



Uganda 2015 Private-Sector Fever Case Management Study

Presentation outline

Background	3
Methods	7
Procedures	9
Results	19
Discussion Points	65

BACKGROUND



Private sector overview:

- The **private sector** is responsible for more than half of all antimalarial distribution at national level in most countries.
- In some contexts, private-sector outlets are increasingly **equipped to appropriately manage** suspected malaria.
 - **QA ACT availability** > 50% among private-sector outlets in Kenya, Nigeria, Tanzania and Uganda.
 - **Malaria blood testing availability** remains low, but is increasing in some countries with very recent initiatives targeting authorized outlets.

Uganda 2015 outlet survey findings:

- Among private for-profit health facilities and pharmacies stocking antimalarials, over **80%** were stocking ACTs.
- Among drug stores stocking antimalarials, over **80%** were stocking ACTs.
- Among private for-profit health facilities, pharmacies, and drug stores stocking antimalarials, over **30%** had malaria blood testing available.

Availability of **ACT** and **malaria blood testing** is moderately high in these private-sector outlet types. The Fever Case Management study can help us understand how providers use malaria commodities when patients have signs and symptoms of malaria.

ACTwatch Fever Case Management Study Overview

Fever Case Management (CM) study conducted as part of 2015 outlet survey.

Fever CM study documented interactions between private-sector providers and patients seeking fever treatment, including two CM outcomes:

- 1) Confirmatory malaria blood testing
- 2) Appropriate treatment according to test result

Goal:

Inform interventions designed to close gaps between the availability of quality-assured malaria diagnostics and medicines and their routine use in managing clients.

METHODS

Fever CM Study Methods

Design

Cross-sectional quantitative survey with a patient consultation observation component and a patient exit interview component.

Study population

Patients seeking treatment for fever at eligible private-sector outlets.

Sampling

No specific sample size calculations completed for Fever CM study.

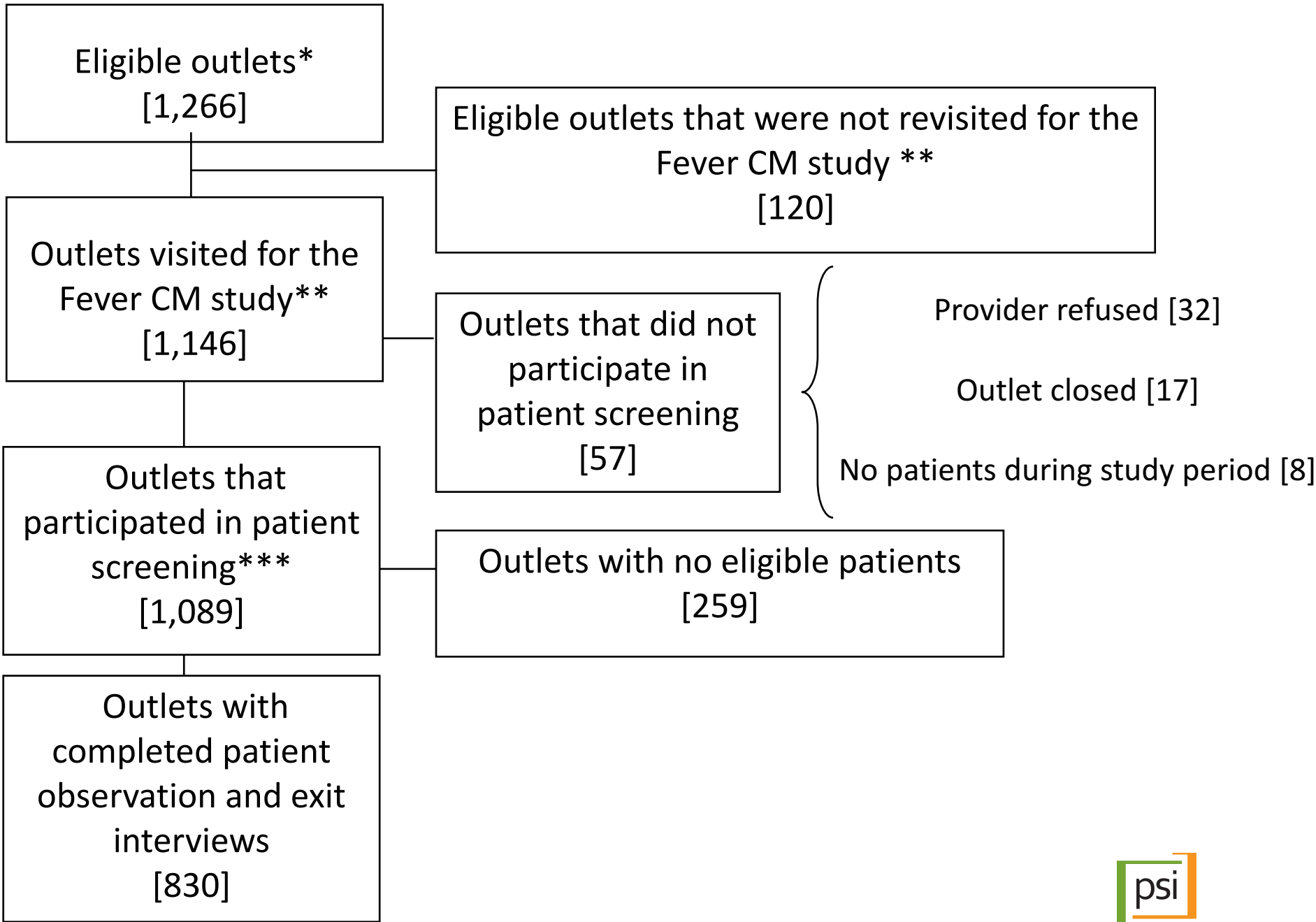
- During outlet survey, eligibility for the Fever CM study was determined, and eligible outlets were invited to participate in the Fever CM study.
- All patients meeting eligibility criteria were invited to participate in the study until a quota of one child and one person age five and older participated in the study at a given outlet.

PROCEDURES

Fever CM Study Outlet Eligibility Criteria

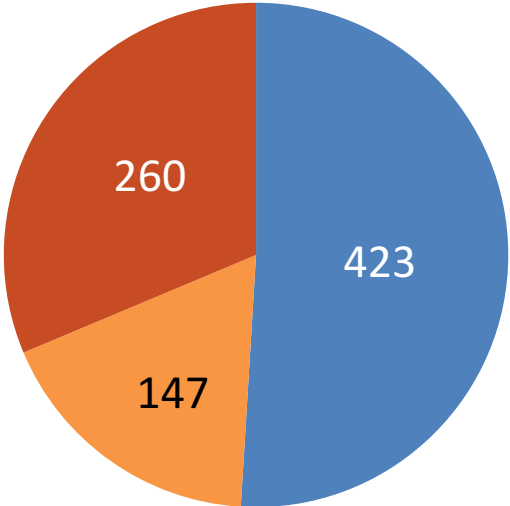
- 1) Outlet was either:
 - Private for-profit health facility,
 - Pharmacy, or
 - Drug store.
- 2) Outlet had national first-line ACT, artemether lumefantrine (AL), in stock on the day of the outlet survey
- 3) Outlet had malaria blood testing (malaria RDT or microscopy) available on the day of the outlet survey

Diagram for outlet inclusion in the Fever CM study



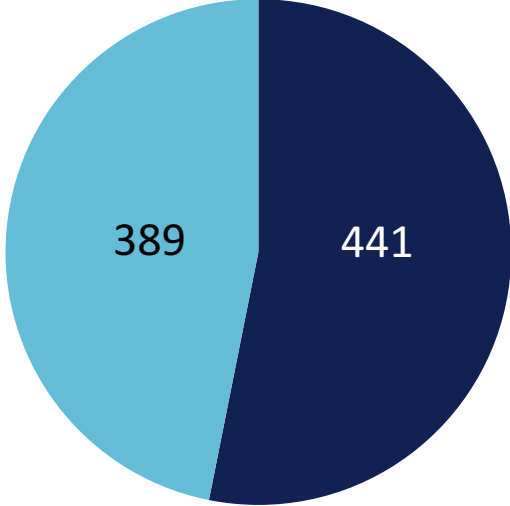
Outlets with completed patient observation and exit interviews (N=830)

Outlet Type



- Private For-Profit Health Facility
- Pharmacy
- Drug Store

Outlet Location

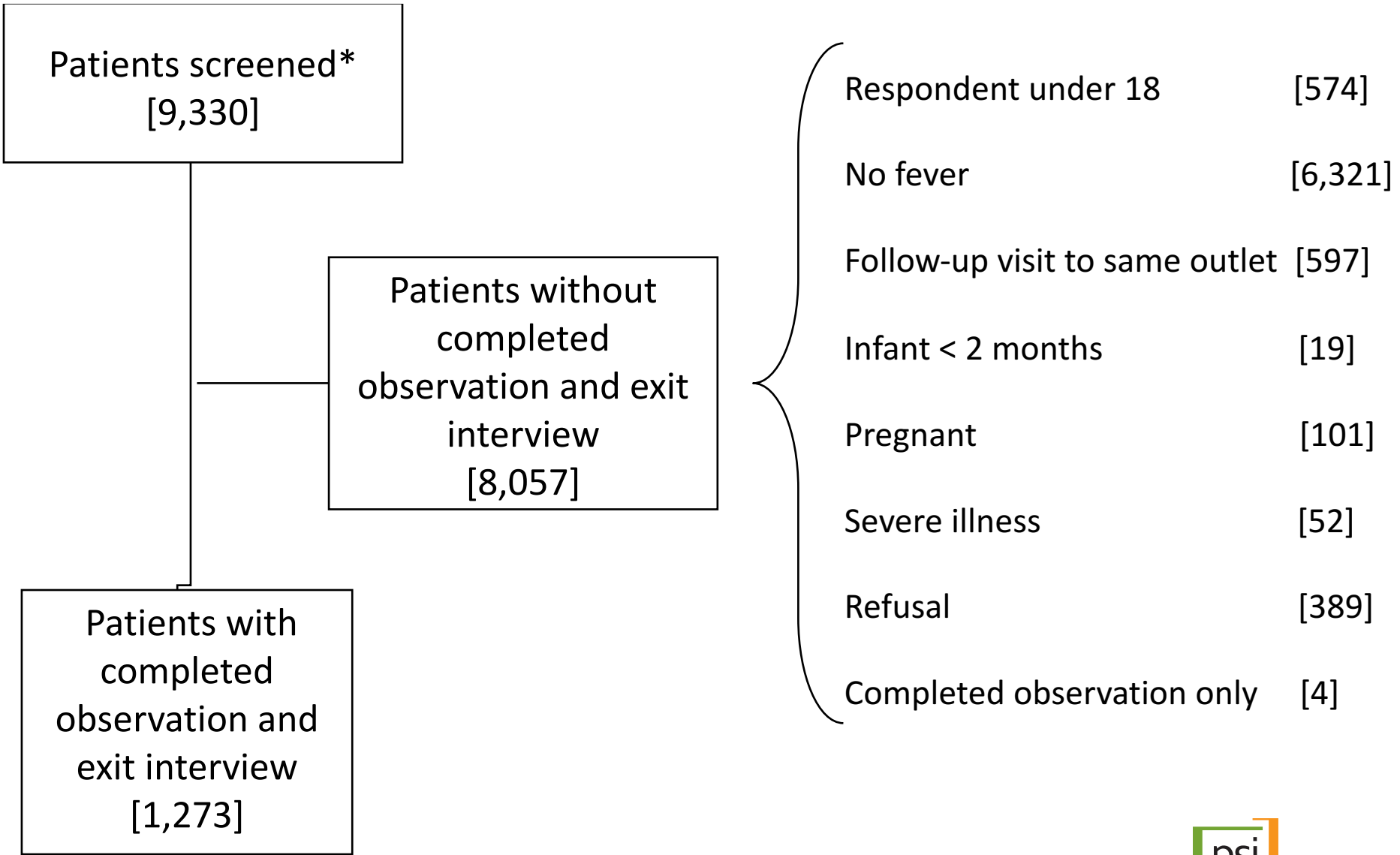


- Urban
- Rural

Patient Eligibility Criteria

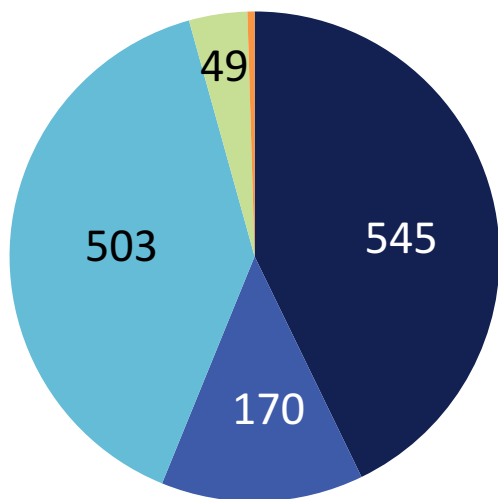
- Patients were invited to participate in the Fever CM study if they met the following eligibility criteria:
 - Respondent age 18 or older
 - Patient at least 2 months of age
 - Illness that includes fever or history of fever
 - Presenting for treatment for this illness at this outlet for the first time
 - Uncomplicated illness (not severe or life threatening)
 - Not currently pregnant
 - Provides consent to participate in the study

Diagram for patient inclusion in the Fever CM study



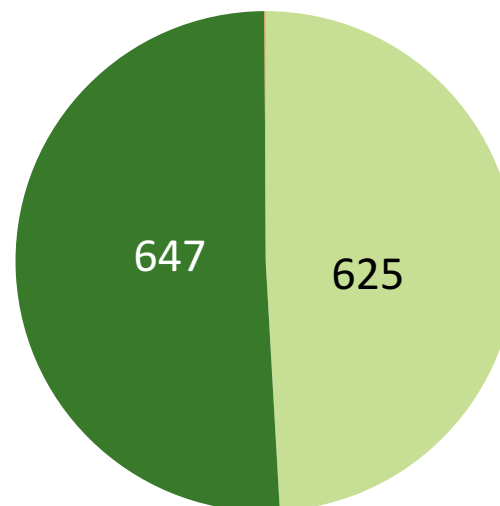
Patients with completed patient observation and exit interviews (N=1,273)

Patient Age



- 0-4 years
- 5-14 years
- 15-49 years
- 50+ years
- Unknown

Patient Sex



- Male
- Female
- Unknown

Observation checklist

- Completed by a trained observer to document aspects of the provider-patient interaction in the private sector.
- Documented provider compliance with standard practice and procedures and aspects of patient demand for specific products or services. The observer remained silent during the consultation.



Patient exit interview

- Conducted after patient visit was complete.
- Captured information about all medicines prescribed/obtained and assessed patient understanding of the test result(s), diagnosis, and medication regimens prescribed.



Sample of observation checklist

	Provider At any time during the visit, did a provider:	Yes	No	N/A Patient not present	Code 1=yes 0=no 7=N/A 8=Observer does not recall
O1	Ask about symptoms of the illness				<input type="checkbox"/>
O2	Ask if the patient has fever / history of fever				<input type="checkbox"/>
O3	Ask about any signs of severe illness (convulsions, unable to eat or drink, vomiting everything)				<input type="checkbox"/>
O4	Ask for the patient's weight or age				<input type="checkbox"/>
O5	Weigh the patient using a <u>scale</u>				<input type="checkbox"/>
O6	Take body temperature with a <u>thermometer</u>				<input type="checkbox"/>
O7	<u>Recommend/offer</u> a blood test for malaria (even if test was refused)				<input type="checkbox"/>
O8	Take blood from the patient's arm using a needle				<input type="checkbox"/>
O9	<u>Recommend/offer</u> any specific treatment to the patient (even if the treatment was refused)				<input type="checkbox"/>
O10	Give a <u>prescription</u> for medicine to be dispensed at another outlet/facility				<input type="checkbox"/>
O11	<u>Dispense/sell</u> any medicine for home use to the patient				<input type="checkbox"/>
O12	Given the patient medicine by <u>injection</u> (inject medicine into the patient)				<input type="checkbox"/>
O13	Give the patient medicine or fluid by intra-venous (<u>IV</u>)				<input type="checkbox"/>
O14	Refer the patient to a(another) doctor or health facility				<input type="checkbox"/>
O15	Give the patient a diagnosis				<input type="checkbox"/>
O16	Record the diagnosis 7 = N/A (Diagnosis not given) 8 = Observer does not recall	a.			
		b.			
		c.			
		d.			

