

Cambodia 2009 - 2015 Outlet Survey Trends

NMCP
PSK population services khmer
ACTwatch Evidence for Malaria Medicine Policy
psi Healthy lives. Measurable results.

Presentation outline

- Background
- ACTwatch project
- Outlet survey methods
- Results
  - Antimalarial availability
  - Antimalarial and diagnostic market composition
  - Antimalarial availability by class of drug
  - Antimalarial market share
  - Diagnostic blood testing availability
  - Frequency of diagnostic blood testing and antimalarial distribution/provision
  - Diagnostic market share
  - Provider knowledge
  - Provider reported supervision, support and case load reporting
- Progress against the MEAF
- Conclusions

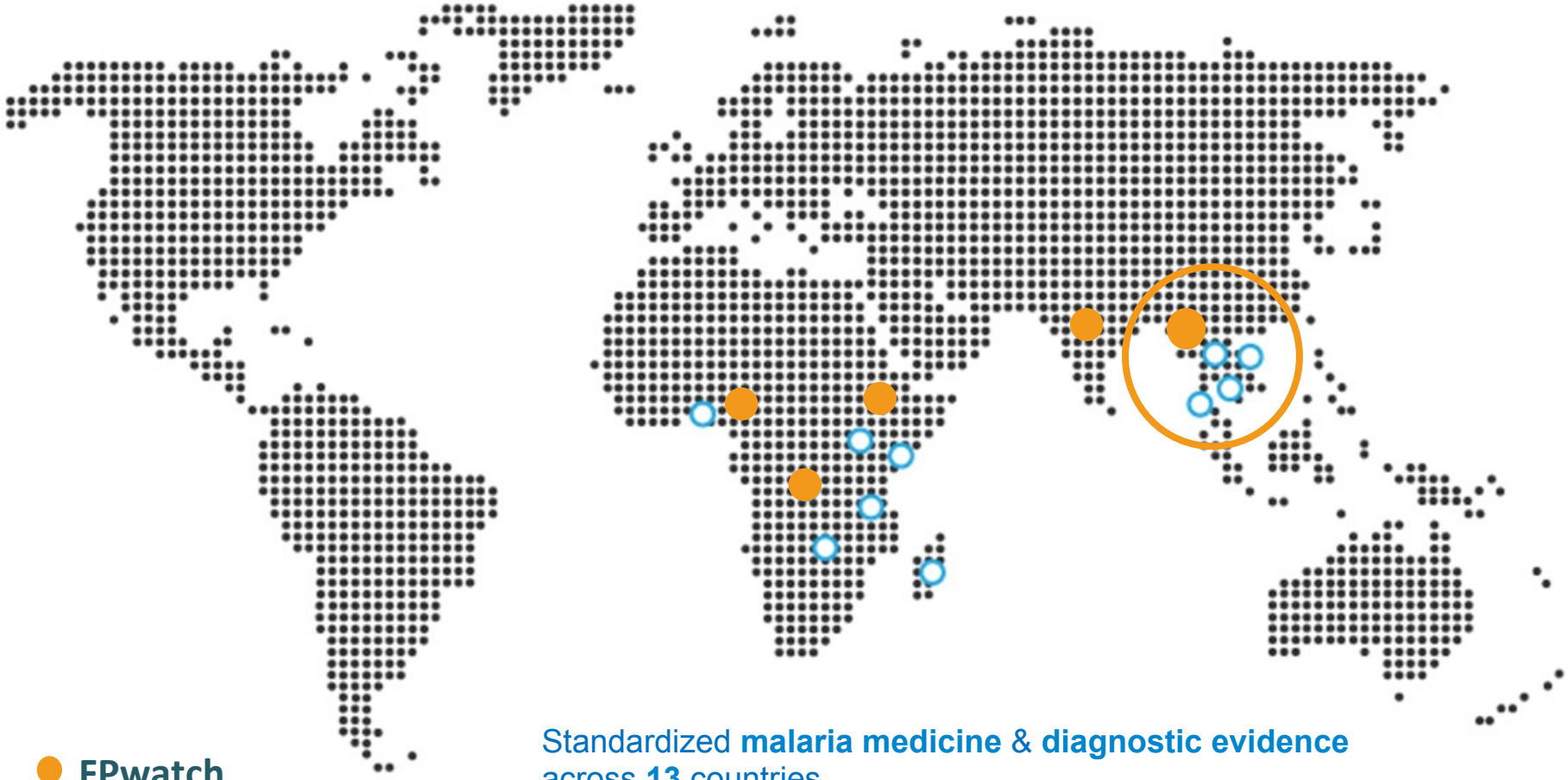
Background



ACTwatch Project

Evidence for Malaria Medicines Policy

ACTwatch countries



● **FPwatch**

Standardized **malaria medicine** & **diagnostic evidence** across **13** countries

BILL & MELINDA GATES foundation

UNITAID

Department for International Development

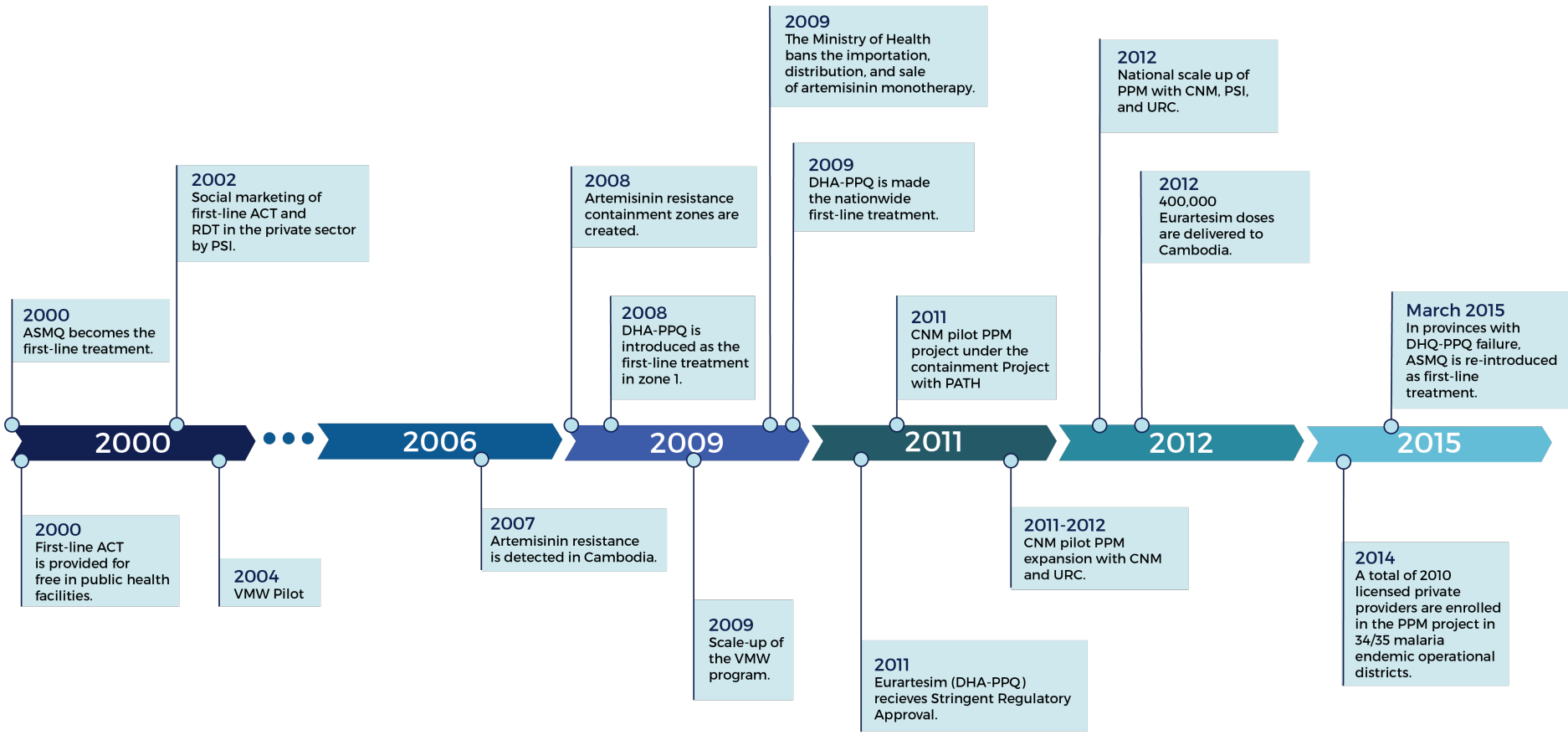
UKaid from the British people

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Cambodia Context

Timeline of events 2000-2015





Cambodia Malaria Elimination Action Framework 2016-2020

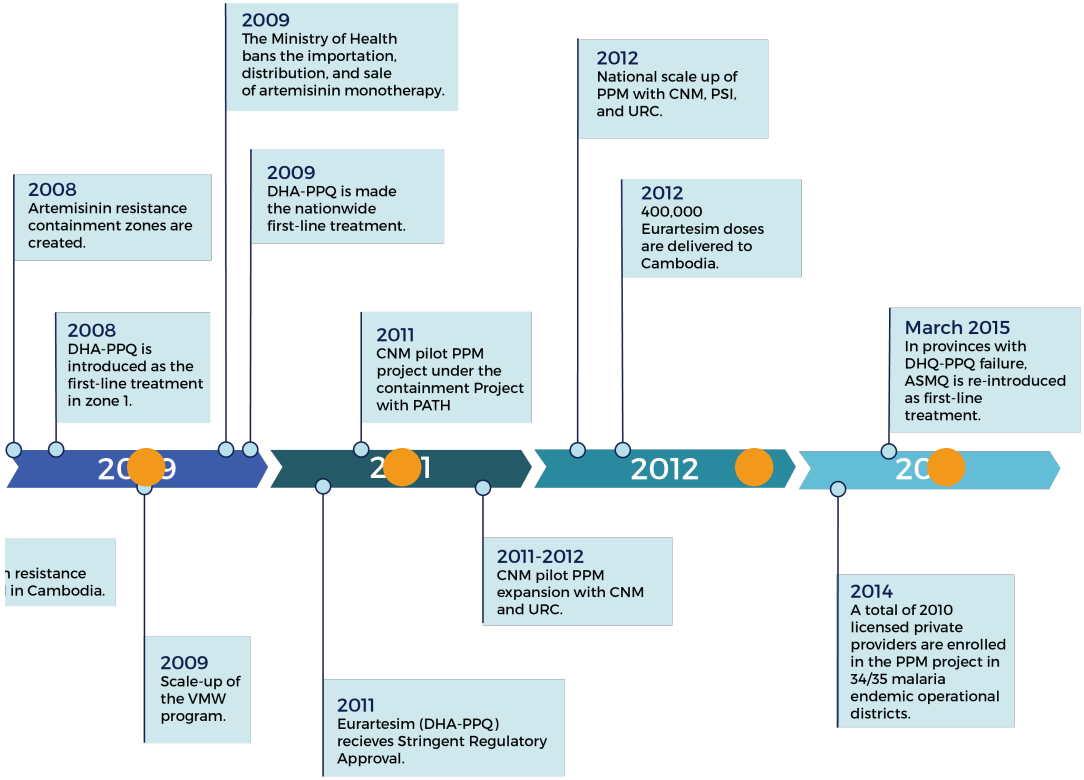
Kingdom of Cambodia
Ministry of Health

ACTwatch relevancy in Cambodia

- Various strategies have been implemented over the years to improve case management in the public and private sector in Cambodia
- Future strategies are focused on the countries efforts to eliminate drug resistance by 2020
- ACTwatch evidence helps to monitor these strategies & to identify where adjustments to policy, strategy and funding decisions may be needed.

ACTwatch in Cambodia

- National Outlet Surveys
  - 2009
  - 2011
  - 2013
  - 2015





Outlet Survey Methods

Study population

Outlets with antimalarials or with malaria blood testing

or

Outlets that stocked an antimalarial in the past three months

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What is an outlet?

Public Health Facility
Village Malaria Worker (VMW)
Private Not For-Profit Facility

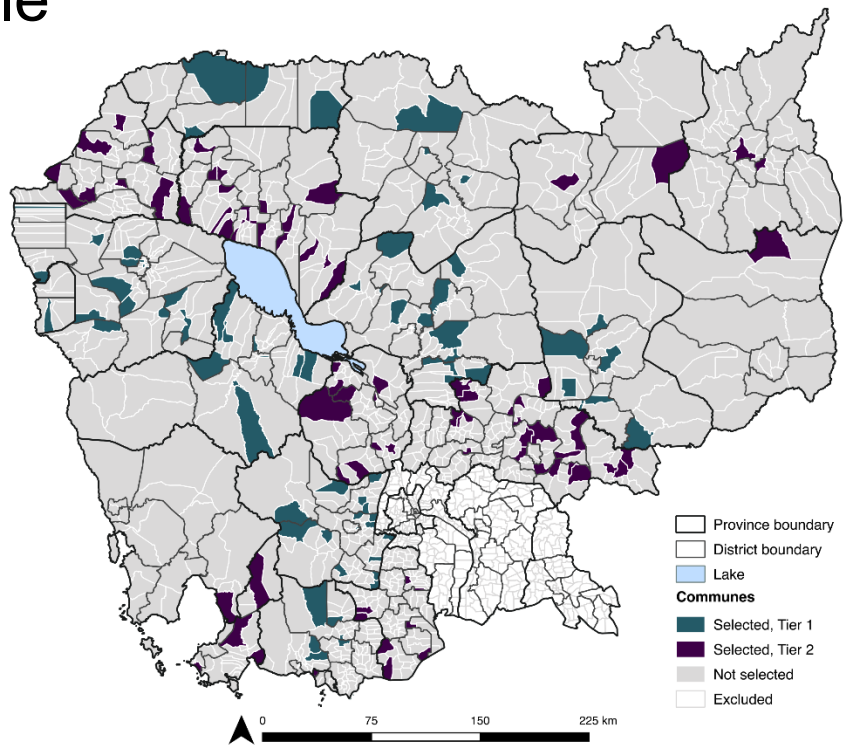
Private For-Profit Facility
Pharmacy
Drug Store

General Retailer
Itinerant Drug Vendor



What areas were selected?

- Representative sample (communes)
- Stratification
  - Tier 1 and Tier 2
  - 80 communes per Domain (160 total)



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How were outlets selected?

1) Complete census of all potentially eligible outlets





2) Screen for antimalarials in stock or malaria blood testing availability

3) When products are in stock: product audit



4) Product audit

TABLET, SUPPOSITORY & GRANULE DRUG AUDIT SHEET (TSG) OUTLET ID: [__|__|-|__|__|-|__|__|__|-|__|__|__]

Sub-outlet code [__|__] Product number [__|__]	1. Generic name [__|__]	2. Strength [__|__|__].[__]mg [__|__|__].[__]mg [__|__|__].[__]mg	2a. Is this base strength? [__] 1 = Yes 0 = No 8 = Don't know [__] *If no, specify salt:* [__]	3. Dosage form/formulation 1 = Tablet 2 = Suppository 3 = Granule [__]	4. Brand name *(Include weight and age information)*

5. Manufacturer	6. Country of manufacture [__|__|__]	7. Package size There are a total of [__|__|__|__] tablets/ suppositories/ granule sachets in each: 1 = Package 2 = Pot/tin [__]	8. Is product a fixed-dose combination (FDC) 1 = Yes 0 = No 8 = Don't know [__]	9. Does product have the Green leaf logo? 1 = Yes 0 = No 8 = Don't know [__]	10. Amount sold/distributed in the last 7 days to individual consumers (*Record # of packages / tins described in Q7 OR record the total # of tablets / suppositories / granule packs sold*) This outlet sold [__|__|__] **packages/ tins** in the last 7 days **OR** This outlet sold [__|__|__] **tablets/ suppositories or granule sachets** in the last 7 days ***Not applicable = 995; Refused = 997; Don't know = 998***	11. Stocked out at any point in the past 3 months? 1 = Yes 0 = No 8 = Don't know [__]

12. Retail selling price [__|__|__] **tablets, suppositories or granule sachets** cost an individual customer [__|__|__|__|__] USH ***Free = 00000 Refused = 99997 Don't know = 99998***	13. Wholesale purchase price For the outlet's most recent wholesale purchase [__|__|__|__] **tablets, suppositories or granule sachets** cost [__|__|__|__|__|__] USH ***Free = 000000 Refused = 999997 Don't know = 999998***

14. Why do you stock this medicine [SHOW PRODUCT]?
Do not read list.
Circle ALL responses given

Free supply	A
Profitable	B
Recommended by the government	C
Low price	D
Customer demand or preference	E
Positive brand reputation	F
Often prescribed by doctors	G
Most effective for treating malaria	H
Don't know	X
Other	Z
specify [_____]	

15. Comments

Tablet Audit Sheet [__|__] of [__|__]

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Antimalarial product in stock

Formulation (tablet, syrup, injection, etc.)

Brand/generic names

Strength

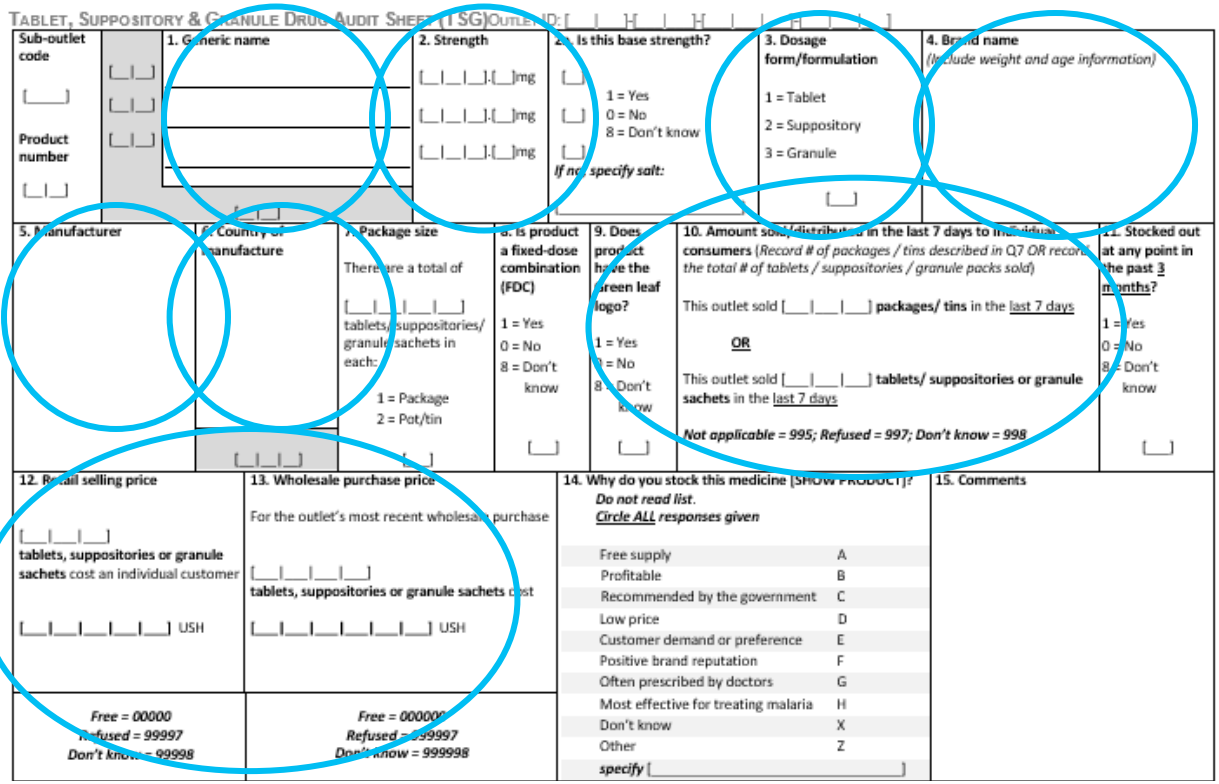
Manufacturer

Country of manufacture

Amount distributed in the past week

Retail & wholesale price

mRDT product in stock



TABLET, SUPPOSITORY & GRANULE DRUG AUDIT SHEET (TSG) OUTLET ID: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

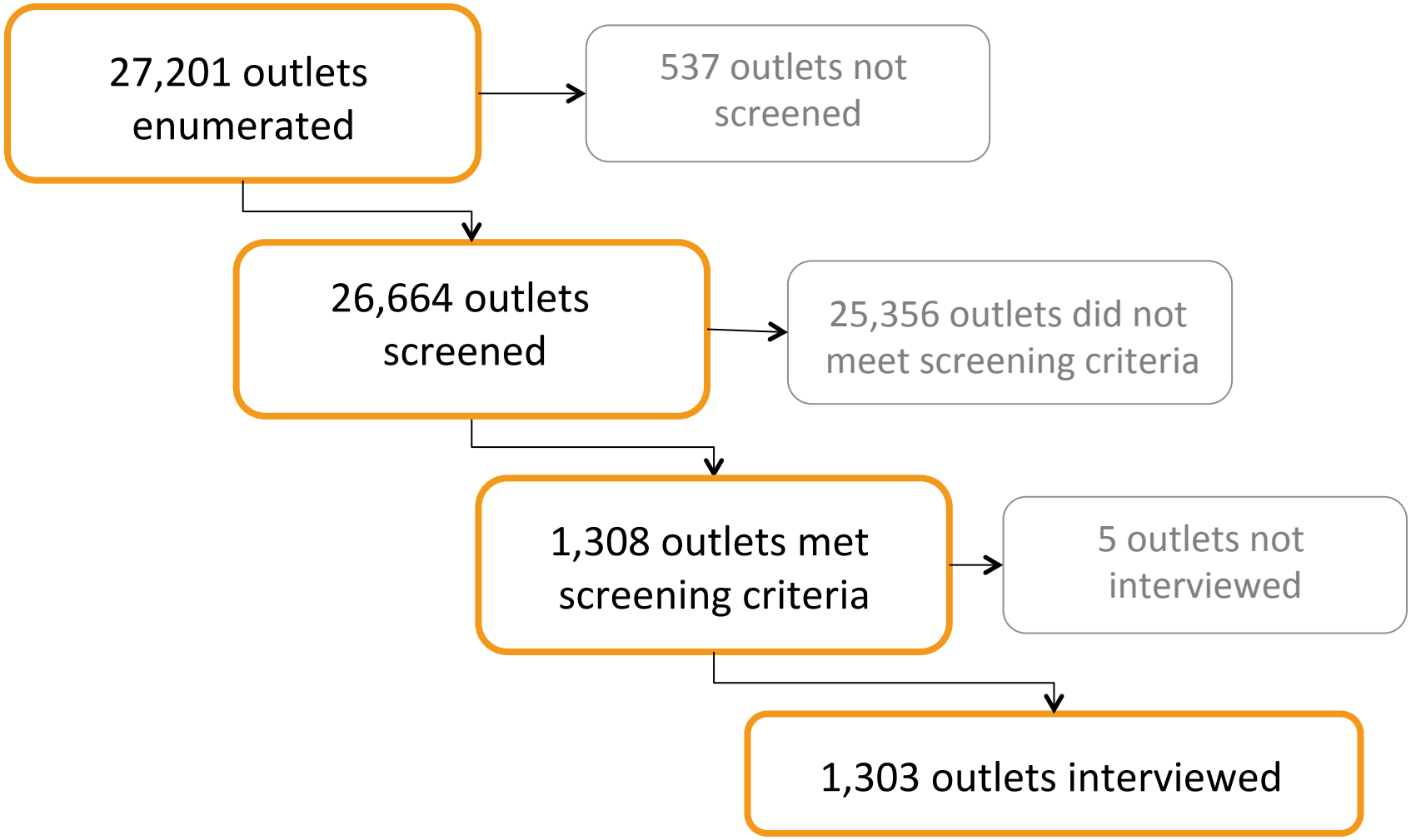
Sub-outlet code [ ][ ][ ] / Product number [ ][ ]	1. Generic name [ ][ ] [ ][ ] [ ][ ]	2. Strength [ ][ ][ ].[ ]mg [ ][ ][ ].[ ]mg [ ][ ][ ].[ ]mg	2a. Is this base strength? [ ] 1 = Yes 0 = No 8 = Don't know [ ] *If not, specify salt:*	3. Dosage form/formulation 1 = Tablet 2 = Suppository 3 = Granule [ ]	4. Brand name *(Include weight and age information)*
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12. Retail selling price [ ][ ][ ] tablets, suppositories or granule sachets cost an individual customer [ ][ ][ ][ ][ ][ ] USH *Free = 00000 Refused = 99997 Don't know = 99998*	13. Wholesale purchase price For the outlet's most recent wholesale purchase [ ][ ][ ][ ][ ] tablets, suppositories or granule sachets cost [ ][ ][ ][ ][ ][ ] USH *Free = 000000 Refused = 999997 Don't know = 999998*	14. Why do you stock this medicine [SHOW PRODUCT]? *Do not read list. Circle ALL responses given*		15. Comments
		Free supply	A	
		Profitable	B	
		Recommended by the government	C	
		Low price	D	
		Customer demand or preference	E	
		Positive brand reputation	F	
		Often prescribed by doctors	G	
		Most effective for treating malaria	H	
		Don't know	X	
		Other	Z	
		specify [ ]		



Outlet Survey Results
2009, 2011, 2013, 2015

Outlet survey sample in 2015



Outlets in the sample

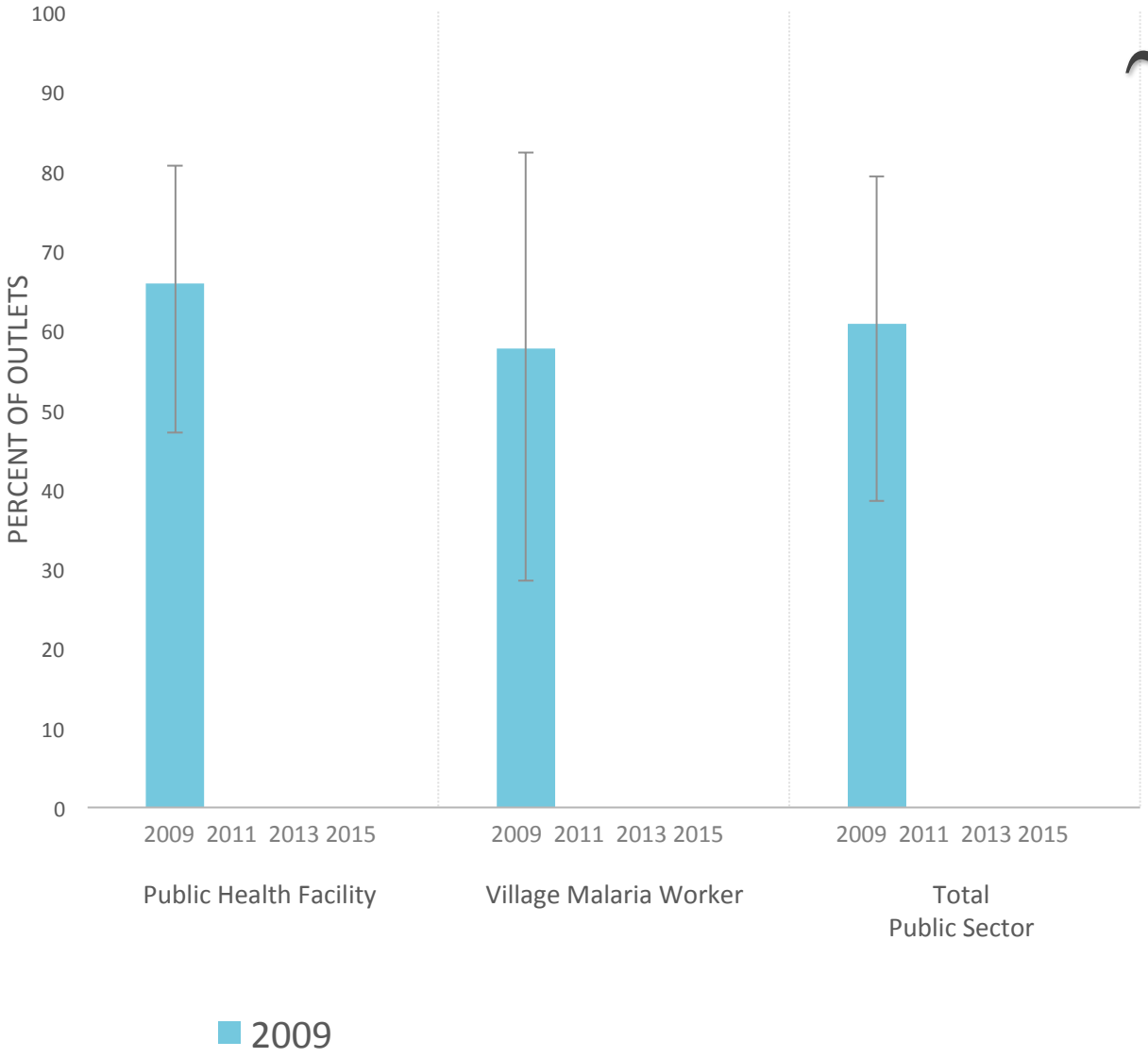
1,303	number of outlets in the sample in 2015
858	number of outlets with antimalarials
254	stocked in the last three months but not on the day of survey
191	stocked malaria diagnostic tests but not antimalarials

What is the availability of antimalarials among the outlets?



Are antimalarials available in the public sector?

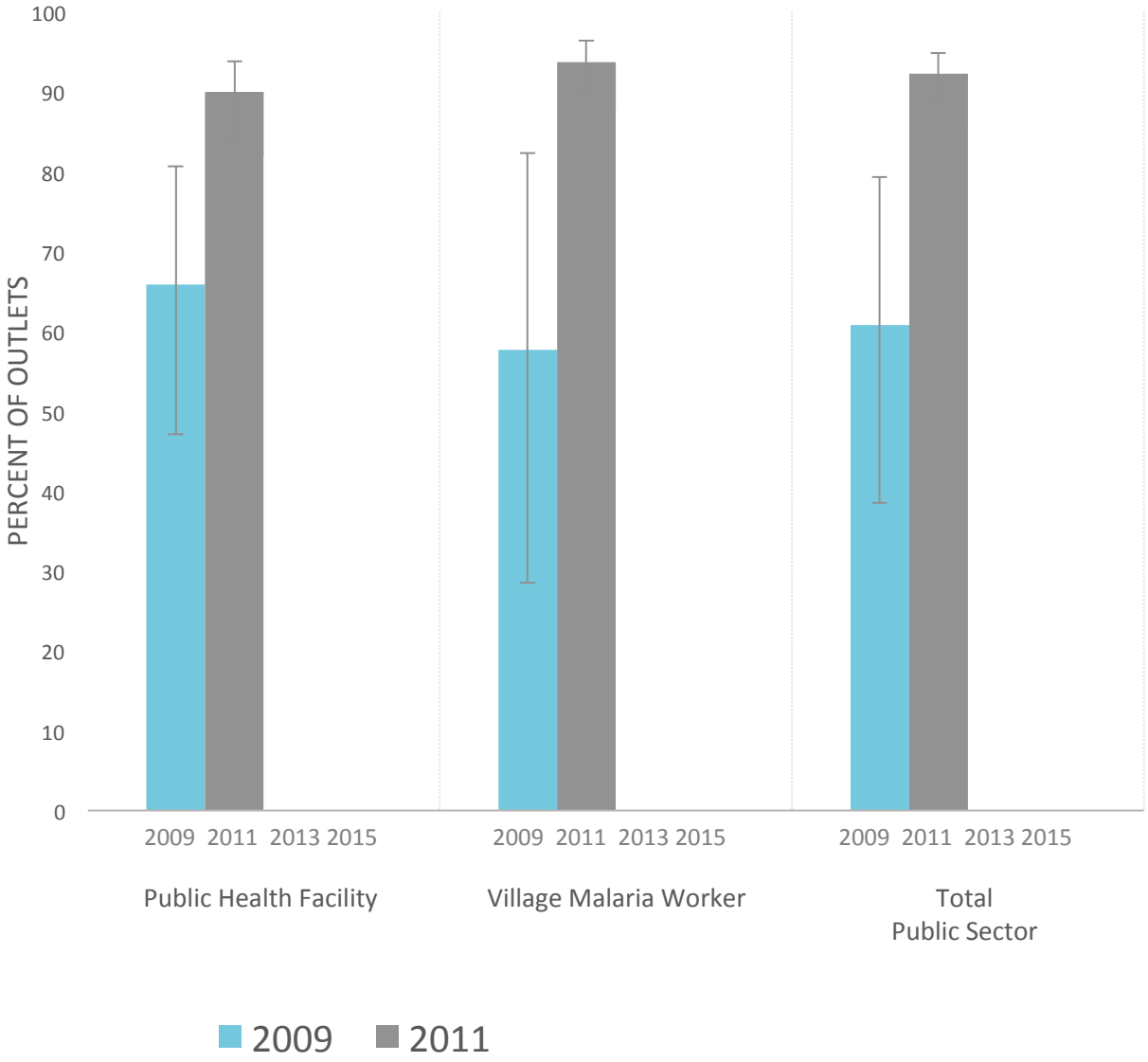
Availability of any antimalarial: public sector



