



Evidence for Malaria Medicines Policy

**ACTwatch Study Reference Document  
The Republic of the Union of Myanmar  
2014**



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### **Contact**

Dr. Megan Littrell  
ACTwatch Principal Investigator  
PSI | 1120 19<sup>th</sup> St NW Suit 600  
Washington DC 20036  
[mlittrell@psi.org](mailto:mlittrell@psi.org)

Dr. Tin Aung  
PSI/Myanmar, Director of Strategic Information  
16 West Shwe Gone Dine 4th Street  
Bahan Township, Yangon, Myanmar  
Phone: +951 375 854  
Fax: +951 527 668  
Email: [taung@psimyanmar.org](mailto:taung@psimyanmar.org)

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### PSI Myanmar

Dr. Tin Aung  
Hnin Su Su Khin  
Reid Moorsmith  
Si Thu  
Leah Valencia  
Chris White  
Barry Whittle  
Zaw Win

### Fieldwork Team

### ACTwatch

Kevin Duff  
Tarryn Haslam  
Dr. Megan Littrell  
Ricki Orford

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## List of Abbreviation

ACT	Artemisinin combination therapy
AETD	Adult equivalent treatment dose
AL	Artemether lumefantrine
AMFm	Affordable Medicines Facility – malaria
BMGF	The Bill and Melinda Gates Foundation
DHS	The Demographic and Health Survey
EMA	European Medicines Agency
GDP	Gross domestic product
IM	Intramuscular injection
IV	Intravenous injection
MOH	Ministry of Health
NGO	Non-governmental Organization
Oral AMT	Oral artemisinin monotherapy
Pf	<i>Plasmodium falciparum</i>
QA ACT	Quality-assured artemisinin combination therapy
RDT	Rapid diagnostic test
UK	United Kingdom

## Definitions

### Survey Methods Definitions

<b>Outlet</b>	Any service delivery point or point of sale for commodities. Outlets are not restricted to stationary points of sale and may include mobile units or individuals.
<b>Outlets eligible for inclusion in the study</b>	Outlets were administered a full questionnaire if they met at least one of three inclusion criteria: (1) had one or more antimalarials in stock at the time of the survey visit; (2) reportedly had one or more antimalarials in stock in the previous three months; or (3) provide malaria blood testing (microscopy or rapid diagnostic tests) but do not provide antimalarial treatment. Outlets not providing services to the general public (e.g. army and military clinics) were excluded from the study.
<b>Cluster</b>	The primary sampling unit, or cluster, for the outlet survey. It is an administrative unit determined by the Myanmar Information Management Unit that hosts a population size of approximately 10,000 to 15,000 inhabitants. These units are defined by political boundaries. In Myanmar, they were defined as <i>wards</i> in urban areas and <i>village tracts</i> in rural areas.
<b>Censused commune</b>	A ward/village tract where field teams conducted a full census of all outlets with the potential to sell antimalarials.

### Antimalarial Indicator Definitions

<b>Antimalarial</b>	Any medicine recognized by the WHO for the treatment of malaria. Medicines used solely for the prevention of malaria were excluded from analysis of key indicators in this report.
<b>Dosing/treatment regimen</b>	The posology or timing and number of doses of an antimalarial used to treat malaria. This schedule often varies by patient weight.
<b>Adult Equivalent Treatment Dose (AETD)</b>	An AETD is the number of milligrams (mg) of an antimalarial drug required to treat a 60 kg adult (see Annex 8).
<b>Monotherapy</b>	An antimalarial medicine that has a single mode of action. This may be a medicine with a single active compound or a synergistic combination of two compounds with related mechanisms of action.
<b>Artemisinin and its derivatives</b>	Artemisinin is a plant extract or synthetic plant extract used in the treatment of malaria. The most common derivatives of artemisinin used to treat malaria are artemether, artesunate, and dihydroartemisinin.
<b>Artemisinin-based Combination Therapy (ACT)</b>	An antimalarial that combines artemisinin or one of its derivatives with an antimalarial or antimalarials of a different class.