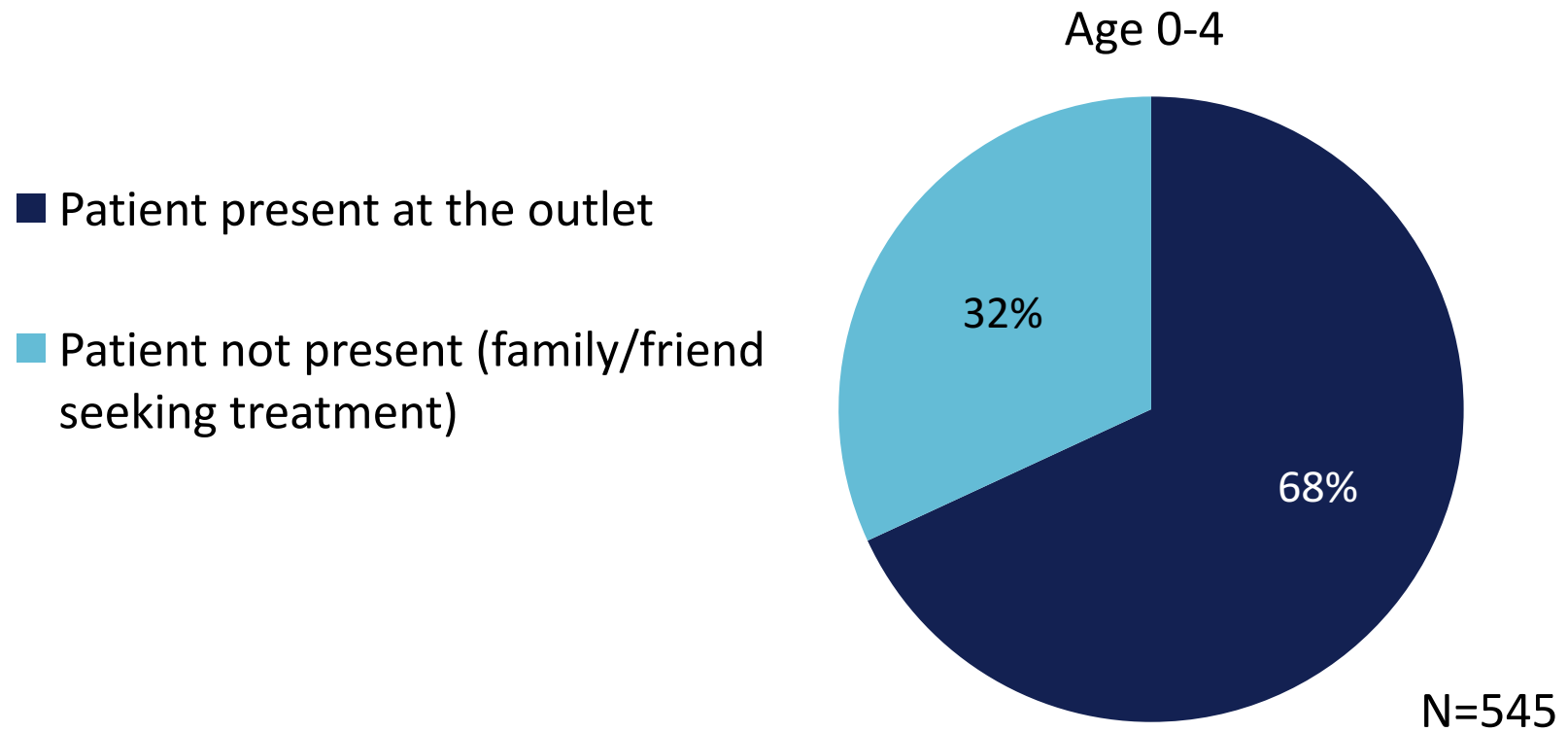
RESULTS

Among N=1,273 patients with completed observation and exit interviews

Were fever patients present at the outlet for the consultation?

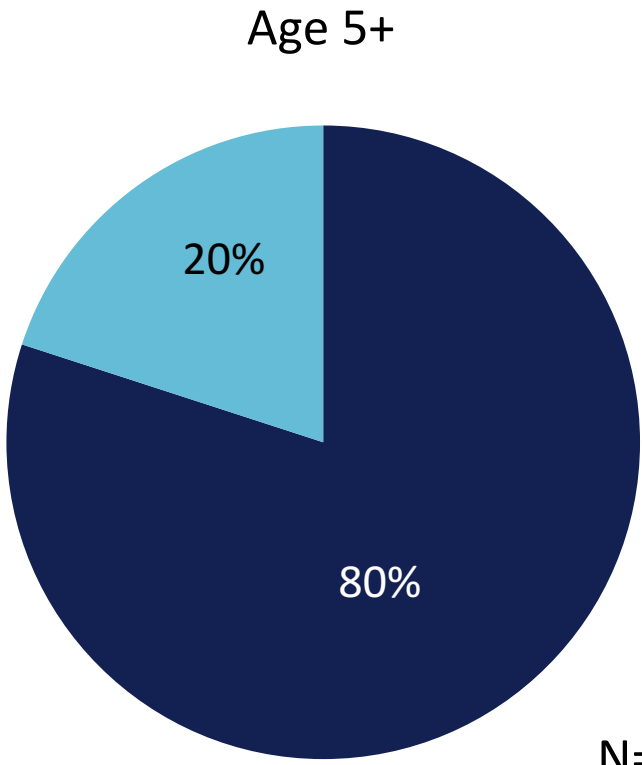


Percent of patients present at the outlet, across patient age



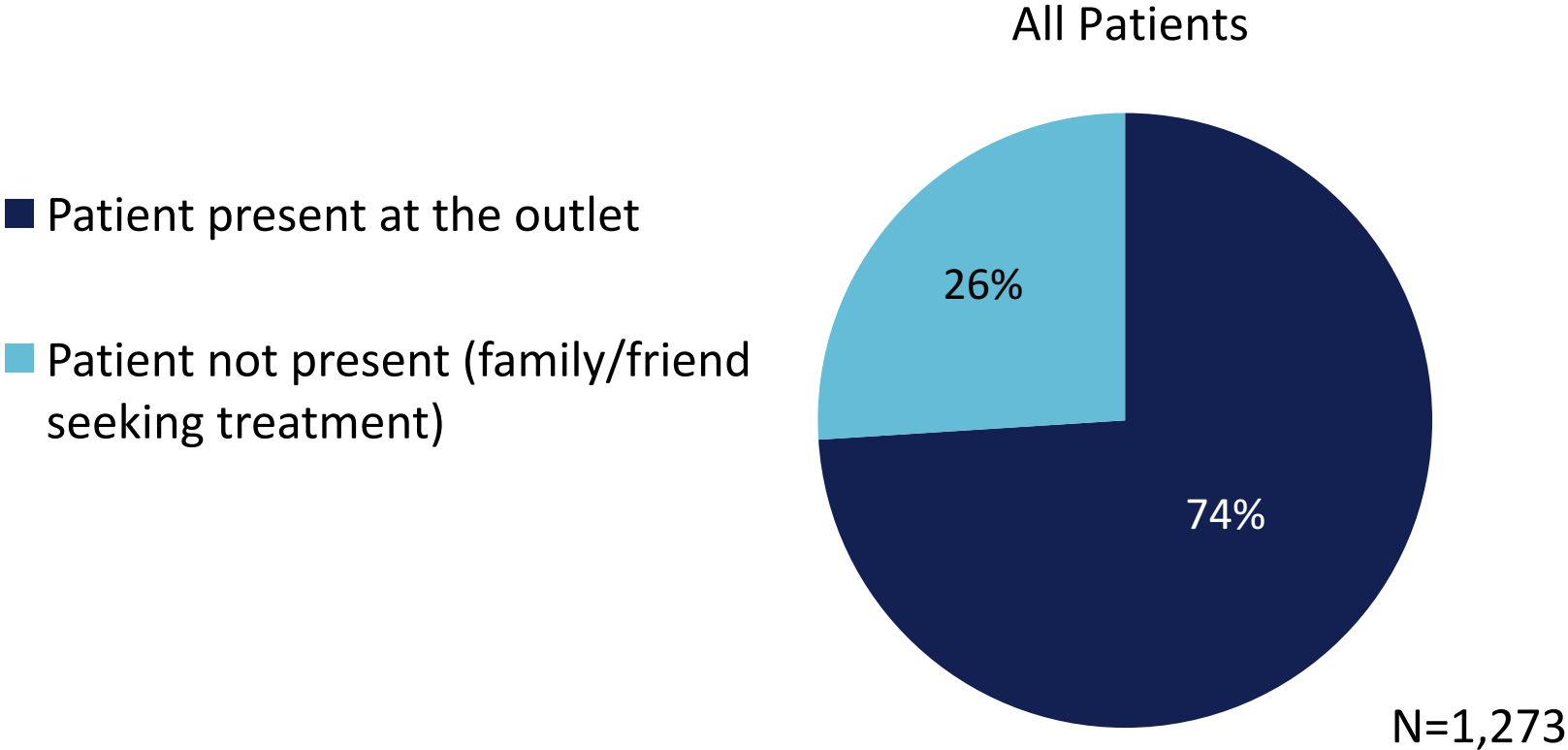
Percent of patients present at the outlet, across patient age

- Patient present at the outlet
- Patient not present (family/friend seeking treatment)



N=722

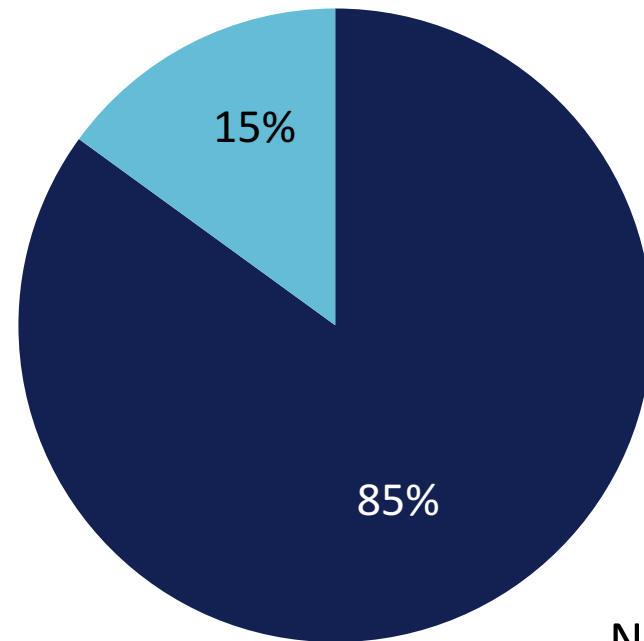
Percent of patients present at the outlet, across patient age



Percent of patients present at the outlet, across outlet type

Private For-Profit Health Facilities

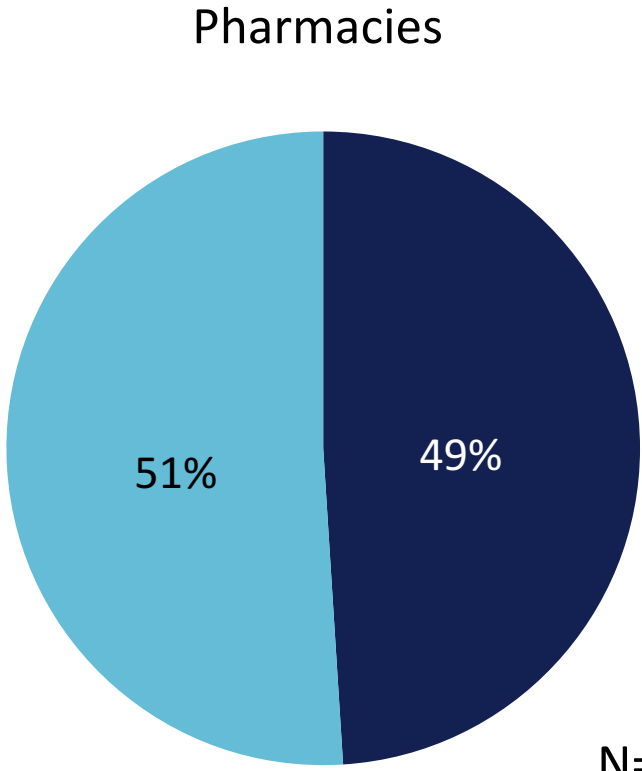
- Patient present at the outlet
- Patient not present (family/friend seeking treatment)



N=630

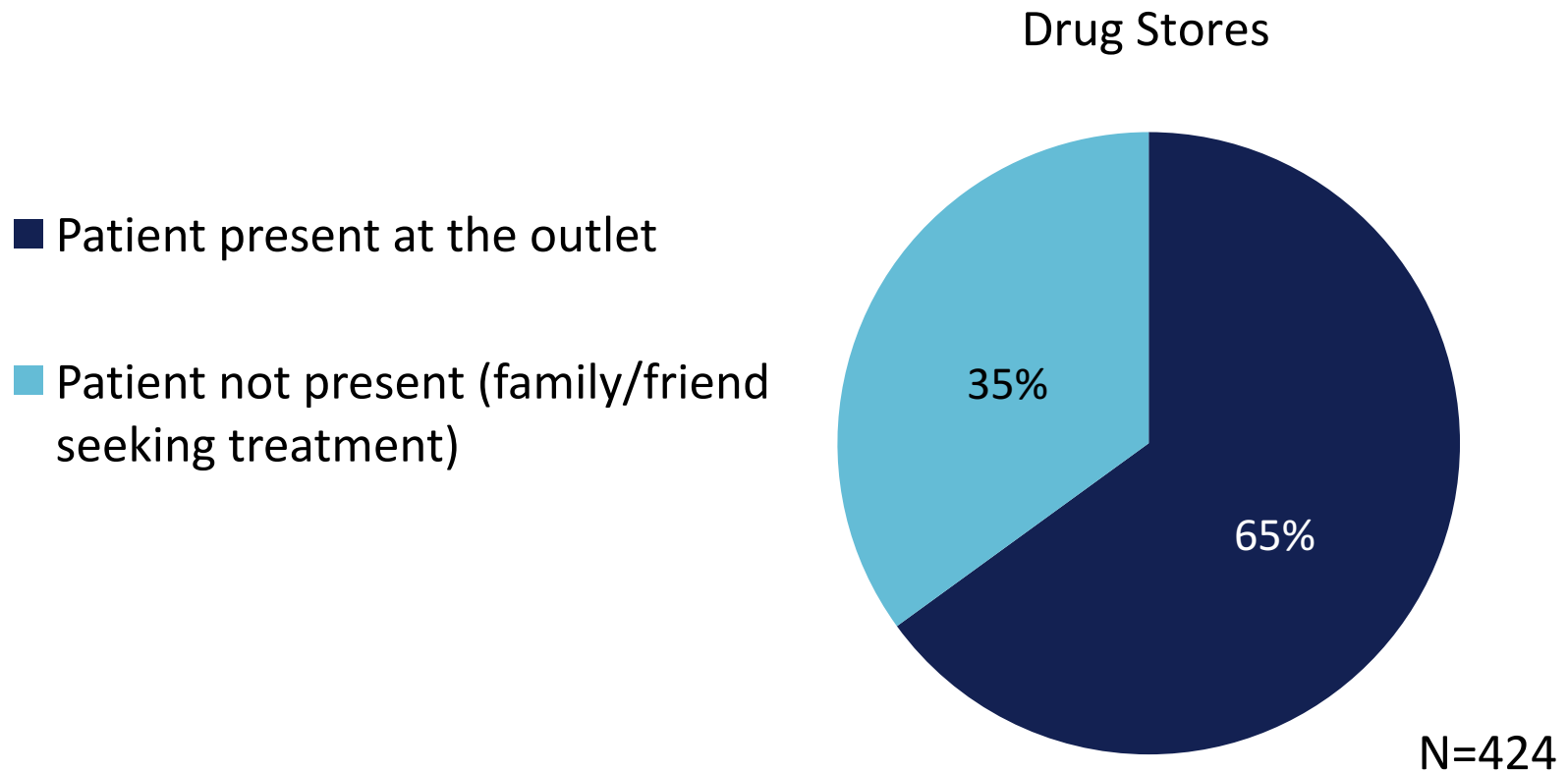
Percent of patients present at the outlet, across outlet type

- Patient present at the outlet
- Patient not present (family/friend seeking treatment)