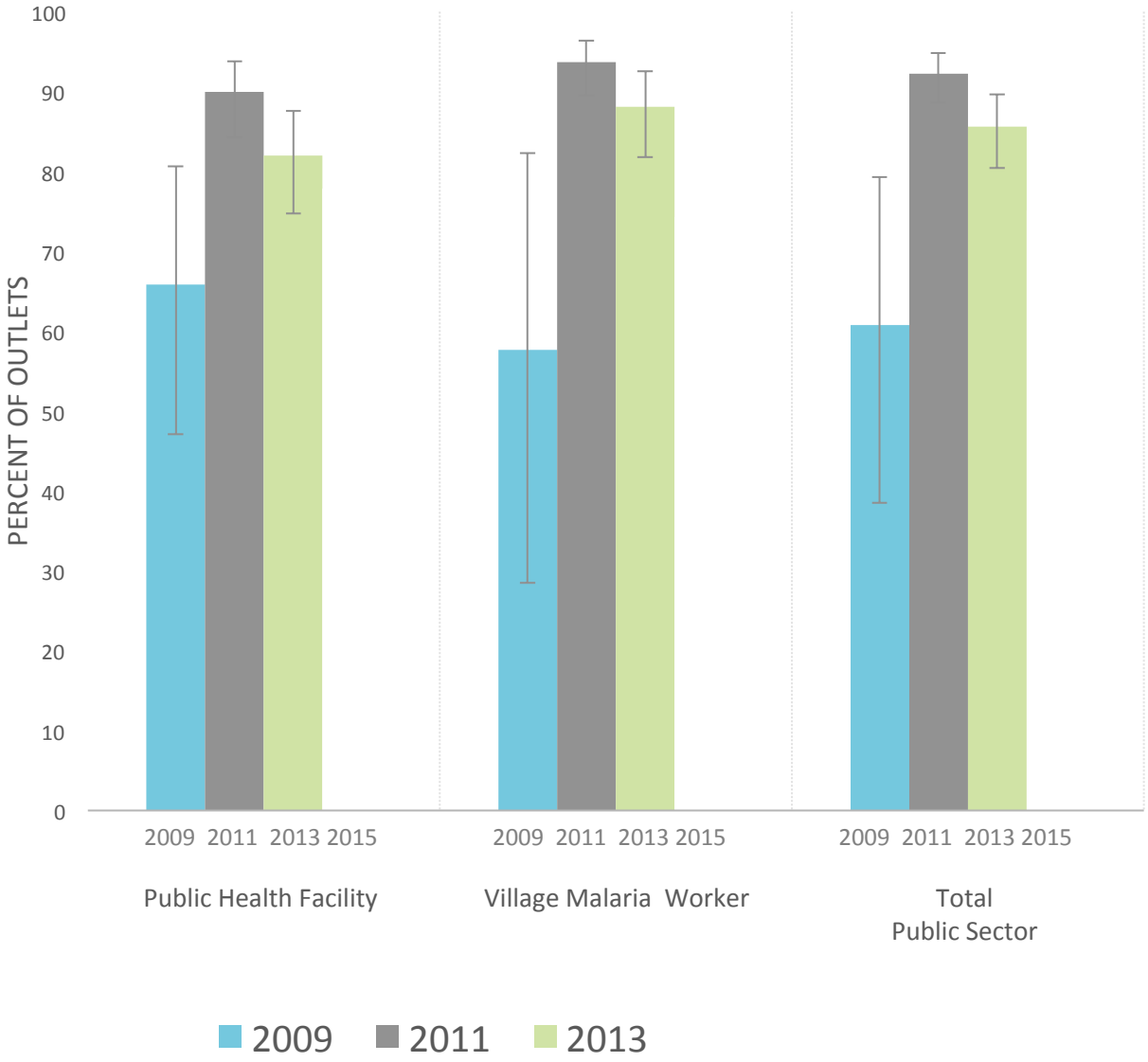
~60% Antimalarial availability in 2009

Similar between PHF & VMW

Availability of any antimalarial: public sector

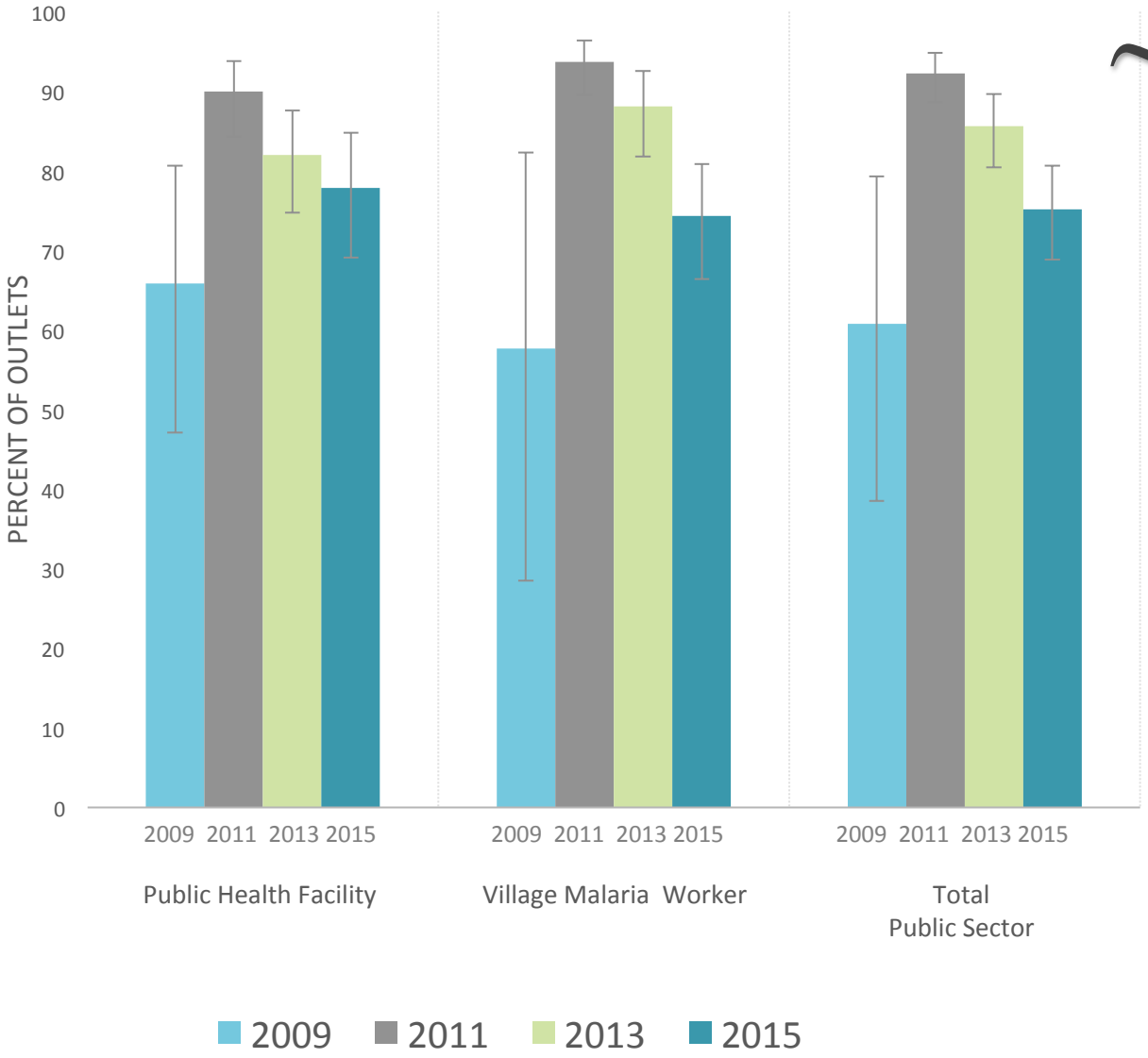


Availability of any antimalarial: public sector



Slight declines observed from 2011

Availability of any antimalarial: public sector



~75% Antimalarial availability in 2015

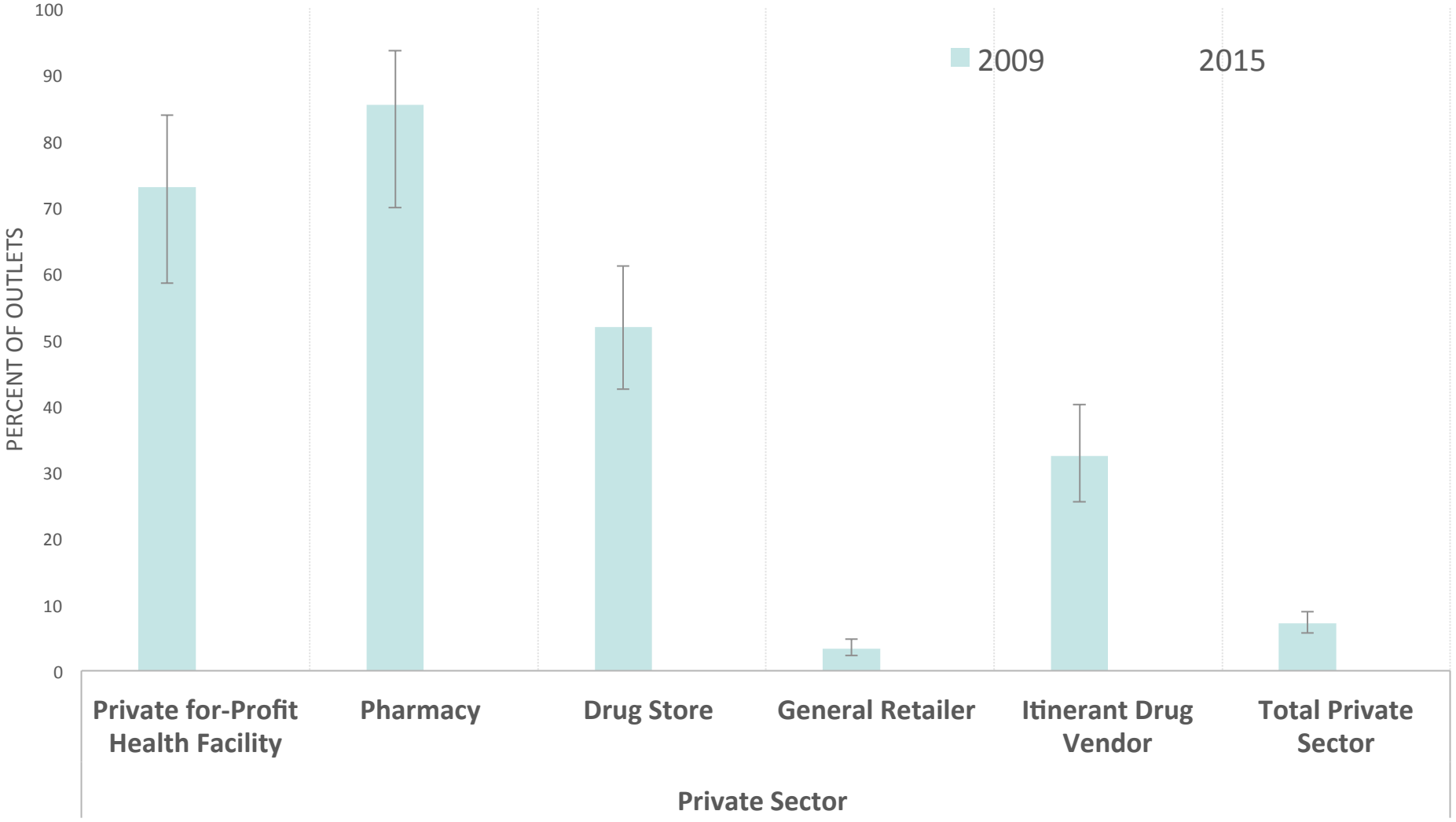
Slight declines observed from 2011 & 2013

Overall increase between 2009 & 2015



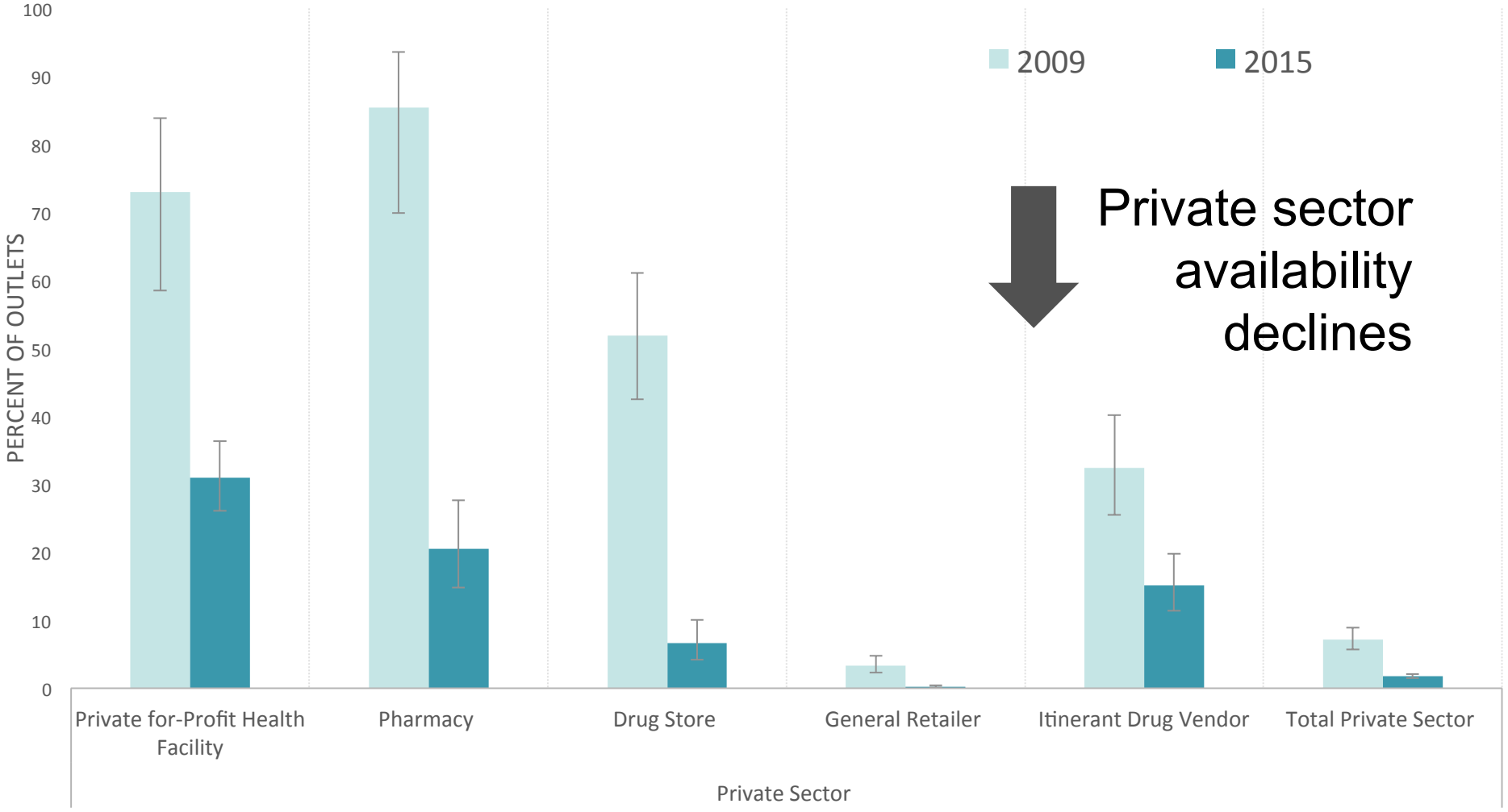
How has the private sector availability changed over time?

Availability of any antimalarial: private sector



Among all screened outlets across survey rounds

Availability of any antimalarial: private sector

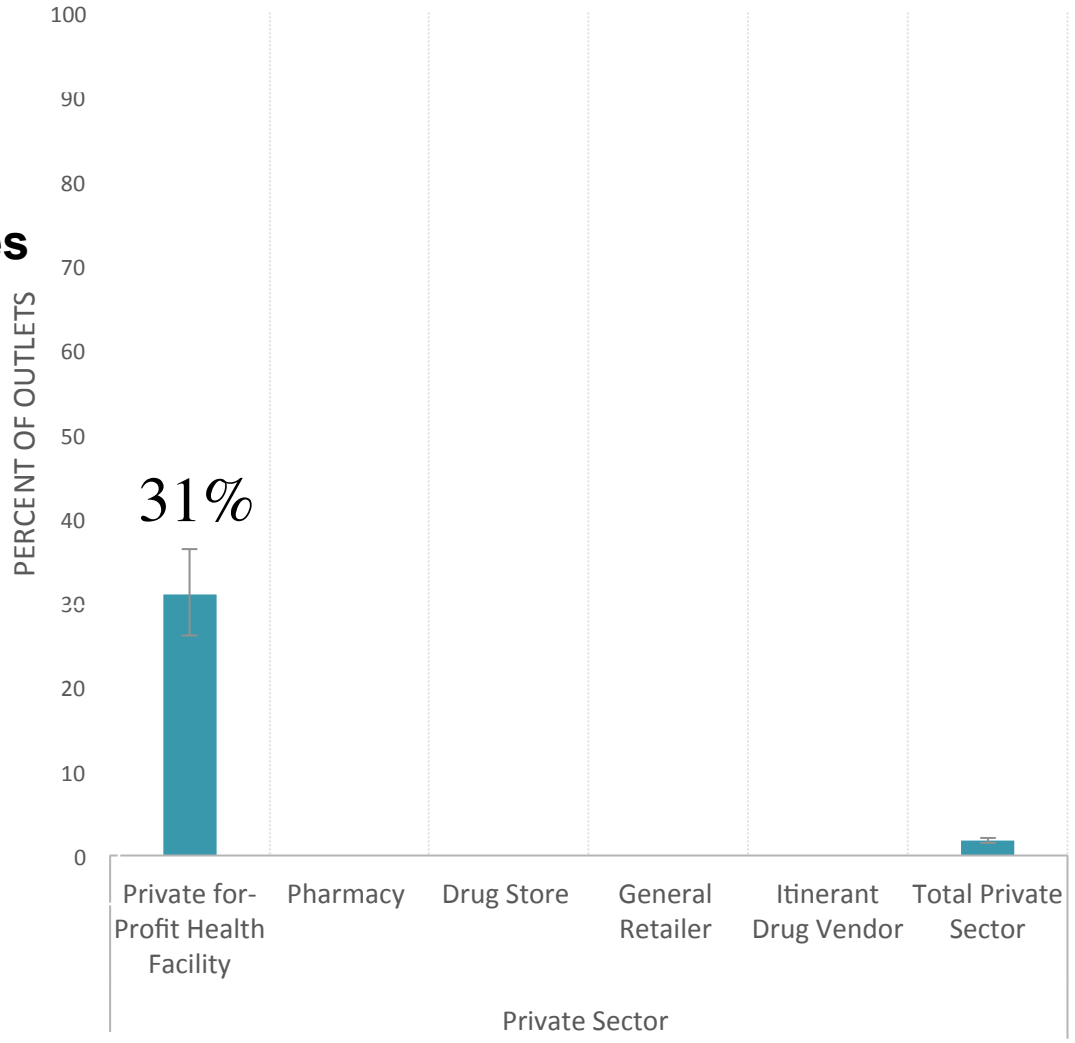


Private sector sample size in 2015



Availability of any antimalarial in 2015: private sector

688 **Private for-profit facilities**

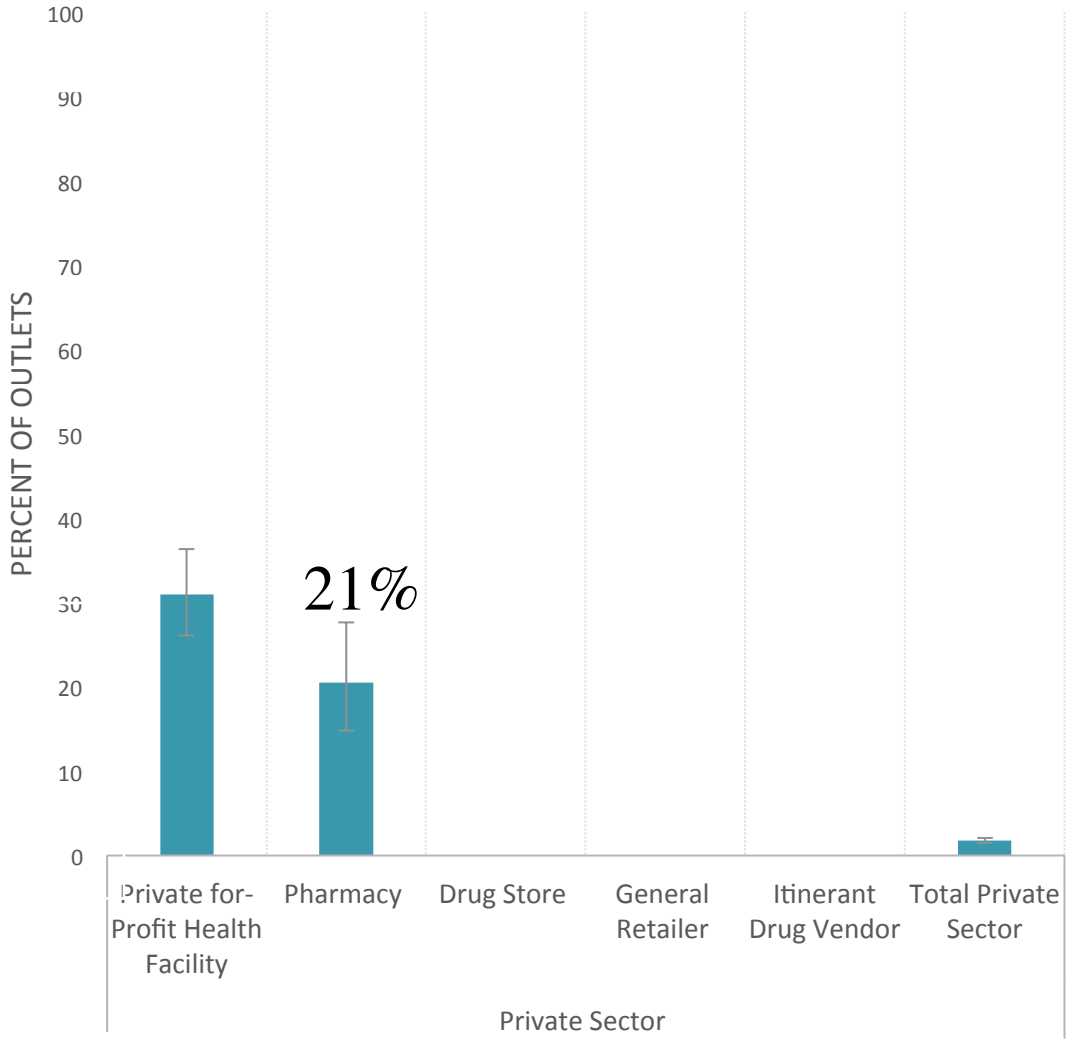


Among all screened outlets across survey rounds

Availability of any antimalarial in 2015: private sector

688 Private for-profit facilities

290 **Pharmacies**



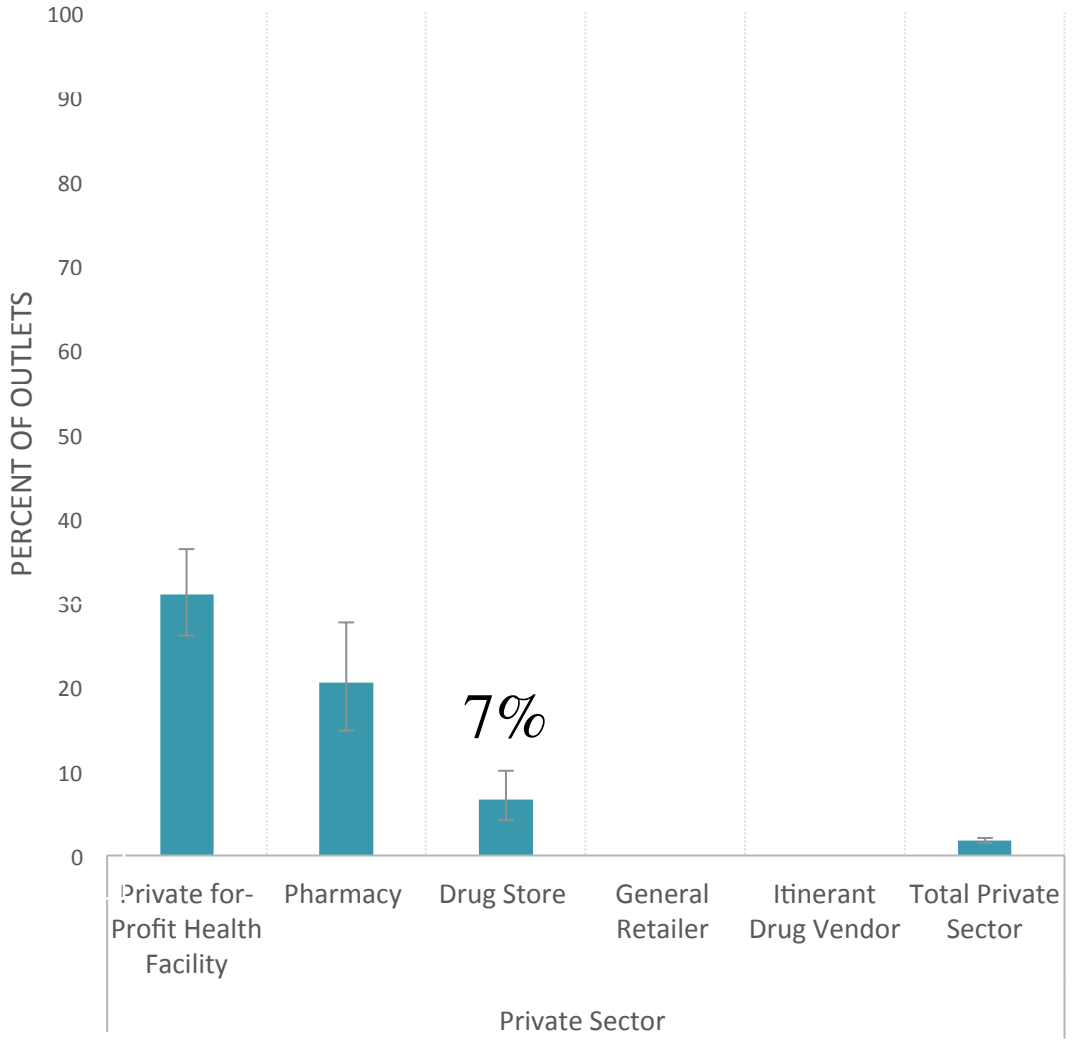
Among all screened outlets across survey rounds

Availability of any antimalarial in 2015: private sector

688 Private for-profit facilities

290 Pharmacies

338 **Drug Stores**



Among all screened outlets across survey rounds

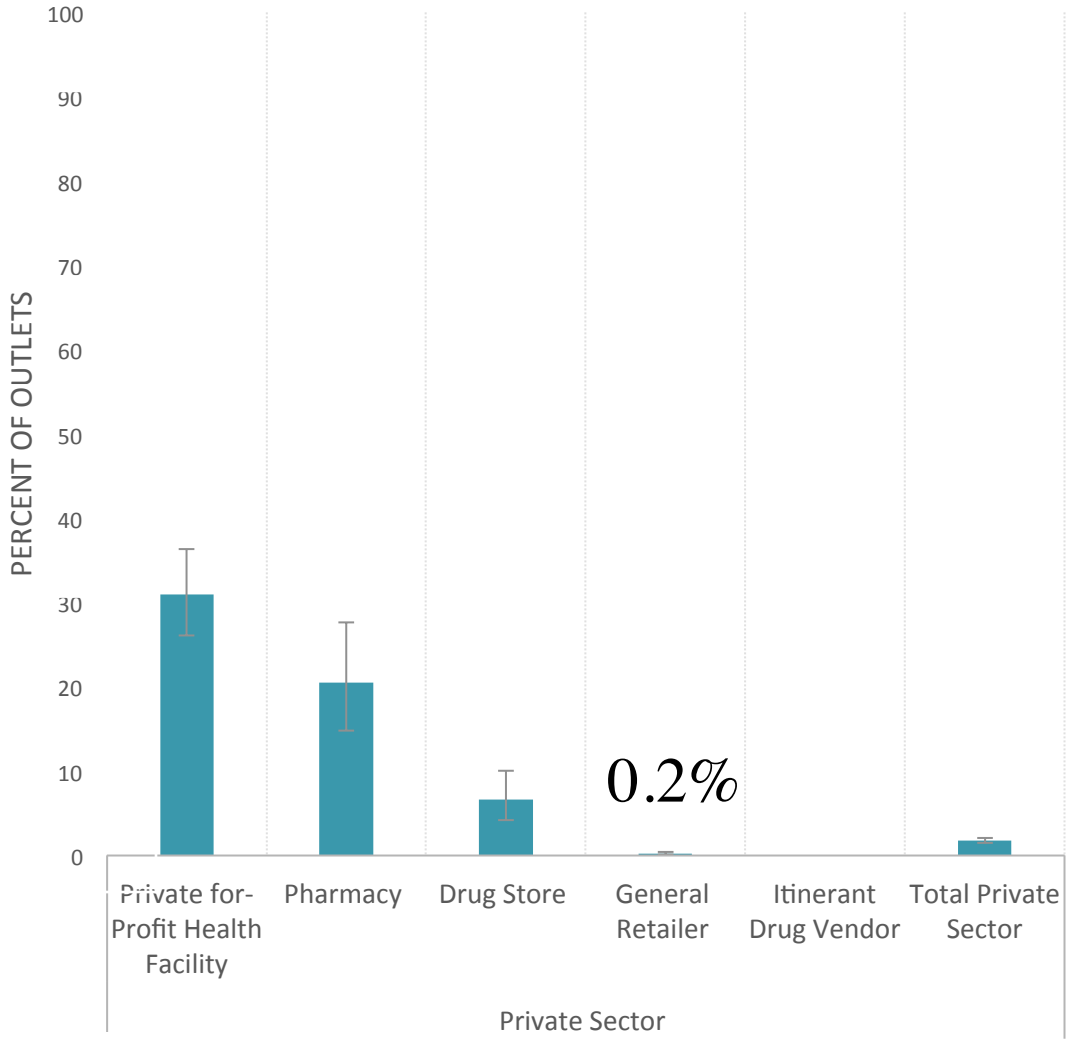
Availability of any antimalarial in 2015: private sector

688 Private for-profit facilities

290 Pharmacies

338 Drug Stores

23840 **General Retailers**



Among all screened outlets across survey rounds

Availability of any antimalarial in 2015: private sector

688 Private for-profit facilities

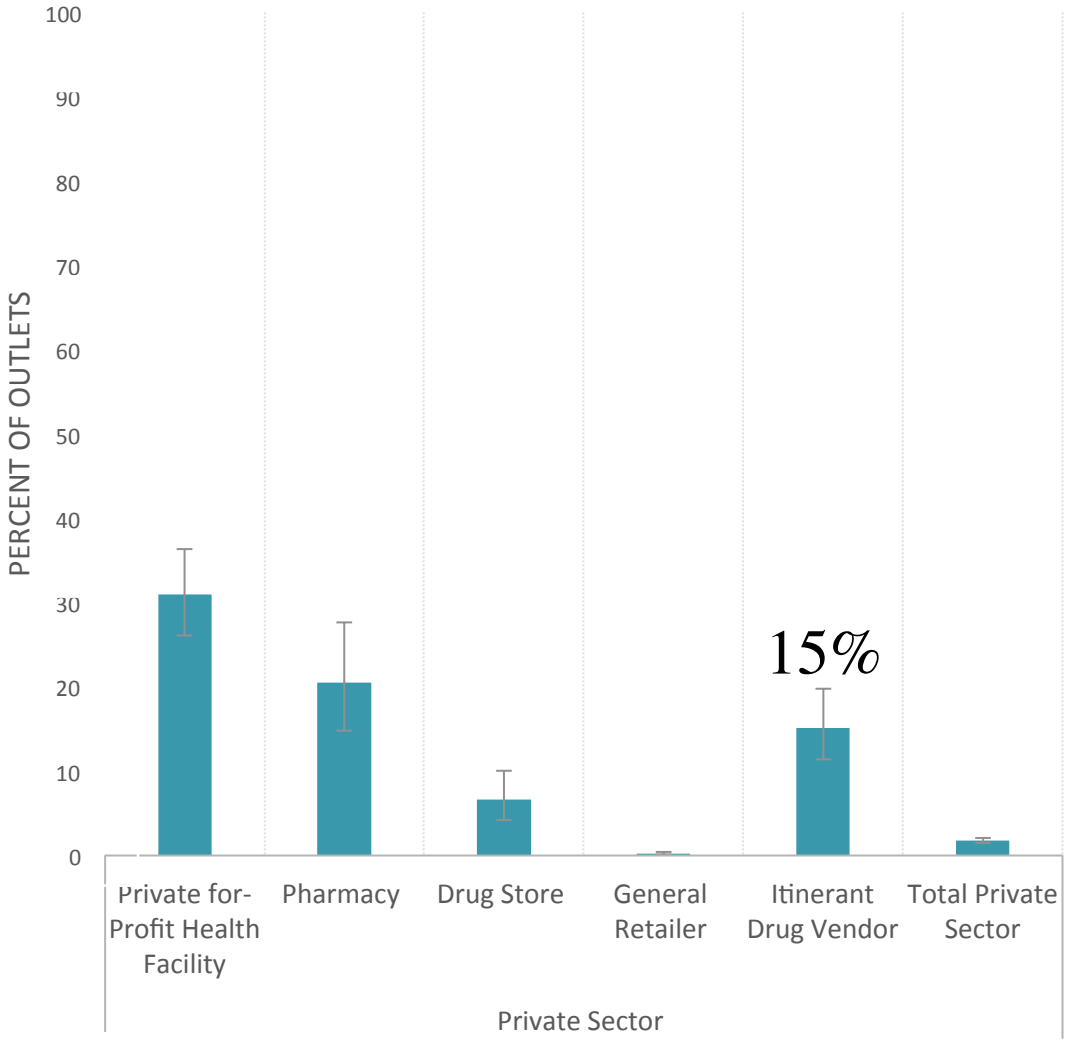
290 Pharmacies

338 Drug Stores

23840 General Retailers

924 **Itinerant Drug Vendors**

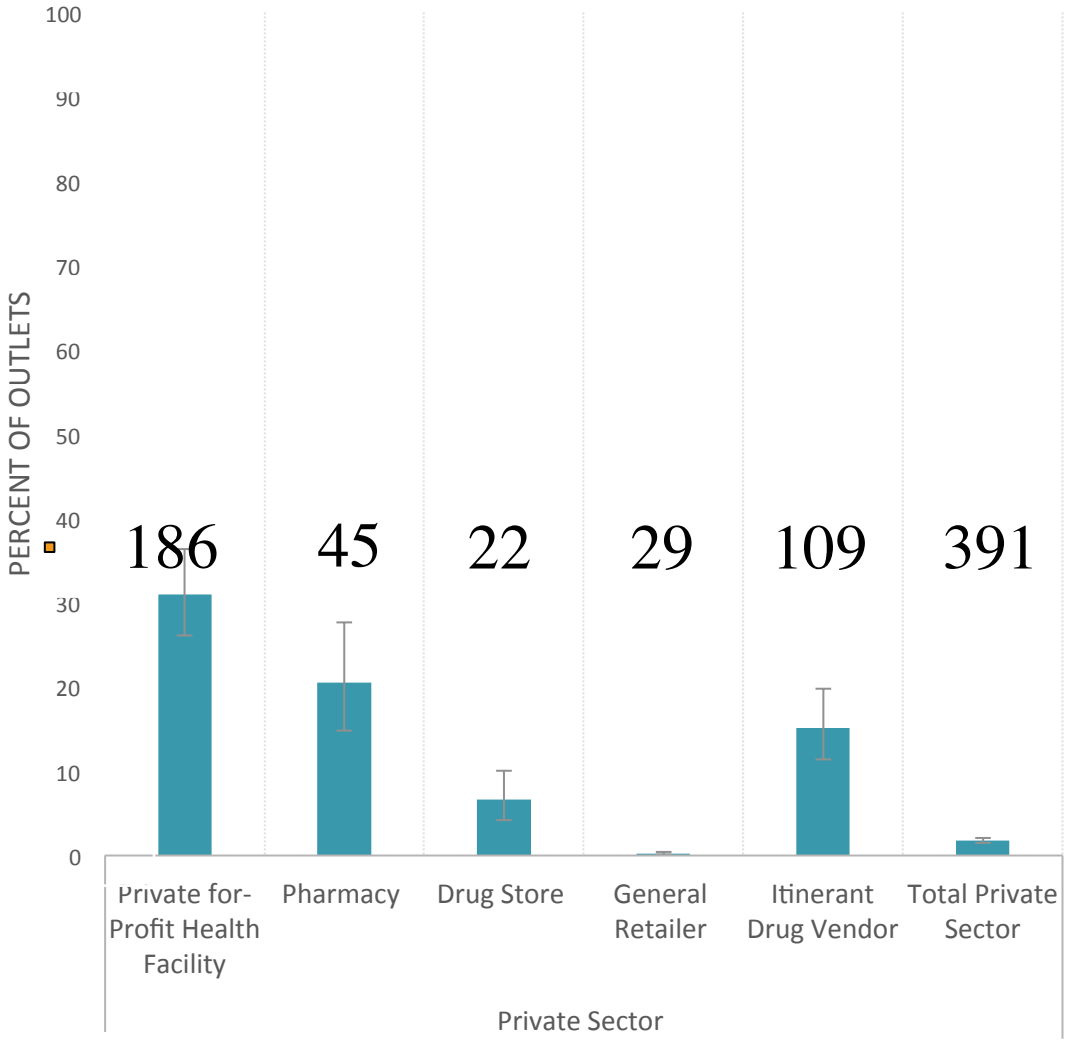
26060 Total Private Sector



Among all screened outlets across survey rounds

Availability of any antimalarial in 2015: private sector

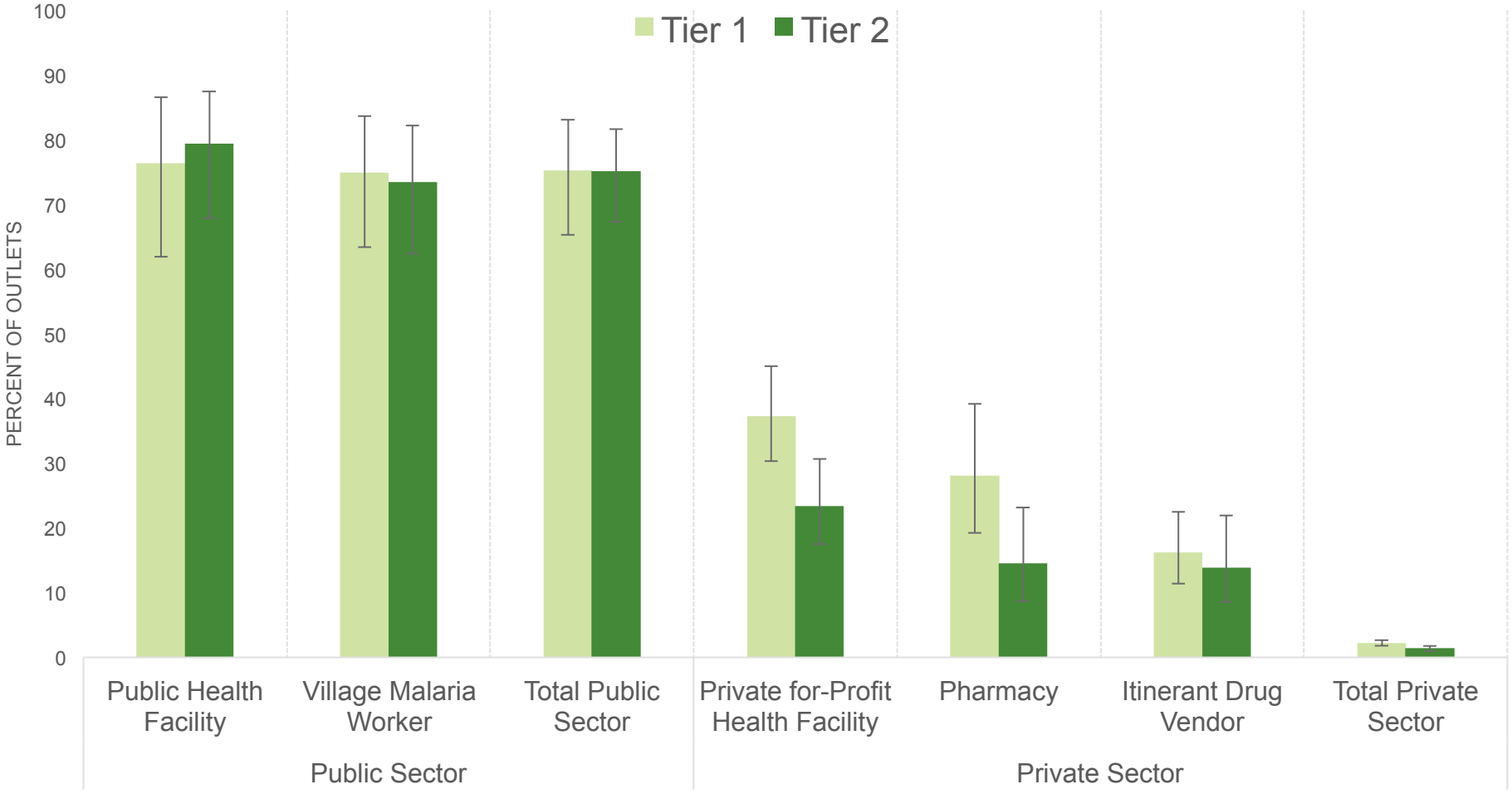
688	Private for-profit facilities
290	Pharmacies
338	Drug Stores
23840	General Retailers
924	Itinerant Drug Vendors
26060	Total Private Sector





Are there differences in antimalarial availability in Tier 1 and Tier 2?