<b>Artemisinin monotherapy</b>	An antimalarial medicine that has a single active compound, where this active compound is artemisinin or one of its derivatives.
<b>Oral artemisinin monotherapy</b>	Artemisinin or one of its derivatives in a dosage form with an oral route of administration. These include tablets, suspensions, and syrups and exclude suppositories and injections.
<b>Non-artemisinin therapy</b>	An antimalarial medicine that does not contain artemisinin or any of its derivatives.
<b>First-line treatment</b>	The government recommended treatment for uncomplicated malaria. Myanmar's first-line treatment for uncomplicated malaria is artemether lumefantrine (20mg / 120mg).
<b>Second-line treatment</b>	The government recommended second-line treatment for uncomplicated malaria. Myanmar's second-line treatment for uncomplicated malaria include oral formulations of artesunate doxycycline, artesunate tetracycline and artesunate clindamycin.
<b>Quality-assured Artemisinin-Based Combination Therapies (QAACTs)</b>	QAACTs are ACTs that comply with the Global Fund to Fight AIDS, Tuberculosis and Malaria's Quality Assurance Policy. A QAACT is any ACT that appeared on the Global Fund's indicative list of antimalarials meeting the Global Fund's quality assurance policy prior to data collection (see <a href="http://www.theglobalfund.org/en/procurement/quality/pharmaceutical/">http://www.theglobalfund.org/en/procurement/quality/pharmaceutical/</a> ), or that previously had C-status in an earlier Global Fund quality assurance policy and was used in a program supplying subsidized ACTs. QAACTs also include ACTs that have been granted regulatory approval by the European Medicines Agency (EMA) – specifically Eurartesim® and Pyramax®.
<b>Quality-assured ACT with the “padonma” logo</b>	The “padonma” logo is a quality-assurance seal that has been used to promote the use of quality-assured AL. Provider and consumer communications promote the use of antimalarial treatment bearing the padonma logo.



## Introduction

This country reference document is a detailed presentation of the 2014 ACTwatch outlet survey (OS) conducted in Myanmar. Previous OSs were conducted in Myanmar in 2012 and 2013.

ACTwatch is a multi-country research project implemented by PSI ([www.psi.org](http://www.psi.org)). Standardized tools and approaches are employed to provide comparable data across countries and over time. ACTwatch is designed to provide timely, relevant, and high quality antimalarial market evidence. The goal of providing this market evidence is to inform and monitor national and global policy, strategy, and funding decisions for improving malaria case management. The project was launched in 2008 with funding from the Bill and Melinda Gates Foundation (BMGF), and is currently funded through mid-2016 by the BMGF, UNITAID, and DFID. See Annex 1 for more information about the ACTwatch project.

ACTwatch antimalarial market monitoring in Myanmar from 2008 to present has been implemented in the context of strategies designed and implemented to improve coverage of appropriate case management. These include:

- Scale up of quality-assured ACTs in the public and private sectors through mechanisms including the Global Fund co-payment mechanism piloted under the Affordable Medicines Facility, malaria (AMFm). The initial AMFm pilot period was 2010-2011 and co-paid ACTs were delivered to first-line buyers in Myanmar from 2010-2013.
- Scale up of malaria rapid diagnostic tests (RDT) and malaria case management training in the public and private sectors to facilitate confirmatory testing prior to appropriate antimalarial treatment.

The 2014 OS was the fourth round of ACTwatch outlet surveys conducted in Myanmar. This report presents trend lines with three data points: 1) the 2010 AMFm baseline survey; 2) the 2011 AMFm pilot endline survey; and 3) the most recent 2014 survey. Another outlet survey round is planned for 2015. These surveys are designed to monitor key antimalarial market indicators at national level and within urban/rural domains. ACTwatch outlet survey findings can inform ongoing monitoring, evaluation, and adjustment to policy, strategy, and funding decisions to strengthen malaria case management.