N=219

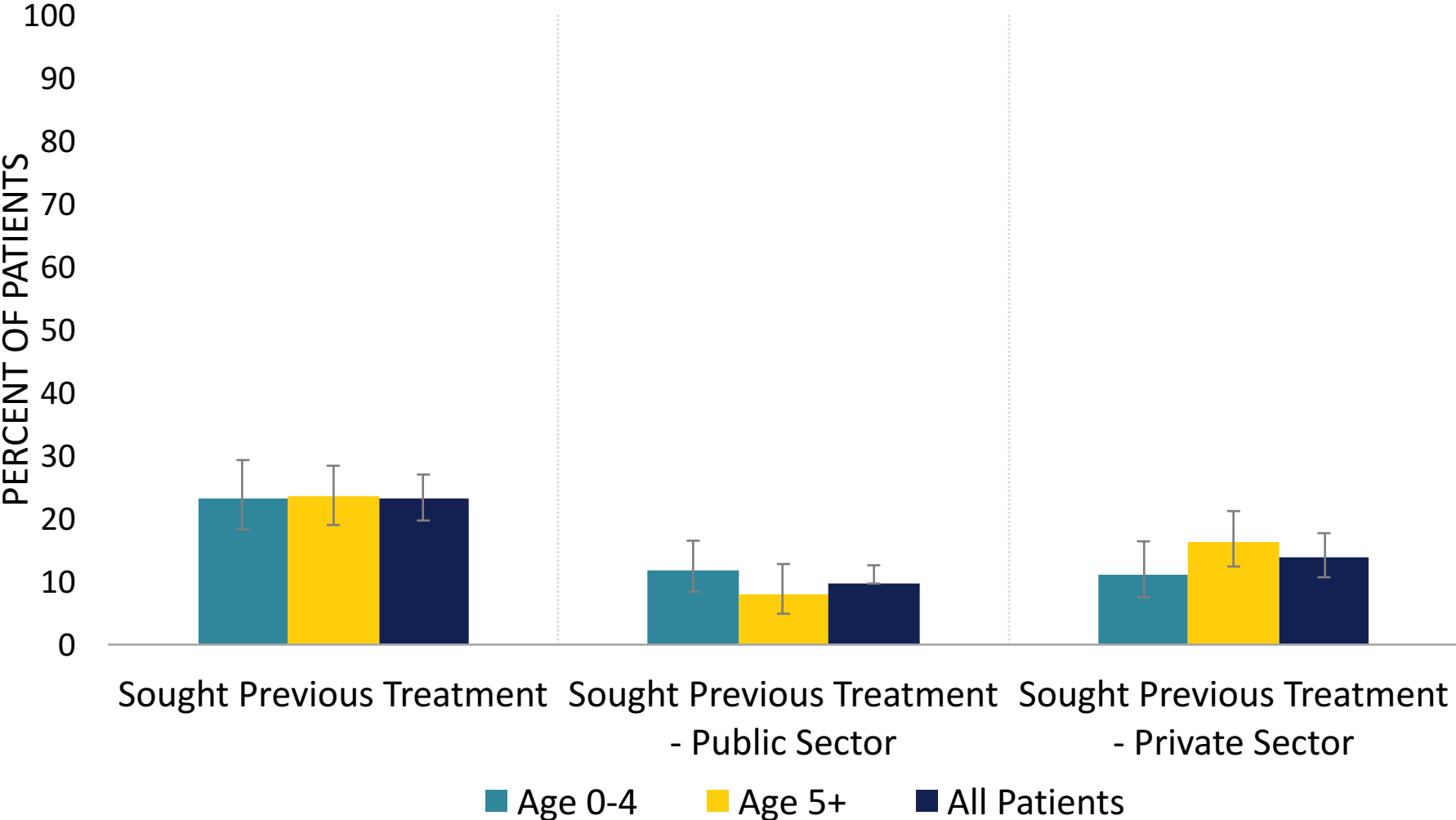
Percent of patients present at the outlet, across outlet type



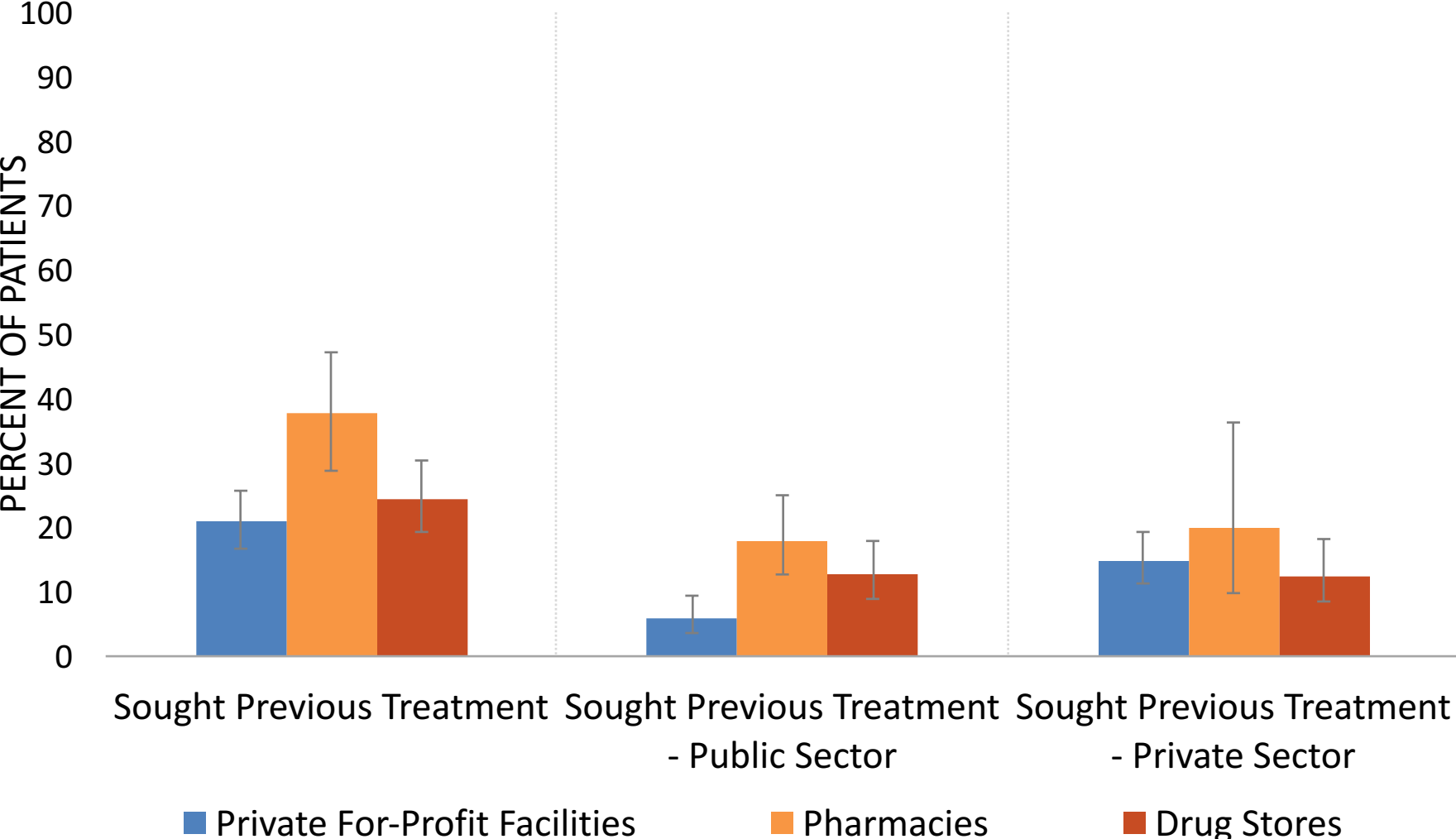
Did fever patients seek previous treatment for this fever at another source of care?



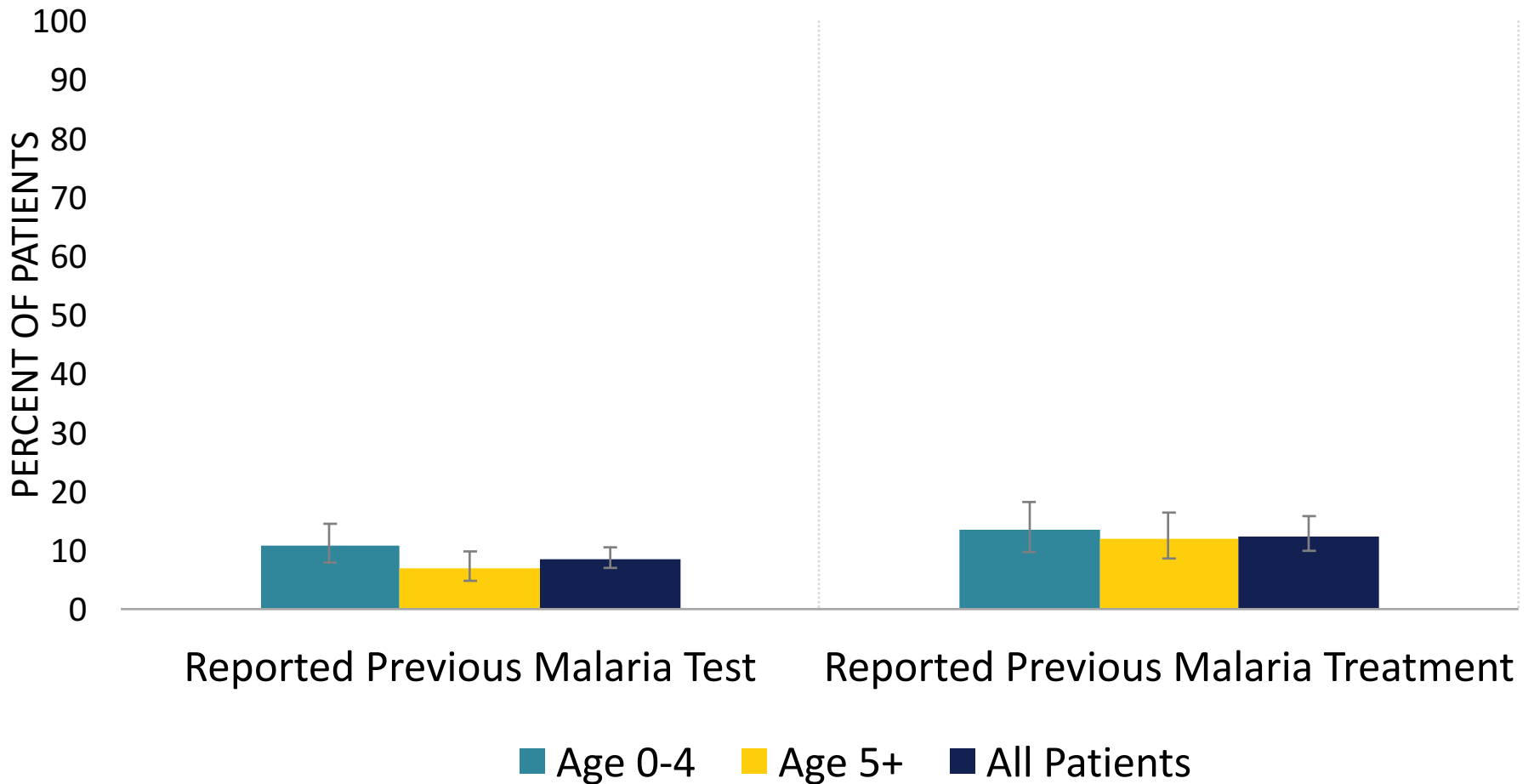
Percent of patients who sought previous treatment for the current illness at a different source of care, across patient age



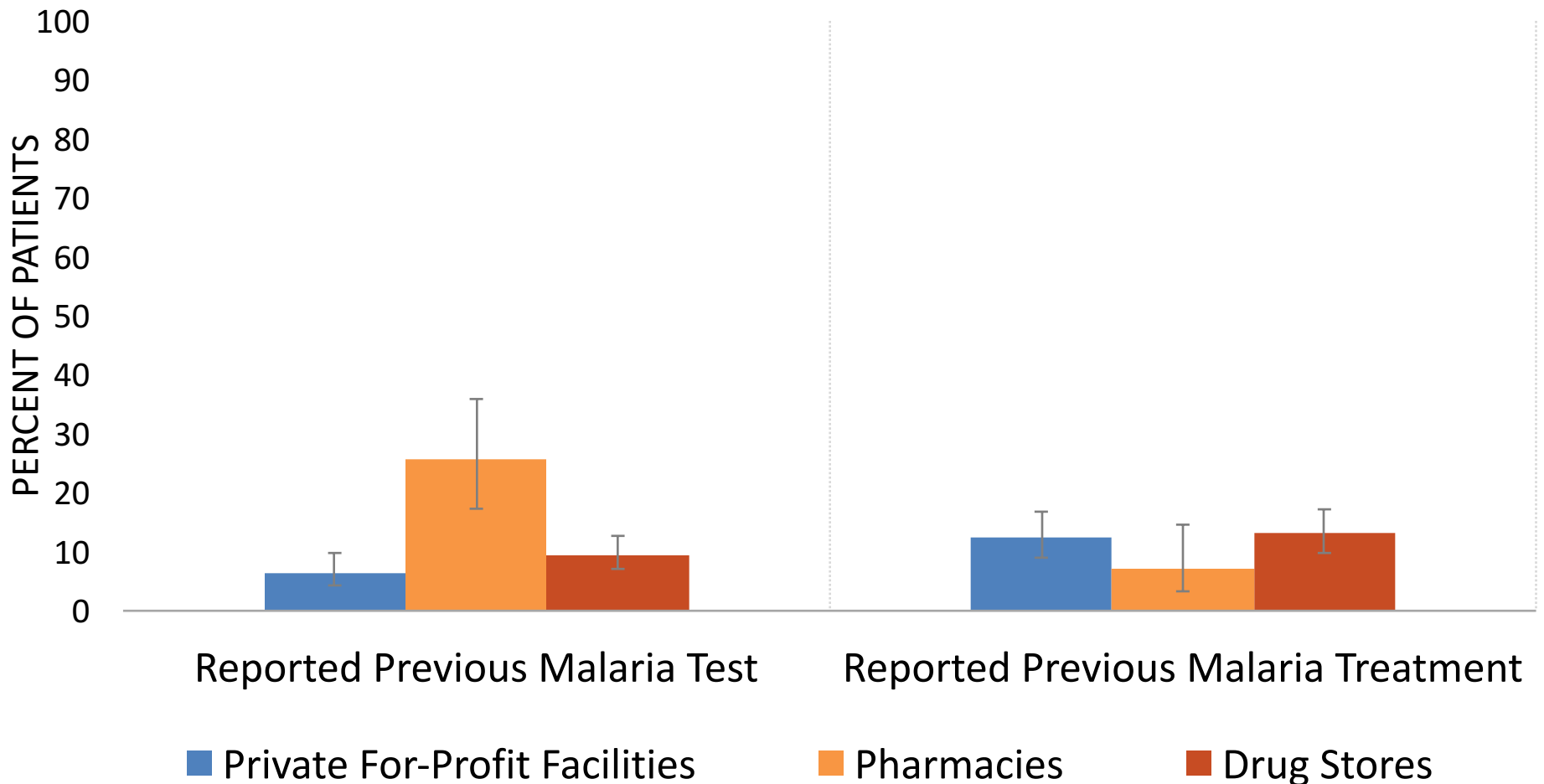
Percent of patients who sought previous treatment for the current illness at a different source of care, across outlet type



Percent of patients who reported receiving previous malaria testing and treatment for the current illness at a different source of care, across patient age



Percent of patients who reported receiving previous malaria testing and treatment for the current illness at a different source of care, across outlet type





Summary:

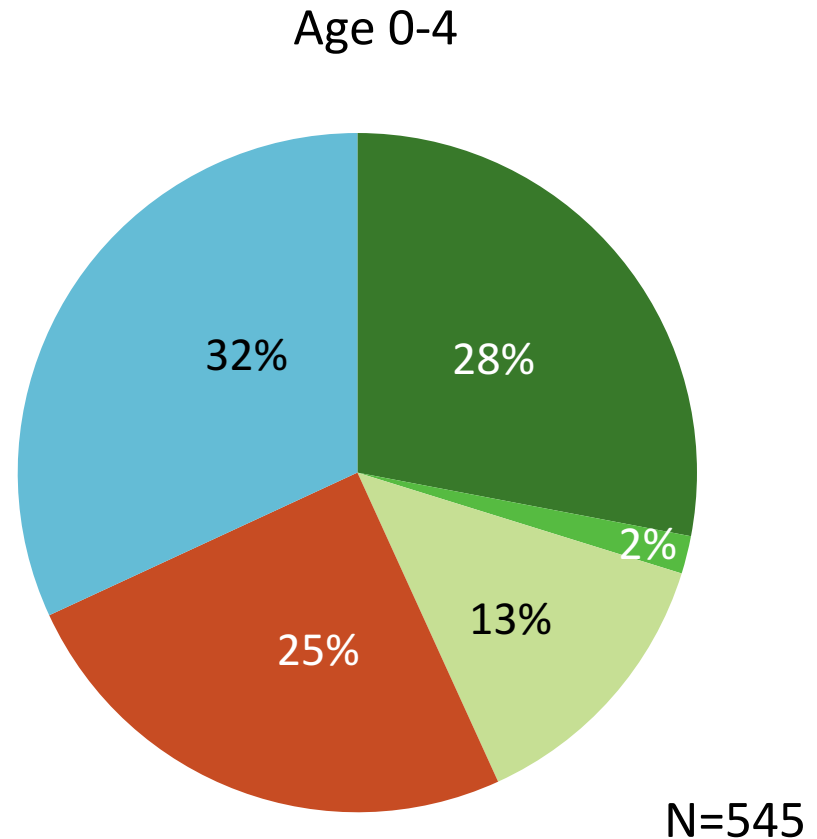
- 1) Overall, about 1 in 4 fever patients were not present at the consultation. Therefore, malaria testing could not be completed.
- 2) Being absent for the consultation was particularly common for patients at pharmacies, and more common for children under five than for older children and adults.
- 3) About 1 in 5 fever patients had already sought care for the fever from another source before the study visit. This was more common at pharmacies compared to drug stores and facilities.
- 4) Previous malaria testing for the current illness was generally not common. However, 1 in 4 patients presenting at pharmacies had already been tested for malaria.