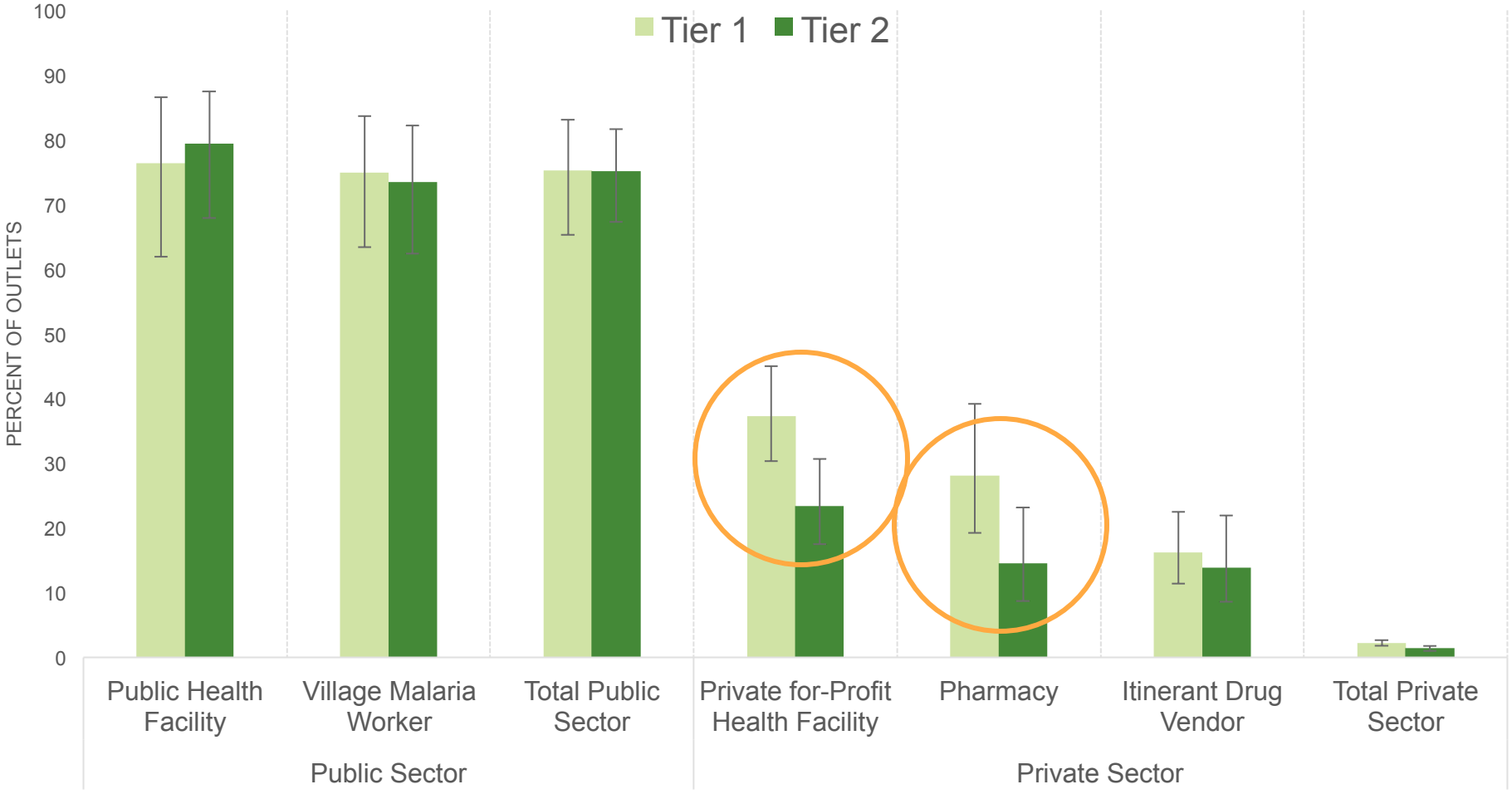
Availability of any antimalarial: by Tier



Little variation between Tiers

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Availability of any antimalarial: by Tier



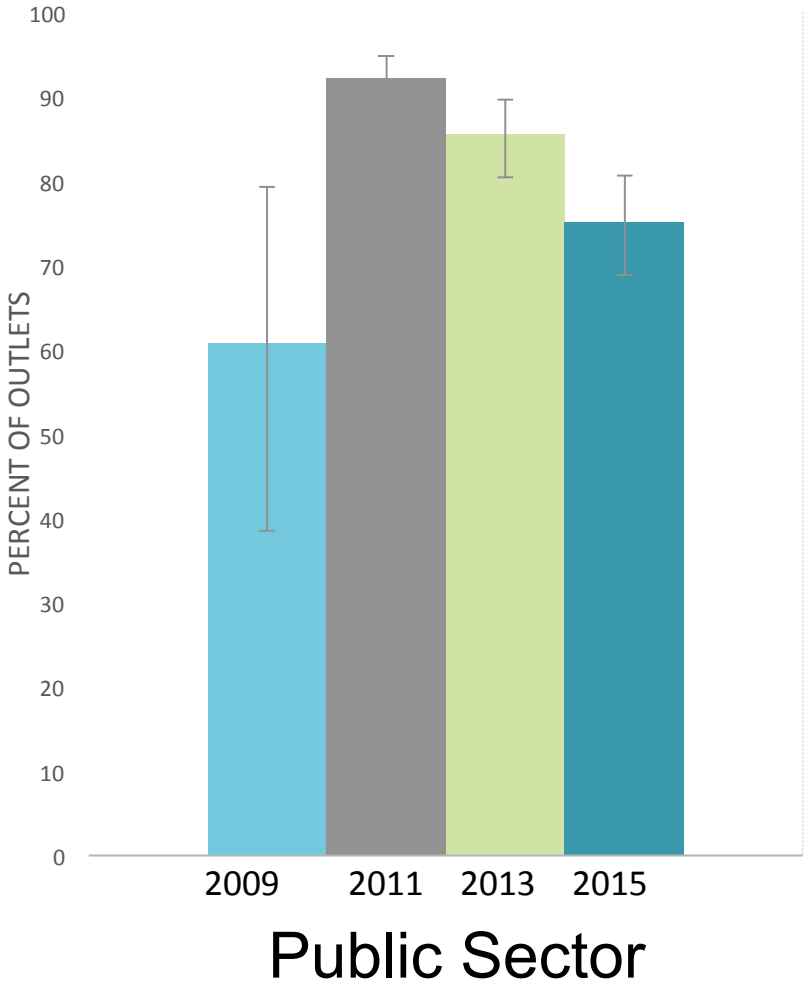
Little variation between Tiers

Slightly higher availability in Tier 1

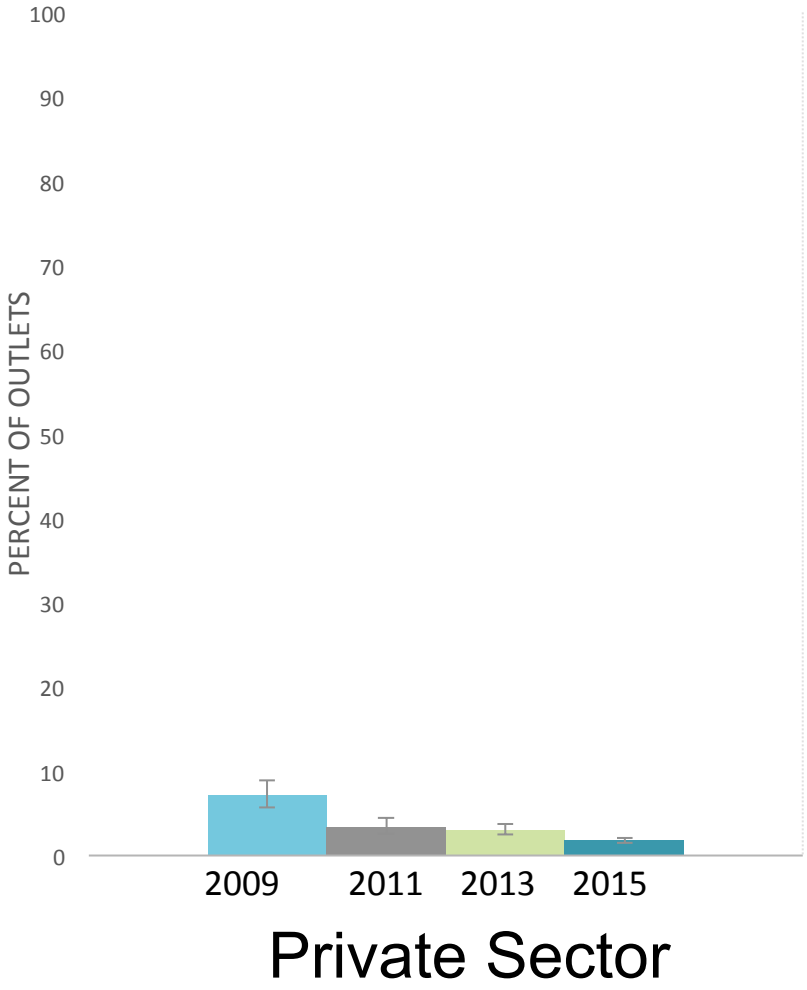
psi
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9 insights

availability of any antimalarial in Cambodia



1. **Most public sector outlets have antimalarials available**
2. **Increases are observed between 2009 and 2015**
3. **However increases were greatest between 2009 and 2011. Slight declines were observed between 2011 (90%) and 2015 (75%).**
4. **There are few differences between Tiers**



5 **Most private sector outlets do not have antimalarials available – though there is variation.**

6 **Decreases in antimalarial availability are observed over time**

7 **1 in 3 private for-profit facilities have antimalarials in 2015**

8 **1 in 5 pharmacies and itinerant drug vendors have antimalarials in 2015**

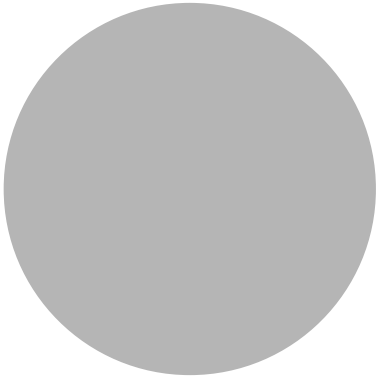
9 **Antimalarial availability is slightly higher in Tier 1 than Tier 2 for private for-profit facilities and pharmacies**

Antimalarial and malaria diagnostic market composition

Among all outlets w at least one AM in stock

Antimalarial market composition in 2015

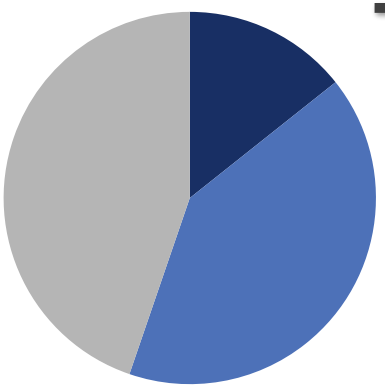
2015
N=858
outlets with antimalarials



Among all outlets w at least one AM in stock

Antimalarial market composition in 2015

2015
N=858



+50% public sector market composition

Public Health Facility

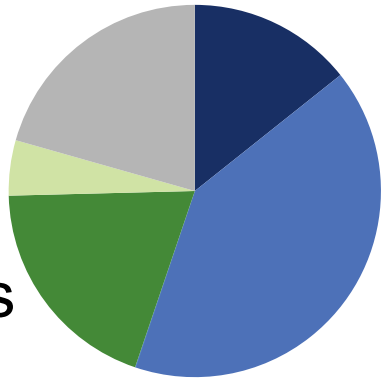
Village Malaria Worker

Among all outlets w at least one AM in stock

Antimalarial market composition in 2015

2015
N=858

25% private facilities & pharmacies



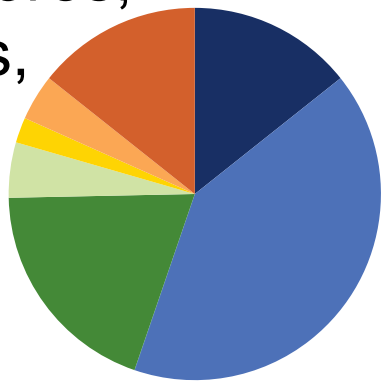
- Public Health Facility
- Private For-Profit Health Facility
- Village Malaria Worker
- Pharmacy

Among all outlets w at least one AM in stock

Antimalarial market composition in 2015

2015
N=858

20% Drug stores, general retailers, & itinerant drug vendors



- Public Health Facility
- Private For-Profit Health Facility
- Drug Store
- Itinerant Drug Vendor
- Village Malaria Worker
- Pharmacy
- General Retailer

Among all outlets w at least one AM in stock

Antimalarial market composition in 2015



2015
N=858

How has this changed over time?

Among all outlets w at least one AM in stock

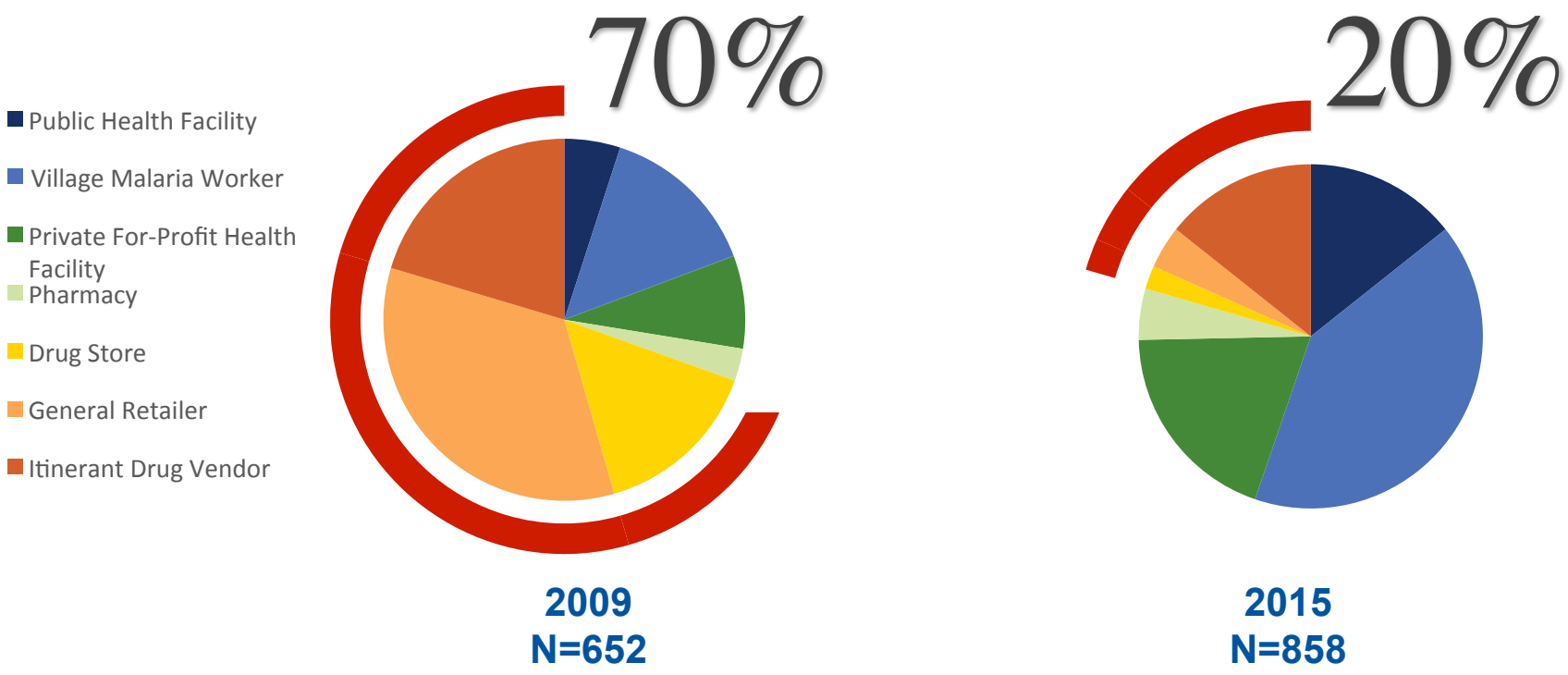
Antimalarial market composition in 2015



How has this changed over time?

Among all outlets w at least one AM in stock

Antimalarial market composition in 2015



How has this changed over time?

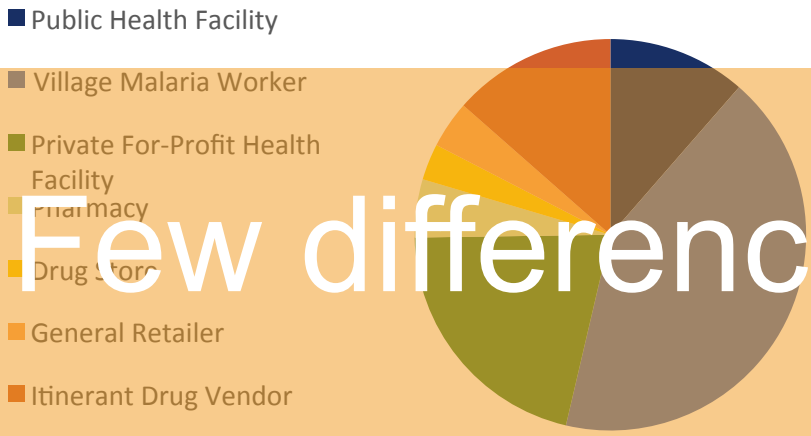
Increasing contribution of the public sector

Declining contribution of drug stores, retailers, itinerant drug vendors outlets


How does the market composition
differ between domains?

Among all outlets w at least one AM in stock

Antimalarial market composition in 2015





Few differences between Tiers

Tier 1
N=519

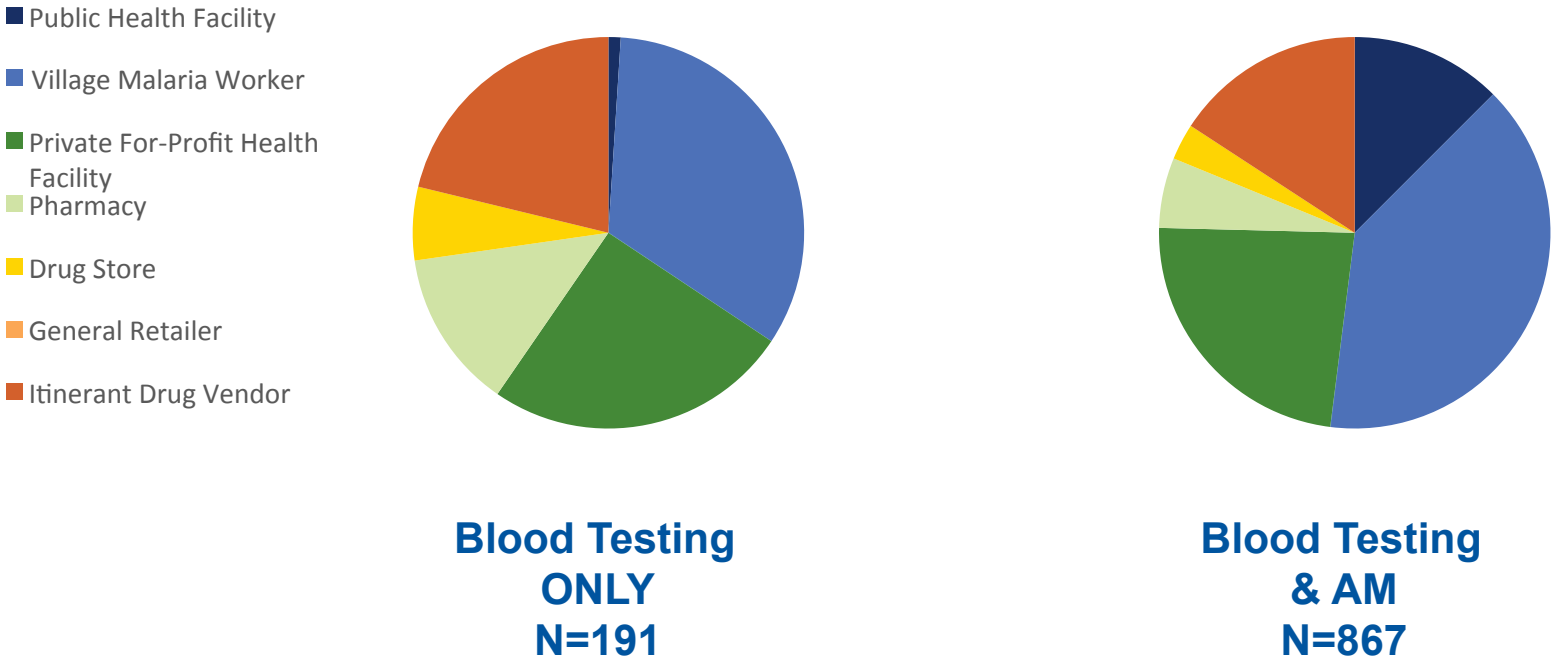
Tier 2
N=339



What is the malaria blood testing market composition?

Among all outlets w at least one AM or/& malaria test in stock

Malaria blood testing market composition: 2015



4 insights

antimalarial and diagnostic market composition in Cambodia

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1. **In 2015 more than half of the market composition of antimalarial stocking outlets is comprised of the public sector.**

2. **Over time, there is decreasing contribution of drug stores, general retailers and itinerant drug vendors. Private for-profit facilities comprise a greater slice of the market composition over time.**

3. **The antimalarial and malaria diagnostic market composition varies somewhat. The 'diagnostic only' market composition shows that VMWs, private for-profit facilities and itinerant drug vendors comprise most of the market.**

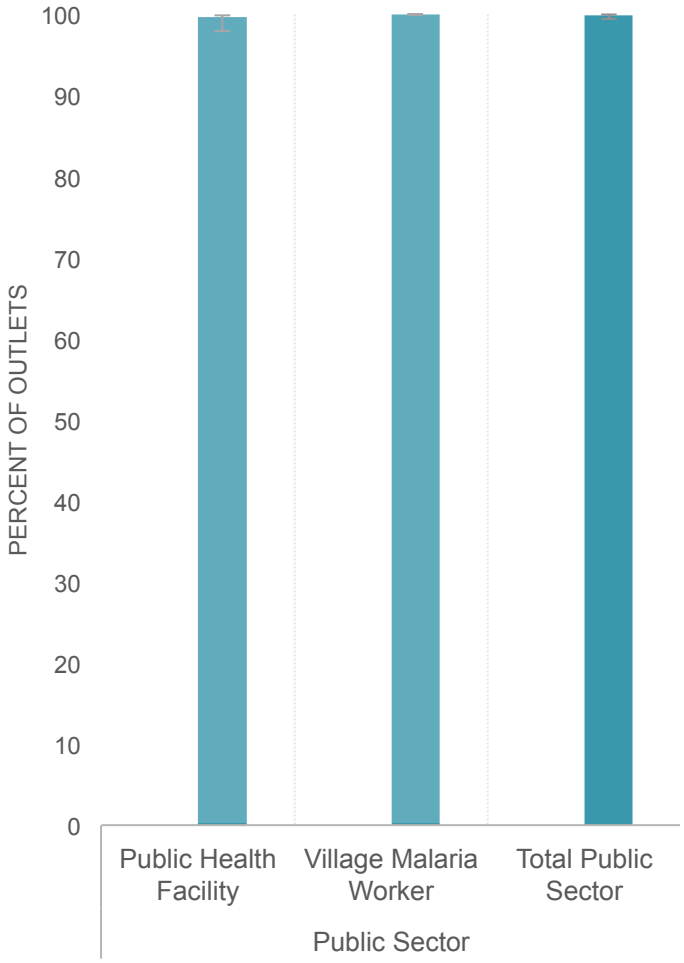
4. **Market composition does not differ by domains.**

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Among outlets with an antimalarial, what types of antimalarials were found in 2015?

Among all outlets w at least one AM in stock

Availability of any ACT: 2015

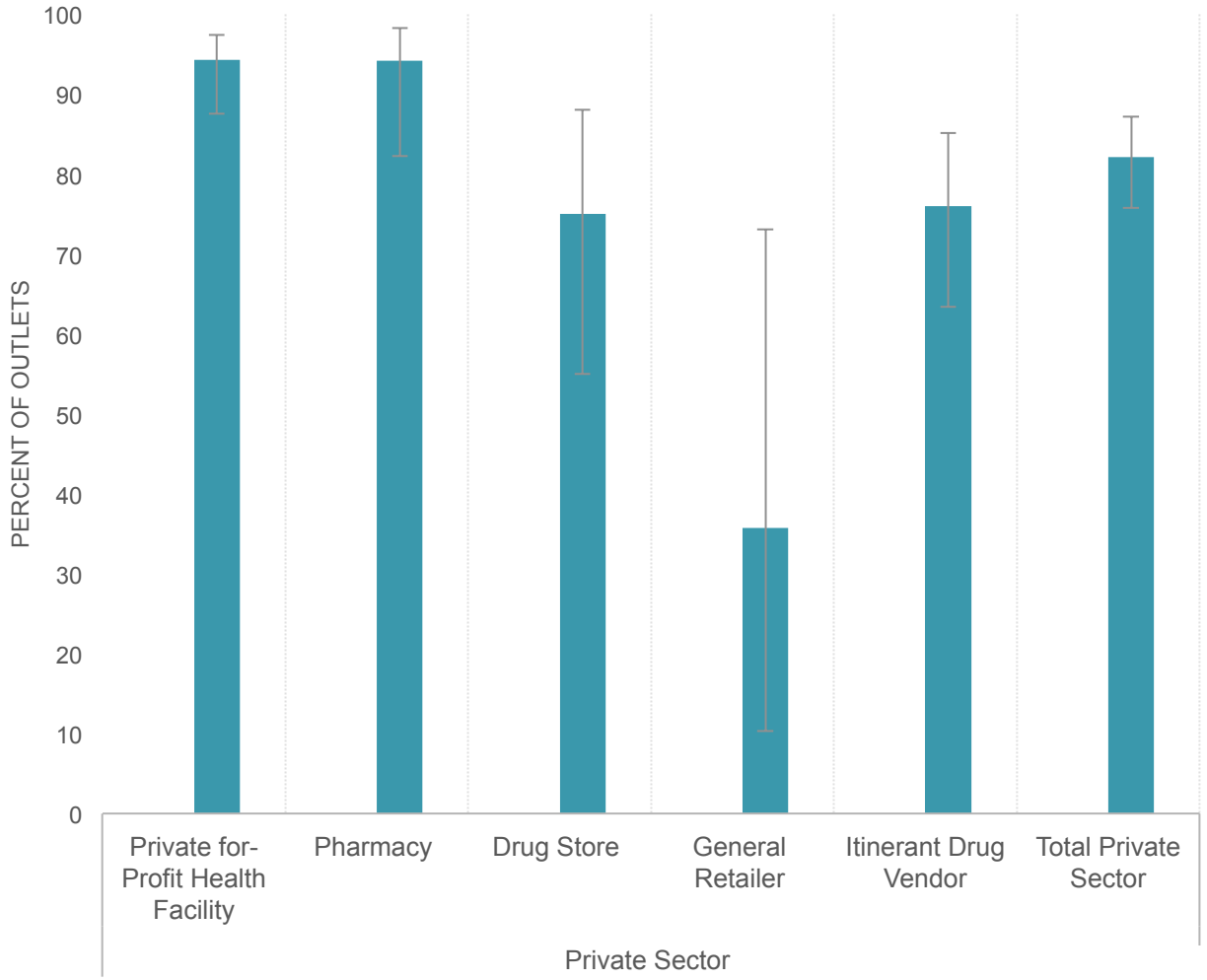


100 percent of antimalarial-stocking public sector have ACT

Among all outlets w at least one AM in stock

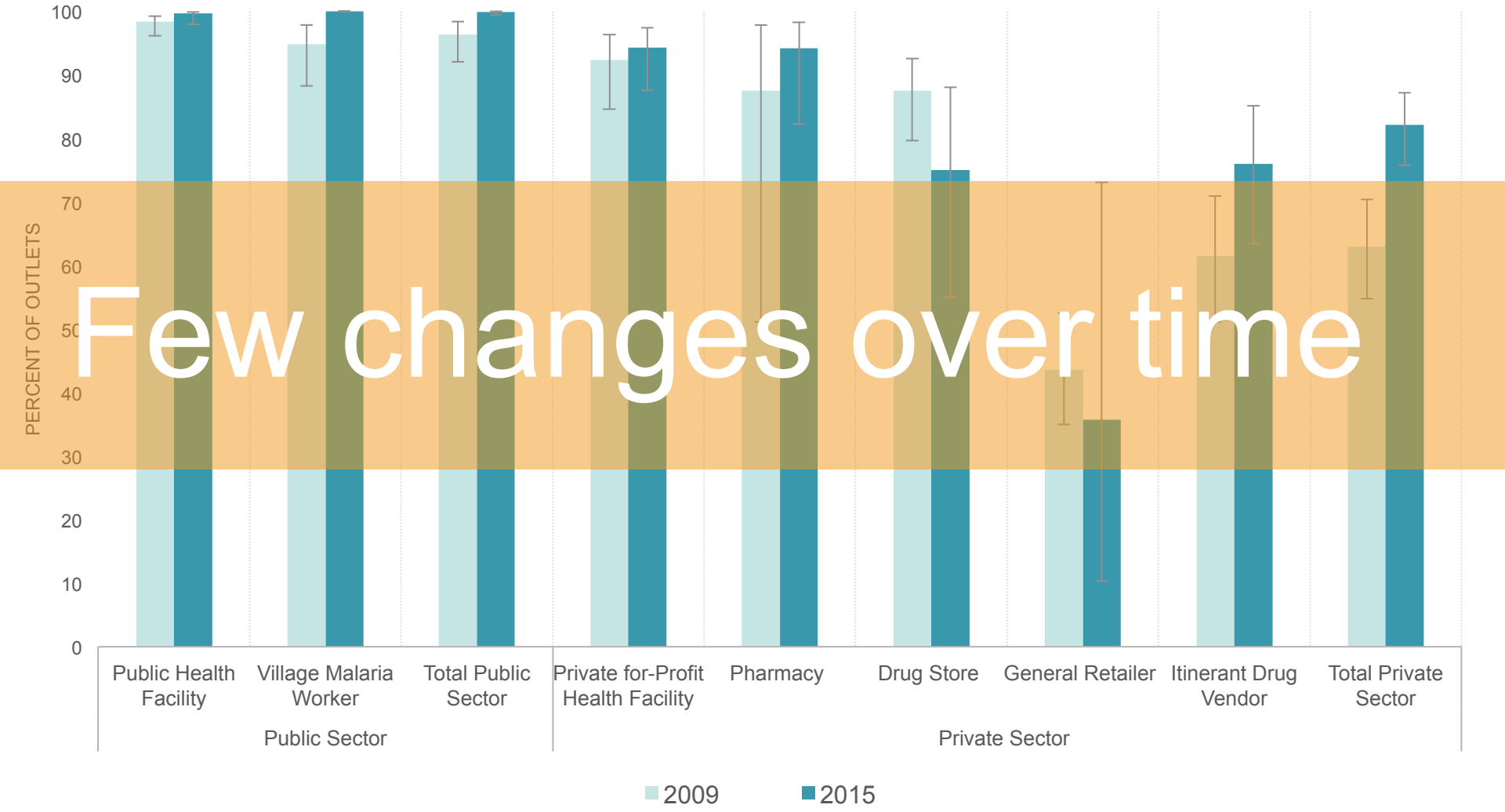
Availability of any ACT: 2015

95 percent of antimalarial-stocking private for-profit facilities and pharmacies have ACT



Among all outlets w at least one AM in stock

Availability of any ACT: 2009 & 2015



Few changes over time

Is the first-line ACT available?



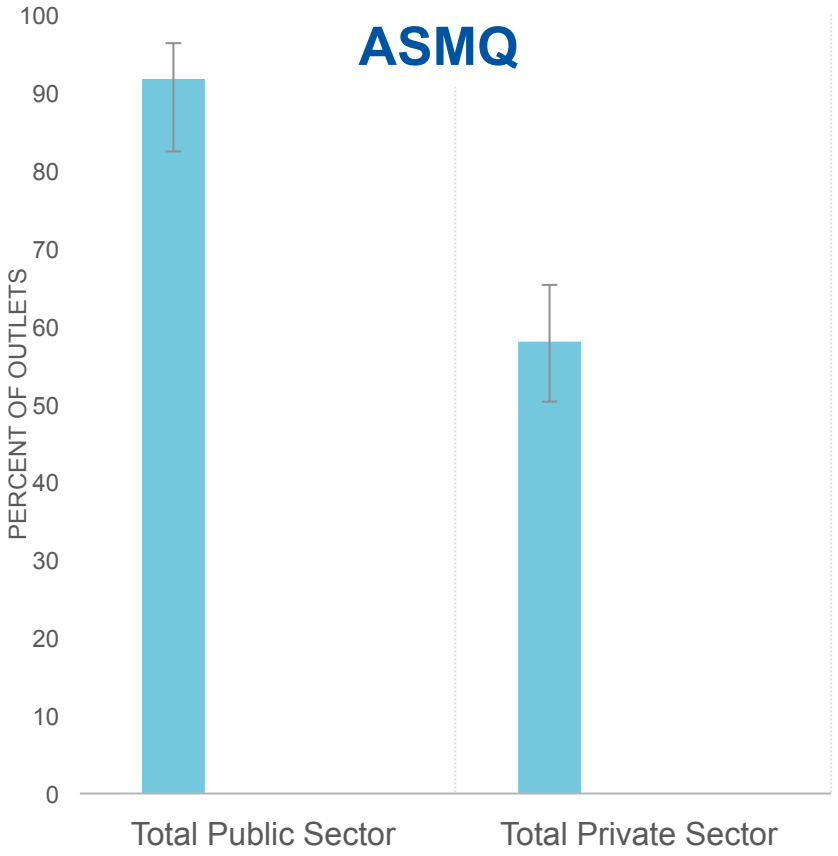
ASMQ 2008

first line treatment

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Healthy lives. Measurable results.

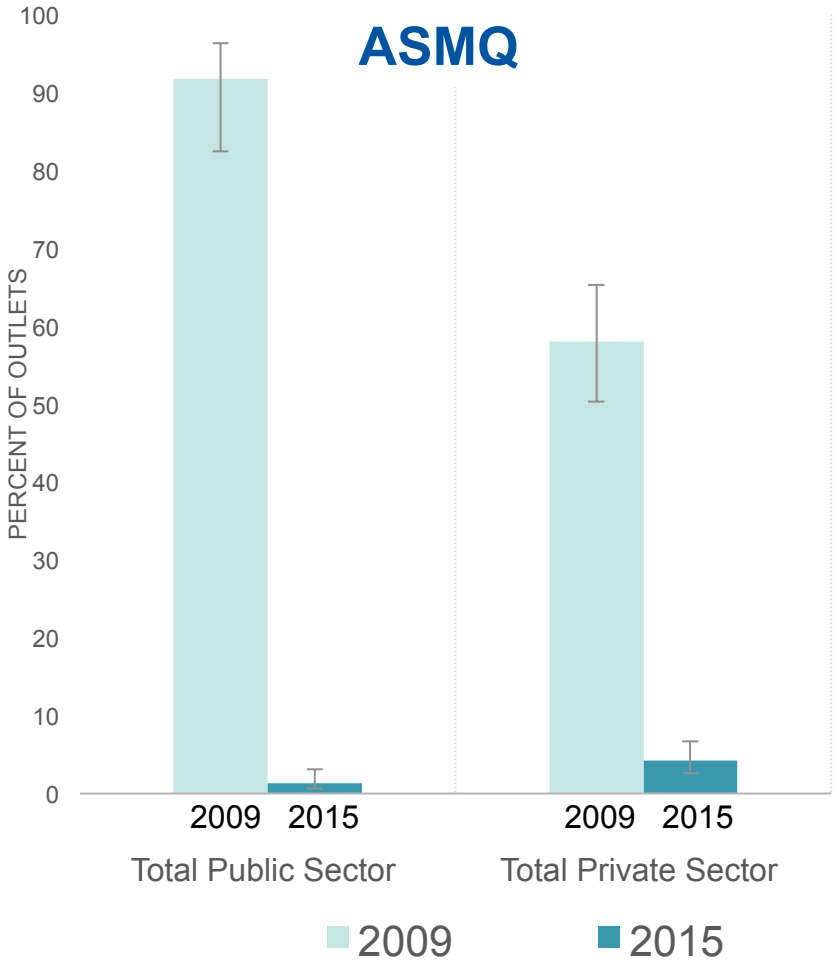
Among all outlets w at least one AM in stock

Availability of ASMQ: 2009



Among all outlets w at least one AM in stock

Availability of ASMQ: 2009 & 2015



Decline in availability of ASMQ over time

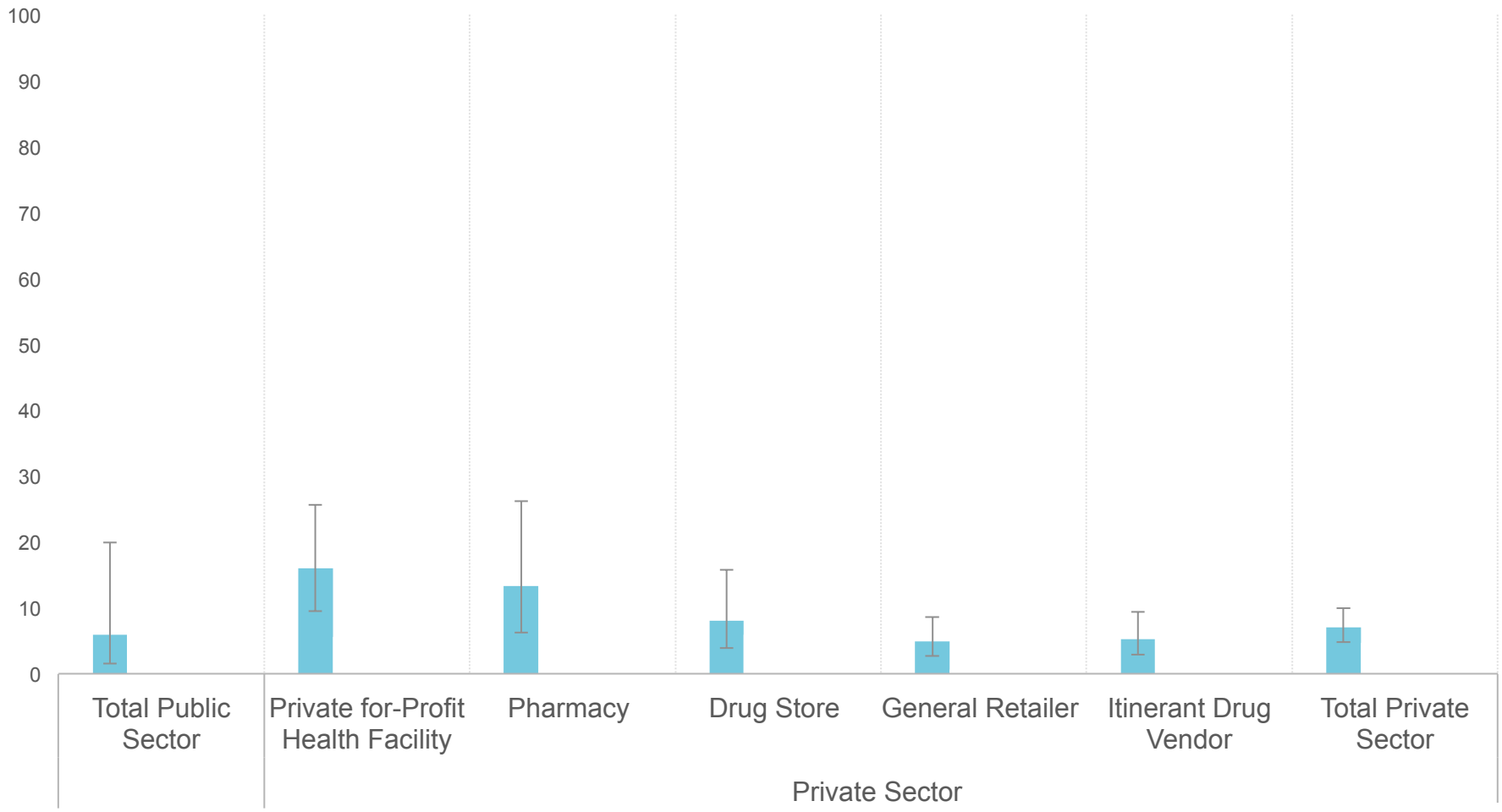
DHA-PPQ

2010

first line treatment

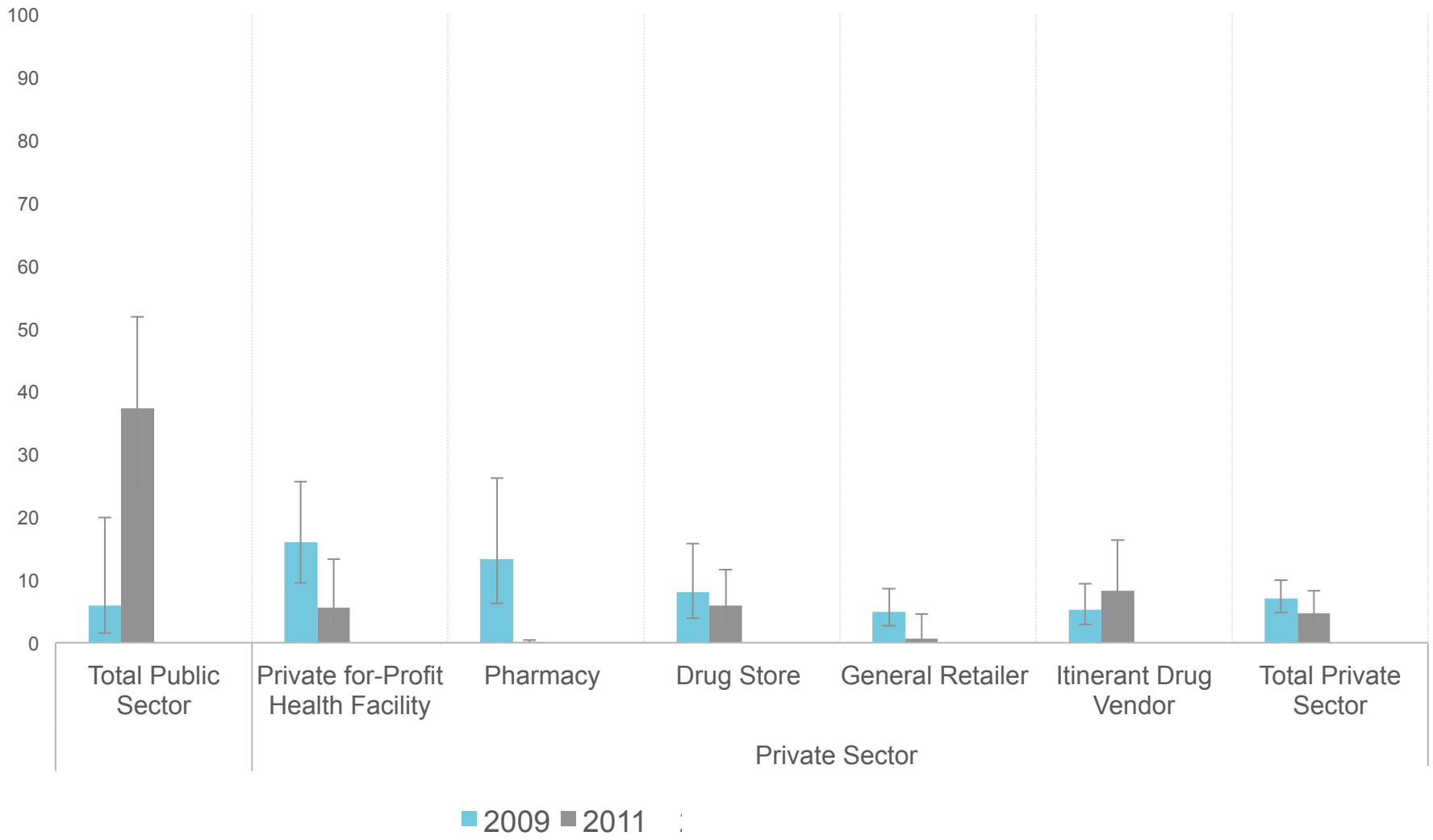
Among all outlets w at least one AM in stock

