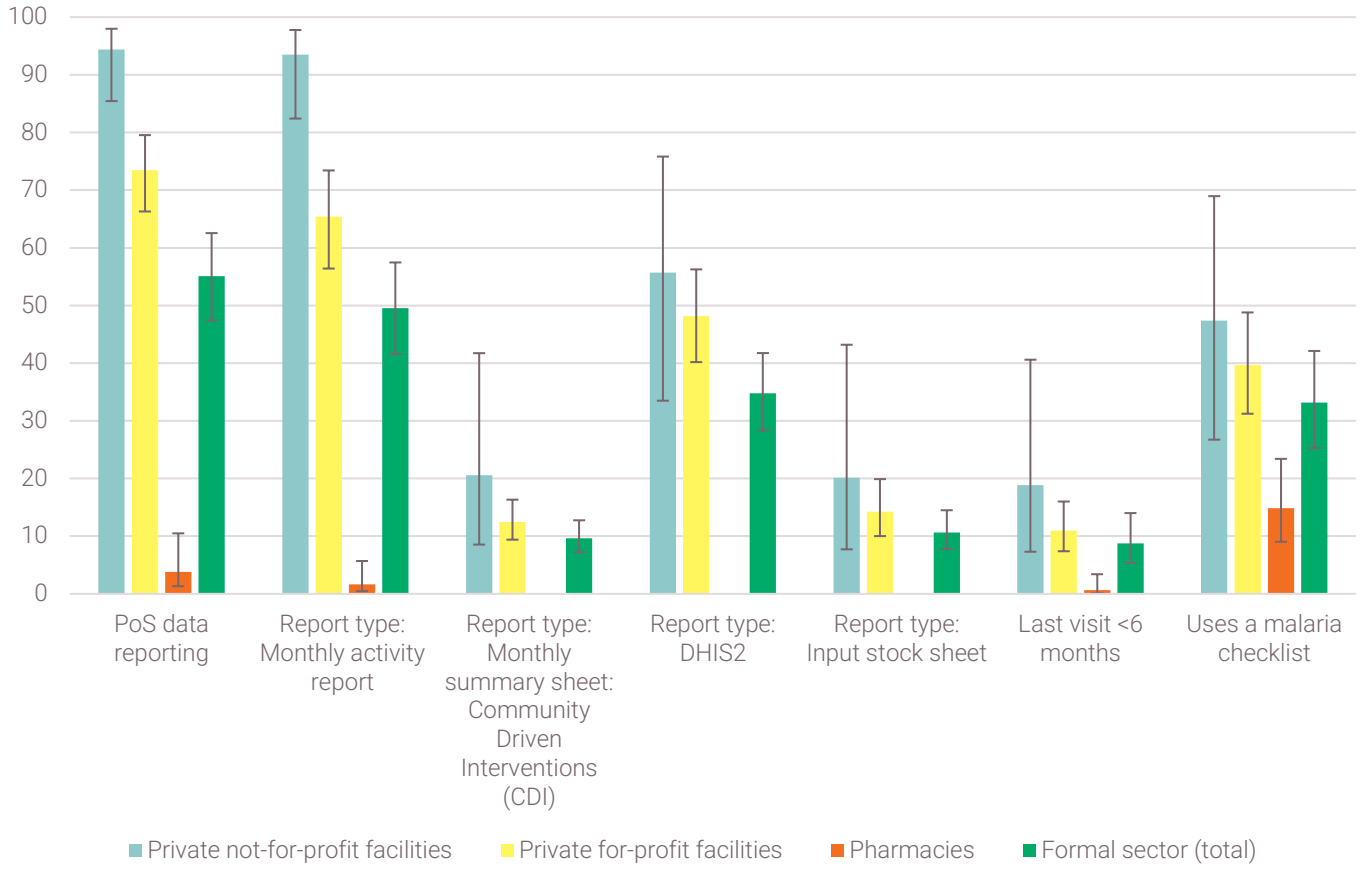
Figure 31 Participation in point-of-sale malaria surveillance system, malaria surveillance, recording and reporting frequency, by type of outlet

Among all formal sector providers who answered this question (N=664)



Participation in malaria surveillance systems varied considerably according to outlet type (it should be noted that these data were only collected for outlets in the formal sector). 94% and 73% of private not-for-profit and faith-based health facilities respectively declared that they reported malaria data, mostly in monthly activity reports. More than half of private not-for-profit facilities (56%) and around half of for-profit private facilities (48%) reported to DHIS2. Very few pharmacies (4%) provided data. In the formal sector as a whole, only 4% of outlets reported having received an official visit in the previous 6 months, while 16% of all outlets reported using a malaria checklist.

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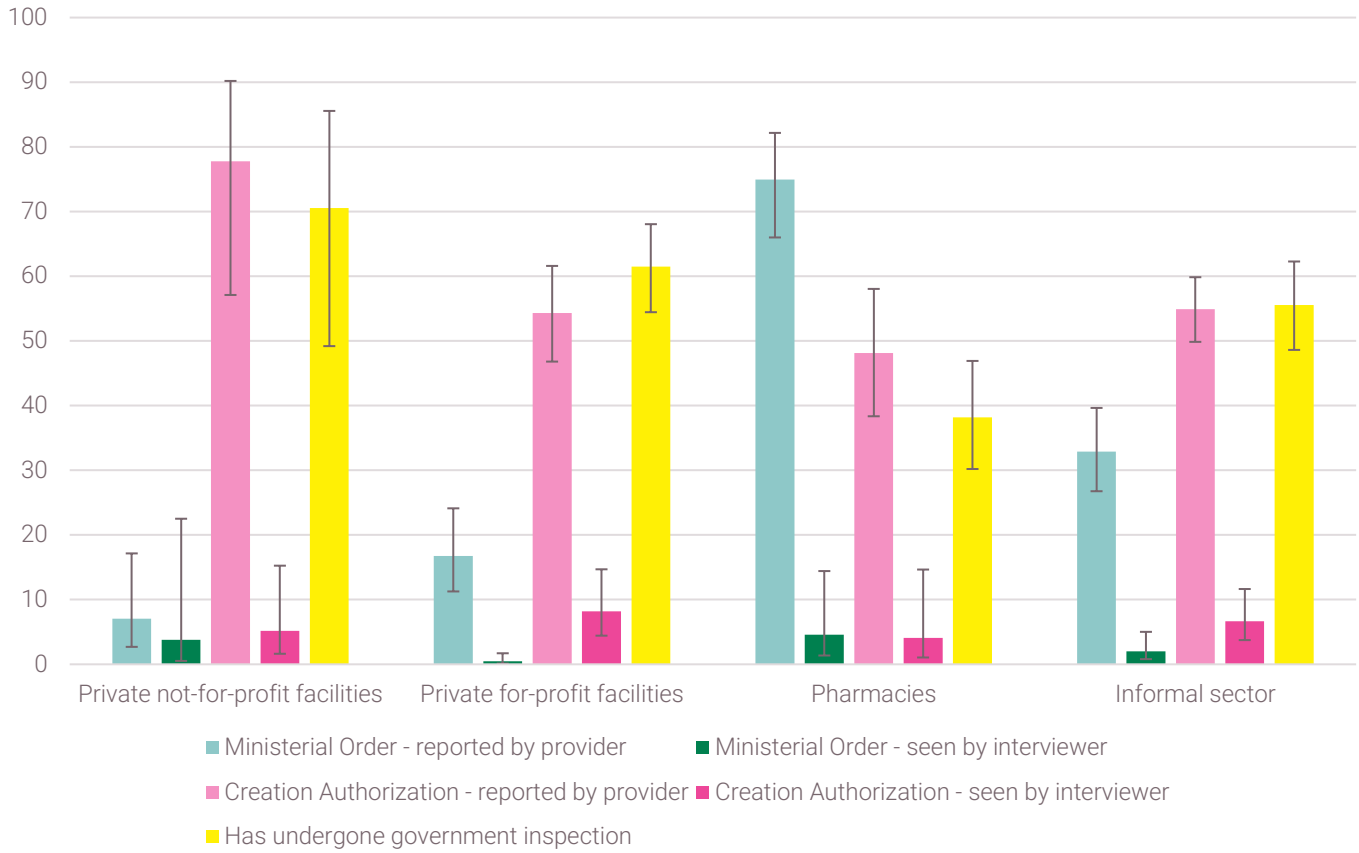
Figure 32 Point-of-sale licenses and inspections, by type of outlet

Among all formal sector providers who answered this question (N=664)



The type of permits and inspections reported or observed at each outlet varied according to outlet type. These data were only collected for outlets in the formal private sector. Private not-for-profit facilities reported having been subject to government inspection (71%), while 38% of pharmacies reported the same.

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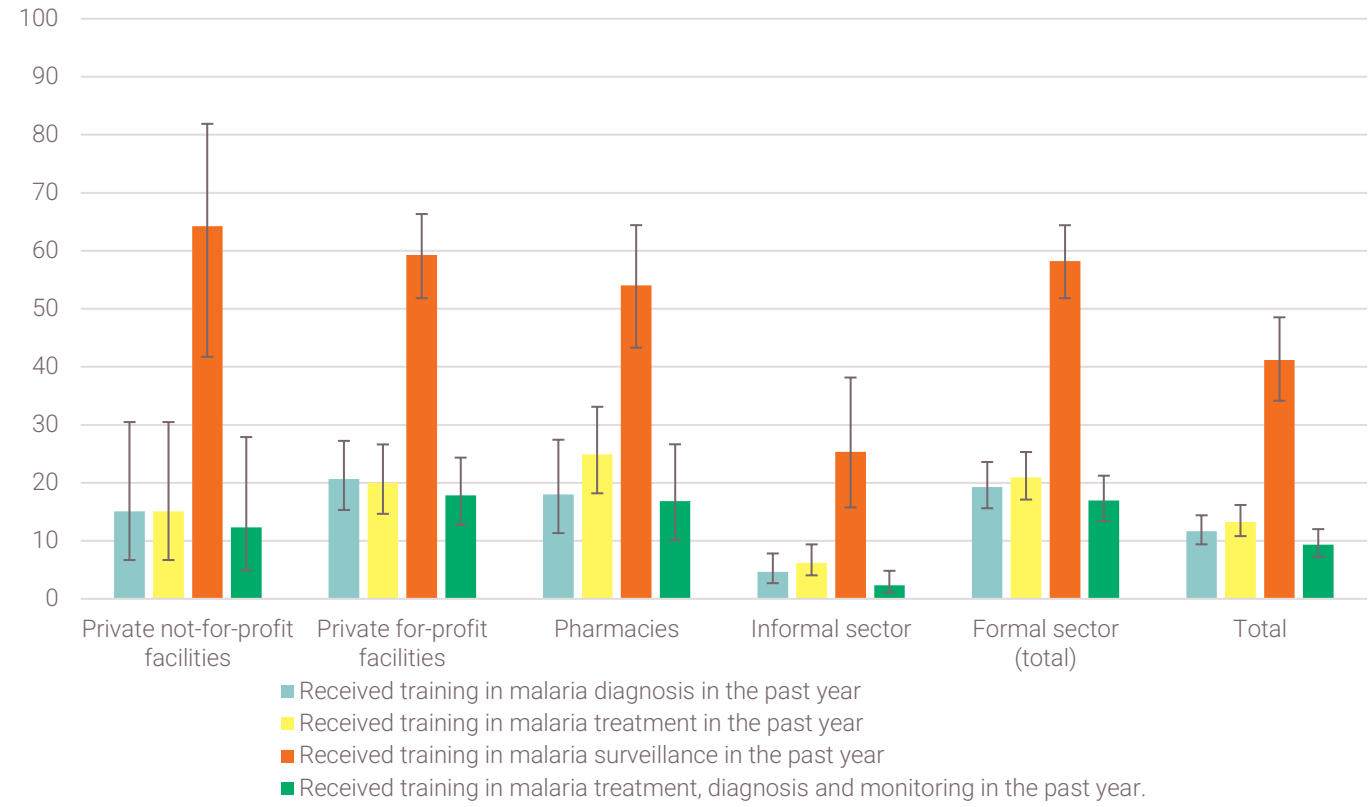
Figure 33 Type of training received by the provider, by type of outlet



Across all outlet types, in both the formal and informal private sectors, the most common training received in the last six months was on malaria surveillance (41% overall, 25% in informal outlets and 58% in formal outlets). At the same time, 24% of pharmacies reported having received training in malaria treatment in the last 6 months, and 15% of private for-profit and private not-for-profit facilities reported having received training in malaria diagnosis.

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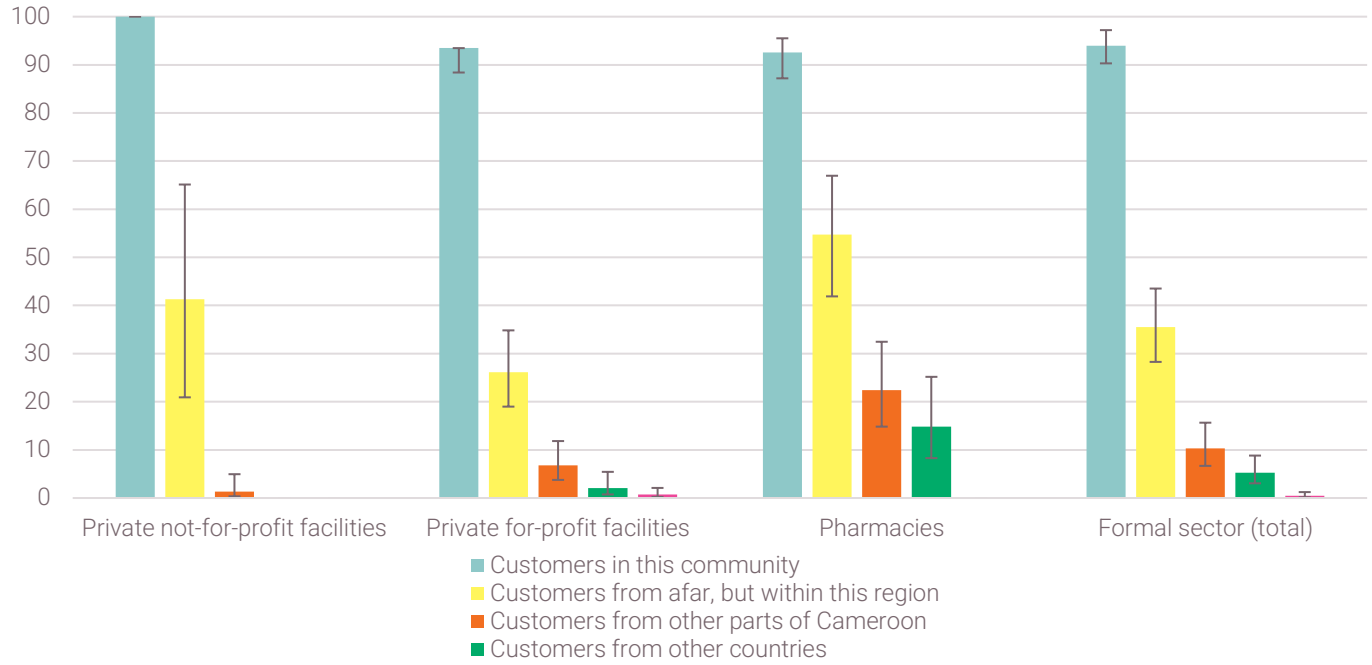
Figure 34 Location of sales outlet customers, by service provider



The location of customers most often reported by suppliers for all types of formal private sector outlets was the immediate community in which the outlet was located (94% reported this), while 55% of pharmacies reported having customers in neighboring communities in the same region. 22% of pharmacies reported having customers from other regions of Cameroon.

Figure 35 Percentage of formal sector outlets selling online or wholesale (N=664)

A very small percentage of distributors reported selling anti-malarials wholesale or online. In the formal private sector as a whole, less than 1% reported distributing anti-malarials online or wholesale to other outlets. 2% of faith-based health facilities reported selling anti-malarials wholesale.

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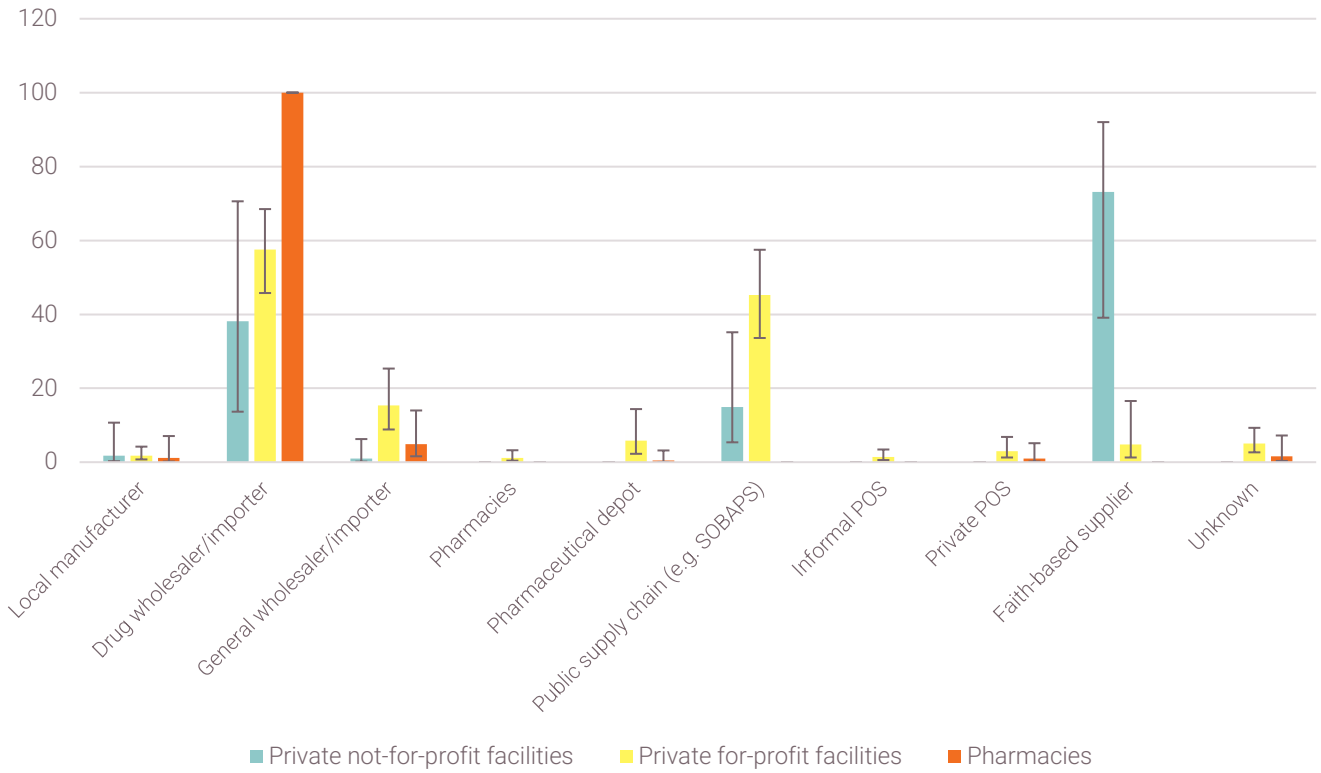
Figure 36 Type of suppliers used by outlets, by sales outlet



We asked providers about their sources of antimalarial products. Among faith-based facilities, the most common source was faith-based non-profit suppliers (73%). Among private for-profit facilities, the most common sources were wholesalers/importers (58%) and public supply chains (45%). Among pharmacies, the most common source was wholesalers/importers (reported by 100% of pharmacies).

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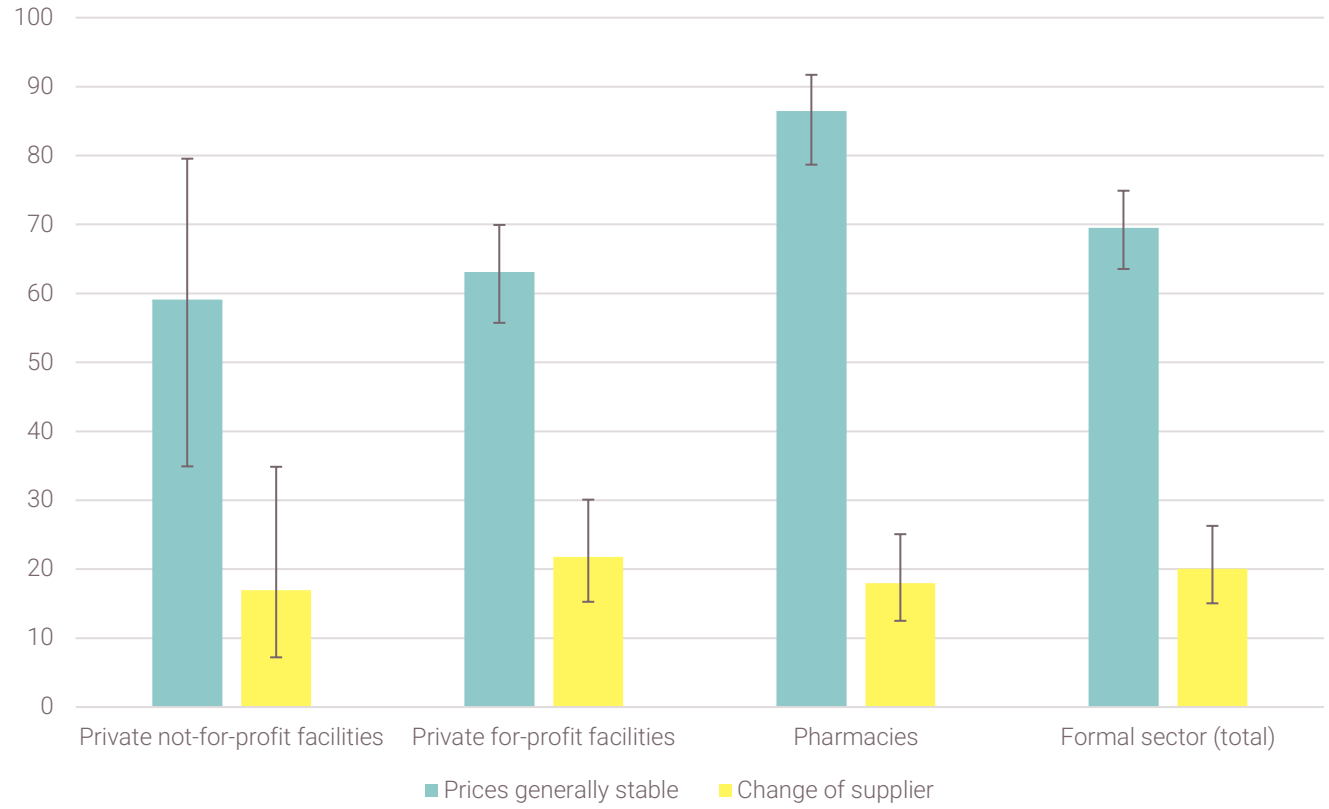
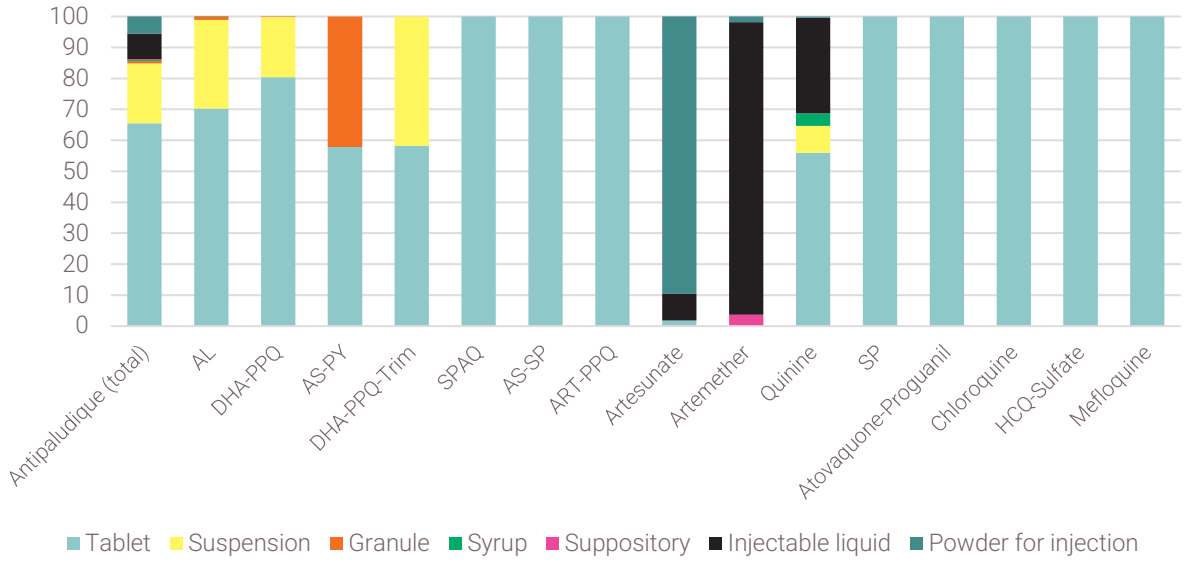
Figure 37 Market volatility by provider in formal outlets



When asked about the volatility of antimalarial drug prices over the past six months, the majority of formal sector providers indicated that prices had remained broadly stable.
Around 20% of all private-sector providers reported having changed antimalarial supplier in the previous six months.

Figure 38 Distribution of dose forms by type of antimalarial audited during the survey



Overall, tablets were the most common dose form (>60%) among antimalarials, followed by suspensions (19%), with DHA-PPQ (42%) and AL (29%) predominating among ACTs. Liquid and injectable powder forms were respectively predominant in the artemether (90%) and artesunate (94%) groups.

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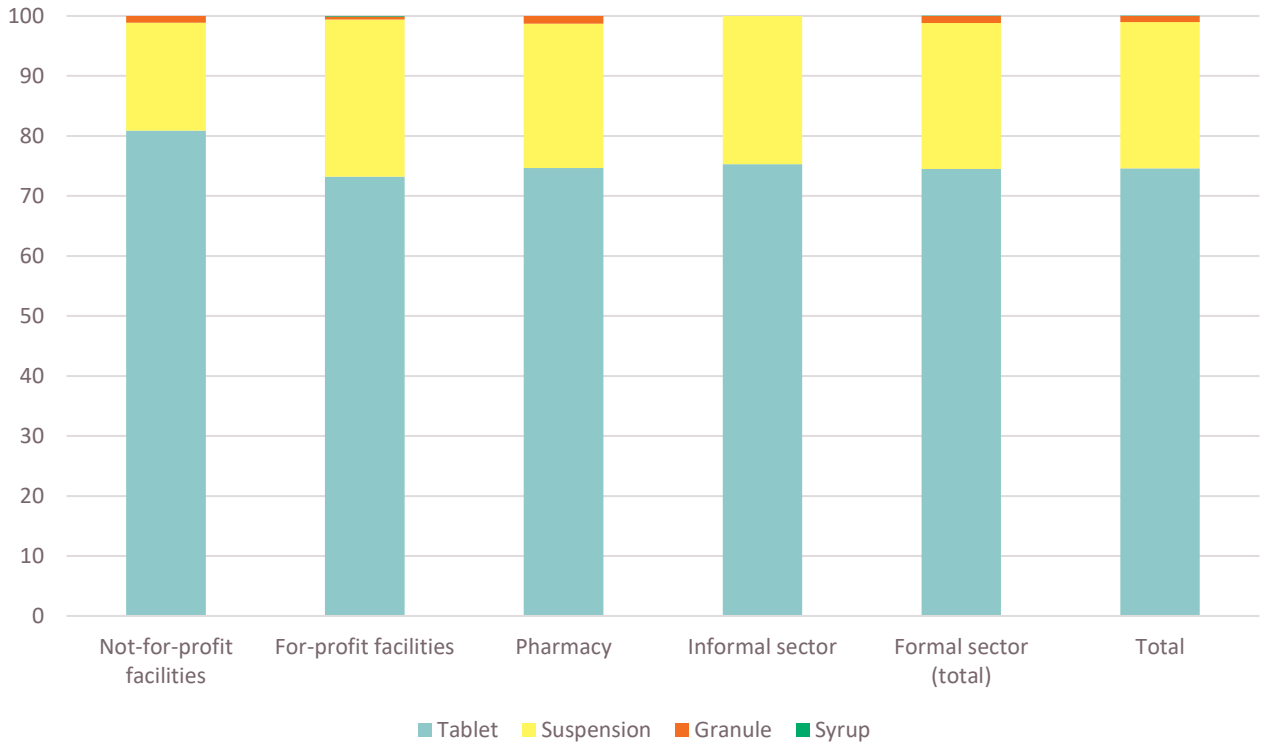
Figure 39 Distribution of dose forms of ACT by type of outlet during the survey



The dose form most frequently used by ACTs at point of sale was the compressed form (75%), followed by the suspension form (24%). There were no variations by type of outlet

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SECTION B: THE PRIVATE SECTOR SUPPLY CHAIN IN CAMEROON

To practise as a pharmacist in Cameroon, you must be registered with the Ordre National des Pharmaciens. Under current legislation, pharmacists have a monopoly on the preparation, importation, possession, use, wholesale and retail sale, and public dispensing of medicines, medicinal plants and all other pharmaceutical products listed in the pharmacopoeia. [5] Local drug production remains embryonic and uncompetitive. Local manufacturing units (17) cover less than 5% of national needs.

The pharmaceutical sector in Cameroon is divided into 2 sub-sectors: private and public. The organization of the public pharmaceutical sub-sector is based on that of the 3-level health system: central, intermediate and peripheral. It includes: the Centrale Nationale d'Approvisionnement en Médicaments et consommables médicaux Essentiels (CENAME), the Fonds Régionaux pour la Promotion de la Santé (FRPS), health programs, public health facilities, international vaccination centers, border health posts, and approved wholesale pharmaceutical distribution outlets.

The private pharmaceutical sub-sector can be broken down into two main categories: private for-profit (licensed local pharmaceutical manufacturing establishments, wholesale distribution establishments and pharmacies) and private not-for-profit (faith-based central purchasing agencies). Few data are available to explicitly explain the supply chain system for antimalarials and RDTs in the private sector in Cameroon.

One of the aims of the ACTwatch Lite study was to assess the structure of the supply chain for antimalarials and RDTs in the private sector, in terms of the distribution networks of importers, national and local wholesalers and their joint distribution practices.

To achieve this objective, we approached private-sector pharmaceutical wholesaler-importers registered on the approved list of the DPML of the Ministry of Health, importing antimalarials and/or RDTs, and headquartered in the Center and Littoral regions. We selected 21 importing wholesalers on a purposive basis, in order to obtain a range of sizes and organizational perimeters. We carried out 20 of the 21 interviews and reached saturation point.

A semi-structured thematic guide was developed based on the concepts of the analytical framework, and was used to ask participants to discuss their practices in relation to stocking antimalarials and RDTs, pricing antimalarials and RDTs, distribution network and practice, competition, sources of information, sales revenue, and regulation. Using a thematic analysis approach, all interview notes were read to identify the main themes or experiences. An initial coding structure was developed based on the analytical framework and existing literature, then applied to the interview notes and revised as the analysis progressed by adding additional codes and sub-codes to capture as many nuances in the data as possible. Coding and thematic analysis were carried out using Dedoose software version 9.2.12. Information from these in-depth interviews was supplemented by a review of relevant documents on malaria control regulations and policy.

[5] Ministry of Public Health. Plan stratégique pour le renforcement de la chaîne d'approvisionnement publique des produits de santé au Cameroun : 2022-2026, March 2022 : 93

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We present here the main results of this analysis. In all, we were able to carry out 20 interviews out of the 21 importing wholesalers approached (95%). Only one interview could not be recorded. Almost all the importing wholesalers interviewed (90%, 18/20) imported anti-malarial drugs. Only one of the importing wholesalers reported having imported RDTs only once since opening (5%, 1/20). Figure 40 shows the semantic co-occurrence matrix for the main themes discussed during the interviews. It can be seen that regulations and challenges were much more developed by importing wholesalers.

Figure 40 Matrix of semantic co-occurrence of supply chain themes

Codes	Challenges	Competition	Deadline importation	Informal sector	Minimal order and terms	Pricing variation	Regulations	Sale pricing	Sales revenue	Source information	Special importation agreement	Stockage strategy and criteria	Suggestions	Supply chain and practices	Totals
Challenges		17	9	12		7	33	5	2	2		4	19	7	117
Competition	17			12	2	4	5	10	3		2	6	2	11	74
Deadline importation	9											1			10
Informal sector	12	12					7						1		32
Minimal order and terms		2				2								4	8
Pricing variation	7	4			2			11						1	25
Regulations	33	5		7				1	1			2	10	2	61
Sale pricing	5	10				11	1				1			1	29
Sales revenue	2	3					1					1	1	1	9
Source information	2														2
Special importation agreement		2						1				2		3	8
Stockage strategy and criteria	4	6	1				2		1		2		1	12	29
Suggestions	19	2		1			10		1			1		2	36
Supply chain and practices	7	11			4	1	2	1	1		3	12	2		44
Totals	117	74	10	32	8	25	61	29	9	2	8	29	36	44	

Anti-malarial drug storage

The main document required to import antimalarial drugs into Cameroon is the Marketing Authorization (MA). The majority of importing wholesalers (71%) stated that they had no exclusive import agreement with laboratories. Such an agreement would be contrary to the code of deontology, and would not be possible for importers of generic forms. The main factors in the choice of laboratories by importing wholesalers were professionalism (up-to-date authorizations), value for money and commercial advantages. Import lead times varied between 2 and 6 months, from the time the order was placed, through manufacturing, transport, collection and customs clearance, to the time the product left the port. The main factors influencing import lead times were :

- slowness in obtaining regulatory approvals
- raw material shortages impacting manufacturing times
- transport times (sea vs. air)
- remittances

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The main criteria for choosing which antimalarial drugs to import/store were based on demand (which antimalarial drugs were most in demand) and the commercial advantages offered by the laboratories (promotion, possibility of deferred payment). Storage, operation and distribution are regulated by Cameroon's Good Distribution Practice guidelines. Importing wholesalers are required to hold a certificate of good distribution practice issued by the DPML, and periodically renewed after evaluation.

Setting sales prices for anti-malarial drugs

The procedure for setting sales prices for anti-malarial drugs could not be developed in detail, given the great variability in the answers given by importing wholesalers. However, it is clear that the approved pre-tax price is set at the time of application for market authorization. The selling price is calculated on the basis of the purchase price multiplied by a coefficient defined by the regulatory authorities. The main factors influencing the selling price reported by wholesalers were :

- order volume, which may lead to discounts,
- costs associated with the import process (transport logistics, tax and customs duties),
- the type of sales outlet (different session prices for wholesalers versus retailers),
- commercial advantages with the manufacturing laboratory,
- internal company costs (payroll, fuel),
- inflation and currency fluctuations (dollar purchases).

Distribution network and practices

Figure 41 below shows a diagram of the antimalarial supply chain in the private sector in Cameroon. In the private sector, importing wholesalers mainly supplied pharmacies (84%) and for-profit health establishments (68%). Tacit agreements between importing wholesalers were also reported, enabling them to supply each other in the event of a stock shortage at a fellow wholesaler (21%). More sporadically, importing wholesalers were able to distribute to regional funds (31%) and first- and second-rate public hospitals (21%).

Distribution frequency was daily or even twice-daily in the major cities (Douala and Yaoundé) for the majority of importing wholesalers. Weekly or monthly deliveries were more common in regions outside the big cities, depending on distance. All ten (10) regions of Cameroon are covered by importing wholesalers, although coverage is weaker in the North and Far North regions. The majority of deliveries to retailers are handled by wholesalers themselves (79%). However, around half also use third-party deliveries (47%), in particular "approved" agencies for long-distance deliveries and deliveries to security risk areas. Occasionally, some retailers collect anti-malarial drugs themselves, in case of emergency. Transport costs are generally borne by the wholesaler, but may rarely be invoiced to the customer if a third party is called in.

Almost all importing wholesalers stated that they did not require a minimum quantity for distribution (95%), but that customer orders were generally substantial. Group deliveries are preferred by wholesalers to minimize transport costs. Wholesalers also offer flexible payment terms.

Competition

Wholesalers reported competing with each other, with the notion of a monopoly held by two large wholesalers. The informal sector is reported to be the second biggest competitor. The marketing

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strategies used by wholesalers include the use of medical representatives, advertising of new arrivals, stock availability, quality of service, promotional campaigns (trade discounts) and rapid delivery times.

There are no agreements between wholesalers, neither commercial nor on prices, nor on the distribution of regions or towns. However, there is a non-commercial association of wholesalers (Association des grossistes pharmaceutiques du Cameroun) where they discuss the difficulties facing the corporation.

Information sources

The majority of importing wholesalers' main sources of information were drug manufacturers and medical representatives. Medical representatives are more responsible for collecting information on product rotations and the challenges faced by customers. Secondary sources of information were the association of pharmaceutical wholesalers in Cameroon, the order of pharmacists, the Ministry of Health, and secondarily the Internet (google). The most reported communication channels used were online discussion forums (WhatsApp and others).

Sales revenue

The sales period with high revenues generally corresponded to the rainy season (April-September), with a peak reported in September (corresponding to the start of the school year, return from vacations). Sporadic peaks were also reported during the winter period (November-December). The sales period with reported low incomes was January and February. Sales periods with high revenues varied enormously according to antimalarial brand, prescribers and availability. Promotional campaigns were also reported as factors impacting high sales of antimalarials. The contribution of antimalarials to the total income of importing wholesalers ranged from 12% to 80% (median: 35%).

Regulations

Regulations exist on distribution, pricing, profit margins, taxation and customs formalities. The majority of importing wholesalers (71%) feel that regulatory requirements are reasonable overall (not too challenging to open, frequent controls/inspections, ease of communication). However, they point to significant challenges that could be improved, chiefly the administrative slowness in issuing authorizations (provisional/final technical visa; renewal of certificate of good practice, import policies). These challenges have an impact on companies in terms of i) collection times, with stock-outs and/or product expiry; ii) difficulties in paying expenses (salaries, etc.) and iii) trust between the laboratory and the wholesaler.

Almost all respondents (82%) stated that the regulatory authorities had the capacity to enforce sanctions in the event of non-compliance, and that the application of sanctions was very strict. The main change desired by importing wholesalers during the interviews was the shortening of the time required by the regulatory authorities to issue administrative authorizations. There was also a desire to step up the fight against the informal sector.

All the wholesalers said they had no details of how the informal market operated. However, they reported that many efforts were being made by the Ministry's authorities, but that the informal sector was still predominant.