Did fever patients receive a malaria blood test?



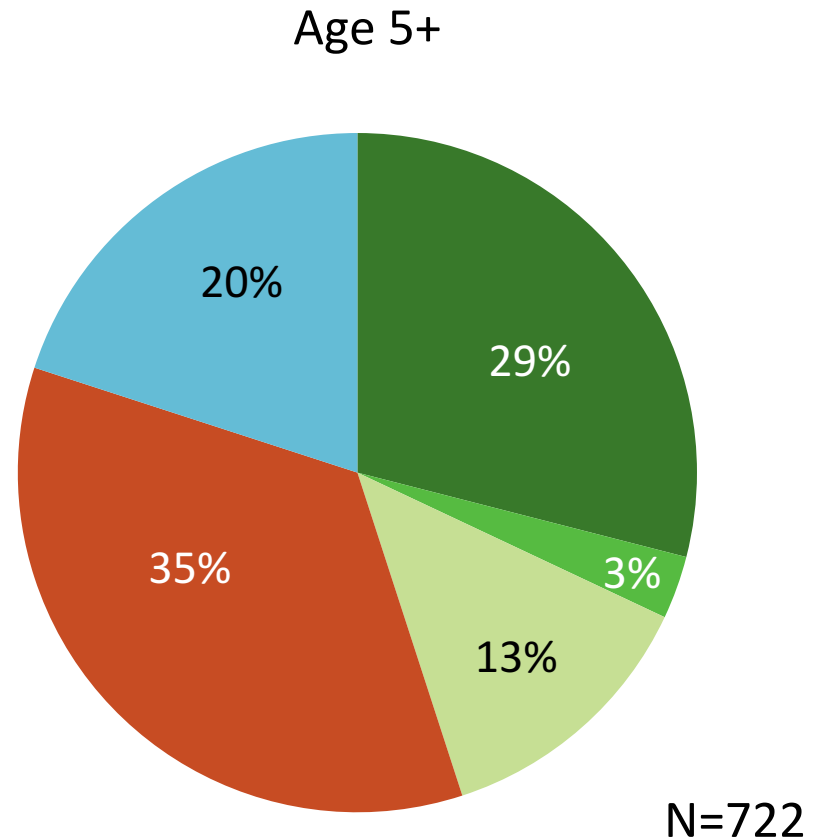
Percent of patients who received a malaria blood test, across patient age

- Received a malaria blood test - mRDT
- Received a malaria blood test - mRDT & microscopy
- Received a malaria blood test - microscopy
- Present, did not receive a malaria test
- Not present (did not receive a malaria test)



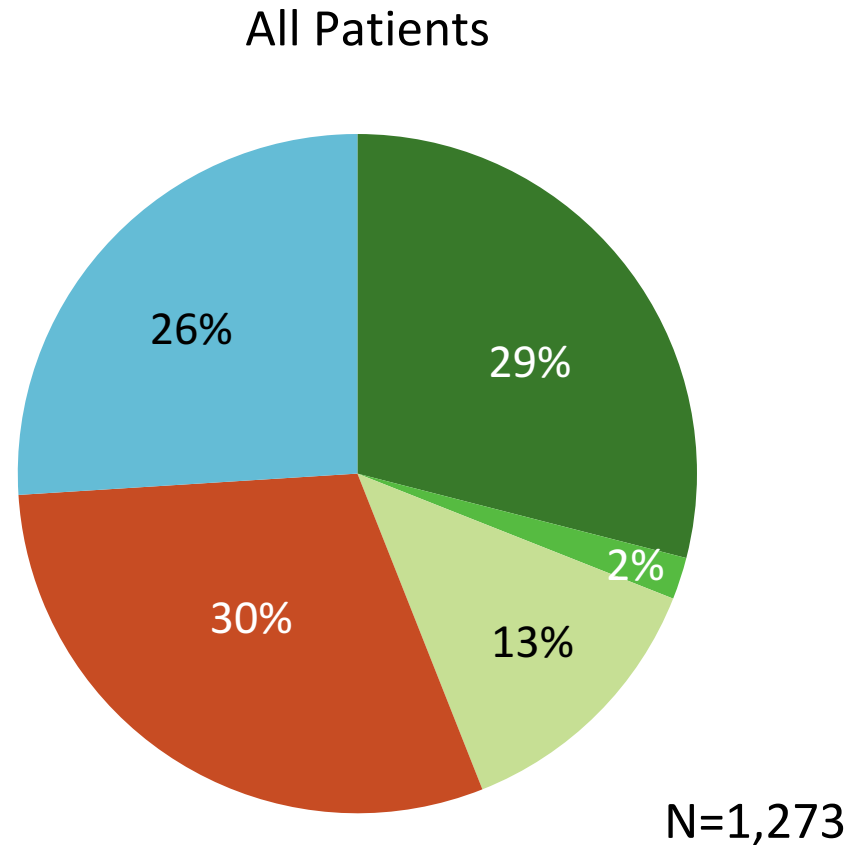
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Percent of patients who received a malaria blood test, across patient age

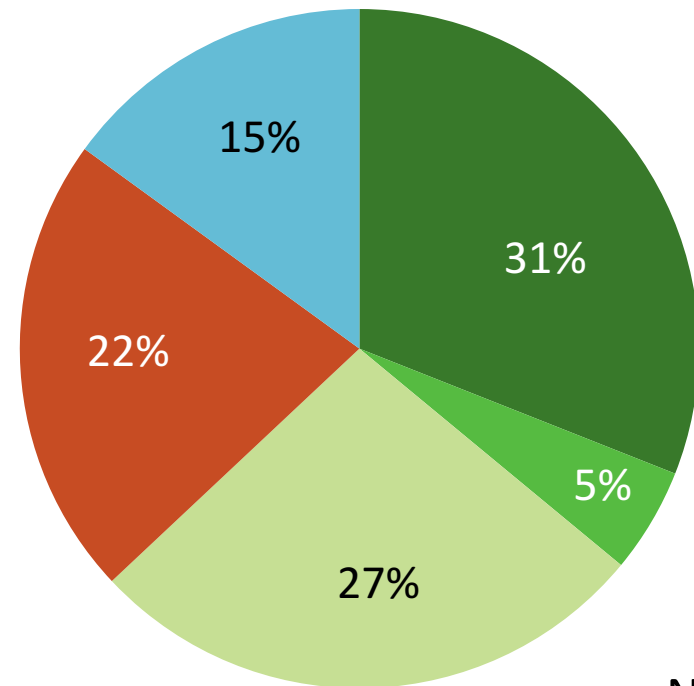
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Percent of patients who received a malaria blood test, across outlet type

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- Received a malaria blood test - microscopy
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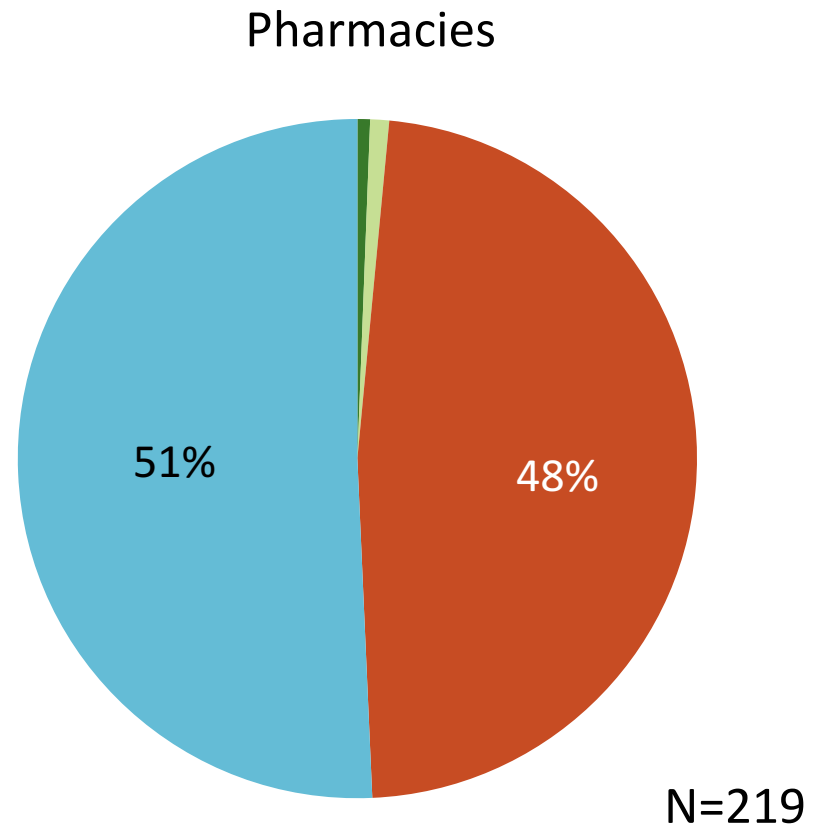
Private For-Profit Health Facilities



N=630

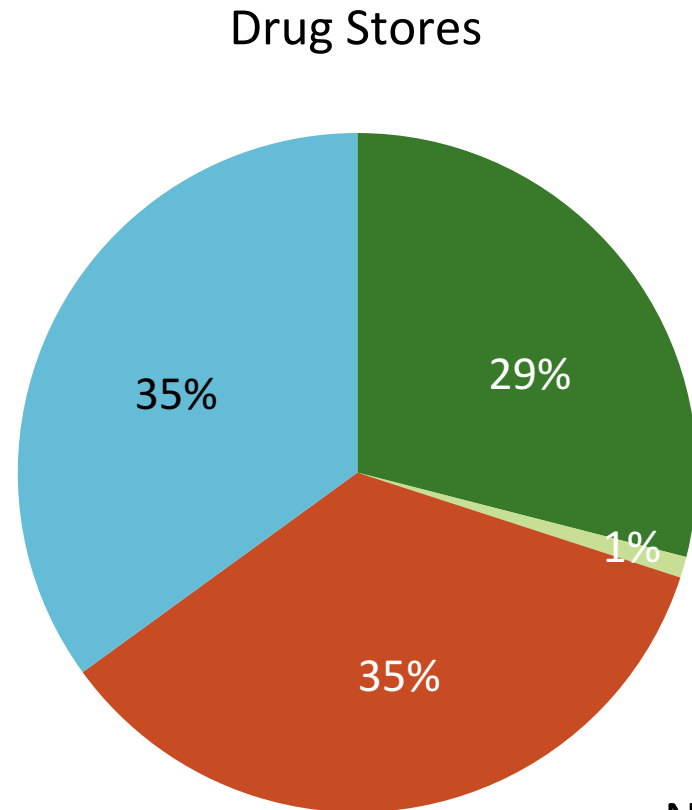
Percent of patients who received a malaria blood test, across outlet type

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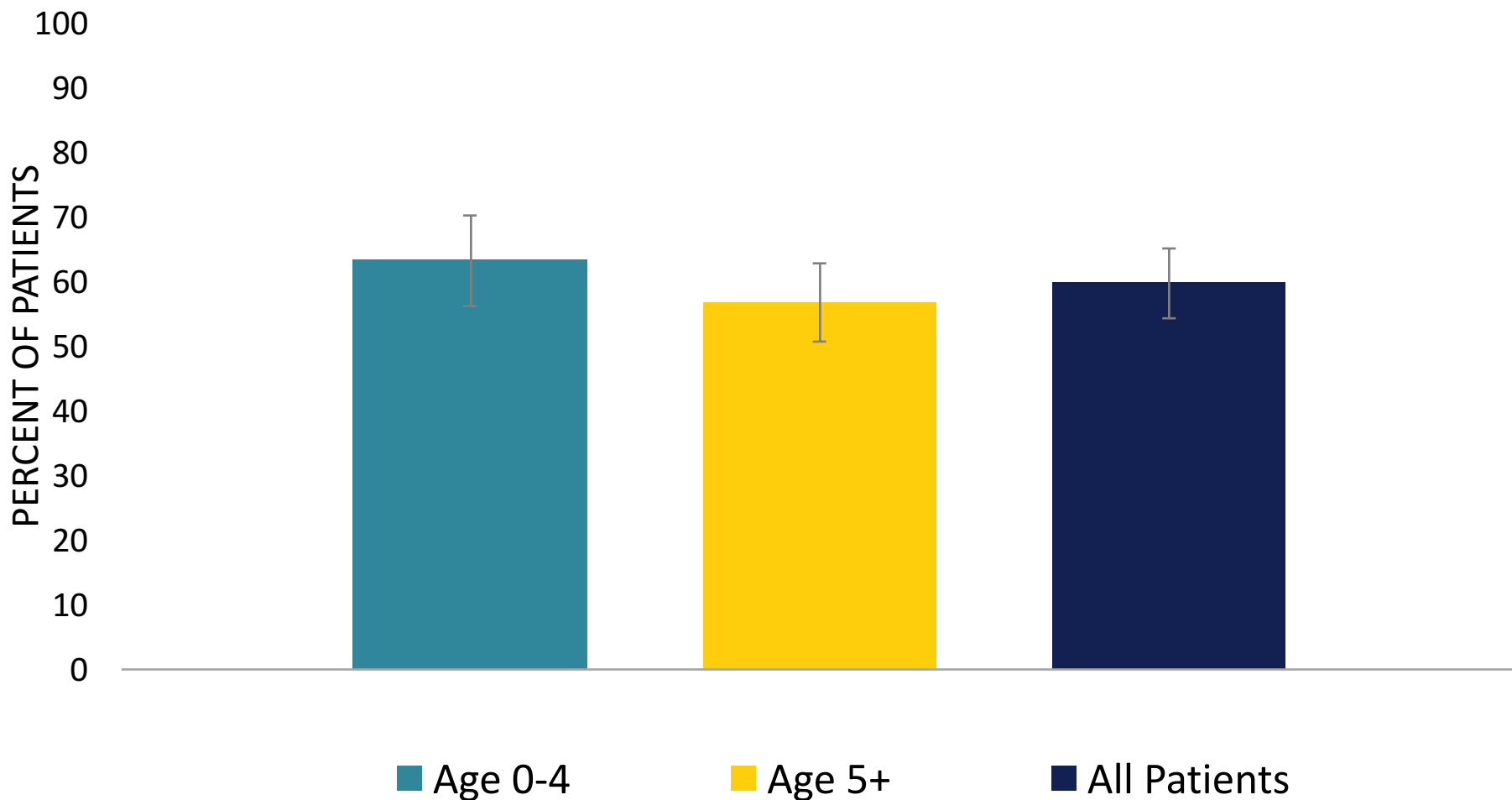
Percent of patients who received a malaria blood test, across outlet type

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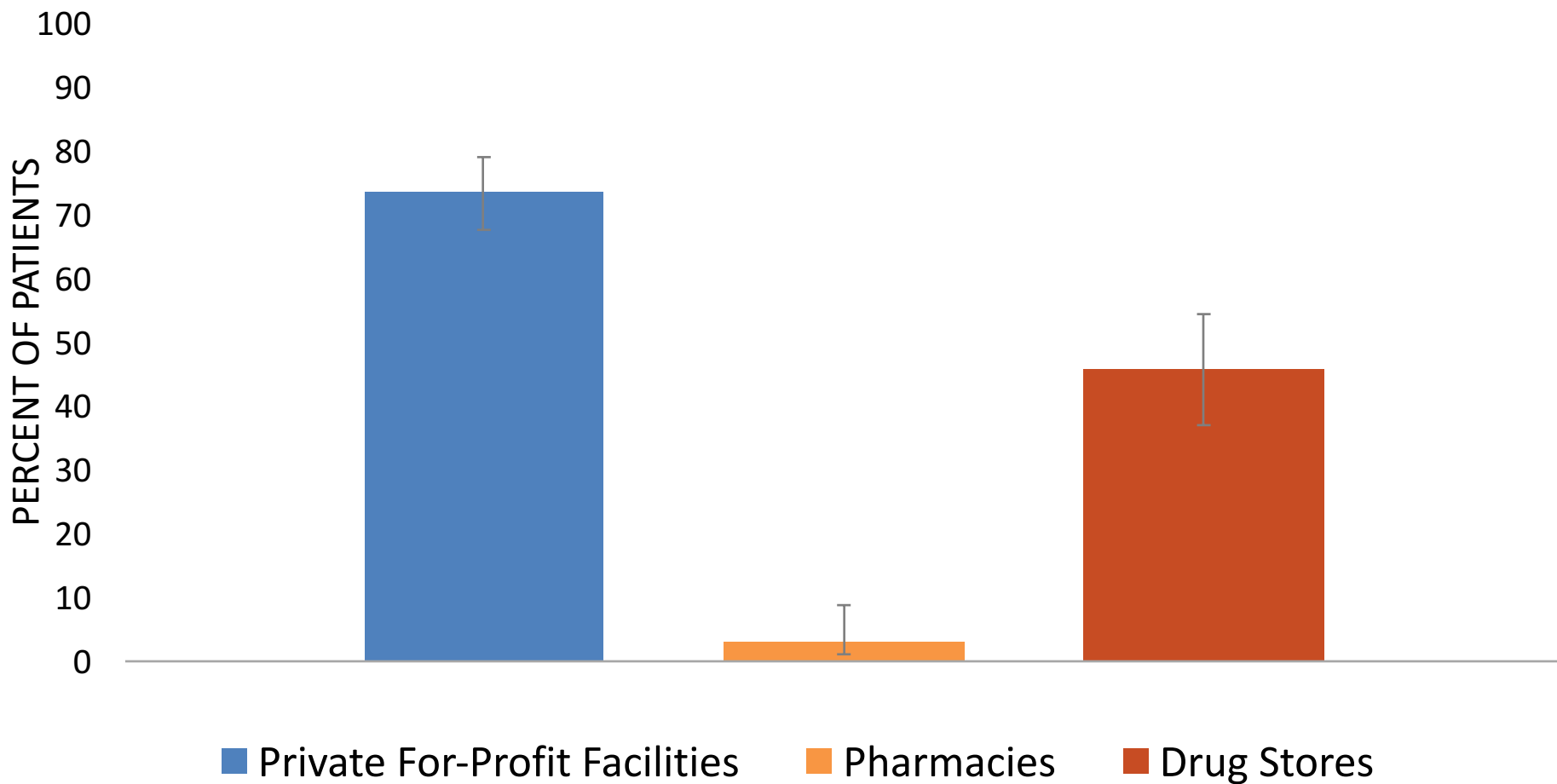