## Summary of Methods and Data Collection

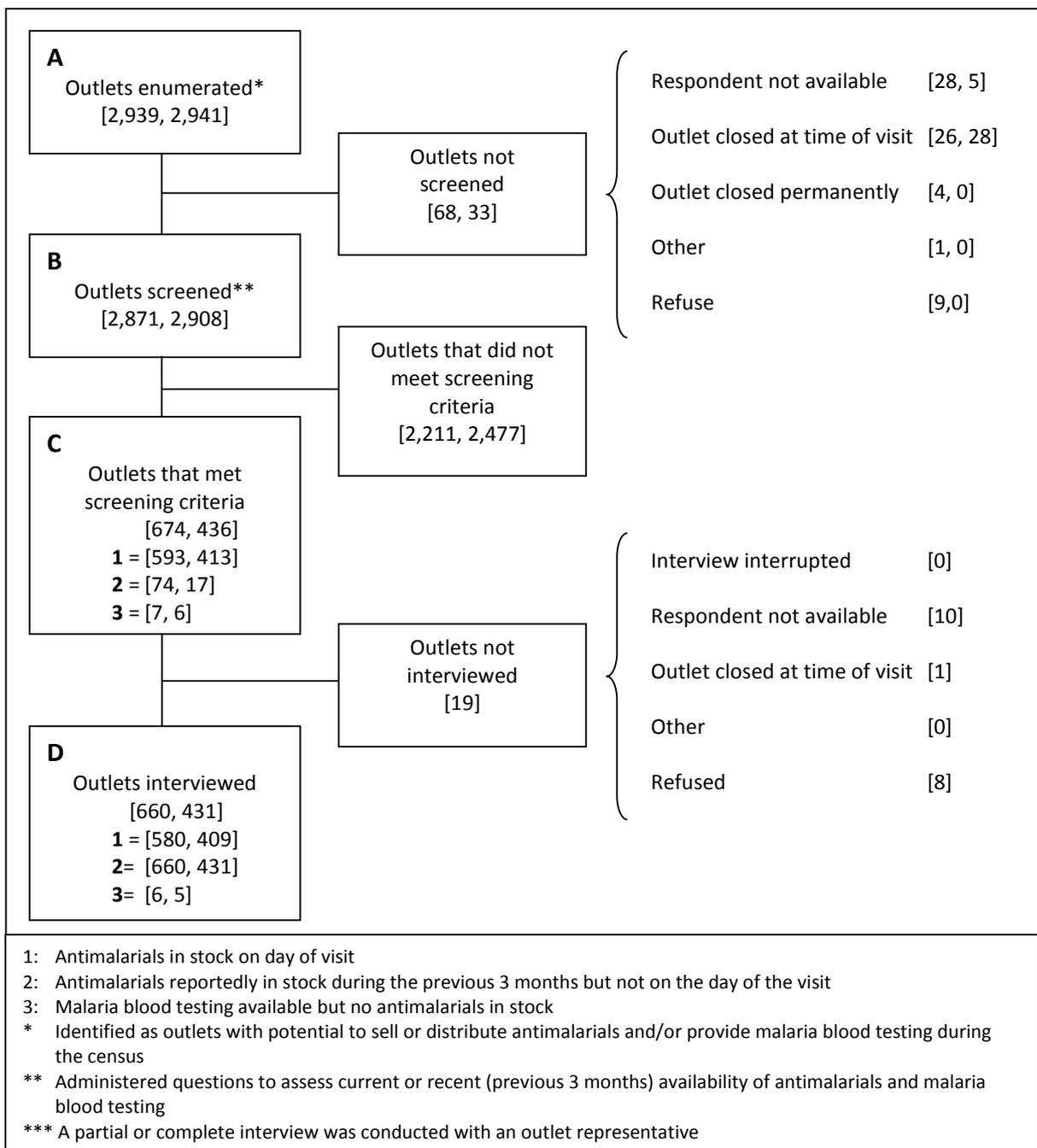
A nationally-representative antimalarial outlet survey was conducted in Myanmar between November 16 and December 18, 2013 and between Jan 4 and 30, 2014. A full description of research design and methods is provided in Annex 2. Briefly, a representative sample of communes was selected from urban and rural domains (see sampled communes in Annex 3). Within selected clusters, a census of all outlets with the potential to sell or distribute antimalarials and/or provide malaria blood testing was completed. The sample was extended to achieve a sufficient sample size for estimating key indicators for important outlet types. The geographic area for sampling was extended to the district for public health facilities in the urban domain. In the rural domain, the sample was extended to all higher-level public health facilities (i.e. hospitals) and to the number of low-level PHFs (i.e. health centers) that would result in approximately 60% of all PHFs being visited within the district. All pharmacies and drug stores were also censused within the extended sample. This booster sampling strategy was used to obtain a sufficient sample size for indicator estimates within public health facilities, pharmacies and drug stores.