Availability of DHA-PPQ: 2009



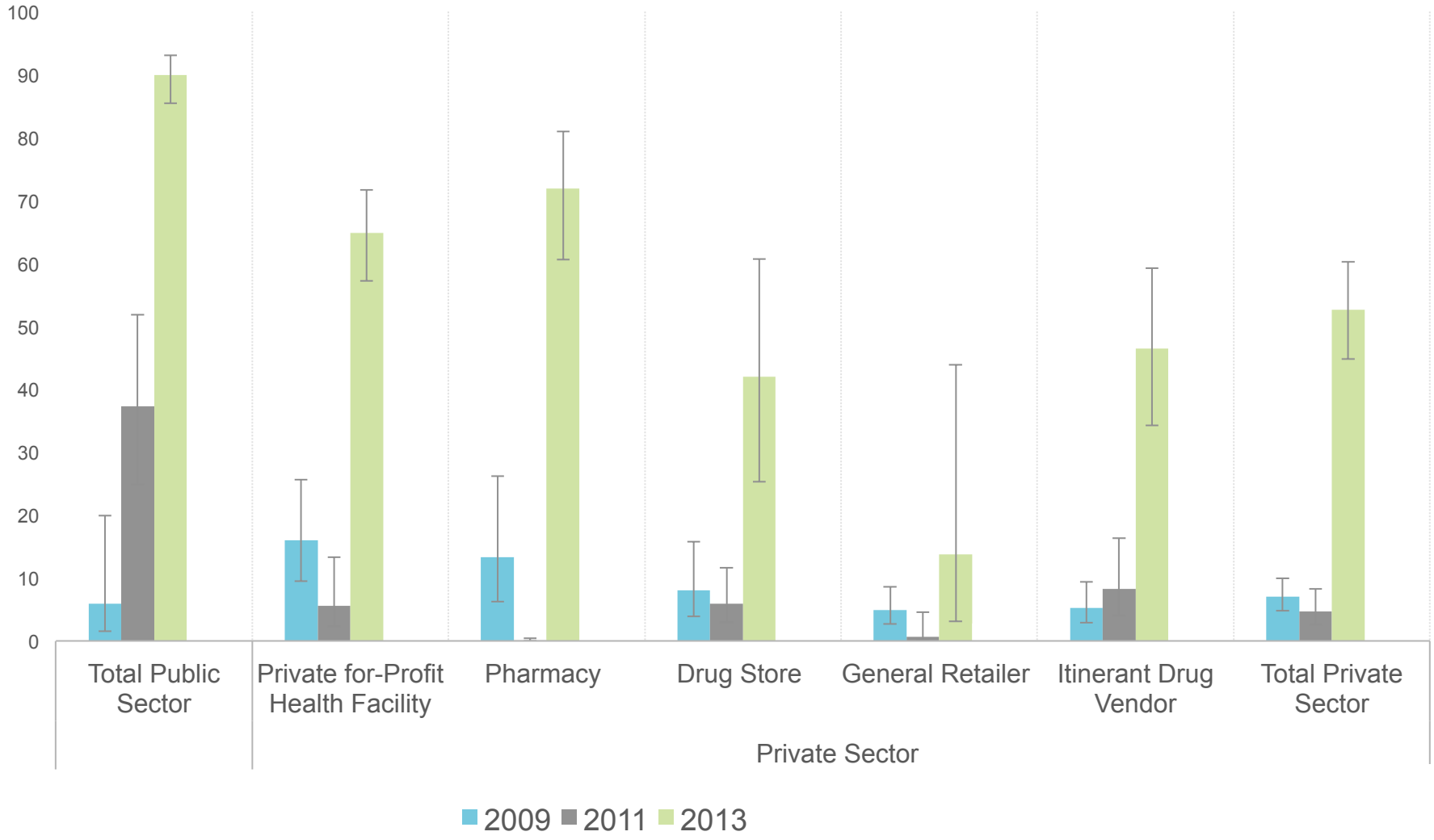
Among all outlets w at least one AM in stock

Availability of DHA-PPQ: 2009 & 2011



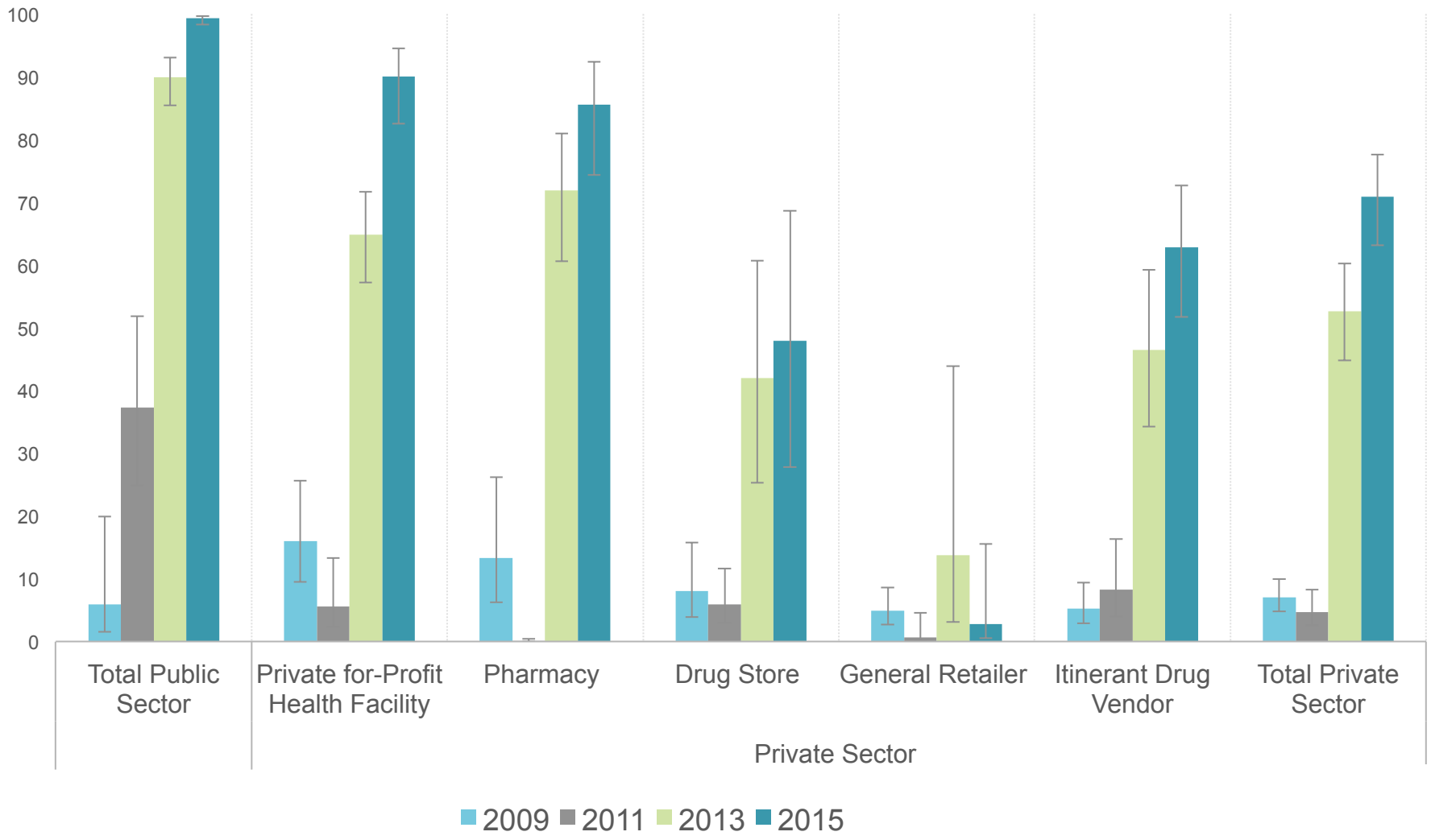
Among all outlets w at least one AM in stock

Availability of DHA-PPQ: 2009 & 2015



Among all outlets w at least one AM in stock

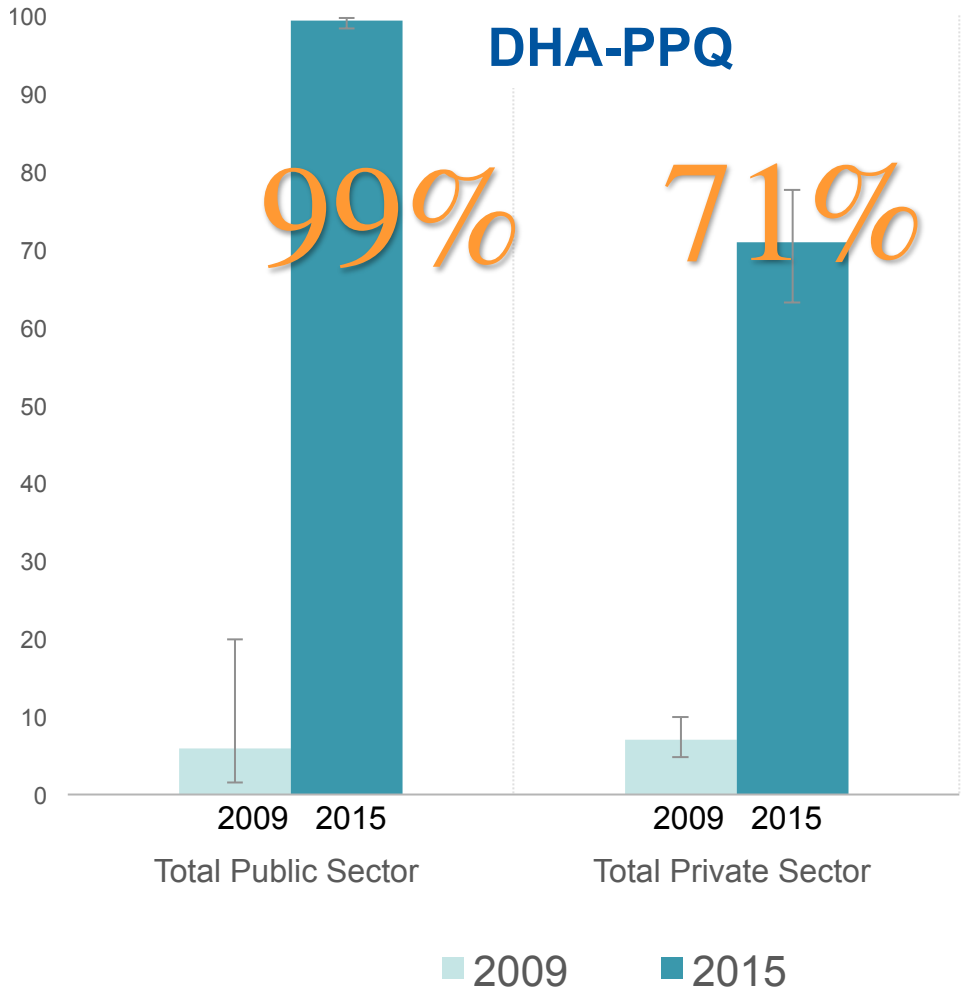
Availability of DHA-PPQ: 2009 - 2015

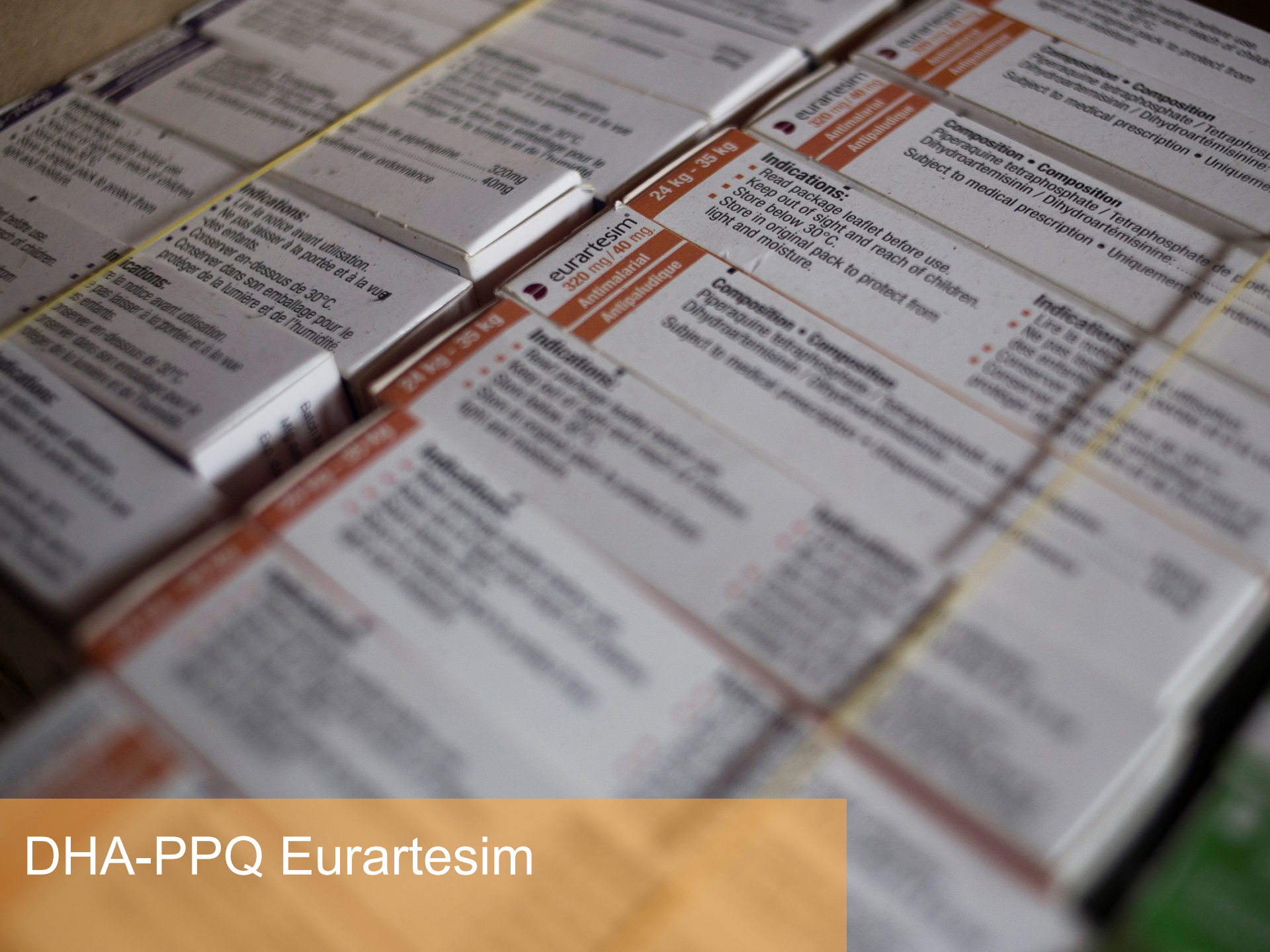


Among all outlets w at least one AM in stock

Availability of DHA-PPQ: 2009 & 2015

Most of the ACT in 2015 is DHA-PPQ





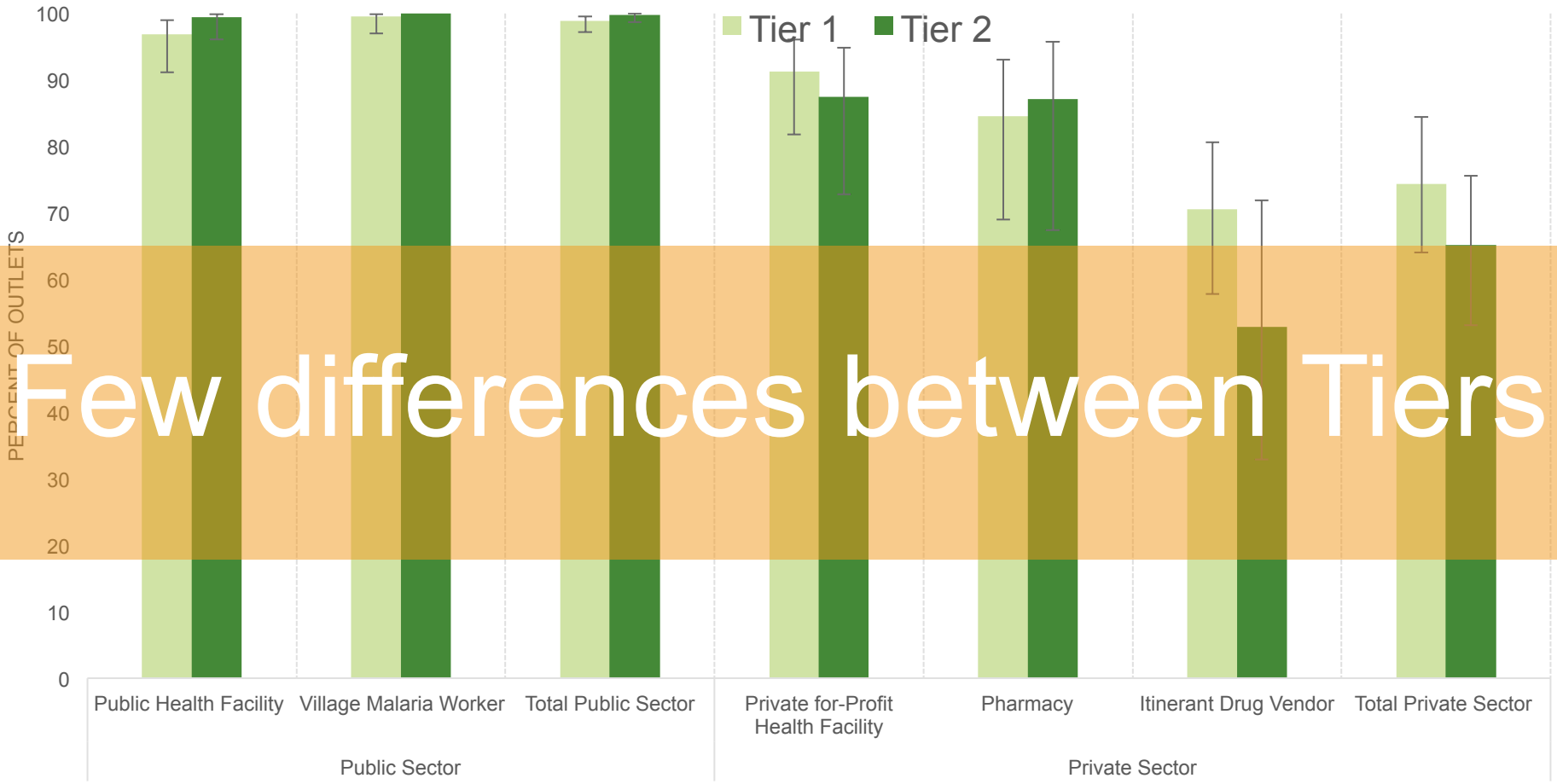
DHA-PPQ Eurartesim



Are there differences in ACT availability in Tier 1 and Tier 2?

Among all outlets w at least one AM in stock

Availability of DHA-PPQ in 2015: by Tier



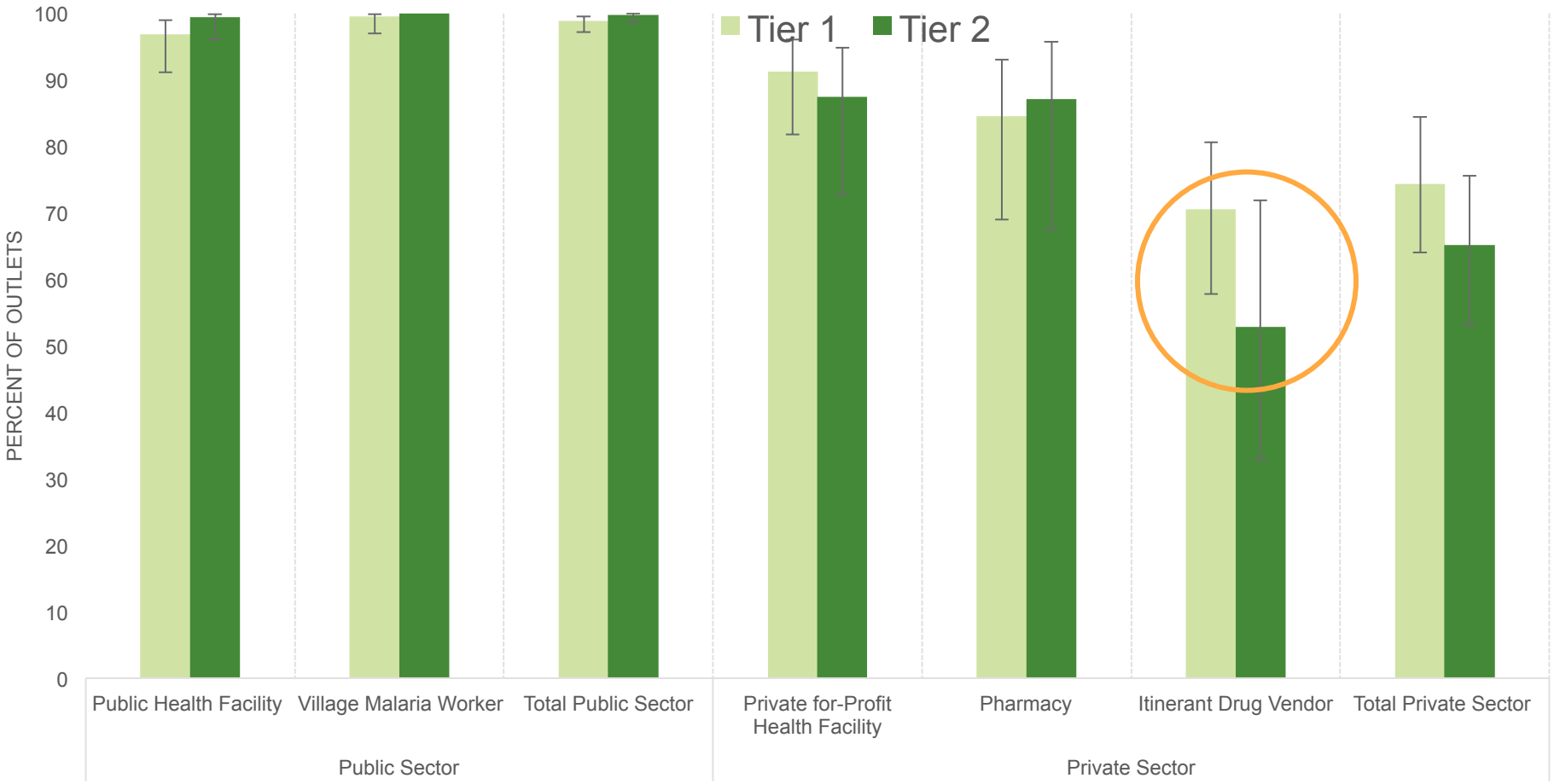
Few differences between Tiers

Little variation between Tiers

Slightly higher availability in Tier 1 among IDV

Among all outlets w at least one AM in stock

Availability of DHA-PPQ in 2015: by Tier



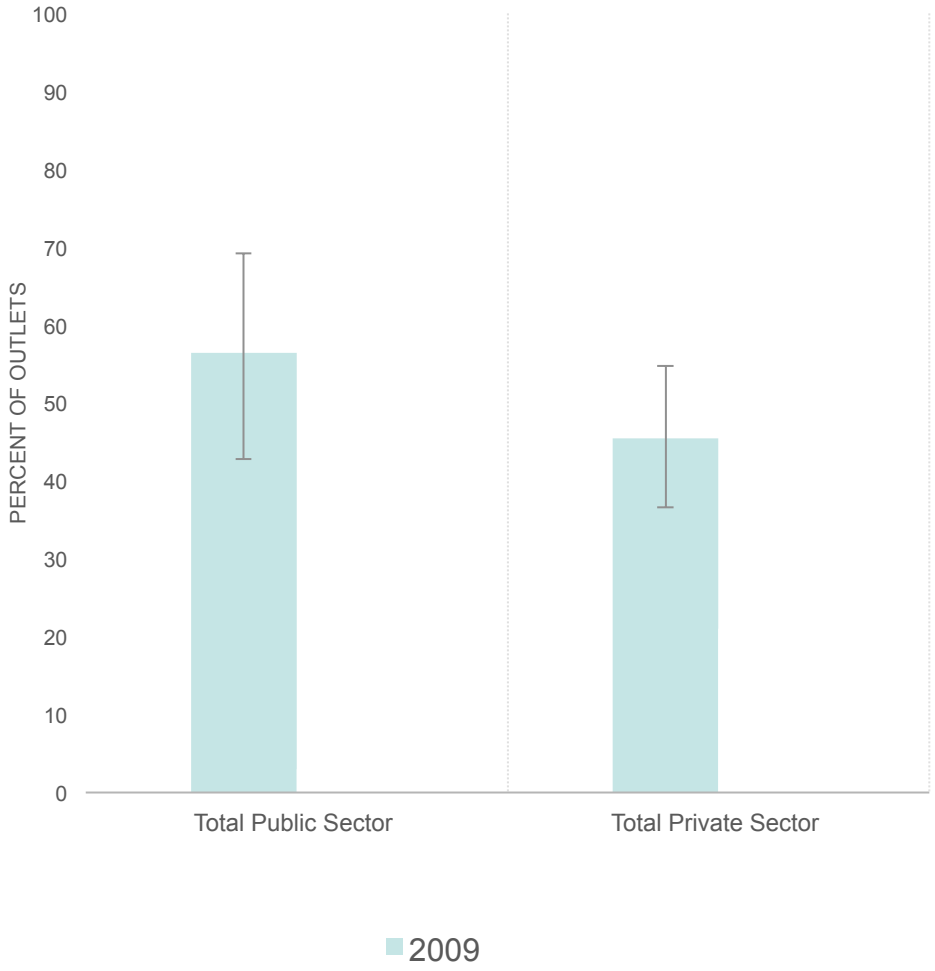
Little variation between Tiers

Slightly higher availability in Tier 1 among IDV


What is the availability of non-artemisinin therapy?

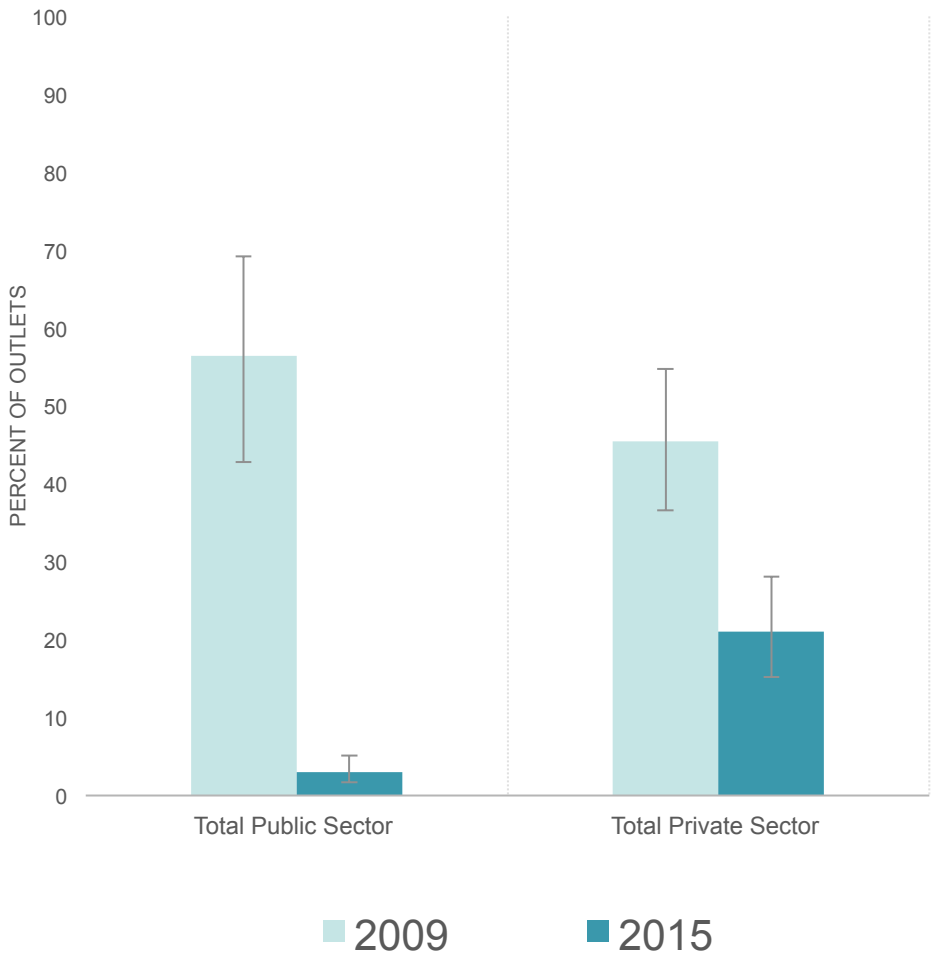
Among all outlets w at least one AM in stock

Availability of non-artemisinin therapy: 2009 & 2015



Among all outlets w at least one AM in stock

Availability of non-artemisinin therapy : 2009 & 2015



Non-artemisinin therapy declines across sectors & over time

What is the availability of oral artemisinin monotherapy?



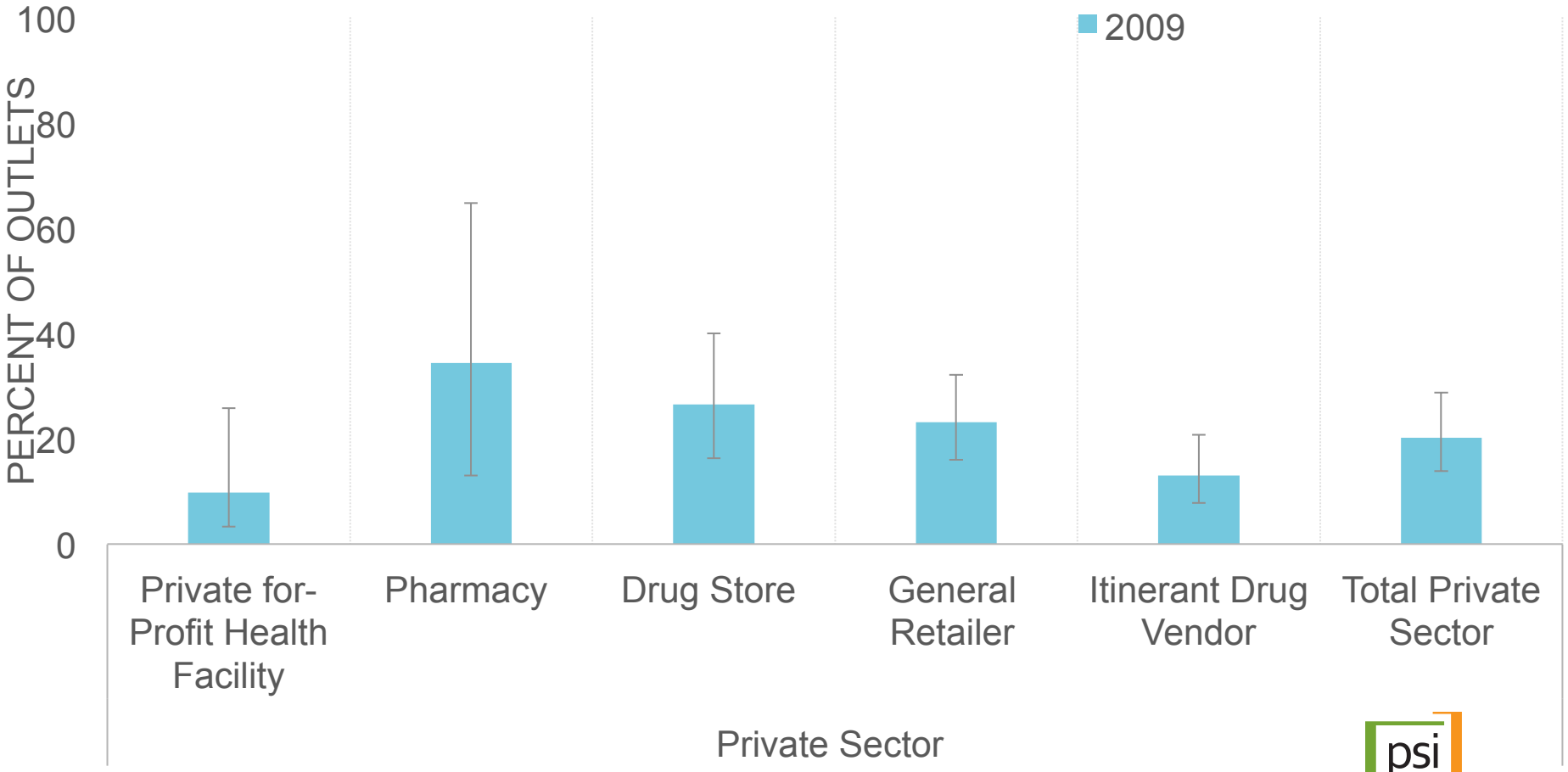
Availability of oral artemisinin monotherapy: 2009

20

Percent of private sector outlets stocking oral artemisinin monotherapy in 2009

Among all outlets w at least one AM in stock

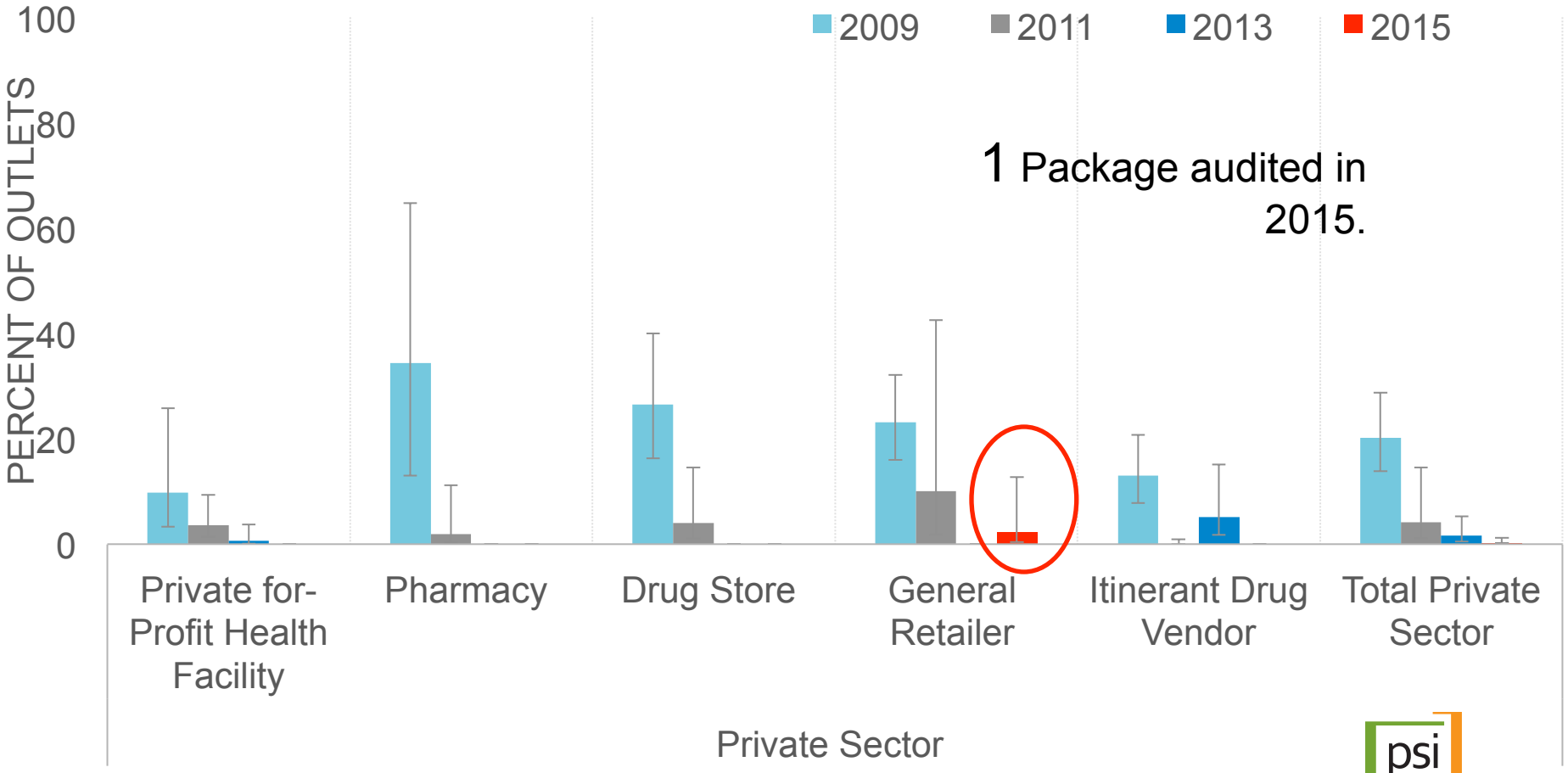
Availability of oral AMT therapy : 2009 & 2015



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Among all outlets w at least one AM in stock

Availability of oral AMT therapy : 2009 & 2015



psi
Healthy lives. Measurable results.