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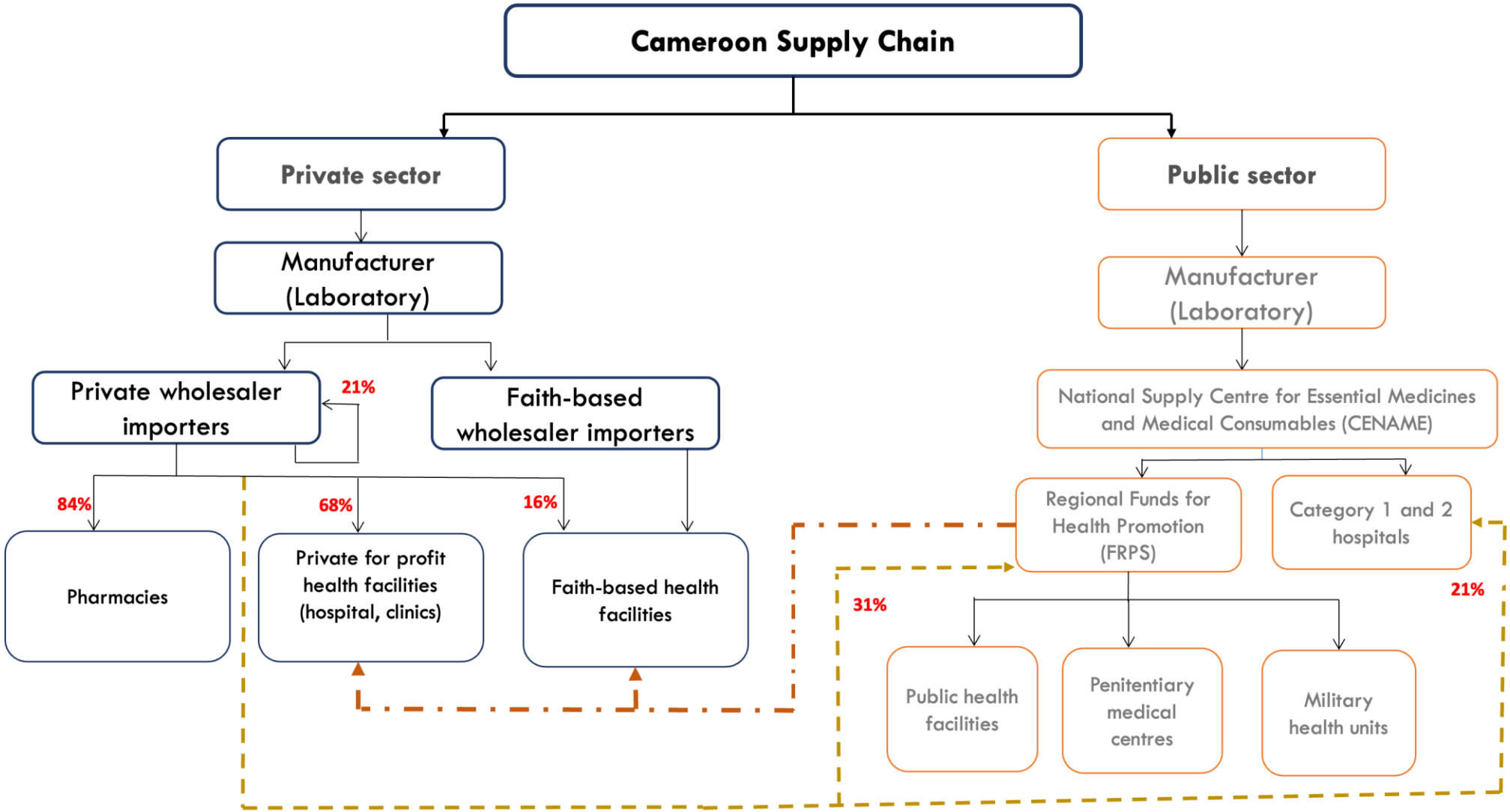
Figure 41 Diagram of the private sector antimalarial supply chain in Cameroon



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SECTION C: RESULTS TABLES

SECTION C1: AVAILABILITY, PRICING, MARKET SHARE AND VOLUMES

Table 2 Availability of antimalarials at all controlled outlets, by outlet type

Percentage of outlets inspected* stocking :	Private not-for-profit facilities[1] % (95% CI) N=37	For-profit health facilities[2] % (95% CI) N=464	Pharmacies[3] % (95% CI) N=163	Formal sector (total)[1+2+3] % (95% CI) N=664	Informal sector (total)[4] % (95% CI) N=543	Total[1+2+3+4] % (95% CI) N=1207	Wholesalers % (95% CI) N=40
All antimalarial drugs	92.1 [81.2; 96.9]	75.0 [68.1; 80.9]	80.7 [72.1; 87.2]	78.5 [73.3; 82.9]	68.9 [58.7; 77.6]	73.5 [67.0; 79.1]	11.6 [5.0; 24.7]
ACT	78.9 [56.6; 91.5]	61.8 [53.5; 69.6]	79.7 [70.9; 86.3]	68.9 [62.8; 74.4]	65.5 [55.2; 74.6]	67.1 [60.1; 73.4]	7.2 [3.4; 14.7]
AL	78.4 [56.3; 91.1]	59.2 [50.8; 67.1]	79.7 [70.9; 86.3]	67.2 [60.9; 72.9]	65.1 [54.8; 74.2]	66.1 [59.0; 72.6]	7.2 [3.4; 14.7]
ASAQ	6.1 [1.9; 17.7]	14.8 [10.9; 19.7]	0.0	9.5 [7.0; 12.9]	0.5 [0.1; 2.2]	4.9 [3.5; 6.6]	0.0
AS-PY	0.0	0.4 [0.1; 1.6]	10.5 [5.7; 18.5]	3.3 [1.8; 6.1]	0.0	1.6 [0.8; 3.0]	0.0
ASSP	0.7 [0.1; 4.7]	2.9 [1.0; 7.8]	74.1 [64.4; 81.9]	23.7 [18.0; 30.5]	1.9 [1.0; 3.5]	12.3 [9.0; 16.8]	0.0
DHAPPQ	7.6 [2.6; 20.5]	14.3 [9.9; 20.1]	78.3 [68.1; 85.9]	32.5 [27.0; 38.4]	7.3 [4.6; 11.5]	19.4 [16.0; 23.3]	2.4 [0.4; 14.6]
ARPPQ	0.0	3.9 [1.8; 8.5]	58.0 [48.1; 67.4]	19.5 [14.7; 25.3]	0.4 [0.2; 1.2]	9.6 [6.6; 13.6]	0.0
DHAPPQ-Trim	0.0	0.0	57.5 [45.8; 68.5]	17.0 [11.4; 24.4]	0.0	8.1 [5.0; 13.0]	0.0
ACT registered at national level#	35.6 [18.2; 57.9]	33.3 [25.8; 41.7]	79.1 [70.2; 85.9]	47.0 [41.6; 52.6]	18.8 [15.1; 23.1]	32.4 [28.6; 36.3]	4.8 [1.9; 11.5]
ACT not registered at national level	69.4 [46.0; 85.8]	51.4 [43.7; 59.2]	79.7 [70.9; 86.3]	61.6 [55.5; 67.4]	44.4 [34.6; 54.6]	52.7 [45.8; 59.4]	4.8 [1.8; 12.1]
ACT WHO PQ^	10.2 [4.3; 22.0]	25.4 [20.4; 31.2]	73.5 [63.1; 81.9]	38.0 [32.6; 43.8]	6.0 [3.9; 8.9]	21.4 [17.1; 26.4]	0.0
WHO-PQ ACT and nationally registered	6.1 [1.9; 17.7]	12.9 [8.6; 18.9]	66.8 [56.2; 75.9]	28.1 [22.5; 34.4]	1.7 [0.7; 4.4]	14.4 [10.7; 19.1]	0.0
WHO-PQ ACT but not registered nationally	10.2 [4.3; 22.0]	21.5 [16.9; 26.8]	73.2 [62.7; 81.6]	35.5 [30.1; 41.4]	4.7 [3.0; 7.3]	19.5 [15.2; 24.8]	0.0
ACT registered at national level but not WHO PQ	35.1 [17.8; 57.4]	27.5 [20.8; 35.4]	78.4 [69.5; 85.2]	43.3 [37.8; 48.9]	17.6 [13.9; 21.9]	29.9 [26.2; 34.0]	4.8 [1.9; 11.5]
ACT not WHO, QP or nationally approved	65.8	42.1	79.7	55.6	43.8	49.5	4.8

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Percentage of outlets inspected* stocking :	Private not-for-profit facilities[1] % (95% CI) N=37	For-profit health facilities[2] % (95% CI) N=464	Pharmacies[3] % (95% CI) N=163	Formal sector (total)[1+2+3] % (95% CI) N=664	Informal sector (total)[4] % (95% CI) N=543	Total[1+2+3+4] % (95% CI) N=1207	Wholesalers % (95% CI) N=40
	[43.3; 83.0]	[33.9; 50.8]	[70.9; 86.3]	[49.0; 62.1]	[34.0; 54.1]	[42.5; 56.5]	[1.8; 12.1]
ACT not WHO-prequalified	78.4 [56.3; 91.1]	56.6 [48.4; 64.5]	79.7 [70.9; 86.3]	65.7 [59.5; 71.4]	64.6 [53.8; 74.0]	65.1 [57.9; 71.7]	7.2 [3.4; 14.7]
2 or more ACTs+	7.6 [2.6; 20.5]	14.4 [10.1; 20.0]	78.5 [68.3; 86.0]	32.6 [27.1; 38.5]	7.1 [4.4; 11.3]	19.3 [15.9; 23.3]	2.4 [0.4; 14.6]
Non-artemisinins	74.2 [58.5; 85.4]	48.2 [40.5; 56.0]	63.6 [52.9; 73.0]	55.4 [49.9; 60.8]	35.1 [26.5; 44.8]	44.9 [38.6; 51.3]	4.8 [1.9; 11.5]
Oral quinine	48.7 [27.7; 70.2]	22.5 [16.0; 30.5]	59.2 [47.8; 69.7]	36.0 [30.3; 42.1]	23.9 [16.2; 33.8]	29.7 [23.9; 36.3]	2.4 [0.4; 13.7]
Chloroquine	0.0	0.0	13.0 [9.1; 18.2]	3.8 [2.4; 6.1]	0.0	1.8 [1.1; 3.2]	0.0
Sulfadoxine pyrimethamine	26.2 [10.2; 52.6]	11.1 [7.8; 15.5]	43.9 [34.8; 53.4]	22.3 [17.4; 28.2]	13.5 [9.9; 17.9]	17.7 [14.3; 21.8]	0.0
SP-AQ	0.0	0.1 [0.0; 0.9]	0.0	0.1 [0.0; 0.6]	0.4 [0.1; 1.5]	0.2 [0.1; 0.8]	0.0
Atovaquone Proguanil	0.0	0.0	16.8 [10.7; 25.4]	5.0 [3.0; 8.0]	0.0	2.4 [1.5; 3.9]	0.0
Mefloquine	0.0	0.0	8.2 [4.9; 13.3]	2.4 [1.4; 4.2]	0.0	1.2 [0.7; 2.0]	0.0
Non-artemisinins (Other)	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
Oral artemisinin monotherapy	0.0	0.0	5.2 [2.9; 9.1]	1.5 [0.8; 3.0]	0.1 [0.0; 0.3]	0.8 [0.4; 1.5]	0.0
Non-oral artemisinin monotherapy	85.1 [70.2; 93.3]	65.1 [58.5; 71.1]	46.4 [33.8; 59.4]	61.6 [55.3; 67.6]	22.1 [15.6; 30.3]	41.1 [35.1; 47.4]	9.2 [3.4; 22.4]
Treatment of severe malaria	85.6 [70.6; 93.6]	67.5 [61.1; 73.3]	43.7 [31.3; 57.0]	62.4 [56.2; 68.2]	23.7 [17.0; 32.0]	42.3 [36.3; 48.4]	9.2 [3.4; 22.4]
Rectal artesunate	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
Artesunate injection	66.8 [43.5; 84.0]	51.2 [43.9; 58.4]	43.2 [30.8; 56.7]	50.4 [42.7; 58.1]	9.9 [6.2; 15.6]	29.4 [23.7; 35.8]	2.4 [0.6; 9.1]
Artemether Injection	63.4 [44.3; 79.1]	51.1 [43.8; 58.2]	37.9 [28.4; 48.6]	48.5 [42.0; 55.0]	17.8 [11.9; 25.8]	32.5 [27.2; 38.4]	6.8 [1.5; 25.6]
Quinine injection	32.8 [16.2; 55.2]	38.3 [30.7; 46.5]	6.9 [3.3; 13.8]	28.5 [22.3; 35.5]	9.4 [5.1; 16.6]	18.5 [14.4; 23.4]	2.4 [0.6; 9.1]

Footnote: POS who met the selection criteria for a full interview, but did not complete the interview (were not interviewed or completed a partial interview) = 108
ACT on the national approval list
^ ACT on the WHO prequalification list
+ The outlet has at least two ACTs with different generics

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 3 Availability of antimalarials in all controlled outlets stocking at least one antimalarial on the day of the study, by type of outlet

Percentage of outlets inspected* stocking at least one antimalarial :	Private not-for-profit facilities[1] % (95% CI) N=31	For-profit health facilities[2] % (95% CI) N=362	Pharmacies[3] % (95% CI) N=128	Formal sector (total)[1+2+3] % (95% CI) N=521	Informal sector (total)[4] % (95% CI) N=397	Total[1+2+3+4] % (95% CI) N=918	Wholesalers % (95% CI) N=4
All antimalarial drugs	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -	100.0 -
Any ACT	85.7 [59.6; 96.1]	82.4 [73.1; 89.0]	98.7 [91.2; 99.8]	87.8 [82.6; 91.5]	95.0 [90.9; 97.4]	91.3 [87.9; 93.8]	62.2 [14.8; 94.0]
AL	85.1 [59.6; 95.7]	78.9 [69.7; 85.8]	98.7 [91.2; 99.8]	85.6 [80.3; 89.7]	94.5 [90.3; 96.9]	89.9 [86.4; 92.6]	62.2 [14.8; 94.0]
ASAQ	6.6 [2.1; 19.2]	19.7 [14.5; 26.1]	0.0	12.1 [8.9; 16.4]	0.8 [0.2; 3.2]	6.6 [4.8; 9.0]	0.0
AS-PY	0.0	0.5 [0.1; 2.1]	13.0 [7.1; 22.6]	4.2 [2.3; 7.7]	0.0	2.2 [1.2; 4.0]	0.0
ASSP	0.8 [0.1; 5.1]	3.9 [1.4; 10.1]	91.8 [84.8; 95.7]	30.2 [23.0; 38.4]	2.7 [1.4; 5.2]	16.8 [12.3; 22.5]	0.0
DHAPPQ	8.3 [2.8; 22.2]	19.0 [13.6; 26.0]	97.0 [90.6; 99.1]	41.4 [34.7; 48.3]	10.6 [6.3; 17.3]	26.4 [21.6; 31.8]	20.7 [2.8; 70.7]
ARPPQ	0.0	5.3 [2.4; 11.0]	71.9 [59.8; 81.5]	24.8 [18.7; 32.2]	0.6 [0.2; 1.7]	13.0 [9.0; 18.4]	0.0
DHAPPQ-Trim	0.0	0.0	71.3 [58.1; 81.6]	21.6 [14.4; 31.1]	0.0	11.1 [6.7; 17.7]	0.0
ACT registered at national level[#]	38.7 [19.6; 62.0]	44.4 [35.7; 53.5]	97.9 [92.3; 99.5]	59.9 [53.8; 65.7]	27.3 [22.3; 32.9]	44.0 [39.5; 48.7]	41.5 [8.9; 83.7]
ACT not registered at national level	75.4 [49.0; 90.7]	68.6 [60.0; 76.0]	98.7 [91.2; 99.8]	78.5 [72.6; 83.5]	64.4 [55.3; 72.5]	71.6 [66.2; 76.5]	41.5 [8.8; 83.8]
ACT WHO PQ[^]	11.0 [4.7; 23.9]	33.9 [27.5; 41.0]	91.1 [77.7; 96.8]	48.5 [41.1; 55.9]	8.6 [5.5; 13.4]	29.1 [22.8; 36.3]	0.0
WHO-PQ ACT and nationally registered	6.6 [2.1; 19.2]	17.2 [11.4; 25.1]	82.7 [69.6; 90.9]	35.8 [28.2; 44.2]	2.5 [0.9; 6.6]	19.5 [14.2; 26.3]	0.0
WHO-PQ ACT but not registered nationally	11.0 [4.7; 23.9]	28.6 [22.6; 35.4]	90.7 [77.5; 96.5]	45.3 [38.0; 52.8]	6.9 [4.3; 10.8]	26.6 [20.4; 33.8]	0.0
ACT registered at national level but not WHO PQ	38.1 [19.1; 61.5]	36.7 [29.0; 45.1]	97.1 [91.2; 99.1]	55.2 [49.1; 61.0]	25.5 [20.9; 30.7]	40.7 [36.6; 45.0]	41.5 [8.9; 83.7]
ACT not WHO, QP or nationally approved	71.5 [46.6; 87.8]	56.1 [46.1; 65.7]	98.7 [91.2; 99.8]	70.9 [63.7; 77.1]	63.6 [54.3; 71.9]	67.3 [61.3; 72.8]	41.5 [8.8; 83.8]
ACT not WHO-prequalified	85.1 [59.6; 95.7]	75.5 [65.8; 83.1]	98.7 [91.2; 99.8]	83.7 [77.9; 88.2]	93.7 [88.9; 96.4]	88.5 [84.6; 91.6]	62.2 [14.8; 94.0]
2 or more ACTs[+]	8.3 [2.8; 22.2]	19.1 [13.9; 25.8]	97.2 [90.7; 99.2]	41.5 [34.9; 48.4]	10.4 [6.1; 17.1]	26.3 [21.5; 31.8]	20.7 [2.8; 70.7]
Non-artemisinins	80.6 [64.6; 90.4]	64.3 [56.4; 71.4]	78.7 [66.3; 87.4]	70.6 [64.7; 75.9]	50.9 [41.7; 60.1]	61.0 [54.8; 66.9]	41.5 [8.9; 83.7]
Oral quinine	52.9	29.9	73.3	45.9	34.7	40.4	20.7

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Percentage of outlets inspected* stocking at least one antimalarial :	Private not-for-profit facilities[1]	For-profit health facilities[2]	Pharmacies[3]	Formal sector (total)[1+2+3]	Informal sector (total)[4]	Total[1+2+3+4]	Wholesalers
	% (95% CI) N=31	% (95% CI) N=362	% (95% CI) N=128	% (95% CI) N=521	% (95% CI) N=397	% (95% CI) N=918	% (95% CI) N=4
	[30.2; 74.5]	[22.1; 39.1]	[59.5; 83.7]	[38.9; 53.0]	[25.2; 45.5]	[33.7; 47.5]	[2.9; 70.0]
Chloroquine	0.0	0.0	16.1 [11.5; 22.1]	4.9 [3.0; 7.8]	0.0	2.5 [1.4; 4.3]	0.0
Sulfadoxine pyrimethamine	28.4 [11.1; 55.8]	14.8 [10.5; 20.4]	54.3 [44.8; 63.6]	28.4 [22.3; 35.4]	19.5 [14.5; 25.8]	24.1 [19.7; 29.0]	0.0
SP-AQ	0.0	0.2 [0.0; 1.2]	0.0	0.1 [0.0; 0.7]	0.5 [0.1; 2.2]	0.3 [0.1; 1.1]	0.0
Atovaquone Proguanil	0.0	0.0	20.8 [13.3; 31.1]	6.3 [3.9; 10.1]	0.0	3.2 [2.0; 5.3]	0.0
Mefloquine	0.0	0.0	10.1 [6.3; 16.1]	3.1 [1.8; 5.3]	0.0	1.6 [0.9; 2.7]	0.0
Non-artemisinins (Other)	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
Oral artemisinin monotherapy	0.0	0.0	6.5 [3.6; 11.3]	2.0 [1.0; 3.9]	0.1 [0.0; 0.5]	1.0 [0.5; 2.0]	0.0
Non-oral artemisinin monotherapy	92.5 [75.9; 97.9]	86.7 [81.7; 90.5]	57.5 [42.2; 71.5]	78.5 [72.0; 83.9]	32.1 [24.9; 40.2]	55.9 [49.9; 61.7]	79.3 [29.3; 97.2]
Treatment of severe malaria	93.0 [75.8; 98.2]	90.0 [85.5; 93.2]	54.2 [38.7; 68.8]	79.5 [73.1; 84.7]	34.4 [27.0; 42.5]	57.5 [51.5; 63.3]	79.3 [29.3; 97.2]
Rectal artesunate	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
Artesunate injection	72.6 [45.5; 89.4]	68.2 [59.3; 75.9]	53.6 [38.1; 68.4]	64.3 [54.8; 72.8]	14.4 [9.7; 20.8]	40.0 [33.2; 47.1]	20.7 [2.6; 72.1]
Artemether Injection	68.9 [47.9; 84.2]	68.1 [60.7; 74.6]	47.0 [35.6; 58.7]	61.8 [55.2; 67.9]	25.8 [18.7; 34.6]	44.3 [38.8; 49.8]	58.5 [16.2; 91.2]
Quinine injection	35.6 [17.2; 59.5]	51.0 [41.9; 60.1]	8.5 [4.0; 17.3]	36.3 [29.0; 44.2]	13.6 [7.9; 22.3]	25.2 [20.6; 30.5]	20.7 [2.6; 72.1]

Footnote: outlets that met the selection criteria for a full interview, had at least 1 AM in stock on the day of the survey, but did not complete the interview (were not interviewed or completed a partial interview) = 25
ACT on the national approval list
^ ACT on the WHO prequalification list
+ The outlet has at least two ACTs with different generics

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 4 Availability of antimalarials at all controlled outlets, by stratum

	Informal sector (total)				Formal sector (total)				Total			
	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala
Percentage of outlets inspected* stocking at least one antimalarial :	% (95% CI) N=183	% (95% CI) N=80	% (95% CI) N=112	% (95% CI) N=22	% (95% CI) N=267	% (95% CI) N=54	% (95% CI) N=145	% (95% CI) N=55	% (95% CI) N=450	% (95% CI) N=134	% (95% CI) N=257	% (95% CI) N=77
All antimalarial drugs	71.1 [57.7; 81.6]	64.3 [47.0; 78.5]	80.2 [63.0; 90.5]	78.3 [51.2; 92.6]	78.9 [69.1; 86.3]	70.3 [55.1; 82.0]	75.4 [67.7; 81.7]	71.3 [57.3; 82.2]	78.9 [69.1; 86.3]	70.3 [55.1; 82.0]	75.4 [67.7; 81.7]	71.3 [57.3; 82.2]
Any ACT	67.9 [55.4; 78.2]	62.1 [44.6; 76.9]	73.9 [59.0; 84.8]	68.9 [42.1; 87.0]	72.5 [62.3; 80.8]	65.4 [49.0; 78.9]	66.9 [60.8; 72.4]	63.6 [49.9; 75.4]	72.5 [62.3; 80.8]	65.4 [49.0; 78.9]	66.9 [60.8; 72.4]	63.6 [49.9; 75.4]
AL	66.9 [54.7; 77.2]	62.1 [44.6; 76.9]	73.9 [59.0; 84.8]	64.7 [41.7; 82.5]	70.7 [61.2; 78.7]	65.0 [48.5; 78.6]	66.2 [59.3; 72.4]	61.7 [47.3; 74.4]	70.7 [61.2; 78.7]	65.0 [48.5; 78.6]	66.2 [59.3; 72.4]	61.7 [47.3; 74.4]
ASAQ	0.5 [0.1; 3.4]	0.6 [0.1; 5.0]	0.5 [0.1; 4.5]	0.0	6.4 [4.2; 9.6]	4.6 [2.4; 8.4]	0.6 [0.1; 3.0]	10.4 [6.9; 15.3]	6.4 [4.2; 9.6]	4.6 [2.4; 8.4]	0.6 [0.1; 3.0]	10.4 [6.9; 15.3]
AS-PY	0.0	0.0	0.0	0.0	1.5 [0.5; 3.8]	0.0	5.4 [2.8; 10.0]	0.6 [0.1; 4.7]	1.5 [0.5; 3.8]	0.0	5.4 [2.8; 10.0]	0.6 [0.1; 4.7]
ASSP	2.3 [1.6; 3.4]	0.0	2.1 [0.6; 6.7]	23.9 [8.3; 52.3]	18.1 [9.2; 32.5]	4.0 [1.6; 9.5]	16.8 [10.5; 25.8]	22.0 [11.5; 37.9]	18.1 [9.2; 32.5]	4.0 [1.6; 9.5]	16.8 [10.5; 25.8]	22.0 [11.5; 37.9]
DHAPPQ	18.0 [14.0; 22.8]	2.5 [0.4; 13.2]	6.5 [2.9; 13.8]	29.4 [11.4; 57.4]	31.3 [21.7; 42.8]	7.2 [4.3; 11.9]	26.6 [20.3; 34.1]	25.8 [16.0; 38.8]	31.3 [21.7; 42.8]	7.2 [4.3; 11.9]	26.6 [20.3; 34.1]	25.8 [16.0; 38.8]
ARPPQ	0.4 [0.1; 2.8]	0.0	0.9 [0.2; 3.7]	4.1 [0.7; 20.8]	12.8 [6.6; 23.4]	2.7 [1.2; 5.9]	13.8 [9.0; 20.8]	18.9 [8.1; 37.9]	12.8 [6.6; 23.4]	2.7 [1.2; 5.9]	13.8 [9.0; 20.8]	18.9 [8.1; 37.9]
DHAPPQ-Trim	0.0	0.0	0.0	0.0	12.4 [5.7; 24.7]	0.9 [0.2; 5.2]	12.9 [6.6; 23.7]	16.1 [5.5; 38.8]	12.4 [5.7; 24.7]	0.9 [0.2; 5.2]	12.9 [6.6; 23.7]	16.1 [5.5; 38.8]
ACT registered at national level#	26.4 [21.5; 32.0]	15.7 [10.5; 22.9]	16.7 [9.9; 26.8]	35.4 [12.8; 67.3]	45.3 [36.7; 54.1]	23.4 [16.8; 31.6]	36.0 [28.4; 44.3]	32.9 [23.1; 44.5]	45.3 [36.7; 54.1]	23.4 [16.8; 31.6]	36.0 [28.4; 44.3]	32.9 [23.1; 44.5]
Does not store nationally registered ACTs	45.2 [38.9; 51.7]	42.3 [26.3; 60.1]	48.8 [41.9; 55.8]	50.8 [23.5; 77.7]	58.0 [51.0; 64.6]	49.6 [33.8; 65.4]	52.6 [47.6; 57.6]	53.5 [40.6; 66.0]	58.0 [51.0; 64.6]	49.6 [33.8; 65.4]	52.6 [47.6; 57.6]	53.5 [40.6; 66.0]
ACT WHO-PQ^	11.3 [8.7; 14.4]	2.1 [0.5; 8.4]	10.5 [6.0; 17.7]	17.8 [5.4; 45.4]	31.7 [23.1; 41.8]	9.8 [5.8; 16.0]	26.3 [18.3; 36.1]	32.4 [21.0; 46.5]	31.7 [23.1; 41.8]	9.8 [5.8; 16.0]	26.3 [18.3; 36.1]	32.4 [21.0; 46.5]
WHO-PQ ACT and nationally registered	1.2 [0.4; 3.2]	1.5 [0.2; 9.1]	3.6 [1.7; 7.3]	0.0	21.8 [13.0; 34.2]	6.0 [2.6; 13.0]	19.5 [13.1; 28.0]	19.9 [9.6; 36.8]	21.8 [13.0; 34.2]	6.0 [2.6; 13.0]	19.5 [13.1; 28.0]	19.9 [9.6; 36.8]
WHO-PQ ACT but not registered nationally	10.9 [8.3; 14.1]	0.6 [0.1; 5.0]	8.8 [4.6; 16.1]	17.8 [5.4; 45.4]	30.4 [21.8; 40.8]	7.4 [4.0; 13.1]	23.9 [15.7; 34.7]	32.4 [21.0; 46.5]	30.4 [21.8; 40.8]	7.4 [4.0; 13.1]	23.9 [15.7; 34.7]	32.4 [21.0; 46.5]
ACT registered at national level but not WHO PQ	26.2 [21.4; 31.6]	14.3 [9.1; 21.6]	15.1 [8.8; 24.7]	35.4 [12.8; 67.3]	41.3 [32.6; 50.6]	20.7 [14.4; 28.9]	34.5 [26.3; 43.6]	32.3 [22.6; 43.8]	41.3 [32.6; 50.6]	20.7 [14.4; 28.9]	34.5 [26.3; 43.6]	32.3 [22.6; 43.8]
ACT not WHO, QP or nationally approved	43.1 [37.3; 49.1]	42.3 [26.3; 60.1]	47.8 [40.8; 54.9]	50.8 [23.5; 77.7]	53.3 [45.7; 60.7]	47.1 [31.2; 63.5]	50.8 [47.0; 54.7]	48.5 [35.1; 62.2]	53.3 [45.7; 60.7]	47.1 [31.2; 63.5]	50.8 [47.0; 54.7]	48.5 [35.1; 62.2]
ACT non-WHO-PQ	67.5 [55.0; 77.9]	60.6 [42.6; 76.1]	73.9 [59.0; 84.8]	68.9 [42.1; 87.0]	69.9 [59.7; 78.5]	62.7 [45.6; 77.0]	66.2 [60.5; 71.4]	62.7 [49.2; 74.4]	69.9 [59.7; 78.5]	62.7 [45.6; 77.0]	66.2 [60.5; 71.4]	62.7 [49.2; 74.4]
2 or more ACTs+	17.0 [12.8; 22.1]	2.5 [0.4; 13.2]	6.5 [2.9; 13.8]	29.4 [11.4; 57.4]	30.8 [21.4; 42.1]	7.6 [4.7; 12.1]	26.3 [19.6; 34.3]	25.6 [15.2; 39.7]	30.8 [21.4; 42.1]	7.6 [4.7; 12.1]	26.3 [19.6; 34.3]	25.6 [15.2; 39.7]
Non-artemisinins	29.5 [23.8; 36.0]	35.1 [21.1; 52.1]	39.6 [31.7; 48.0]	41.3 [26.3; 58.0]	44.4 [37.1; 51.8]	45.5 [32.3; 59.4]	42.8 [35.5; 50.5]	47.1 [31.9; 62.9]	44.4 [37.1; 51.8]	45.5 [32.3; 59.4]	42.8 [35.5; 50.5]	47.1 [31.9; 62.9]

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	Informal sector (total)				Formal sector (total)				Total			
	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala
Oral quinine	22.5 [18.4; 27.2]	24.3 [12.4; 42.3]	22.2 [15.6; 30.7]	30.5 [11.2; 60.6]	30.9 [24.1; 38.6]	30.8 [18.9; 46.0]	26.4 [20.7; 33.0]	29.7 [16.4; 47.5]	30.9 [24.1; 38.6]	30.8 [18.9; 46.0]	26.4 [20.7; 33.0]	29.7 [16.4; 47.5]
Chloroquine	0.0	0.0	0.0	0.0	3.1 [1.2; 7.7]	0.0	2.7 [1.3; 5.3]	4.3 [1.6; 10.7]	3.1 [1.2; 7.7]	0.0	2.7 [1.3; 5.3]	4.3 [1.6; 10.7]
Sulfadoxine pyrimethamine	13.2 [8.8; 19.4]	10.0 [5.7; 17.0]	24.3 [17.3; 33.1]	17.9 [8.6; 33.5]	19.1 [12.5; 28.1]	13.1 [8.3; 20.3]	22.5 [17.1; 29.2]	21.7 [11.7; 36.6]	19.1 [12.5; 28.1]	13.1 [8.3; 20.3]	22.5 [17.1; 29.2]	21.7 [11.7; 36.6]
SP-AQ	2.0 [0.6; 6.7]	0.0	0.0	0.0	0.9 [0.2; 3.2]	0.0	0.2 [0.0; 1.6]	0.0	0.9 [0.2; 3.2]	0.0	0.2 [0.0; 1.6]	0.0
Atovaquone Proguanil	0.0	0.0	0.0	0.0	5.3 [2.5; 10.8]	0.0	4.9 [2.6; 9.1]	0.8 [0.1; 5.4]	5.3 [2.5; 10.8]	0.0	4.9 [2.6; 9.1]	0.8 [0.1; 5.4]
Mefloquine	0.0	0.0	0.0	0.0	2.7 [1.2; 5.9]	0.0	2.5 [1.1; 5.4]	0.0	2.7 [1.2; 5.9]	0.0	2.5 [1.1; 5.4]	0.0
Non-artemisinins (Other)	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
Oral artemisinin monotherapy	0.3 [0.0; 2.1]	0.0	0.0	0.0	2.4 [1.0; 5.8]	0.1 [0.0; 0.8]	0.8 [0.1; 4.3]	0.0	2.4 [1.0; 5.8]	0.1 [0.0; 0.8]	0.8 [0.1; 4.3]	0.0
Non-oral artemisinin monotherapy	22.0 [16.5; 28.8]	21.3 [11.4; 36.4]	24.1 [17.0; 33.1]	24.8 [8.9; 52.7]	43.6 [38.3; 49.0]	36.9 [25.2; 50.4]	40.6 [36.4; 45.0]	51.1 [30.8; 71.1]	43.6 [38.3; 49.0]	36.9 [25.2; 50.4]	40.6 [36.4; 45.0]	51.1 [30.8; 71.1]
Treatment of severe malaria	22.0 [16.5; 28.8]	23.4 [13.1; 38.3]	25.1 [17.8; 34.2]	28.3 [10.9; 55.9]	44.0 [38.9; 49.3]	38.9 [27.1; 52.3]	40.3 [36.4; 44.5]	53.2 [34.1; 71.4]	44.0 [38.9; 49.3]	38.9 [27.1; 52.3]	40.3 [36.4; 44.5]	53.2 [34.1; 71.4]
Rectal artesunate	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
Artesunate injection	15.3 [9.7; 23.3]	10.1 [4.6; 20.5]	5.8 [2.7; 12.0]	2.0 [0.3; 13.6]	34.3 [29.2; 39.9]	23.4 [14.2; 36.2]	26.5 [20.7; 33.3]	45.0 [23.4; 68.7]	34.3 [29.2; 39.9]	23.4 [14.2; 36.2]	26.5 [20.7; 33.3]	45.0 [23.4; 68.7]
Artemether Injection	16.7 [11.3; 24.1]	16.5 [7.7; 31.8]	21.8 [15.6; 29.6]	24.8 [8.9; 52.7]	34.7 [29.3; 40.5]	31.7 [20.4; 45.6]	31.8 [28.1; 35.7]	32.8 [20.4; 48.2]	34.7 [29.3; 40.5]	31.7 [20.4; 45.6]	31.8 [28.1; 35.7]	32.8 [20.4; 48.2]
Quinine injection	5.2 [2.8; 9.5]	11.6 [4.9; 25.0]	7.2 [3.4; 14.5]	5.4 [1.2; 21.3]	16.0 [12.5; 20.3]	22.4 [14.3; 33.3]	12.8 [7.8; 20.3]	20.1 [13.2; 29.4]	16.0 [12.5; 20.3]	22.4 [14.3; 33.3]	12.8 [7.8; 20.3]	20.1 [13.2; 29.4]

Footnote: Outlets that met the selection criteria for a full interview, but did not complete the interview (were not interviewed or completed a partial interview) = 108
ACT on the national approval list
^ ACT on the WHO prequalification list
+ The outlet has at least two ACTs with different generics

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Table 5 Availability of antimalarials in all outlets audited stocking at least one antimalarial on the day of the visit, by stratum

	Informal sector (total)				Formal sector (total)				Total			
	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala
Percentage of outlets inspected* stocking at least one antimalarial :	% (95% CI) N=183	% (95% CI) N=80	% (95% CI) N=112	% (95% CI) N=22	% (95% CI) N=262	% (95% CI) N=54	% (95% CI) N=145	% (95% CI) N=55	% (95% CI) N=450	% (95% CI) N=134	% (95% CI) N=257	% (95% CI) N=77
All antimalarial drugs	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ACT	95.4 [92.7; 97.2]	96.6 [85.7; 99.3]	92.2 [85.2; 96.1]	87.9 [72.7; 95.2]	89.6 [83.0; 93.9]	86.0 [61.1; 96.0]	86.1 [82.6; 88.9]	89.5 [84.5; 92.9]	91.9 [88.2; 94.5]	93.1 [82.8; 97.4]	88.7 [85.3; 91.4]	89.1 [84.0; 92.8]
AL	94.0 [90.6; 96.3]	96.6 [85.7; 99.3]	92.2 [85.2; 96.1]	82.6 [71.4; 90.1]	86.7 [80.3; 91.3]	84.1 [60.0; 95.0]	84.4 [79.5; 88.3]	87.5 [80.7; 92.2]	89.5 [86.5; 92.0]	92.5 [82.0; 97.1]	87.7 [85.0; 90.1]	86.5 [79.9; 91.2]
ASAQ	0.7 [0.1; 4.8]	0.9 [0.1; 7.8]	0.6 [0.1; 5.4]	0.0	12.7 [7.6; 20.3]	17.9 [10.1; 29.5]	1.0 [0.2; 4.2]	18.3 [11.1; 28.6]	8.1 [5.2; 12.3]	6.5 [3.5; 11.8]	0.8 [0.2; 4.0]	14.6 [10.1; 20.6]
AS-PY	0.0	0.0	0.0	0.0	3.0 [1.1; 7.6]	0.0	12.4 [7.1; 20.9]	1.0 [0.1; 8.7]	1.8 [0.7; 4.6]	0.0	7.1 [3.9; 12.7]	0.8 [0.1; 6.6]
ASSP	3.3 [2.0; 5.3]	0.0	2.6 [0.7; 8.7]	30.6 [12.7; 57.0]	35.2 [18.4; 56.8]	17.2 [7.8; 33.6]	37.0 [25.6; 50.2]	30.8 [15.0; 53.0]	22.9 [11.9; 39.6]	5.6 [2.6; 12.0]	22.3 [14.7; 32.2]	30.8 [17.0; 49.1]
DHAPPQ	25.3 [20.0; 31.4]	4.0 [0.6; 21.0]	8.1 [3.5; 17.5]	37.5 [18.6; 61.1]	48.7 [32.5; 65.2]	23.1 [12.5; 38.8]	55.8 [46.2; 65.0]	35.8 [21.4; 53.3]	39.7 [28.5; 52.0]	10.3 [6.3; 16.4]	35.3 [28.2; 43.1]	36.1 [24.1; 50.2]
ARPPQ	0.5 [0.1; 4.0]	0.0	1.2 [0.3; 4.8]	5.3 [0.9; 24.5]	26.1 [14.5; 42.5]	11.8 [6.3; 20.9]	31.3 [22.0; 42.3]	31.8 [16.1; 53.1]	16.3 [8.6; 28.6]	3.9 [1.9; 7.6]	18.4 [12.5; 26.2]	26.4 [11.6; 49.6]
DHAPPQ-Trim	0.0	0.0	0.0	0.0	25.5 [12.9; 44.1]	3.9 [0.7; 19.2]	30.1 [16.8; 47.8]	28.3 [11.8; 53.7]	15.7 [7.5; 29.9]	1.3 [0.2; 7.4]	17.2 [9.4; 29.4]	22.5 [7.6; 50.7]
ACT registered at national level#	37.2 [30.3; 44.6]	24.5 [17.3; 33.4]	20.8 [12.4; 32.9]	45.2 [20.8; 72.2]	70.0 [59.1; 79.0]	51.1 [34.2; 67.7]	67.9 [59.7; 75.1]	46.4 [36.8; 56.3]	57.4 [49.0; 65.3]	33.2 [25.2; 42.4]	47.7 [39.3; 56.2]	46.2 [36.8; 55.8]
Does not store nationally registered ACTs	63.6 [52.3; 73.6]	65.9 [49.6; 79.1]	60.9 [48.9; 71.7]	64.9 [40.2; 83.6]	79.6 [70.4; 86.5]	80.0 [56.3; 92.6]	76.5 [67.4; 83.6]	77.5 [72.1; 82.2]	73.5 [67.0; 79.1]	70.5 [56.7; 81.4]	69.8 [63.7; 75.3]	75.0 [68.1; 80.8]
ACT WHO-PQ^	15.8 [11.4; 21.5]	3.2 [0.7; 13.8]	13.1 [7.7; 21.2]	22.8 [8.1; 49.8]	55.5 [40.7; 69.4]	35.8 [22.1; 52.3]	51.2 [37.0; 65.2]	51.2 [38.8; 63.6]	40.2 [29.8; 51.7]	13.9 [7.7; 23.9]	34.8 [25.8; 45.1]	45.5 [31.7; 60.0]
WHO-PQ ACT and nationally registered	1.6 [0.6; 4.3]	2.3 [0.3; 14.6]	4.5 [2.2; 8.9]	0.0	43.8 [28.1; 60.9]	21.2 [9.1; 42.1]	42.0 [29.9; 55.0]	35.0 [20.9; 52.4]	27.6 [16.7; 42.0]	8.5 [3.4; 19.9]	25.9 [18.5; 34.9]	27.9 [13.5; 48.9]
WHO-PQ ACT but not registered nationally	15.3 [10.8; 21.2]	0.9 [0.1; 7.8]	11.0 [6.2; 18.8]	22.8 [8.1; 49.8]	53.1 [37.7; 67.9]	29.9 [18.4; 44.8]	47.4 [32.7; 62.5]	51.2 [38.8; 63.6]	38.6 [27.9; 50.5]	10.5 [5.6; 18.7]	31.7 [22.2; 43.2]	45.5 [31.7; 60.0]
ACT registered nationally but not WHO-PQ	36.8 [30.2; 44.1]	22.2 [15.7; 30.3]	18.8 [11.2; 29.9]	45.2 [20.8; 72.2]	62.0 [48.9; 73.5]	44.4 [30.1; 59.7]	65.9 [56.0; 74.7]	45.3 [35.6; 55.3]	52.3 [43.5; 60.9]	29.5 [22.7; 37.3]	45.7 [36.7; 55.0]	45.3 [35.8; 55.1]
ACT not WHO, QP or nationally approved	60.6 [48.6; 71.4]	65.9 [49.6; 79.1]	59.7 [46.3; 71.8]	64.9 [40.2; 83.6]	71.8 [60.4; 80.9]	69.1 [43.3; 86.8]	73.3 [65.7; 79.7]	68.8 [57.1; 78.5]	67.5 [60.0; 74.1]	66.9 [52.3; 78.9]	67.4 [61.4; 72.9]	68.0 [56.4; 77.8]
ACT not WHO-prequalified	94.9 [92.4; 96.6]	94.3 [83.5; 98.2]	92.2 [85.2; 96.1]	87.9 [72.7; 95.2]	84.7 [77.4; 89.9]	78.6 [53.7; 92.1]	84.5 [81.3; 87.2]	87.8 [83.1; 91.4]	88.6 [84.8; 91.6]	89.1 [77.8; 95.1]	87.8 [84.6; 90.4]	87.8 [82.0; 91.9]

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Percentage of outlets inspected* stocking at least one antimalarial :	Informal sector (total)				Formal sector (total)				Total			
	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala	Yaoundé	Center excl. Yaoundé	Douala	Littoral excl. Douala
	% (95% CI) N=183	% (95% CI) N=80	% (95% CI) N=112	% (95% CI) N=22	% (95% CI) N=262	% (95% CI) N=54	% (95% CI) N=145	% (95% CI) N=55	% (95% CI) N=450	% (95% CI) N=134	% (95% CI) N=257	% (95% CI) N=77
2 or more ACTs+	23.9 [18.3; 30.6]	4.0 [0.6; 21.0]	8.1 [3.5; 17.5]	37.5 [18.6; 61.1]	48.4 [32.3; 64.9]	25.0 [14.5; 39.5]	55.0 [45.5; 64.2]	35.4 [20.7; 53.6]	39.0 [28.1; 51.1]	10.9 [6.8; 16.8]	34.9 [27.5; 43.0]	35.8 [23.1; 51.0]
Non-artemisinins	41.5 [31.3; 52.5]	54.5 [37.7; 70.4]	49.3 [44.5; 54.2]	52.7 [37.6; 67.3]	65.4 [56.8; 73.1]	85.5 [74.1; 92.4]	62.4 [51.1; 72.5]	69.4 [47.4; 85.1]	56.2 [48.5; 63.6]	64.7 [51.3; 76.2]	56.8 [49.6; 63.7]	66.0 [45.5; 81.9]
Oral quinine	31.6 [22.8; 42.0]	37.8 [21.9; 56.9]	27.7 [20.4; 36.5]	39.0 [17.5; 65.9]	43.8 [32.1; 56.3]	56.2 [39.3; 71.7]	40.5 [30.8; 51.0]	42.2 [22.3; 65.1]	39.1 [31.0; 47.9]	43.9 [29.7; 59.2]	35.0 [28.9; 41.8]	41.6 [23.6; 62.1]
Chloroquine	0.0	0.0	0.0	0.0	6.4 [2.7; 14.3]	0.0	6.2 [3.2; 11.6]	7.5 [3.5; 15.5]	3.9 [1.6; 9.6]	0.0	3.5 [1.8; 6.7]	6.0 [2.3; 14.5]
Sulfadoxine pyrimethamine	18.6 [12.8; 26.3]	15.6 [8.9; 25.9]	30.3 [22.8; 39.1]	22.9 [9.5; 45.6]	27.8 [17.3; 41.4]	25.0 [13.4; 41.8]	29.6 [22.5; 37.9]	32.4 [17.0; 52.8]	24.2 [16.3; 34.4]	18.7 [12.7; 26.6]	29.9 [23.6; 37.0]	30.4 [16.5; 49.2]
SP-AQ	2.8 [0.7; 10.2]	0.0	0.0	0.0	0.0	0.0	0.4 [0.0; 3.5]	0.0	1.1 [0.3; 4.3]	0.0	0.2 [0.0; 2.1]	0.0
Atovaquone Proguanil	0.0	0.0	0.0	0.0	10.9 [5.3; 20.9]	0.0	11.4 [6.3; 19.6]	1.3 [0.2; 10.5]	6.7 [3.2; 13.3]	0.0	6.5 [3.7; 11.3]	1.1 [0.1; 7.5]
Mefloquine	0.0	0.0	0.0	0.0	5.5 [2.6; 11.1]	0.0	5.8 [2.8; 11.7]	0.0	3.4 [1.6; 7.2]	0.0	3.3 [1.6; 6.6]	0.0
Non-artemisinins (Other)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oral artemisinin monotherapy	0.4 [0.1; 2.7]	0.0	0.0	0.0	4.7 [1.9; 11.1]	0.4 [0.1; 3.4]	1.8 [0.3; 9.2]	0.0	3.1 [1.3; 7.2]	0.1 [0.0; 1.2]	1.1 [0.2; 5.4]	0.0
Non-oral artemisinin monotherapy	31.0 [22.3; 41.3]	33.2 [21.4; 47.5]	30.1 [20.7; 41.6]	31.6 [13.9; 57.0]	70.4 [62.5; 77.2]	91.9 [74.3; 97.8]	71.7 [62.1; 79.7]	81.8 [52.2; 94.9]	55.2 [50.9; 59.4]	52.5 [41.6; 63.1]	53.9 [50.3; 57.4]	71.7 [42.4; 89.7]
Treatment of severe malaria	31.0 [22.3; 41.3]	36.4 [24.2; 50.8]	31.3 [22.4; 41.9]	36.1 [17.9; 59.3]	71.3 [61.2; 79.6]	94.1 [81.8; 98.3]	70.2 [61.4; 77.7]	84.4 [56.1; 95.8]	55.8 [50.9; 60.6]	55.4 [44.2; 66.1]	53.5 [49.9; 57.1]	74.6 [47.4; 90.5]
Rectal artesunate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Artesunate injection	21.5 [13.6; 32.4]	15.6 [8.6; 26.8]	7.2 [3.6; 14.1]	2.5 [0.3; 15.9]	57.2 [50.3; 63.9]	69.5 [43.9; 86.9]	56.1 [47.5; 64.3]	78.4 [47.4; 93.6]	43.5 [39.2; 47.9]	33.3 [22.9; 45.7]	35.1 [29.3; 41.4]	63.1 [30.8; 86.7]
Artemether Injection	23.5 [14.4; 36.1]	25.6 [14.0; 42.1]	27.2 [19.5; 36.5]	31.6 [13.9; 57.0]	56.8 [49.7; 63.6]	84.7 [58.8; 95.6]	53.4 [44.3; 62.3]	49.7 [34.3; 65.1]	44.0 [38.0; 50.1]	45.0 [33.0; 57.7]	42.2 [38.2; 46.2]	46.0 [30.6; 62.2]
Quinine injection	7.4 [4.1; 13.0]	18.0 [8.5; 34.1]	9.0 [5.0; 15.6]	6.9 [1.7; 23.9]	28.4 [21.5; 36.5]	60.2 [41.5; 76.3]	22.9 [12.6; 38.1]	33.6 [27.1; 40.8]	20.3 [16.4; 24.8]	31.9 [22.9; 42.4]	16.9 [10.4; 26.4]	28.2 [19.6; 38.8]

Footnote: Outlets that met the selection criteria for a full interview, but did not complete the interview (were not interviewed or completed a partial interview) = 108
ACT on the national approval list
^ ACT on the WHO prequalification list
+ The outlet has at least two ACTs with different generics

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Table 6 Availability of blood tests for malaria in surveyed outlets, by type of outlet

Breakdown of all types of controlled outlets	Private not-for-profit facilities[1]	For-profit health facilities[2]	Pharmacy [3]	Formal sector (total)[1+2+3]	Informal sector (total)[4]	Total[1+2+3+4]	Wholesaler
	% (95% CI) N=37	% (95% CI) N=464	% (95% CI) N=163	% (95% CI) N=664	% (95% CI) N=543	% (95% CI) N=1207	% (95% CI) N=40
Stores any diagnostic test	85.3 [62.6; 95.2]	78.5 [71.1; 84.4]	10.4 [3.9; 24.5]	59.1 [51.9; 65.9]	9.2 [5.5; 15.0]	33.2 [27.9; 38.9]	11.6 [4.8; 25.6]
Stores malaria RDTs	74.3 [54.9; 87.3]	56.2 [48.3; 63.8]	10.4 [3.9; 24.5]	44.6 [37.5; 51.9]	9.0 [5.4; 14.7]	26.1 [21.2; 31.6]	11.6 [4.8; 25.6]
Stores malaria microscopy tests	57.7 [34.7; 77.8]	57.2 [48.9; 65.1]	0.0	40.4 [34.4; 46.7]	0.4 [0.1; 1.3]	19.6 [16.2; 23.5]	0 -
Stores pre-qualified RDTs^.	69.5 [49.6; 84.1]	48.9 [41.7; 56.2]	6.2 [2.6; 13.8]	38.4 [31.8; 45.6]	8.7 [5.1; 14.3]	23.0 [18.5; 28.1]	9.2 [3.1; 24.2]

Footnote: Outlets that met the selection criteria for a full interview, but did not complete the interview (were not interviewed or completed a partial interview) = 108
^ RDT on the WHO pre-qualification list

Source: ACTwatch Lite survey, CAMEROON, 2024.