Outlets were screened to determine eligibility. Outlets eligible for the survey met at least one of three criteria: 1) one or more antimalarials were in stock on the day of the survey; 2) one or more antimalarials were in stock in the three months preceding the survey; and/or 3) malaria blood testing (microscopy or RDT) was available. Outlets that do not serve the general public (e.g. military facilities) were excluded from the study. The results of the census are summarized in Figure 1.

A structured questionnaire was used to complete an audit of all antimalarials and RDTs as well as a provider interview (see Annex 4). See Annex 5 for detailed summaries of antimalarials and RDTs audited.

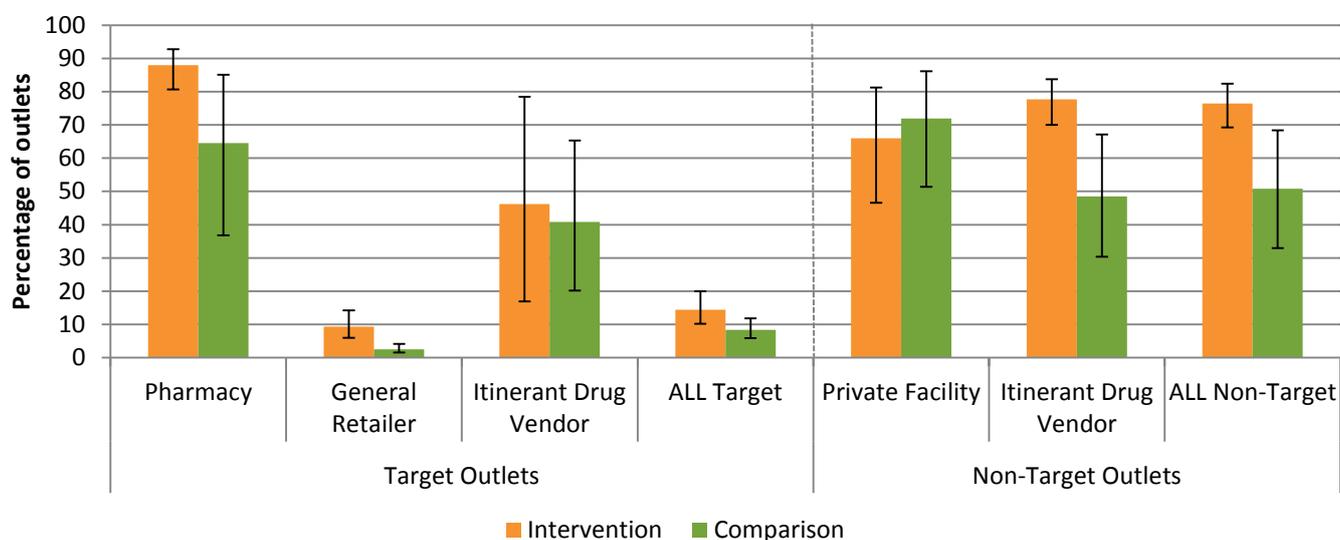
Data was collected using PDAs. The electronic data collection application was programmed using Visual CE 12 (©Syware, Cambridge, MA). All data cleaning and analysis was performed using Stata 12.1 (©StataCorp, College Station, TX). Data were weighted to account for variation in probability of outlet selection (see Annex 6), and standard error calculation reflected clustering of outlets at commune and district levels. Standard indicators were constructed according to definitions applied across ACTwatch project countries (see Annex 7).