N=424

Percent of patients who received a malaria blood test, across patient age, among patients present at the consultation



Percent of patients who received a malaria blood test, across outlet type





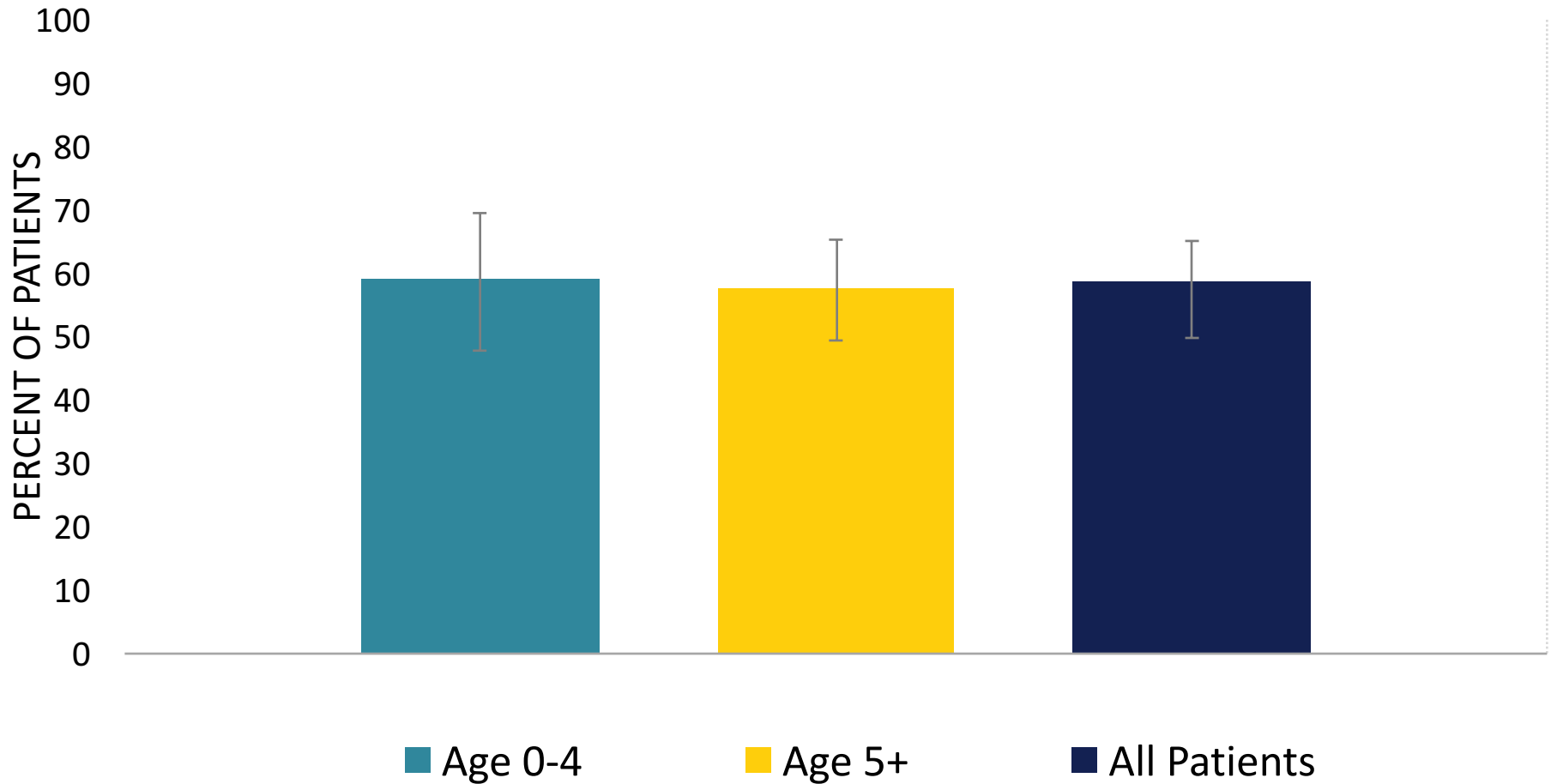
Summary:

- 1) Fever patients are most likely to be tested at private for-profit health facilities. Among those present, about 3 in 4 were tested. About half of testing was done by mRDT and half by microscopy.
- 2) Testing is very low in pharmacies. Half of patients were not present for the consult and could not be tested. Among those present, only 3% were tested.
- 3) At drug stores, nearly half of patients present were tested, and testing was done by mRDT.

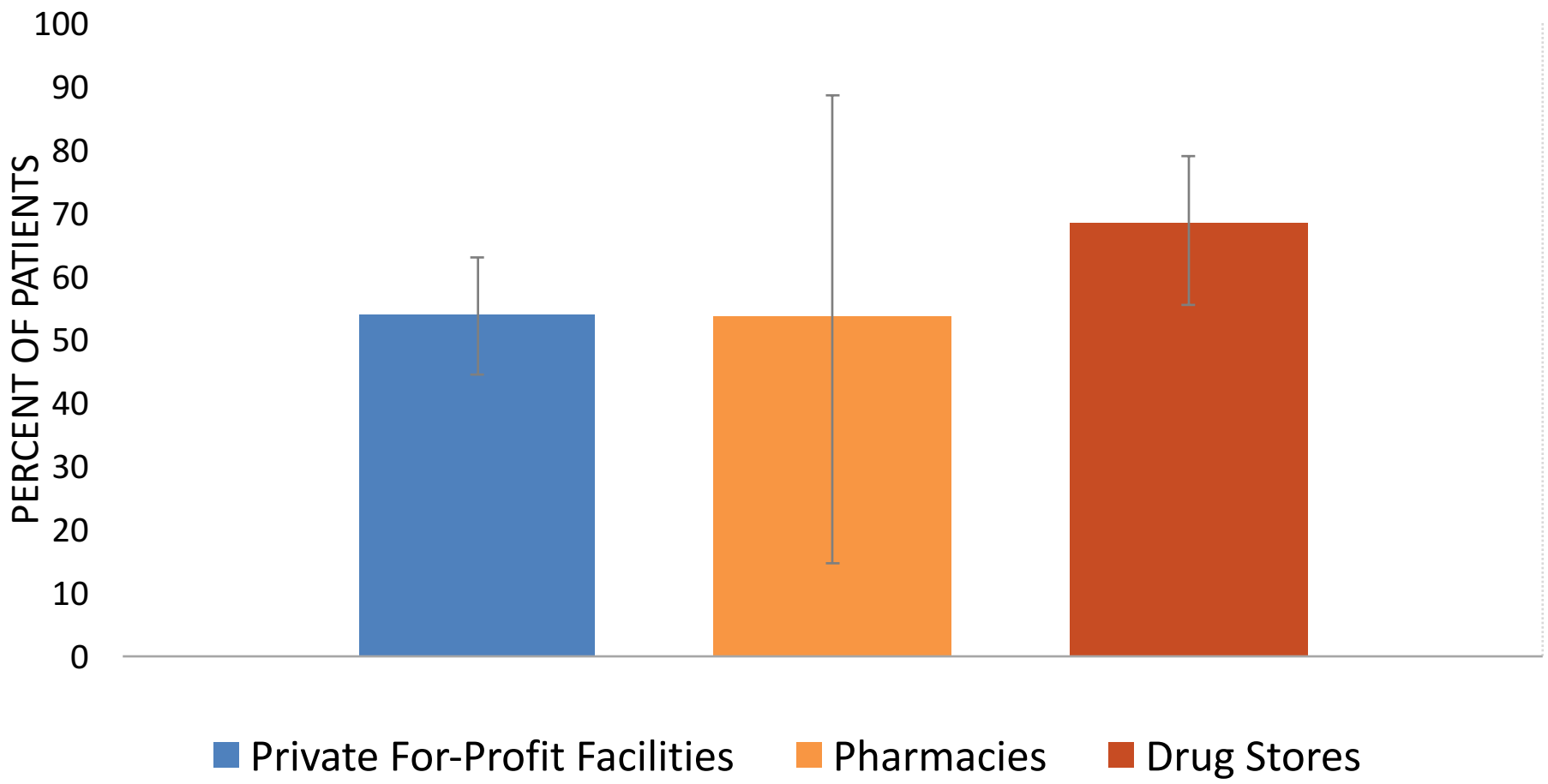
Malaria testing results



Percent of patients who tested positive for malaria, among tested patients, across patient age



Percent of patients who tested positive for malaria, among tested patients, across outlet type

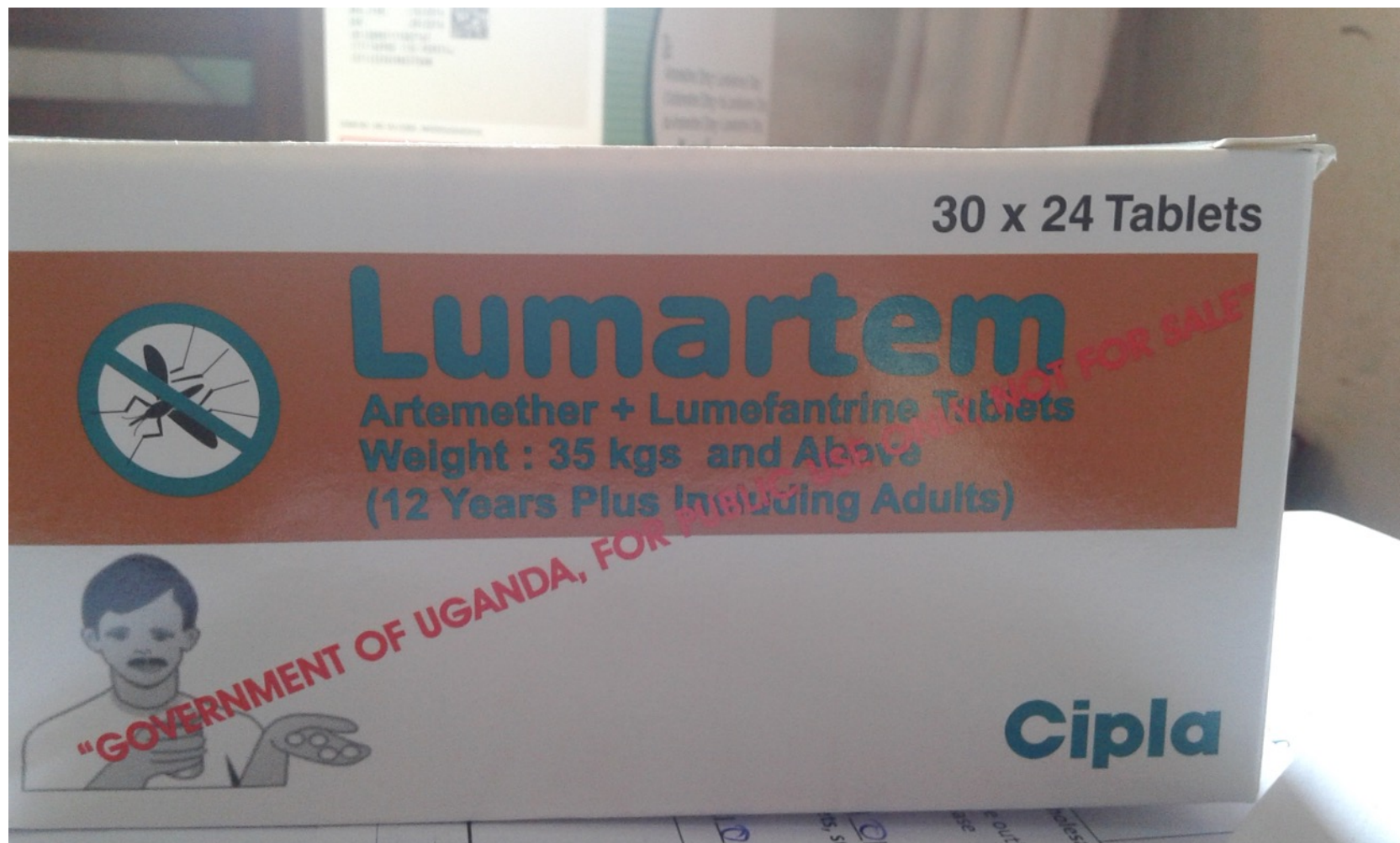




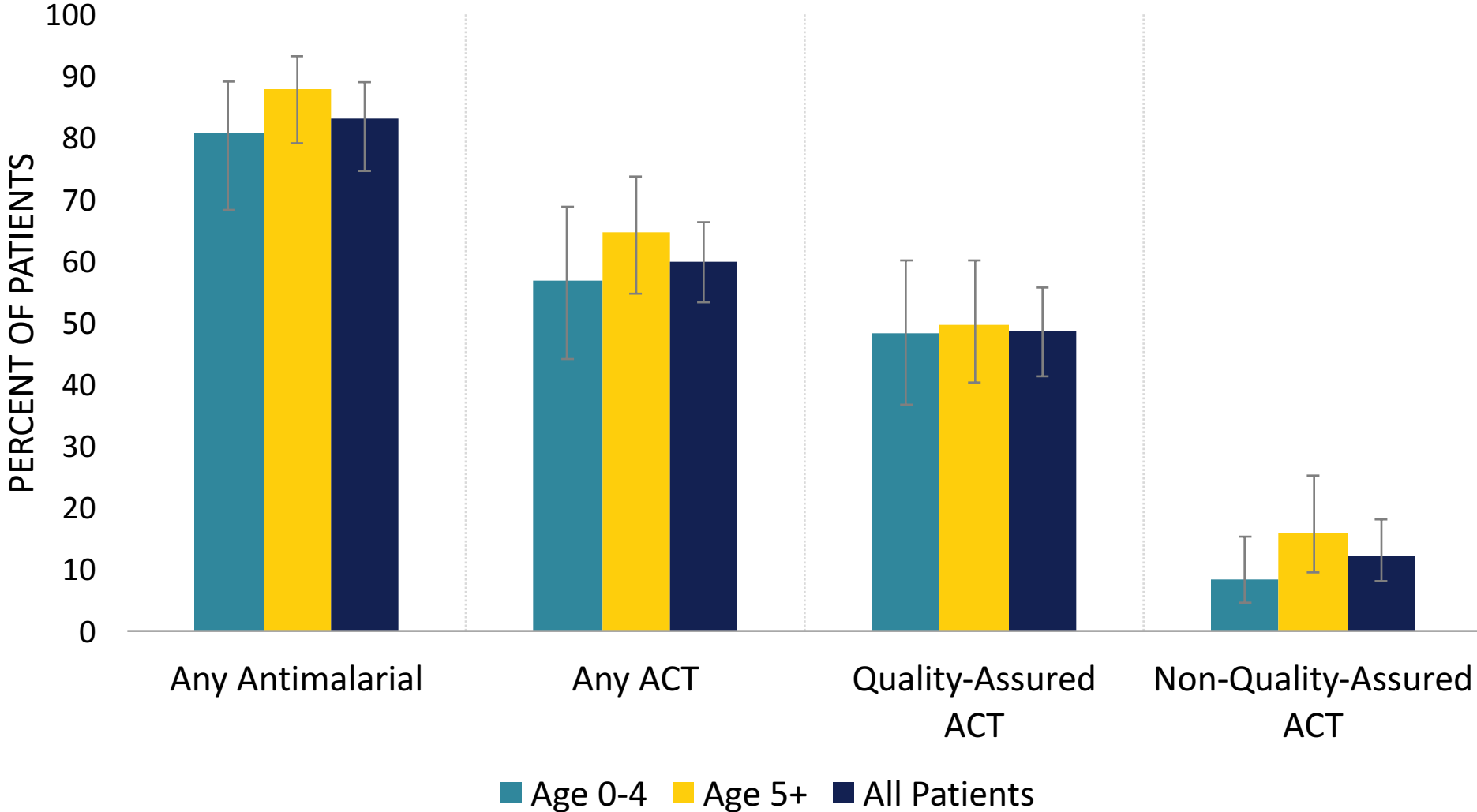
Summary:

About 60% of patients tested for malaria had a positive test result.