Table 7 Availability of malaria screening blood tests in surveyed outlets stocking at least 1 antimalarial product, by type of outlet

Distribution of outlet types, among outlets with at least 1 antimalarial product available on the day of the survey	Private not-for-profit facilities[1]	Private for-profit facilities[2]	Pharmacy[3]	Formal sector (total)[1+2+3]	Informal sector (total)[4]	Total[1+2+3+4]	Wholesaler
	% (95% CI) N=31	% (95% CI) N=362	% (95% CI) N=128	% (95% CI) N=521	% (95% CI) N=397	% (95% CI) N=918	% (95% CI) N=4
Stores any diagnostic test	90.0 [58.6; 98.3]	90.8 [81.1; 95.8]	12.8 [4.8; 30.1]	67.1 [58.7; 74.5]	13.3 [8.1; 21.0]	40.9 [34.7; 47.3]	37.8 [6.0; 85.2]
Stores malaria RDTs	78.1 [56.3; 90.8]	69.9 [59.9; 78.3]	12.8 [4.8; 30.1]	53.6 [45.3; 61.7]	13.0 [7.9; 20.6]	33.8 [27.9; 40.2]	37.8 [6.0; 85.2]
Stores malaria microscopy tests	62.7 [36.9; 82.9]	64.9 [55.6; 73.2]	0.0	45.0 [38.1; 52.1]	0.6 [0.2; 1.8]	23.3 [19.5; 27.7]	0
Stores pre-qualified RDTs^.	73.0 [51.1; 87.5]	60.1 [52.0; 67.8]	7.6 [3.2; 17.1]	45.8 [38.5; 53.2]	12.5 [7.5; 20.1]	29.6 [24.3; 35.5]	37.8 [6.0; 85.2]

Footnote: Outlets that met the selection criteria for a full interview, but did not complete the interview (were not interviewed or completed a partial interview) = 25
^ RDT on the WHO pre-qualification list

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 8 Market composition: Distribution of surveyed outlet types

Distribution of outlet types, among outlets with at least 1 product or service available on the day of the survey	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	General retailer	Itinerant vendor	All private outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Anti-malarial* drugs						
N= 804	6.9% [4.93; 9.49]	30.7% [25.64; 36.32]	11.8% [7.45; 18.27]	46.5% [38.01; 55.13]	4.1% [1.27; 12.54]	100% -
Blood test for malaria** (in French)						
N= 452	13.4% [9.42; 18.80]	68.1% [60.07; 75.18]	3.7% [0.99; 12.82]	14.8% [9.33; 22.64]	0.0% [0.00; 0.00]	100% -

* Outlets with at least one antimalarial in stock on the day of the survey, verified by the presence of at least one antimalarial recorded in the antimalarial audit form.
** Outlets offering malaria blood tests on the day of the survey, verified by the presence of at least one RDT recorded in the RDT audit form and/or the reported availability of a malaria microscopy.

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 9 Purchase price in CFA of antimalarial tablets (standardized AETD) in surveyed outlets, by type of outlet

Median price of a AETD* tablet :	Type of outlet						
	Private not-for-profit facilities[1]	Private for-profit facilities[2]	Pharmacy[3]	Formal sector (total)[1+2+3]	Informal sector (total)[4]	Total[1+2+3+4]	Wholesaler
	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)
All antimalarial drugs	3000.00 CFA [1734.67; 6666.67] (64)	3200.00 CFA [1700.00; 8673.33] (738)	3475.00 CFA [2500.00; 6066.67] (4072)	3466.67 CFA [2441.25; 6253.33] (4874)	1500.00 CFA [1000.00; 3000.00] (912)	3160.00 CFA [2320.00; 6000.00] (5786)	1387.73 CFA [800.00; 3000.00] (6)
Any ACT	2400.00 CFA [1100.00; 3600.00] (51)	2000.00 CFA [1125.00; 4000.00] (635)	3375.00 CFA [2490.00; 5293.33] (3668)	3153.33 CFA [2418.75; 4965.00] (4354)	1000.00 CFA [1000.00; 2666.67] (731)	3000.00 CFA [2305.00; 4700.00] (5085)	850.00 CFA [800.00; 2266.67] (5)
All AL	2000.00 CFA [1000.00; 3400.00] (39)	2000.00 CFA [1333.33; 4000.00] (468)	3200.00 CFA [2385.00; 4880.00] (2069)	3133.33 CFA [2330.00; 4800.00] (2576)	1000.00 CFA [1000.00; 2500.00] (646)	2900.00 CFA [2000.00; 4470.00] (3222)	825.00 CFA [800.00; 2266.67] (4)
ASAQ	2250.00 CFA [500.00; 4000.00] (2)	1000.00 CFA [500.00; 2000.00] (71)		1000.00 CFA [500.00; 2000.00] (73)	1000.00 CFA [4.00; 4000.00] (8)	1000.00 CFA [500.00; 2000.00] (81)	
AS-PY		1666.67 CFA [101.67; 1666.67] (1)	5000.00 CFA [3333.33; 9250.00] (19)	5000.00 CFA [1666.67; 9250.00] (20)		5000.00 CFA [1666.67; 9250.00] (20)	
ASSP	500.00 CFA [500.00; 500.00] (1)	4800.00 CFA [4000.00; 4800.00] (11)	4600.00 CFA [3000.00; 8520.00] (259)	4600.00 CFA [3000.00; 8500.00] (271)	5300.00 CFA [5000.00; 8000.00] (14)	4600.00 CFA [3000.00; 8500.00] (285)	
DHAPPQ	2812.50 CFA [2400.00; 3600.00] (9)	3000.00 CFA [2250.00; 6400.00] (72)	3030.00 CFA [2445.00; 5333.33] (1113)	3030.00 CFA [2441.25; 5333.33] (1194)	2625.00 CFA [2212.50; 8000.00] (59)	3030.00 CFA [2441.25; 5333.33] (1253)	1337.00 CFA [1337.00; 1337.00] (1)
ARPPQ		2500.00 CFA [850.00; 3000.00] (12)	3000.00 CFA [2975.00; 4280.00] (127)	3000.00 CFA [2975.00; 4280.00] (139)	2500.00 CFA [2500.00; 3000.00] (4)	3000.00 CFA [2975.00; 4280.00] (143)	
DHA-PPQ-Trim			4050.00 CFA [4025.00; 6529.60] (81)	4050.00 CFA [4025.00; 6529.60] (81)		4050.00 CFA [4025.00; 6529.60] (81)	
ACT registered at national level#	1100.00 CFA [1000.00; 2400.00] (18)	2700.00 CFA [1500.00; 5333.33] (196)	3465.00 CFA [2445.00; 5333.33] (1377)	3450.00 CFA [2360.00; 5333.33] (1591)	2000.00 CFA [1000.00; 4000.00] (143)	3426.67 CFA [2350.00; 5320.00] (1734)	825.00 CFA [750.00; 2425.00] (3)
ACT not registered at national level	3000.00 CFA [1500.00; 4000.00] (29)	2000.00 CFA [1000.00; 4000.00] (337)	3133.33 CFA [2598.75; 5000.00] (2201)	3050.00 CFA [2441.25; 4800.00] (2567)	1500.00 CFA [1000.00; 2666.67] (313)	3000.00 CFA [2400.00; 4600.00] (2880)	1801.83 CFA [1337.00; 2266.67] (1)
ACT pre-qualified by WHO^	3400.00 CFA [500.00; 4000.00] (4)	1600.00 CFA [1000.00; 2625.00] (159)	3133.33 CFA [2815.00; 3500.00] (917)	3050.00 CFA [2490.00; 3500.00] (1080)	2000.00 CFA [1000.00; 2800.00] (58)	3030.00 CFA [2475.00; 3500.00] (1138)	
WHO-prequalified and nationally-approved ACT	4000.00 CFA [4000.00; 4000.00] (1)	3200.00 CFA [2000.00; 4000.00] (44)	3150.00 CFA [2425.00; 4800.00] (277)	3150.00 CFA [2400.00; 4200.00] (322)	2000.00 CFA [1500.00; 2000.00] (11)	3150.00 CFA [2350.00; 4000.00] (333)	

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	Type of outlet						
	Private not-for-profit facilities[1]	Private for-profit facilities[2]	Pharmacy[3]	Formal sector (total)[1+2+3]	Informal sector (total)[4]	Total[1+2+3+4]	Wholesaler
ACT prequalified by WHO but not approved at national level	500.00 CFA [500.00; 3400.00] (3)	1000.00 CFA [666.67; 2000.00] (115)	3120.00 CFA [2900.00; 3500.00] (640)	3025.00 CFA [2493.75; 3500.00] (758)	2500.00 CFA [1000.00; 2800.00] (47)	3010.00 CFA [2490.00; 3500.00] (805)	
Nationally approved but not WHO prequalified	1100.00 CFA [1000.00; 2200.00] (17)	2700.00 CFA [1500.00; 6000.00] (152)	3487.50 CFA [2445.00; 5500.00] (1100)	3466.67 CFA [2350.00; 5500.00] (1269)	2000.00 CFA [1000.00; 4600.00] (132)	3466.67 CFA [2350.00; 5500.00] (1401)	825.00 CFA [750.00; 2425.00] (3)
ACT not prequalified by WHO or at national level	3000.00 CFA [1500.00; 4000.00] (26)	2512.50 CFA [1500.00; 4000.00] (222)	3295.00 CFA [2441.25; 6300.00] (1561)	3146.67 CFA [2437.50; 6000.00] (1809)	1500.00 CFA [1000.00; 2666.67] (266)	3000.00 CFA [2350.00; 5400.00] (2075)	1801.83 CFA [1337.00; 2266.67] (1)
ACT not prequalified by WHO	2400.00 CFA [1100.00; 3600.00] (47)	2475.00 CFA [1500.00; 4000.00] (476)	3465.00 CFA [2441.25; 5746.67] (2751)	3400.00 CFA [2400.00; 5600.00] (3274)	1000.00 CFA [1000.00; 2666.67] (673)	3000.00 CFA [2272.50; 5320.00] (3947)	850.00 CFA [800.00; 2266.67] (5)
Non-artemisinins	3469.33 CFA [1734.67; 8673.33] (13)	6346.34 CFA [2428.53; 10577.24] (103)	7077.44 CFA [1045.00; 15265.07] (396)	7008.05 CFA [1050.00; 14385.04] (512)	2081.60 CFA [500.00; 5204.00] (181)	4653.98 CFA [1040.80; 11703.22] (693)	1994.87 CFA [1387.73; 2602.00] (1)
Oral quinine	3469.33 CFA [1734.67; 3469.33] (10)	2602.00 CFA [277.55; 7806.00] (81)	11830.43 CFA [7077.44; 14918.13] (173)	7077.44 CFA [2948.93; 14385.04] (264)	2602.00 CFA [1734.67; 5204.00] (106)	5204.00 CFA [2081.60; 11830.43] (370)	1387.73 CFA [1387.73; 1387.73] (1)
Chloroquine			997.50 CFA [992.50; 1028.17] (21)	997.50 CFA [992.50; 1028.17] (21)		997.50 CFA [992.50; 1028.17] (21)	
SP	500.00 CFA [500.00; 500.00] (3)	300.00 CFA [300.00; 500.00] (22)	650.00 CFA [600.00; 1045.00] (114)	600.00 CFA [500.00; 1045.00] (139)	300.00 CFA [250.00; 500.00] (71)	500.00 CFA [300.00; 800.00] (210)	
SP-Amodiaquine					1696.46 CFA [1470.59; 1922.34] (4)	1696.46 CFA [1470.59; 1922.34] (4)	
Atovaquone-Proguanil			38290.00 CFA [17800.00; 51760.00] (71)	38290.00 CFA [17800.00; 51760.00] (71)		38290.00 CFA [17800.00; 51760.00] (71)	
Mefloquine			16714.00 CFA [16631.80; 17974.40] (17)	16714.00 CFA [16631.80; 17974.40] (17)		16714.00 CFA [16631.80; 17974.40] (17)	

* AETD - Adult Equivalent Treatment Dose - is the number of milligrams needed to treat a 60 kg adult (see Appendix 9: AETDs).
Information provided by the respondent on the price of a specific quantity of antimalarial (for example, price per tablet or price per pack) has been converted into a price by AETD.
Pricing data in this table is derived from audited products for which pricing information was provided. Footnote: N outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252; N antimalarial products audited but price information missing = 435
ACT on the national approval list
^ ACT on the WHO prequalification list

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Table 10 Purchase price in CFA francs of ACT tablets and prepackaged RDTs at surveyed outlets, by outlet type

	Type of outlet						
	Private not-for-profit facilities[1]	Private for-profit facilities[2]	Pharmacy[3]	Formal sector (total)[1+2+3]	Informal sector (total)[4]	Total[1+2+3+4]	Wholesaler
Median price of pre-packaged therapy* :	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)
Artemether lumefantrine WHO prequalified							
Pack size 1 (paediatric): For 5-15 kgs		500.00 CFA [500.00; 1000.00] (17)	1220.00 CFA [1200.00; 1700.00] (137)	1220.00 CFA [1100.00; 1300.00] (154)	500.00 CFA [500.00; 500.00] (1)	1220.00 CFA [1100.00; 1300.00] (155)	
Pack size 2 (child): For 15-25 kgs		1700.00 CFA [1700.00; 1800.00] (2)	1750.00 CFA [1750.00; 1770.00] (71)	1750.00 CFA [1750.00; 1775.00] (73)	2500.00 CFA [2000.00; 2500.00] (2)	1750.00 CFA [1750.00; 1800.00] (75)	
Pack size 3 (Teenager): For 25-35 kgs		2000.00 CFA [2000.00; 2000.00] (1)	2350.00 CFA [2340.00; 2365.00] (80)	2350.00 CFA [2340.00; 2365.00] (81)		2350.00 CFA [2340.00; 2365.00] (81)	
Size 4 package (adult): For ≥35 kgs		2600.00 CFA [2000.00; 2900.00] (21)	2910.00 CFA [2400.00; 3150.00] (253)	2910.00 CFA [2400.00; 3150.00] (274)	2500.00 CFA [2300.00; 2800.00] (29)	2900.00 CFA [2400.00; 3150.00] (303)	
Artemether lumefantrine non-prequalified							
Pack size 1 (paediatric): For 5-15 kgs	2000.00 CFA [1000.00; 2000.00] (3)	1500.00 CFA [1000.00; 1500.00] (48)	1425.00 CFA [1150.00; 2300.00] (321)	1500.00 CFA [1015.00; 2285.00] (372)	1000.00 CFA [1000.00; 1000.00] (34)	1375.00 CFA [1000.00; 2270.00] (406)	
Packaging size 2 (child): For 15-25 kgs	2200.00 CFA [2000.00; 2200.00] (2)	2100.00 CFA [1600.00; 2300.00] (5)	2235.00 CFA [1750.00; 2250.00] (137)	2235.00 CFA [1750.00; 2250.00] (144)	2000.00 CFA [2000.00; 2300.00] (2)	2235.00 CFA [1750.00; 2250.00] (146)	
Pack size 3 (Teenager): For 25-35 kgs		2500.00 CFA [2300.00; 2500.00] (5)	2565.00 CFA [2550.00; 2570.00] (83)	2565.00 CFA [2550.00; 2570.00] (88)	2500.00 CFA [2300.00; 2500.00] (3)	2565.00 CFA [2550.00; 2570.00] (91)	
Size 4 package (adult): For ≥35 kgs	1500.00 CFA [1000.00; 2500.00] (19)	1500.00 CFA [1000.00; 2000.00] (223)	2350.00 CFA [2230.00; 2650.00] (816)	2315.00 CFA [1895.00; 2630.00] (1058)	1000.00 CFA [1000.00; 1500.00] (347)	2250.00 CFA [1500.00; 2500.00] (1405)	800.00 CFA [800.00; 850.00] (3)
RDT							
RDT (per unit)	1000.00 CFA [500.00; 1000.00] (24)	1000.00 CFA [500.00; 1000.00] (274)	1000.00 CFA [500.00; 1000.00] (9)	1000.00 CFA [500.00; 1000.00] (307)	1000.00 CFA [500.00; 1000.00] (41)	1000.00 CFA [500.00; 1000.00] (348)	1000.00 CFA [1000.00; 1000.00] (1)

* Prices of prepackaged ACT products as declared by respondents.
Pricing data in this table was obtained from audited products for which pricing information was provided. The number of anti-malarial products audited for which price information was not provided is as follows:
Footnote: products with missing price data: QA AL, pack size 1: 9640; QA AL, pack size 2: 2; QA AL, pack size 3: 1; QA AL, pack size 4: 7; non-QA AL, pack size 1: 6; non-QA AL, pack size 2: 4; non-QA AL, pack size 3: 0; non-QA AL, pack size 4: 38; mRDT: 47

Source: ACTwatch Lite survey, CAMEROON, 2024

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Table 11 Median profit margins (in percent) on anti-malarial tablets (standardized AETD) in outlets surveyed at customer level, by outlet type

	Type of outlet					
	Private not-for-profit facilities[1]	Private health facilities[2]	Pharmacy[3]	Formal vendors Total[1+2+3]	Informal vendors Total[4]	Total[1+2+3+4]
Profit margin# median per AETD* tablet :	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)
Any ACT	49% [0.45; 1.31] (64)	98% [0.49; 1.39] (738)	126% [1.00; 1.83] (4072)	124% [0.98; 1.71] (4874)	66% [0.33; 0.98] (912)	115% [0.82; 1.56] (5786)
AL	49% [0.45; 1.31] (51)	98% [0.49; 1.31] (635)	125% [1.01; 1.66] (3668)	123% [0.98; 1.62] (4354)	74% [0.42; 0.98] (731)	115% [0.90; 1.48] (5085)
DHAPPQ	49% [0.43; 1.31] (39)	98% [0.55; 1.31] (468)	121% [0.97; 1.47] (2069)	117% [0.96; 1.46] (2576)	74% [0.42; 0.98] (646)	102% [0.79; 1.36] (3222)
ARPPQ	47% [0.47; 3.28] (9)	98% [0.68; 1.65] (72)	121% [1.02; 1.50] (1113)	120% [1.01; 1.50] (1194)	74% [0.37; 1.23] (59)	120% [1.01; 1.50] (1253)
ASSP		107% [1.07; 1.31] (12)	154% [1.24; 1.85] (127)	137% [1.24; 1.85] (139)	98% [0.98; 0.98] (4)	131% [1.24; 1.85] (143)
Other ACT		164% [0.00; 1.97] (11)	194% [1.27; 3.52] (259)	194% [1.27; 3.52] (271)	295% [1.97; 3.23] (14)	194% [1.27; 3.52] (285)
ACT registered at national level#	369% [0.82; 6.55] (2)	78% [0.25; 1.31] (84)	167% [1.26; 1.84] (227)	167% [1.24; 1.80] (313)	92% [-13.10; 3.44] (12)	167% [1.24; 1.80] (325)
ACT prequalified by WHO^	49% [0.33; 0.82] (18)	109% [0.62; 1.66] (196)	126% [0.98; 1.67] (1377)	120% [0.97; 1.67] (1591)	82% [0.66; 1.04] (143)	116% [0.96; 1.64] (1734)
ACT not prequalified by WHO	131% [0.82; 6.55] (4)	109% [0.55; 1.91] (159)	131% [1.16; 1.47] (917)	130% [1.09; 1.47] (1080)	98% [0.54; 1.20] (58)	130% [1.04; 1.47] (1138)
Non-ACT	49% [0.43; 1.31] (47)	83% [0.49; 1.23] (476)	121% [0.98; 1.72] (2751)	119% [0.96; 1.67] (3274)	66% [0.42; 0.98] (673)	107% [0.82; 1.50] (3947)
SP	-23% [-0.23; -0.23] (13)	112% [0.00; 2.27] (103)	492% [0.44; 7.45] (396)	295% [0.43; 6.65] (512)	41% [0.16; 1.42] (181)	114% [0.33; 4.92] (693)
Quinine		25% [0.16; 0.49] (22)	43% [0.26; 0.44] (114)	43% [0.25; 0.44] (139)	25% [0.16; 0.33] (71)	33% [0.21; 0.43] (210)
Chloroquine	-23% [-0.23; -0.23] (10)	142% [0.00; 2.58] (81)	600% [3.08; 7.63] (173)	491% [2.29; 6.26] (264)	57% [0.28; 1.85] (106)	227% [0.57; 5.05] (370)

* AETD - Adult Equivalent Treatment Dose - is the number of milligrams needed to treat a 60 kg adult (see appendix 9: AETD).
Information provided by the respondent on the price of a specific quantity of antimalarial (e.g. price per tablet or price per pack) has been converted into a price by AETD
Percentage profit margins are calculated as the percentage difference between the reported wholesale purchase price and the retail selling price for each product. Only products with non-missing wholesale and retail prices were included.
Products with missing margin data for the following products: Anti-malarials: 6114
Here we present the median difference as a percentage.
ACT on the national approval list
^ ACT on the WHO prequalification list

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 12 Median profit margins (in percent) on prepackaged ACT and RDT tablets in all outlets surveyed at customer level, by outlet type

	Type of outlet					
	Formal			Informal		
	Private not-for-profit facilities[1]	Private health facilities[2]	Pharmacy[3]	Formal vendors Total[1+2+3]	Informal vendors Total[4]	Total[1+2+3+4]
Profit margin= median for pre-packaged therapy :	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)	Median % [IQR] (N of antimalarials)
Artemether lumefantrine prequalified						
Pack size 1 (paediatric): For 5-15 kgs	43% [0.22; 1.14] (64)	50% [0.33; 1.12] (738)	34% [0.34; 0.35] (4072)	34% [0.34; 1.14] (912)	67% [0.34; 0.35] (4874)	34% [0.34; 0.43] (5786)
Pack size 2 (child): For 15-25 kgs	43% [0.22; 1.14] (51)	50% [0.34; 1.12] (635)	34% [0.34; 0.35] (3668)	34% [0.39; 1.14] (731)	67% [0.34; 0.35] (4354)	34% [0.34; 0.40] (5085)
Size 3 package (Teenager): For 25-35 kgs	43% [0.22; 1.14] (39)	56% [0.34; 1.14] (468)	34% [0.34; 0.35] (2069)	34% [0.43; 1.22] (646)	67% [0.34; 0.36] (2576)	34% [0.34; 0.54] (3222)
Size 4 package (adult): For ≥35 kgs	12% [0.12; 1.00] (9)	32% [0.20; 0.50] (72)	34% [0.34; 0.35] (1113)	34% [0.18; 0.39] (59)	25% [0.34; 0.35] (1194)	34% [0.34; 0.35] (1253)
Artemether lumefantrine non-prequalified						
Pack size 1 (paediatric): For 5-15 kgs		29% [0.29; 0.36] (12)	34% [0.34; 0.34] (127)	34% [0.25; 0.25] (4)	25% [0.34; 0.34] (139)	34% [0.34; 0.34] (143)
Packaging size 2 (child): For 15-25 kgs		17% [0.00; 0.28] (11)	34% [0.34; 0.35] (259)	34% [0.32; 0.56] (14)	34% [0.34; 0.35] (271)	34% [0.34; 0.35] (285)
Size 3 package (Teenager): For 25-35 kgs		43% [0.29; 2.33] (84)	34% [0.34; 0.35] (227)	34% [-1.00; 0.54] (12)	25% [0.34; 0.35] (313)	34% [0.34; 0.35] (325)
Size 4 package (adult): For ≥35 kgs	43% [0.22; 0.43] (18)	50% [0.32; 1.86] (196)	34% [0.34; 0.35] (1377)	34% [0.33; 1.00] (143)	50% [0.34; 0.35] (1591)	34% [0.34; 0.36] (1734)
RDT						
RDT (per unit)	31% [0.31; 0.31] (4)	67% [0.33; 2.00] (159)	34% [0.34; 0.35] (917)	34% [0.25; 0.54] (58)	43% [0.34; 0.35] (1080)	34% [0.34; 0.36] (1138)

Percentage profit margins are calculated as the percentage unit price difference between the reported wholesale purchase price and the retail selling price for each product. Only products with non-missing wholesale and retail prices were included. products with missing margin data for the following products: Anti-malarials: 4,357The median percentage difference is shown here.

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 13 Median number of antimalarial AETDs and RDTs sold in the week preceding the survey in all outlets inspected at customer level, by outlet type

	Type of outlet					
	Formal			Informal		Total
	Private not-for-profit facilities	Private health facilities	Pharmacy	General retailer	Itinerant vendor	
Median number sold among all POS checked	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)
All antimalarial drugs	0.75 [0.00; 4.00] (138)	0.75 [0.00; 3.00] (1601)	0.50 [0.00; 2.00] (3923)	1.00 [0.00; 3.46] (1126)	3.00 [0.75; 4.00] (16)	0.75 [0.00; 2.50] (6804)
Any ACT	2.00 [0.25; 10.00] (65)	1.00 [0.00; 3.00] (876)	0.75 [0.00; 2.00] (3447)	2.00 [0.00; 5.00] (763)	4.00 [0.75; 8.00] (12)	1.00 [0.00; 3.00] (5163)
All AL	2.00 [0.75; 10.00] (45)	1.50 [0.25; 3.75] (652)	0.75 [0.00; 2.00] (2108)	2.00 [0.00; 5.00] (680)	4.00 [0.37; 8.00] (11)	1.00 [0.00; 3.00] (3496)
Artesunate amodiaquine	0.00 [0.00; 0.88] (10)	0.38 [0.00; 2.00] (99)		0.00 [0.00; 0.75] (8)		0.25 [0.00; 1.25] (117)
AS-pyronaridine		2.70 [2.70; 36.00] (3)	0.00 [0.00; 2.10] (23)			0.00 [0.00; 5.40] (26)
AS-SP		5.00 [1.50; 5.00] (10)	1.25 [0.50; 3.00] (181)	0.75 [0.50; 1.25] (12)		1.25 [0.50; 3.00] (203)
Dihydroartemisinin-Piperaquine	2.67 [0.00; 20.00] (10)	0.38 [0.00; 2.67] (101)	0.38 [0.00; 1.78] (953)	0.50 [0.00; 1.33] (61)	0.75 [0.75; 0.75] (1)	0.38 [0.00; 2.00] (1126)
Arterolane PPQ		5.00 [1.00; 5.00] (11)	1.25 [0.00; 6.00] (87)	0.00 [0.00; 5.00] (2)	0.00	2.00 [0.00; 5.00] (100)
DHA-PPQ-Trimethoprim			1.00 [0.00; 2.00] (95)			1.00 [0.00; 2.00] (95)
ACT registered at national level	3.00 [0.50; 5.00] (21)	1.00 [0.00; 3.00] (275)	0.75 [0.00; 2.00] (1403)	1.00 [0.00; 4.00] (160)	8.00 [8.00; 8.00] (2)	0.75 [0.00; 2.00] (1861)
ACT not registered at national level	1.13 [0.38; 15.00] (39)	1.13 [0.00; 3.75] (465)	0.67 [0.00; 2.00] (1966)	1.00 [0.00; 4.00] (369)	2.00 [0.75; 9.00] (7)	0.75 [0.00; 2.67] (2846)
WHO-prequalified ACTs	0.25 [0.00; 0.88] (15)	0.75 [0.00; 3.00] (205)	1.00 [0.00; 3.00] (664)	1.00 [0.00; 2.00] (48)		1.00 [0.00; 3.00] (932)
WHO-prequalified and nationally-approved ACTs	0.00 [0.00; 0.50] (5)	0.88 [0.00; 3.00] (62)	1.00 [0.00; 4.00] (204)	1.00 [1.00; 1.00] (10)		1.00 [0.00; 3.00] (281)
WHO-prequalified ACTs (not nationally registered)	0.25 [0.00; 1.50] (10)	0.75 [0.00; 3.00] (143)	1.00 [0.00; 2.67] (460)	1.00 [0.00; 2.00] (38)		1.00 [0.00; 2.67] (651)
ACT approved nationally but not WHO prequalified	3.00 [2.00; 5.00] (16)	1.00 [0.00; 2.67] (213)	0.75 [0.00; 2.00] (1199)	1.00 [0.00; 5.00] (150)	8.00 [8.00; 8.00] (2)	0.75 [0.00; 2.00] (1580)
ACT not WHO-prequalified or nationally approved	2.00 [0.75; 15.00] (29)	1.50 [0.25; 4.00] (322)	0.50 [0.00; 2.00] (1506)	1.12 [0.00; 4.00] (331)	2.00 [0.75; 9.00] (7)	0.75 [0.00; 2.67] (2195)
ACTs not prequalified by WHO	2.67 [0.75; 15.00] (50)	1.33 [0.00; 3.75] (671)	0.50 [0.00; 2.00] (2783)	2.00 [0.00; 5.00] (715)	4.00 [0.75; 8.00] (12)	1.00 [0.00; 3.00] (4231)
Non-artemisinins	0.28	0.12	0.00	0.29	3.00	0.19

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	Type of outlet					
	Formal			Informal		Total
	Private not-for-profit facilities	Private health facilities	Pharmacy	General retailer	Itinerant vendor	
Median number sold among all POS checked	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)
	[0.00; 1.44] (30)	[0.00; 0.77] (274)	[0.00; 1.37] (301)	[0.03; 1.44] (223)	[0.58; 3.00] (4)	[0.00; 1.44] (832)
Oral quinine	0.86 [0.00; 1.44] (11)	0.00 [0.00; 1.44] (98)	0.00 [0.00; 0.35] (136)	0.29 [0.00; 1.44] (134)	0.58 [0.29; 0.58] (2)	0.09 [0.00; 0.86] (381)
Chloroquine			0.00 [0.00; 4.00] (14)			0.00 [0.00; 4.00] (14)
SP	10.00 [0.00; 10.00] (6)	3.00 [0.00; 8.00] (43)	3.00 [1.00; 5.00] (82)	2.00 [1.00; 3.00] (56)	3.00 [3.00; 3.00] (2)	3.00 [1.00; 5.00] (189)
SP-AQ		2.60 [2.60; 2.60] (1)		2.04 [2.04; 2.04] (3)		2.04 [2.04; 2.60] (4)
Atovaquone-Proguanil			0.00 [0.00; 0.50] (50)			0.00 [0.00; 0.50] (50)
Mefloquine			0.00 [0.00; 0.00] (14)			0.00 [0.00; 0.00] (14)
Oral artemisinin monotherapy			1.00 [0.00; 1.50] (8)			1.00 [0.00; 1.50] (8)
Non-oral artemisinin monotherapy	0.50 [0.00; 3.33] (43)	0.83 [0.20; 2.50] (451)	0.00 [0.00; 0.50] (167)	0.50 [0.00; 1.80] (140)		0.50 [0.00; 1.67] (801)
Any treatment for severe malaria	0.30 [0.00; 1.20] (56)	0.50 [0.09; 1.50] (579)	0.00 [0.00; 0.50] (161)	0.40 [0.05; 1.17] (170)		0.40 [0.00; 1.20] (966)
Rectal artesunate						
Artesunate injection	1.00 [0.00; 7.50] (29)	1.00 [0.20; 3.00] (233)	0.15 [0.00; 0.90] (89)	0.20 [0.10; 0.80] (50)		0.50 [0.00; 2.00] (401)
Artemether Injection	0.33 [0.00; 0.50] (14)	0.83 [0.17; 1.67] (217)	0.00 [0.00; 0.17] (67)	1.00 [0.00; 3.00] (90)		0.50 [0.00; 1.67] (388)
Quinine injection	0.24 [0.05; 0.28] (13)	0.12 [0.05; 0.43] (129)	0.00 [0.00; 0.00] (5)	0.19 [0.05; 0.86] (30)		0.12 [0.05; 0.43] (177)
RDT	4.00 [2.00; 13.00] (23)	6.00 [3.00; 10.00] (264)	0.00 [0.00; 0.00] (9)	2.00 [0.00; 5.00] (52)		5.00 [2.00; 10.00] (348)

* AETD - Adult Equivalent Treatment Dose - is the number of milligrams needed to treat a 60 kg adult (see Appendix 9: AETDs).
Information provided by the respondent on the price of a specific quantity of antimalarial (for example, price per tablet or price per pack) has been converted into a price by AETD.
Number of products audited (AM/RDT) but missing sales volume data for the previous week: 2,492

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 14 Median number of antimalarial AETDs and RDTs sold in the week preceding the survey in outlets*, by outlet type

	Type of outlet					
	Formal			Informal		Total
	Private not-for-profit facilities	Private health facilities	Pharmacy	General retailer	Travelling vendor	
Median number of sales in PoVs with sales	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)
All antimalarial drugs	1.44 [0.71; 10.00] (102)	1.50 [0.50; 4.00] (1038)	1.50 [0.75; 3.00] (2399)	2.00 [0.86; 5.00] (840)	1.50 [0.75; 3.75] (3539)	1.50 [0.75; 4.00] (4379)
Any ACT	3.00 [1.13; 15.00] (51)	2.00 [1.00; 5.00] (568)	1.50 [0.75; 3.00] (2173)	3.00 [1.13; 8.00] (579)	1.88 [0.88; 4.00] (2792)	2.00 [1.00; 4.00] (3371)
All AL	3.00 [1.13; 15.00] (37)	2.00 [1.00; 4.00] (439)	1.50 [0.75; 3.00] (1348)	4.00 [1.88; 8.00] (528)	2.00 [0.75; 4.00] (1824)	2.00 [1.00; 4.50] (2352)
Artesunate amodiaquine	0.88 [0.25; 1.50] (7)	1.00 [0.63; 3.00] (55)		1.00 [0.75; 2.50] (5)	1.00 [0.50; 3.00] (62)	1.00 [0.50; 3.00] (67)
AS-pyronaridine		19.35 [2.70; 36.00] (2)	5.40 [0.60; 6.00] (8)		5.40 [1.50; 6.00] (10)	5.40 [1.50; 6.00] (10)
AS-SP		5.00 [3.50; 5.00] (8)	2.00 [1.00; 3.00] (157)	0.75 [0.50; 1.25] (10)	2.00 [1.00; 4.00] (165)	2.00 [1.00; 3.50] (175)
Dihydroartemisinin-Piperaquine	20.00 [2.67; 20.83] (7)	2.50 [1.00; 2.67] (56)	1.33 [0.67; 3.56] (537)	0.75 [0.75; 2.08] (35)	1.33 [0.75; 4.00] (600)	1.33 [0.75; 3.56] (635)
Arterolane PPQ		5.00 [4.00; 5.00] (8)	3.00 [1.00; 7.00] (58)	5.00 [5.00; 5.00] (1)	4.00 [1.00; 7.00] (66)	4.00 [1.00; 7.00] (67)
DHA-PPQ-Trimethoprim			1.00 [1.00; 3.00] (65)		1.00 [1.00; 3.00] (65)	1.00 [1.00; 3.00] (65)
ACT registered at national level	3.00 [2.00; 5.00] (17)	2.00 [0.75; 3.00] (168)	1.50 [0.75; 3.00] (900)	3.50 [1.00; 8.00] (112)	1.50 [0.75; 3.00] (1085)	2.00 [1.00; 3.00] (1197)
ACT not registered at national level	3.00 [1.00; 15.00] (31)	2.25 [1.00; 5.00] (308)	1.50 [0.75; 4.00] (1235)	2.50 [1.00; 6.00] (268)	1.88 [0.75; 4.00] (1574)	2.00 [1.00; 4.00] (1842)
WHO-prequalified ACTs	0.88 [0.50; 1.50] (10)	2.00 [0.75; 3.75] (116)	2.00 [1.00; 5.00] (465)	1.50 [1.00; 2.50] (32)	2.00 [1.00; 5.00] (591)	2.00 [1.00; 4.00] (623)
WHO-prequalified and nationally-approved ACTs	0.50 [0.50; 0.50] (3)	2.00 [0.63; 3.00] (35)	2.00 [1.00; 6.00] (158)	1.00 [1.00; 1.00] (8)	2.00 [1.00; 5.00] (196)	2.00 [1.00; 5.00] (204)
WHO-prequalified ACTs (not nationally registered)	1.25 [0.25; 2.00] (7)	2.00 [0.75; 4.00] (81)	2.00 [1.00; 4.00] (307)	2.00 [2.00; 5.00] (24)	2.00 [1.00; 4.00] (395)	2.00 [1.00; 4.00] (419)
ACT approved nationally but not WHO prequalified	3.00 [3.00; 10.00] (14)	2.00 [0.75; 3.00] (133)	1.50 [0.75; 3.00] (742)	4.00 [1.00; 8.00] (104)	1.50 [0.75; 3.00] (889)	1.50 [0.75; 3.00] (993)
ACT not WHO-prequalified or nationally approved	4.00 [1.00; 15.00] (24)	2.50 [1.00; 5.00] (227)	1.50 [0.75; 4.00] (928)	2.63 [1.00; 6.00] (244)	1.78 [0.75; 4.00] (1179)	2.00 [0.75; 4.00] (1423)
ACTs not prequalified by WHO	4.00 [1.13; 15.00] (41)	2.25 [1.00; 5.00] (452)	1.50 [0.75; 3.00] (1708)	3.33 [1.25; 8.00] (547)	1.50 [0.75; 3.75] (2201)	2.00 [1.00; 4.00] (2748)
Non-artemisinins	0.86	0.57	1.37	0.86	0.86	0.86