**Figure 1: Survey flow diagram, Myanmar, 2014 [intervention, comparison areas]**

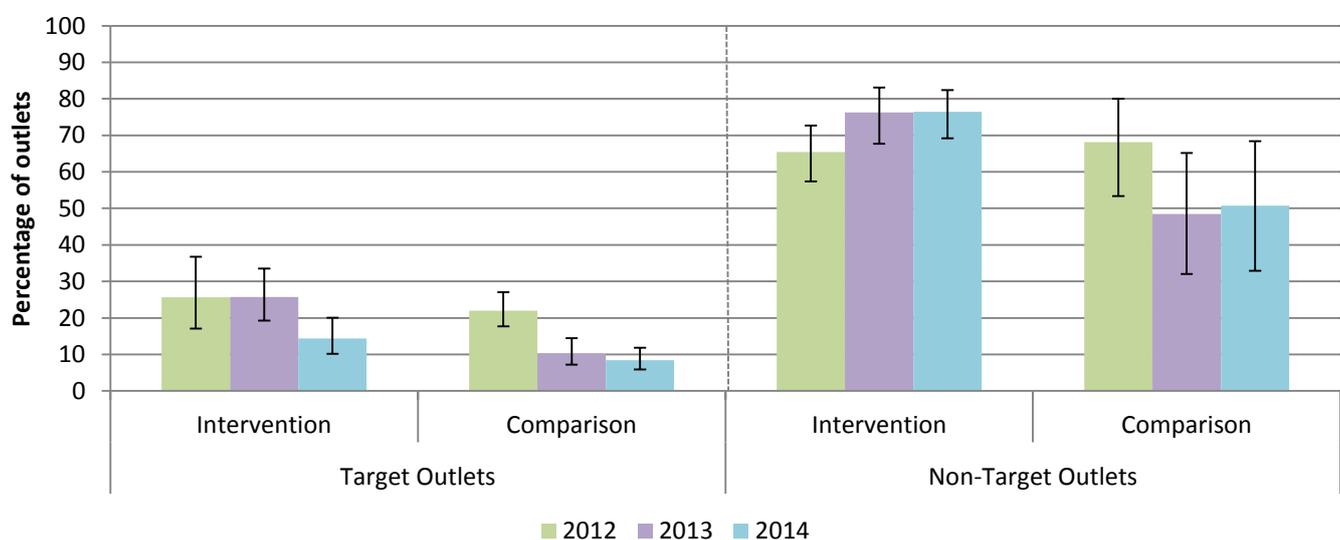


## Summary of Key Findings

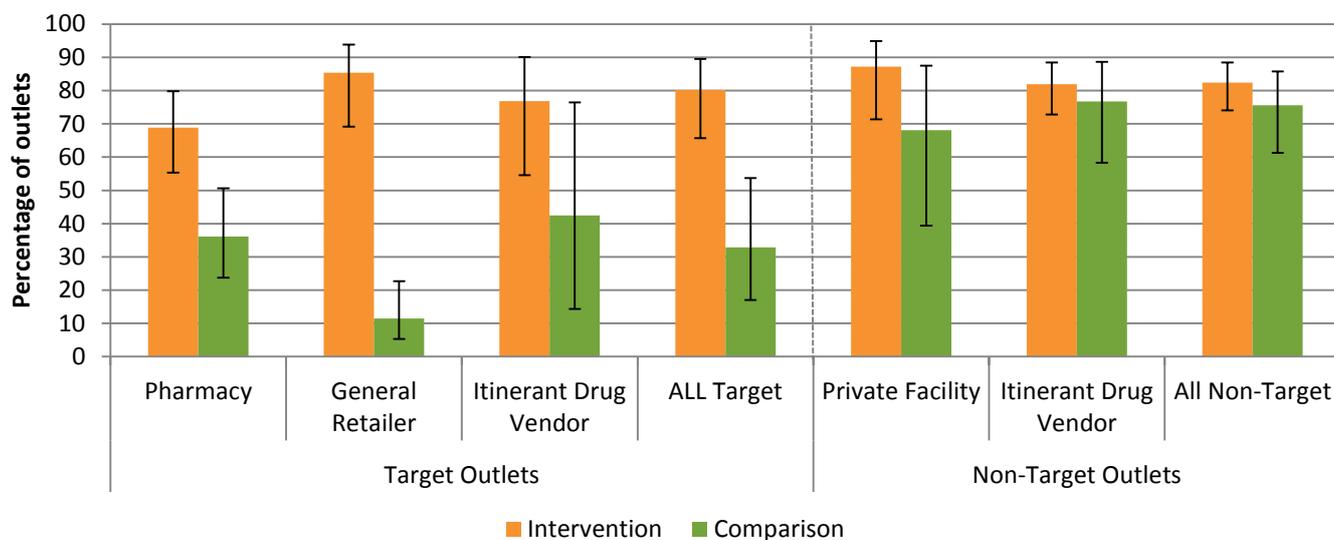
**Figure 2. Percentage of outlets with at least one antimalarial in stock on the day of the survey, 2014**  
Among all screened outlets