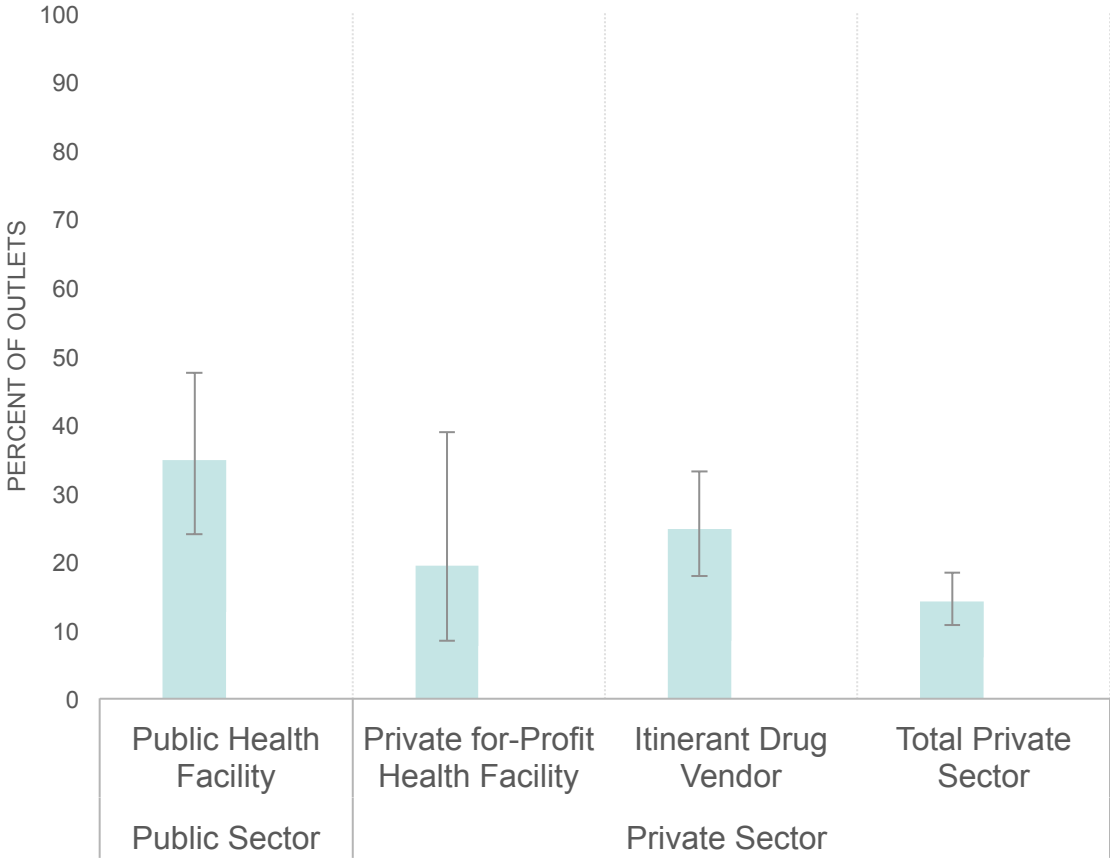
Availability of oral artemisinin monotherapy: 2015

0.2 Percent of private sector outlets stocking oral artemisinin monotherapy in 2015


How available is treatment for severe malaria?

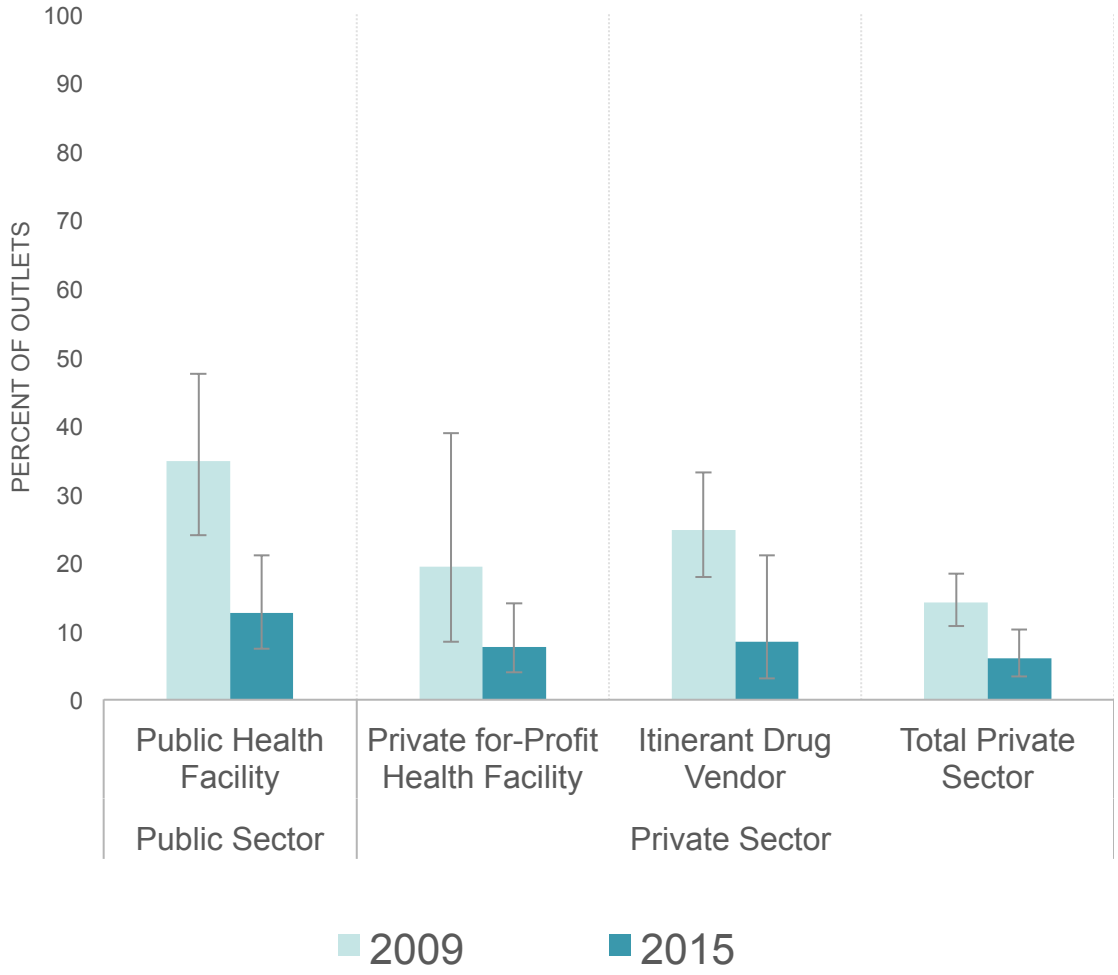
Among all outlets w at least one AM in stock

Availability of treatment for severe malaria: 2009



Among all outlets w at least one AM in stock

Availability of treatment for severe malaria: 2009



10% of outlets stock treatment for severe malaria in 2015

6 insights

availability of different classes of antimalarials in Cambodia

1. **Availability of any ACT remains similar over time. Slight increases are observed in the private sector.**

2. **In 2015 almost 100% of the public sector have ACT in stock. ACT availability is more variable in the private sector and stocked by over 90% of antimalarial-stocking private for-profit facilities and pharmacies.**

3. **Most of the ACT in 2015 is DHA-PPQ, namely Eurartesim.**

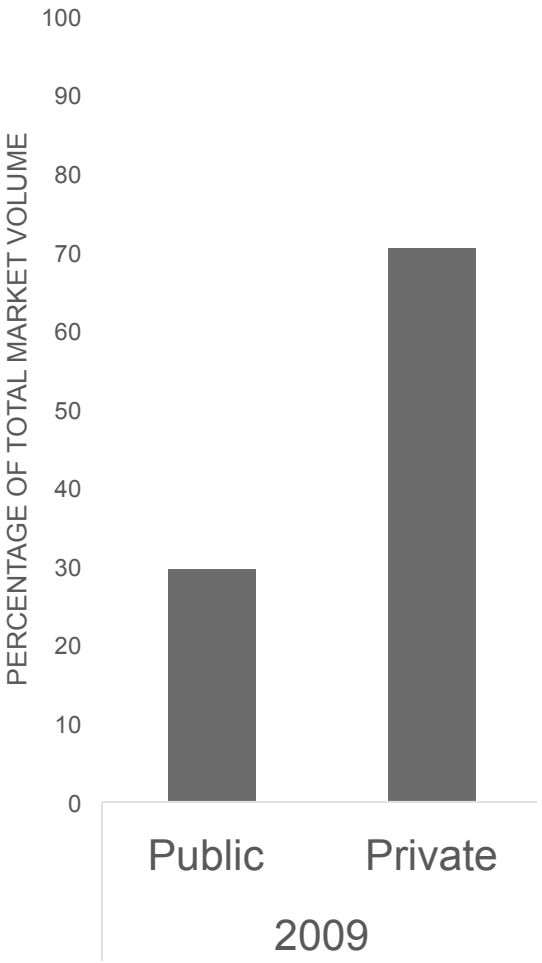
4. **Non-artemisinin therapy availability declines over time. In 2015 most of the non-artemisinin therapy is chloroquine and found in retail outlets.**

5. **Only one oral artemisinin monotherapy product was found in 2015.**

6. **Availability of treatment for severe malaria was found in 10% of public health facilities andprivate for-profit facilities.**

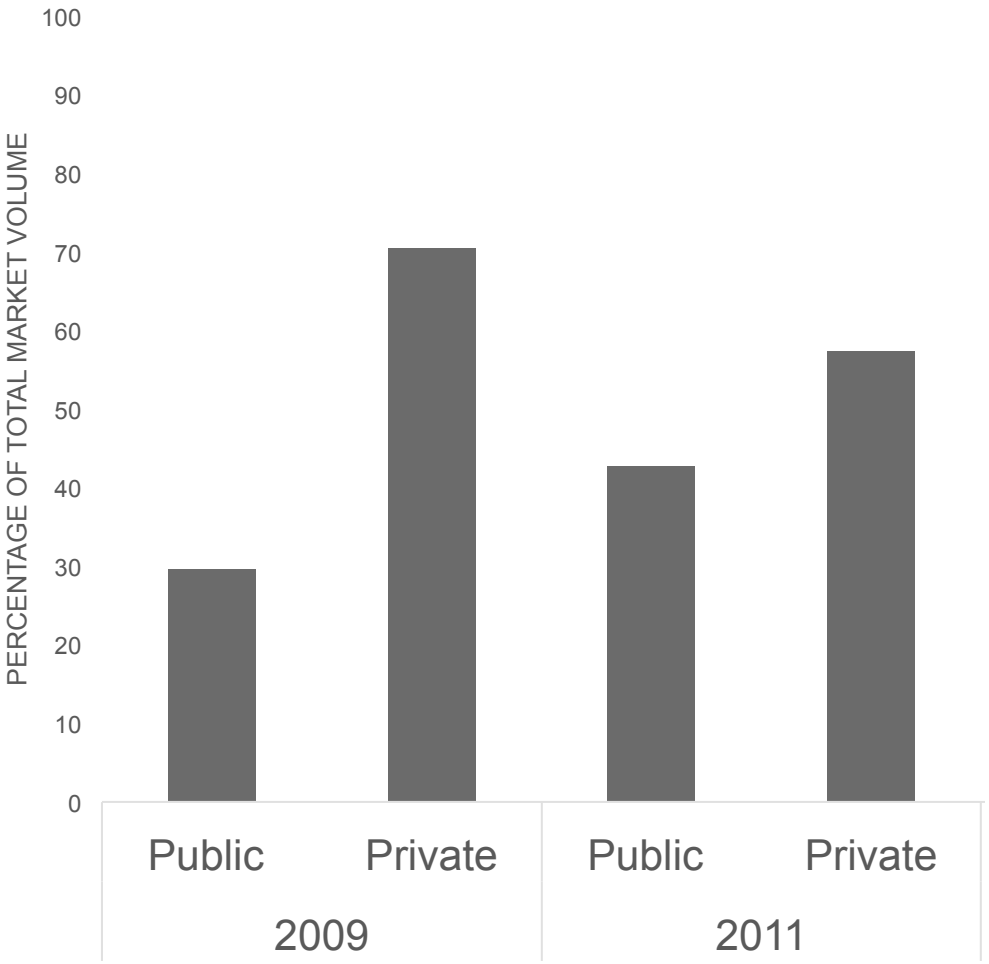
What is the antimalarial market share between the public and private sectors?