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	Type of outlet					
	Formal			Informal		Total
	Private not-for-profit facilities	Private health facilities	Pharmacy	General retailer	Travelling vendor	
Median number of sales in PoVs with sales	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)	Median [IQR] (N of audited products)
	[0.24; 10.00] (18)	[0.14; 2.59] (148)	[0.50; 4.00] (138)	[0.24; 2.00] (160)	[0.25; 3.00] (304)	[0.25; 3.00] (464)
Oral quinine	1.15 [0.86; 1.44] (6)	1.44 [0.58; 8.65] (41)	0.36 [0.19; 0.86] (49)	0.43 [0.29; 1.44] (96)	0.86 [0.36; 1.44] (96)	0.71 [0.29; 1.44] (192)
Chloroquine - packaged alone			4.00 [4.00; 4.00] (6)	0.00	4.00 [4.00; 4.00] (6)	4.00 [4.00; 4.00] (6)
Sulfaxoxine pyrimethamine	10.00 [10.00; 10.00] (3)	8.00 [3.00; 10.00] (23)	4.00 [2.00; 5.00] (62)	3.00 [2.00; 3.00] (41)	5.00 [3.00; 10.00] (88)	3.00 [2.00; 8.00] (129)
SP-Amodiaquine		2.60 [2.60; 2.60] (1)		2.04 [2.04; 2.60] (2)	2.60 [2.60; 2.60] (1)	2.04 [2.04; 2.60] (3)
Atovaquone-Proguanil			1.00 [0.25; 1.00] (18)		1.00 [0.25; 1.00] (18)	1.00 [0.25; 1.00] (18)
Mefloquine			1.37 [1.37; 1.37] (1)		1.37 [1.37; 1.37] (1)	1.37 [1.37; 1.37] (1)
Oral artemisinin monotherapy			1.50 [1.00; 2.00] (4)		1.50 [1.00; 2.00] (4)	1.50 [1.00; 2.00] (4)
Non-oral artemisinin monotherapy	1.20 [0.50; 5.83] (33)	1.00 [0.50; 3.00] (322)	0.50 [0.20; 1.20] (84)	1.00 [0.40; 3.00] (101)	1.00 [0.50; 2.67] (439)	1.00 [0.50; 3.00] (540)
Any treatment for severe malaria	0.60 [0.24; 3.33] (42)	0.83 [0.33; 2.10] (404)	0.60 [0.20; 1.20] (79)	0.83 [0.24; 1.80] (122)	0.80 [0.30; 2.00] (525)	0.80 [0.28; 2.00] (647)
Rectal artesunate						
Artesunate injection	3.50 [0.60; 7.50] (22)	1.50 [0.60; 4.00] (172)	0.60 [0.30; 1.40] (50)	0.40 [0.20; 0.90] (39)	1.20 [0.50; 4.00] (244)	1.20 [0.40; 3.00] (283)
Artemether Injection	0.50 [0.33; 1.00] (11)	1.00 [0.50; 2.00] (150)	0.33 [0.17; 0.63] (27)	1.67 [0.83; 3.33] (62)	0.83 [0.50; 2.00] (188)	1.00 [0.50; 2.50] (250)
Quinine injection	0.24 [0.09; 0.71] (9)	0.19 [0.12; 0.52] (82)	0.47 [0.47; 0.47] (2)	0.24 [0.05; 0.86] (21)	0.24 [0.09; 0.57] (93)	0.24 [0.09; 0.57] (114)
RDT	4.00 [3.00; 25.00] (21)	6.00 [3.00; 11.00] (235)	5.00 [1.00; 50.00] (5)	4.00 [2.00; 8.00] (32)	6.00 [3.00; 12.00] (261)	6.00 [3.00; 11.00] (293)

* AETD - Adult Equivalent Treatment Dose - is the number of milligrams needed to treat a 60 kg adult (see Appendix 9: AETDs).
Information provided by the respondent on the price of a specific quantity of antimalarial (for example, price per tablet or price per pack) has been converted into a price by AETD.
Number of products for which sales volume data are missing for the previous week in - Yaoundé: 1458; Center excluding Yaoundé: 149; Douala: 895; Littoral without Douala: 298

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 15 Market share of antimalarials by type of outlet

Distribution of antimalarial AETDs sold or distributed during the previous week, by type of outlet and by product type*.	Type of outlet							
	Formal				Informal			
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Itinerant vendor	Informal sector Total	Total
	%	%	%	%	%	%	%	%
All antimalarial drugs	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
1. Any ACT	60.2%	61.6%	94.0%	77.9%	82.7%	89.9%	83.1%	79.5%
AL	49.2%	52.7%	54.9%	53.5%	81.3%	87.5%	81.7%	62.1%
Artesunate amodiaquine	0.5%	3.9%	0.0%	1.6%	0.2%	0.0%	0.2%	1.2%
AS-pyronaridine	0.0%	0.9%	0.2%	0.5%	0.0%	0.0%	0.0%	0.3%
AS-SP	0.0%	0.9%	5.9%	3.3%	0.2%	0.0%	0.2%	2.4%
Dihydroartemisinin-Piperaquine	10.6%	2.2%	25.7%	14.8%	1.0%	2.4%	1.1%	10.6%
Arterolane PPQ	0.0%	1.1%	3.5%	2.2%	0.1%	0.0%	0.1%	1.6%
DHA-PPQ-Trimethoprim	0.0%	0.0%	3.9%	2.0%	0.0%	0.0%	0.0%	1.4%
ACT registered at national level#	13.3%	12.5%	36.7%	24.8%	7.0%	26.8%	8.1%	19.7%
ACT not registered at national level	45.1%	40.1%	56.0%	48.6%	42.3%	50.2%	42.7%	46.8%
WHO-prequalified ACTs (QAACT)^	0.7%	11.1%	24.8%	17.1%	1.3%	0.0%	1.2%	12.3%
WHO-prequalified and nationally-approved ACTs	0.1%	1.7%	8.1%	4.8%	0.2%	0.0%	0.2%	3.4%
WHO-prequalified ACTs (not nationally registered)	0.6%	9.4%	16.6%	12.3%	1.1%	0.0%	1.1%	8.8%
ACT approved nationally but not WHO prequalified	13.2%	10.8%	28.6%	20.0%	6.8%	26.8%	7.9%	16.3%
ACT not WHO-prequalified or nationally approved	44.5%	30.7%	39.3%	36.3%	41.1%	50.2%	41.6%	37.9%
ACTs not prequalified by WHO	59.5%	50.5%	69.3%	60.8%	81.4%	89.9%	81.9%	67.2%
2. Non-artemisinins	20.8%	23.8%	5.3%	14.2%	9.3%	10.1%	9.3%	12.7%
Oral quinine	2.0%	18.6%	0.6%	8.0%	6.0%	0.4%	5.7%	7.3%
Chloroquine	0.0%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.1%
SP	18.1%	4.4%	4.0%	5.4%	2.8%	9.7%	3.2%	4.7%
SP-Amodiaquine	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
Atovaquone-Proguanil	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.1%
Mefloquine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other artemisinin-free treatments	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3. Oral artemisinin monotherapy	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

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Distribution of antimalarial AETDs sold or distributed during the previous week, by type of outlet and by product type*.	Type of outlet							
	Formal				Informal			Total
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Itinerant vendor	Informal sector Total	
4. Non-oral artemisinin monotherapy	18.9%	14.6%	0.6%	7.9%	8.0%	0.0%	7.5%	7.8%
Any treatment for severe malaria	19.7%	15.4%	0.6%	8.3%	8.4%	0.0%	7.9%	8.2%
Rectal artesunate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Artesunate injection	16.7%	9.4%	0.5%	5.5%	0.7%	0.0%	0.7%	4.1%
Artemether Injection	2.3%	5.2%	0.1%	2.4%	7.2%	0.0%	6.8%	3.7%
Quinine injection	0.8%	0.8%	0.0%	0.4%	0.4%	0.0%	0.4%	0.4%

Outlets stocking antimalarials had at least one antimalarial in stock on the day of the survey, which was verified by the presence of at least one antimalarial recorded on the audit sheet. Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252
The sum of the categories in each column is 100%.
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Table 16 Market share of antimalarial drugs, total market

Distribution of antimalarial AETDs sold or distributed during the previous week, by type of outlet and by product type*.	Type of outlet							
	Formal				Informal			
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Itinerant vendor	Informal sector Total	Total
	%	%	%	%	%	%	%	%
All antimalarial drugs	6.3%	28.1%	35.2%	69.5%	28.8%	1.7%	30.5%	100.0%
1. Any ACT	3.8%	17.3%	33.1%	54.1%	23.8%	1.5%	25.3%	79.5%
AL	3.1%	14.8%	19.3%	37.2%	23.4%	1.5%	24.9%	62.1%
Artesunate amodiaquine	0.0%	1.1%	0.0%	1.1%	0.1%	0.0%	0.1%	1.2%
AS-pyronaridine	0.0%	0.2%	0.1%	0.3%	0.0%	0.0%	0.0%	0.3%
AS-SP	0.0%	0.3%	2.1%	2.3%	0.0%	0.0%	0.0%	2.4%
Dihydroartemisinin-Piperaquine	0.7%	0.6%	9.0%	10.3%	0.3%	0.0%	0.3%	10.6%
Arterolane PPQ	0.0%	0.3%	1.2%	1.5%	0.0%	0.0%	0.0%	1.6%
DHA-PPQ-Trim	0.0%	0.0%	1.4%	1.4%	0.0%	0.0%	0.0%	1.4%
ACT registered at national level[#]	0.8%	3.5%	12.9%	17.3%	2.0%	0.5%	2.5%	19.7%
ACT not registered at national level	2.8%	11.3%	19.7%	33.8%	12.2%	0.9%	13.0%	46.8%
WHO-prequalified ACTs (QAACT)^	0.0%	3.1%	8.7%	11.9%	0.4%	0.0%	0.4%	12.3%
WHO-prequalified and nationally-approved ACTs	0.0%	0.5%	2.9%	3.4%	0.1%	0.0%	0.1%	3.4%
WHO-prequalified ACTs (not nationally registered)	0.0%	2.6%	5.9%	8.5%	0.3%	0.0%	0.3%	8.8%
ACT approved nationally but not WHO prequalified	0.8%	3.0%	10.1%	13.9%	2.0%	0.5%	2.4%	16.3%
ACT not WHO-prequalified or nationally approved	2.8%	8.6%	13.8%	25.2%	11.8%	0.9%	12.7%	37.9%
ACTs not prequalified by WHO	3.7%	14.2%	24.4%	42.3%	23.4%	1.5%	25.0%	67.2%
2. Non-artemisinins	1.3%	6.7%	1.9%	9.8%	2.7%	0.2%	2.8%	12.7%
Oral quinine	0.1%	5.2%	0.2%	5.6%	1.7%	0.0%	1.7%	7.3%
Chloroquine	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Sulfaxoxine pyrimethamine	1.1%	1.2%	1.4%	3.8%	0.8%	0.2%	1.0%	4.7%
SP-Amodiaquine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Atovaquone-Proguanil	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%
Mefloquine	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other artemisinin-free treatments	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3. Oral artemisinin monotherapy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

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Distribution of antimalarial AETDs sold or distributed during the previous week, by type of outlet and by product type*.	Type of outlet							
	Formal				Informal			
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Itinerant vendor	Informal sector Total	Total
4. Non-oral artemisinin monotherapy	1.2%	4.1%	0.2%	5.5%	2.3%	0.0%	2.3%	7.8%
Any treatment for severe malaria	1.2%	4.3%	0.2%	5.8%	2.4%	0.0%	2.4%	8.2%
Rectal artesunate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Artesunate injection	1.0%	2.6%	0.2%	3.8%	0.2%	0.0%	0.2%	4.1%
Artemether Injection	0.1%	1.5%	0.0%	1.6%	2.1%	0.0%	2.1%	3.7%
Quinine injection	0.0%	0.2%	0.0%	0.3%	0.1%	0.0%	0.1%	0.4%

Outlets stocking antimalarials had at least one antimalarial in stock on the day of the survey, which was verified by the presence of at least one antimalarial recorded on the audit sheet. Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252

** Sum of lines - market share for the type of drug specified for blood tests.

*** Sum of columns - market share for specified outlet type.

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Table 17 Market share of antimalarial drugs, by stratum

Distribution of antimalarial AETDs sold or distributed during the previous week, by stratum and product type*.	Total %	Yaoundé %	Center excl. Yaoundé %	Douala %	Littoral excl. Douala %
All antimalarial drugs	100.0%	100.0%	100.0%	100.0%	100.0%
1. Any ACT	87.1%	70.0%	90.0%	74.8%	79.5%
AL	62.5%	63.9%	60.1%	58.6%	62.0%
ASAQ	4.0%	0.4%	0.0%	2.0%	1.2%
AS-PY	0.0%	0.0%	0.3%	2.4%	0.3%
AS-SP	2.7%	1.4%	3.6%	2.5%	2.4%
DHAPPQ	16.0%	2.7%	20.5%	5.7%	10.6%
Arterolane PPQ	1.3%	1.2%	1.7%	3.2%	1.6%
DHA-PPQ-Trim	0.6%	0.4%	3.8%	0.4%	1.4%
ACT registered nationwide #	28.6%	8.3%	34.1%	10.4%	19.7%
ACT not registered at national level	44.8%	45.4%	49.9%	47.7%	46.8%
WHO-prequalified ACTs (QAACT)^	16.7%	4.9%	21.7%	8.1%	12.2%
WHO-prequalified and nationally-approved ACTs	3.4%	1.1%	7.8%	0.9%	3.4%
WHO-prequalified ACTs (not nationally registered)	13.3%	3.8%	13.9%	7.1%	8.8%
ACT approved nationally but not WHO prequalified	25.2%	7.2%	26.3%	9.5%	16.3%
ACT not WHO-prequalified or nationally approved	31.5%	41.7%	35.9%	40.5%	37.9%
ACTs not prequalified by WHO	70.4%	65.1%	68.3%	66.7%	67.2%
2. Non-artemisinins	6.3%	21.0%	6.4%	8.2%	12.7%
Oral quinine	1.7%	16.0%	0.4%	1.5%	7.3%
Chloroquine	0.0%	0.0%	0.5%	0.0%	0.1%
Sulfaxoxine pyrimethamine	4.3%	4.4%	5.1%	6.2%	4.7%
SP-Amodiaquine	0.1%	0.0%	0.0%	0.0%	0.0%
Atovaquone-Proguanil	0.1%	0.0%	0.2%	0.0%	0.1%
Mefloquine	0.0%	0.0%	0.1%	0.0%	0.0%
Other artemisinin-free treatments	0.0%	0.0%	0.0%	0.0%	0.0%
3. Oral artemisinin monotherapy	0.1%	0.0%	0.0%	0.0%	0.0%
4. Non-oral artemisinin monotherapy	6.5%	9.0%	3.6%	17.1%	7.8%
Any treatment for severe malaria	6.7%	9.6%	3.6%	17.5%	8.2%
Rectal artesunate	0.0%	0.0%	0.0%	0.0%	0.0%

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Distribution of antimalarial AETDs sold or distributed during the previous week, by stratum and product type*.	Total %	Yaoundé %	Center excl. Yaoundé %	Douala %	Littoral excl. Douala %
Artesunate injection	3.2%	3.5%	2.3%	12.9%	4.1%
Artemether Injection	3.3%	5.6%	1.2%	4.2%	3.8%
Quinine injection	0.3%	0.6%	0.1%	0.4%	0.4%

Outlets stocking antimalarials had at least one antimalarial in stock on the day of the survey, which was verified by the presence of at least one antimalarial recorded on the audit sheet. Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252

The sum of the categories in each column is 100%.

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Table 18 Market share in all strata : Anti-malarials

Distribution of antimalarial AETDs sold or distributed during the previous week, by stratum and product type*.	Total %	Yaoundé %	Center excl. Yaoundé %	Douala %	Littoral excl. Douala %
All antimalarial drugs	100.0%	20.0%	42.0%	27.7%	10.3%
1. Any ACT	79.5%	17.4%	29.4%	24.9%	7.7%
AL	62.0%	12.5%	26.8%	16.7%	6.0%
ASAQ	1.2%	0.8%	0.2%	0.0%	0.2%
AS- PY	0.3%	0.0%	0.0%	0.1%	0.2%
AS-SP	2.4%	0.5%	0.6%	1.0%	0.3%
DHAPPQ	10.6%	3.2%	1.2%	5.7%	0.6%
Arterolane PPQ	1.6%	0.3%	0.5%	0.5%	0.3%
DHA-PPQ-Trim	1.4%	0.1%	0.2%	1.1%	0.0%
ACT registered at national level#	19.7%	5.7%	3.5%	9.5%	1.1%
ACT not registered at national level	46.8%	9.0%	19.1%	13.8%	4.9%
WHO-prequalified ACTs (QAACT)^	12.2%	3.3%	2.0%	6.0%	0.8%
WHO-prequalified and nationally-approved ACTs	3.4%	0.7%	0.5%	2.2%	0.1%
WHO-prequalified ACTs (not nationally registered)	8.8%	2.7%	1.6%	3.9%	0.7%
ACT approved nationally but not WHO prequalified	16.3%	5.0%	3.0%	7.3%	1.0%
ACT not WHO-prequalified or nationally approved	37.9%	6.3%	17.5%	10.0%	4.2%
ACTs not prequalified by WHO	67.2%	14.1%	27.3%	18.9%	6.9%
2. Non-artemisinins	12.7%	1.3%	8.8%	1.8%	0.8%
Oral quinine	7.3%	0.3%	6.7%	0.1%	0.2%
Chloroquine	0.1%	0.0%	0.0%	0.1%	0.0%
SP	4.7%	0.9%	1.8%	1.4%	0.6%
SP-Amodiaquine	0.0%	0.0%	0.0%	0.0%	0.0%
Atovaquone-Proguanil	0.1%	0.0%	0.0%	0.0%	0.0%
Mefloquine	0.0%	0.0%	0.0%	0.0%	0.0%
Other artemisinin-free treatments	0.0%	0.0%	0.0%	0.0%	0.0%
3. Oral artemisinin monotherapy	0.0%	0.0%	0.0%	0.0%	0.0%
4. Non-oral artemisinin monotherapy	7.8%	1.3%	3.8%	1.0%	1.8%
Any treatment for severe malaria	8.2%	1.3%	4.0%	1.0%	1.8%
Rectal artesunate	0.0%	0.0%	0.0%	0.0%	0.0%

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Distribution of antimalarial AETDs sold or distributed during the previous week, by stratum and product type*.	Total %	Yaoundé %	Center excl. Yaoundé %	Douala %	Littoral excl. Douala %
Artesunate injection	4.1%	0.6%	1.5%	0.6%	1.3%
Artemether Injection	3.8%	0.7%	2.3%	0.3%	0.4%
Quinine injection	0.4%	0.1%	0.3%	0.0%	0.0%

Outlets stocking antimalarials had at least one antimalarial in stock on the day of the survey, which was verified by the presence of at least one antimalarial recorded on the audit sheet. Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252

** Sum of lines - market share for the type of drug specified for blood tests.

*** Sum of columns - market share for specified outlet type.

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Table 19 Market share of blood tests for malaria

Distribution of malaria blood tests performed or sold in the previous week in each type of outlet, by type of test*.	Type of outlet						
	Formal				Informal		
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector total	General retailer	Informal sector total	Total
	%	%	%	%	%	%	%
Any diagnosis (microscopy/RDT)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
All microscopy	45.9%	57.3%	0.0%	55.0%	2.4%	2.4%	52.6%
All RDT	54.1%	42.7%	100.0%	45.0%	97.6%	97.6%	47.4%
Is the RDT quality-assured?	53.1%	36.8%	91.7%	39.9%	96.8%	96.8%	42.5%
RDT manufacturer: Abbott	9.2%	8.7%	0.0%	8.7%	22.7%	22.7%	9.4%
RDT manufacturer: Orchid	11.3%	11.0%	91.7%	11.6%	41.5%	41.5%	13.0%
RDT manufacturer: Arkray	21.5%	11.9%	0.0%	13.4%	14.0%	14.0%	13.4%
RDT manufacturer: other	12.1%	11.1%	8.3%	11.3%	19.4%	19.4%	11.6%
RDT manufacturer: don't know	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Y Prequalified RDTs are products that appear on the WHO prequalified list.
The sum of the categories in each column is 100%.

Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 15; N products audited, missing sales volumes: 92

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Table 20 Market share of malaria blood tests (including manufacturer) by type of outlet

Distribution of malaria blood tests performed or sold in the previous week in each type of outlet, by type of test*.	Type of wind point						
	Private not-for-profit facilities	Private health facilities	Pharmacy	Formal sector Total	General retailer	Informal sector Total	Total
	%	%	%	%	%	%	%
1. Microscopy	7.5%	45.0%	0.0%	52.5%	0.1%	0.1%	52.6%
2. RDT	8.8%	33.5%	0.7%	43.0%	4.4%	4.4%	47.4%
RDT prequalified Y	8.7%	28.9%	0.6%	38.1%	4.4%	4.4%	42.5%
Abbott	1.5%	6.8%	0.0%	8.3%	1.0%	1.0%	9.4%
Orchid	1.8%	8.7%	0.6%	11.1%	1.9%	1.9%	13.0%
Arkray	3.5%	9.3%	0.0%	12.8%	0.6%	0.6%	13.4%
Other manufacturer	2.0%	8.7%	0.1%	10.7%	0.9%	0.9%	11.6%
RDT manufacturer unknown	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3. Any diagnosis	16.3%	78.5%	0.7%	95.5%	4.5%	4.5%	100.0%

** Sum of lines - market share for the type of drug specified for blood tests.
*** Sum of columns - market share for specified outlet type.
Y Prequalified RDTs are products that appear on the WHO prequalified list.
Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 15; N products audited, missing sales volumes: 92

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Table 21 Volumes of AETD antimalarial drugs sold in the week prior to the survey in all outlets, by manufacturer (manufacturers listed had at least 100 products checked in the outlet survey).

Reported volume of antimalarial drugs sold at outlets visited, by manufacturer	N audited products	Volume sold (95% CI)	Proportion of total volume
Estimated total volume sold (weighted) in the 7 days preceding the survey	1916	15133 (5950, 24317)	100.00%
AFRICURE PHARMA CAMEROON S.A.	107	2402 (0, 5003)	16%
AJANTA PHARMA LTD	448	2286 (362, 4210)	15%
ALFASIGMA S.P.A	55	249 (0, 539)	2%
BENGBU TUSHAN PHARMA CO LTD	392	1705 (212, 3198)	11%
DAFRA PHARMA LTD	213	787 (299, 1274)	5%
DEVLIFE CORP PVT LTD	76	126 (67, 184)	1%
DINAMICS PHARMA INC	143	687 (272, 1101)	5%
DRUGS FOR NEGLECTED TROPICAL DISEASES (DNDI)	107	398 (67, 729)	3%
EXPHA / HUAZHONG PHARMA CO LTD	229	1194 (533, 1854)	8%
GUILIN PHARMACEUTICAL CO. LTD	174	537 (181, 893)	4%
HUAZHONG PHARMA CO LTD	91	105 (23, 187)	1%
IMEX PHARMA	176	616 (0, 1280)	4%
IPCA LABORATORIES LTD	163	1450 (306, 2595)	10%
JIANGSU RUINIAN QIANJIN PHARMA CO LTD	99	1131 (648, 1614)	7%
LABSRATORIOS SALVAT SA	243	1717 (692, 2742)	11%
LANARK LABS PVT LTD	75	581 (264, 899)	4%
M-GENERIC LTD	82	325 (325, 325)	2%
MEDILIX LIFE SCIENCE	81	81 (24, 138)	1%
MULTICHRIS PHARM & CHEM CO LTD	72	894 (392, 1396)	6%
NORONIC PHARMA PVT LTD	85	931 (286, 1577)	6%
NOVARTIS PHARMA AG	131	913 (0, 1996)	6%
SANOFI AVENTIS	67	39 (5, 73)	0%
SAVORITE PHARMA PVT LTD	87	211 (104, 318)	1%
STRIDES ARCO LABS	145	476 (223, 730)	3%
SUN PHARMA INDUSTRIES LTD	71	552 (231, 873)	4%

A total of 9269 products were included in the audit, 101 of which lacked manufacturer data.

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Table 22 Providers' case management knowledge and practices, by type of outlet

Percentage of respondents that:	Type of outlet: Private not-for-profit facilities % (95% CI) N=32	Private health facilities % (95% CI) N=408	Pharmacy % (95% CI) N=134	Formal sector % (95% CI) N=574	Informal sector % (95% CI) N=418	Total % (95% CI) N=992
Designates ACT as the most effective drug for uncomplicated malaria in adults	76.9 [54.2; 90.3]	57.4 [49.8; 64.6]	82.5 [76.4; 87.3]	66.7 [60.7; 72.2]	54.1 [41.3; 66.3]	60.6 [54.9; 66.1]
Designates ACT as the most effective drug for uncomplicated malaria in children	81.1 [58.4; 92.9]	52.8 [45.4; 60.1]	80.1 [68.0; 88.4]	63.8 [57.0; 70.0]	49.4 [33.7; 65.3]	56.9 [48.8; 64.6]
Designates ACT as the most effective treatment recommended by the government	67.7 [45.7; 83.9]	54.4 [48.1; 60.7]	60.6 [52.3; 68.3]	57.7 [53.6; 61.6]	26.5 [17.7; 37.7]	42.7 [37.2; 48.3]
Have heard of RDTs for malaria	100.0	99.2 [98.2; 99.6]	94.8 [89.2; 97.6]	98.0 [96.4; 98.9]	82.7 [66.9; 91.8]	90.6 [81.8; 95.4]
Have already used an RDT for malaria on a client	98.1 [92.9; 99.5]	87.9 [82.4; 91.8]	25.2 [18.8; 32.8]	71.9 [63.4; 79.1]	42.6 [31.3; 54.7]	59.0 [51.9; 65.8]
Would treat a customer with a negative test with an antimalarial drug	1.1 [0.3; 4.0]	7.1 [3.7; 13.2]	4.6 [2.0; 10.6]	5.8 [3.4; 9.7]	7.1 [3.7; 13.1]	6.3 [4.4; 9.0]
Reported reasons respondent would treat a negative test:*	N=21	N=246	N=59	N=326	N=161	N=487
Client show signs and symptoms of malaria.	100.0	90.1 [82.0; 94.8]	91.9 [79.4; 97.1]	91.5 [86.7; 94.7]	81.3 [69.6; 89.1]	87.6 [82.1; 91.6]
Client requests antimalarial treatment.	0 -	3.8 [1.9; 7.3]	5.1 [1.6; 15.1]	3.7 [2.0; 6.6]	15.6 [8.4; 27.3]	8.3 [4.9; 13.8]
Respondent does not trust the test result.	15.2 [5.5; 35.5]	13.0 [7.2; 22.4]	7.9 [3.4; 17.3]	12.0 [7.4; 19.0]	6.1 [3.0; 11.8]	9.7 [6.1; 15.2]
Other reason	20.8 [6.5; 49.7]	18.6 [9.5; 33.1]	19.7 [8.6; 38.9]	19.0 [11.5; 29.9]	9.2 [3.9; 20.2]	15.2 [8.7; 25.4]

The questions asked of providers were put to a member of staff at each outlet likely to be interviewed (outlets stocking anti-malarials or offering malaria blood tests in the formal private sector, current or recent). Interviews were not conducted with providers of informal outlets).
The numbers of providers (N) in this table correspond to the total number of eligible providers for the indicators in the table. No provider interview lacked information on malaria treatment knowledge and practices.

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 23 Digital technology availability and use, by outlet type

Percentage of outlets:	Type of outlet					
	Formal				Informal sector	Total
	Private not-for-profit facilities	Private health facilities	Pharmacy	Formal sector		
	% (95% CI) N=32	% (95% CI) N=407	% (95% CI) N=134	% (95% CI) N=573	% (95% CI) N=416	% (95% CI) N=989
With infrastructure available if needed in the last 30 days:						
Electricity	46.9 [26.9; 68.0]	79.3 [70.5; 86.0]	78.0 [70.0; 84.4]	75.3 [68.1; 81.3]	36.1 [14.6; 65.0]	74.3 [67.8; 80.0]
Voice and SMS connection on the cell phone	62.6 [39.0; 81.4]	77.3 [69.8; 83.3]	96.9 [92.0; 98.9]	81.2 [75.2; 86.0]	53.6 [38.7; 67.9]	67.9 [58.3; 76.2]
Internet connection (data or WiFi)	25.8 [11.5; 48.3]	43.5 [34.6; 52.9]	77.3 [64.8; 86.3]	51.1 [43.1; 59.1]	26.0 [17.9; 36.0]	39.0 [31.6; 47.0]
With equipment available if needed within the last 30 days :						
Computer/tablet available	38.6 [19.2; 62.4]	51.7 [43.2; 60.0]	93.9 [79.7; 98.4]	62.2 [55.5; 68.4]	6.3 [1.7; 21.2]	60.8 [54.6; 66.7]
Current business uses of digital technology:						
Managing retail sales to customers	20.9 [7.8; 45.3]	25.3 [19.1; 32.6]	88.5 [76.0; 95.0]	42.7 [34.7; 51.1]	7.4 [4.1; 13.2]	25.7 [20.1; 32.3]
Inventory management	24.9 [10.4; 48.7]	37.4 [27.9; 48.0]	88.8 [75.9; 95.2]	50.5 [42.0; 59.1]	7.2 [4.3; 11.7]	29.7 [24.2; 35.8]
Orders to suppliers	37.1 [18.0; 61.3]	52.3 [41.7; 62.7]	93.0 [79.7; 97.8]	62.1 [54.5; 69.1]	36.8 [26.2; 48.9]	49.9 [42.5; 57.4]
Paying suppliers	23.3 [9.1; 47.8]	44.3 [35.5; 53.5]	57.6 [42.7; 71.3]	45.7 [39.1; 52.4]	32.1 [21.2; 45.2]	39.1 [31.4; 47.5]

The questions asked of providers were put to a member of staff at each outlet likely to be interviewed (outlets stocking anti-malarials or offering malaria blood tests in the formal private sector, current or recent). Interviews were not conducted with providers of informal outlets).
Number of private not-for-profit healthcare facilities screened and stocked with antimalarials = 37 (screened); 31 (stocked). Outlets that met the screening criteria for a full interview but did not complete the interview (were not interviewed or conducted a partial interview) = 108

Source: ACTwatch Lite survey, CAMEROON, 2024

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Table 24 Participation in malaria training at consumer level, by type of outlet

Percentage of outlets with any staff who have recieved training in the past year on :	Type of outlet					
	Formal					
	Private not-for-profit facilities	Private health facilities	Pharmacy	Formal sector	Informal sector	Total
	% (95% CI) N=37	% (95% CI) N=464	% (95% CI) N=163	% (95% CI) N=664	% (95% CI) N=543	% (95% CI) N=1207
Malaria diagnosis	15.1 [6.7; 30.5]	20.6 [15.3; 27.2]	18.0 [11.3; 27.4]	19.3 [15.6; 23.6]	4.6 [2.7; 7.8]	11.7 [9.4; 14.4]
Malaria treatment	15.1 [6.7; 30.5]	20.0 [14.7; 26.6]	24.9 [18.2; 33.1]	20.9 [17.1; 25.3]	6.2 [4.0; 9.4]	13.3 [10.8; 16.2]
Malaria surveillance/ monitoring	64.3 [41.7; 81.9]	59.3 [51.8; 66.3]	54.0 [43.3; 64.4]	58.3 [51.8; 64.4]	25.4 [15.8; 38.1]	41.1 [34.1; 48.5]
All (treatment, diagnosis and monitoring)	12.3 [4.9; 27.9]	17.8 [12.8; 24.3]	16.8 [10.1; 26.6]	17.0 [13.4; 21.2]	2.3 [1.1; 4.8]	9.4 [7.2; 12.0]

The questions asked of providers were put to a member of staff at each outlet likely to be interviewed (outlets stocking anti-malarials or offering malaria blood tests in the formal private sector, current or recent). Interviews were not conducted with providers of informal outlets).
Number of private not-for-profit healthcare facilities screened and stocked with antimalarials = 37 (screened); 31 (stocked). Outlets that met the screening criteria for a full interview but did not complete the interview (were not interviewed or conducted a partial interview) = 108

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Table 25 Participation in malaria surveillance at consumer outlets, by type of outlet (formal outlets)

	Type of outlet			
	Formal			
	Private not-for-profit facilities	Private health facilities	Pharmacy	Formal sector
Percentage of outlets who :	% (95% CI) N=37	% (95% CI) N=464	% (95% CI) N=163	% (95% CI) N=664
Report data on malaria cases	94.4 [85.4; 98.0]	73.5 [66.3; 79.5]	3.8 [1.3; 10.5]	55.1 [47.4; 62.6]
Report type: monthly activity report	93.5 [82.4; 97.8]	65.4 [56.4; 73.4]	1.7 [0.5; 5.7]	49.5 [41.6; 57.5]
Report type: Monthly summary sheet Interventions under Community Directives (ISDC)	20.6 [8.5; 41.7]	12.5 [9.4; 16.3]	0	9.6 [7.2; 12.8]
Report type: DHIS2	55.7 [33.5; 75.8]	48.2 [40.2; 56.3]	0	34.8 [28.4; 41.8]
Report type: Input stock sheet	20.1 [7.7; 43.2]	14.3 [10.0; 19.9]	0	10.7 [7.8; 14.5]
Had a supervision visit in the previous <6 months	18.8 [7.3; 40.6]	11.0 [7.4; 16.0]	0.6 [0.1; 3.4]	8.7 [5.3; 14.0]
Have a checklist for malaria surveillance	47.4 [26.7; 69.0]	39.7 [31.2; 48.8]	14.8 [9.0; 23.4]	33.2 [25.3; 42.1]

The questions asked of providers were put to a member of staff at each outlet likely to be interviewed (outlets stocking anti-malarials or offering malaria blood tests in the formal private sector, current or recent). Interviews were not conducted with providers of informal outlets).
Number of private not-for-profit healthcare facilities screened and stocked with antimalarials = 37 (screened); 31 (stocked). Outlets that met the screening criteria for a full interview but did not complete the interview (were not interviewed or conducted a partial interview) = 108

Source: ACTwatch Lite survey, CAMEROON, 2024.

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Table 26 Participation in the malaria surveillance system at consumer outlets, by type of outlet (formal outlets)

	Type of outlet			
	Private not-for-profit facilities	Private health facilities	Pharmacy	Formal sector
Percentage of outlets with :	% (95% CI) N=37	% (95% CI) N=464	% (95% CI) N=163	% (95% CI) N=664
Ministerial Order - reported by service provider	7.0 [2.7; 17.1]	16.7 [11.3; 24.1]	74.9 [66.0; 82.2]	32.9 [26.8; 39.6]
Ministerial Order - seen by investigator	3.8 [0.5; 22.5]	0.5 [0.1; 1.7]	4.6 [1.4; 14.4]	2.0 [0.8; 5.0]
Authorization to create - reported by	77.8 [57.1; 90.2]	54.3 [46.8; 61.6]	48.1 [38.3; 58.0]	54.9 [49.9; 59.9]
Authorization to create - seen by investigator	5.2 [1.6; 15.3]	8.2 [4.4; 14.7]	4.1 [1.1; 14.7]	6.7 [3.7; 11.6]
Has undergone government inspection	70.6 [49.2; 85.6]	61.5 [54.4; 68.1]	38.2 [30.2; 46.9]	55.6 [48.6; 62.3]

The questions asked of providers were put to a member of staff at each outlet likely to be interviewed (outlets stocking anti-malarials or offering malaria blood tests in the formal private sector, current or recent). Interviews were not conducted with providers of informal outlets).
Number of private not-for-profit healthcare facilities screened and stocked with antimalarials = 37 (screened); 31 (in stock). Outlets that met screening criteria for a full interview but did not complete the interview (were not interviewed or carried out a partial interview) = 108 ;
Informal outlets were excluded from this analysis, N informal outlets surveyed but excluded for these questions = 543

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Table 27 Supply chain information: where does the outlet sell antimalarials, through which channels and to whom?

	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector (total)	Wholesalers
	N= 37	N= 464	N= 163	N= 664	N= 40
Sells online	0.0	0.1 [0.0; 0.9]	0.3 [0.0; 2.3]	0.2 [0.0; 0.7]	2.4 [0.6; 9.1]
Wholesale	2.4 [0.3; 14.7]	0.3 [0.1; 1.0]	0.6 [0.1; 2.3]	0.6 [0.2; 1.7]	24.0 [13.7; 38.7]
	N= 1	N= 3	N= 2	N= 6	N= 10
The point of sale imports anti-malarial drugs	0.0	0.0	47.5 [4.0; 95.2]	13.1 [1.1; 66.0]	20.0 [4.2; 58.7]
Sells to individuals in person	100.0	100.0	0.0	72.5 [36.5; 92.4]	20.0 [4.2; 58.7]
Sells to individuals online	0.0	0.0	0.0	0.0	0.0
Sells to other outlets	0.0	29.5 [3.6; 82.4]	47.5 [4.0; 95.2]	61.9 [14.4; 94.0]	100.0
Sells to wholesale outlets	0.0	0.0	0.0	0.0	20.0 [6.0; 49.5]
Wholesale online	0.0	0.0	0.0	0.0	20.0 [9.8; 36.6]
Other types of customer	0.0	0.0	0.0	0.0	10.0 [1.3; 49.1]
	N= 31	N= 399	N= 129	N= 559	N= 2
Community customers	100.0	93.5 [88.4; 96.4]	92.6 [87.2; 95.8]	94.0 [90.3; 96.3]	64.6 [10.6; 96.6]
Customers from neighboring communities	65.3 [39.9; 84.2]	64.7 [58.0; 70.9]	81.6 [72.7; 88.1]	69.3 [62.0; 75.7]	64.6 [10.6; 96.6]
Customers from further afield, but within this region	41.3 [20.9; 65.1]	26.1 [19.0; 34.8]	54.7 [41.9; 67.0]	35.5 [28.3; 43.5]	35.4 [3.4; 89.4]
Customers from other regions of Cameroon	1.3 [0.4; 5.0]	6.8 [3.8; 11.8]	22.4 [14.8; 32.5]	10.3 [6.7; 15.7]	35.4 [3.4; 89.4]
Customers from other countries	0.0	2.0 [0.7; 5.4]	14.8 [8.3; 25.2]	5.2 [3.1; 8.8]	0.0
Customers Online / from the Internet	0.0	0.7 [0.2; 2.1]	0.0	0.4 [0.2; 1.2]	0.0
Customers: other/refused	0.0	4.8 [2.2; 10.1]	6.1 [3.4; 10.8]	4.6 [2.5; 8.2]	0.0
Prices generally stable	59.1 [34.9; 79.5]	63.1 [55.7; 69.9]	86.5 [78.7; 91.7]	69.5 [63.5; 74.9]	73.3 [24.8; 95.8]
Change of supplier?	16.9 [7.2; 34.9]	21.8 [15.3; 30.1]	18.0 [12.5; 25.1]	20.1 [15.0; 26.3]	29.3 [7.4; 68.2]

Formal sector outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 39; Informal outlets were excluded from this analysis, N informal outlets surveyed but excluded for these questions = 543

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Table 28 Characteristics of antimalarial suppliers reported by customers

	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Informal sector	Formal sector (total)	Total
	N= 17	N= 206	N= 108	N= 331	N= 331	N= 3
International manufacturer	4.2 [0.6; 24.4]	4.9 [2.7; 8.9]	0.0	3.1 [1.7; 5.6]	3.1 [1.7; 5.6]	0.0
Local manufacturer	1.7 [0.3; 10.7]	1.8 [0.7; 4.2]	1.1 [0.2; 7.1]	1.6 [0.7; 3.6]	1.6 [0.7; 3.6]	0.0
Drug wholesaler/importer	38.1 [13.7; 70.6]	57.5 [45.8; 68.5]	100.0	70.3 [59.8; 79.0]	70.3 [59.8; 79.0]	33.3 [4.6; 83.9]
Wholesaler/general importer	1.0 [0.1; 6.3]	15.4 [8.8; 25.3]	4.9 [1.6; 14.0]	10.1 [6.1; 16.0]	10.1 [6.1; 16.0]	33.3 [4.4; 84.5]
Pharmacy	0.0	1.2 [0.4; 3.2]	0.0	0.6 [0.2; 1.8]	0.6 [0.2; 1.8]	0.0
Pharmaceutical depot	0.0	5.9 [2.3; 14.4]	0.4 [0.1; 3.2]	3.3 [1.4; 7.8]	3.3 [1.4; 7.8]	0.0
Public supply chain (e.g. SOBAPS)	14.9 [5.4; 35.2]	45.3 [33.6; 57.5]	0.0	25.9 [17.9; 36.0]	25.9 [17.9; 36.0]	0.0
Informal POS	0.0	1.4 [0.6; 3.4]	0.0	0.8 [0.3; 1.9]	0.8 [0.3; 1.9]	0.0
Private POS	0.0	3.0 [1.3; 6.8]	1.0 [0.2; 5.1]	2.0 [0.9; 4.0]	2.0 [0.9; 4.0]	0.0
Don't know	0.0	5.0 [2.7; 9.3]	1.6 [0.3; 7.2]	3.3 [1.7; 6.1]	3.3 [1.7; 6.1]	0.0
Medical delegate	0.0	5.2 [2.4; 10.7]	0.0	2.8 [1.2; 6.1]	2.8 [1.2; 6.1]	0.0
Faith-based supplier	73.1 [39.1; 92.0]	4.8 [1.3; 16.6]	0.0	10.8 [5.5; 20.2]	10.8 [5.5; 20.2]	33.3 [4.4; 84.5]

Formal sector outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 39; Informal outlets were excluded from this analysis, N informal outlets reviewed but excluded = 543

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SECTION C4: ONLINE SALES PRACTICES

Table 29 Practices of online outlets

POS practices		Proportion, % (n)
Sale of antimalarials or RDTs online (N=1005)	No	97.2% (977)
	Yes	1.3% (13)
	Don't know	0.2% (2)
	Not applicable	1.3% (13)
Online sales to individual customers (N=21)	No	90.5% (19)
	Yes	4.8% (1)
	Don't know	4.8% (1)
Online sales to wholesalers (N=21)	No	85.7% (18)
	Yes	9.5% (2)
	Don't know	4.8% (1)

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SECTION C5: CHARACTERISTICS OF THE AUDITED RDTS

Table 30 Characteristics of RDTs audited (N=450) in outlets

Features		Proportion, % (n)
Parasites detected	PF	
	PF/PAN	62.0% (279)
	PF/PV	35.3% (159)
	Not specified	2.2% (10)
Antigens detected	HRP2	56.9% (256)
	HRP2/PLDH	40.9% (184)
	HRP2/ALDOLASE	0.2% (1)
	Not specified	2.0% (9)
Manufacturer	ABBOTT DIAGNOSTICS KOREA INC	33.1% (149)
	ORCHID BIOMEDICAL SYSTEMS/ TULIP DIAGNOSTIC	25.3% (114)
	ARKRAY HEALTHCARE PVT LTD	15.6% (70)
	PREMIER MEDICAL CORPORATION LTD	14.9% (67)
	OTHER	9.1% (41)
	Not specified	2.0% (9)
Country of manufacture	India	61.6% (277)
	South Korea	33.1% (149)
	China	2.4% (11)
	United States	0.9% (4)
	Germany	0.4% (2)
	Not specified	1.6% (7)

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APPENDICES

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APPENDIX 1 ACTWATCH LITE: PROJECT OVERVIEW

ACTwatch Lite has been designed to provide relevant, high-quality data on the private market for antimalarial drugs. The purpose of this data is to inform and improve the policies and strategies of national and international malaria control programs, and to guide their policy, strategy and funding decisions to improve malaria case management.