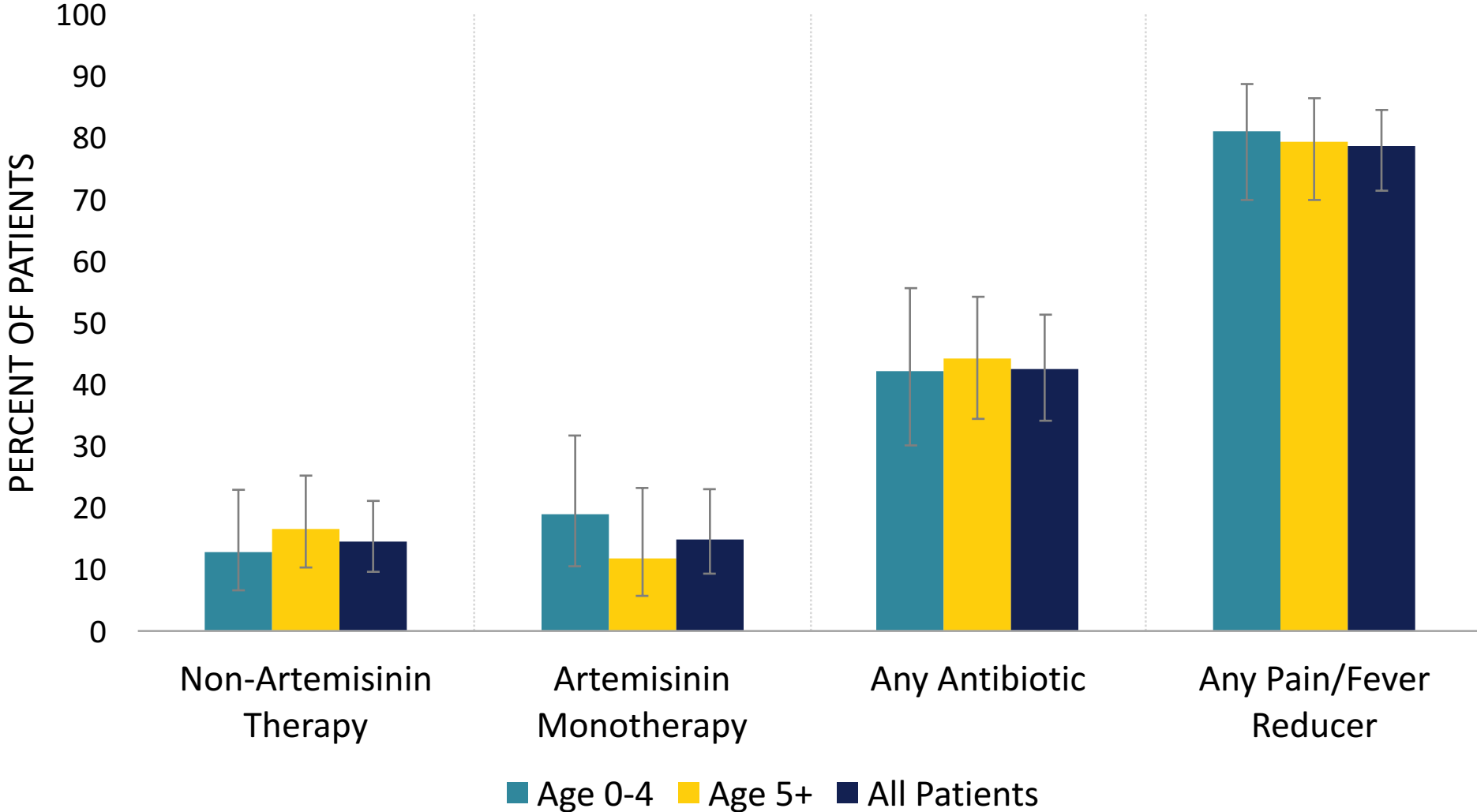
Did patients who tested positive for malaria receive ACT treatment?



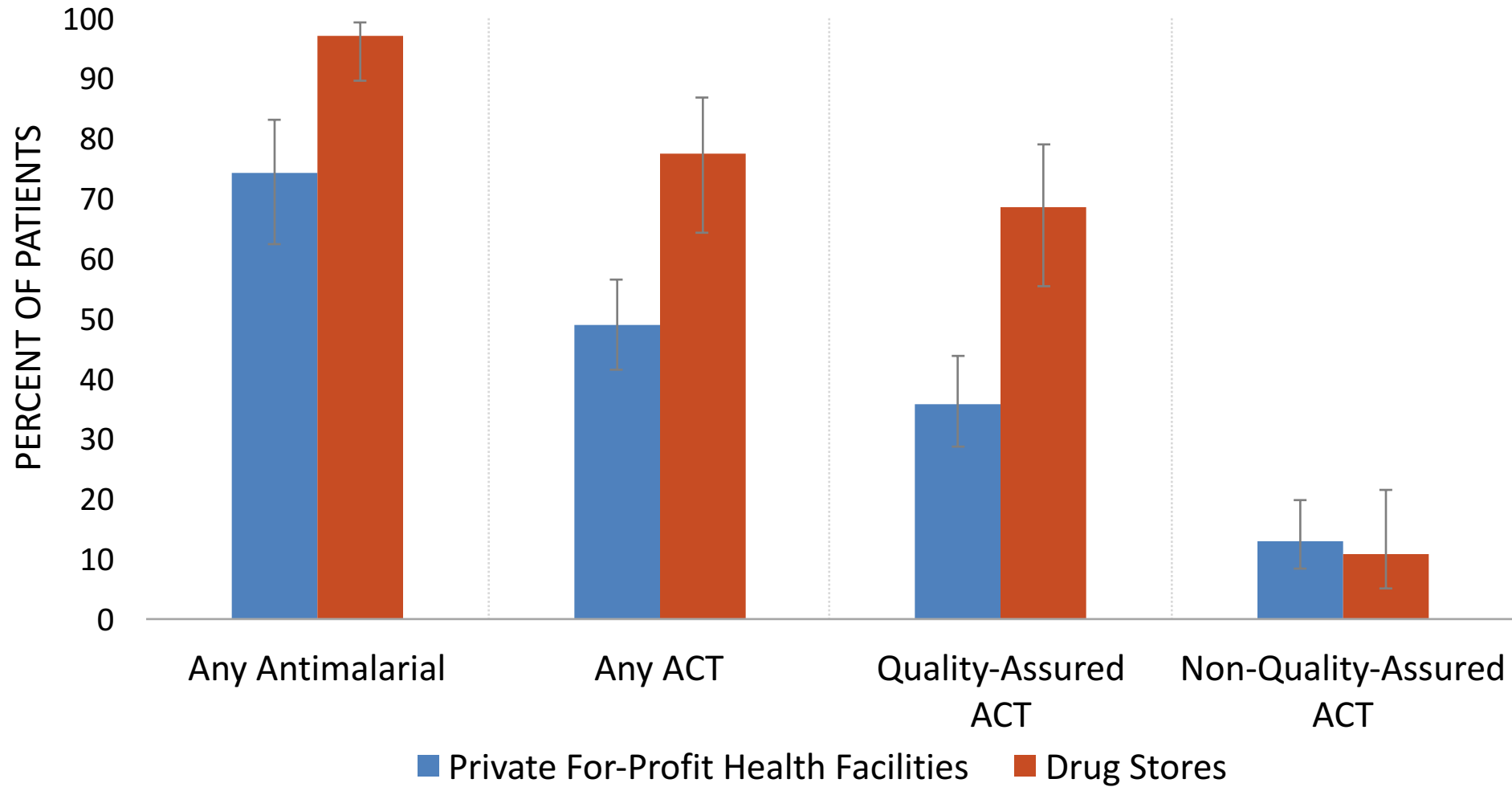
Treatments received by patients who tested positive for malaria, across patient age



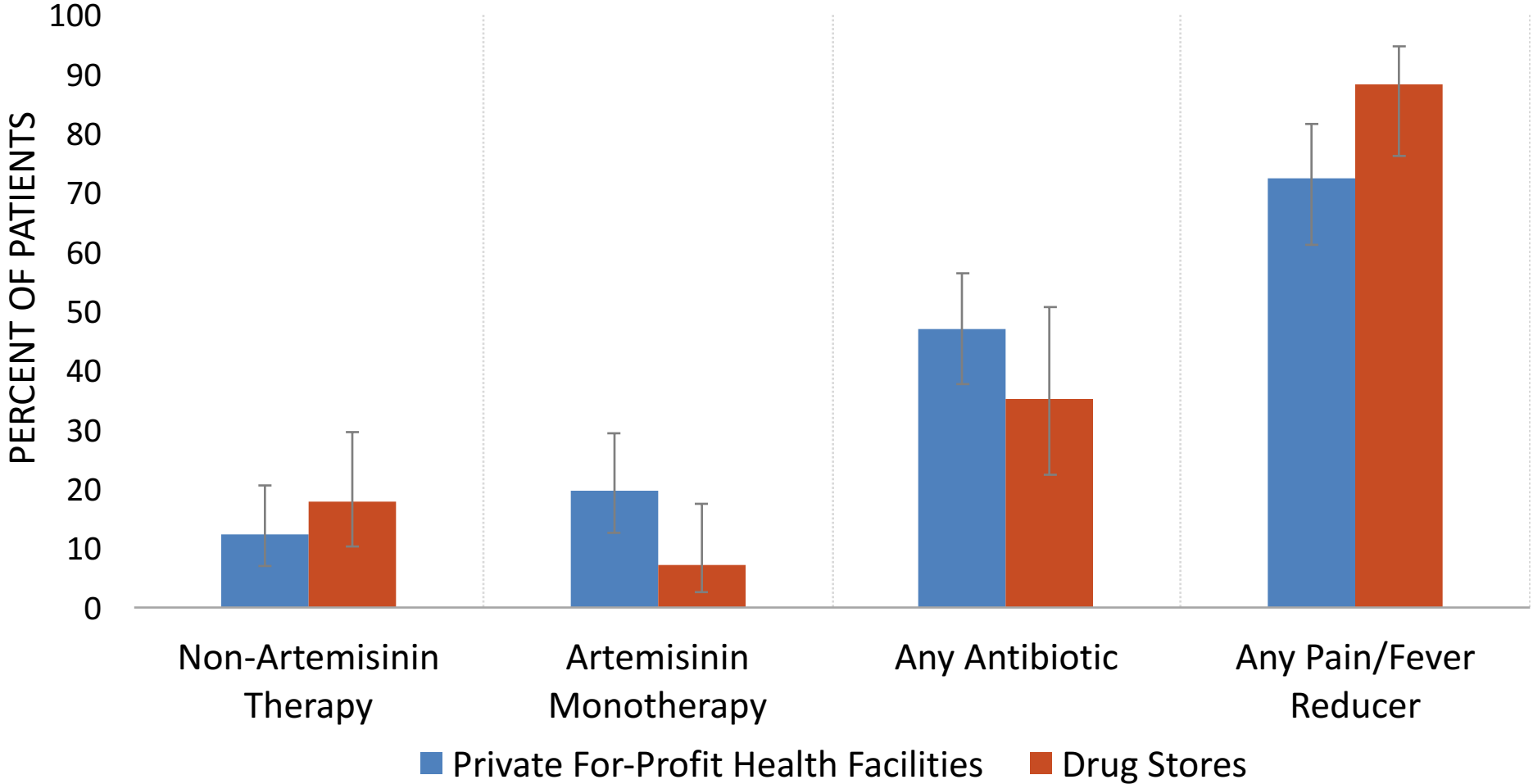
Treatments received by patients who tested positive for malaria, across patient age



Treatments received by patients who tested positive for malaria, across outlet type



Treatments received by patients who tested positive for malaria, across outlet type



Summary:

- 1) Among patients who tested positive for malaria, 80% received an antimalarial and 60% received an ACT. Half received QA ACT.
- 2) Other antimalarials received included non-artemisinins like quinine and sulfadoxine-pyrimethamine (SP), or artemether injections (used for severe malaria). Note that all patients in this study were uncomplicated cases, without signs of severe illness.
- 3) About half of the patients received an antibiotic.
- 4) ACT treatment was higher in drug stores than in facilities. In drug stores, 3 in 4 positive patients received an ACT compared to half in facilities.
- 5) Facilities were more likely to treat with artemether injections (1 in 5 positive patients) and antibiotics compared to drug stores.

Did patients who tested negative for malaria receive antimalarial treatment?

1mlx6Ampoule

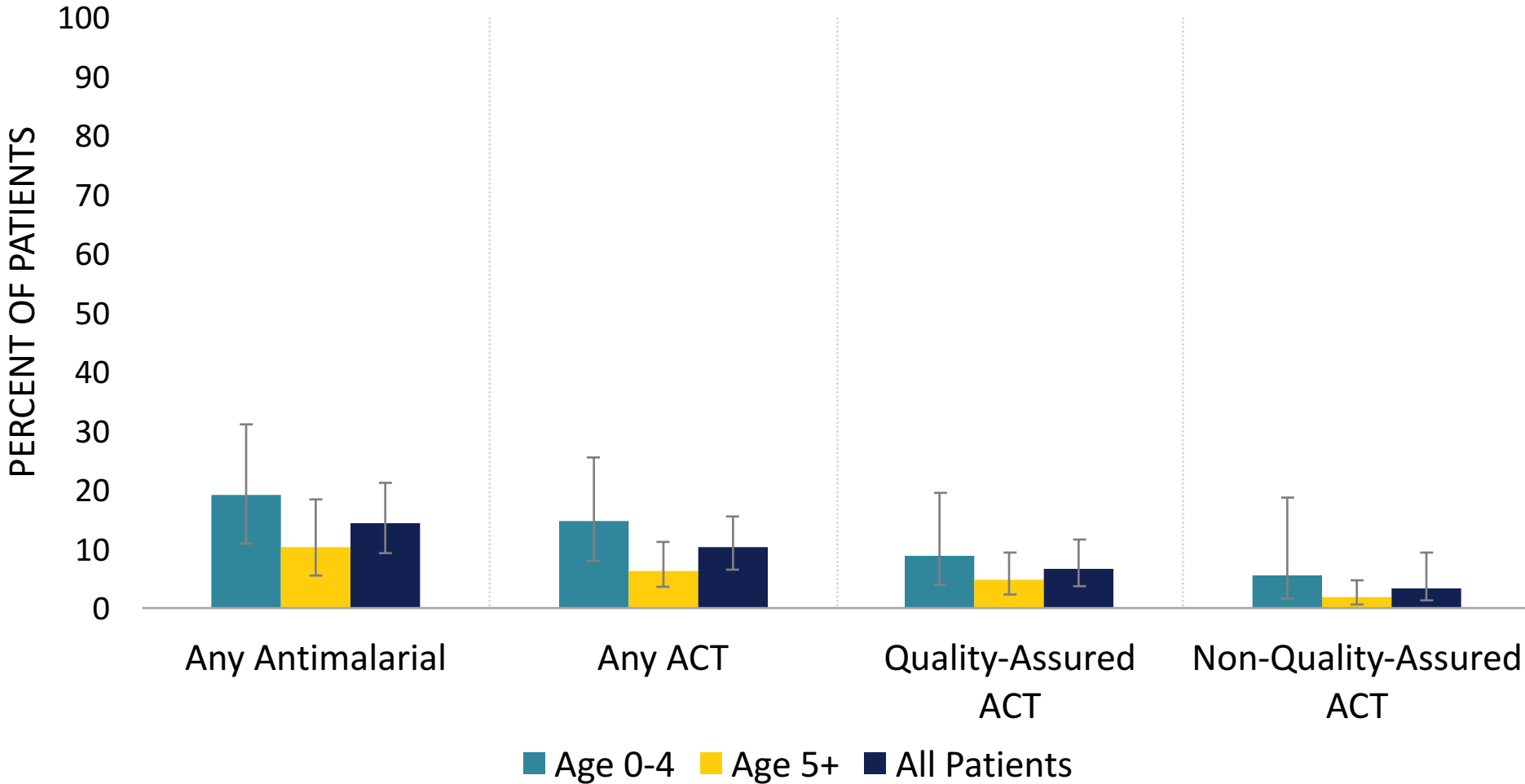
Artemether
Injection/Injectable
1ml:80mg

Manufactured by:

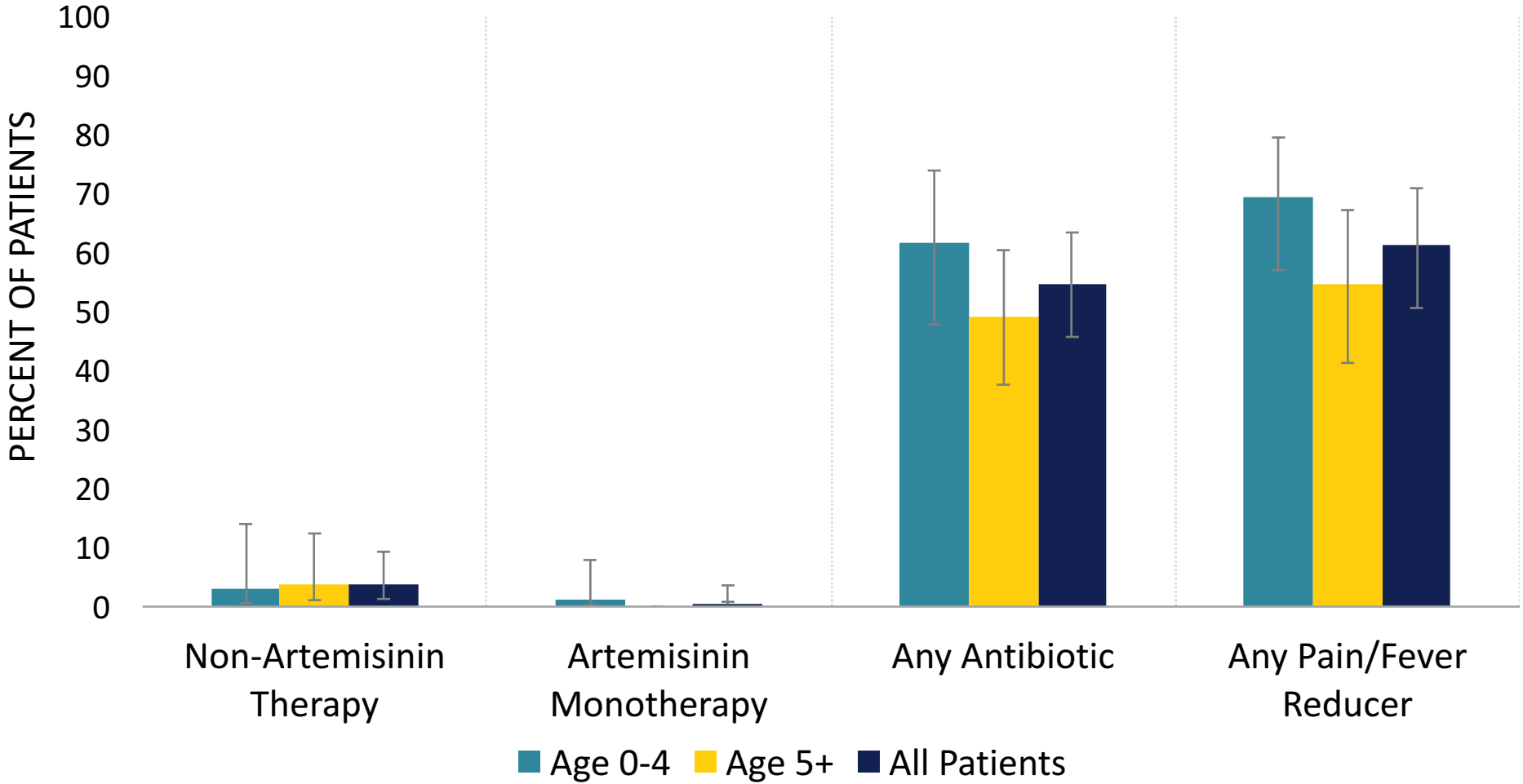


Hebei Kaiwei Pharmaceutical Co., Ltd.
27, Lingyuan Road, Zhangjiakou, Hebei., PR China.

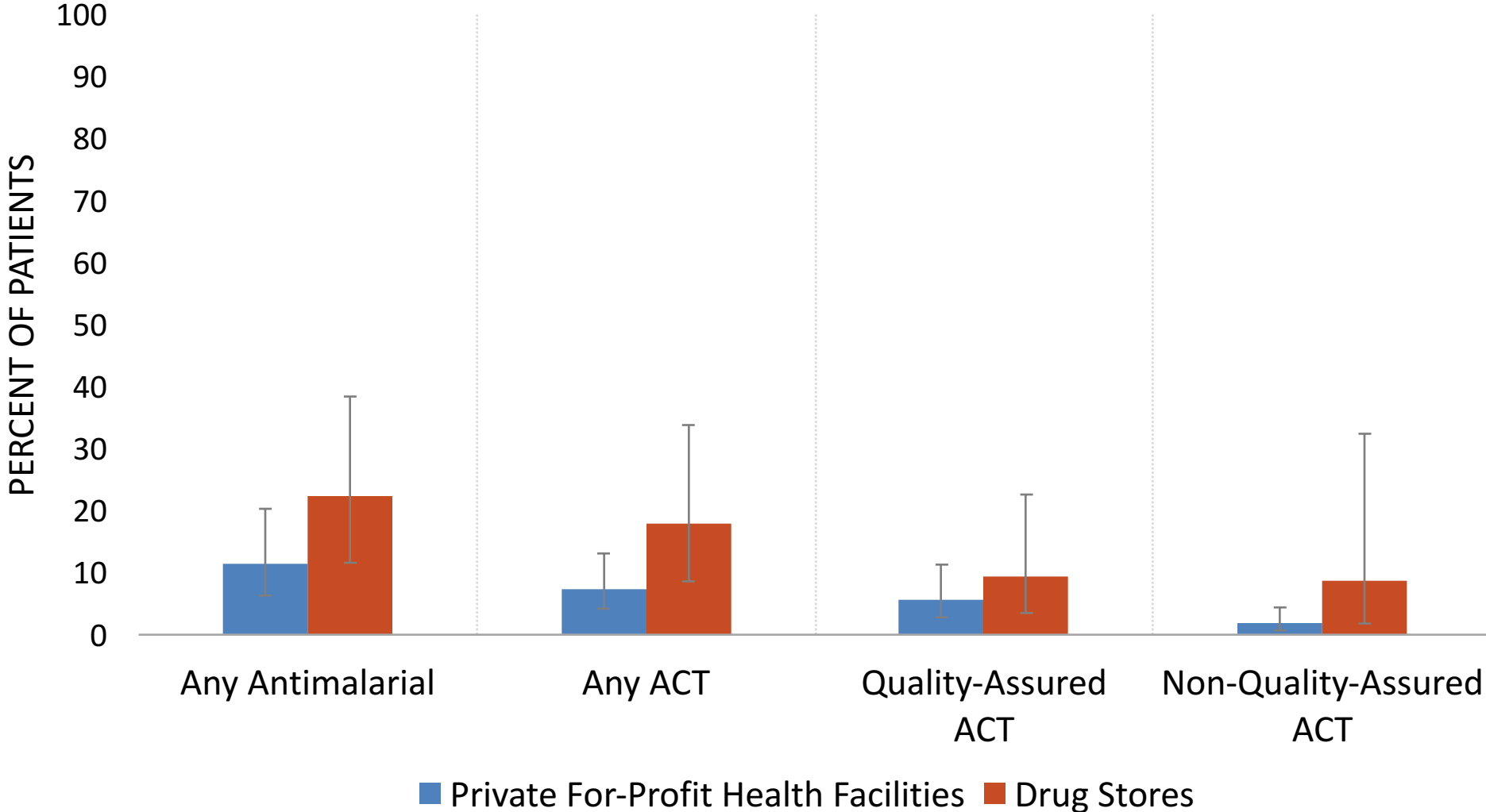
Treatments received by patients who tested negative for malaria, across patient age



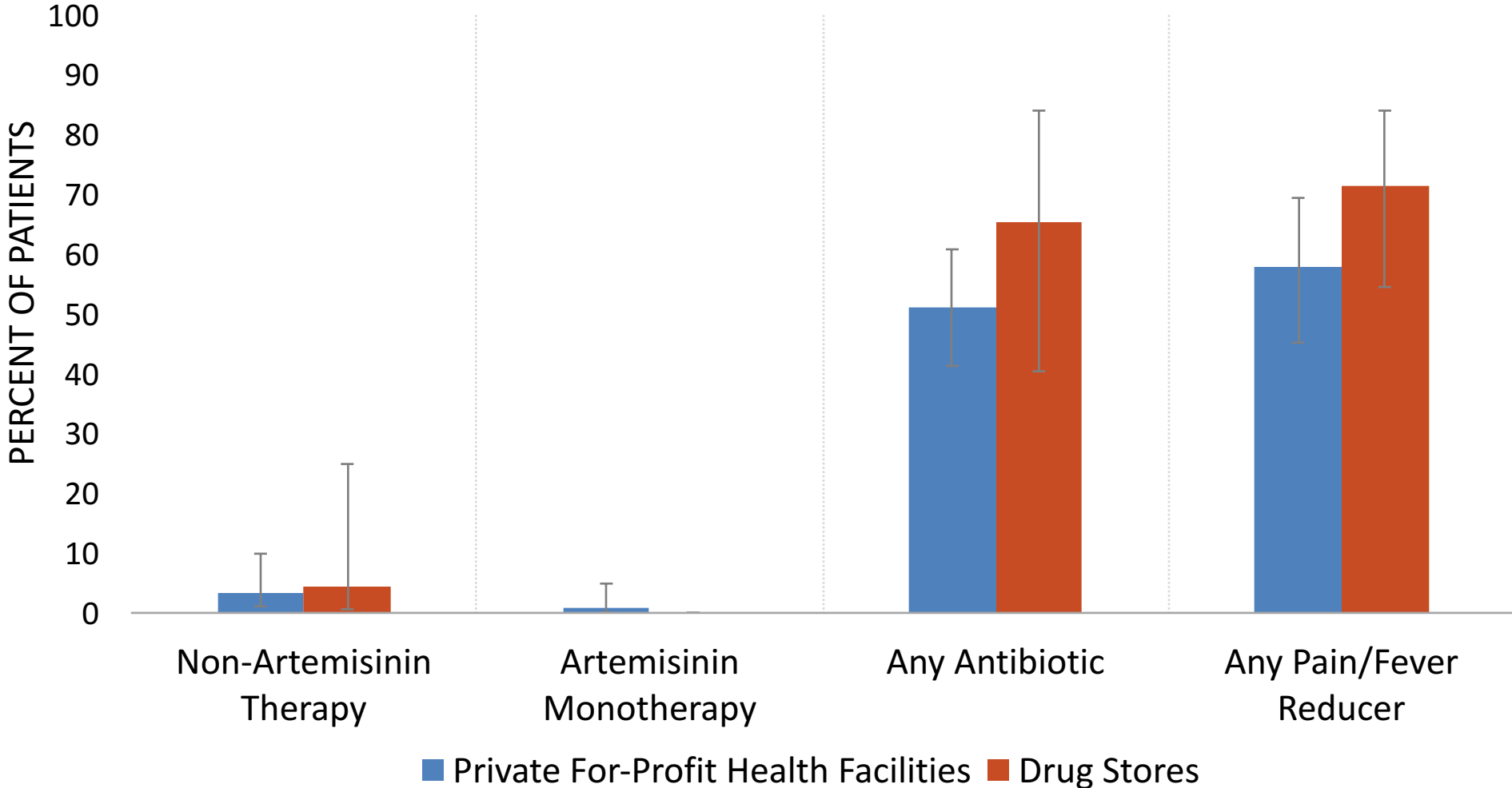
Treatments received by patients who tested negative for malaria, across patient age



Treatments received by patients who tested negative for malaria, across outlet type



Treatments received by patients who tested negative for malaria, across outlet type

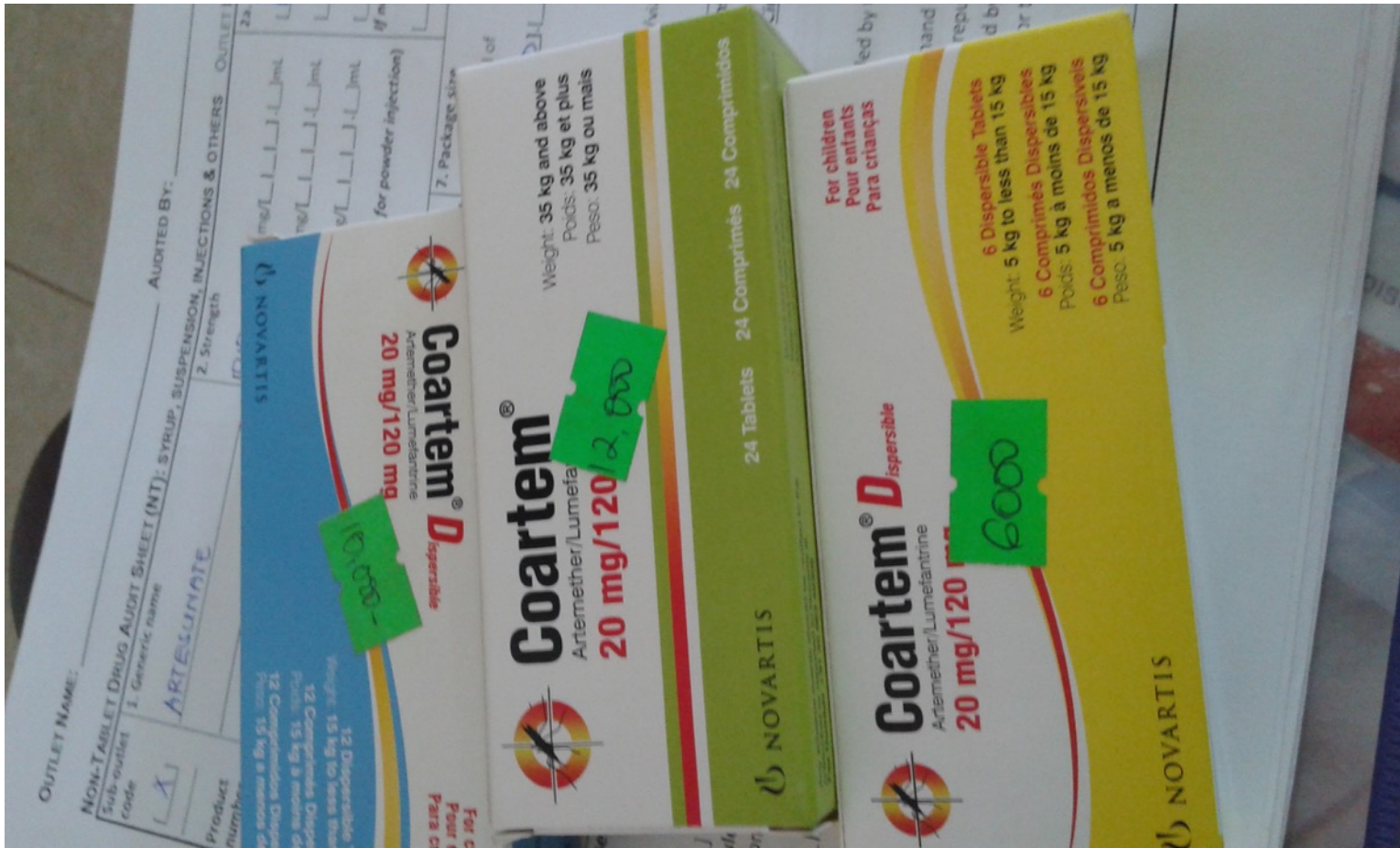




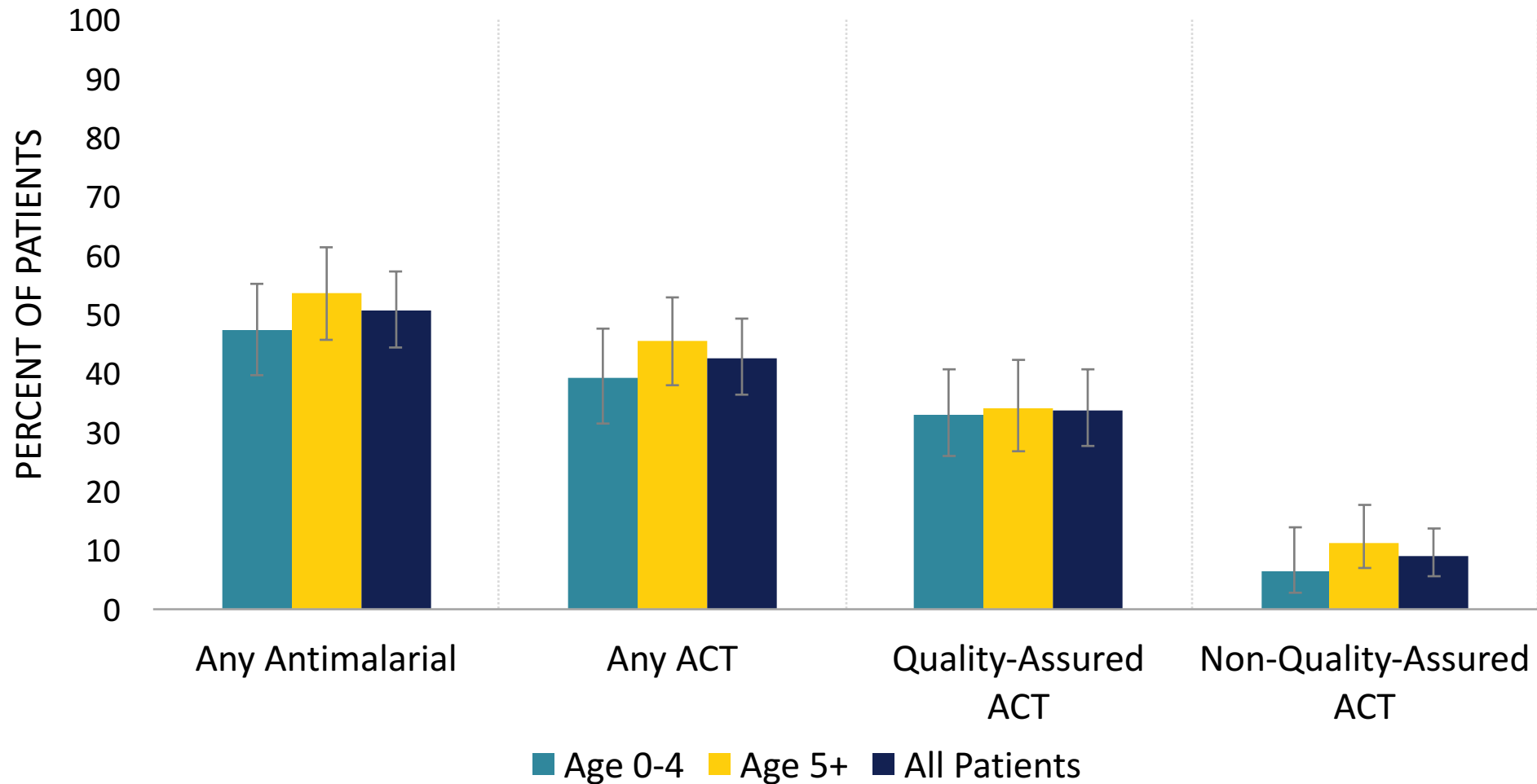
Summary:

- 1) Among patients who tested negative for malaria, 1 in 5 children under 5, and 1 in 10 older children and adults, received antimalarial treatment.
- 2) Antimalarial treatment for those who tested negative was usually ACT treatment.
- 3) The percentage of those who tested negative treated with an antibiotic was similar to that of those who tested positive and were treated with an antibiotic: about half.
- 4) Drug stores were more likely to treat negative cases, treating 1 in 4 with an antimalarial compared to facilities where 1 in 10 were treated with an antimalarial.