Antimalarial Market Share: 2009



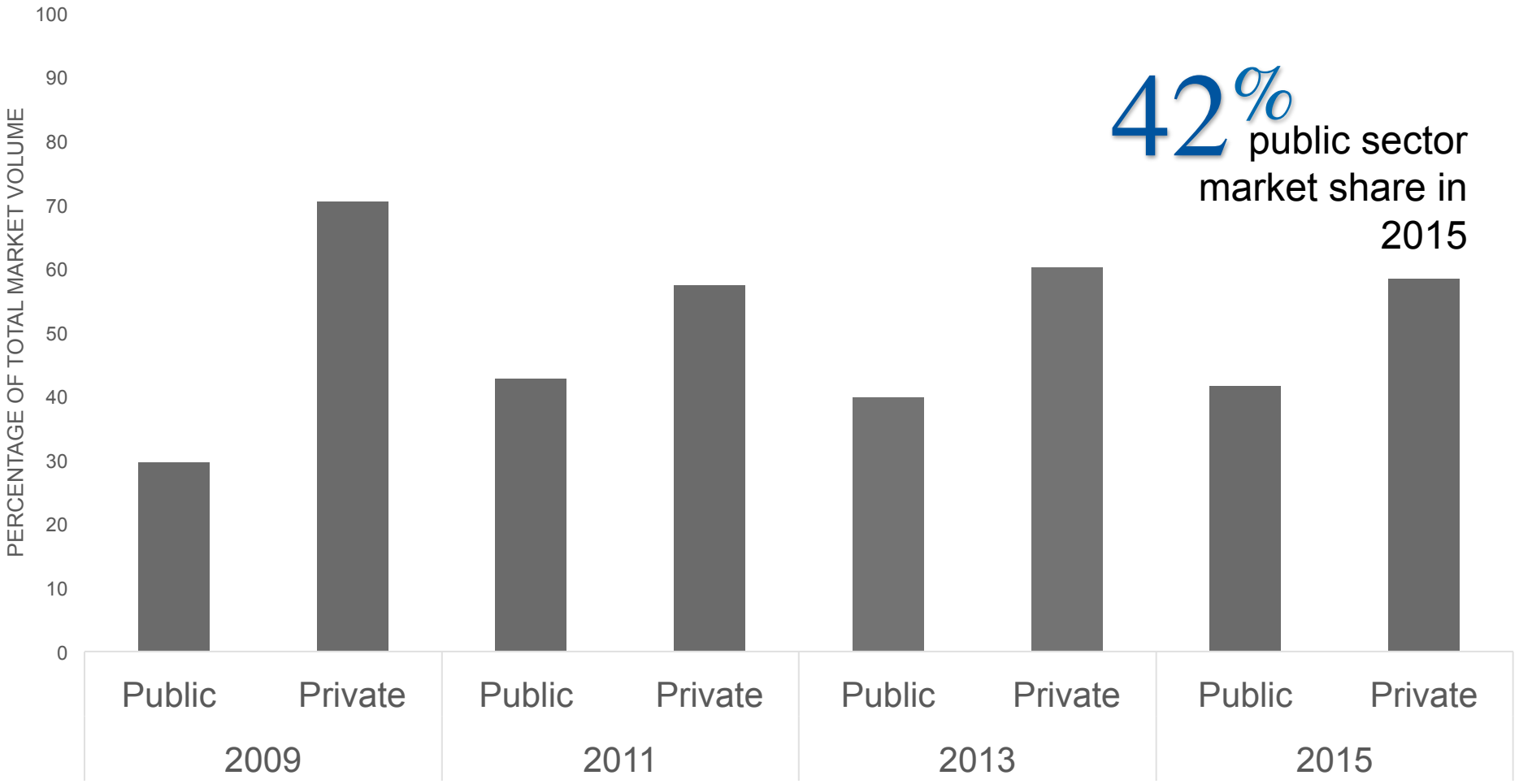
30% public sector market share in 2009

Antimalarial Market Share: 2009

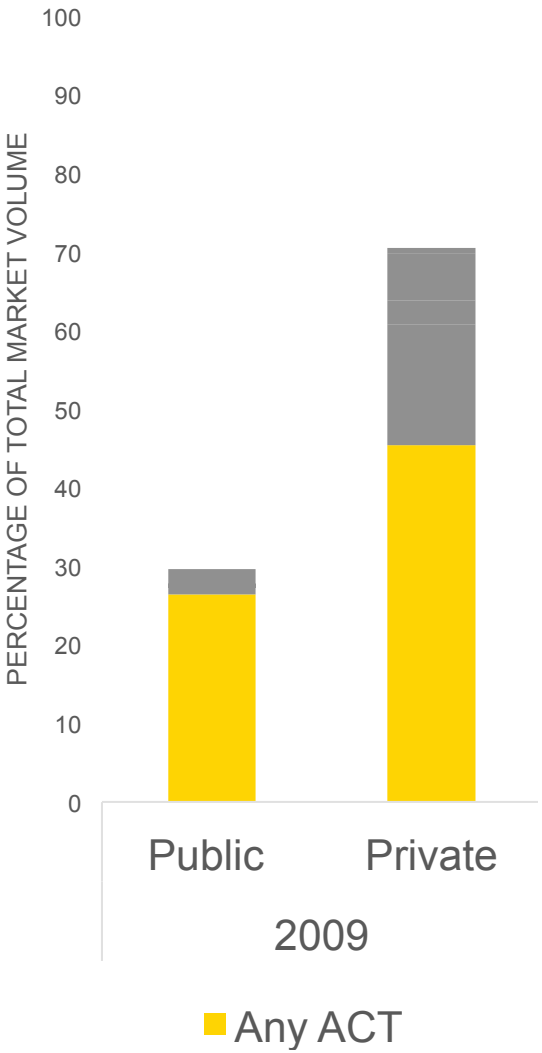


43% public sector market share in 2009

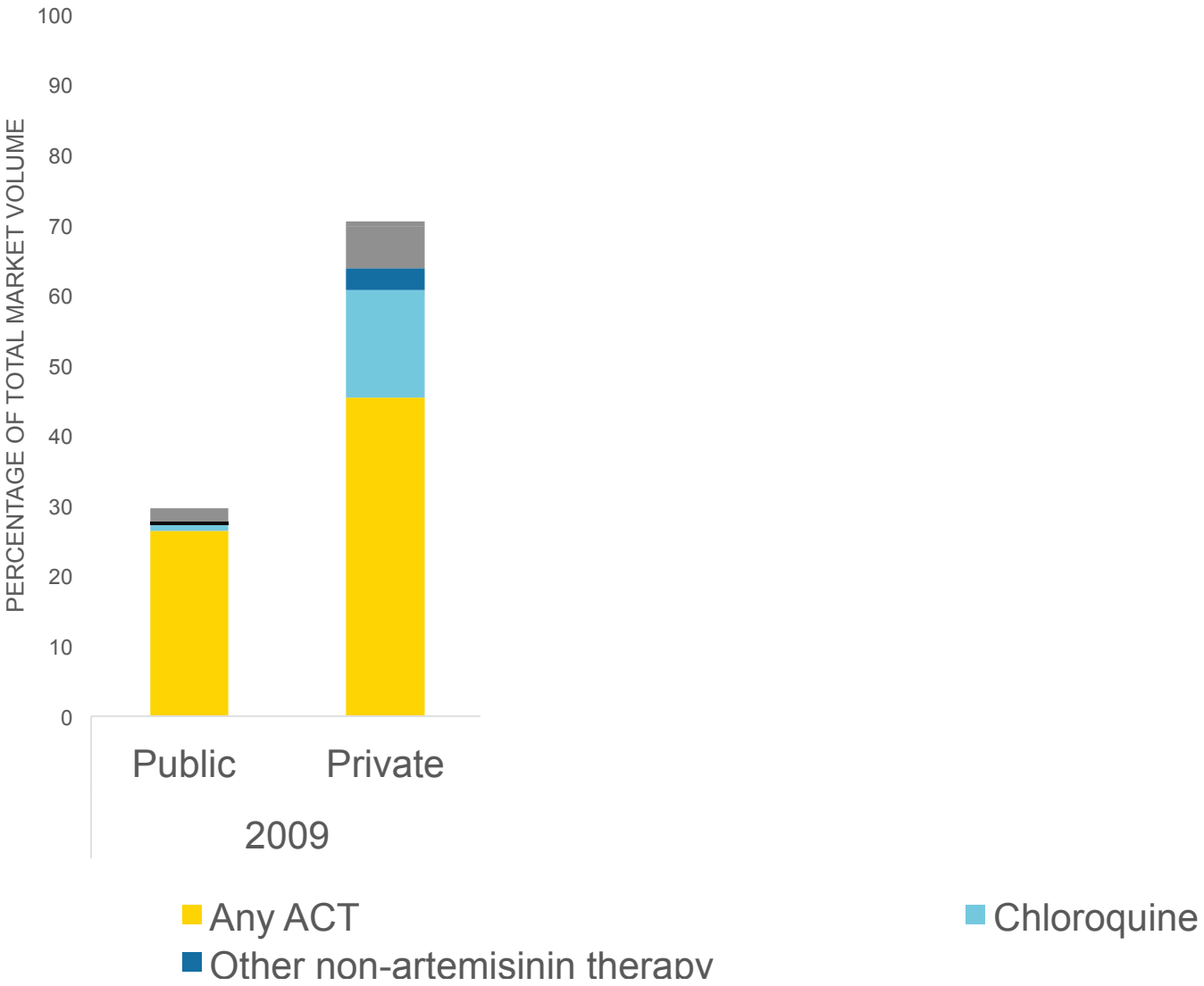
Antimalarial Market Share: 2009-2015



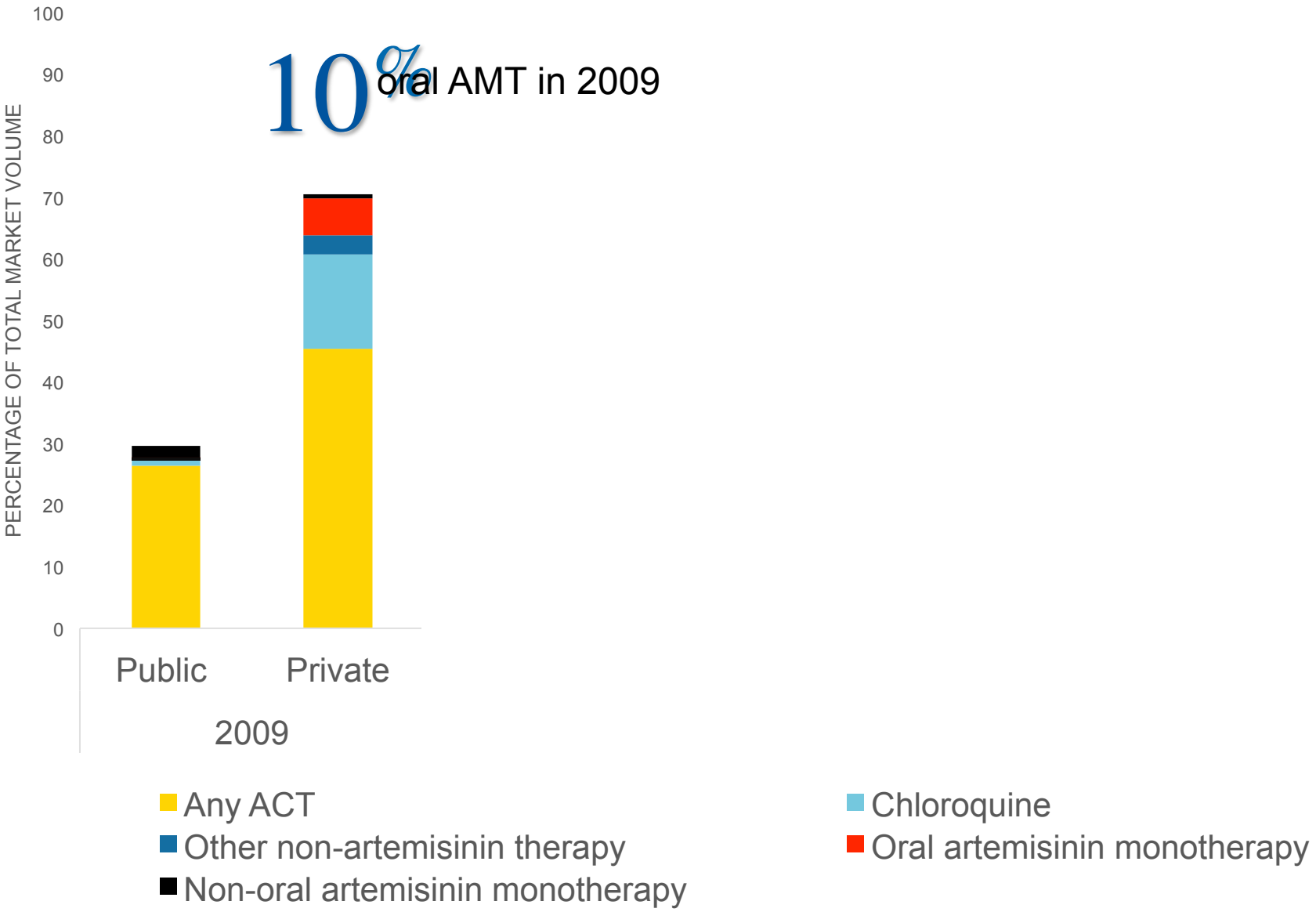
Antimalarial Market Share: 2009 - 2015



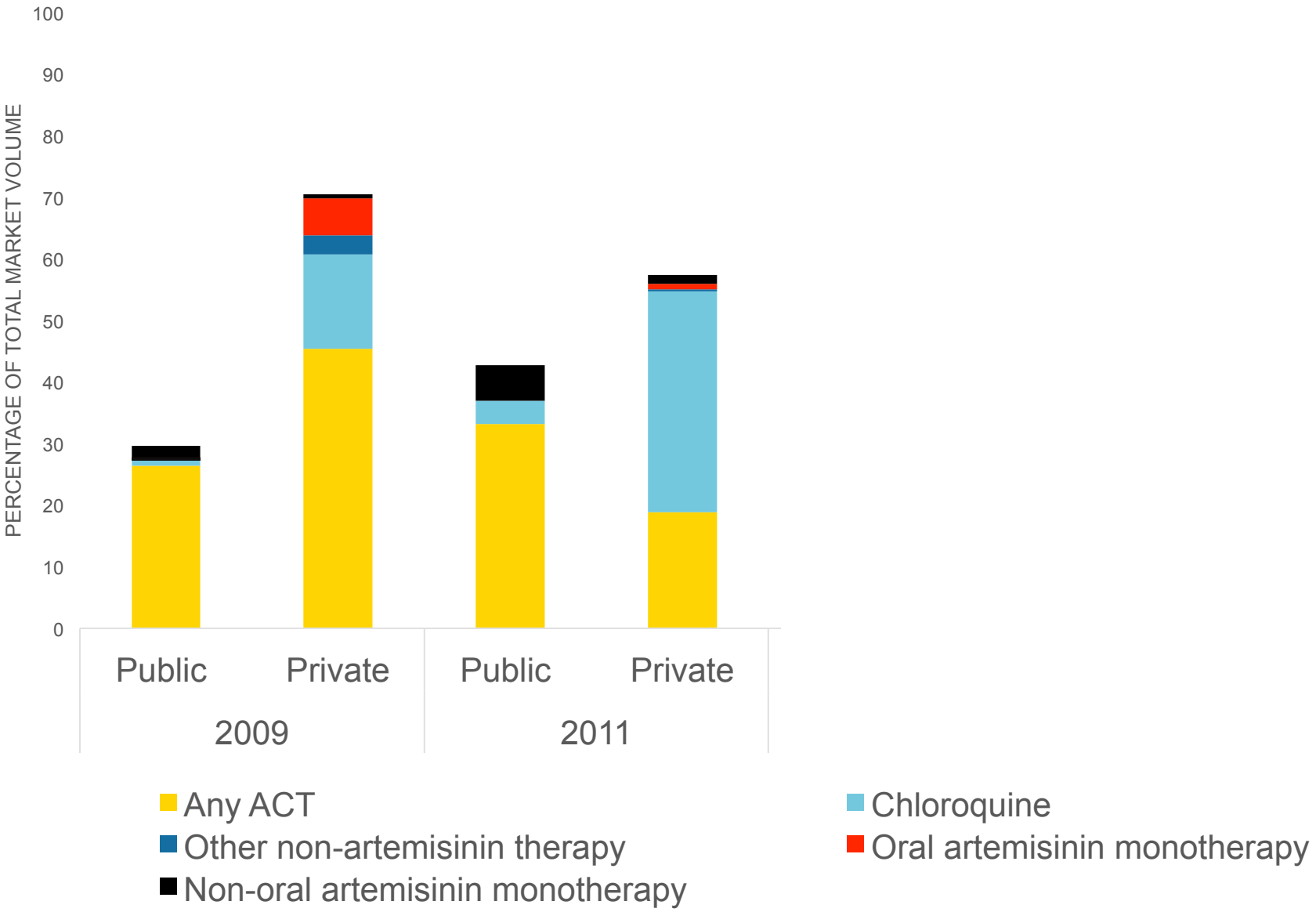
Antimalarial Market Share: 2009 - 2015



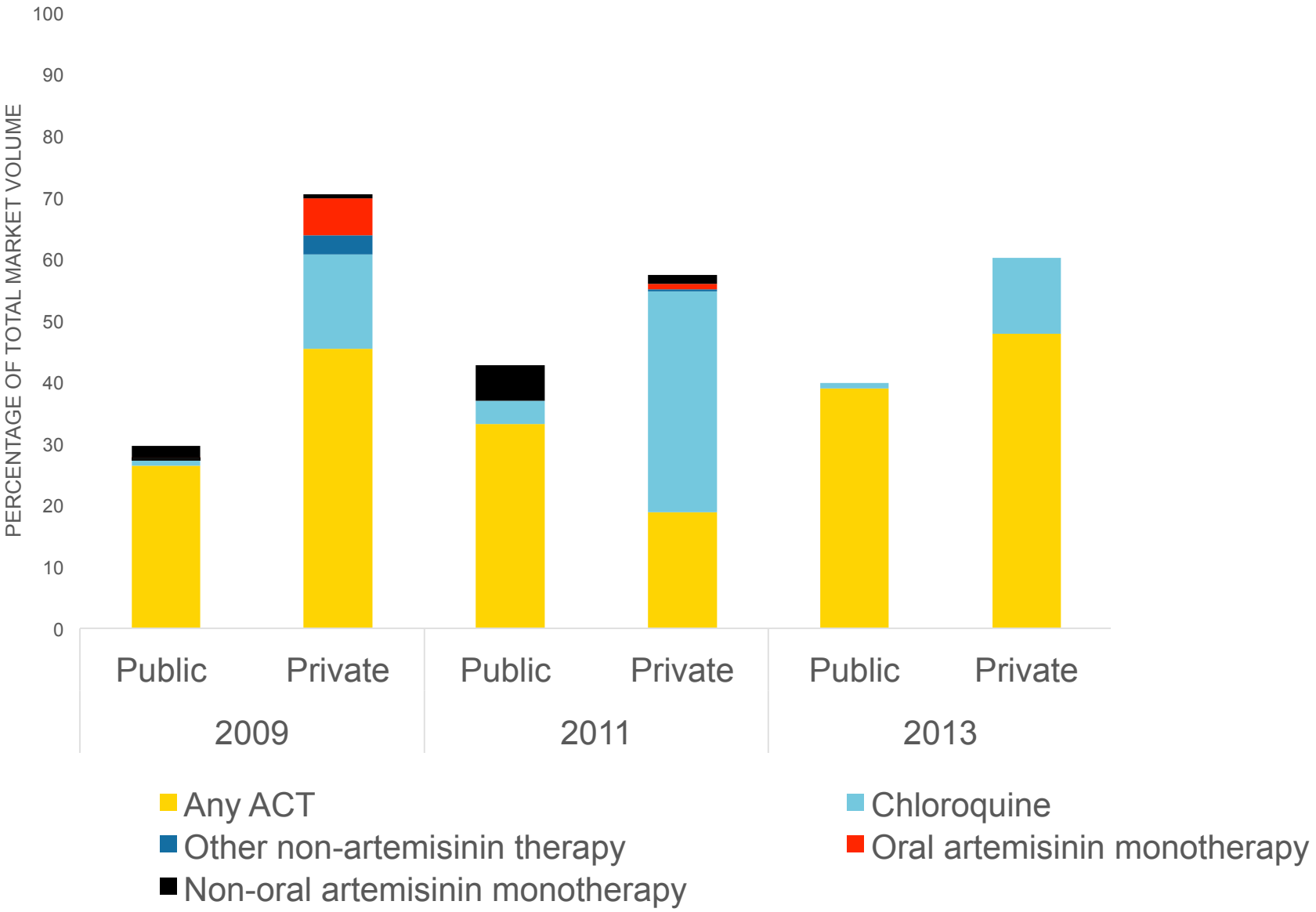
Antimalarial Market Share: 2009 - 2015



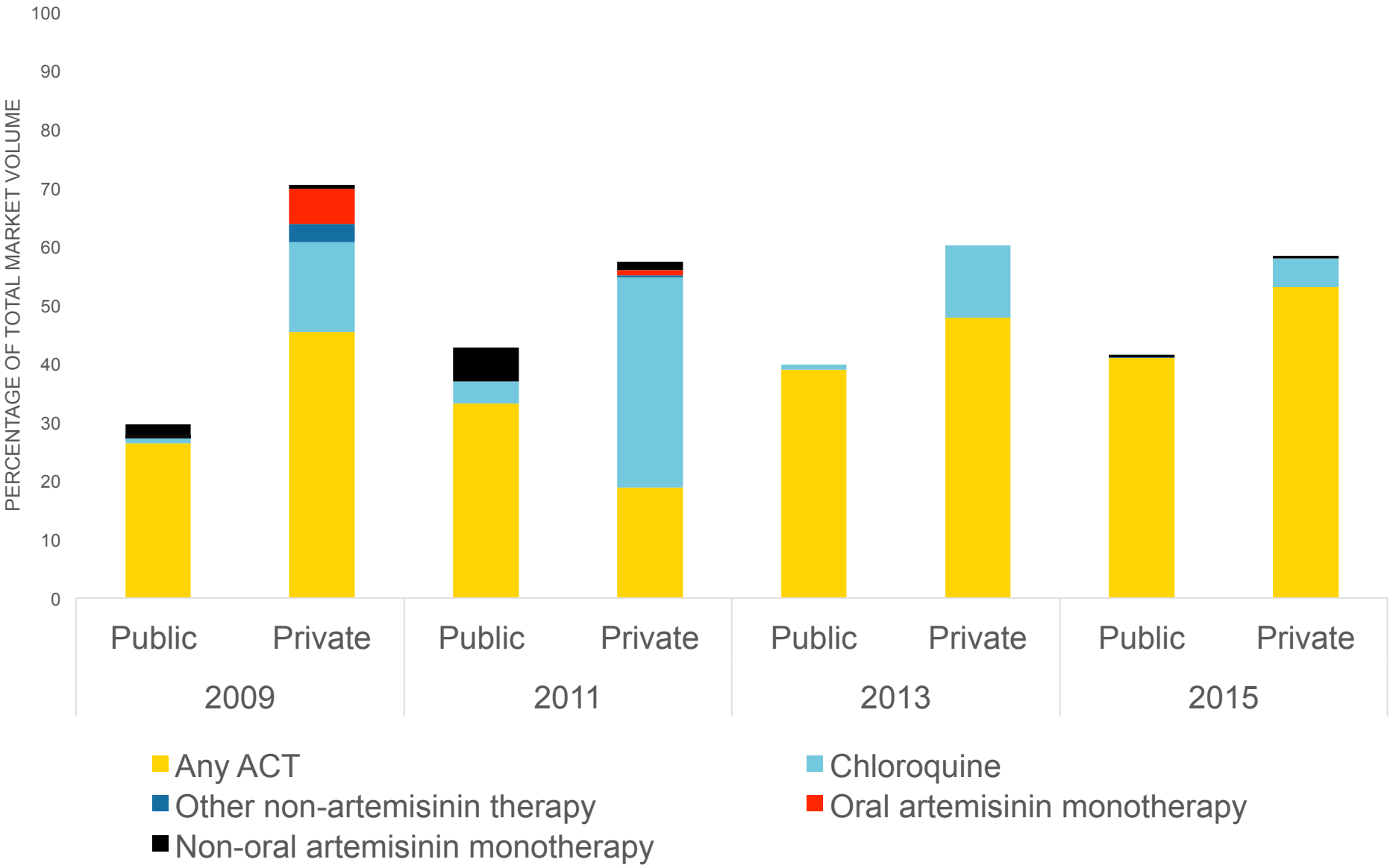
Antimalarial Market Share: 2009 - 2015



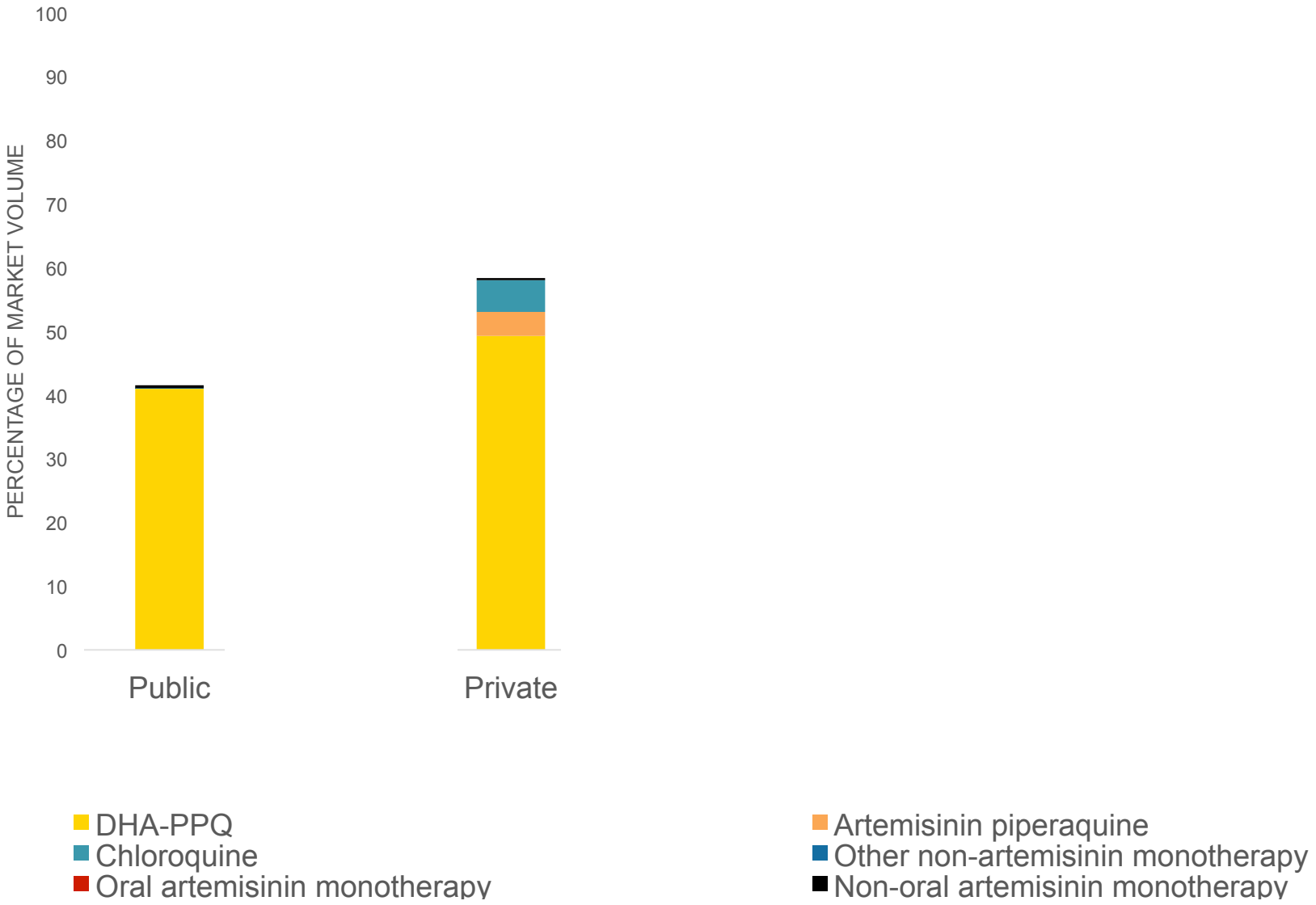
Antimalarial Market Share: 2009 - 2015



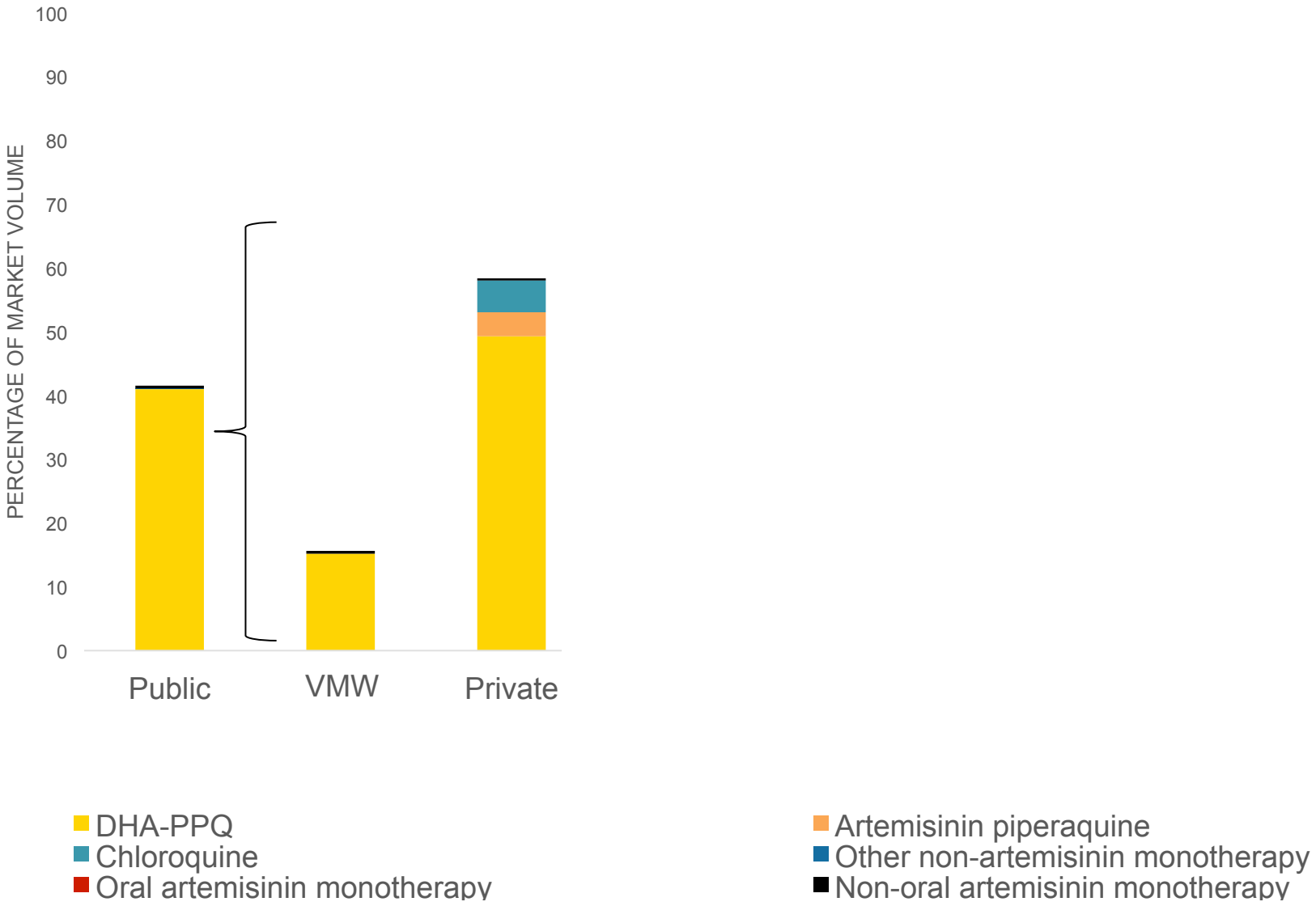
Antimalarial Market Share: 2009 - 2015



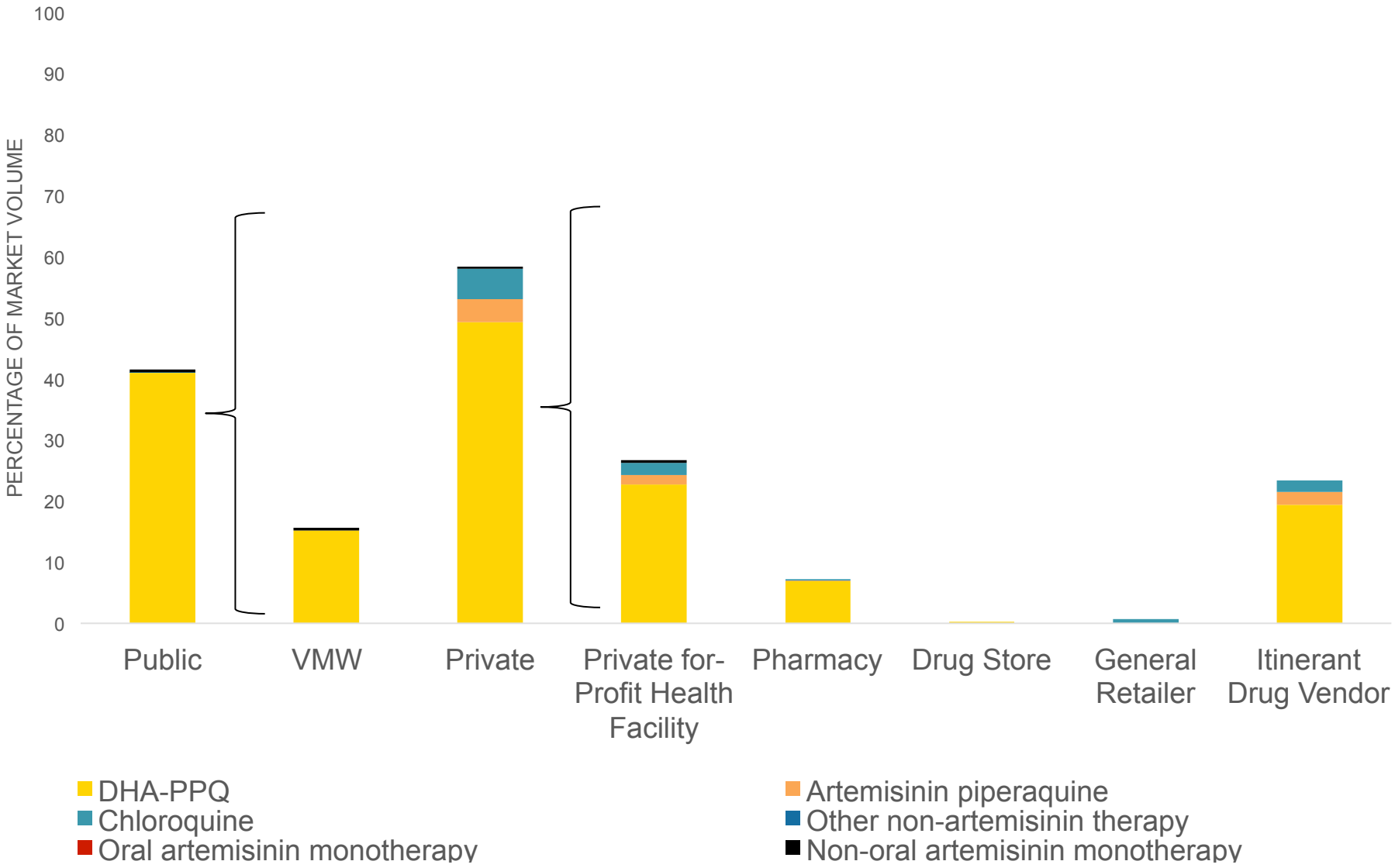
Antimalarial Market Share: 2015



Antimalarial Market Share: 2015



Antimalarial Market Share: 2015




What do we know about the
itinerant drug vendors?

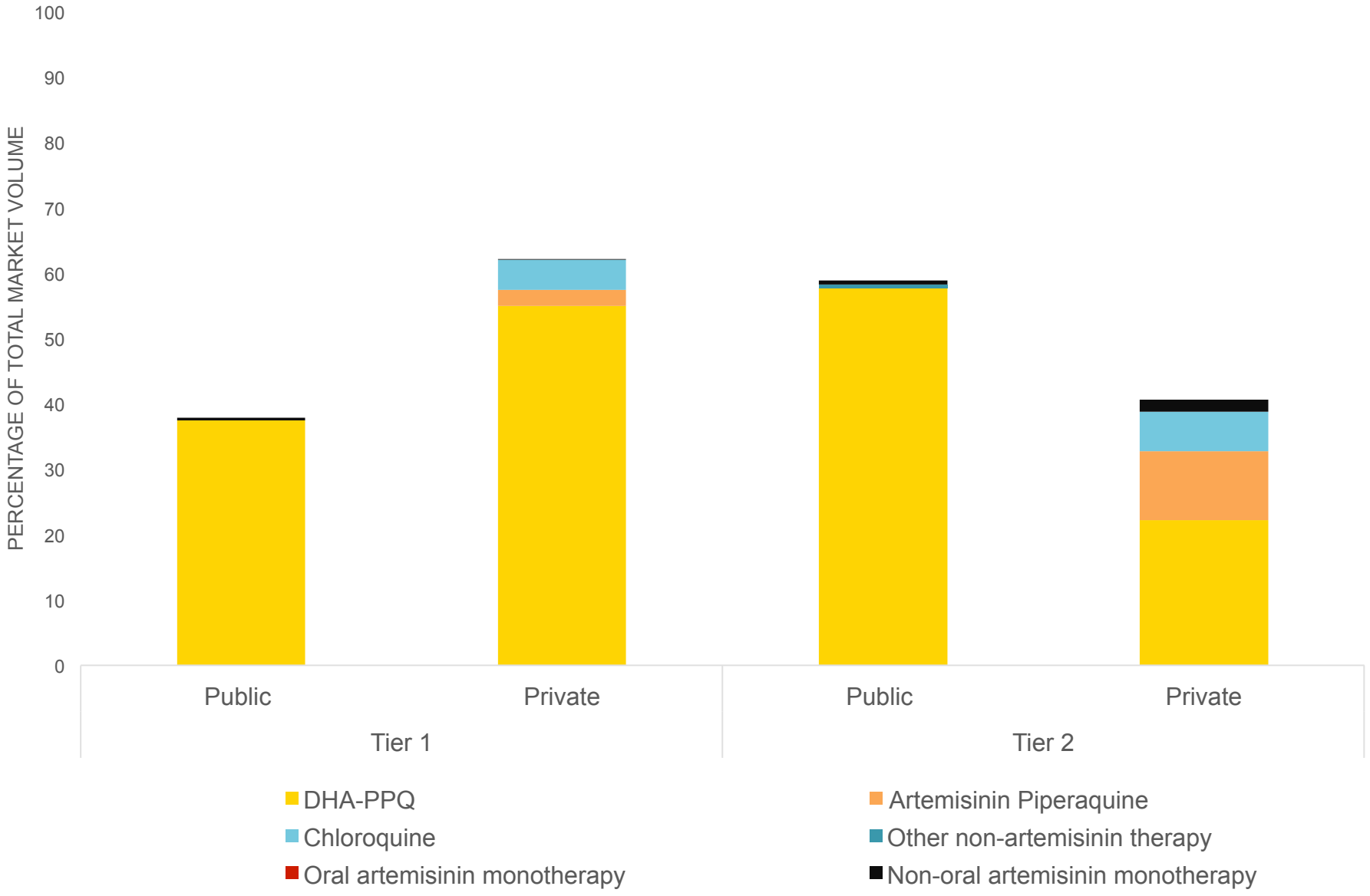
Demographic profile

- About 80% male
- Median time working as provider: 10 years
- Median age: 46
- About one-third with some college or completed college
- About half with less than completed secondary school education
- More than half have some sort of medical training and most commonly this is nurse/nursing officer training.




How different is antimalarial market share in Tier 1 and Tier 2?

Antimalarial Market Share: by Tier



5 insights

antimalarial market share in Cambodia

1. **Public sector markets share increases over time, though most antimalarials are still sold/distributed in the private sector.**

2. **In 2015, most of the antimalarials sold/distributed are first line DHA-PPQ. Distribution of non-artemisinin therapy, namely chloroquine, is limited to the private sector and comprises less than 5% of the market share. No oral AMT is sold/distributed in 2015.**

3. **Itinerant drug vendors comprise one fifth of total market share – similar to private for-profit facilities.**

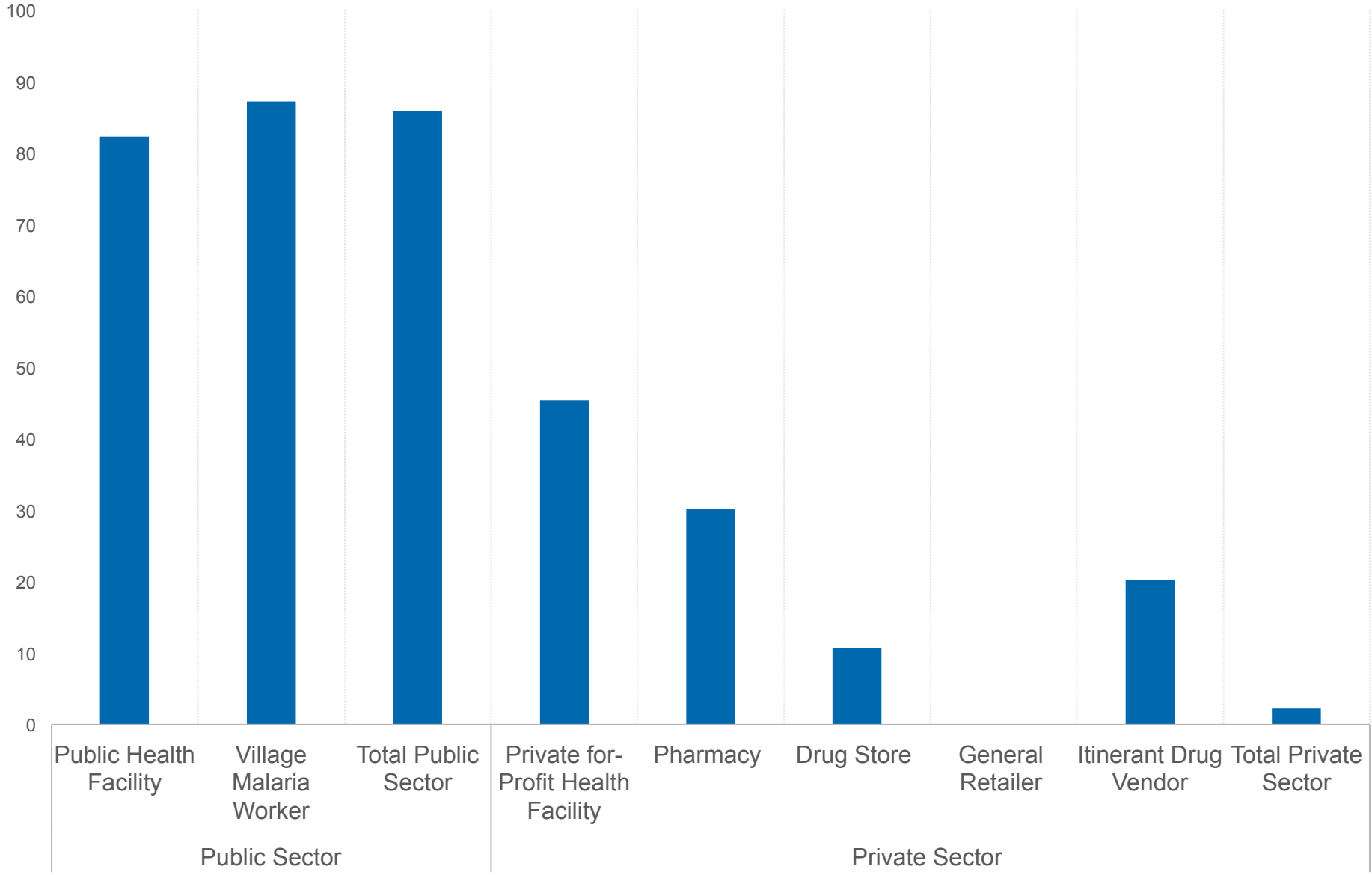
4. **Market share among the public sector in Tier 2 is greater than the private sector market share (60% versus 40%)**

5. **Most of the non first-line ACT (artemisinin piperaquine) is distributed in Tier 2.**

What is the availability of diagnostics among all outlets?

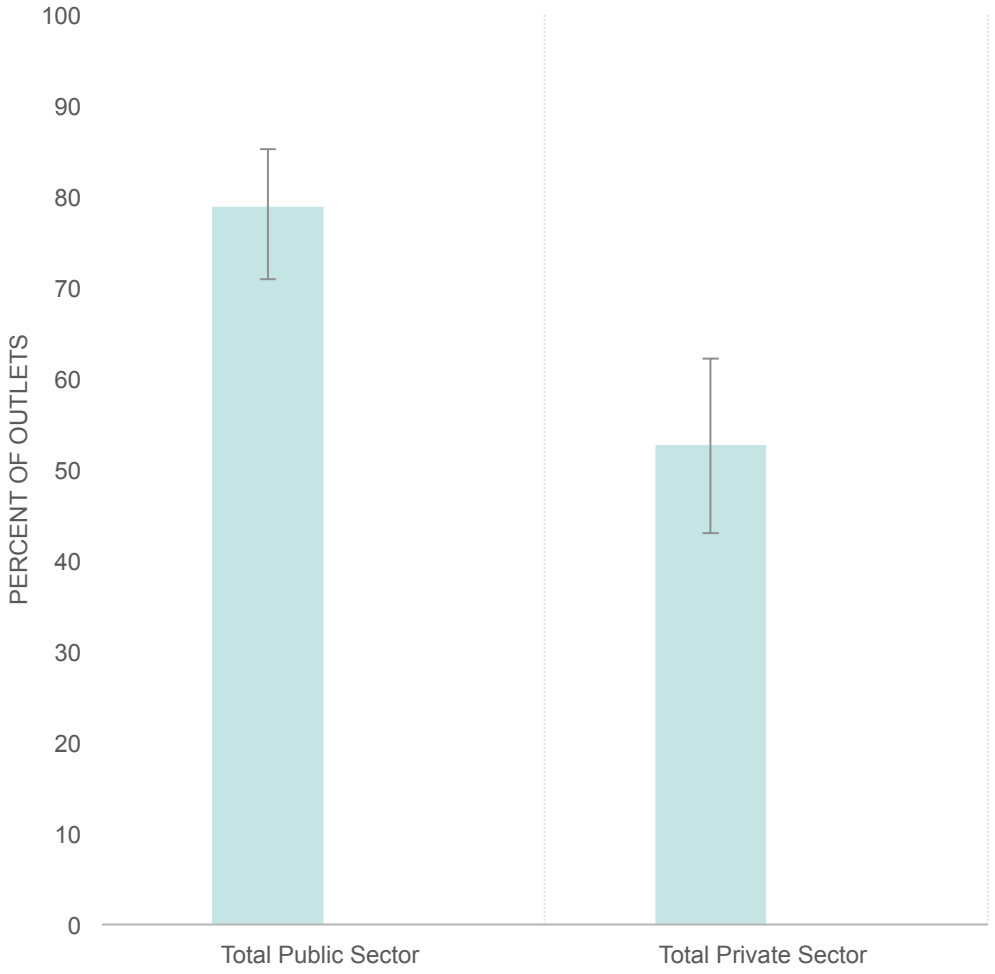
Among all screened outlets

Availability of Any Malaria Test: 2015



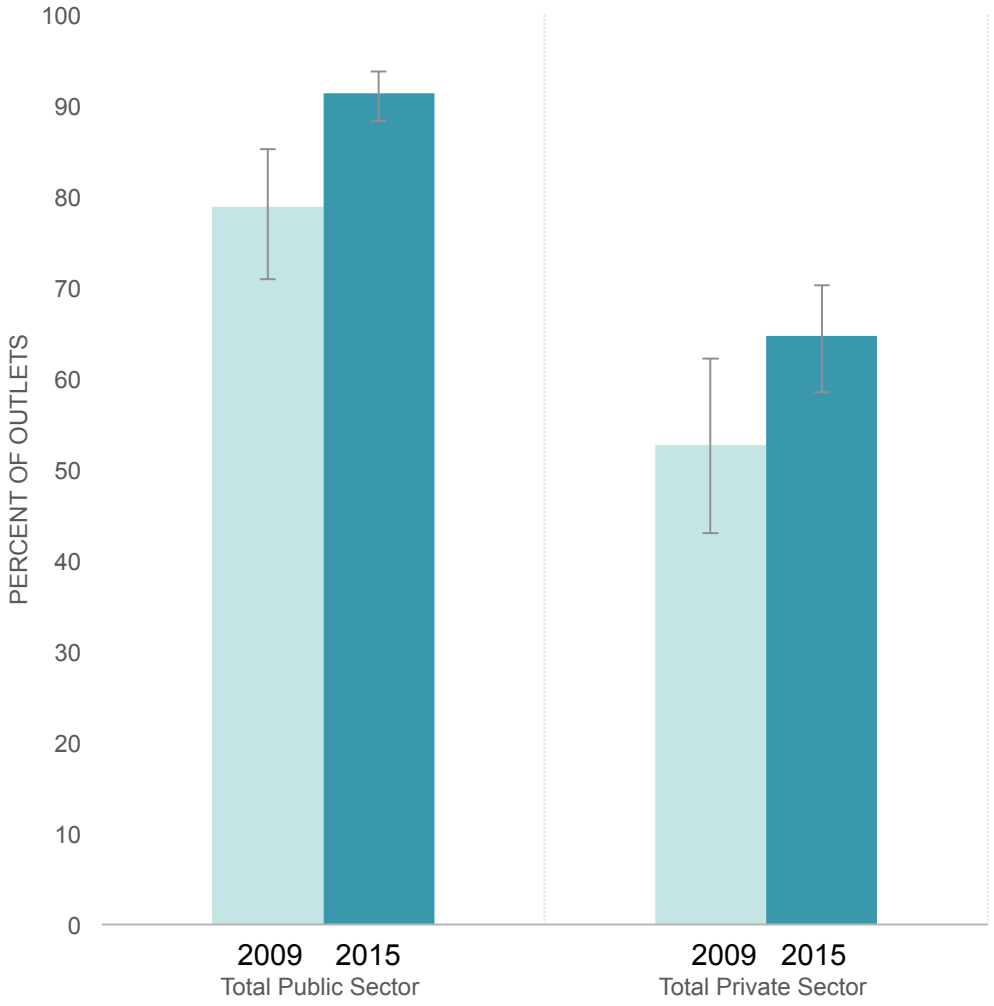
Is malaria blood testing available among antimalarial stocking outlets?

Availability of malaria diagnostic tests: 2009



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Availability of malaria diagnostic tests: 2009 & 2015



90% of the public sector have diagnostic testing availability

Increases in availability are found over time across both sectors

How available is malaria microscopy in 2015?



Malaria microscopy availability in 2015

1 in 3

Number of public health facilities that have malaria microscopy available

Malaria microscopy availability in 2015

<10

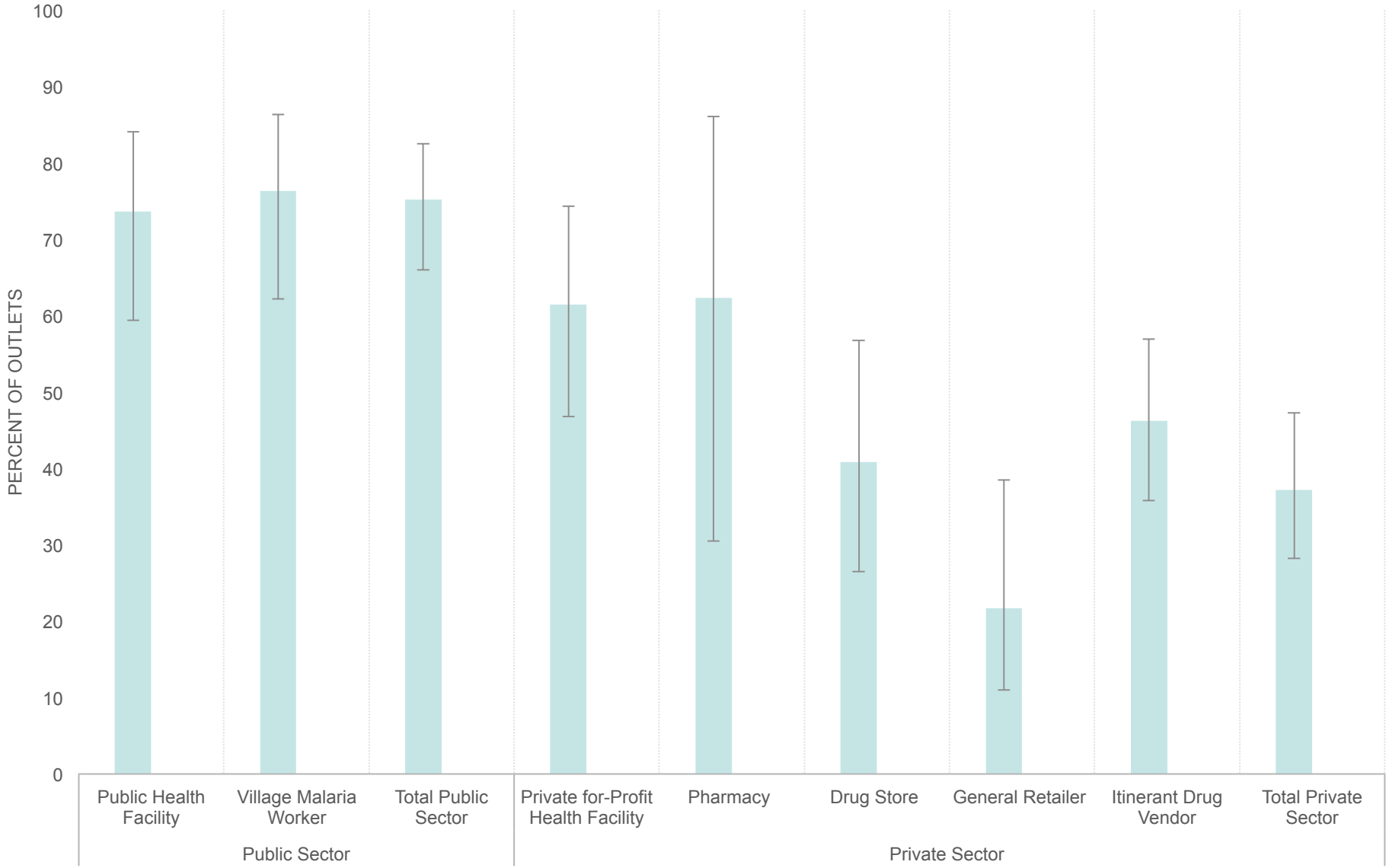
Percent of the private sector have malaria microscopy available



How available are malaria RDTs?

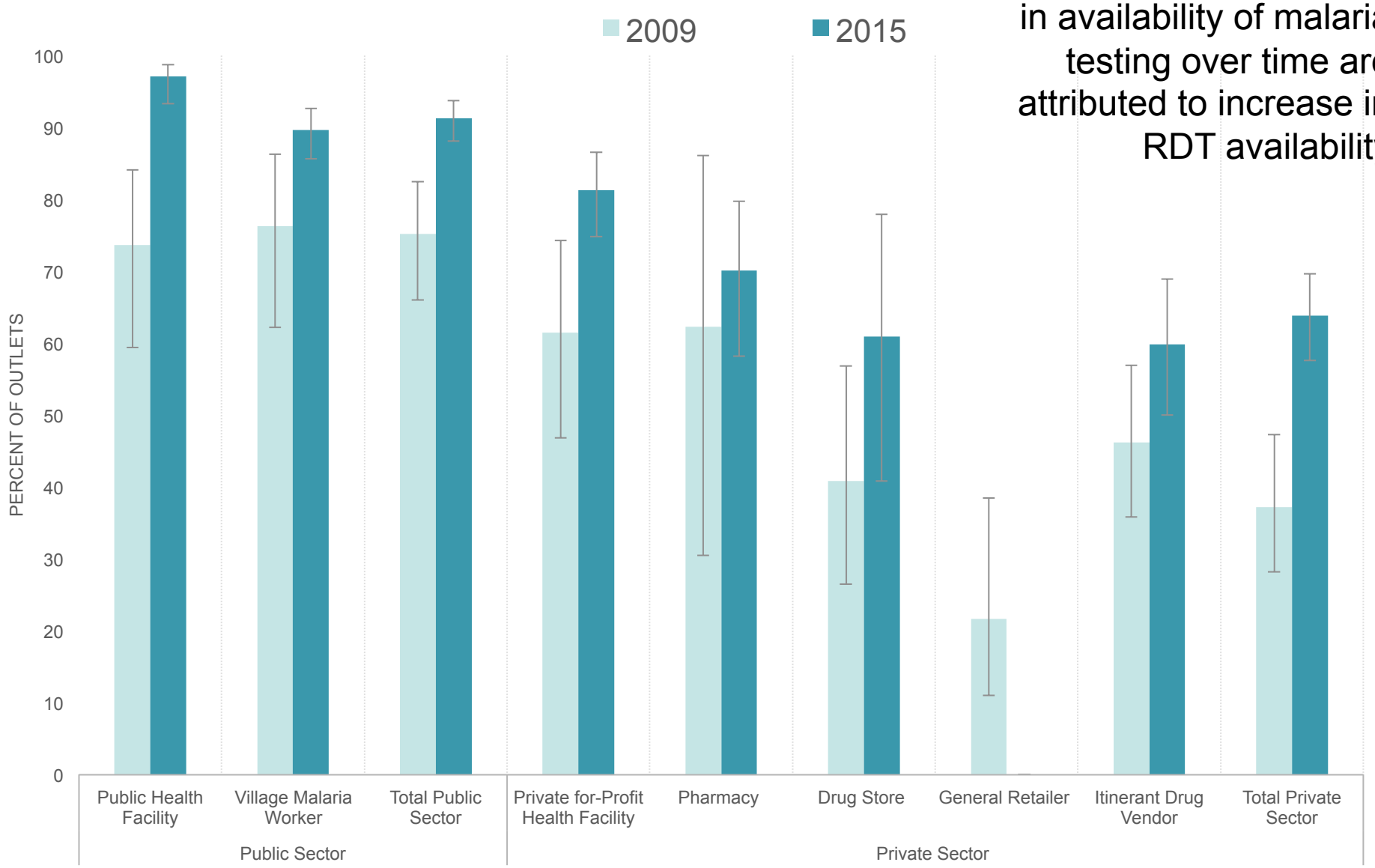
Among all outlets w at least one AM in stock or in the past 3 months

Availability of mRDT: 2009



Availability of mRDT: 2009 & 2015

Most of the increases in availability of malaria testing over time are attributed to increase in RDT availability





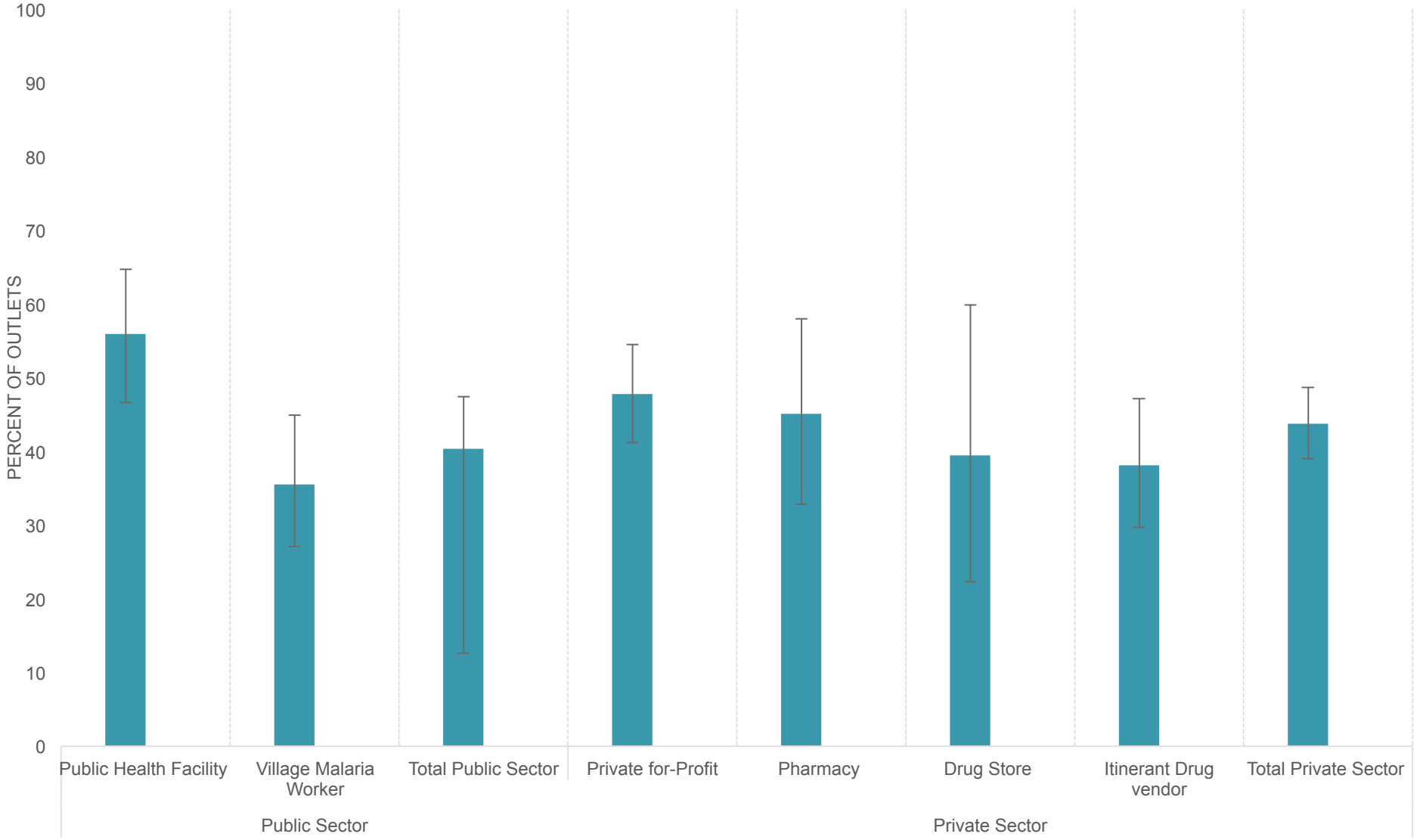
How frequently are malaria tests provided/performed?