Over the past two decades, numerous investments and interventions at regional and international level have positively influenced the private sector market in malaria-endemic countries, particularly in sub-Saharan Africa. Among the direct interventions that have impacted this private sector, the most illustrative was the Affordable Medicines Facility-malaria (AMFm) initiative launched in 2010 and extended as a private sector co-payment mechanism by the Global Fund until 2017. Despite the positive results of these interventions, the adoption of policy and action at national level to involve the private health sector market in malaria case management has not progressed enormously since the AMFm era. One of the main factors limiting progress in this sector is the lack of up-to-date, robust data on malaria case management, including inputs, in the private market sector. This data can be used by public health stakeholders and policy-makers at national level to support the design of appropriate interventions.

Between 2007 and 2016, the ACTwatch project collaborated with Ministries of Health in 13 African and Southeast Asian countries to conduct over 50 malaria market surveys. These surveys provided nationally representative data on the availability, price and market share of antimalarial products in the public and private health sectors. In collaboration with the World Health Organization (WHO) and with funding from the Bill & Melinda Gates Foundation, PSI has implemented a new market survey in 2023 on antimalarial drugs and diagnostic tests in the private sector in Benin, Cameroon and Nigeria (ACTwatch Lite). This study will provide a WHO-approved toolkit which, combined with appropriate advocacy, will catalyze support for the adoption of ACTwatch Lite methods in other countries.

Successful implementation of ACTwatch Lite will provide national malaria programs and their partners with an up-to-date understanding of national malaria private sector markets, with which to 1) understand the drivers of market performance and target areas and channels of intervention; 2) inform national and sub-national decision-making; 3) contribute to the development of Global Fund concept notes and other funding opportunities.

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APPENDIX 2: NATIONAL CONTEXT CAMEROON

The malaria situation in Cameroon

Cameroon is one of 11 countries that together account for 70% of the estimated burden of malaria cases and deaths worldwide. Despite numerous efforts in the fight against malaria with a stable reduction between 2005 and 2011, the number of malaria cases and deaths has increased slightly since 2015. The 2017 report by the National Malaria Control Program (PNLP), shows that the number of malaria cases recorded in the country's health facilities evolved from 1,829,266 to 2,093,009, an increase of 14.4% while the number of all-cause consultations rose from 5,957,438 to 8,622,922, an increase of 44.7%. The incidence of malaria in Cameroon in 2017 was 86.3 cases per 1,000 inhabitants. It is highest in the forest zone covering the East, South-West and Center regions, and moderate in the other regions.

Parasite prevalence among children aged 6 to 59 months was 30% for the country as a whole (EDS-MICS, 2011). However, there is a regional disparity. It is high in the country's forest zone, notably the Center (excluding Yaoundé) (52.4%), East (48.2%), South-West (46.1%), South (43.1%), the Sudano-Sahelian zone of Adamaoua (47.4%) and the North (34.3%). However, it is relatively low in the western highlands (26.8%), the northwest (15.0%), the Sahelian Far North (27.1%) and the major urban centers of Douala (12.1%) and Yaoundé. From 2011 to 2017, proportional hospital morbidity due to malaria fell from 30.7% to 24.3%, a relative drop of 21% (NSP 2021-2023). Among pregnant women, after a slight decline from 2011 to 2012, morbidity increased from 2013 to 2017, rising from 12.7% to 21.3%. However, the systematic screening of pregnant women for malaria carried out in the prenatal consultation departments of health facilities, since the scaling-up of the use of rapid malaria diagnostic tests in 2014, has contributed to a significant increase in the number of malaria cases in pregnant women (diagnosis of cases of plasmodium infection with or in the absence of fever)

The State of Cameroon has made political commitments and taken concrete action to reduce the burden of malaria: Adherence to the global "Roll Back Malaria" initiative launched in 1998; Adherence to the Abuja Summit Declaration in April 2000; Reorganization of the National Malaria Control Program in 2002 to make it a priority health program; Integration of malaria control into the Health Sector Strategy (2016-2027) and the National Health Development Plan (PNDS) 2016-2020; the adoption of several national policies to improve access to quality malaria prevention and treatment services (free malaria treatment for children under 5; free intermittent preventive treatment for pregnant women; free distribution of long-acting impregnated mosquito nets to the entire population; integration of malaria control services into the Universal Health Coverage reform currently under development, etc.).(PSNLP, 2019)). These measures have led to a reduction in hospital morbidity due to malaria, particularly in the under-5 age group. It fell from 45.8% in 2011 to 31.8% in 2017 (NSP 2021-2023). This reduction is attributable to all the actions undertaken by the government and its partners in favor of this vulnerable group (free treatment of simple and severe malaria since February 2011 and May 2014 respectively, free distribution of LLINs to children under 5 since 2005, chemoprevention campaign for seasonal malaria in children aged 3 to 59 months in the Far North and North Regions).

According to the President's Malaria Initiative Operational Plan 2022, between 2017 and 2020, the number of malaria cases in Cameroon rose by 3.8%, from 250 to 260 per 1,000 inhabitants at risk. During the same period, WHO notes that the mortality rate rose slightly by 0.8%, from 0.55 to 0.56 per 1,000 inhabitants at risk. Less than 30% of children with fever had a positive malaria test in 2022 (MIS, 2022). Thus, the percentage of children aged 6-59 months who tested positive for malaria using the rapid diagnostic test was 26.1% nationally, 49.1% in the Center (excluding Yaoundé (10%)) and 27.8% in the Littoral (excluding Douala (6.9%)). The Global Malaria Strategy 2020 targets call for a reduction in malaria incidence and mortality rates of at least 40% between 2015 and 2020. Unfortunately, results for Cameroon have remained relatively unsatisfactory over this period, and malaria remains a major cause of morbidity and mortality, with 6.9 million cases and 15,000 deaths estimated in 2020.

The entire national population, i.e. 26.8 million people, is exposed to the risk of malaria every year. Nationally, one in four children aged between 6 and 59 months tested positive for malaria by rapid diagnostic test (RDT) in the Demographic Health Survey (DHS 2018), with malaria prevalence highest in rural areas (32%) and in the Center region

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(47%). Reported levels of access to treatment for childhood fever in 2018 (63%) were close to the 2015-2019 medians for sub-Saharan Africa (69%). However, the reported proportion of RDT use (21%) and artemisinin-based combination therapy (ACT) use among children who received a diagnostic test (17%) were low compared with regional medians. These results probably reflect the fact that care was sought from informal and traditional sources for 20% of suspected cases, and from pharmacies for 12% of suspected malaria cases. Of the feverish children for whom care or treatment was sought, 70% did so in the private health sector, including informal stores.

Recommendations for malaria case management

To reinforce the fight against malaria, the government has drawn up guidelines for the management of malaria cases, set out in a document entitled Guide de prise en charge du paludisme. These diagnostic guidelines call for systematic confirmation of all suspected cases by a rapid diagnostic test (RDT) or by high-quality microscopy. RDTs are subsidized and free for children under five. The performance of RDTs and microscopy must be supported by an operational Quality Assurance and Quality Control system. With regard to treatment, the guide identifies a specific protocol for each of the seven categories identified, namely: (i) uncomplicated malaria, (ii) clinical failures, (iii) severe malaria: pre-referral treatment, (iv) severe malaria, (v) malaria in pregnant women, (vi) special populations and situations, and (vii) Intermittent Preventive Treatment in pregnant women.

Private healthcare system

The for-profit private healthcare sector in Cameroon comprises private for-profit establishments, pharmacies that are registered and licensed by the national regulatory authority, the Direction de la pharmacie du médicament et des laboratoires (DPML), and informal retailers, known as street pharmacies or street dispensaries, and comprising mainly kiosks and market stalls, with a relatively smaller contingent of itinerant drug vendors. Private, for-profit health services are overwhelmingly located in Cameroon's Center and Littoral regions, home to the country's two largest cities, Yaoundé and Douala. These two regions comprised 76% (1930/2535) of registered for-profit healthcare facilities (Ministry of Health 2020 list from DHIS2), 61% (267/436) of Ubipharm network pharmacies, and 95% (38/40) of pharmaceutical distributors listed with DPML in 2019.

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APPENDIX 3: SURVEY METHODS

Population design and study

ACTwatch Lite is a cross-sectional survey of retail outlets. The study population is defined as all outlets likely to sell or distribute antimalarial drugs and/or provide malaria blood tests. In Cameroon, this includes the following types of outlets private for-profit and not-for-profit health facilities (faith-based health facilities), pharmacies, pro-pharmacies, general retailers, itinerant vendors and wholesalers.

Eligibility criteria

Outlets were eligible for a supplier interview and antimalarial product audit if they met at least one of the three study criteria: 1) one or more antimalarials apparently in stock on the day of the survey; 2) one or more antimalarials that would have been in stock during the three months prior to the survey; and/or 3) performs blood tests for malaria (microscopy or RDT).

Sampling

The study adopted a cluster sampling approach. This involved sampling a set of administrative units (geographical clusters) with a corresponding population of around 10,000 to 15,000 inhabitants. The appropriate administrative unit in Cameroon corresponding to this desired population size is the "health area". There are 4089 health areas in Cameroon, grouped into 200 health districts, grouped into 10 regions.

Sampling was directed by the selection of urban clusters (health areas). Prior to sampling, all health areas in the Center and Littoral regions were classified into one of the two groups below. From a list of all health areas located in the health districts, stratified by classifications 1 and 2 below, health areas were selected with probability proportional to population size.

1. Health areas located in the 2 largest communes in the Center and Littoral regions (communes with special status: Yaoundé and Douala). These towns are also communes in which all the health districts where the health areas are located are classified as urban. Probability sampling proportional to the size of the urban health areas in these communes was carried out, and 16 urban health areas in Yaoundé and Douala were randomly selected for the census.
2. Double probability cluster sampling proportional to the size of the districts and health areas was carried out for all other health districts outside Yaoundé and Douala in the Center and Littoral regions. An initial random sample of eight health districts was drawn from the Center and Littoral health districts outside Yaoundé and Douala. Secondly, 40 health areas (mixed urban and rural) were randomly selected from these eight selected districts and included in the census.

All private for-profit health facilities, faith-based health facilities, pharmacies and informal vendors potentially oriented towards the sale of antimalarial drugs were approached for possible participation. Once the clusters had been selected, the lists of DPML-authorized pharmacies and private health facilities were used to estimate the number of outlets in the selected clusters. Additional pharmacies were selected in a booster sample by geographical area, from the official lists of pharmacies, until the required sample size was reached.

Sample size

A series of calculations was carried out to identify the minimum sample size requirements for consumer-level outlets needed to estimate key market indicators with a precision ≤10 percentage points in both regions and separately in urban and rural areas. Data on the composition of cluster outlets (health areas) come from a 2019 family planning study conducted in the Center and Littoral regions by the Association camerounaise pour le marketing social (ACMS), PSI's affiliate in Cameroon. A sample of 15 urban clusters, supplemented by additional pharmacies, yielded the

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numbers of outlets selected and presented in the in Table 1. The sample sizes were sufficient to estimate the market indicators (as proportions) with at least the absolute level of precision shown in Table 1. The following formula and assumptions were used to estimate the number of outlets required:

$$n = \text{deff} \times \frac{[Z_{1-\alpha}^2 \times P(1-P)]}{d^2}$$

with :

n = desired sample size (by urban/rural area and by outlet type)

P = assumption concerning the proportion of the population, equal to 0.5.

Z1-□ = normal value of standard deviation 1-α corresponding to an error □ (type I) with a two-tailed test, equal to 1.96

d = the desired absolute precision of the estimate / half the width of the desired confidence interval, equal to 0.1.

deff = the sampling effect in the case of multi-stage sampling, equal to 2.

CPF = finite population correction, a correction applied to the sample size calculation when the size of the universe of is known (or assumed to be less than a given value) and the sample represents more than 5% of the universe. In this study, CPF is applied to sample size estimates for private for-profit health facilities, pharmacies and pro-pharmacies.

	Urban		Rural		Total	
Type of outlet	Number of interviews	Minimum absolute accuracy	Number of interviews	Minimum absolute accuracy	Number of interviews	Minimum absolute accuracy
Private health facilities	194	0.10	193	0.10	387	0.08
Pharmacies	100	0.12	0	-	100	0.12
Informal vendors	150	0.12	162	0.11	312	0.08
Total	443	0.07	355	0.08	798	0.05

Wholesaler sample size

Little is known about the number of formal pharmaceutical and medical wholesale companies in Cameroon. Based on ACTwatch's supply chain studies in Cameroon and Nigeria in 2009, each urban group selected in the point-of-sale survey generated two unique terminal wholesaler contacts. The study investigated the largest Cameroonian distribution companies based in Yaoundé and Douala, identified from contacts provided at lower levels of the supply chain, supplemented by targeted sampling where necessary. Cameroon has an active informal private sector and, based on previous work, it was expected that kiosks and market stalls would source goods from larger informal market stalls. The survey collected information from informal wholesalers where they were identified on the basis of contact details provided.

Collecting data

Outlet data collection

In each of the selected health areas, investigators counted all outlets with the potential to stock all kinds of antimalarials and diagnostic tests. To ensure that all outlets with the potential to sell or distribute antimalarials and diagnostic tests in the sampled health areas were visited, the following methods were used before and during data collection:

1. Once in the field, the supervisors went to see the head doctor of the zone (district or health area) to obtain his approval. For the census, contact was made with the competent local authority (health area or district chief) to find out where anti-malarial drugs are usually sold.
2. The research team provided interviewers with a list of all private and faith-based health facilities and pharmacies registered in the selected health area (and district).
3. After surveying the boundaries of each district or village in the health area with the help of district chiefs, the surveyors identified all outlets with the potential to store, sell and distribute anti-malarial drugs and tests.

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For eligible outlets, the interviewers provided information on the study and asked to interview the manager or main pharmacist, as this person is in a position to provide reliable information on sales volumes. If there are several providers working in the outlet, the main provider was invited to complete the interview. If he/she was not available, the most senior manager was invited to complete the interview, with the authorization of the designated deputy if the latter was not the most senior manager. In all cases, the participant was interviewed in a discreet location away from colleagues and/or superiors. In each sales outlet and in each private and faith-based health facility visited, a salesperson or care provider was first approached to ask for his or her agreement to participate, using the information sheet and informed consent form. Once consent had been obtained, full details of each antimalarial drug available were collected using the drug audit form. Details for each type of RDT were also entered on the RDT audit form. If an outlet was closed or the provider was too busy, the interviewer returned at another time. A maximum of three visits were made to a given outlet; interviewers were encouraged to make an appointment on the same day as the initial visit, and at a time agreed with the provider. This reduced the time spent in a given locality.

Prior to data collection, initial lists of all private health facilities, faith-based health facilities, pharmacies and pro-pharmacies registered in the Cameroon regions were obtained from the Ministry of Health and the DPML. Key informants (district and village chiefs, notables, etc.) living or working in the health districts were also approached to verify and identify the outlets on the lists. Finally, a snowball sampling technique was used with providers to identify other outlets in the arrondissements. This snowballing technique took place at the same time as the point-of-sale survey.

Collection from wholesalers

General field procedures for wholesale outlets mirrored those for retail outlets. The same field team was responsible for interviewing both wholesalers and retailers. Once sampling and selection had been completed, wholesalers were approached by members of the field team, who presented the study to the company staff member responsible for malaria-related sales. Wholesalers were selected for inclusion by checking whether the establishment had antimalarials or RDTs in stock at the time of the interview or at any time in the 3 months prior to the interview.

Sampling weight

Sampling weights were applied to the analysis of the Camaroun 2024 point-of-sale survey data to account for variations in the probability of selection resulting from the sampling design:

1) Cluster sampling: Health areas were selected from sampling frames in each area with probability proportional to size. In each selected health area, a census of all outlets likely to sell or distribute antimalarials and/or provide malaria blood tests was carried out.
2) Recall sample: The geographical area for the point-of-sale census was extended to include neighbouring health areas (selected using a random method) for pharmacies and health facilities.

The sampling weights applied in the analysis are the inverse of the selection probability:

$$W_i = \frac{1}{a \times \frac{M_\alpha}{\sum M_\alpha}}$$

Where:

Mα = Estimated cluster (population size)
ΣMα =Sum of estimated cluster sizes (population size) across the stratum
a =Number of selected clusters in the stratum

Sampling weights are calculated at cluster level and applied to all outlets in a given cluster, regardless of outlet type.

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Market share was calculated using complete census data at the level of the selected primary health area only (i.e., the booster sample was not included in the market share calculation). Health area sampling weights were created using the sampling weight formula (Wi), where :

Mα = Estimated population size of the health area
ΣMα =Sum of estimated health area population size across stratum
a =Number of selected health areas in stratum

Health area sampling weights were applied to all other report indicators for all outlet types, with the exception of health facilities and pharmacies. Since these outlet types were included in the recall sample, the weights applied to these outlet types for all indicators other than market share were calculated using the sampling weight formula (Wi), where :

Mα = Estimate of the size of the communal population
ΣMα =Sum of estimated communal population size across stratum
a = Number of selected communes in stratum

A sampling frame with population size was used to select the sample because there are no precise estimates of the total number of outlets per geographic or administrative unit that might be eligible for a survey of drug outlets. The main assumption used in the use of population figures for sampling and weighting is that the distribution of outlets and/or the distribution of drugs transiting through the outlets of a given group is correlated with the size of the population.

Finite population correction

A finite population correction (FPC) was applied to the study estimates to account for the high proportion of arrondissements and communes selected in the study without replacement. The CPF affects the standard errors of the estimates, but not the point estimates themselves.

APPENDIX 4: SAMPLED CLUSTERS

Region	Health district	Health area	Status (rural/urban)
CENTER_ YAOUNDE	EFOULAN	AHALA 1	Urban
CENTER_ YAOUNDE	CITE_VERTE	CITE_VERTE	Urban
CENTER_ YAOUNDE	DJOUNGOLO	EMANA	Urban
CENTER_ YAOUNDE	DJOUNGOLO	MBALLA_V	Urban
CENTER_ YAOUNDE	NKOLNDONGO	MIMBOMAN_II	Urban
CENTER_ YAOUNDE	NKOLNDONGO	NKOLDONGO_I	Urban
CENTER_ YAOUNDE	NKOLNDONGO	NKOMO	Urban
CENTER_ YAOUNDE	NKOLNDONGO	ODZA	Urban
CENTRE_SANS_YAOUNDE	BAFIA	ASSALA	Rural
CENTRE_SANS_YAOUNDE	NGOUMOU	AKONO	Rural
CENTRE_SANS_YAOUNDE	BAFIA	BAFIA_I	Urban
CENTRE_SANS_YAOUNDE	BAFIA	BAFIA_II	Urban
CENTRE_SANS_YAOUNDE	BAFIA	BAFIA_RURAL	Rural
CENTRE_SANS_YAOUNDE	BAFIA	BALIAMA	Rural
CENTRE_SANS_YAOUNDE	NGOUMOU	BIKOK	Rural
CENTRE_SANS_YAOUNDE	BAFIA	BOKITO	Rural
CENTRE_SANS_YAOUNDE	BAFIA	DONENKENG	Rural
CENTRE_SANS_YAOUNDE	BAFIA	KIIKI	Rural

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Region	Health district	Health area	Status (rural/urban)
CENTRE_SANS_YAOUNDE	MBANDJOCK	MBANDJOCK	Rural
CENTRE_SANS_YAOUNDE	MBANDJOCK	MEBOLO	Rural
CENTRE_SANS_YAOUNDE	SAA	NDONG_ELANG	Rural
CENTRE_SANS_YAOUNDE	SAA	NKOLANG	Rural
CENTRE_SANS_YAOUNDE	NGOUMOU	NKONG_ABOK	Rural
CENTRE_SANS_YAOUNDE	MBANDJOCK	NKOTENG_II	Rural
CENTRE_SANS_YAOUNDE	NGOUMOU	OFFOUMOU	Rural
CENTRE_SANS_YAOUNDE	SAA	ONDONDO	Rural
CENTRE_SANS_YAOUNDE	SAA	SA'A	Rural
LITTORAL_DOUALA	BANGUE	Massoubou	Urban
LITTORAL_DOUALA	BONASSAMA	Bilingual	Urban
LITTORAL_DOUALA	BONASSAMA	Ngwelé	Urban
LITTORAL_DOUALA	DEIDO	Akwa_I	Urban
LITTORAL_DOUALA	DEIDO	Cité_SIC	Urban
LITTORAL_DOUALA	LOGBABA	Ndogbati	Urban
LITTORAL_DOUALA	NEW_BELL	Sebenjongo	Urban
LITTORAL_DOUALA	NYLON	Oyack	Urban
LITTORAL_SANS_DOUALA	EDEA	Béon	Urban
LITTORAL_SANS_DOUALA	EDEA	Délangue	Urban
LITTORAL_SANS_DOUALA	EDEA	Dizangue	Urban
LITTORAL_SANS_DOUALA	EDEA	Elog_Bélé	Urban
LITTORAL_SANS_DOUALA	EDEA	Logbajeck	Rural
LITTORAL_SANS_DOUALA	EDEA	Malimba	Urban
LITTORAL_SANS_DOUALA	EDEA	Plateau_Administra	Urban
LITTORAL_SANS_DOUALA	LOUM	BAbong	Rural
LITTORAL_SANS_DOUALA	LOUM	Loum_Chantier	Rural
LITTORAL_SANS_DOUALA	LOUM	Loum_II	Rural
LITTORAL_SANS_DOUALA	MELONG	Baré	Rural
LITTORAL_SANS_DOUALA	MELONG	Lelem	Rural
LITTORAL_SANS_DOUALA	MELONG	Melong_Centre	Rural
LITTORAL_SANS_DOUALA	MELONG	Melong_II	Rural
LITTORAL_SANS_DOUALA	NKONGSAMBA	Barressoumtou	Urban
LITTORAL_SANS_DOUALA	NKONGSAMBA	Bonangoh	Urban
LITTORAL_SANS_DOUALA	NKONGSAMBA	Eboumbeng	Urban
LITTORAL_SANS_DOUALA	NKONGSAMBA	Ekel_Mbeng	Urban
LITTORAL_SANS_DOUALA	NKONGSAMBA	Nkoundou	Urban

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APPENDIX 5: QUESTIONNAIRE

Retailer questionnaires

Field	Question	Answer
clock_WARN	The clock setting on your phone is incorrect *Question relevant when: today()<date('2024-01-29')*	
note_intro	ACTwatch Lite Cameroon 2024 Questionnaire on points of sale for retailers and wholesalers Welcome	
date *(required)*	0.1 Confirm today's date:	
SECTION 0: FORM TYPE		
formtype *(required)*	0.1 What type of form would you like to fill in for this outlet / company?	1 Questionnaire for retailers 2 Questionnaire for wholesalers 3 Additional audit form (retailers or wholesalers)
auditlevel *(required)*	0.2 Would you like to carry out this audit for a retail or wholesale outlet? *Question relevant when: ${formtype} =3*	1 Retail trade 2 Wholesale trade
Section 1: Census information		
HEAD_s1	Section 1: Census information Investigator *Answer the following questions before entering the store / business. Question relevant when: ${supp} =0*	
team *(required)*	Field team	51 TEAM 1 (NGOMONO LAURENCE NADIA) 52 TEAM 2 (DAHA MEKOUGUEM RITA CLEMENCE) 53 TEAM 3 (ALIMA ZINGA MARTINE LINDA) 54 TEAM 4 (NGO NYANITH RUTH FLORE)

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		55	TEAM 5 (DJOMENI RODRIGUE BAUDOUIN)
c1a *(required)*	1.1 Name of interviewer	11	PSI/ACMS
		5152	NGOMONO LAURENCE NADIA
		5153	BIH HENRIETTA
		5154	CHUEGOUE KEUTGNE AUGUSTIN
		5156	ATANGANA MESSI HERMANNE ALIX
		5157	KENGNE DJOUKAM KELSIE DIANE
		5158	NGO BABA ELEANOR LABLONDE
		5253	DAHA MEKOUGUEM RITA CLEMENCE
		5254	MESSINA MARIE FELY ERICA
		5255	NSAME IVAN
		5256	TALLA TAGNE NACCIS

Field	Question	Answer	
		5257	EFOUSSI NYAMA DIANE
		5258	MENDOUGA MARIE CHRISTELLE
		5354	ALIMA ZINGA MARTINE LINDA
		5355	NJIANKA KOUOTOU ROGER
		5356	BIDJA ESTELLE CARINE
		5357	ADAMA HAMAN
		5358	DEFFO PAUL YVAN
		5359	DJEUMO DJATCHA JESSICA LINDA
		5455	NGO NYANITH RUTH FLORE

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		5456	AGONATE TAYANOU ERIC
		5457	SOB KENFACK LYNE JOSEPHINE
		5458	MBOGNE DONGMO LARISSA
		5459	MONKAM PAULE SANDRA
		5460	WAFE KUIGNE INES VERINENCE
		5461	SOH MBAZI MAX HERVE
		5556	DJOMENI RODRIGUE BAUDOUIN
		5557	NGUEMI NAOMIE PARELIE
		5558	NYOBE MBOE JOSEPH
		5559	DJIENANG EDITH LAURE MANUELLA
		5560	OTSE ATEME JEAN
		5561	FANGUENG KANGO DALLONNES
c2 *(required)*	1.2 Region	10	Central Region
		11	Littoral Region
c3 *(required)*	1.3 Health district	1011	BAFIA
		1012	GREEN CITY
		1013	DJOUNGOLO
		1014	EFOULAN
		1015	MBANDJOCK
		1016	NGOUMOU
		1017	NKOLNDONGO
		1018	SAA
		1019	BIYEM-ASSI
		1111	BANGUE
		1112	BONASSAMA

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			1113	DEIDO
			1114	EDEA
			1115	LOGBABA
			1116	LOUM
			1117	MELONG
			1118	NEW BELL
			1119	NKONGSAMBA
			1120	NYLON
c4 *(required)*	1.4 Health area		101112	ASSALA
			101113	BAFIA I
			101114	BAFIA II
			101115	BAFIA RURAL
			101116	BALIAMA
			101117	BOKITO
			101118	DONENKENG
			101119	KIIKI
			101120	TSEKANE
			101213	CARRIERE

Field	Question	Answer		
			101214	GREEN CITY
			101215	MESSA
			101216	MOKOLO
			101217	TSINGA
			101314	EMANA
			101315	MBALLA V
			101316	ELIG ESSONO
			1014	AHALA 1

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	15	
	1014 16	EFOULAN
	1014 17	NGOA EKELLE
	1014 18	OBILI
	1015 16	MBANDJOCK
	1015 17	MEBOLO
	1015 18	NKOTENG II
	1016 17	AKONO
	1016 18	BIKOK
	1016 19	NKONG ABOK
	1016 20	OFFOUMOU
	1017 18	MIMBOMAN II
	1017 19	NKOLDONGO I
	1017 20	NKOMO
	1017 21	ODZA
	1018 19	NDONG ELANG
	1018 20	NKOLANG
	1018 21	ONDONDO
	1018 22	SA'A
	1019 20	BIYEM ASSI 2
	1019 21	ETOUG-EBE
	1111 12	MASSOUBOU
	1111 13	LOGPOM MAKEPE
	1112 13	BILINGUAL
	1112 14	NGWELE
	1112 15	BONAMIKANO
	1112 16	SODIKO
	1113	AKWA I

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	14	
	111315	CITE SIC
	111316	AKWA II
	111317	AKWA III
	111318	BONANJO
	111415	BEON
	111416	DELANGUE
	111417	DIZANGUE
	111418	ELOG BELE
	111419	LOGBAJECK
	111420	MALIMBA
	111421	ADMINISTRATIVE PLATEAU
	111516	NDOGBATI
	111617	BABONG
	111618	LOUM CHANTIER
	111619	LOUM II
	111718	BARE
	111719	LELEM
	111720	MELONG CENTER
	111721	MELONG II
	111819	SEBENJONGO
	111820	NEW BELL BAMILEKE
	111821	NGANGUE
	111920	BARRESSOUMTOU
	111921	BONANGOH
	111922	EBOUMBENG
	111923	EKEL MBENG

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Field	Question	Answer	
		111924	NKOUNDOU
		111925	NLONGKO'O
		112021	OYACK
		112022	SOBOUM
c7_r *(required)*	1.5 Type of outlet / business *Question relevant when: ${formtype} =1 or ${auditlevel} =1*	1	Private hospital
		2	Private laboratory
		3	Faith hospital
		11	Formal pharmacy or dispensary
		21	Store in market
		22	Out-of-market store
		23	Market display
		24	Off-market display
		25	Street vendor
		26	At home
		96	Other
c7_ws *(required)*	1.6 Type of wholesaler *Question relevant when: ${formtype} =2 or ${auditlevel} =2*	11	Formal pharmacy or dispensary
		12	Wholesaler/general importer
		26	At home
		21	Store in market
		22	Out-of-market store
		23	Market display
		24	Off-market display
		25	Street vendor
		96	Other
c7_other *(required)*	1.7 Specify other type [c6] *Question relevant when: selected(${c7_r} ,'96') or selected(${c7_ws} ,'96')*		

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c6 *(required)*	1.8 Name of sales outlet / company *If nameless, write "nameless".* *Question relevant when: ${inf} !=1*	
c5 *(required)*	1.9 Location description *Question relevant when: ${inf} !=1*	
gps *(required)*	1.10 GPS coordinates *GPS coordinates can only be collected when outside.* *Question relevant when: ${inf} !=1*	
Section 1: Census information > 0 *Group relevant when: ${formtype} =3*		
outletmatch_photo *(required)*	1.11 Photo Please take a photo of the point-of-sale/company ID in the top right-hand corner of the c o n s e n t form.	
outletmatch_id1 *(required)*	1.12 Outlet ID Please enter the point-of-sale identification number shown at the top right of the consent form. You must enter the code in the form 1-XX-XXXXXX-XXXX *Response constrained to: regex(., '^[1]{1}[-][0-9]{2}[-][0-9]{6}[-][0-9]{4}$')*	
outletmatch_id2 *(required)*	1.13 Outlet ID Please re-enter the point-of-sale identification number from the top right of the consent form. You must enter the code in the form 1-XX-XXXXXX-XXXX *Response constrained to: regex(., '^[1]{1}[-][0-9]{2}[-][0-9]{6}[-][0-9]{4}$')*	
outletmatch_id_WARN	The store ID you have entered does not match the previous entry. First entry: [outletmatch_id1] Second entry: [outletmatch_id2]	

Field	Question	Answer		
	You must ensure that the two store ID entries match before you can continue. *Question relevant when: (${outletmatch_id2} != ${outletmatch_id1})*			
outletmatch_intname *(required)*	1.14 C2b. Name of the interviewer conducting the interview with the service provider in		11	PSI/ACMS
			5152	NGOMONO LAURENCE NADIA

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	this outlet.		5153	BIH HENRIETTA
			5154	CHUEGOUE KEUTGNE AUGUSTIN
			5156	ATANGANA MESSI HERMANNE ALIX
			5157	KENGNE DJOUKAM KELSIE DIANE
			5158	NGO BABA ELEANOR LABLONDE
			5253	DAHA MEKOUGUEM RITA CLEMENCE
			5254	MESSINA MARIE FELY ERICA
			5255	NSAME IVAN
			5256	TALLA TAGNE NACCIS
			5257	EFOUSSI NYAMA DIANE
			5258	MENDOUGA MARIE CHRISTELLE
			5354	ALIMA ZINGA MARTINE LINDA
			5355	NJIANKA KOUOTOU ROGER
			5356	BIDJA ESTELLE CARINE
			5357	ADAMA HAMAN
			5358	DEFFO PAUL YVAN
			5359	DJEUMO DJATCHA JESSICA LINDA
			5455	NGO NYANITH RUTH FLORE
			5456	AGONATE TAYANOU ERIC
			5457	SOB KENFACK LYNE JOSEPHINE
			5458	MBOGNE DONGMO LARISSA
			5459	MONKAM PAULE SANDRA

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			5460	WAFE KUIGNE INES VERINENCE
			5461	SOH MBAZI MAX HERVE
			5556	DJOMENI RODRIGUE BAUDOUIN
			5557	NGUEMI NAOMIE PARELIE
			5558	NYOBE MBOE JOSEPH
			5559	DJIENANG EDITH LAURE MANUELLA
			5560	OTSE ATEME JEAN
			5561	FANGUENG KANGO DALLONNES
Section 2. Selection questions				
canscreen *(required)*	2.1 Section 2. Selection questions INVESTIGATOR Are you able to select this outlet/company to take part in the study?		1	Yes
			0	No

Field	Question	Answer		
	Question relevant when: ${formtype} !=3			
cantscreen *(required)*	2.2 INVESTIGATOR Why aren't you able to select this outlet/company? *Question relevant when: ${canscreen} =0*		1	The point of sale is definitively closed
			2	Point-of-sale staff refused before the selection was made can take place
			3	There is no eligible sponsor to complete the selection
			4	Point-of-sale staff ask us to come back more often late for selection
			96	Other reasons

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cantscreen_other *(required)*	2.3 Specify another reason : *Question relevant when: ${cantscreen} =96*	
Section 2. Selection questions > 0 *Group relevant when: ${canscreen} =1*		
INST_start	Prompt: *Hello, my name is [c1b]. I work for the Association Camerounaise pour le Marketing Social, ACMS. We are conducting a study on the availability of anti-malarial drugs and malaria screening services in outlets like yours in Cameroon. The results will help us improve the availability of appropriate drugs and the treatment of malaria in Cameroon.* *I'd like to ask you a few questions to see if you can take part in this study. This is a study and you are under no obligation to participate as it is completely voluntary. I would also like to assure you that the answers you give will remain confidential. We will not share your information with the authorities, and you will not have to fear any reprisals.* *Question relevant when: ${formtype} !=3*	
s3 *(required)*	2.4 Do you have any anti-malarial drugs in stock today?	1 Yes 0 No
s4 *(required)*	2.5 Are there any antimalarial drugs that are sold out today, but that you've had in stock for the past 3 months? *Question relevant when: selected(${s3} ,'0')*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
s5a *(required)*	2.6 Is microscopic malaria screening available here today? *Question relevant when: ${formtype} !=2*	1 Yes 0 No
s5b *(required)*	2.7 Do you have malaria rapid diagnostic tests (RDTs) in stock today? *If you're asked what an RDT is, explain: a malaria rapid diagnostic test, also known as an RDT, is a small, individually packaged blood test that quickly diagnoses whether a person has malaria.*	1 Yes 0 No
s6 *(required)*	2.8 Have you stocked malaria rapid diagnostic tests (RDTs) in the last 3 months? *If you're asked what an RDT is, explain: a malaria rapid diagnostic test, also known as an RDT, is a small, individually packaged blood test that quickly*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of

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	diagnoses whether a person has malaria. *Question relevant when: selected(${s5b} ,'0') or selected(${s5b} ,'98')*	point of sale
Section 2. Selection questions > 0 *Group relevant when: ${eligible} =1 and ${supp} =0*		
INST_eligable	Interviewer: Instructions for consent: - *Provide the respondent with information about the study.* - *Ask to interview the outlet/company manager or the main pharmacist. If several providers work in the outlet/company, ask the main provider or the most senior provider available at the time of the visit to complete the interview.*	

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Field	Question	Answer	
	- *In a discreet location, away from colleagues and/or supervisors, provide additional information and the consent form.* - *Ask the respondent if they consent to the interview and ask them to read and sign the consent form.* *Question relevant when: ${eligible} =1*		
consented *(required)*	2.9 INVESTIGATOR Have you obtained consent to complete the form? *Question relevant when: ${eligible} =1*	1 97 99	Yes No - the provider refused No - eligible provider was not available / Time of day not suitable
consent_y	Investigator: . The store ID is: 1---0083 Write this identification at the top of the consent form before proceeding with the interview. *Question relevant when: selected(${consented} ,'1')*		
consent_notavail	Interviewer: *If the provider is willing to participate at a more convenient time, arrange a time (ideally later in the day) to return. Return to this form to complete the survey at that time.* *Question relevant when: selected(${consented} , '99')*		
c10 *(required)*	2.10 If the service provider refused to answer, why? *Question relevant when: selected(${consented} ,'97')*	1 2 3 7 96	An influx of customers Thinks it's an inspection / fears for its authorization Not interested No reason Other
c10_other *(required)*	2.11 Specify other reason *Question relevant when: selected(${c10} ,'96')*		

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INST_refused1	Interviewer: The interview could not be completed at this sales outlet/company. *If the provider is available and willing to participate at a more convenient time, arrange a time (ideally later in the day) to return. Return to this form to complete the survey at that time.* *If not, thank the respondent for their time.* *Save this form.* *Move on to the next point of sale/company.* *Question relevant when: selected(${c10} ,'96') or selected(${c10} ,'1')*	
INST_refused2	Interviewer: *The interview could not be completed at this sales outlet/company.* *Save this form.* *Move on to the next point of sale/company.* *Question relevant when: selected(${c10} ,'2') or selected(${c10} ,'3') or selected(${c10} ,'7')*	
agreed *Group relevant when: ${consented} =1 or ${supp} =1*		
checkpoint1 *(required)*	CONTROL POINT INVESTIGATOR Are you able to continue the interview, i.e. has it been uninterrupted?	1 Yes 0 No
> Section 3. Questionnaire for the service provider *Group relevant when: ${prov_int} =1 and ${checkpoint1} =1*		
HEAD_s3	Section 3. Questionnaire for the provider	

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Field	Question	Answer
> Section 3. Questionnaire for service providers > 3A. Characteristics of outlets		
p1 *(required)*	3A.1 Sales outlet characteristics Investigator: . *For the following questions, ask to speak with a sales outlet/company manager whose responsibilities include prescribing prescriptions and providing care or medication to customers/patients.* Confirm that the guarantor is responsible for prescribing, providing care or medication to clients/patients:	1 Yes 0 No
p1_WARN	Investigator: Ask again to speak to a store manager or member of staff who is responsible for providing prescriptions, treatments or medication to customers, and return to the previous page. *Question relevant when: ${p1} =0*	
char2 *(required)*	3A.2 Year the outlet/business was established: *Response constrained to: (.>=1900 and .<=2025) or .=-9888 or .=-9777*	
p2 *(required)*	3A.3 How many years have you worked in this outlet/company? *If less than one year, enter "0" If respondent does not know, enter "98".* *Response constrained to: .<=98*	
char3_WARN1	Interviewer: *Confirm that [p2] is the exact number of years the respondent has worked in this outlet.* */ company before continuing.* *If the respondent does not know how long they have been working in this outlet/company, go back and enter "98".* *Question relevant when: ${p2} >=10*	
char3_WARN2	Interviewer: *Confirm that the respondent has been working in this establishment for less than one year before continuing.* *If the respondent doesn't know how long they've been working in this outlet, go back and enter "98".* *Question relevant when: ${p2} =0*	

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char4 *(required)*	3A.4 How many people work here? *Response constrained to: .<=98*	
char4_WARN1	 Interviewer: *Confirm that [char4] is the correct number of employees in this store/company before continuing. Question relevant when: ${char4} >=10*	
p8 *(required)*	3A.5 Do you or anyone in this outlet/company have any of the following health-related qualifications? Select all that apply: *Read the list. Select respondent's highest qualification* *Response constrained to: if(selected(., 99), count-selected(.) = 1, count-selected(.) >= 1)*	99 No (other) qualification(s) in the health sector 7 Care assistant 8 Counselor (HIV, TB, Family planning, etc.) 3 Nurse 5 Laboratory assistant laboratory 2 Doctor 1 Pharmacist 9 Community Relay 4 Midwife 6 Pharmacy technician / Pharmacy assistant 96 Other 98 Don't know

Field	Question	Answer
p8_other *(required)*	3A.6 Specify qualification *Question relevant when: selected(${p8} , '96')*	
char9 *(required)*	3A.7 Have staff working in this outlet/company received malaria training in the following areas in the last two years? These include courses and workshops. Interviewer: Please read all the answers below and select those that apply. *Do not include initial training.* *Response constrained to: if(selected(., 99) or selected(., 98), count-selected(.) = 1, count-selected(.) >= 1)*	1 Malaria diagnosis 2 Treatment of malaria 3 Malaria case management (diagnosis and treatment) 96 Other 99 No 98 Don't know
char9_other *(required)*	3A.8 Specify the purpose of the training	

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	Question relevant when: selected(${char9} , '96')		
agreed > Section 3. Questionnaire for the provider > <3.B Malaria knowledge> *Group relevant when: ${prov_int} =1*			
INST_mal	Malaria knowledge Interviewer: *For the next two questions, record the brand name or generic name, and the presentation. Ask the provider to show you the drugs if they are in stock to verify the name and presentation.*		
agreed > Section 3. Questionnaire for the provider > <3.B Malaria knowledge> > Most effective treatment for children			
p10_name *(required)*	3B.1 In your opinion, what is the most effective antimalarial drug for treating uncomplicated malaria in children? children under five? Name: *Do not read the list. If a brand name is provided, select the generic name of that brand. If you don't know the generic name, ask the provider. Ask the provider to show you the drug if it's in stock.*	9	Amodiaquine
		6	Artemether
		1	Artemether-lumefantrine (ex. Coartem, L-Artem)
		7	Artemisinin
		8	Artesunate
		2	Artesunate-amodiaquine
		4	Artesunate-SP
		10	Chloroquine
		5	ACTs (combination therapies artemisinin)
		3	Dihydroartemisinin-piperaquine
		11	Quinine
		12	Sulfadoxine-pyrimethamine (ex. Fansidar, SP)
		95	Not an antimalarial
		96	Other
		98	Don't know
p10_form *(required)*	3B.3 Presentation:	1	Tablet
		2	Suppository
		3	Granule
		4	Syrup
		5	Suspension
		6	Injectable liquid
		7	Powder for injection
		8	Drops
		96	Other

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		97	Not applicable
p10_name_oth *(required)*	3B.2 Other, please specify: *Question relevant when: ${p10_name} =96*		
agreed > Section 3. Questionnaire for the provider > <3.B Malaria knowledge> > Most effective treatment for adults			
p11_name *(required)*	3B.4 In your opinion, what is the most effective antimalarial drug for treating uncomplicated malaria in children?	9	Amodiaquine
		6	Artemether

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Field	Question	Answer		
	adults? Name: *Do not read the list. If a brand name is provided, select the generic name of that brand. Ask the provider to show you the drug if it's in stock.*		1	Artemether-lumefantrine (ex. Coartem, L-Artem)
			7	Artemisinin
			8	Artesunate
			2	Artesunate-amodiaquine
			4	Artesunate-SP
			10	Chloroquine
			5	ACTs (combination therapies artemisinin)
			3	Dihydroartemisinin-piperaquine
			11	Quinine
			12	Sulfadoxine-pyrimethamine (ex. Fansidar, SP)
			95	Not an antimalarial
			96	Other
			98	Don't know
p11_form *(required)*	3B.6 Presentation:		1	Tablet
			2	Suppository
			3	Granule
			4	Syrup
			5	Suspension
			6	Injectable liquid
			7	Powder for injection
			8	Drops
			96	Other
			97	Not applicable
p11_name_oth *(required)*	3B.5 Other, please specify: *Question relevant when: ${p11_name} =96*			
agreed > Section 3. Questionnaire for the provider > <3.B Malaria knowledge> > 3B.8 Government recommendation				
p16_name *(required)*	3B.9 Please name the first-line drug recommended by the government to treat uncomplicated malaria. *Do not read the list. If a brand name is provided, select the generic name of that brand. Ask the provider to show you the drug if it's in stock.*		9	Amodiaquine
			6	Artemether
			1	Artemether-lumefantrine (ex. Coartem, L-Artem)
			7	Artemisinin