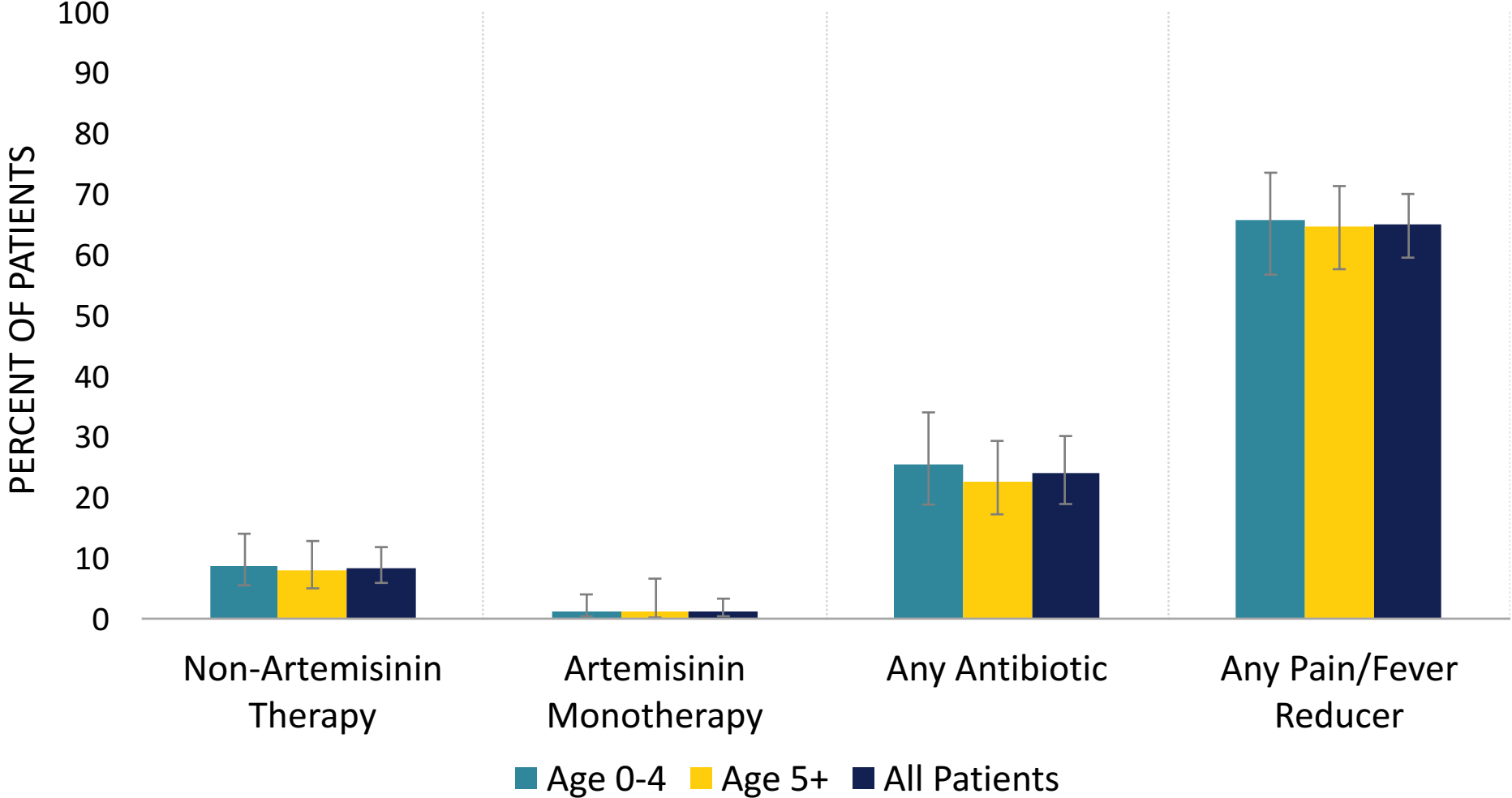
Did patients who were not tested for malaria receive antimalarial treatment?



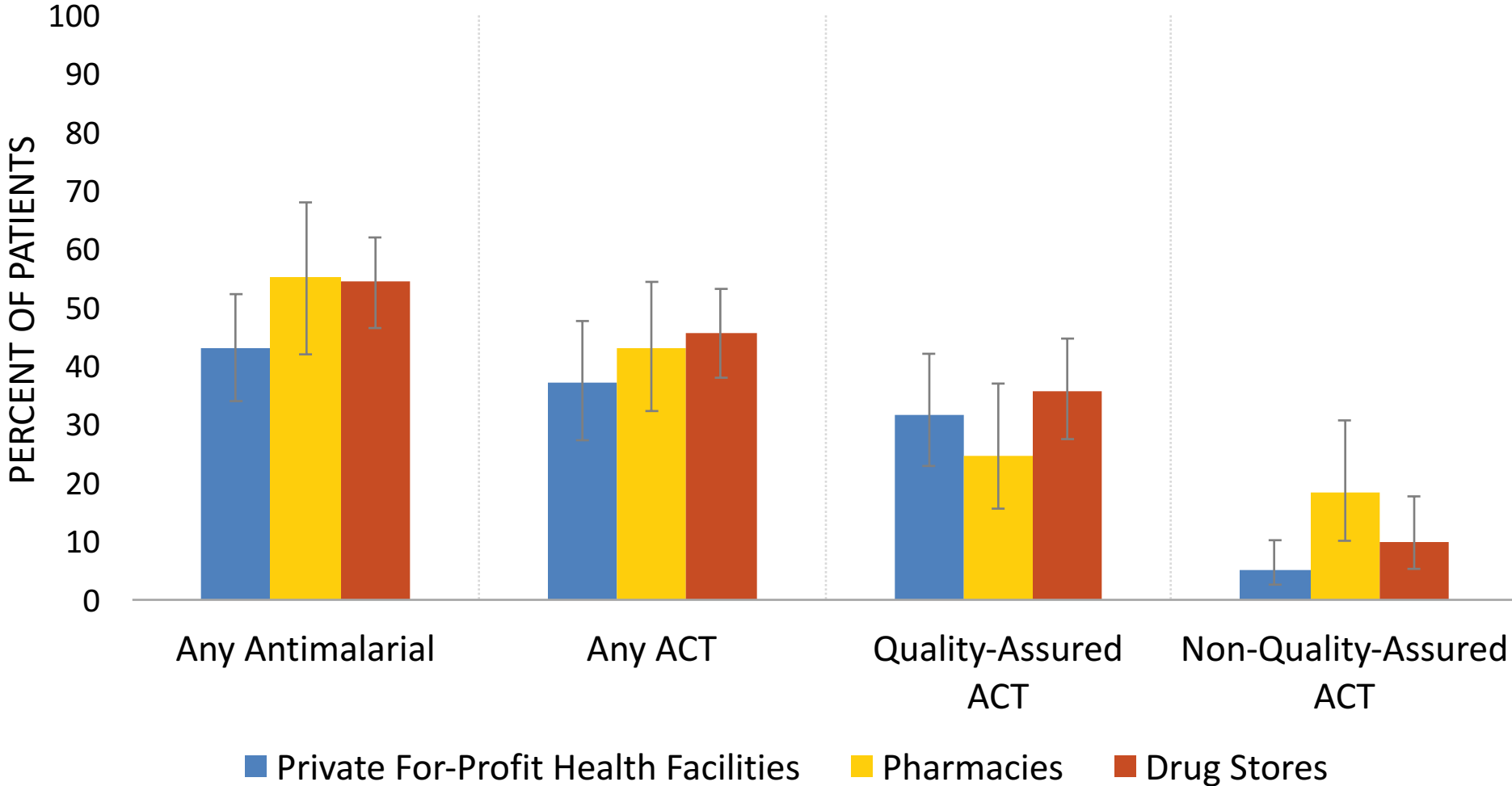
Treatments received by patients who were not tested for malaria, across patient age



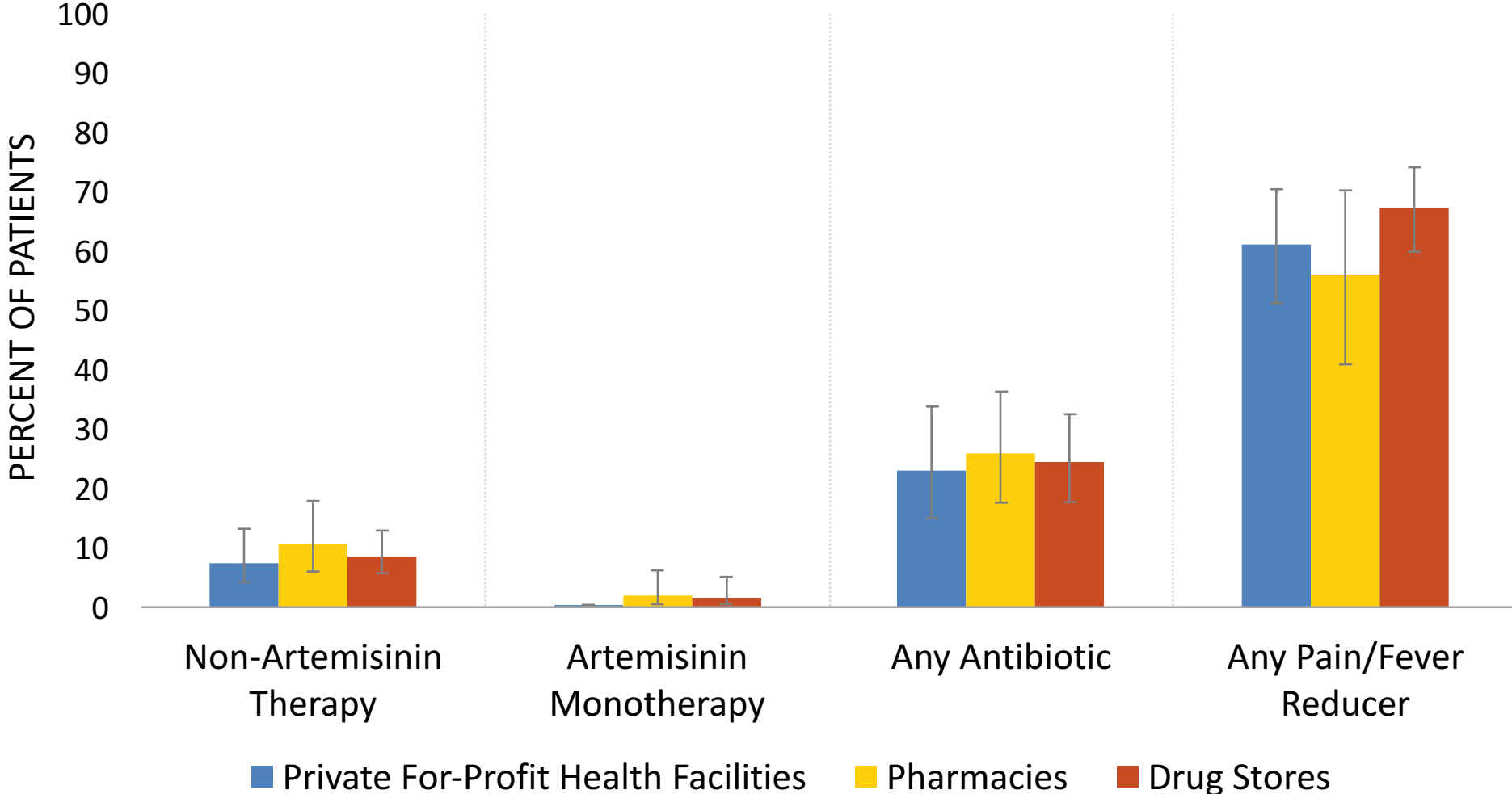
Treatments received by patients who were not tested for malaria, across patient age



Treatments received by patients who were not tested for malaria, across outlet type



Treatments received by patients who were not tested for malaria, across outlet type





Summary:

- 1) About half of patients not tested for malaria received antimalarial treatment, usually with an ACT.
- 2) Antimalarial treatment was higher for those not tested in drug stores and pharmacies (just over half) compared to facilities (less than half).
- 3) Antibiotic treatment was relatively low for this group—about 1 in 4.

DISCUSSION POINTS

- 1) Not all patients seeking fever treatment in the private sector can or will be tested for malaria. This is because some patients are not present at the consult and some have already been tested for malaria.
- 2) When patients are present, testing is moderately high in health facilities and drug stores, but very low in pharmacies.

- 3) Test-positive cases usually receive antimalarial treatment, but not 100% of the time. Only 60% received ACT treatment. Non-artemisinin therapies, like quinine and SP, are still used for test-positive cases, even in outlets that have ACT in stock. In health facilities, 1 in 5 test-positive patients received an artemether injection, despite not having symptoms of severe illness.

- 4) Test-negative patients usually do not receive antimalarial treatment. However, when they do receive treatment it is usually with an ACT, and this is more common for children under five and patients at drug stores.

- 5) Antibiotics are given to about half of patients who test either positive or negative for malaria.
- 6) About half of fever patients who are not tested for malaria receive antimalarial treatment, usually with an ACT.



Thank you



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population-services-international](https://linkedin.com/company/population-services-international)



Which patients were more likely to receive a malaria blood test?

Method:

- Logistic regression: unadjusted odds ratios for each factor tested

Factors tested:

- Outlet: outlet type and location (urban/rural)
- Patient: sex and age
- Provider: recent CM training
- Testing price (below median, median, and above)

Factors with a significant association with malaria testing included:

- Outlet type: patients at drug stores were 27.1 times more likely to receive a test compared with pharmacies, and patients at private for-profit health facilities were 108.7 times more likely to receive a test compared to pharmacies.
- Patient report of fever during the consultation (prompted or unprompted): patients who reported fever to the provider were 3.8 times more likely to receive a test compared to patients who did not report fever.
- Previous testing: patients who were not previously tested for malaria for the current illness were 3.4 times more likely to be tested compared with patients who had previously received a malaria test.

Factors that were not significantly associated with malaria testing included:

- Urban/rural location
- Patient sex
- Patient age
- Recent provider case management training
- Price of malaria testing (below median price versus median and above)

Factors with a significant association with quality-assured ACT treatment, among confirmed cases, included:

- Outlet type: patients in drug stores were 3.9 times more likely to receive quality-assured ACT treatment compared with patients in private facilities.
- Price of quality-assured ACT treatment: patients within outlets where one adult equivalent treatment dose (AETD) of quality-assured ACT treatment was below median price were 1.6 times more likely to receive quality-assured ACT treatment, as compared with outlets where one AETD was the median price or higher.

Factors that were not significantly associated with quality-assured ACT treatment included:

- Urban/rural location
- Patient sex
- Patient age
- Patient report of fever during the consultation (prompted or unprompted)
- Previous treatment-seeking and previous antimalarial treatment for the current illness
- Recent provider case management training
- Provider knowledge of the national first-line treatment
- Provider belief that ACT is most effective for malaria infection