Less than half

of the public and private sector that have diagnostic tests report selling or providing a malaria test in the previous week

Among all outlets w at least one malaria test in stock

Outlets that provided malaria tests in the previous week: 2015



How frequently are antimalarials distributed?

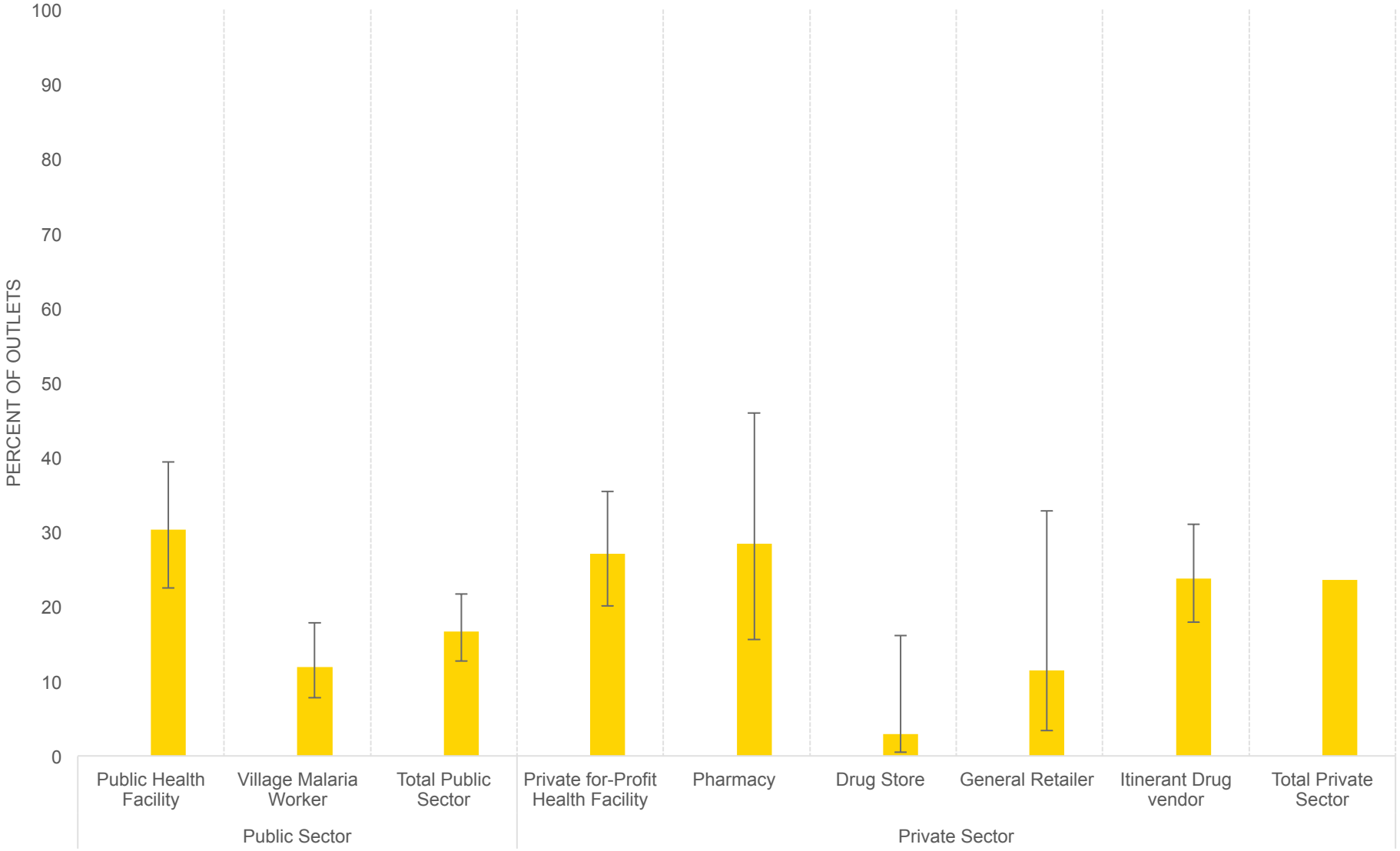


Less than 1 in 3

of the public and private sector outlets that have antimalarials report distributing them in the previous week

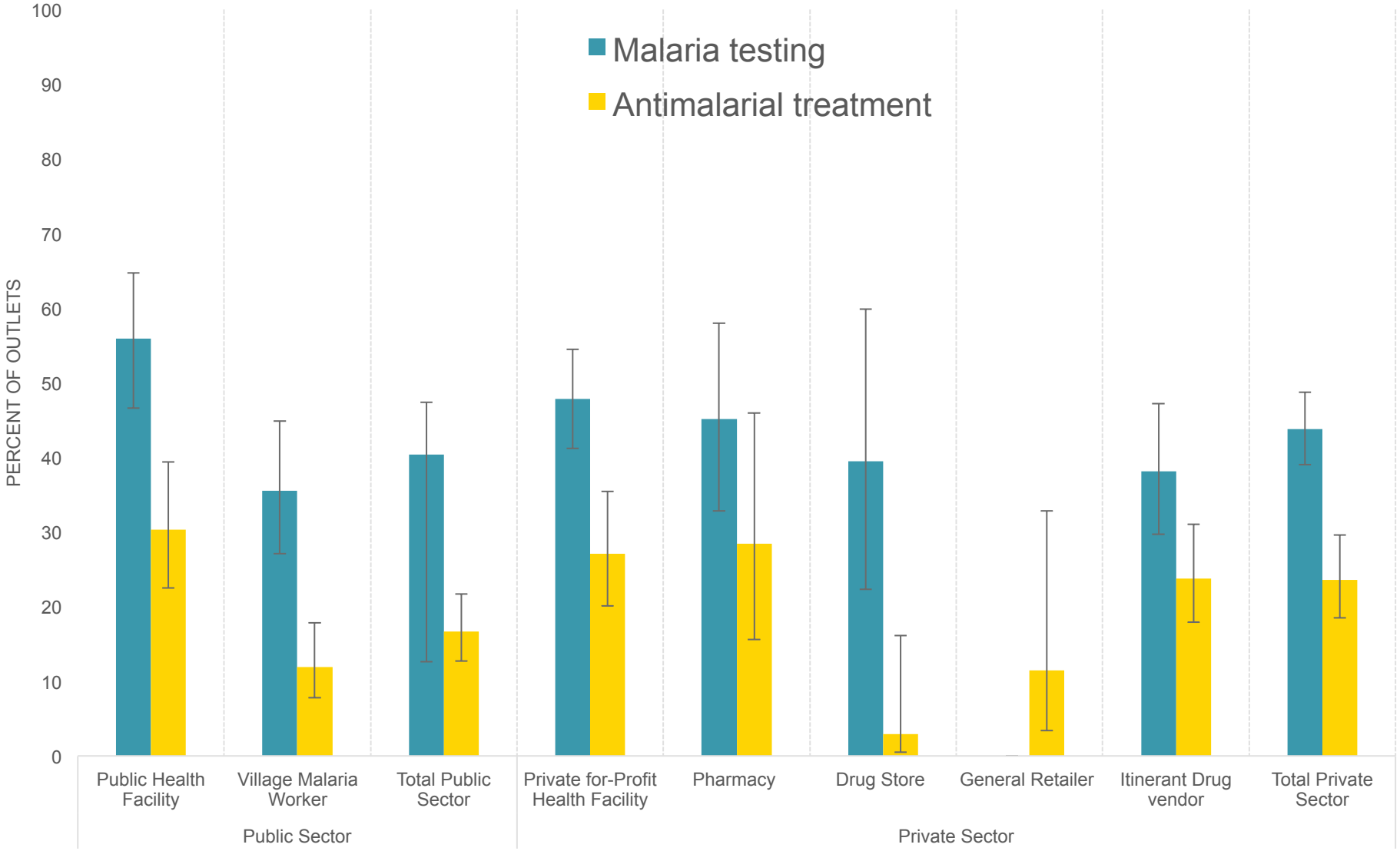
Among all outlets w at least one AM in stock

Outlets that distributed AM in the previous week: 2015



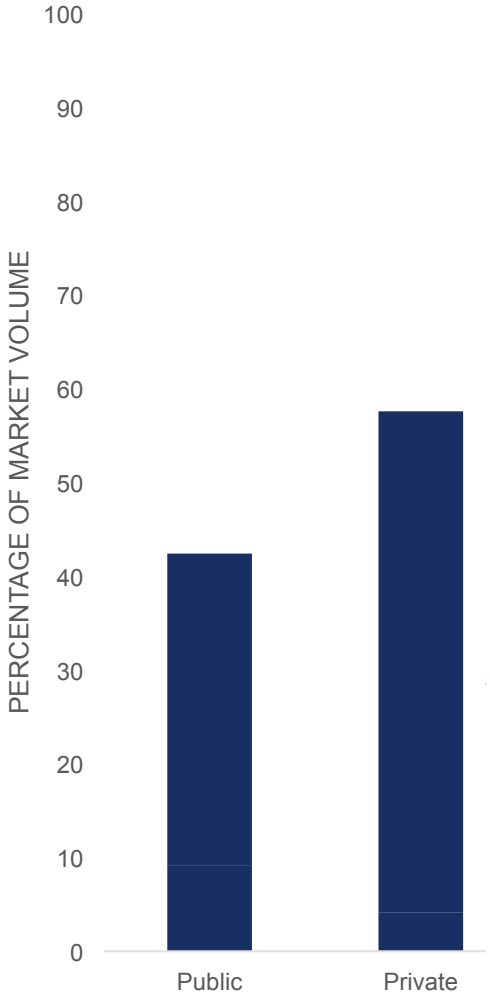
Among all outlets w at least one AM or test in stock

Provision of malaria blood testing & distribution of AMs: 2015



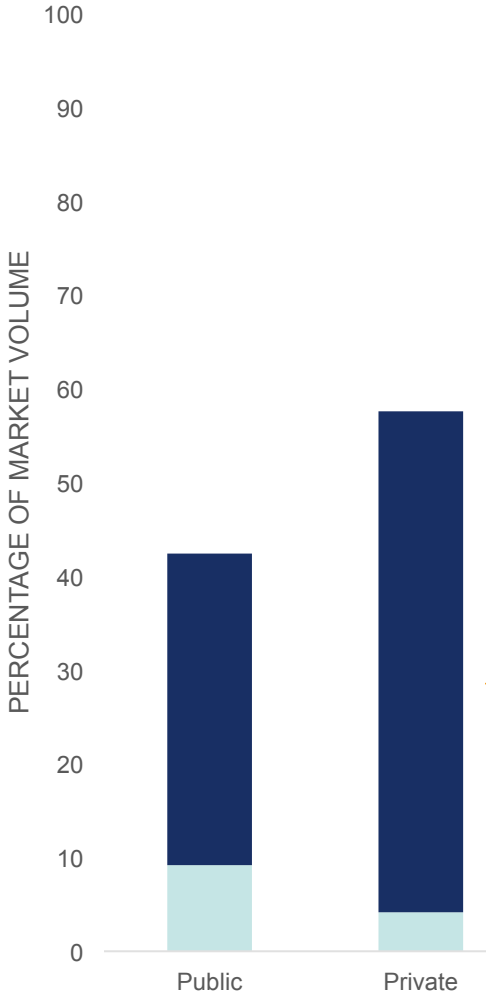
What is the malaria diagnostic market share between the public and private sectors?

Malaria Diagnostic Market Share: 2015



57% of malaria tests are distributed through the private sector

Malaria Diagnostic Market Share: 2015



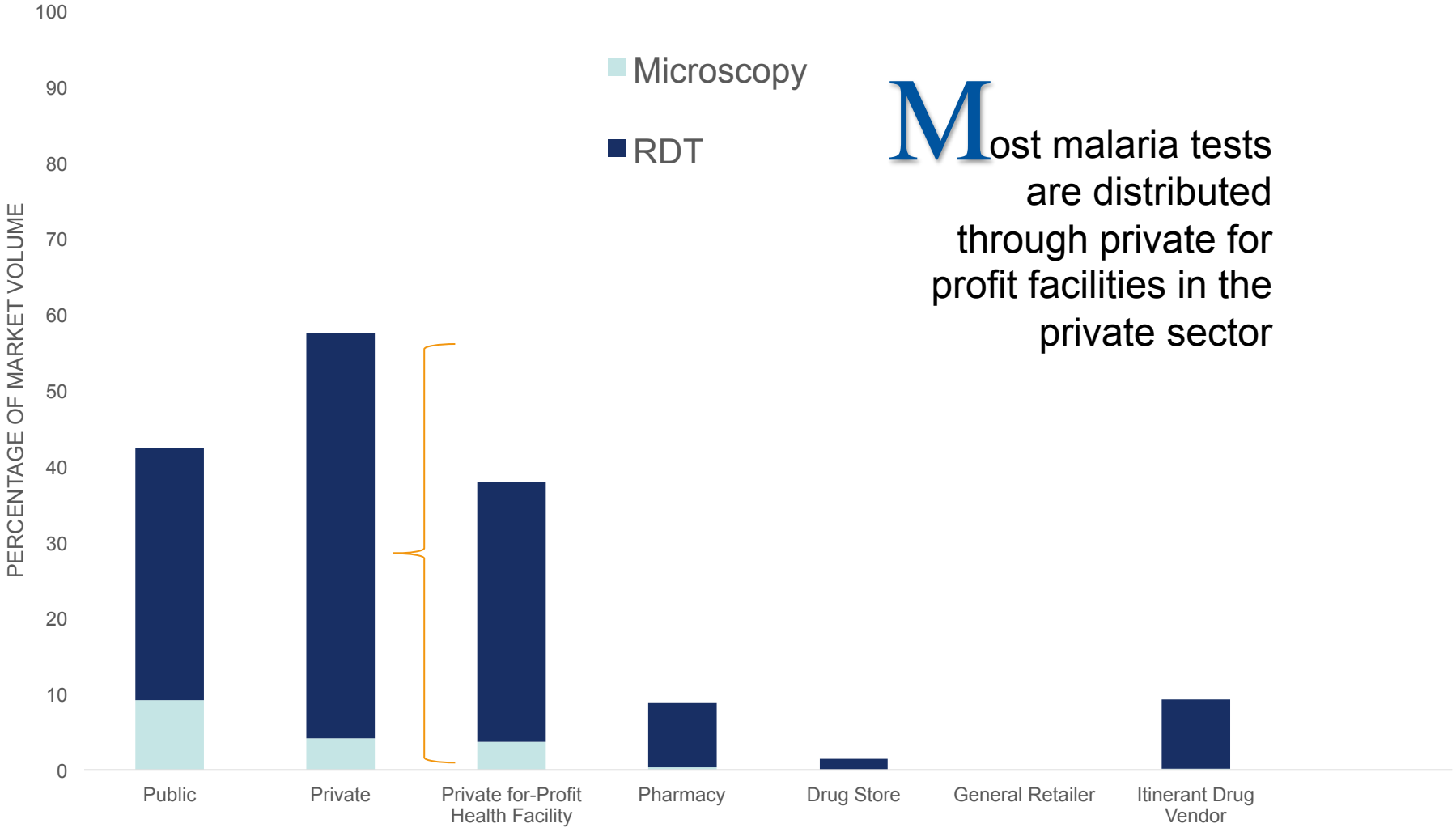
Microscopy

RDT

86% of malaria tests are RDT

90% manufactured by Standard Diagnostics

Malaria Diagnostic Market Share: 2015



Most malaria tests are distributed through private for profit facilities in the private sector

5 insights

malaria diagnostics in Cambodia

1. **Availability of diagnostic tests has increased over time. This is primarily due to an increase of RDTs on the market in the private sector.**

2. **Among all outlets screened, 86% of the public sector, 46% of private for profit facilities and 1 in three pharmacies had a malaria test in stock.**

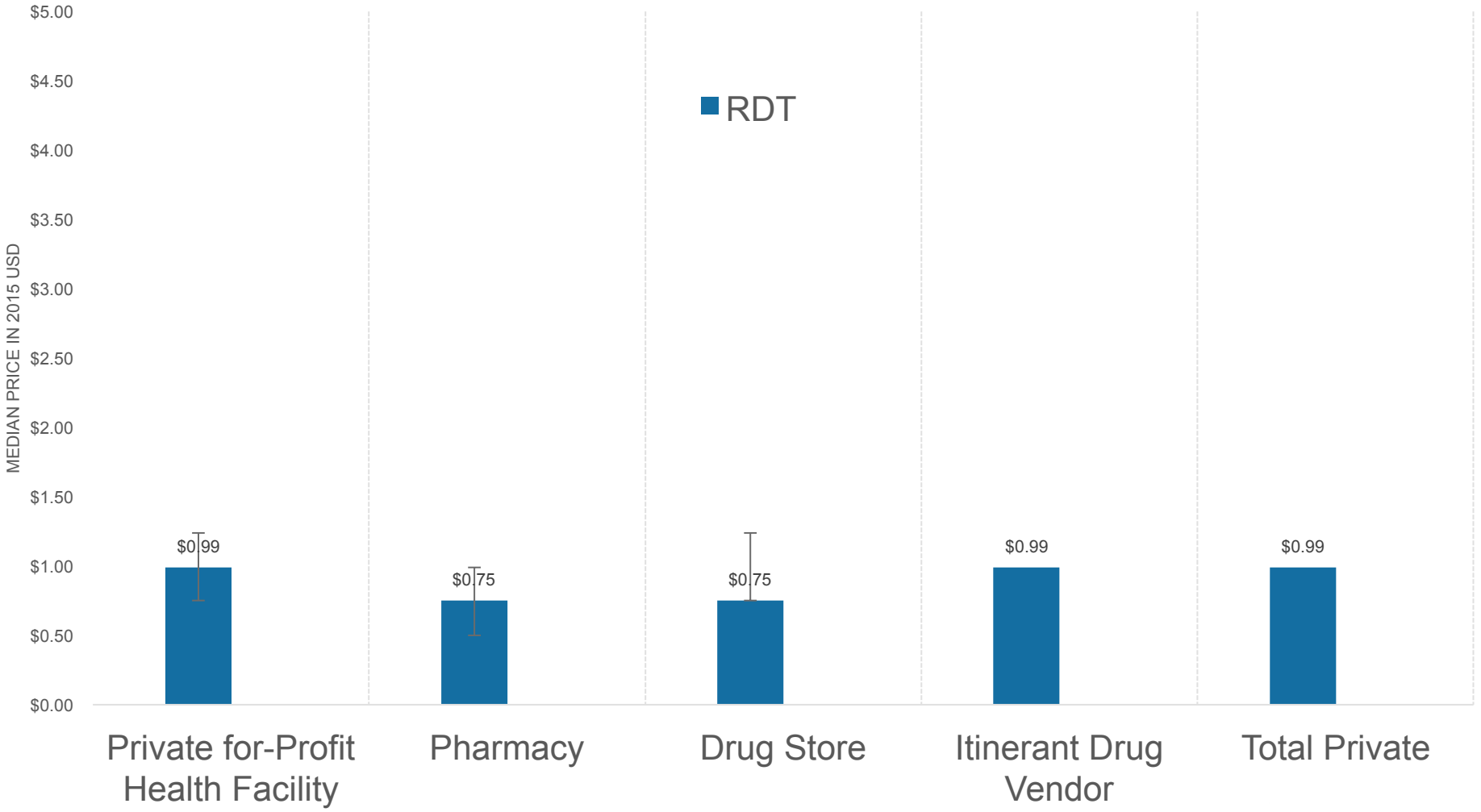
3. **In 2015, most of the public sector stocking antimalarials had diagnostics in stock, and around 70% of the antimalarial stocking private sector.**

4. **Most outlets with malaria commodities reportedly did not sell/ distribute diagnostic tests or antimalarials a week prior to the survey.**

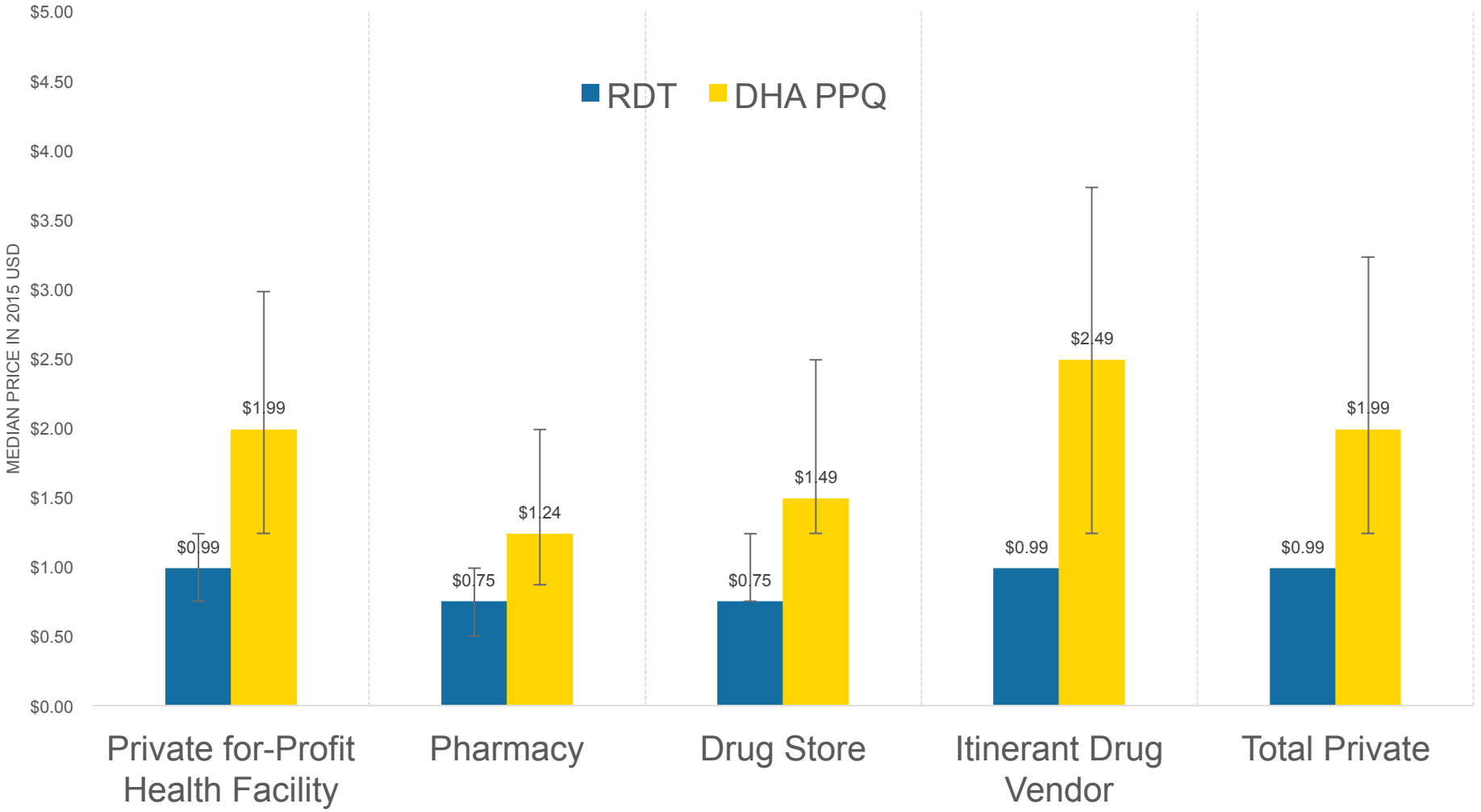
5. **Most of the diagnostic tests sold or distributed are RDTs, and 57% of the market share is through private sector.**

What is consumer price of RDT and first line treatment?

Median private sector consumer prices for malaria RDT testing for adults: 2015



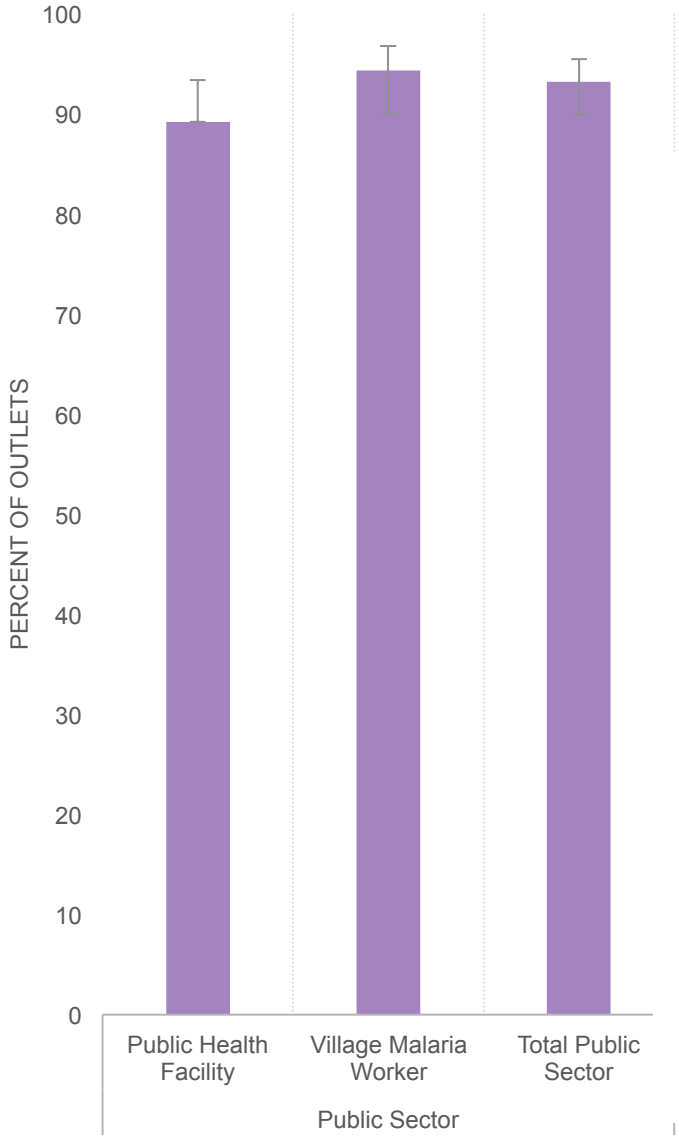
Median private sector consumer prices for malaria RDT testing & DHA-PPQ for adults: 2015



Do the providers working in outlets stocking antimalarials know the correct first-line treatment for uncomplicated malaria?

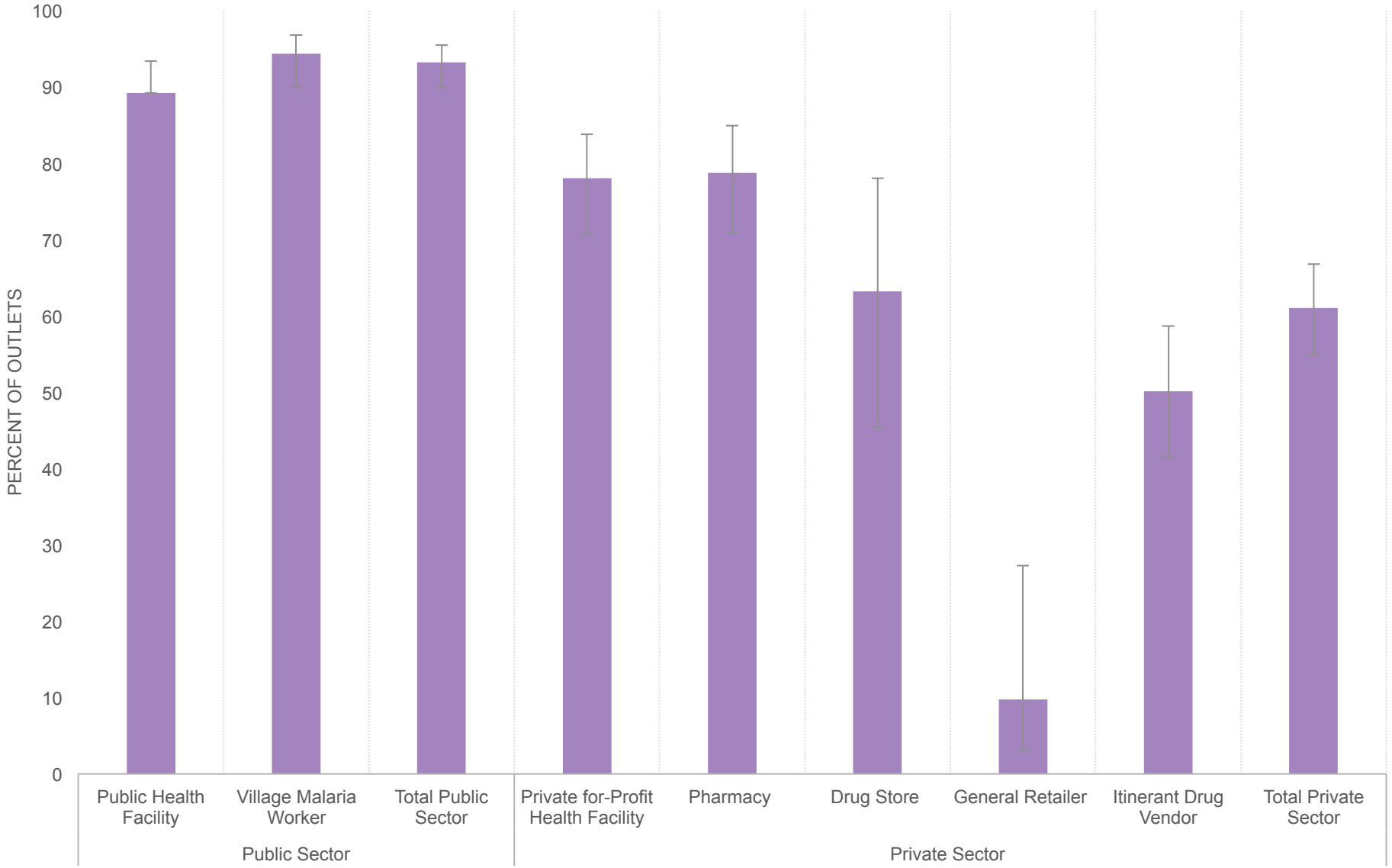
Among outlets currently/recently stocking antimalarials

Providers who correctly state the first-line treatment (DHA-PPQ or ASMQ FDC) for uncomplicated malaria: 2015



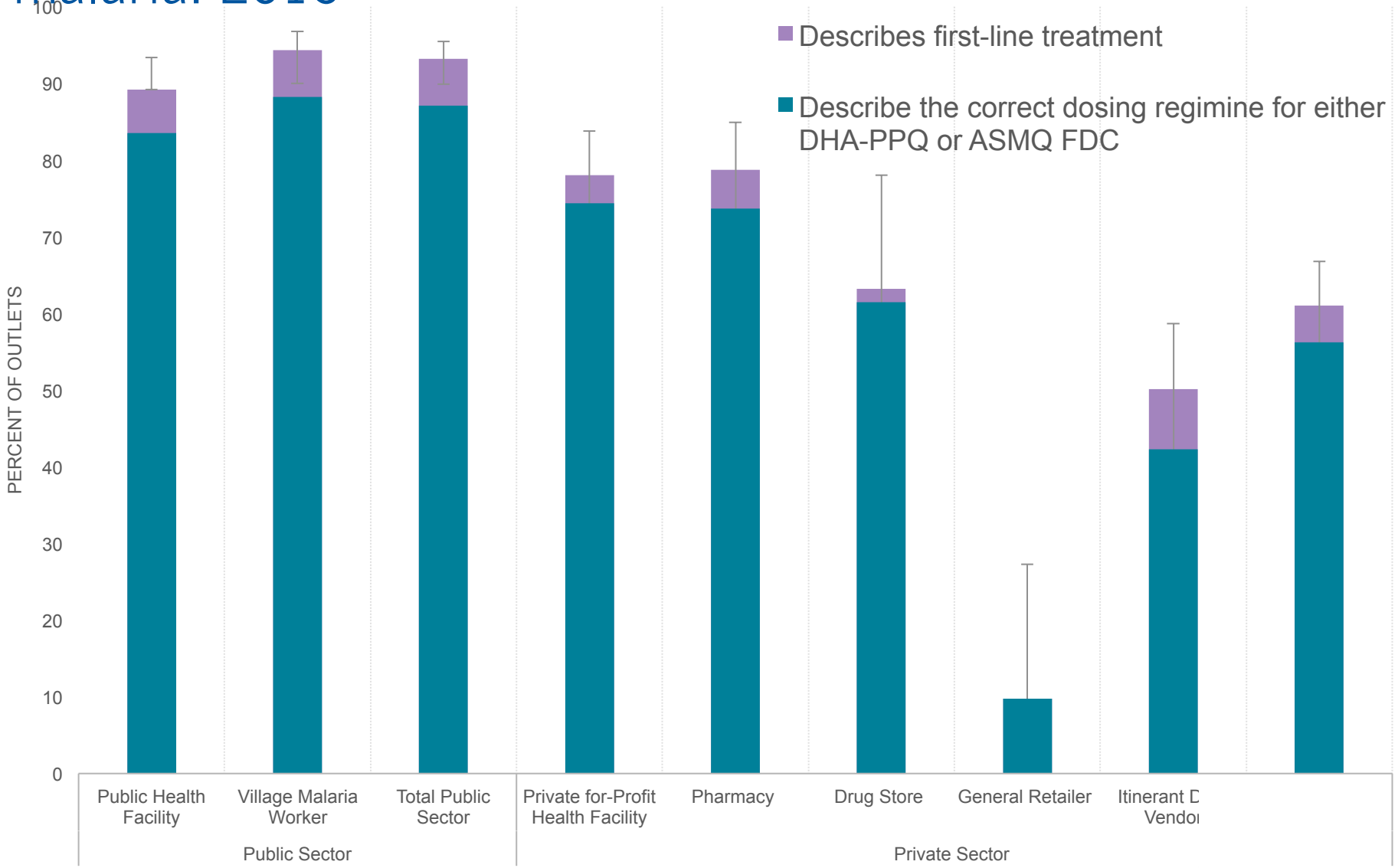
Among outlets currently/recently stocking antimalarials

Providers who correctly state the first-line treatment (DHA-PPQ or ASMQ FDC) for uncomplicated malaria: 2015



Among outlets currently/recently stocking antimalarials

Providers who correctly state the first-line treatment (DHA-PPQ or ASMQ FDC) & dosing regimen for uncomplicated malaria: 2015



What is the private sector readiness to adhere to malaria elimination guidelines? Progress towards Malaria Elimination Framework?