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			8	Artesunate
			2	Artesunate-amodiaquine
			4	Artesunate-SP
			10	Chloroquine
			5	ACTs (combination therapies artemisinin)
			3	Dihydroartemisinin-piperaquine
			11	Quinine
			12	Sulfadoxine-pyrimethamine (ex. Fansidar, SP)
			95	Not an antimalarial
			96	Other
			98	Don't know
p16_form *(required)*	3B.11 Presentation:		1	Tablet
			2	Suppository
			3	Granule
			4	Syrup
			5	Suspension
			6	Injectable liquid
			7	Powder for injection
			8	Drops
			96	Other
			97	Not applicable

Field	Question	Answer		
p16_name_oth *(required)*	3B.10 Other, please specify: *Question relevant when: ${p16_name} =96*			
p21 *(required)*	3B.12 A malaria rapid diagnostic test, also known as a RDT, is a small, individually packaged blood test that quickly diagnoses whether a person has malaria. Have you ever seen or heard of it? *Show photos of the RDTs in the illustrative sheets.*		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
p22 *(required)*	3B.13		1	Yes
			0	No
			9	Don't know

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	While working in this outlet/business, have you ever tested a customer for malaria using an RDT? *Question relevant when: selected(${p21} ,'1')*	8	
		99	Not applicable for this type of point of sale
p23 *(required)*	3B.14 Would you recommend that a patient/client take an antimalarial drug if the rapid diagnostic test i s negative for malaria? *Read the list. Register only one answer* *Question relevant when: selected(${p21} ,'1')*	1	Yes, sometimes
		2	Yes, always
		3	No, never
		98	Don't know
p24 *(required)*	3B.15 Under what circumstances would you recommend that a patient/client take an antimalarial drug after a negative malaria RDT test? *Don't read the list. Ask "apart from that?" until the participant finishes. Select all answers provided.* *Question relevant when: selected(${p23} ,'1') or selected(${p23} ,'2') or selected(${p23} ,'8')*	1	When they have signs/symptoms of malaria
		2	When they ask for a antimalarial treatment
		3	When it comes to children
		4	When it comes to adults
		5	When it comes to women speakers
		6	When I don't trust to the test
		7	When I know the patient/customer
		96	Other
p24_other *(required)*	3B.16 Other circumstances *Question relevant when: selected(${p24} ,'96')*		
> Section 3. Questionnaire for the service provider > Wholesale practice *Group relevant when: ${prov_int} =1*			
HEAD_3c	We want to find out how this outlet/company fits into the antimalarial supply chain. To do this, we'll be asking questions about who you supply anti-malarials to, and where you get your anti-malarials from.		
> Section 3. Provider Questionnaire > Wholesale Practice > Customers			
retonline *(required)*	3C.1 Does this outlet/company sell antimalarials or RDTs online?	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of point of sale
retws *(required)*	3C.2	1	Yes

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	Does this outlet/company sell antimalarials or RDTs to other outlets, companies or healthcare facilities?		0	No
			98	Don't know
			99	Not applicable for this type of point of sale
retws_warning	Interviewer: *You've noted that the interviewee doesn't know whether this outlet/company supplies malaria products to other outlets.* *Before continuing, try to identify and ask someone in that outlet/company who knows if they sell to other outlets or if all customers are patients/individuals (not companies).* *If someone is able to provide an answer, please go back and indicate yes or no.*			

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Field	Question	Answer
	Question relevant when: ${retws} =98	
retws_confirmdk *(required)*	3C.3 Are you sure that no one in this outlet/company knows whether the outlet/company sells antimalarials or RDTs to other outlets, companies or health facilities (i.e. f o r resale)? *Question relevant when: ${retws} =98 and ${inf} !=1*	1 Yes 0 No
> Section 3. Provider Questionnaire > Wholesaling Practice > Customers > customercount		
p30 *(required)*	3C.4 How many retail customers have you sold anti-malarial drugs to in the last 7 days? *Question relevant when: ${inf} !=1*	
p31 *(required)*	3C.5 How many wholesale/non-retail customers have you sold anti-malarial drugs to in the last 7 days? *Record only the number of wholesale customers, NOT individual customers who come to buy drugs for personal use and not for resale.* * Approximations are acceptable.* *Question relevant when: ${retws} =1 and ${inf} !=1*	
> Section 3. Provider Questionnaire > Wholesale Practice > Customers > 0 *Group relevant when: ${retws} =1 and ${inf} !=1*		
p32_0	3C.6 To what types of customers or companies do you sell antimalarials or mRDTs? *Question relevant when: ${inf} !=1*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
p32_1 *(required)*	a. Individual retail customers (i.e. for consumption, not for resale) *Question relevant when: ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
p32_2 *(required)*	b. Individual customers ONLINE *Question relevant when: ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
p32_3 *(required)*	c. Outlets (e.g. pharmacies, healthcare facilities, etc.) that sell ONLY to individual customers *Question relevant when: ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of

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				point of sale
p32_4 *(required)*	d. Outlets/companies supplying other outlets/companies (e.g. pharmacies selling to drugstores, wholesalers) *Question relevant when: ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
p32_5 *(required)*	e. Wholesale ONLINE *Question relevant when: ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
p32_6 *(required)*	f. Oth er *Question relevant when: ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
p32b	3C.7 Other customers, please specify : *Question relevant when: ${p32_6} =1*			
p34 *(required)*	3C.8 Can you estimate the proportion (percentage out of 100) of antimalarial drugs you sell to each type of customer (in volume, not cost)? *Question relevant when: ${retws} =1 and ${inf} !=1*		1	Yes
			0	No
> Section 3. Provider Questionnaire > Wholesale Practice > Customers > 0 *Group relevant when: ${p34} =1 and ${inf} !=1*				

Field	Question	Answer
p34b_0	3C.9 Estimate the percentage of antimalarial products you sell to each type of customer:	
p34b_1 *(required)*	a. Individual retail customers (i.e. for consumption, not for resale) *Question relevant when: ${p32_1} =1 and ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
p34b_2 *(required)*	b. Individual customers ONLINE *Question relevant when: ${p32_2} =1 and ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	

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p34b_3 *(required)*	c. Outlets (e.g. pharmacies, healthcare facilities, etc.) that sell ONLY to individual customers *Question relevant when: ${p32_3} =1 and ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
p34b_4 *(required)*	d. Outlets/companies supplying other outlets/companies (e.g. pharmacies selling to drugstores, wholesalers) *Question relevant when: ${p32_4} =1 and ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
p34b_5 *(required)*	e. Wholesale ONLINE *Question relevant when: ${p32_5} =1 and ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
p34b_6 *(required)*	f. Oth er *Question relevant when: ${p32_6} =1 and ${inf} !=1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
p34b_WARN	" Interviewer: The proportion of products by type of supplier must equal 100%. The proportion of products per supplier type must equal 100%. The current total entered is [p34b_check]%. Please go back." *Question relevant when: ${p34b_check} !=100 and ${p34} =1*	
ind_0 *(required)*	3C.1 Where are your retail customers located? In other words, where do they come from to buy your products? *Question relevant when: ${retws} =0 and ${inf} !=1*	1 From this community 2 Neighboring communities 3 From further away, but inside this region 4 Other regions of Cameroon 5 Other countries 6 Online / from the Internet 98 Don't know 97 Refusal
> Section 3. Provider Questionnaire > Wholesale Practice > Customers > Wholesalers with individual customers *Group relevant when: ${p32_1} =1 and ${inf} !=1*		

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Field	Question	Answer		
ind_1 *(required)*	3C.2 Where are your individual customers? Where do they come from to buy your products? *Response constrained to: if(selected(., 97) or selected(., 98), count-selected(.) = 1, count-selected(.) >= 1)*		1	From this community
			2	Neighboring communities
			3	From further away, but inside this region
			4	Other regions of Cameroon
			5	Other countries
			6	Online / from the Internet
			98	Don't know
			97	Refusal
> Section 3. Provider Questionnaire > Wholesale Practice > Customers > Outlets (e.g. pharmacies, healthcare facilities, etc.) that sell ONLY to individual customers *Group relevant when: ${p32_3} =1 and ${inf} !=1*				

Field	Question	Answer		
l1_1 *(required)*	3C.3 Where are your retail customers who sell to individuals, i.e. where do they come from to buy your products?		1	From this community
			2	Neighboring communities
			3	From further away, but inside this region
			4	Other regions of Cameroon
			5	Other countries
			6	Online / from the Internet
			98	Don't know
			97	Refusal
l1_2 *(required)*	3C.4 How do you distribute the antimalarial products you sell at these outlets? *Read the list. Select all that apply*		1	The outlet delivers to customers
			2	Customers pick them up at the point of sale
			3	Through third-party delivery companies (courier express, etc.)
			96	Other
l1_2b *(required)*	3C.5 Indicate other distribution methods : *Question relevant when: selected(${l1_2} , '96')*			

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> Section 3. Provider Questionnaire > Wholesale practice > Customers > Outlets/companies supplying other outlets/companies (e.g. pharmacies selling to drugstores, wholesalers). *Group relevant when: ${inf} !=1*			
I2_1 *(required)*	3C.6 What types of outlets/companies/suppliers do you sell your products to?	1	Retail customers (individuals)
		2	Pharmacies
		3	Public health facilities
		4	Private health facilities / denominational
		5	General retailer
		6	Drug wholesaler
		7	General wholesaler
		96	Other
I2_2 *(required)*	3C.7 Where are these suppliers located?	1	From this community
		2	Neighboring communities
		3	From further away, but inside this region
		4	Other regions of Cameroon
		5	Other countries
		6	Online / from the Internet
		98	Don't know
		97	Refusal
I2_3 *(required)*	3C.8 How do you distribute the antimalarial products you sell to these suppliers? *Read the list. Select all that apply*	1	The sales outlet delivers customers
		2	Customers pick them up at the point of sale
		3	Through third-party delivery companies (courier express, etc.)
		96	Other
I2_3b *(required)*	3C.9 Indicate other distribution methods : *Question relevant when: selected(${I2_3} , '96')*		
> Section 3. Provider Questionnaire > Wholesale Practice > Customers > ONLINE *Group relevant when: ${retonline} =1 and ${inf} !=1*			
online_1 *(required)*	3C.10 How do your online customers place their orders?		

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online_2 *(required)*	3C.11 How do you supply products to your online customers?		1	The outlet delivers to customers
			2	Customers pick them up at the point of sale
			3	Through the intermediary of third-party deliveries (mail

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Field	Question	Answer	
			express, etc.)
		96	Other
online_2b *(required)*	3C.12 Indicate other distribution methods : *Question relevant when: selected(${online_2} , '96')*		
online_3 *(required)*	3C.13 Where are your online customers?	1	From this community
		2	Neighboring communities
		3	From further away, but inside this region
		4	Other regions of Cameroon
		5	Other countries
		6	Online / from the Internet
		98	Don't know
		97	Refusal
> Section 3. Questionnaire for service providers > Wholesale trade practices > Wholesale trade practices *Group relevant when: ${retws} =1 and ${inf} !=1*			
ws1 *(required)*	3C.1 Do you import antimalarial drugs?	1	Yes
		0	No
		98	Don't know
ws1b *(required)*	3C.2 Where do you import antimalarials from (give company names and countries if possible). *Question relevant when: ${ws1} =1*		
ws10a *(required)*	3C.3 Do you have price-related minimum order conditions for wholesale customers?	1	Yes
		0	No
		97	Refusal
		98	Don't know
ws10b *(required)*	3C.4 Interviewer: Enter the minimum order price in FCFA *CFA* *Question relevant when: ${ws10a} =1* *Response constrained to: (.>=0) or .=-9888 or .=-9777*		
ws11a *(required)*	3C.5	1	Yes
		0	No
		9	Refusal

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	Do you have minimum order conditions linked to quantities purchased for wholesale customers?	7	
		98	Don't know
ws11b *(required)*	3C.6 Interviewer: Enter the minimum order quantity or note if quantities are different for each product. *Question relevant when: ${ws11a} =1* *Response constrained to: (.>=0) or .=-9888 or .=-9777*		
ws12 *(required)*	3C.7 In the last 3 months, have you granted credit to wholesale customers who have purchased anti-malarial drugs?	1	Yes
		0	No
		98	Don't know
ws13 *(required)*	3C.8 What are the most common credit terms, in terms of number of days? *Question relevant when: ${ws12} =1*		
ws13_warning	You have indicated that this wholesaler generally provides [ws13] days' credit for customers purchasing anti-malarial drugs. If so, please continue. If not, go back and modify your answer. *Question relevant when: ${ws13} >=30*		
> Section 3. Questionnaire for the service provider > Wholesale practice > Company network *Group relevant when: ${inf} !=1*			
ws5a *(required)*	3C.1 Does the owner of this company own any other stores or businesses?	1	Yes
		0	No
		97	Refusal to answer
		98	Don't know

Field	Question	Answer	
ws5b *(required)*	3C.2 What kind of other stores or businesses does the owner own? *Question relevant when: selected(${ws5a} , '1')*	8	Clinic
		3	Wholesale and retail trade medicines
		6	General retailer
		7	Manufacturer
		1	Wholesaler/distributor/ importer medicines
		2	Wholesaler/distributor/ importer general
		4	General wholesale and detail

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		5	Pharmacy / Depot pharmaceutical
		96	Other
ws5b_other *(required)*	3C.3 Specify another type of business : *Question relevant when: selected(${ws5b} , '96')*		
p_cmts	3C.1 Interviewer: Please add any other comments or descriptions of their distribution network here.		
checkpoint2 *(required)*	CONTROL POINT INVESTIGATOR Are you able to continue the interview, i.e. has it been uninterrupted? *Question relevant when: ${checkpoint1} =1 and ${prov_int} =1*	1 0	Yes No
> Section 4. Digital *Group relevant when: ${prov_int} =1 and ${checkpoint2} =1*			
HEAD_s4	Section 4: Digital		
> Section 4. Digital > 4.A Access to and use of digital technology *Group relevant when: ${prov_int} =1*			
dig0 *(required)*	4A.1 In the last 30 days, has this outlet/business had running water? *Question relevant when: ${inf} !=1*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
dig1 *(required)*	4A.2 In the last 30 days, did this outlet/company have electricity? *Question relevant when: ${inf} !=1*	1 2 0	Yes - available AND functional Available, does not work normally NO - not available
dig2 *(required)*	4A.3 In the last 30 days, has this outlet/company had access to a telephone?	1 2 0	Yes - available AND functional Available, does not work normally NO - not available
dig2b *(required)*	4A.4 What type of phone? *Question relevant when: ${dig2} =1 or ${dig2} =2*	1 2	Landline or non-mobile phone Simple cell phone (voice, SMS)

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			3	Function phone (voice, SMS, limited access to certain internet applications)
			4	Smartphone
dig2c *(required)*	4A.5 In the last 30 days, did this outlet/company have a mobile connection for voice and SMS? *Question relevant when: selected(${dig2b} ,'2') or selected(${dig2b} ,'3') or selected(${dig2b} ,'4')*		1	Yes - available AND functional
			2	Available, does not work normally
			0	NO - not available
dig2d *(required)*	4A.6 For each of the following types of application, please tell me if you have used this service on your current phone?		3	Mobile money
			1	SMS
			2	Whatsapp/ Other e-mail

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Field	Question	Answer
	Question relevant when: selected(${dig2b} ,'2') or selected(${dig2b} ,'3') or selected(${dig2b} ,'4')	4 Call
dig3 *(required)*	4A.7 In the last 30 days, did this outlet/business have an Internet connection (WiFi or fixed)?	1 Yes - available AND functional 2 Available, does not work normally 0 NO - not available
dig4 *(required)*	4A.8 What type of Internet connection do you use most often? *Question relevant when: (${dig3} =1 or ${dig3} =2) and ${inf} !=1*	1 Mobile data 2 Wi-fi
dig5 *(required)*	4A.9 In the last 30 days, has this outlet/business had access to tablets or computers? *Question relevant when: ${inf} !=1*	1 Yes - available AND functional 2 Available, does not work normally 0 NO - not available
dig5b *(required)*	4A.10 What kind of tablets or computers does this outlet/company have? *Question relevant when: (${dig5} =1 or ${dig5} =2) and ${inf} !=1*	1 Tablet(s) 2 Laptop(s) 3 Desktop computer
> Section 4. Digital > 4.A Access to and use of digital technology > 0		
dig7_0	4A.11 Which of the following activities do you or this facility carry out using digital technology? Digital technology includes computers, tablets and smartphones with an Internet connection. *Read the list. All lines must have answers before you can continue.*	1 Currently using 2 Not currently in use, but would like to use it in the future 3 Does not use; not interested 98 Don't know 97 Refused
dig7_1 *(required)*	4A.12 Managing retail sales to customers	1 Currently using 2 Not currently in use, but would like to use it in the future 3 Does not use; not interested 98 Don't know 97 Refused
dig7_2 *(required)*	4A.13 Inventory management at this facility	1 Currently using 2 Not currently in use, but

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				would like to use it in the future
			3	Does not use; not interested
			98	Don't know
			97	Refused
dig7_3 *(required)*	4A.14 Place orders with suppliers		1	Currently using
			2	Not currently in use, but would like to use it in the future
			3	Does not use; not interested
			98	Don't know
			97	Refused
dig7_4 *(required)*	4A.15 Paying suppliers		1	Currently using
			2	Not currently in use, but would like to use it in the future
			3	Does not use; not interested
			98	Don't know
			97	Refused
dig7_5 *(required)*	4A.16 Manage other human resources functions		1	Currently using
			2	Not currently in use, but would like to use it in the future
			3	Does not use; not interested
			98	Don't know
			97	Refused
dig7b *(required)*	4A.17 Are there any other activities that you or this establishment carry out using digital technology?		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale

Field	Question	Answer

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dig7bi *(required)*	4A.18 Specify other activities: *Question relevant when: ${dig7b} =1*		
> Section 4. Digital > 4.B Participation in the monitoring system and supervisory visits *Group relevant when: ${prov_int} =1 and ${inf} !=1*			
INST_data	Routine data Interviewer: *Complete the following section by addressing the person responsible for data management at the facility or outlet, e.g., the head nurse (PHN), general nurse (GN), pharmacy manager or owner.*		
data1 *(required)*	4B.19 Have you ever reported malaria data to the health system? *That is, do you report to the local health authority/borough?*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
data2 *(required)*	4B.20 What forms and tools do you use to report malaria-related data to higher levels of the health system? *Read the list. Select all that apply* *Question relevant when: ${data1} =1* *Response constrained to: if(selected(., 98), count-selected(.) = 1, count-selected(.) >= 1)*	1 2 3 4 96 98	Monthly activity report (RMA) Monthly summary o f data on Interventions under Community Directives (ISDC) DHIS2 Input stock sheet Other Don't know
data2b *(required)*	4B.21 Other forms and tools *Question relevant when: ${data2} =96*		
data3 *(required)*	4B.22 When was the last time you received a malaria surveillance visit?	1 2 3 4 5 0 98	Less than one month Between 1 and 3 months Between 3 and 6 months Between 6 and 12 months More than 12 months ago Never Don't know
data3b *(required)*	4B.23	1 0 98	Yes No Don't know

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	During the previous supervision visit, did the supervisor help you make a decision or take corrective action based on the discussion? *Question relevant when: ${data3} !=0*		99	Not applicable for this type of point of sale
data3c *(required)*	4B.24 Did the supervisor send written feedback after the previous supervision visit? *Question relevant when: ${data3} !=0*		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
data4 *(required)*	4B.25 Have you received a malaria surveillance checklist, such as a poster or leaflet?		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
checkpoint3 *(required)*	CONTROL POINT INVESTIGATOR Are you able to continue the interview, i.e. has it been uninterrupted? *Question relevant when: ${checkpoint2} =1 and ${prov_int} =1*		1	Yes
			0	No
> Section 5. Product supply *Group relevant when: ${prov_int} =1 and ${checkpoint3} =1*				
HEAD_s5	Section 5. Product supply			
Section 5. Product sourcing > 5.A Sources of antimalarial drugs *Group relevant when: ${am_stockcurrent} =1 or ${am_stockpast} =1*				

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Field	Question	Answer	
sa1 *(required)*	5A.1 Supply of antimalarial drugs SA1. In the last 3 months, from how many suppliers have you purchased antimalarials? *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*		
sa1_WARN1	Interviewer: *Confirm that [sa1] is the exact number of different suppliers in the last 3 months.* *before continuing* *Question relevant when: ${sa1} >=10*		
Section 5. Product sourcing > 5.A Sources of antimalarial drugs > 0			
sa2_01	5A.2 What types of suppliers does this outlet/company use to purchase antimalarials?	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of point of sale
sa2_1 *(required)*	a. International manufacturer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of point of sale
sa2_2 *(required)*	b. Local manufacturer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of point of sale
sa2_3 *(required)*	c. Drug wholesaler/importer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of point of sale
sa2_4 *(required)*	d. Wholesaler/general importer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of

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			point of sale
sa2_5 *(required)*	e. Pharm acy *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
sa2_6 *(required)*	f. Pharmaceutical depot *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
sa2_7 *(required)*	g. Regional Public Health Fund (FRSP) *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
sa2_8 *(required)*	h. Informal POS *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
sa2_9 *(required)*	i. Private POS *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale

Field	Question	Answer	
sa2_10 *(required)*	j. Oth er *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
sa2b	5A.3 Other type of supplier? *Question relevant when: ${sa2_10} =1*		
sa3 *(required)*	5A.4	1	Yes

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	Can you estimate the proportion (percentage out of 100) of antimalarial drugs you obtain from each type of supplier (in volume, not cost)? *Question relevant when: ${sa1} >1 and ${inf} !=1*	0 No
Section 5. Product sourcing > 5.A Sources of antimalarial drugs > 0 *Group relevant when: ${sa3} =1 and ${inf} !=1*		
sa3b_0	5A.5 Estimate the percentage of antimalarial products you obtain from each type of supplier:	
sa3b_1 *(required)*	a. International manufacturer *Question relevant when: ${sa2_1} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_2 *(required)*	b. Local manufacturer *Question relevant when: ${sa2_2} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_3 *(required)*	c. Drug wholesaler/importer *Question relevant when: ${sa2_3} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_4 *(required)*	d. Wholesaler/general importer *Question relevant when: ${sa2_4} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_5 *(required)*	e. Pharm acy *Question relevant when: ${sa2_5} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_6 *(required)*	f. Pharmaceutical depot *Question relevant when: ${sa2_6} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_7 *(required)*	g. Regional Public Health Fund (FRSP) *Question relevant when: ${sa2_7} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_8 *(required)*	h. Informal POS *Question relevant when: ${sa2_8} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_9 *(required)*	i. Private POS *Question relevant when: ${sa2_9} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	

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sa3b_10 *(required)*	j. Oth er *Question relevant when: ${sa2_10} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
sa3b_WARN	" Interviewer: The proportion of products by supplier type must equal 100%. The proportion of products by	

Field	Question	Answer
	supplier type must equal 100%. The current total entered is [sa3b_check]. Please go back." *Question relevant when: ${sa3b_check} !=100 and ${sa3} =1*	
sa4 *(required)*	5A.6 How do you most often receive your antimalarials from your supplier(s)? *Read the list.* *Question relevant when: ${inf} !=1*	1 The supplier delivers 2 You pick up the product at the supplier's 3 Both 97 Refusal 98 Don't know
sa5 *(required)*	5A.7 What are the most common methods of payment for anti-malarial drugs to your suppliers? *Read the list. Select all that apply.* *Question relevant when: ${inf} !=1* *Response constrained to: if(selected(., 97) or selected(., 98), count-selected(.) = 1, count-selected(.) >= 1)*	1 Species 2 Credit cards 3 Cheque 4 Mobile money 96 Other 97 Refusal 98 Don't know
sa5_other *(required)*	5A.8 Other payment methods *Question relevant when: selected(${sa5} ,'96')*	
sa6 *(required)*	5A.9 Do you buy antimalarial drugs on credit from a supplier? *Question relevant when: ${inf} !=1*	1 Yes 0 No 97 Refusal to answer 98 Don't know
sa7 *(required)*	5A.10 What are the most common credit terms, in terms of number of days to pay? ?	

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	Question relevant when: selected(${sa6} ,'1') and ${inf} !=1 Response constrained to: (.>=0 and .<=365) or .=-9888 or .=-9777	
sa7_WARN1	Interviewer: *Confirm that [sa7] is the exact number of days usually allowed to settle the payment before continuing.* *Question relevant when: ${sa7} >=31 and not(${sa7} =9777 or ${sa7} =9888)*	
sa11 *(required)*	5A.11 What brand of antimalarial drugs do you sell to individual customers or use most often in this facility? *If possible, enter the main brand name (e.g. Coartem) instead of a specific variant (Coartem 40/480).* *Question relevant when: ${inf} !=1*	
sa12 *(required)*	5A.12 In the last 12 months, have you had to use another supplier for [sa11] because your usual supplier didn't have the product of your choice in stock? *Question relevant when: ${inf} !=1*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
sa13 *(required)*	5A.13 Regarding your purchases of [sa11] over the past 12 months, would you say that prices have generally remained stable, changed every 6 months, every quarter or more frequently than e v e r y quarter? *Question relevant when: ${inf} !=1*	1 Generally stable 2 Changed every 6 months 3 Changed every quarter 4 Changed more frequently 98 Don't know
sa14 *(required)*	5A.14 What do you think is the main reason for price changes over the past 12 months? *Question relevant when: (selected(${sa13} ,'2') or selected(${sa13} ,'3') or selected(${sa13} ,'4')) and ${inf} !=1*	4 COVID-19 3 Competition from other products 1 Product scarcity 2 Modification of wholesalers 5 Taxes (duties, customs) 96 Other reasons
sa14_other *(required)*	5A.15 Specify other reasons for the price change: *Question relevant when: selected(${sa14} ,'96')*	
sa15 *(required)*	5A.16	1 Less volatile than 2022/2021 2 Almost identical

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Field	Question	Answer
	Thinking about your purchases of [sa11] over the last 12 months, have prices been less volatile, about the same or more volatile than in 2022 and 2021? *Question relevant when: ${inf} !=1*	3 More volatile than 2022/2021 98 Don't know
sa1a *(required)*	5A.17 Thinking back to your main suppliers of anti-malarials, are you able to give specific details about your main suppliers, such as name and location? *Details include name, location, payment method, delivery method. Ask respondents to provide as much information as possible, but note that they may refuse or skip questions they don't know. The purpose of this series of questions is to gather information about the wholesalers who will be interviewed later in this study.* *Question relevant when: (${sa1} >=1 and ${sa1} <97) and ${inf} !=1*	1 Yes 0 No
amsuppliers_INST	Interviewer: *Collect information on all suppliers of antimalarial drugs used in the last three months.* *Instructions:* ***(1)*** *Continue by swiping forward and selecting "Add a group".* ***(2)*** *Answer all questions and add new groups for each different supplier.* ***(3)*** *If the provider doesn't know or doesn't want to answer, select these choices or follow the hint instructions on each page.* *Question relevant when: ${sa1a} =1*	
> Section 5. Supply of products > 5.A Sources of antimalarial drugs > Supplier of antimalarial drugs (1) *Group relevant when: ${sa1a} =1 and ${inf} !=1*		(Repeated group)
amsupp1 *(required)*	5A.18 Supplier name: *97 = Refused 98 = Don't know*	
amsupp2 *(required)*	5A.19 Type of supplier?	1 International manufacturer 2 Local manufacturer 3 Wholesaler/importer of medications 4 Wholesaler/general importer 5 Pharmacy 6 Pharmaceutical depot 11 Supply chain public (ex. CENAME) 12 Other informal POS 96 Other private POS 9 Refusal

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		7	
		98	Don't know
amsupp3 *(required)*	5A.20 Other type of supplier? *97 = Refused 98 = Don't know* *Question relevant when: ${amsupp2} =96*		
amsupp4 *(required)*	5A.21 Is the supplier located in this area?	1	Yes
		0	No
		98	Don't know
		99	Not applicable for this type of point of sale
amsupp5 *(required)*	5A.22 Supplier's city. *97 = Refused 98 = Don't know*		
amsupp6 *(required)*	5A.23 Physical address or description of company location. *97 = Refused 98 = Don't know*		
amsupp7 *(required)*	5A.24 Telephone number (if available) *97 = Refused 98 = Don't know*		
amsuppliers_END	Interviewer: Thank the interviewee for the information about the antimalarial supplier and continue. *Question relevant when: ${sa1a} =1*		

Field	Question	Answer
> Section 5. Product sourcing > 5.B Sources of the RDTs *Group relevant when: ${rdt_stock} =1 and ${inf} !=1*		
st1 *(required)*	5B.1 Supply of RDTs ST1. In the last 3 months, from how many suppliers have you purchased malaria rapid diagnostic tests (RDTs)? *Ask to speak with someone who has the information 00 = No supplier 97 = Refused 98 = Don't know* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st1_WARN	Interviewer: *Confirm that [st1] is the exact number of different suppliers in the last 3 months.* *before continuing* *Question relevant when: ${st1} >=10 and ${st1} <9777*	
INST_st1	Ask to speak with someone who has the information and return to the previous question. *Question relevant when: ${st1} =98*	

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> Section 5. Product sourcing > 5.B TOR sources > 0

Group relevant when: ${st3} =1

st2_0	5B.2 What types of suppliers does this outlet/company use to buy RDTs?	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
st2_1 *(required)*	a.1 International manufacturer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
st2_2 *(required)*	b.1 Local manufacturer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
st2_3 *(required)*	c.1 Drug wholesaler/importer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
st2_4 *(required)*	d.1 Wholesaler/general importer *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
st2_5 *(required)*	e.1 Pharm acy *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of point of sale
st2_6 *(required)*	f.1 Pharmaceutical depot *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 0 98 99	Yes No Don't know Not applicable for this type of

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		point of sale
st2_7 *(required)*	g.1 Public supply chain (e.g. SOBAPS) *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
st2_8 *(required)*	h.1 Informal POS *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know

Field	Question	Answer
		99 Not applicable for this type of point of sale
st2_9 *(required)*	i.1 Private POS *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
st2_10 *(required)*	j.1 Oth er *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
st2b	5B.2 Other type of supplier? *Question relevant when: ${st2_10} =1*	
st3 *(required)*	5B.3 Can you estimate the proportion (percentage out of 100) of RDTs you obtain from each type of supplier (in volume, not cost)? *Question relevant when: ${st1} >1*	1 Yes 0 No
> Section 5. Product sourcing > 5.B TOR sources > 0 *Group relevant when: ${st3} =1*		
st3b_1 *(required)*	a. International manufacturer *Question relevant when: ${st2_1} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	

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st3b_2 *(required)*	b. Local manufacturer *Question relevant when: ${st2_2} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_3 *(required)*	c. Drug wholesaler/importer *Question relevant when: ${st2_3} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_4 *(required)*	d. Wholesaler/general importer *Question relevant when: ${st2_4} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_5 *(required)*	e. Pharm acy *Question relevant when: ${st2_5} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_6 *(required)*	f. Pharmaceutical depot *Question relevant when: ${st2_6} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_7 *(required)*	g. Public supply chain (e.g. SOBAPS) *Question relevant when: ${st2_7} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_8 *(required)*	h. Informal POS *Question relevant when: ${st2_8} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_9 *(required)*	i. Private POS *Question relevant when: ${st2_9} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	
st3b_10 *(required)*	j. Oth er *Question relevant when: ${st2_10} =1* *Response constrained to: (.>=0 and .<=100) or .=-9888 or .=-9777*	

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Field	Question	Answer
st3b_WARN	" Interviewer: The proportion of products by supplier type must equal 100%. The proportion of products by supplier type must equal 100%. The current total entered is [st3b_check]. Please go back." *Question relevant when: ${st3}b_check !=100 and ${st3} =1*	
st4 *(required)*	5B.4 How do you most often receive your RDTs from your supplier(s)? *Read the list.* *Response constrained to: if(selected(., 97) or selected(., 98), count-selected(.) = 1, count-selected(.) >= 1)*	1 The supplier delivers 2 You pick up the product at the supplier's 3 Both 97 Refusal 98 Don't know
st5 *(required)*	5B.5 What are your suppliers' usual methods of payment for RDTs? *Read the list. Select all that apply.* *Response constrained to: if(selected(., 97) or selected(., 98), count-selected(.) = 1, count-selected(.) >= 1)*	1 Species 2 Credit cards 3 Cheque 4 Mobile money 96 Other 97 Refusal 98 Don't know
st5_other *(required)*	5B.6 Other payment methods *97 = Refused 98 = Don't know* *Question relevant when: selected(${st5} ,'96')*	
st6 *(required)*	5B.7 Do you buy RDTs on credit from a supplier?	1 Yes 0 No 97 Refusal to answer 98 Don't know
st7 *(required)*	5B.8 What are the most common credit terms, in terms of number of days to pay? *Enter the number of days. 97 = Refusal 98 = Don't know* *Question relevant when: selected(${st6} ,'1')* *Response constrained to: .>=0*	

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st7_WARN1	Interviewer: *Confirm that [sa7] is the exact number of days usually allowed to settle the payment before continuing.* *Question relevant when: ${st7} >=31 and not(${st7} =9777 or ${st7} =9888)*	
st11 *(required)*	5B.9 What brand of RDT do you sell to individual customers or use most often in this establishment?	
st12 *(required)*	5B.10 Over the past 12 months, have you had to use another supplier for [st11] because your usual supplier did not have the product of your choice in stock?	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
st13 *(required)*	5B.11 Regarding your purchases of [st11] over the past 12 months, would you say that prices have generally remained stable, changed every 6 months, every quarter or more frequently than e v e r y quarter?	1 Generally stable 2 Changed every 6 months 3 Changed every quarter 4 Changed more frequently 98 Don't know
st14 *(required)*	5B.12 What do you think is the main reason for price changes over the past 12 months? *Question relevant when: selected(${st13} ,'2') or selected(${st13} ,'3') or selected(${st13} ,'4')*	4 COVID-19 3 Competition from other products 1 Product scarcity 2 Modification of wholesalers 5 Taxes (duties, customs) 96 Other reasons

Field	Question	Answer
st14_other *(required)*	5B.13 Specify other reasons for the price change: *Question relevant when: selected(${st14} ,'96')*	
st15 *(required)*	5B.14 Thinking about your purchases of [st11] over the last 12 months, have prices been less volatile, about the same or more volatile than in 2022 and 2021?	1 Less volatile than 2022/2021 2 Almost identical 3 More volatile than 2022/2021 98 Don't know
st1a *(required)*	5B.15 Thinking back to your main suppliers of anti-malarials/RDTs, are you able to	1 Yes 0 No

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	give specific details about your main suppliers, such as name and location? *Details include name, location, payment method, delivery method. Ask respondents to provide as much information as possible, but note that they may refuse or skip questions they don't know. The purpose of this series of questions is to gather information about the wholesalers who will be interviewed later in this study.* *Question relevant when: ${st1} >=1 and ${st1} <97*	
rdtsuppliers_INST	Interviewer: *Collect information on all RDT suppliers used in the last 3 months.* *Instructions:* ***(1)** Continue by swiping forward and selecting "Add a group".* ***(2)** Answer all questions and add new groups for each different supplier.* ***(3)** If the provider doesn't know or doesn't want to answer, select these choices or follow the hint instructions on each page.* *Question relevant when: ${st1a} =1*	
> Section 5. Product sourcing > 5.B TOR sources > TOR main supplier (1) *Group relevant when: ${st1a} =1*		(Repeated group)
rdtsupp1 *(required)*	5B.16 In the last 3 months, what was the name of your main supplier of RDTs? *7 = Refused 8 = Don't know*	
rdtsupp2 *(required)*	5B.17 Type of supplier?	1 International manufacturer 2 Local manufacturer 3 Wholesaler/importer of medications 4 Wholesaler/general importer 5 Pharmacy 6 Pharmaceutical depot 11 Supply chain public (ex. CENAME) 12 Other informal POS 96 Other private POS 97 Refusal 98 Don't know
rdtsupp3 *(required)*	5B.18 Other type of supplier? *Question relevant when: selected(${rdtsupp2} ,'96')*	
rdtsupp4 *(required)*	5B.19	1 Yes 0 No 9 Don't know

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	Is the supplier located in this commune?	8	
		99	Not applicable for this type of point of sale
rdtsupp5 *(required)*	5B.20 Supplier's city. *97 = Refused 98 = Don't know*		
rdtsupp6 *(required)*	5B.21 Physical address or description of company location. *97 = Refused 98 = Don't know*		
rdtsupp7 *(required)*	5B.22 Contact details (if available)		

Field	Question	Answer	
	97 = Refused 98 = Don't know		
checkpoint4 *(required)*	CONTROL POINT INVESTIGATOR Are you able to continue the interview, i.e. has it been uninterrupted? *Question relevant when: (${checkpoint3} =1 and ${prov_int} =1) or (${checkpoint1} =1 and ${prov_int} =0)*	1 0	Yes No
> Section 6: Drug audit sheets *Group relevant when: ${am_stockcurrent} =1 and ${do_audit} =1 and ${checkpoint4} =1*			
n1 *(required)*	6.1 Drug audit *Interviewer: Show the photo catalog of antimalarials and ask to see the full range o f antimalarials that the outlet/company currently stocks.* Confirm the presence of at least one anti-malarial drug in this outlet/company.	1 0	Yes No
n2 *(required)*	6.2 In the pre-screening phase of this interview, the provider has indicated that antimalarials are present. Please confirm that the provider has no products physically available, or indicate here why there is a difference in answers, e.g. the provider doesn't want to show them to us, etc. Otherwise, return to the previous question, change your answer and continue the audit. *Question relevant when: selected(${n1} , '0')*	1 2 96	Yes, I can confirm that there is NO of antimalarial drugs present The provider refused to show the antimalarial drugs present Other reasons
n2_other *(required)*	6.3 Specify other reason: *Question relevant when: selected(${n2} ,'96')*		

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n3	Interviewer: *Audit antimalarial drugs* *Instructions:* *(1) Collect one copy of every antimalarial available.* *(2) Proceed with the audit by swiping forward and selecting "Add a group".* *(3) Answer all questions and add new groups for each different product. Question relevant when: selected(${n1} , '1')*	
> Section 6: Drug audit forms > Drug information (1) *Group relevant when: ${n1} =1*		(Repeated group)
fillmethod *(required)*	6.4 Please choose how you would like to select the product to be audited:	1 Database search data 2 Manually enter information
> Section 6: Drug audit forms > Drug information (1) > Database search : *Group relevant when: ${fillmethod} =1*		
search_typ_am *(required)*	6.1 Please choose how you would like to select the product you are auditing:	1 Tablet / Suppository / Granule 2 Other (Syrup/ Suspension/ Drops / Injectables - liquids or powders, etc.)
> Section 6: Drug audit forms > Drug information (1) > Database search: > 0 *Group relevant when: ${search_typ_am} =1*		
tsgsearchtext *(required)*	6.2 Enter all or part of the brand name	
tsg_amCode *(required)*	6.3 Select the product you wish to audit *Question relevant when: ${tsgsearchtext} !=null*	num_id amBrand
> Section 6: Drug audit forms > Drug information (1) > Database search: > 0 *Group relevant when: ${search_typ_am} =2*		
ntsgsearchtext *(required)*	6.4 Enter all or part of the brand name	
ntsg_amCode *(required)*	6.5 Select the product you wish to audit *Question relevant when: ${ntsgsearchtext} !=null*	num_id amBrand

Field	Question	Answer
confirmAM_search *(required)*	6.6	1 Yes 0 No

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	Product details Dosage form: [a3_lbl_search] Brand name: [brand_search] Active ingredient(s) and dosage(s): [ai1_lbl_search] - [ai1_strength_search] [ai2_lbl_search] - [ai2_strength_search] [ai3_lbl_search] - [ai3_strength_search] Manufacturer: [manu_search] Confirm that these details are correct *Question relevant when: ${brand_search} !=null*	
nopreloadnote	No preloaded data was found for this brand. You can therefore enter the product information manually. *Question relevant when: ${amCode} =null*	
wrongresult1	You have indicated that the details provided for [tsgsearchtext][ntsgsearchtext] were NOT correct. If you wish to perform a new search, go back and run the search again. If you wish to enter product information manually, please continue. *Question relevant when: selected(${confirmAM_search} , '0')*	
a3_searchl_5_detail *(required)*	What type of suspension? *Question relevant when: ${a3_search} =5*	1 Liquid 2 Powder 96 Other
a3_search_5_detail_other	Specify suspension type: *Question relevant when: ${a3_searchl_5_detail} =96*	
excip *(required)*	6.7 Do any of the active ingredients contain salt? *Question relevant when: selected(${confirmAM_search} , '1')*	1 Yes 0 No 98 Don't know
excip_salt *(required)*	6.8 Specify salt *Question relevant when: selected(${excip} ,'1')*	1 Bisulfate 2 Hydrochloride 3 Dihydrochloride / Dichlorhydrate

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		4	Gluconate
		5	Phosphate
		6	Sulfate
		7	Tetraphosphate
		96	Other
excip_salt_other *(required)*	6.9 Specify salt if other *Question relevant when: selected(${excip_salt} , '96')*		
act_ingred *(required)*	6.10 Which active ingredient has a salt? *Question relevant when: selected(${excip} ,'1')*	60	Amodiaquine
		63	Arteether
		61	Artemether
		62	Artemisinin
		64	Artemotil
		69	Arterolane
		65	Artesunate
		66	Atovaquone
		67	Chloroproguanil
		68	Chloroquine
		70	Dapsone
		71	Dihydroartemisinin
		72	Halofantrine
		73	Hydroxychloroquine

Field	Question	Answer	
		74	Lumefantrine
		75	Mefloquine
		76	Naphthoquine
		77	Piperaquine
		78	Primaquine
		79	Proguanil

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			81	Pyrimethamine
			80	Pyronaridine
			82	Quinacrine
			83	Quinine
			85	Sulfadoxine
			89	Sulfalene
			86	Sulfamethoxazole
			87	Sulfamethoxypyrazine
			88	Trimethoprim
			96	Other
			98	Don't know
> Section 6: Drug audit forms > Drug information (1) > Manual entry: *Group relevant when: ${fillmethod} =2 or selected(${confirmAM_search} , '0')*				
a3_manual *(required)*	6.1 Presentation:		1	Tablet
			2	Suppository
			3	Granule
			4	Syrup
			5	Suspension
			6	Injectable liquid
			7	Powder for injection
			8	Drops
			96	Other
			97	Not applicable
a3_manual_5_detail *(required)*	What type of suspension? *Question relevant when: ${a3_manual} =5*		1	Liquid
			2	Powder
			96	Other
a3_manual_5_detail_other *(required)*	Specify suspension type: *Question relevant when: ${a3_manual_5_detail} =96*			
a3_manual_other *(required)*	6.3 Specify another presentation: *Question relevant when: selected(${a3_manual} , '96')*			
brand_manual *(required)*	6.4 Brand name: *Enter weight and age information, e.g. "Coartem 20/120 5-14kg".*			
manu_manual *(required)*	6.5 Manufacturer of [brand_manual]			
> Section 6: Drug audit forms > Drug information (1) > Manual data entry: > Generic name & dosage of [brand_manual].				