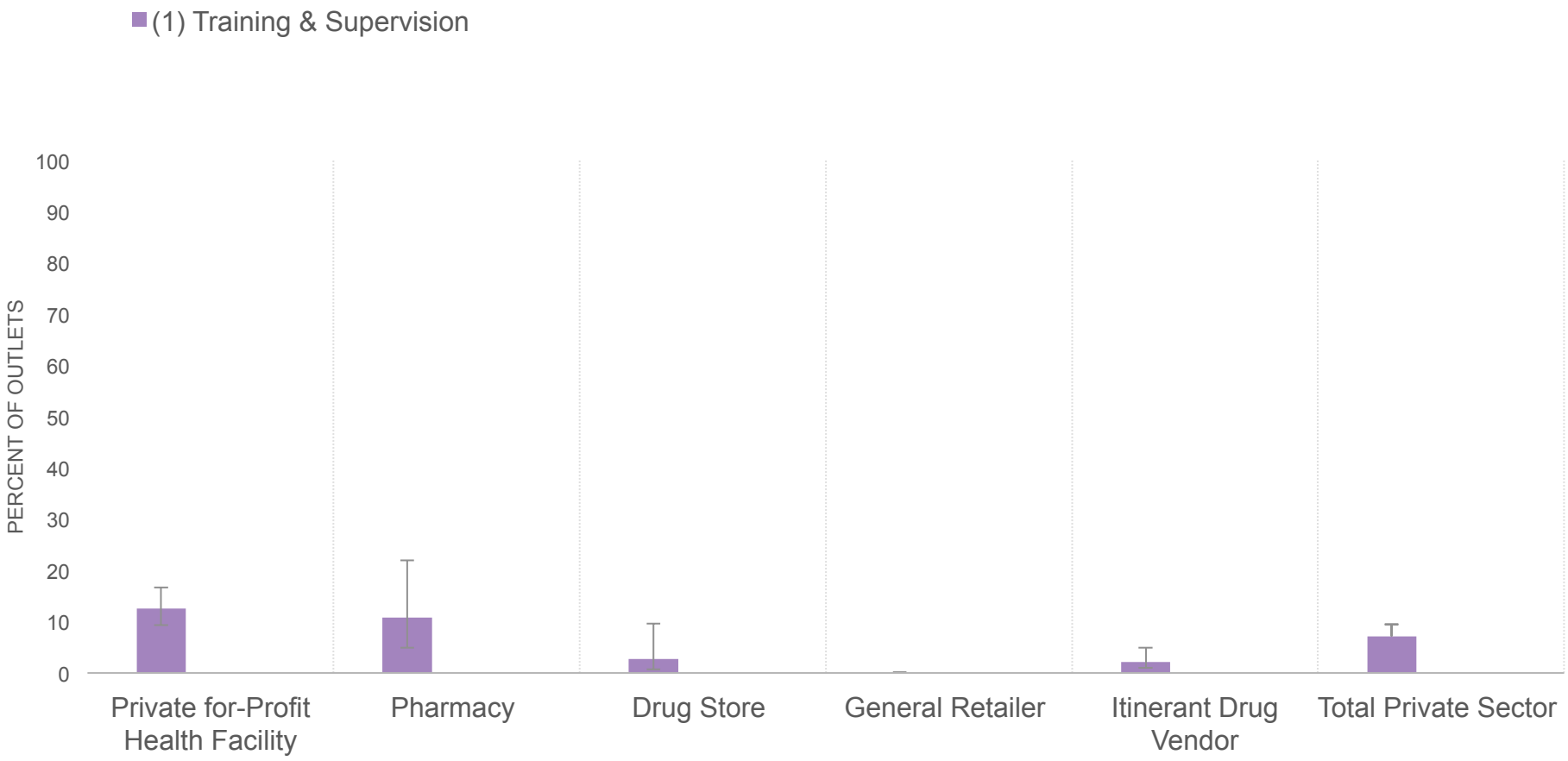


Cambodia's Malaria Elimination Framework includes:

- Achieve universal coverage of case management services by 2016 to ensure 100% parasitological diagnosis of all suspected cases and effective treatment of all confirmed cases
  - Providers must have malaria diagnostic testing available
  - Providers must have the first line treatment in stock
  - Providers must be trained on the national treatment guidelines & receive supervision
- Enhance the surveillance system to detect, immediately notify, investigate, classify and respond to all cases and foci by 2017 to move toward malaria elimination
  - Providers must keep records on number of patients tested and treated
  - Providers must report on numbers of patients tested/treated for malaria to government or other agency

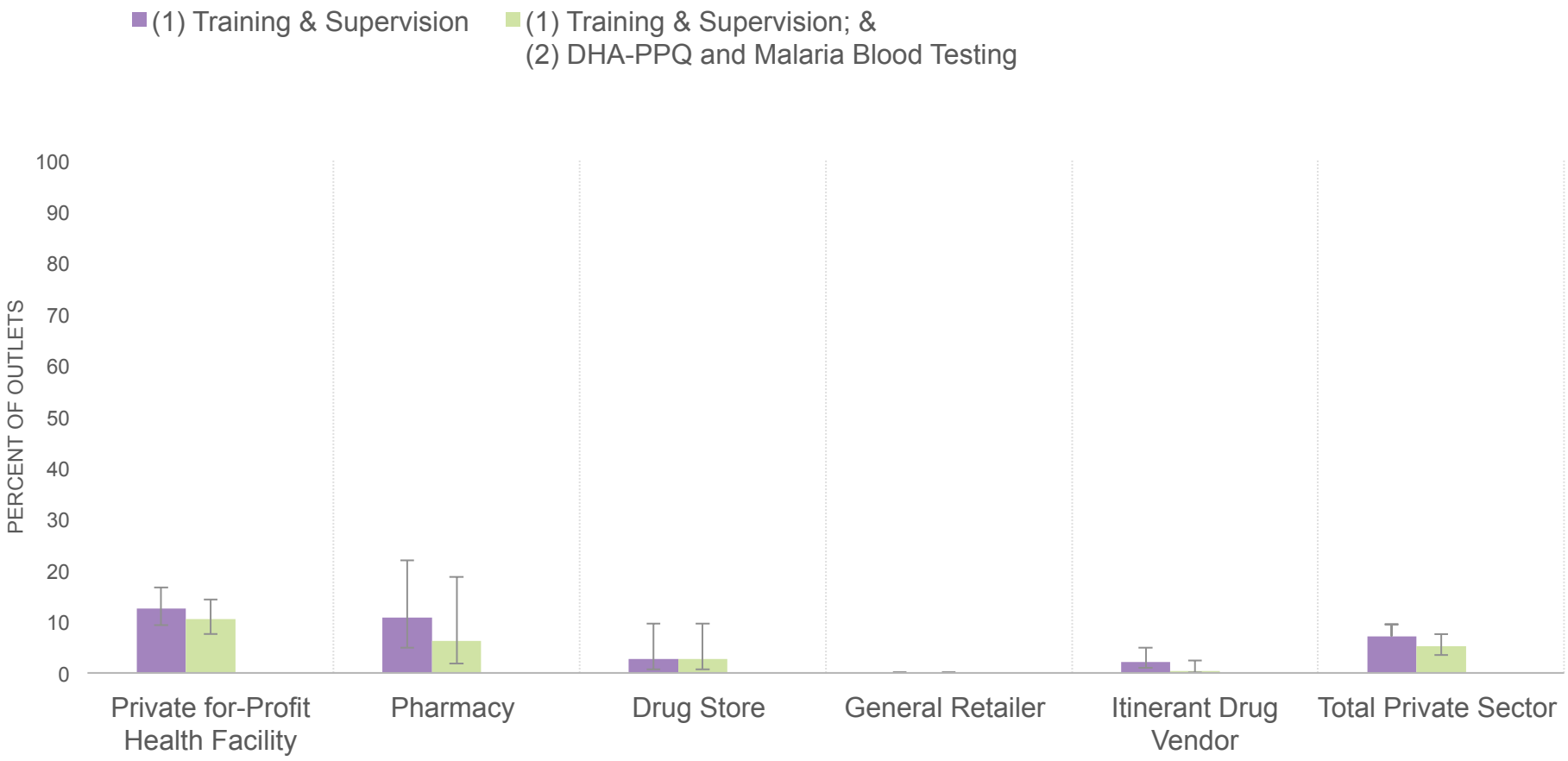
Among all outlets w at least one AM or/& malaria test in stock

Training, Supervision and Reporting in the Private Sector:



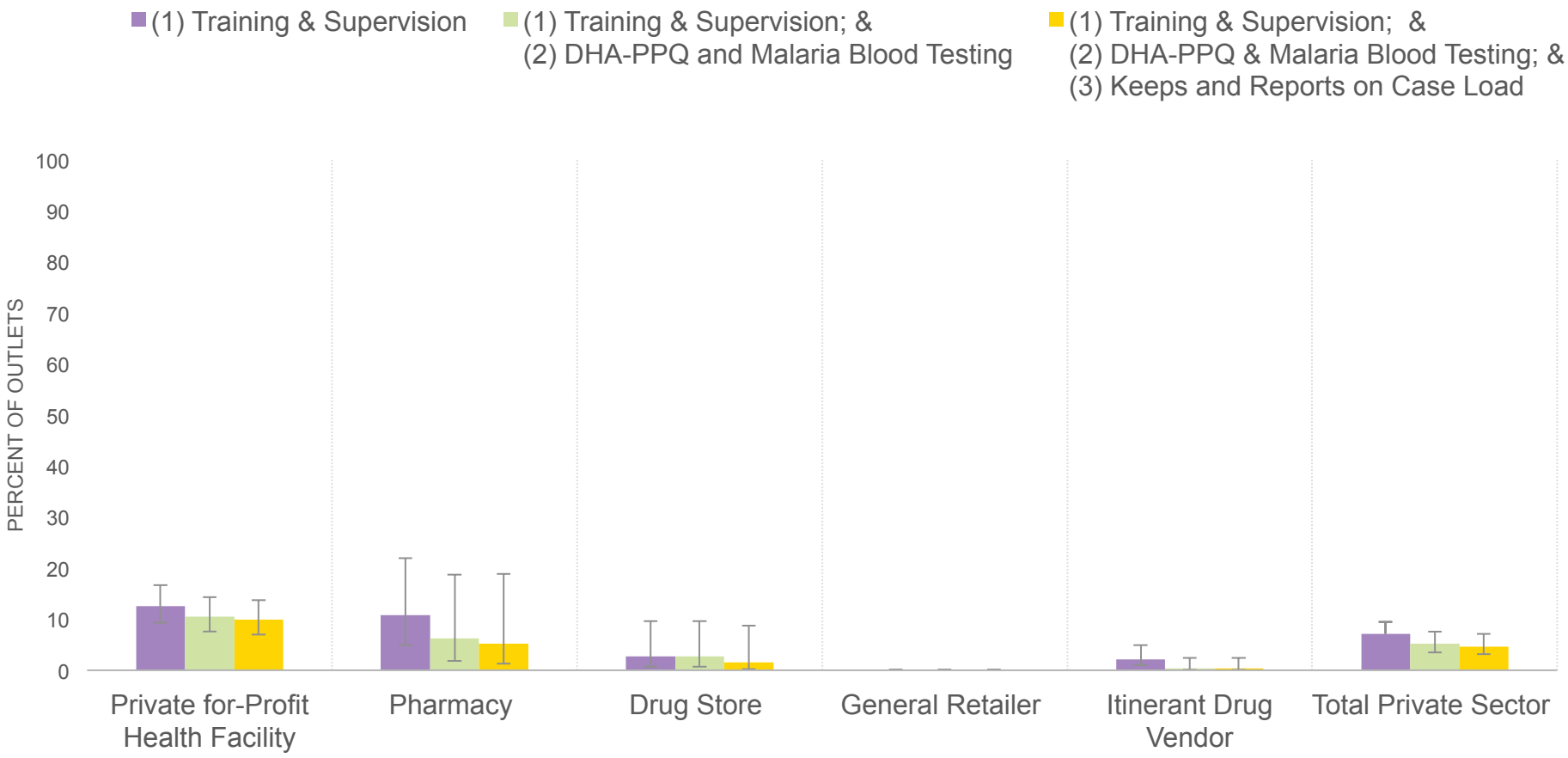
Among all outlets w at least one AM or/& malaria test in stock

Training, Supervision and Reporting in the Private Sector:



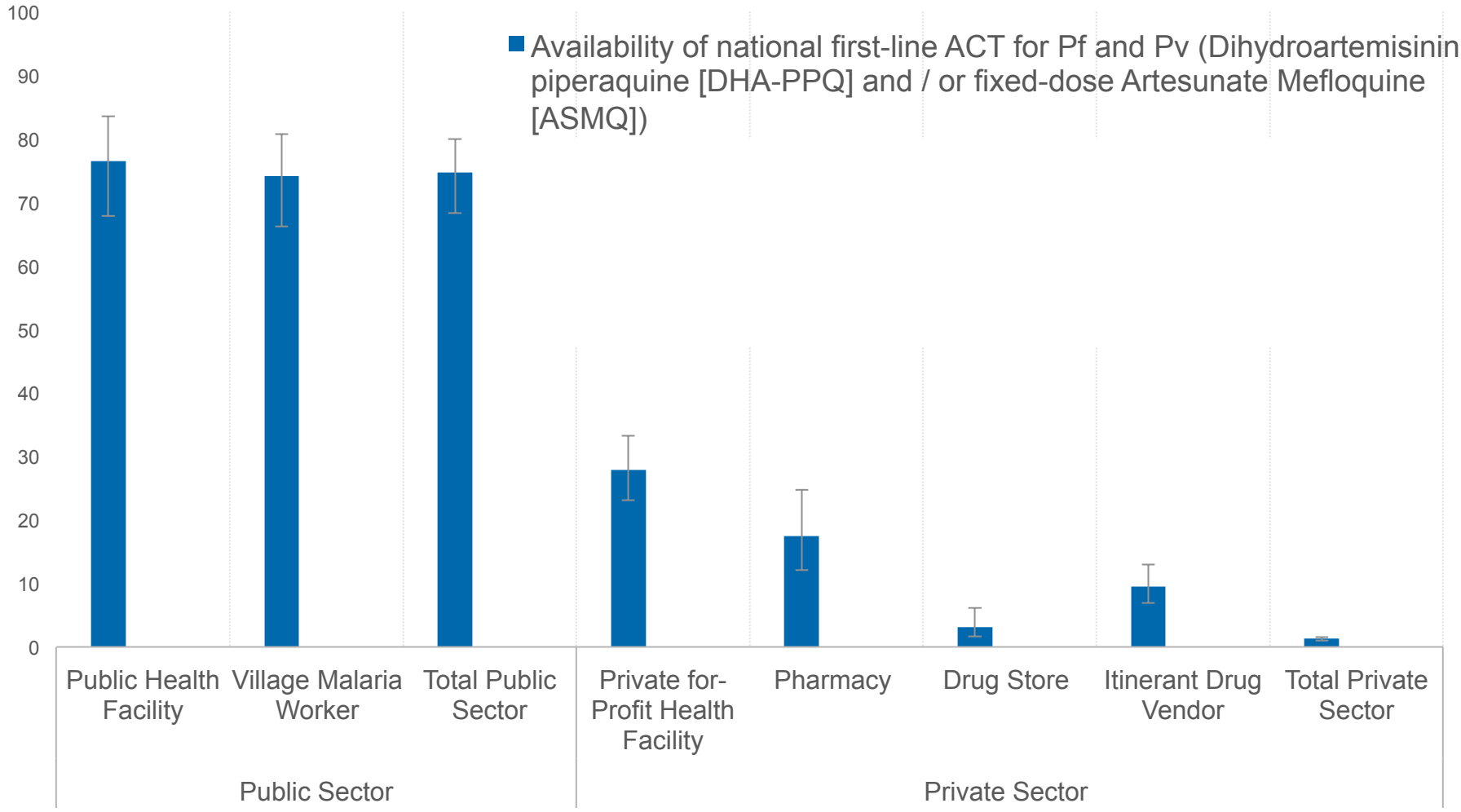
Among all outlets w at least one AM or/& malaria test in stock

Training, Supervision and Reporting in the Private Sector:

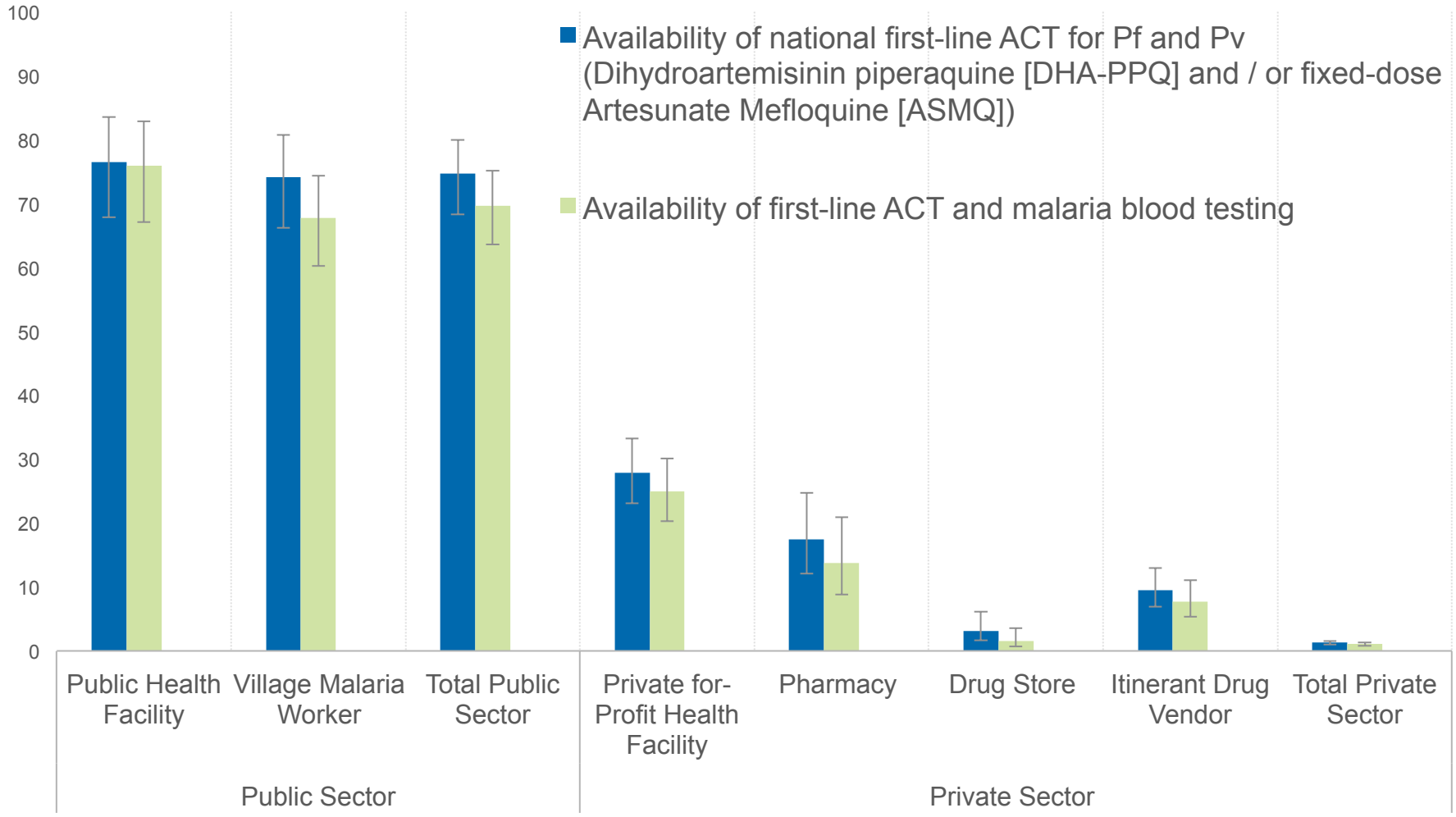


Among all screened outlets

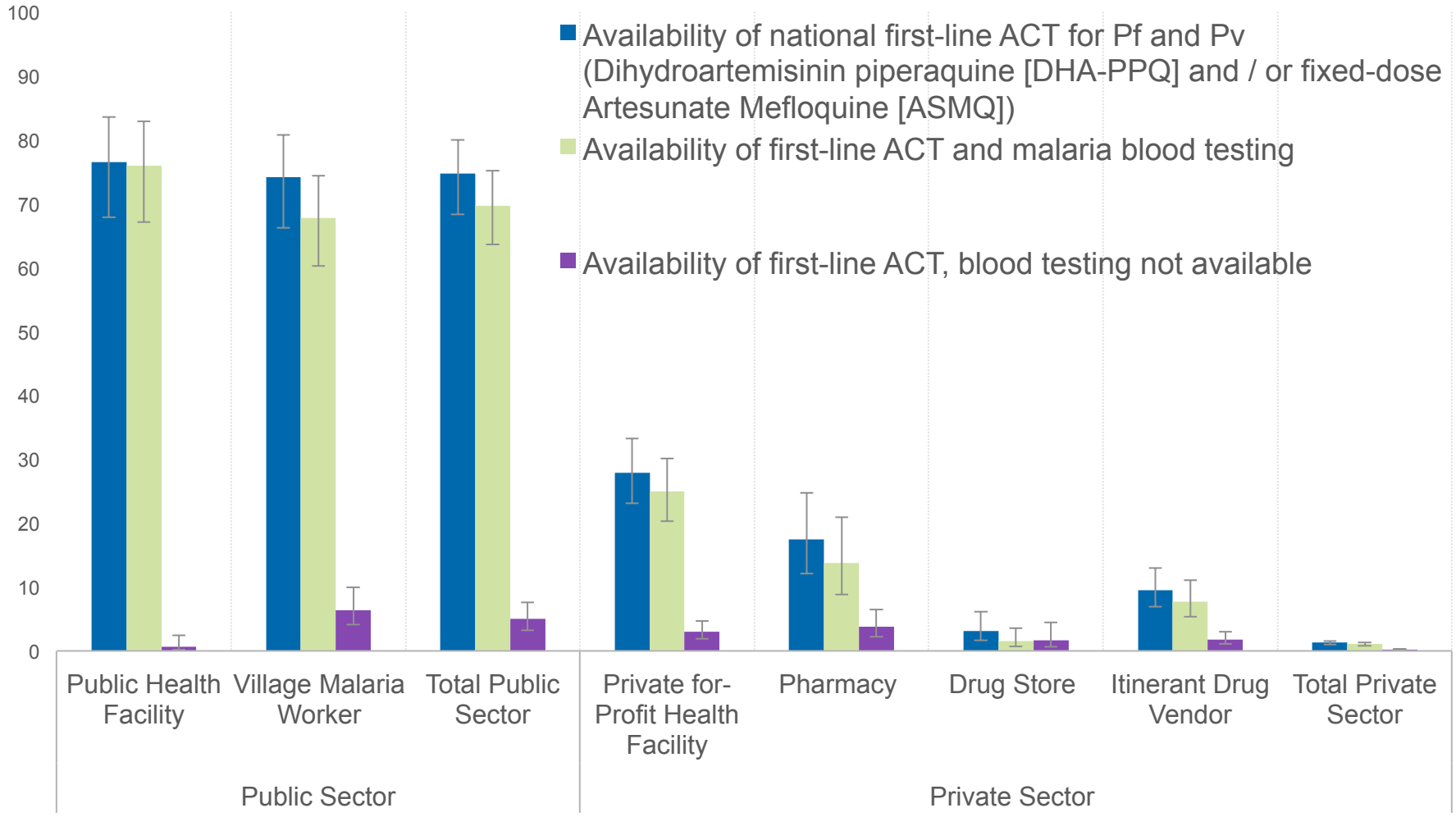
Public and Private Sector Readiness: 2015



Public and Private Sector Readiness: 2015

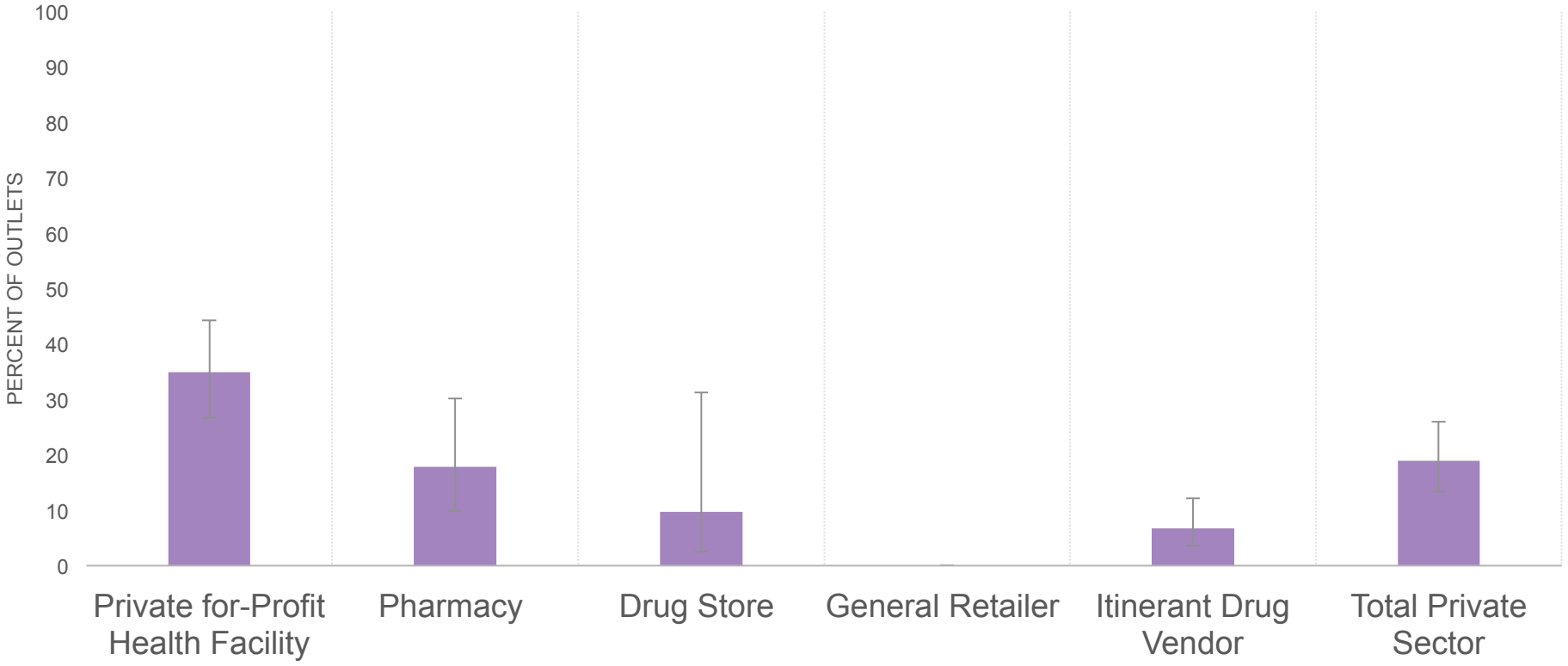


Public and Private Sector Readiness: 2015



Among all outlets w at least one AM or/& malaria test in stock

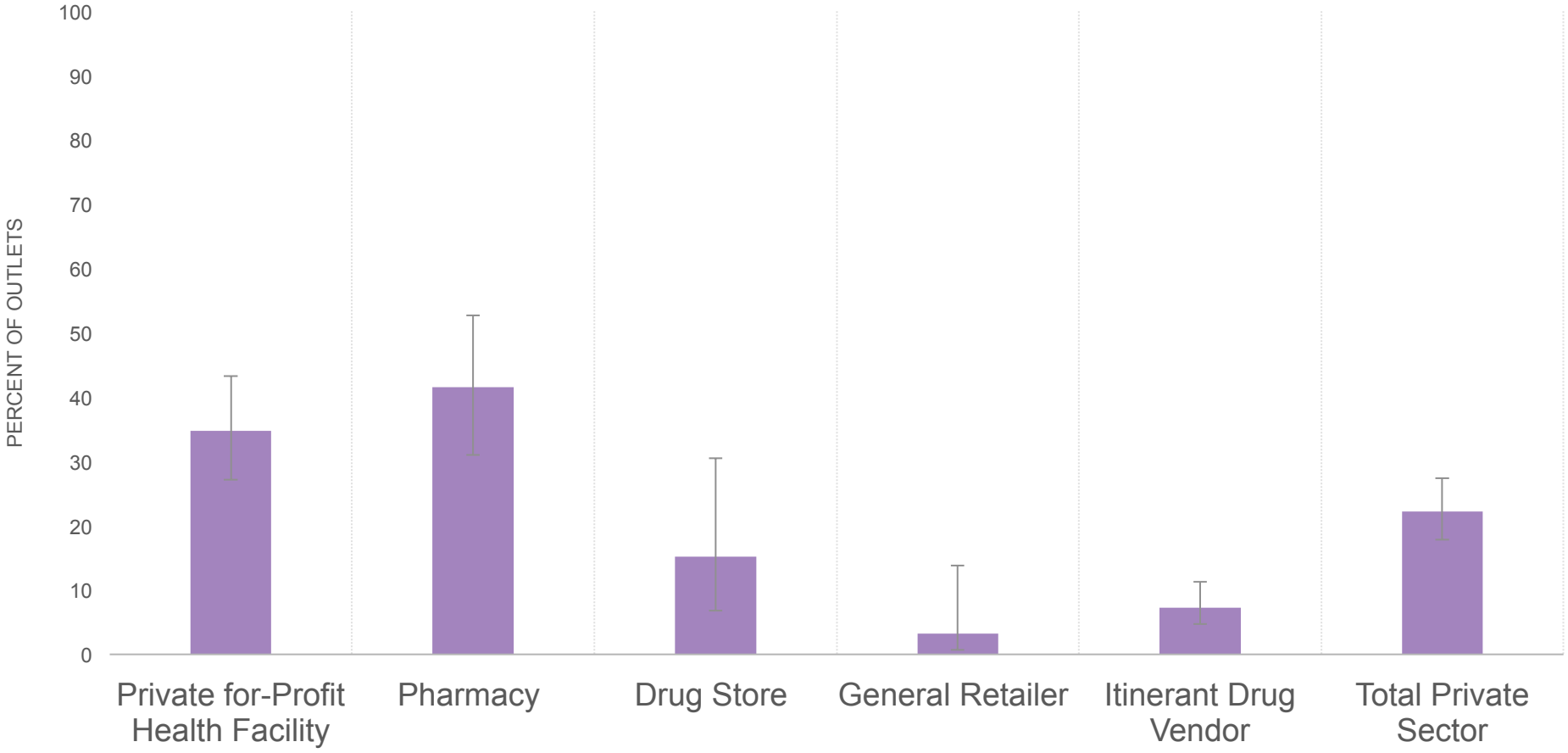
Private sector: case load reporting



psi
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Among all outlets w at least one AM or/& malaria test in stock

Private sector: received training on national guidelines

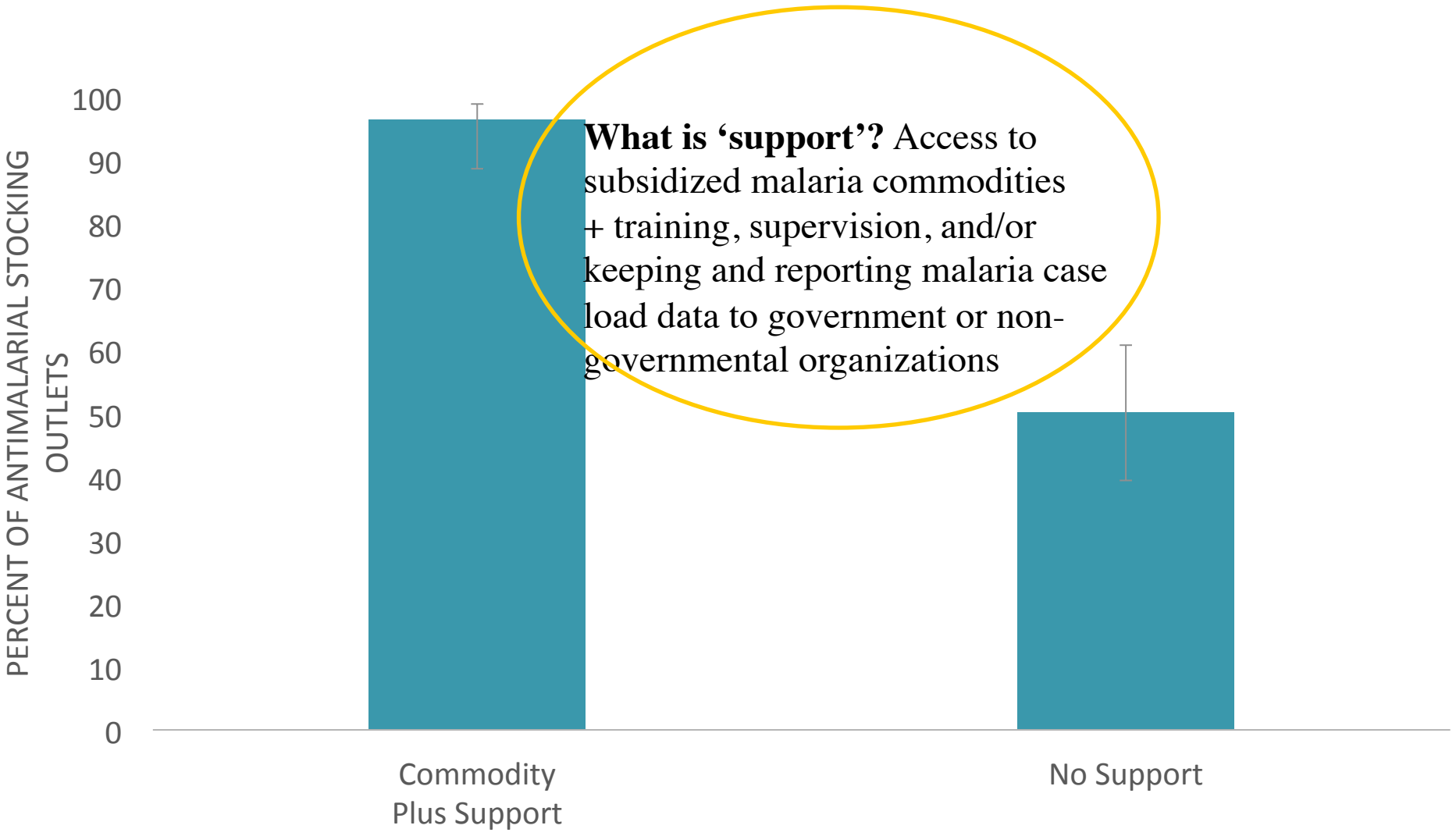


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Healthy lives. Measurable results.

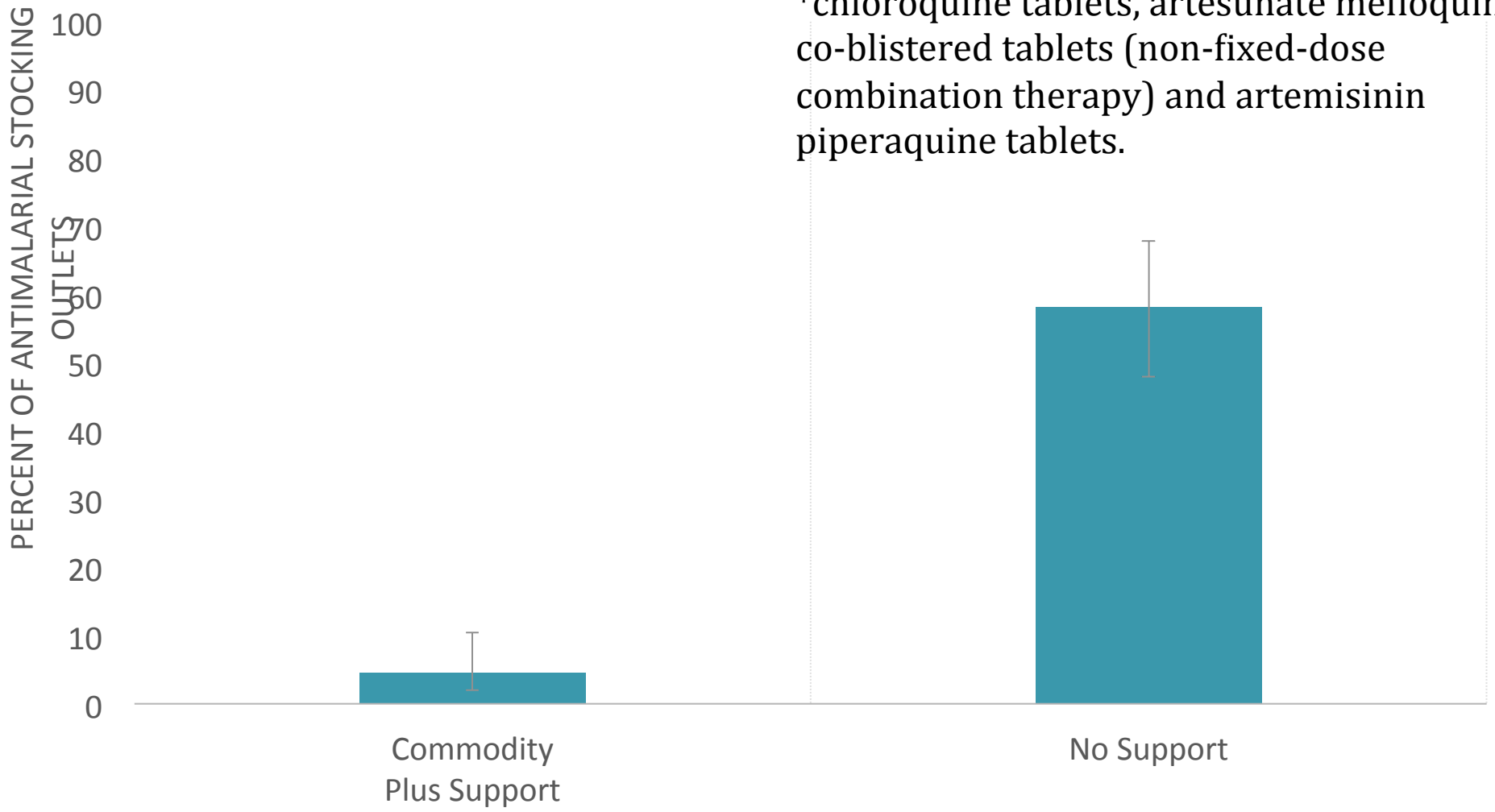
- Are there differences in the private sector according to outlets that are receiving support?

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Availability of first-line ACT in the private sector, 2015



Availability of treatment not on national guidelines* in the private sector, 2015



*chloroquine tablets, artesunate mefloquine co-blistered tablets (non-fixed-dose combination therapy) and artemisinin piperaquine tablets.

insights 5

provider knowledge, training and case load reporting

1. **Provider knowledge of the first line treatment and dosing regimen was high in the public sector. Provider knowledge was lower in the private sector, and highest among private for-profit facilities and pharmacies.**

2. **Providers typically cited correct knowledge of DHA-PPQ and not ASMQ FDC.**

3. **Private sector training and supervision was generally low.**

4. **Only 1 in 3 private for-profit facilities and 1 in 4 pharmacies report keeping case load data. However supported outlets appear to perform better than those without support.**

5. **The readiness of private sector outlets to adhere to national elimination guidelines is variable across sectors and by outlets.**

Conclusions



Summary of National Trends 2009 to 2015

1. **High readiness of public health facilities to appropriately manage malaria cases in 2015:**

- ✓ Access to malaria diagnostics in antimalarial stocking public sector has increased from 75% in 2009 to over 90% in 2015
- ✓ Almost all of the antimalarials available in the public sector and distributed were first-line ACT.
- ✓ Village Malaria Workers contributed to positive public sector findings, and explained 15% of the overall antimalarial market share.
- ✓ Among all screened outlets, most of the public sector had both first line ACT and malaria testing in stock.

Areas of note:

- ✓ Declines in antimalarial availability in public health facilities.
  - ✓ Over 90% availability in 2011 to 75% in 2015
- ➢ Availability of treatment for severe malaria for malaria was only 10%.

2. The readiness and performance of the private sector in malaria case management has strengthened over time:

- In 2015, the private sector comprised 60% of the antimalarial market share. Private for-profit facilities, pharmacies and itinerant drug vendors were responsible for most of the sale and distribution of antimalarials.
- Most of the antimalarials available and distributed in 2015 were first-line treatment across both sectors.
- No oral AMT was distributed, and only one package was found.
- Trend data show that the there have been shifts over time regarding the antimalarial market composition. Increasingly private for-profit facilities and pharmacies (more 'regulated' outlets) comprise more of the market composition and market share. Drug stores and general retailers (less 'regulated' outlets) have a declining role.
- Availability of blood tests increased over time from 40% to 60%, and availability was particularly high among private for-profit facilities (82%).

2. The readiness and performance of the private sector in malaria case management has strengthened over time: (2)

- Private providers are more frequently dispensing diagnostic tests than antimalarials.
- Very few general retailer outlets were found to stock or distribute antimalarials.

Areas of note in 2015:

- A patient seeking treatment from private for-profit facilities or pharmacies in 2015 will find treatment in:
  - ✓ 1 in 3 private for-profit facilities, and
  - ✓ 1 in 5 pharmacies
- Of all screened private sector outlets, 1 in 4 private for-profit facilities and 15% of pharmacies will have first line treatment & a malaria diagnostic test.
- Most private providers stocking antimalarials have not reportedly received recent training or supervision and do not capture and report case data.
- Most private sector outlets with malaria diagnostic tests or antimalarials report not providing/distributing these commodities a week preceding the survey.
- Itinerant drug vendors contribute to 20% of the market share (more than pharmacies) and are responsible for distributing some of the non first-line treatment.
- Chloroquine was only available and distributed in the private sector, and this contributed to 5% of the market share.

3. Tier 1 and Tier 2 Comparisons

Data collection occurred shortly after the new Tier classifications were defined and applied and therefore we would not necessarily expect to find major differences between the Tiers in antimalarial markets.

- Overall there were few differences across domains.
- Market share data indicate that Tier 1 performs slightly better than Tier 2 in 2015:
  - 93% first-line ACT in Tier 1 versus 80% Tier 2
- Availability of malaria blood testing is similar.
- Provider knowledge of the dosing regimen is slightly higher among public sector in Tier 1 than Tier 2.
- Among private sector outlets, data suggest that outlets in Tier 1 are slightly more likely to have been trained and to report on case load data.



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