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aiNum *(required)*	6.6 How many active ingredients are there in [brand_manual]? *Enter a number from 1 to 3, or "0" if the active ingredients are unknown or not listed.* *Response constrained to: .<=3*	

> Section 6: Drug audit trail > Drug information (1) > Manual entry: > Generic name & dosage of [brand_manual] > 0

Group relevant when: ${aiNum} >=1

ai1_manual *(required)*	6.7 Generic name 1 of [brand_manual].	60	Amodiaquine
		63	Arteether
		61	Artemether
		62	Artemisinin
		64	Artemotil
		69	Arterolane
		65	Artesunate
		66	Atovaquone
		67	Chloroproguanil
		68	Chloroquine
		70	Dapsone
		71	Dihydroartemisinin
		72	Halofantrine

Field	Question	Answer	
		73	Hydroxychloroquine
		74	Lumefantrine
		75	Mefloquine
		76	Naphthoquine
		77	Piperaquine
		78	Primaquine
		79	Proguanil
		81	Pyrimethamine
		8	Pyronaridine

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		0	
		82	Quinacrine
		83	Quinine
		85	Sulfadoxine
		89	Sulfalene
		86	Sulfamethoxazole
		87	Sulfamethoxypyrazine
		88	Trimethoprim
		96	Other
		98	Don't know
> Section 6: Drug audit trail > Drug information (1) > Manual entry: > Generic name & dosage of [brand_manual] > 0 > 0			
ai1_mg_manual *(required)*	6.8 Dosage 1 of [ai1_manual_lbl]. mg: *Response constrained to: .> 0 and .< 9999.9*		
ai1_ml_manual *(required)*	6.9 mL: *Question relevant when: selected(${a3_manual} ,'4') or selected(${a3_manual} ,'5') or selected(${a3_manual} ${a3_manual} ,'6') or selected(${a3_manual} ,'8') or selected(${a3_manual} ,'96') Response constrained to: .>=0 and .<=9999*		
ai1_mg_manual_WARN	Interviewer: *Confirm that [ai1_mg_manual] is the correct dosage.* *Question relevant when: ${ai1_mg_manual} >600*		
ai1_ml_manual_WARN	Interviewer: *Confirm that [ai1_ml_manual] is the correct dosage* *Question relevant when: ${ai1_ml_manual} >120*		
excip_a_manual *(required)*	6.10 Is it an active ingredient with a salt?	1	Yes
		0	No
		98	Don't know
excip_a_salt *(required)*	6.11 Specify salt *Question relevant when: ${excip_a_manual} =1*	1	Bisulfate
		2	Hydrochloride
		3	Dihydrochloride / Dichlorhydrate
		4	Gluconate
		5	Phosphate
		6	Sulfate
		7	Tetraphosphate
		96	Other

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excip_a_salt_other *(required)*	6.12 Specify salt (other) *Question relevant when: selected(${excip_a_salt} , '96')*	

> Section 6: Drug audit trail > Drug information (1) > Manual entry: > Generic name & dosage of [brand_manual] > 0

Group relevant when: ${aiNum} >=2

ai2_manual *(required)*	6.13 Generic name 2 of [brand_manual].	60	Amodiaquine
		63	Arteether
		61	Artemether
		62	Artemisinin
		64	Artemotil
		69	Arterolane
		65	Artesunate
		66	Atovaquone
		67	Chloroproguanil
		68	Chloroquine
		70	Dapsone
		71	Dihydroartemisinin
		72	Halofantrine

Field	Question	Answer	
		73	Hydroxychloroquine
		74	Lumefantrine
		75	Mefloquine
		76	Naphthoquine
		77	Piperaquine
		78	Primaquine
		79	Proguanil
		81	Pyrimethamine
		80	Pyronaridine
		8	Quinacrine

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		2	
		83	Quinine
		85	Sulfadoxine
		89	Sulfalene
		86	Sulfamethoxazole
		87	Sulfamethoxypyrazine
		88	Trimethoprim
		96	Other
		98	Don't know
> Section 6: Drug audit trail > Drug information (1) > Manual entry: > Generic name & dosage of [brand_manual] > 0 > 0			
ai2_mg_manual *(required)*	6.14 Dosage 2 of [ai2_manual_lbl]. mg: *Response constrained to: .> 0 and .< 9999.9*		
ai2_ml_manual *(required)*	6.15 mL: *Question relevant when: selected(${a3_manual} ,'4') or selected(${a3_manual} ,'5') or selected(${a3_manual} ${a3_manual} ,'6') or selected(${a3_manual} ,'8') or selected(${a3_manual} ,'96') Response constrained to: .>=0 and .<=9999*		
ai2_mg_manual_WARN	Interviewer: *Confirm that [ai2_mg_manual] is the correct dosage* *Question relevant when: ${ai2_mg_manual} >600*		
ai2_ml_manual_WARN	Interviewer: *Confirm that [ai2_ml_manual] is the correct dosage* *Question relevant when: ${ai2_ml_manual} >120*		
excip_b_manual *(required)*	6.16 Is it an active ingredient with a salt?	1	Yes
		0	No
		98	Don't know
excip_b_salt *(required)*	6.17 Specify excipient *Question relevant when: selected(${excip_b_manual} ,'1')*	1	Bisulfate
		2	Hydrochloride
		3	Dihydrochloride / Dichlorhydrate
		4	Gluconate
		5	Phosphate
		6	Sulfate
		7	Tetraphosphate
		96	Other
excip_b_salt_other *(required)*	6.18 Specify salt (other)		

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	Question relevant when: selected(${excip_b_salt} , '96')	

> Section 6: Drug audit trail > Drug information (1) > Manual entry: > Generic name & dosage of [brand_manual] > 0

Group relevant when: ${aiNum} >=3

ai3_manual *(required)*	6.19 Generic [brand_manual] name 3	60	Amodiaquine
		63	Arteether
		61	Artemether
		62	Artemisinin
		64	Artemotil
		69	Arterolane
		65	Artesunate
		66	Atovaquone
		67	Chloroproguanil
		68	Chloroquine
		70	Dapsone
		71	Dihydroartemisinin
		72	Halofantrine

Field	Question	Answer	
		73	Hydroxychloroquine
		74	Lumefantrine
		75	Mefloquine
		76	Naphthoquine
		77	Piperaquine
		78	Primaquine
		79	Proguanil
		81	Pyrimethamine
		80	Pyronaridine
		82	Quinacrine

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		83	Quinine
		85	Sulfadoxine
		89	Sulfalene
		86	Sulfamethoxazole
		87	Sulfamethoxypyrazine
		88	Trimethoprim
		96	Other
		98	Don't know
> Section 6: Drug audit trail > Drug information (1) > Manual entry: > Generic name & dosage of [brand_manual] > 0 > 0			
ai3_mg_manual *(required)*	6.20 Dosage 3 of [ai3_manual_lbl]. mg: *Response constrained to: .> 0 and .< 9999.9*		
ai3_ml_manual *(required)*	6.21 mL: *Question relevant when: selected(${a3_manual} ,'4') or selected(${a3_manual} ,'5') or selected(${a3_manual} ${a3_manual} ,'6') or selected(${a3_manual} ,'8') or selected(${a3_manual} ,'96') Response constrained to: .>=0 and .<=9999*		
ai3_mg_manual_WARN	Interviewer: *Confirm that [ai3_mg_manual] is the correct dosage.* *Question relevant when: ${ai3_mg_manual} >600*		
ai3_ml_manual_WARN	Interviewer: *Confirm that [ai3_ml_manual] is the correct dosage* *Question relevant when: ${ai3_ml_manual} >120*		
excip_c_manual *(required)*	6.22 Is it an active ingredient with a salt?	1	Yes
		0	No
		98	Don't know
excip_c_salt *(required)*	6.23 Specify excipient *Question relevant when: selected(${excip_c_manual} ,'1')*	1	Bisulfate
		2	Hydrochloride
		3	Dihydrochloride / Dichlorhydrate
		4	Gluconate
		5	Phosphate
		6	Sulfate
		7	Tetraphosphate
		96	Other
excip_c_salt_other *(required)*	6.24 Specify excipient *Question relevant when: selected(${excip_c_salt} , '96')*		

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> Section 6: Drug audit forms > Drug information (1) > Manual entry: > 0		
confirmAM_tsg	Confirm product details entered Dosage form: [a3_lbl_manual] Brand name: [brand_manual] Active ingredient(s) and dosage(s) in mg (and ml for liquids): [ai1_manual_lbl] - [ai1_mg_manual]. [ai2_manual_lbl] - [ai2_mg_manual] [ai3_manual_lbl] - [ai3_mg_manual]	

Field	Question	Answer
	Manufacturer: [manu_manual] Go on to the next step if this information is correct. Go back to correct any errors. *Question relevant when: selected(${a3_manual} ,'1') or selected(${a3_manual} ,'2') or selected(* *${a3_manual} 3') or selected(${a3_manual} ,'7')*	
confirmAM_nt	Confirm product details entered Brand name: [brand_manual] Dosage form: [a3_lbl_manual] Active ingredient(s) and dosage(s) in mg (and ml for liquids): [ai1_manual_lbl] - [ai1_mg_manual]/ [ai1_ml_manual] [ai2_manual_lbl] - [ai2_mg_manual]/ [ai2_ml_manual] [ai3_manual_lbl] - [ai3_mg_manual]/ [ai3_ml_manual] Manufacturer: [manu_manual]	

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	Go on to the next step if this information is correct. Go back to correct any errors. *Question relevant when: selected(${a3_manual} ,'4') or selected(${a3_manual} ,'5') or selected(* *${a3_manual} ${a3_manual} ,'6') or selected(${a3_manual} ,'8') or selected(${a3_manual} ,'96')*			
> Section 6: Drug audit forms > Drug information (1) > Additional information for all products				
amCountry *(required)*	6.25 Country of [brand] manufacture		3	AFRIQUE DU SUD / South Africa
			4	ALLEMAGNE / Germany
			5	BELGIQUE / Belgium
			6	BENIN / Benin
			7	CAMEROUN / Cameroon
			8	CANADA / Canada
			1	CHINE / China
			9	CHYPRE / Cyprus
			10	CORÉE DU SUD / South Korea
			11	COTE D'IVOIRE / Ivory Coast
			12	ESPAGNE / Spain
			13	UNITED STATES / USA
			14	FRANCE / France
			15	GHANA / Ghana
			100	GRÉCE / Greece
			2	INDE / India
			16	ITALIE / Italy
			17	KENYA / Kenya
			18	MAROC / Morocco
			19	MAURITIUS / Mauritius
			20	NIGERIA / Nigeria
			21	PAKISTAN / Pakistan
			22	PORTUGAL / Portugal

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		23	ROYAUME-UNI / United Kingdom / UK
		24	SINGAPORE / Singapore
		25	SUISSE / Switzerland
		26	TAIWAN / Taiwan
		27	TOGO / Togo
		28	TURQUIE / Turkey
		29	VIETNAM / Vietnam
		996	Other

Field	Question	Answer	
		998	No specific country
amCountry_other *(required)*	6.26 Specify other country: *Question relevant when: selected(${amCountry} , '996')*		
tsg_8 *(required)*	6.27 Fixed-dose combination? *Question relevant when: ${a3} =1 or ${a3} =2 or ${a3} =3*	1 0 98	Yes No Don't know
unexpired_pack *(required)*	6.28 Has this product expired (see expiration date)?	1 0 98	Yes No Don't know
packageType_tsg *(required)*	6.29 Type of [brand] packaging *Question relevant when: ${a3} =1 or ${a3} =2 or ${a3} =3*	1 2 3 96	Blister pack Individual package Loose tablets in a jar, a tin can or other packaging Other
packageType_nt *(required)*	6.30 Type of [brand] packaging *Question relevant when: ${a3} >3*	4 5 96	Bottle Ampoule or vial Other
packageType_other *(required)*	6.31 Specify another type of packaging: *Question relevant when: selected(${packageType_tsg} , '96') or selected(${packageType_nt} , '96')*		
packageSize_blisterpacks *(required)*	6.32 Number of [a3_lbl] in each [packageType_label]. *Question relevant when: selected(${packageType} ,'1') or selected(${packageType} ,'2')*		
packageSize_blisterpacks_WARN	Interviewer: *Confirm that [packageSize_blisterpacks] is the correct number.* *Question relevant when: ${packageSize_blisterpacks} >24*		

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packageSize_tablets *(required)*	6.33 Number of loose tablets in a jar, can or other packaging *Question relevant when: selected(${packageType} ,'3')*	
packageSize_tablets_WARN	Interviewer: *Confirm that [packageSize_tablets] is the correct number* *Question relevant when: ${packageSize_tablets} >500*	
packageSize_powder *(required)*	6.28 Quantity in mg in each [packageType_label]. *Question relevant when: ${a3} =7 and (selected(${packageType} ,'4') or selected(${packageType} ,'5'))*	
packageSize_powder_WARN	Interviewer: *Confirm that [packageSize_powder] is the correct quantity* *Question relevant when: ${packageSize_powder} >120*	
packageSize_liquid *(required)*	6.29 Quantity (in ml) in each [packageType_label]. *Question relevant when: ${a3} !=7 and (selected(${packageType} ,'4') or selected(${packageType} ,'5'))*	
packageSize_bottle_WARN	Interviewer: *Confirm that [packageSize_liquid] is the correct quantity* *Question relevant when: selected(${packageType} ,'4') and ${packageSize_liquid} >120*	
packageSize_inj_WARN	Interviewer: *Confirm that [packageSize_liquid] is the correct quantity* *Question relevant when: selected(${packageType} ,'5') and ${packageSize_liquid} >2*	
packageSize_other *(required)*	6.30 Quantity/number in each [packageType_other] *Question relevant when: selected(${packageType} ,'96')*	
packageSize_other_WARN	Interviewer: *Confirm that [packageSize_other] is the correct quantity* *Question relevant when: ${packageSize_other} >500*	
amOOS *(required)*	6.31 Has [brand] ever been out of stock in the last 3 months?	1 Yes 0 No 98 Don't know
> Section 6: Drug audit forms > Drug information (1) > Enter additional information for all products > Quantity sold		
amSold_tab *(required)*	6.32 How many tablets of [brand] has this outlet/company sold/distributed to individual customers in the last 7 days? *Question relevant when: ${packageType} =3* *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
amSold_tab_WARN	Interviewer: *Confirm that [amSold_tab] is the exact number of tablets sold in the last 7 days Question relevant when: ${amSold_tab} >50*	

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Field	Question	Answer
amSold_nt *(required)*	6.33 How many [packageType_label] of [brand] has this outlet/company sold/distributed to individual customers in the last 7 days? *Question relevant when: ${packageType} !=3* *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
amSold_nt_WARN	Interviewer: *Confirm that [amSold_nt] is the exact number of [packageType_label] sold in the last 7 days.* *Question relevant when: ${amSold_nt} >50*	
> Section 6: Drug audit forms > Drug information (1) > Enter additional information for all products > Retail price		
packagePrice_tab *(required)*	6.34 What was the cost or price of a bulk tablet of [brand] for the most recent individual customer? *CFA* *Question relevant when: ${packageType} =3* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
packagePrice_tab_WARN	Interviewer: *Confirm that [packagePrice_tab] FCFA is the exact price of the last [brand] tablet sold.* *Question relevant when: ${packagePrice_tab} >15000*	
packagePrice_nt *(required)*	6.35 What is the retail price per [packageType_label] of [brand] for an individual customer? *CFA* *Question relevant when: ${packageType} !=3* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
packagePrice_other_WARN	Interviewer: *Confirm that [packagePrice_nt] FCFA is the exact price of the last [packageType_label] [brand] sold.* *Question relevant when: ${packagePrice_tab} >15000*	
> Section 6: Drug audit forms > Drug information (1) > Additional information for all products > Wholesale price		
> Section 6: Drug audit forms > Drug information (1) > Enter additional information for all products > Wholesale price > 0		
wholesale_NOTE	At the time of your last wholesale purchase of [brand] :	
packageWSamt_tab *(required)*	6.36 How many bulk tablets did you buy? *Question relevant when: ${packageType} =3 Response constrained to: (.>=0) or .=-9888 or .=-9777*	
packageWSamt_nt *(required)*	6.37 How many [packageType_label](s) did you buy? *Question relevant when: ${packageType} !=3 Response constrained to: (.>=0) or .=-9888 or .=-9777*	

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packageWSprice *(required)*	6.38 What was the total purchase price? *CFA* *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
packageWSamt_tab_WARN	Interviewer: *Confirm that [packageWSamt_tab] is the correct number of [brand] bulk tablets purchased Question relevant when: ${packageWSamt_tab} >1000*	
packageWSamt_nt_WARN	Interviewer: *Confirm that [packageWSamt_nt] corresponds to the exact number of [packageType_label](s) of [brand] purchased. Question relevant when: ${packageWSamt} >100*	
packageWSprice_tab_WARN	Interviewer: *Confirm that [packageWSprice] FCFA is the correct price for* *[packageWSamt_tab]bulk tablets of [brand] purchased from the wholesaler.* *Question relevant when: ${packageWSamt} >100000*	
packageWSprice_nt_WARN	Interviewer: *Confirm that [packageWSprice] is the correct price for [packageWSamt]* *[packageType_label] (s) of [brand] purchased from the wholesaler.* *Question relevant when: ${packageWSamt} >100000*	
> Section 6: Drug audit forms > Drug information (1) > Additional information for all products > Wholesale price *Group relevant when: ${retws} =1*		
> Section 6: Drug audit forms > Drug information (1) > Enter additional information for all products > Wholesale price > 0		
WSmin_tab *(required)*	6.39 What is the minimum number of bulk boxes of [brand] tablets you sell at wholesale? Number of boxes	

Field	Question	Answer
	Question relevant when: ${packageType} =3 *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
WSmin_nt *(required)*	6.40 What is the minimum number of [packageType_label](s) of [brand] that you wholesale? Quantity: *Question relevant when: ${packageType} !=3 Response constrained to: (.>=0) or .=-9888 or .=-9777*	
WSmin_price *(required)*	6.41 What is the purchase price for a [packageType_label](s) for this quantity? *CFA* *Response constrained to: (.>=0) or .=-9888 or .=-9777*	

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WSmin_tab_WARN	Interviewer: *Confirm that [WSmin_tab] is the minimum number of boxes the company sells wholesale.* *Question relevant when: ${WSmin_tab} >=500 and not(${WSmin_tab} =997 or ${WSmin_tab} =998)*	
WSmin_nt_WARN	Interviewer: *Confirm that [WSmin_nt] is the minimum number of [packageType_label] that the company wholesales.* *Question relevant when: ${WSmin_nt} >=500 and not(${WSmin_nt} =997 or ${WSmin_tab} =nt)*	
WSminPrice_WARN	Interviewer: *Confirm that [WSmin_price] is the price of a pack or box corresponding to the minimum number of packs or boxes sold wholesale.* *Question relevant when: ${WSmin_price} >=5000*	
amComments	6.42 Any additional comments on [brand]?	
pic_ok *(required)*	6.43 Can you take a photo of this product at this time? *The photos will be used to correct any data entry errors, and may be added to a database of anti-malarial drugs in Cameroon.*	1 Yes 0 No
pic_front *(required)*	6.44 TAKE A PHOTO OF THE FRONT OF THE PRODUCT/b> OR THE SIDE / SPACE THAT INCLUDES T H E BRAND NAME: Press on the photo to focus. Repeat if the image is unclear. *Question relevant when: ${pic_ok} =1*	
pic_ais *(required)*	6.45 TAKE A PHOTO OF THE SIDE OF THE PRODUCT THAT INCLUDES INFORMATION ON THE ACTIVE INGREDIENTS: Press on the photo to focus. Repeat if the image is unclear. *Question relevant when: ${pic_ok} =1*	
> Section 6: Drug audit forms > Audit follow-up *Group relevant when: ${n1} =1*		
amAudit_complete *(required)*	6.46 Have you completed audit forms for all available antimalarials?	0 Yes, full audit 1 No, not a complete audit 2 No, the audit was only partially completed
amAudit_incomplete *(required)*	6.47 Reason for incomplete audit: *Explain here why the audit is incomplete or has not been completed. There are many reasons why the audit would not be feasible. Investigators will not be penalized for incomplete audits; however, it is essential for the study results to understand why it was not possible to complete them.* *Question relevant when: selected(${amAudit_complete} , '1') or selected(${amAudit_complete} , '2')*	
agreed > am_stockouts1 *Group relevant when: ${formtype} !=1*		
given their consent > am_stockouts1 > Anti-malarial drug stock-outs		

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Group relevant when: (${am_stockcurrent} =1 or ${am_stockpast} =1) and ${checkpoint4} =1			
a16 *(required)*	6.48 Are there any antimalarial drugs that are sold out today, but that you have had in stock for the past 3 months?	1 0 98	Yes No Don't know
a17 *(required)*	6.49 Which of the following types of antimalarial were OUT OF STOCK in the last 3 months? We're interested here in anti-malarial drugs in general, not in specific brands. *Read the list. Select all that apply.* *Question relevant when: selected(${a16} ,'1')* *Response constrained to: not(selected(., 98) and count-selected(.) > 1)*	9 6 1 7 8	Amodiaquine Artemether Artemether-lumefantrine (ex. Coartem, Luther, L-Artem, Lonart, Co-Rimetar, Lumartem) Artemisinin Artesunate
Field	Question	Answer	
		2 4 10 5 3 11 12 96 98	Artesunate-amodiaquine Artesunate-SP Chloroquine ACTs (combination therapies artemisinin) Dihydroartemisinin-piperaquine Quinine Sulfadoxine-pyrimethamine (ex. Fansidar, SP) Other Don't know
a17_other *(required)*	6.50 Specify the antimalarial drug(s) out of stock during the last 3 months : *Question relevant when: selected(${a17} ,'96')*		
checkpoint5 *(required)*	CONTROL POINT INVESTIGATOR Are you able to continue the interview, i.e. has it been uninterrupted? *Question relevant when: (${checkpoint4} =1 and ${prov_int} =1) or (${checkpoint1} =1 and ${prov_int} =0)*	1 0	Yes No
> Section 7. Diagnostic audit *Group relevant when: ${testing_stock} =1 and ${do_audit} =1 and ${checkpoint5} =1*			
> Section 7. Diagnostic audit > 0 *Group relevant when: ${formtype} =1*			

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rdt_instructions	Diagnostic audit Investigator: The following questions aim to audit the availability of malaria tests. Answer a series of questions about test equipment and microscopy services, then carry out an audit of all RDTs in stock in this outlet/company.	
d1 *(required)*	7.1 D1. Does this facility now have disposable gloves that staff can use when meeting customers/patients?	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
d2 *(required)*	7.2 D2. Does this facility have a s h a r p s disposal box or safety box available to staff today?	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
d3 *(required)*	7.3 D3. Is microscopic malaria screening available here today?	1 Yes 0 No
d3b *(required)*	7.4 In the pre-screening phase of this interview, the provider indicated that malaria microscopy screening is available here today. Please confirm with the provider that malaria microscopy screening is available, or return to the previous question, change your answer and continue the audit. *Question relevant when: selected(${d3} , '0') and ${micro_stockcurrent} =1*	1 Yes, I confirm that microscopic malaria screening is NOT available
d4 *(required)*	7.5 D4. How many malaria microscopy tests has this establishment performed in the last 7 days? *Question relevant when: selected(${d3} ,'1')* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
d4_WARN	Interviewer: *Confirm that [d4] is the correct number of people tested before continuing. Question relevant when: ${d4} >=50 and not(${d4} =998)*	

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Field	Question	Answer
d5 *(required)*	7.6 D5. What is the total cost of a microscopic examination for an adult? *FCFA* *Question relevant when: selected(${d3} ,'1')* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
d5_WARN	Interviewer: *Confirm that [d5] is the correct cost of an adult microscopy test before proceeding. Question relevant when: ${d5} >=5000*	
d6 *(required)*	7.7 D6. What is the total cost of a microscopic examination for a child under 5? *FCFA* *Question relevant when: selected(${d3} ,'1')* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
d6_WARN	Interviewer: *Confirm [d6] is the correct cost of a microscopy test for children under 5 before proceeding. Question relevant when: ${d6} >=5000*	
d7 *(required)*	7.8 Interviewer: Interviewer: *Show the RDT photo catalog and ask to see the full range of RDTs the outlet/company currently stocks.* Confirm the presence of at least one RDT in this outlet/company: *Show the entire list using the photo catalog. E.g. - Bioline - SD Bioline (Standard Diagnostic Bioline) - DiaSpot - ParaCheck - Parasight - CareStart - First response* *Question relevant when: ${rdt_stock} =1*	1 Yes 0 No
d8 *(required)*	7.9 In the pre-screening phase of this interview, the provider has indicated that TORs are present. Please confirm that the provider has no products physically available, or indicate here why there is a difference in answers, e.g. the provider doesn't want to show them to us, etc. Otherwise, return t o the previous question, change your answer and continue the audit. *Question relevant when: selected(${d7} , '0') and ${rdt_stock} =1*	1 I can confirm that there are NO RDTs present 2 The provider refused to show RDTs present 96 Other reasons
d8_other	8.9b Specify another reason : *Question relevant when: ${d8} =96*	

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rdtAudit_instructions	Interviewer: *Audit the RDT.* *Instructions:* *(1) Collect one copy of each RDT available.* *(2) Proceed with the audit by swiping forward and selecting "Add a group".* *(3) Answer all questions and add new groups for each different product. Question relevant when: selected(${d7} , '1')*	
> Section 7. Diagnostic audit > <RDT information> (1) *Group relevant when: selected(${d7} , '1')*		(Repeated group)
fillmethod2 *(required)*	7.10 Would you like to search the current product database or enter product information manually?	1 Database search data 2 Manually enter information
> Section 7. Diagnostic audit > <RDT information> (1) > <Select product> (1) *Group relevant when: ${fillmethod2} =1*		
searchtextrdt *(required)*	7.11 Enter all or part of the brand name	

Field	Question	Answer
rdtCode *(required)*	7.12 Select the product you wish to audit *Question relevant when: ${searchtextrdt} !=null*	num_id rdtBrand
confirmRDT_search *(required)*	7.13 Product details Brand: [rdtBrand_search] of the Parasite : [parasite_search] antigen test : [anti_search] Made by [rdtManu_search]	1 Yes 0 No

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	Confirm that this information is correct	
nopreloadnote_rdt	No preloaded data was found for this brand. You can therefore enter the product information manually. *Question relevant when: ${rdtCode} =null*	
wrongresult_rdt	You have indicated that the information for [rdtBrand_search] is NOT correct. If you wish to perform a new search, go back and restart the search. If you wish to enter product information manually, go back and select "Manual entry". *Question relevant when: ${confirmRDT_search} =0*	
> Section 7. Diagnostic audit > <RDT information> (1) > Manual entry: *Group relevant when: ${fillmethod2} =2 or ${confirmRDT_search} =0*		
r1 *(required)*	7.14 Brand name:	
r3 *(required)*	7.15 Parasite test: *Check all that apply* *Response constrained to: not(selected(., 98) and count-selected(.) > 1)*	1 Pf 2 Pf/Pan 4 Pf/Pv 5 Pan 8 Not indicated 96 Other
r2 *(required)*	7.16 Antigen test: *Check all that apply* *Response constrained to: not(selected(., 98) and count-selected(.) > 1)*	1 HRP2 2 pLDH 3 HRP2/pLDH 4 HRP2/Aldolase 8 Not indicated 96 Other
r4 *(required)*	7.17 Manufacturer:	

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confirmRDT_manual	Confirm that the product is: [r1] of the parasite: [r3_lbl] antigen test: [r2_lbl] manufa ctured by: [r4] Slide forward if this information is correct. Go back to correct any errors.	
> Section 7. Diagnostic audit > <RDT information> (1) > Enter additional information for all products		
r5code *(required)*	7.18 Country of manufacture:	3 AFRIQUE DU SUD / South Africa 4 ALLEMAGNE / Germany 5 BELGIQUE / Belgium 6 BENIN / Benin

Field	Question	Answer
		7 CAMEROUN / Cameroon 8 CANADA / Canada 1 CHINE / China 9 CHYPRE / Cyprus 10 CORÉE DU SUD / South Korea 11 COTE D'IVOIRE / Ivory Coast 12 ESPAGNE / Spain 13 UNITED STATES / USA 14 FRANCE / France 15 GHANA / Ghana 100 GRÉCE / Greece 2 INDE / India 16 ITALIE / Italy 17 KENYA / Kenya 1 MAROC / Morocco

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			8	
			19	MAURITIUS / Mauritius
			20	NIGERIA / Nigeria
			21	PAKISTAN / Pakistan
			22	PORTUGAL / Portugal
			23	ROYAUME-UNI / United Kingdom / UK
			24	SINGAPORE / Singapore
			25	SUISSE / Switzerland
			26	TAIWAN / Taiwan
			27	TOGO / Togo
			28	TURQUIE / Turkey
			29	VIETNAM / Vietnam
			996	Other
			998	No specific country
r5code_other *(required)*	7.19 Specify other country: *Question relevant when: selected(${r5code} , '996')*			
self *(required)*	7.20 Is it a take-and-test RDT (each individual test is packaged w i t h its own swab, pipette and lancet)?		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
r13 *(required)*	7.21 How many [rdtBrand] tests has this establishment sold/distributed/used in the last 7 days to individual customers? *Record the total number of tests* *Response constrained to: .<=9999*			
r13_WARN	Interviewer: *Confirm that [r13] is the correct number of tests sold Question relevant when: ${r13} >=100*			
r14 *(required)*	7.22 Is [rdtBrand] out of stock in the last 3 months?		1	Yes
			0	No
			98	Don't know

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			99	Not applicable for this type of point of sale
r15a *(required)*	7.23 Do you or other employees use [rdtBrand] to test customers in this establishment?		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale

agreed > Section 7. Diagnostics audit > <RDT information> (1) > Additional information input for all products > RDT input-output test cost

Group relevant when: ${r15a} =1

r15b *(required)*	7.24 What is the total cost of a test performed (including the cost of the RDT and service fees) with the [rdtBrand] RDT for	

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Field	Question	Answer
	An adult? *FCFA* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
r15c *(required)*	7.25 A child under 5? *FCFA* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
r15b_WARN	Interviewer: *Confirm that [r15b] is the correct cost Question* *relevant when: ${r15b} >=5000*	
r15c_WARN	Interviewer: *Confirm that [r15c] is the correct cost Question* *relevant when: ${r15c} >=5000*	
r16a *(required)*	7.26 Does this establishment supply this brand of RDT to customers who take it away for testing elsewhere?	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
> Section 7. Diagnostic audit > <RDT information> (1) > Enter additional information for all products > RDT takeaway price *Group relevant when: ${r16a} =1*		
r16b *(required)*	7.27 What is the cost of [rdtBrand] RDT for: An adult? *FCFA* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
r16c *(required)*	7.28 A child under 5? *FCFA* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
r16b_WARN	Interviewer: *Confirm that [r16b] is the correct cost Question* *relevant when: ${r16b} >=5000*	
r16c_WARN	Interviewer: *Confirm that [r16c]is the correct cost Question*	

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	relevant when: ${r16c} >=5000	
> Section 7. Diagnostic audit > <RDT information> (1) > Enter additional information for all products > Wholesale purchase price *Group relevant when: ${retws} =1*		
r17n *(required)*	7.29 For the last wholesale purchase of RDT from the brand [rdtBrand] , you bought: Number of RDT tests: *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
r17p *(required)*	7.30 Total price: *CFA* *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
r17n_WARN	Interviewer: *Confirm that [r17n] is the correct number of [rdtBrand] RDTs purchased Question relevant when: ${r17n} >=500*	
r17p_WARN	Interviewer: *Confirm that [r17p]is the correct cost Question relevant when: ${r17p} >=100000*	
> Section 7. Diagnostic audit > <RDT information> (1) > Enter additional information for all products > 0 *Group relevant when: ${retws} =1*		
r12a *(required)*	7.31 What is the minimum number of boxes of [rdtBrand] that you sell to wholesale customers? *If there is no minimum quantity, enter the price for 1 RDT.* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
r12b *(required)*	7.32	

Field	Question	Answer
	For a price per box of : *CFA* *Response constrained to: (.>=0) or .=-9888 or .=-9777*	
r12a_WARN	Interviewer: *Confirm that [r12a] box(es) is the correct quantity.* *Question relevant when: ${r12a} >=10*	
r12b_WARN	Interviewer: *Confirm that [r12b] is the price per box* *Question relevant when: ${r12b} >=50000*	
> Section 7. Diagnostic audit > <RDT information> (1) > Enter additional information for all products > 0 *Group relevant when: ${retws} =1*		
r12c *(required)*	7.33 What is the minimum price per box of [rdtBrand] that you charge for wholesale purchases? *If the wholesale price does not vary, enter the price for one box. FCFA* *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	

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r12d *(required)*	7.34 How many boxes of RDTs should your customer buy to benefit from this price? *Response constrained to: (.>=0 and .<=1000000) or .=-9888 or .=-9777*	
r12c_WARN	Interviewer: *Confirm that [r12c] is the correct minimum price.* *Question relevant when: ${r12c} >=50000*	
r12d_WARN	Interviewer: *Confirm that [r12d] is the correct quantity* *Question relevant when: ${r12d} >=10 and not(${r12d} =997 or ${r12d} =998)*	
r19	7.31 Any comments on [rdtBrand]?	
> Section 7. Diagnostic audits > Audit follow-up *Group relevant when: selected(${d7} , '1')*		
rdtAudit_complete *(required)*	7.32 Have you completed audit forms for all available TORs?	0 Yes, full audit 1 No, not a complete audit 2 No, the audit was only partially completed
rdtAudit_incomplete *(required)*	7.33 Reason for incomplete audit: *Explain here why the audit is incomplete or has not been completed. There are many reasons why the audit would not be feasible. Investigators will not be penalized for incomplete audits; however, it is essential for the study results to understand why it was not possible to complete them.* *Question relevant when: selected(${rdtAudit_complete} , '1') or selected(${rdtAudit_complete} , '2')*	
> Section 7. Diagnostic audit > RDT stock-outs		
d16 *(required)*	7.34 Are there any rapid diagnostic test kits for malaria, RDTs, that are sold out today, but that you've had in stock for the past 3 months?	1 Yes 0 No 98 Don't know 99 Not applicable for this type of point of sale
d16_type *(required)*	7.35 What types of RDTs have you had in stock over the past 3 months that are currently out of stock? *Question relevant when: ${d16} =1*	
checkpoint6 *(required)*	CONTROL POINT INVESTIGATOR Are you able to continue the interview, i.e. has it been uninterrupted? *Question relevant when: ${checkpoint5} =1 and ${prov_int} =1*	1 Yes 0 No
gave their consent > <Registration status> *Group relevant when: ${prov_int} =1 and ${checkpoint6} =1 and ${inf} !=1*		

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HEAD_s8	Section8. Registration status		
reg0 *(required)*	8.1 Does this establishment have a decree authorizing it to market pharmaceutical products at retail, signed by the Ministry of Health?	1	YES - the respondent declares having this ministerial decree
		2	YES - respondent claims to have this bylaw AND I have seen this bylaw ministerial
		0	NO - respondent declares NO NOT have the ministerial order
		97	The respondent refused to answer
		98	Respondent does not know

Field	Question	Answer	
		99	Not applicable - this type of point do not require this ministerial decree.
reg1 *(required)*	8.2 Does this facility have a creation authorization signed by the Minister of Public Health?	1	YES - the respondent declares having this authorization
		2	YES - respondent claims to have this bylaw AND I have seen this creation authorization
		0	NO - the respondent declares NOT to have the authorization to creation
		97	The respondent refused to answer
		98	Respondent does not know
		99	Not applicable - this type of outlet does not require this creation authorization

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reg2 *(required)*	8.3 Does this facility have an opening and commissioning order signed by the Minister of Public Health? ?		1	Yes
			0	No
			98	Respondent does not know
			99	Not applicable - this type of outlet does not require this authorization
reg3 *(required)*	8.4 Does this establishment have a decree of approval as a pharmaceutical wholesale distribution company signed by the Minister of Public Health ?		1	Yes
			0	No
			98	Respondent does not know
			99	Not applicable - this type of outlet does not require this authorization
reg4 *(required)*	8.5 Does this outlet/company have another opening and operating license?		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
reg4_other *(required)*	8.6 List the name(s) of other licenses: *If several other licenses are supplied, please separate the names with a ";".* *Question relevant when: selected(${reg4} , '1')*			
reg5 *(required)*	8.7 Has this establishment received a government inspection in the last 12 months?		1	Yes
			0	No
			98	Don't know
			99	Not applicable for this type of point of sale
agreed > <Registration status> > last_visitgrp *Group relevant when: selected(${reg5} , '1')*				
reg6 *(required)*	8.8 When was your last visit? *Enter "1998" for "don't know".* *Response constrained to: (. <= today())*			
reg7	8.8a		-9998	Don't know
			-9777	Refused

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Section X: End of interview				
c9 *(required)*	X.1 Interviewer: Record the result of the interview here : *Question relevant when: ${eligible} =1 and ${consented} =1*		1	Maintenance completed
			99	Maintenance interrupted (The time not suitable)
			97	Maintenance interrupted (Service provider refusal to continue)
			96	Other
status_other *(required)*	X.2 Specify other questionnaire results:			

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Field	Question	Answer
	Question relevant when: selected(${c9} , '96')	
survey_complete	Interviewer: *The interview is now over.* *Thank the participant and save this form.* *Move on to the next point of sale. Question relevant when: ${c9} =1*	
survey_incomplete	Interviewer: *If the provider is willing to attend at a more convenient time, arrange a time (ideally later in the day) to come back.* *Return to this form to complete the survey at that time.* *Question relevant when: ${c9} =96 or ${c9} =97 or ${c9} =99*	
screen_later	Interviewer: *If the provider is willing to attend at a more convenient time, arrange a time (ideally later in the day) to come back.* *Return to this form to complete the survey at that time.* *Question relevant when: selected(${cantscreen} , '3') or selected(${cantscreen} , '4') or selected(${cantscreen} , '96')*	
screen_notpossible	Interviewer: *The interview could not be completed at this point of sale.* *Save this form.* *Move on to the next point of sale.* *Question relevant when: selected(${cantscreen} , '1') or selected(${cantscreen} , '2')*	
end3	X.3 Additional comments/remarks by the investigator	

Interview guide (quantitative)

ACTwatch Lite: Interviews with importers (at headquarters) Cameroon 2024

Service details
Complete the table below before starting maintenance.

Maintenance ID	
Company name	
Name of sponsor	
Position or title of respondent	
Number of years' experience in this sector in Cameroon	
Information sheet provided	
Consent obtained	

Questions	Terms and conditions
1. Stored products (Anti-malarials)	
1.1. Which 10 antimalarial products do you regularly import? *Please provide brand name, generic name and presentation*	1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____
1.2. What are the top 10 antimalarial products you sell in terms of volume? *Please provide brand name, generic name and presentation*	1) _____ 2) _____ 3) _____ 4) _____ 5) _____ 6) _____ 7) _____ 8) _____ 9) _____ 10) _____
2. Pricing (Anti-malarial drugs)	
2.1. What is your approximate average margin (XAF)?	|_____|
2.2. Do your margins vary according to the type of antimalarial?	|__|Yes |__|No
2.3 Which antimalarial product has the highest margin?	|_____|
2.4. Which antimalarial product has the lowest margin?	|_____|
3. Stocked products (RDTs)	
What RDT products do you regularly import?	1) _____ 2) _____ 3) _____ 4) _____ 5) _____
What are the best-selling RDTs in terms of volume?	1) _____ 2) _____ 3) _____ 4) _____ 5) _____
4. Pricing (RDTs)	
What is your approximate average margin (XAF)?	|_____|
Which RTD product has the highest margin?	|_____|
Which RTD product has the lowest margin?	|_____|
5. Distribution network and practices	
5.1. Does this company have its own distribution centers or wholesalers in Cameroon, i.e., branches?	|__|Yes |__|No
5.2. How much will it cost?	|__||__||__|
5.3. Where are they located? *Gather information on the location of the city/town for follow-up visits*	1) _____ 2) _____ 3) _____ 4) _____ 5) _____
5.4. What is the size and coverage of your distribution network to distributors and wholesalers outside the company network? *For example, how many regions do you cover? How many regions do you cover?*	|__||__|
5.5. Where are the other customers located?	1) _____ 2) _____

Questions	Terms and conditions
	3) _____ 4) _____ 5) _____
5.6. How many customers do you have in total?	|__||__||__||__|
5.7. What proportion of anti-malarial sales volumes is distributed through your own company's network? *(compared with other drug products)*	|__||__|.|__| %
5.8. What proportion of RDT sales volumes is distributed by your own company network? *(compared with other diagnostic tests)*	|__||__|.|__| %
6. Sales revenue	
What is the company's approximate gross monthly sales (XAF)?	|__||__||__||__||__||__||__||__||__||__|
What percentage of this revenue comes from the sale of anti-malarial drugs?	|__||__|.|__| %
What percentage of this revenue comes from the sale of RDTs?	|__||__|.|__| %

Interview guide (qualitative)

ACTwatch Lite: Interviews with importers (at headquarters) Cameroon 2024

Service details
Complete the table below before starting maintenance.

Maintenance ID	
Company name	
Name of sponsor	
Position or title of respondent	
Number of years' experience in this sector in Cameroon	
Information sheet provided	
Consent obtained	

In this interview, I'd like to discuss the anti-malarial and rapid diagnostic test (RDT) aspects of your business. As we move through the interview topics, we can first discuss the link with antimalarials, then with RDTs.

1) Introduction
   a) Can you tell me a bit about yourself and your role in the company?

Let's start by talking about antimalarial drugs:

2) Stored products (Anti-malarials)
   Gather current product list from respondent, if available

   a) Do you have exclusive import agreements for certain brands of antimalarial drugs?
      i) Which brands?
   b) How do you decide which other antimalarial products to stock?
   c) What are the usual import deadlines?
      i) Do these timescales vary greatly depending on the brand or manufacturer?

3) Pricing (Anti-malarials)
   a) How do you decide on the sale price of anti-malarial products?
   b) Do you ever vary your selling price for a given product?
      i) What are the reasons for this?
         Prompt: Do prices vary according to order volume or customer type?

We will now talk about malaria RDTs:

4) Stocked products (RDTs)
   Gather current product list from respondent, if available

   a) Do you have exclusive import agreements for certain RDT brands?
      i) Which brands?
   b) How do you decide which other RDT products to stock?
   c) What are the usual import deadlines?
      i) Do these lead times vary greatly from one manufacturer to another?

5) Pricing (RDTs)
   a) How do you decide which selling prices to apply to RDTs?
   b) Do you ever vary your selling price for a given product?
      i) What are the reasons for this?
         Prompt: Do prices vary according to order volume or customer type?

We will now talk about commercial operations in general:

6) Distribution network and practices
   a)
      i) Can you describe your distribution system?
         Prompt: number and frequency of delivery routes to distribution centers, in-house or third-party logistics ?
   b)
      i) Do you distribute products to customers, or do they pick them up from you?
         If the company makes deliveries : Can you describe your distribution system for these customers?
   c) Do you have minimum order requirements for wholesale customers outside your corporate network? What are the terms?
         Prompt: depending on minimum total price, minimum quantity, other conditions.
         Note if there are differences for antimalarials and RDTs
   d) Are there any differences in the number of distribution points or customers for RDTs compared with antimalarials?
         If yes: Please describe these differences.

7) Competition
   a) Who do you see as your main commercial competitors for antimalarial drugs?
      i) What makes these companies your competitors?

   b) How do you attract antimalarial customers to your company?

   c) Why do you think some customers choose other companies over yours?

   d) Are there any means of cooperation between companies at your level?
         Prompt: trade associations, price agreements, agreements on geographic concentration

e) Does the company have different competitors for RDTs?

Ask the questions above and document any differences in answers for the RDTs.

8) Information sources
   a) How do you get information about antimalarial products?
   b) How do you get information about RDTs products?

9) Sales revenue
   a) At what time of year is total income highest?
      i) When is it at its lowest?
   b) How does the contribution of antimalarials to total income vary over the year?
   c) How does the contribution of RDTs to total income vary over the year?

10) Regulations
   a) What is your opinion on the regulatory requirements for this type of business?
      i) Do you think they're reasonable? If not, why not?
      ii) How do they influence the way you run your business?

   b) What do you think of the regulators' ability to enforce their regulations?
      i) Do you think most companies comply with the regulations?
      ii) Do you think sanctions are applied?
      iii) Have you had any personal experiences in your dealings with regulatory authorities? Can you describe them?

   c) Would you like to see changes in the regulatory system?
      i) What would you like to see changed?

   d) With specific reference to anti-malarial drugs, what do you know about the operation of the parallel market in unofficial imports and smuggling in this country?
      i) How do you think the parallel market has changed in recent years?

11) Suggestions
   a) What is the biggest risk or challenge you face when it comes to anti-malarial drugs in your company?
      i) What can be done about it?
   b) Is there anything else you'd like to tell me about your experience with anti-malarial drugs?
   c) Now, with regard to the RDT, what is the biggest risk or challenge you face with regard to the RDT?
      i) What can be done about it?
   d) Is there anything else you'd like to tell me about your RDT experience?

12) Wrap-up and questions from the respondent

Thank you for your time today.

   a) Before we finish, is there anything else you'd like to raise or discuss about these topics?
   b) Do you have any questions for me?

APPENDIX 6: DEFINITIONS OF KEY INDICATORS

Table 1: Availability of antimalarials among all outlets surveyed

Table 1 shows the proportion of all outlets counted that had antimalarials in stock at the time of the survey visit. The availability of antimalarials is reported for all outlets, as well as for the different types of outlet. Availability is reported for all antimalarial drugs, as well as for specific types of antimalarial drugs.

Numerator	Number of outlets with an antimalarial drug in stock at the time of the survey visit, confirmed by the presence of at least one antimalarial drug (defined as a drug containing antimalarial components) recorded in the antimalarial verification section.
Denominator	Number of outlets surveyed.
Calculation	Numerator divided by denominator.
Handling missing values	All filtered outlets will contribute to the denominator. This includes outlets that were eligible for an interview (including a malaria check), but: 1) were not interviewed; or 2) the interview was only partially completed.
Notes and considerations	Given the partial completion or non-completion of interviews among eligible outlets, and the inclusion of these outlets in the denominator, these availability indicators can be considered as conservative estimates of antimalarial availability.

Table 2: Availability of antimalarial drugs among outlets stocking at least one antimalarial drug

Table 2 shows the proportion of antimalarial stockists with specific antimalarials in stock at the time of the survey visit. The availability of antimalarials is reported for all outlets, as well as for the different types of outlet. Availability is reported for all anti-malarial drugs as well as for specific types of anti-malarial drugs.

Numerator	Number of outlets with an antimalarial drug in stock at the time of the survey visit, confirmed by the presence of at least one antimalarial drug (defined as a drug containing antimalarial components) recorded in the antimalarial verification section.
Denominator	Number of outlets with at least 1 antimalarial audited.
Calculation	Numerator divided by denominator.
Handling missing values	All outlets with at least one antimalarial recorded in the antimalarial audit sheet will contribute to the denominator. This includes outlets where the interview was not fully completed (partial interview).
Notes and considerations	Given the partial completion of interviews with outlets stocking anti-malarial drugs, and the inclusion of these outlets in the denominator, these availability indicators can be considered as conservative estimates of anti-malarial drug availability.

Table 3: Availability of malaria blood tests at anti-malarial stocking points

Table 6 shows the proportion of antimalarial stockists who had antimalarial blood tests available. Test availability is reported for all outlets, as well as for each type of outlet. Availability is reported for all blood tests, as well as for specific types of test: microscopy and rapid diagnostic tests (RDTs), including prequalified RDTs.

Numerator	Number of outlets with blood malaria screening available (all, microscopy, RDT, prequalified RDT).
Denominator	Part 1: Number of eligible outlets Part 2: Number of outlets with antimalarials in stock at the time of the survey visit, or which had stocked antimalarials in the previous three months.
Calculation	Numerator divided by denominator.
Handling missing values	• Antimalarial stocking points for which information on the availability of microscopy and RDTs is lacking are excluded from the malaria screening indicators. The number of such outlets is indicated in a footnote. • Outlets offering partial information on the availability of blood tests (microcopy or RDT information) are included in the denominator of the "any available blood test" indicator. The number of such outlets is indicated in a footnote. • The RDT and microscopy availability indicators respectively exclude outlets for which information on availability is missing (i.e. outlets lacking information on microscopy availability are excluded from the microscopy indicator).

Table 4: Composition of the anti-malarial drugs market

Table 3 shows the distribution of outlet types among outlets with at least one antimalarial in stock on the day of the survey.

Numerator	By type of outlet, the number of outlets with an antimalarial in stock at the time of the survey visit, confirmed by the presence of at least one antimalarial (defined as a drug containing antimalarial components) recorded in the antimalarial verification section.
Denominator	Total number of outlets with an antimalarial drug in stock at the time of the survey visit, confirmed by the presence of at least one antimalarial drug (defined as a drug containing antimalarial ingredients) recorded in the antimalarial verification section.
Calculation	Numerator for each catch type divided by the denominator.
Handling missing values	All outlets with at least one anti-malarial registered in the anti-malarial audit sheet will contribute to the indicator. This includes outlets where the interview has not been fully completed (partial interview).
Notes and considerations	Market composition is calculated among outlets located in the representative cluster sample and excludes the booster sample.

Table 5: Prices of antimalarial drugs

Table 5a shows the median price of an adult equivalent treatment dose (AETD, see Appendix 9) for selected types of antimalarial tablets for all output types. The interquartile range (IQR) is provided as a measure of dispersion.

Calculation	Median price of antimalarial AETD (see appendix 9) in US dollars with inter-quartile range (25th and 75th percentiles).
Handling missing values	Anti-malarials for which price information is missing are excluded from the median price calculation.
Notes and considerations	The price in US dollars is calculated on the basis of exchange rates available from www.oanda.com using the historical exchange rates tool. The average exchange rate over the entire data collection period is used to convert the local currency entered at the time of data collection into US dollars.

Table 6: Prices of antimalarial drugs

Table 6 shows the median price of pre-packaged ACT AQ therapies: pediatric appropriate for a 10 kg child (2 years), child (15-25 kg), adolescent (25-35 kg) and adult appropriate for a 60 kg adult. The interquartile range (IQR) is provided as a measure of dispersion.

Calculation	Median price of pre-packaged treatment in US dollars with inter-quartile range (25th and 75th percentiles).
Handling missing values	Anti-malarials for which price information is missing are excluded from the median price calculation.
Notes and considerations	The price in US dollars is calculated on the basis of exchange rates available from www.oanda.com using the historical exchange rates tool. The average exchange rate over the entire data collection period is used to convert the local currency entered at the time of data collection into US dollars.

Tables 7 and 8: Profit margins

Table 7 shows the median percentage profit per AETD, while Table 8 shows the median percentage profit for prepackaged antimalarial tablet formulation types for all outlet types. The interquartile range (IQR) is provided as a measure of dispersion.

Calculation	The profit percentage is calculated for each antimalarial by dividing the difference between the retail price and the wholesale price by the wholesale price. The median is then indicated for each type of antimalarial in each type of outlet.
Handling missing values	Antimalarials for which information on retail or wholesale purchase prices is missing are excluded from the median price calculation. Antimalarials for which profits have been negative are excluded from this calculation.
Notes and considerations	The price in US dollars is calculated on the basis of exchange rates available from www.oanda.com using the historical exchange rates tool. The average exchange rate over the entire data collection period is used to convert the local currency entered at the time of data collection into US dollars.

Tables 9 and 10: Profit margins

Table 9 shows the median absolute benefit values per AETD, while Table 10 shows the median absolute benefit for prepackaged tablet antimalarial types for all outlet types. The interquartile range (IQR) is provided as a measure of dispersion.

Calculation	Absolute profit is calculated for each antimalarial by calculating the difference between the retail price and the wholesale price. The median is then indicated for each type of antimalarial in each type of outlet.

Handling missing values	Antimalarials for which information on retail or wholesale purchase prices is missing are excluded from the median price calculation. Antimalarials with a negative difference are excluded from this calculation.
Notes and considerations	The price in US dollars is calculated on the basis of exchange rates available from www.oanda.com using the historical exchange rates tool. The average exchange rate over the entire data collection period is used to convert the local currency entered at the time of data collection into US dollars.

Table 11: Median sales volumes

Table 11 shows the median number of certain types of antimalarial tablet formulations and mRDTs sold in the previous week for all outlet types. The interquartile range (IQR) is provided as a measure of dispersion.

Calculation	AETD sales volumes by product type are calculated, and the median is then reported by type of antimalarial in each type of outlet.
Handling missing values	Anti-malarial drugs for which information on sales volume is lacking are excluded from this calculation.

Table 12: Median sales volumes among outlets with sales

Table 12 shows the median number of certain types of antimalarial tablet formulations and mRDTs sold in the previous week across all outlet types for outlets reporting sales. The interquartile range (IQR) is provided as a measure of dispersion.

Calculation	AETD sales volumes by product type are calculated, and the median is then reported by antimalarial type in each outlet type if the outlet's overall sales volume in the previous week was greater than zero.
Handling missing values	Anti-malarial drugs for which information on sales volume is lacking are excluded from this calculation.

Table 13: Market share of antimalarial drugs

Antimalarial market share is the quantity of adult treatment equivalent doses (ATEDs) reported to have been sold/distributed in the previous week, by outlet type and antimalarial drug type, as a percentage of all ATEDs sold/distributed in the previous week. Expressed as a percentage, market share is the quantity of a specific antimalarial sold/distributed by a specific type of outlet relative to the total antimalarial market (all types of antimalarial sold/distributed by all types of outlet). Totals are shown by type of antimalarial drug and type of outlet. For all anti-malarial drug types and outlet types, the percentages in the overall table add up to 100% (the total market).

Numerator	Number of AETDs sold/distributed for a specific antimalarial drug category and outlet type.
Denominator	Total number of AETDs sold/distributed.
Calculation	Numerator divided by denominator.
Handling missing values	DEAM sold/distributed is calculated among audited drugs with complete and consistent information. Anti-malarials with incomplete or inconsistent information among the key variables that define DEAM sold/distributed (active ingredients, concentration, formulation, pack size, quantity sold/distributed) are excluded from the calculation.

Notes and considerations	See Appendix 9 for a description of the AETD calculation.

Table 14: Market share of antimalarials by type of outlet

Antimalarial market share for all outlet types is the quantity of adult treatment equivalent doses (ATEDs) reportedly sold/distributed in the previous week by antimalarial type in each outlet type, as a percentage of all ATEDs sold/distributed in the previous week in the specified outlet type. Expressed as a percentage, the outlet type's market share is the quantity of a specific antimalarial sold/distributed relative to the entire antimalarial market segment for the specified outlet type (all antimalarial types sold/distributed by the specific outlet type). Totals are reported by anti-malarial drug type for each outlet type. For all anti-malarial drug types in each outlet type, the sum of the percentages is 100%.

Numerator	Number of AETDs sold/distributed for a specific category of antimalarial drugs in the type of outlet specified.
Denominator	Total number of AETD sold/distributed in the specific outlet type.
Calculation	Numerator divided by denominator.
Handling missing values	DEAM sold/distributed is calculated among audited drugs with complete and consistent information. Anti-malarials with incomplete or inconsistent information among the key variables that define DEAM sold/distributed (active ingredients, concentration, formulation, pack size, quantity sold/distributed) are excluded from the calculation.
Notes and considerations	See Appendix 9 for a description of the AETD calculation.

Table 15: Market share of malaria screening blood tests

Malaria blood test market share is the number of malaria blood tests reportedly sold or distributed in the previous week by outlet type and malaria blood test type (RDT, microscopy) as a percentage of all malaria blood tests sold/distributed in the previous week. Expressed as a percentage, market share is the number of a specific type of malaria blood test sold by a specific type of outlet relative to the total malaria blood test market (all malaria blood tests sold / distributed by all types of outlet). Totals are shown by test type and by outlet type. For all malaria blood test types and outlet types, the percentages in the overall table add up to 100% (the total market).

Numerator	Number of malaria blood tests sold/distributed for a specific type of blood test (RDT, microscopy) and type of output.
Denominator	Total number of malaria blood tests sold/distributed.
Calculation	Numerator divided by denominator.
Handling missing values	Malaria blood tests sold/distributed are calculated between RDTs and microscopy services verified with complete and consistent information. RDTs and microscopy services with incomplete or inconsistent information on the quantity sold/distributed) are excluded from the calculation.
Notes and considerations	Records and/or recalls of microscopy tests versus malaria RDTs may differ within a given outlet, introducing an unquantifiable bias into the estimate of the total number of tests performed.

Table 16: Market share of malaria blood tests by type of outlet

Market share of malaria blood tests by outlet type is the number of malaria blood tests that would have been sold or distributed in the previous week by blood test type in each outlet type, as a percentage of all blood tests sold / distributed in the previous week in the specified outlet type. Expressed as a percentage, the outlet type's market share is the quantity of a specific malaria blood test sold / distributed relative to the entire blood test market segment for the specified outlet type (all malaria tests sold / distributed by the specific outlet type). Totals are reported by test type for each outlet type. For all malaria blood test types in each outlet type, percentages add up to 100%.

The market share of each RDT manufacturer is also reported by outlet type. Within each outlet type, the number of RDTs sold or distributed for a given manufacturer relative to all RDTs distributed in that outlet type is expressed as a percentage. Totals for RDT market share in all manufacturer sums at 100% in each outlet type.

Numerator	Number of malaria blood tests sold/distributed for a specific type of blood test (RDT, microscopy) or number of malaria RDTs sold/distributed for a specific manufacturer, in the type of outlet specified.
Denominator	Total number of malaria blood tests / RDTs sold / distributed in the specific outlet type.
Calculation	Numerator divided by denominator.
Handling missing values	Malaria blood tests sold/distributed are calculated between RDTs and microscopy services verified with complete and consistent information. RDTs and microscopy services with incomplete or inconsistent information on the quantity sold/distributed) are excluded from the calculation.
Notes and considerations	Records and/or recalls of microscopy tests versus malaria RDTs may differ within a given outlet, introducing an unquantifiable bias into the estimate of the total number of tests performed.

APPENDIX 7: AETD (ADULT EQUIVALENT TREATMENT DOSE)

Definition

Antimalarial drugs are manufactured from a variety of active pharmaceutical ingredients, dosage forms, strengths and pack sizes. ACTwatch uses the adult equivalent treatment dose (AETD) as the standard unit for pricing and sales/distribution analyses. An AETD is defined as the number of milligrams (mg) of an antimalarial drug required to treat an adult weighing 60 kilograms (kg). For each generic antimalarial drug, the AETD is defined as the number of mg recommended in the WHO guidelines for the treatment of uncomplicated malaria in areas of low drug resistance. Where the WHO treatment guidelines do not cover a specific generic, AETD is defined on the basis of peer-reviewed research or the treatment recommended by the product manufacturer for a 60 kg adult. Table X9 lists the definitions of AETD used in this report.

While it is recognized that the use of AETDs can oversimplify and ignore many of the complexities of drug consumption and utilization, this analytical approach has been chosen because it standardizes drug dosages across drug types and across countries (which can sometimes vary), thus enabling comparisons on prices and volumes calculated on the basis of an AETD.

Additional considerations :

- When combination therapies consist of two or more active antimalarial ingredients packaged together (co-formulated or co-blistered), the concentration of a single main ingredient is issued. Artemisinin derivative is used as the main ingredient for ACT AETD calculations.

- Co-cloned combinations are generally assumed to be a 1:1 ratio of tablets, unless otherwise specified during fieldwork or on manufacturers' websites.

- Sulfamethoxpyrazine-pyrimethamine is assumed to deliver the same full adult dose as sulfadoxine-pyrimethamine.

Calculation

Information collected on the drug concentration and unit size indicated on the product packaging was used to calculate the total quantity of each active ingredient found in the package. The number of AETDs in a unit was calculated..[6] The number of AETDs in a monotherapy is calculated by dividing the total amount of active ingredient in the unit by the AETD (i.e. the total number of mg required to treat a 60 kg adult). The number of AETDs for combination therapy is calculated by dividing the total quantity of active ingredient used as the basis for the AETD by the AETD.

[6] The unit depends on the dosage form of the drug. The unit for antimalarials in tablet, suppository or granule form is the pack. The unit for injectable antimalarials is the ampoule. The unit for anti-malarial syrups and suspensions is the bottle.

Antimalarial Generic [Ingredient used for the dose in mg of AETD].	Dose used to calculate 1 AETD (mg required to treat a 60 kg adult)	Source
Amodiaquine	1800mg	WHO model form, 2008
Artemether	960mg	WHO use of antimalarial drugs, 2001 Note: this includes a recommended loading dose of 4 mg / kg on the first day, followed by a six-day course of 2 mg / kg once daily.
Artemether-Lumefantrine [Artemether]	480mg	WHO malaria treatment guidelines 3rd edition, 2015
Artemisinin-Naphthoquine [Artemisinin]	2400mg	WHO use of antimalarial drugs, 2001
Artemisinin - Piperaquine [Artemisinin]	504mg	Thanh NX, Trung TN, Phong NC et al. 2012. Efficacy and tolerability of artemisinin-piperaquine (Artequick®) versus artesunate-amodiaquine (Coarsucam™) for the treatment of uncomplicated Plasmodium falciparum malaria in south-central Vietnam. Malaria Journal, 11 :217.
Arterolane- Piperaquine [Arterolane]	450mg	Patil C, Katare S, Baig M, Doifode S. Fixed-dose combination of arterolane and piperaquine: a new perspective in antimalarial treatment. Ann Med Health Sci Res. 2014 Jul; 4(4):466-71. doi: 10.4103/2141-9248.139270
Artesunate	960mg	WHO use of antimalarial drugs, 2001 Note: this includes a recommended loading dose of 4 mg / kg on the first day, followed by a six-day course of 2 mg / kg once daily.
Artesunate-Amodiaquine [Artesunate]	600mg	WHO malaria treatment guidelines 3rd edition, 2015
Artesunate-Mefloquine [Artesunate]	600mg	WHO malaria treatment guidelines 3rd edition, 2015
Artesunate- Sulfadoxine-Pyrimethamine [Artesunate]	600mg	WHO malaria treatment guidelines 3rd edition, 2015
Atovaquone-Proguanil [Atovaquone]	3000mg	WHO malaria treatment guidelines 3rd edition, 2015
Chloroquine	1500mg	WHO malaria treatment guidelines 3rd edition, 2015
Dihydroartemisinin-piperaquine [Dihydroartemisinin].	360mg	WHO malaria treatment guidelines 3rd edition, 2015 Note: AETD under the new 2015 guidelines is now 480 mg, whereas 360 mg was indicated in the previous guidelines. Product availability for prepackaged adult DHA PPQ in 2015 was still most often 360 mg administered over a 3-day cycle on a total of 9 tablets (40/320).
Dihydroartemisinin-Piperazine-Trimethoprim [Dihydroartemisinin].	256mg	Manufacturer's guidelines (Artecxin - Medicare Pharma; Artecom - Ctonghe)
Dihydroartemisinin-sulfadoxine-pyrimethamine [Dihydroartemisinin].	360mg	Manufacturer's guidelines (Dalasin - Adams Pharma)
Hydroxychloroquine	2000mg	Manufacturer's guidelines (Plaquenil - Sanofi Aventis)
Mefloquine	1000mg	WHO model form, 2008
Quinine	10408mg	WHO model form, 2008
Sulfadoxine-pyrimethamine	1500mg	WHO model form, 2008

APPENDIX 8: VOLUME OF ANTIMALARIAL DRUGS DISTRIBUTED

Market share of antimalarial drugs - total market Distribution of antimalarial AETDs sold or distributed during the previous week, by type of outlet and by product type*.	Type of outlet							
	Formal				Informal			
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Street vendor	Informal sector Total	Total
All antimalarial drugs	2224.5	9981.3	12492.6	24698.3	10216.7	610.5	10827.2	35525.5
1. Any ACT	1340.0	6147.8	11747.0	19234.8	8453.7	548.9	9002.6	28237.4
AL	1093.5	5257.8	6853.1	13204.4	8308.5	534.1	8842.7	22047.1
Artesunate amodiaquine	10.3	389.8	0	400.1	18.2	0	18.2	418.3
AS-pyronaridine	0	87.3	28.2	115.5	0	0	0	115.5
AS-SP	0	89.2	738.1	827.3	16.8	0	16.8	844.2
Dihydroartemisinin-Piperaquine	236.2	214.8	3205.1	3656.0	104.7	14.7	119.4	3775.5
Arterolane PPQ	0	109.0	437.6	546.6	5.4	0	5.4	552.0
DHA-PPQ-Trimethoprim	0	0	484.8	484.8	0	0	0	484.8
ACT registered at national level	296.7	1252.4	4586.1	6135.2	714.6	163.8	878.4	7013.6
ACT not registered at national level	1004.0	4003.3	6990.3	11997.6	4317.1	306.4	4623.5	16621.1
WHO-prequalified ACTs (QAACT)	16.5	1106.6	3095.3	4218.4	133.7	0	133.7	4352.1
WHO-prequalified and nationally-approved ACTs	2.9	172.0	1015.7	1190.6	19.4	0	19.4	1210.0
WHO-prequalified ACTs (not nationally registered)	13.6	934.6	2079.6	3027.8	114.4	0	114.4	3142.1
ACT approved nationally but not WHO prequalified	293.8	1080.4	3570.4	4944.6	695.2	163.8	859.0	5803.6
ACT not WHO-prequalified or nationally approved	990.3	3068.7	4910.8	8969.8	4202.7	306.4	4509.1	13478.9
ACTs not prequalified by WHO	1323.6	5041.2	8651.7	15016.5	8320.0	548.9	8868.9	23885.3
2. Artemisinin-free therapy	463.1	2374.9	661.3	3499.3	947.7	61.6	1009.3	4508.6
Oral quinine	43.8	1860.7	78.7	1983.2	614.3	2.6	616.9	2600.1
Chloroquine	0	0	51.0	51.0	0	0	0	51.0

Market share of antimalarial drugs - total market

Distribution of antimalarial AETDs sold or distributed during the previous week, by type of outlet and by product type*.	Type of outlet							
	Formal				Informal			
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Street vendor	Informal sector Total	Total
Sulfaxoxine pyrimethamine	401.9	434.4	501.6	1337.9	288.7	59.0	347.7	1685.6
SP-Amodiaquine	0	3.1	0	3.1	6.2	0	6.2	9.3
Atovaquone-Proguanil	0	0	22.9	22.9	0	0	0	22.9
Mefloquine	0	0	6.0	6.0	0	0	0	6.0
Other artemisinin-free treatments	0	0	0	0	0	0	0	0
3. Oral artemisinin monotherapy	0	0	6.6	6.6	0	0	0	6.6
4. Non-oral artemisinin monotherapy	421.4	1458.6	77.8	1957.7	815.3	0	815.3	2773.0
Any treatment for severe malaria	438.8	1535.2	70.1	2044.1	853.7	0	853.7	2897.9
Rectal artesunate	0	0	0	0	0	0	0	0
Artesunate injection	370.7	939.6	56.6	1367.0	74.9	0	74.9	1441.9
Artemether Injection	50.6	519.0	12.6	582.2	740.4	0	740.4	1322.6
Quinine injection	17.4	76.7	0.9	95.0	38.4	0	38.4	133.4

Outlets stocking antimalarials had at least one antimalarial in stock on the day of the survey, which was verified by the presence of at least one antimalarial recorded on the audit sheet. Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252
The sum of the categories in each column is 100%.
ACT on the national approval list
^ ACT on the WHO prequalification list

Market share of antimalarial drugs, by stratum					
	Total	Yaoundé	Center without Yaoundé	Douala	Littoral without Douala
All antimalarial drugs	35539.19	7117.82	14914.58	9842.87	3663.92
1. Any ACT	28237.43	6199.04	10439.14	8859.78	2739.47
AL	22047.09	4448.70	9530.32	5919.79	2148.28
Artesunate amodiaquine	418.32	282.63	60.73	1.68	73.29
AS-pyronaridine	115.52	1.68	0	26.56	87.28
AS-SP	844.16	193.66	208.75	351.02	90.73
Dihydroartemisinin-Piperaquine	3775.48	1139.39	409.54	2016.23	210.32
Arterolane PPQ	552.03	92.68	173.54	169.51	116.30
DHA-PPQ-Trimethoprim	484.84	40.32	56.26	374.99	13.26
ACT registered at national level	7013.59	2035.86	1236.61	3358.88	382.24
ACT not registered at national level	16621.07	3189.08	6777.48	4907.83	1746.68
WHO-prequalified ACTs (QAACT)	4352.11	1188.61	728.47	2139.69	295.34
WHO-prequalified and nationally-approved ACTs	1209.98	241.17	165.62	769.58	33.61
WHO-prequalified ACTs (not nationally registered)	3142.13	947.44	562.84	1370.11	261.73
ACT approved nationally but not WHO prequalified	5803.61	1794.70	1070.99	2589.30	348.62
ACT not WHO-prequalified or nationally approved	13478.94	2241.64	6214.64	3537.72	1484.95
ACTs not prequalified by WHO	23885.32	5010.43	9710.67	6720.09	2444.13
2. Artemisinin-free therapy	4508.56	451.09	3131.98	626.14	299.36
Oral quinine	2600.14	118.03	2385.85	40.66	55.60
Chloroquine	50.99	0.00	0	50.99	0
Sulfaxoxine pyrimethamine	1685.64	303.35	655.80	498.36	228.13
SP-Amodiaquine	9.30	6.24	0	3.07	0
Atovaquone-Proguanil	22.94	5.50	0	17.44	0
Mefloquine	6.04	0.00	0	6.04	0
Other artemisinin-free treatments	0	0	0	0	0
3. Oral artemisinin monotherapy	6.56	3.99	0.00	2.57	0
4. Non-oral artemisinin monotherapy	2786.63	463.70	1343.46	354.38	625.09
Any treatment for severe malaria	2911.51	479.55	1433.78	357.45	640.72

Market share of antimalarial drugs, by stratum					
	Total	Yaoundé	Center without Yaoundé	Douala	Littoral without Douala
Rectal artesunate	0	0	0	0	0
Artesunate injection	1441.88	227.05	515.38	227.69	471.76
Artemether Injection	1336.22	234.53	828.08	120.27	153.34
Quinine injection	133.41	17.98	90.32	9.49	15.63

Outlets stocking antimalarials had at least one antimalarial in stock on the day of the survey, which was verified by the presence of at least one antimalarial recorded on the audit sheet. Outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252
The sum of the categories in each column is 100%.
ACT on the national approval list
^ ACT on the WHO prequalification list

APPENDIX 9: VOLUME OF DIAGNOSTICS DISTRIBUTED

Volume of malaria blood tests distributed during the week preceding the survey							
Distribution of malaria blood tests performed or sold in the previous week in each type of outlet, by type of test*.	Type of outlet						
	Formal				Informal		
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	General retailer	Informal sector Total	Total
Any diagnosis (microscopy/RDT)	1620.0	7798.2	68.3	9486.4	448.8	448.8	9935.2
All microscopy	743.1	4471.2	0	5214.3	10.7	10.7	5225.0
All RDT	876.9	3327.0	68.3	4272.1	438.0	438.0	4710.2
WHO-prequalified RDT	860.4	2866.8	62.6	3789.8	434.3	434.3	4224.1
RDT manufacturer: Abbott	149.6	677.8	0	827.4	101.8	101.8	929.2
RDT manufacturer: Orchid	182.9	859.6	62.6	1105.0	186.3	186.3	1291.3
RDT manufacturer: Arkray	348.0	924.4	0.0	1272.4	63.0	63.0	1335.4
RDT manufacturer: other	196.4	865.2	5.7	1067.3	86.9	86.9	1154.2
RDT manufacturer: don't know	0	0	0	0	0	0	9935.2

** Sum of lines - market share for the type of drug specified for blood tests.
*** Sum of columns - market share for specified outlet type.
Y Prequalified RDTs are products that appear on the WHO prequalified list.

APPENDIX 10: TABLES IN USD

Table X1 Purchase price in USD of antimalarial tablets (standardized AETD) in surveyed outlets, by type of outlet

	Type of outlet						
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	Informal sector	Total	Distributor
Median price of a AETD* tablet :	Median USD [IQR] (N of antimalarials)	Median USD [IQR] (N of antimalarials)	Median USD [IQR] (N of antimalarials)	Median USD [IQR] (N of antimalarials)	Median USD [IQR] (N of antimalarials)	Median USD [IQR] (N of antimalarials)	Median USD [IQR] (N of antimalarials)
All antimalarial drugs	4.92 USD [2.84; 10.92] (64)	5.24 USD [2.79; 14.21] (738)	5.69 USD [4.10; 9.94] (4072)	5.68 USD [4.00; 10.25] (4874)	2.46 USD [1.64; 4.92] (912)	5.18 USD [3.80; 9.83] (5786)	2.27 USD [1.31; 4.92] (6)
Any ACT	3.93 USD [1.80; 5.90] (51)	3.28 USD [1.84; 6.55] (635)	5.53 USD [4.08; 8.67] (3668)	5.17 USD [3.96; 8.14] (4354)	1.64 USD [1.64; 4.37] (731)	4.92 USD [3.78; 7.70] (5085)	1.39 USD [1.31; 3.71] (5)
All AL	3.28 USD [1.64; 5.57] (39)	3.28 USD [2.18; 6.55] (468)	5.24 USD [3.91; 8.00] (2069)	5.13 USD [3.82; 7.87] (2576)	1.64 USD [1.64; 4.10] (646)	4.75 USD [3.28; 7.33] (3222)	1.35 USD [1.31; 3.71] (4)
ASAQ	3.69 USD [0.82; 6.55] (2)	1.64 USD [0.82; 3.28] (71)	0.00 USD	1.64 USD [0.82; 3.28] (73)	1.64 USD [0.01; 6.55] (8)	1.64 USD [0.82; 3.28] (81)	
AS-PY		2.73 USD [0.17; 2.73] (1)	8.19 USD [5.46; 15.16] (19)	8.19 USD [2.73; 15.16] (20)		8.19 USD [2.73; 15.16] (20)	
Artesunate SP	0.82 USD [0.82; 0.82] (1)	7.87 USD [6.55; 7.87] (11)	7.54 USD [4.92; 13.96] (259)	7.54 USD [4.92; 13.93] (271)	8.69 USD [8.19; 13.11] (14)	7.54 USD [4.92; 13.93] (285)	
DHAPPQ	4.61 USD [3.93; 5.90] (9)	4.92 USD [3.69; 10.49] (72)	4.97 USD [4.01; 8.74] (1113)	4.97 USD [4.00; 8.74] (1194)	4.30 USD [3.63; 13.11] (59)	4.97 USD [4.00; 8.74] (1253)	2.19 USD [2.19; 2.19] (1)
ARPPQ	0.00 USD	4.10 USD [1.39; 4.92] (12)	4.92 USD [4.88; 7.01] (127)	4.92 USD [4.88; 7.01] (139)	4.10 USD [4.10; 4.92] (4)	4.92 USD [4.88; 7.01] (143)	
DHA-PPQ-Trim			6.64 USD [6.60; 10.70] (81)	6.64 USD [6.60; 10.70] (81)		6.64 USD [6.60; 10.70] (81)	
ACT registered at national level#	1.80 USD [1.64; 3.93] (18)	4.42 USD [2.46; 8.74] (196)	5.68 USD [4.01; 8.74] (1377)	5.65 USD [3.87; 8.74] (1591)	3.28 USD [1.64; 6.55] (143)	5.62 USD [3.85; 8.72] (1734)	1.35 USD [1.23; 3.97] (3)
ACT not registered at national level	4.92 USD [2.46; 6.55] (29)	3.28 USD [1.64; 6.55] (337)	5.13 USD [4.26; 8.19] (2201)	5.00 USD [4.00; 7.87] (2567)	2.46 USD [1.64; 4.37] (313)	4.92 USD [3.93; 7.54] (2880)	2.95 USD [2.19; 3.71] (1)
ACT pre-qualified by WHO^	5.57 USD [0.82; 6.55] (4)	2.62 USD [1.64; 4.30] (159)	5.13 USD [4.61; 5.74] (917)	5.00 USD [4.08; 5.74] (1080)	3.28 USD [1.64; 4.59] (58)	4.97 USD [4.06; 5.74] (1138)	
WHO-prequalified and nationally-approved ACT	6.55 USD [6.55; 6.55] (1)	5.24 USD [3.28; 6.55] (44)	5.16 USD [3.97; 7.87] (277)	5.16 USD [3.93; 6.88] (322)	3.28 USD [2.46; 3.28] (11)	5.16 USD [3.85; 6.55] (333)	
ACT prequalified by WHO but not approved at national level	0.82 USD [0.82; 5.57] (3)	1.64 USD [1.09; 3.28] (115)	5.11 USD [4.75; 5.74] (640)	4.96 USD [4.09; 5.74] (758)	4.10 USD [1.64; 4.59] (47)	4.93 USD [4.08; 5.74] (805)	
	1.80 USD	4.42 USD	5.71 USD	5.68 USD	3.28 USD	5.68 USD	1.35 USD

	Type of outlet						
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector	Informal sector	Total	Distributor
Nationally approved but not WHO prequalified	[1.64; 3.61] (17)	[2.46; 9.83] (152)	[4.01; 9.01] (1100)	[3.85; 9.01] (1269)	[1.64; 7.54] (132)	[3.85; 9.01] (1401)	[1.23; 3.97] (3)
ACT not prequalified by WHO or at national level	4.92 USD [2.46; 6.55] (26)	4.12 USD [2.46; 6.55] (222)	5.40 USD [4.00; 10.32] (1561)	5.16 USD [3.99; 9.83] (1809)	2.46 USD [1.64; 4.37] (266)	4.92 USD [3.85; 8.85] (2075)	2.95 USD [2.19; 3.71] (1)
ACT not prequalified by WHO	3.93 USD [1.80; 5.90] (47)	4.06 USD [2.46; 6.55] (476)	5.68 USD [4.00; 9.42] (2751)	5.57 USD [3.93; 9.18] (3274)	1.64 USD [1.64; 4.37] (673)	4.92 USD [3.72; 8.72] (3947)	1.39 USD [1.31; 3.71] (5)
Treatment without artemisinin	5.69 USD [2.84; 14.21] (13)	10.40 USD [3.98; 17.33] (103)	11.60 USD [1.71; 25.01] (396)	11.48 USD [1.72; 23.57] (512)	3.41 USD [0.82; 8.53] (181)	7.63 USD [1.71; 19.18] (693)	3.27 USD [2.27; 4.26] (1)
Oral quinine	5.69 USD [2.84; 5.69] (10)	4.26 USD [0.45; 12.79] (81)	19.39 USD [11.60; 24.45] (173)	11.60 USD [4.83; 23.57] (264)	4.26 USD [2.84; 8.53] (106)	8.53 USD [3.41; 19.39] (370)	2.27 USD [2.27; 2.27] (1)
Chloroquine - packaged alone			1.63 USD [1.63; 1.68] (21)	1.63 USD [1.63; 1.68] (21)		1.63 USD [1.63; 1.68] (21)	
Sulfaxoxine pyrimethamine	0.82 USD [0.82; 0.82] (3)	0.49 USD [0.49; 0.82] (22)	1.07 USD [0.98; 1.71] (114)	0.98 USD [0.82; 1.71] (139)	0.49 USD [0.41; 0.82] (71)	0.82 USD [0.49; 1.31] (210)	
SP-Amodiaquine			0.00 USD	0.00 USD	2.78 USD [2.41; 3.15] (4)	2.78 USD [2.41; 3.15] (4)	
Atovaquone-Proguanil			62.75 USD [29.17; 84.82] (71)	62.75 USD [29.17; 84.82] (71)		62.75 USD [29.17; 84.82] (71)	
Mefloquine			27.39 USD [27.25; 29.45] (17)	27.39 USD [27.25; 29.45] (17)		27.39 USD [27.25; 29.45] (17)	

* AETD - Adult Equivalent Treatment Dose - is the number of milligrams needed to treat a 60 kg adult (see Appendix 9: AETDs).
Information provided by the respondent on the price of a specific quantity of antimalarial (for example, price per tablet or price per pack) has been converted into a price by AETD.
Pricing data in this table is derived from audited products for which pricing information has been provided. Footnote:
N outlets that met the selection criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview) = 252; N antimalarial products audited but price information missing = 435# ACT on the national registration list
^ ACT on the WHO prequalification list

Source: ACTwatch Lite survey, CAMEROON, 2024

Table X2 Purchase price in USD of antimalarials and RDTs in prepackaged form at surveyed outlets, by type of outlet

Median price of pre-packaged therapy* :	Type of outlet						
	Private not-for-profit facilities	Private for-profit facilities	Pharmacy	Formal sector (total)	Informal sector	Total	Distributor
	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)	Median FCFA [IQR] (N of antimalarials)
Artemether lumefantrine WHO prequalified							
Pack size 1 (paediatric): For 5-15 kgs		0.82 USD [0.82; 1.64] (17)	2.00 USD [1.97; 2.79] (137)	2.00 USD [1.80; 2.13] (154)	0.82 USD [0.82; 0.82] (1)	2.00 USD [1.80; 2.13] (155)	
Pack size 2 (child): For 15-25 kgs		2.79 USD [2.79; 2.95] (2)	2.87 USD [2.87; 2.90] (71)	2.87 USD [2.87; 2.91] (73)	4.10 USD [3.28; 4.10] (2)	2.87 USD [2.87; 2.95] (75)	
Pack size 3 (Teenager): For 25-35 kgs		3.28 USD [3.28; 3.28] (1)	3.85 USD [3.83; 3.88] (80)	3.85 USD [3.83; 3.88] (81)	0.00 USD	3.85 USD [3.83; 3.88] (81)	
Size 4 package (adult): For ≥35 kgs		4.26 USD [3.28; 4.75] (21)	4.77 USD [3.93; 5.16] (253)	4.77 USD [3.93; 5.16] (274)	4.10 USD [3.77; 4.59] (29)	4.75 USD [3.93; 5.16] (303)	
Artemether lumefantrine non-prequalified							
Pack size 1 (paediatric): For 5-15 kgs	3.28 USD [1.64; 3.28] (3)	2.46 USD [1.64; 2.46] (48)	2.34 USD [1.88; 3.77] (321)	2.46 USD [1.66; 3.74] (372)	1.64 USD [1.64; 1.64] (34)	2.25 USD [1.64; 3.72] (406)	0.00 USD
Pack size 2 (child): For 15-25 kgs	3.61 USD [3.28; 3.61] (2)	3.44 USD [2.62; 3.77] (5)	3.66 USD [2.87; 3.69] (137)	3.66 USD [2.87; 3.69] (144)	3.28 USD [3.28; 3.77] (2)	3.66 USD [2.87; 3.69] (146)	0.00 USD
Pack size 3 (Teenager): For 25-35 kgs	0.00 USD	4.10 USD [3.77; 4.10] (5)	4.20 USD [4.18; 4.21] (83)	4.20 USD [4.18; 4.21] (88)	4.10 USD [3.77; 4.10] (3)	4.20 USD [4.18; 4.21] (91)	0.00 USD
Size 4 package (adult): For ≥35 kgs	2.46 USD [1.64; 4.10] (19)	2.46 USD [1.64; 3.28] (223)	3.85 USD [3.65; 4.34] (816)	3.79 USD [3.11; 4.31] (1058)	1.64 USD [1.64; 2.46] (347)	3.69 USD [2.46; 4.10] (1405)	1.31 USD [1.31; 1.39] (3)
RDT							
RDT (per unit)	1.64 USD [0.82; 1.64] (24)	1.64 USD [0.82; 1.64] (274)	1.64 USD [0.82; 1.64] (9)	1.64 USD [0.82; 1.64] (307)	1.64 USD [0.82; 1.64] (41)	1.64 USD [0.82; 1.64] (348)	1.64 USD [1.64; 1.64] (1)

* Prices of prepackaged ACT products as declared by respondents.
Pricing data in this table was obtained from audited products for which pricing information was provided. The number of anti-malarial products audited for which price information was not provided is as follows:
Footnote: products with missing price data: QA AL, pack size 1: 9640; QA AL, pack size 2: 2; QA AL, pack size 3: 1; QA AL, pack size 4: 7; non-QA AL, pack size 1: 6; non-QA AL, pack size 2: 4; non-QA AL, pack size 3: 0; non-QA AL, pack size 4: 38; mRDT: 47