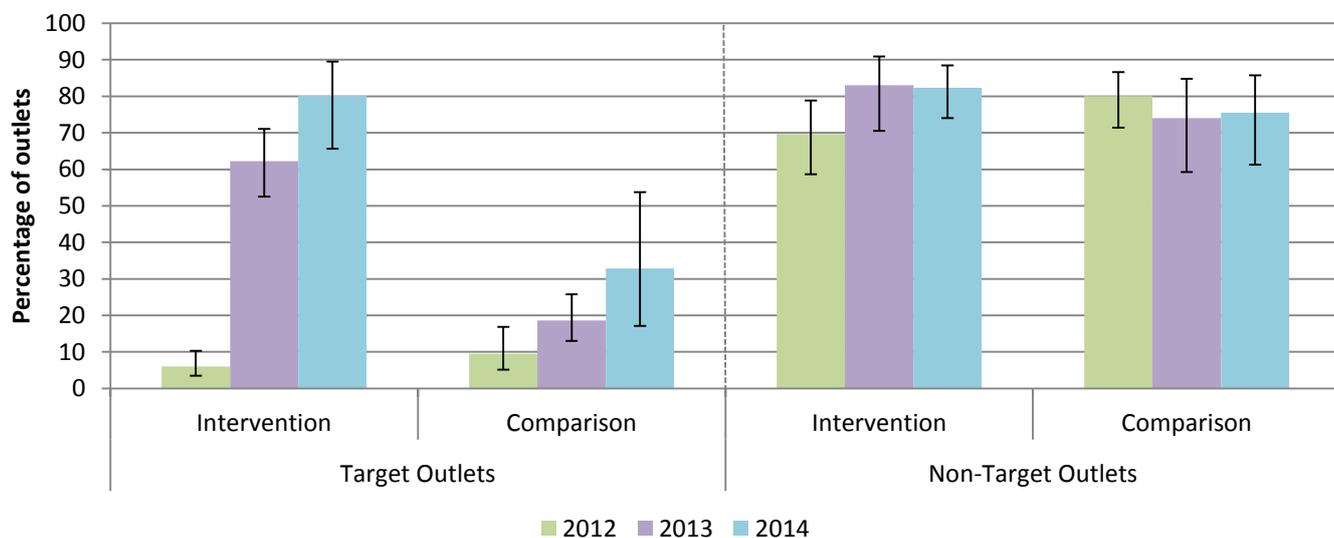
**Figure 3. Percentage of outlets with at least one antimalarial in stock on the day of the survey, 2012-14**  
Among all screened outlets



**Figure 4. Percentage of antimalarial-stocking outlets with ACT in stock on the day of the survey, 2014**  
*Among all outlets with at least one antimalarial in stock*

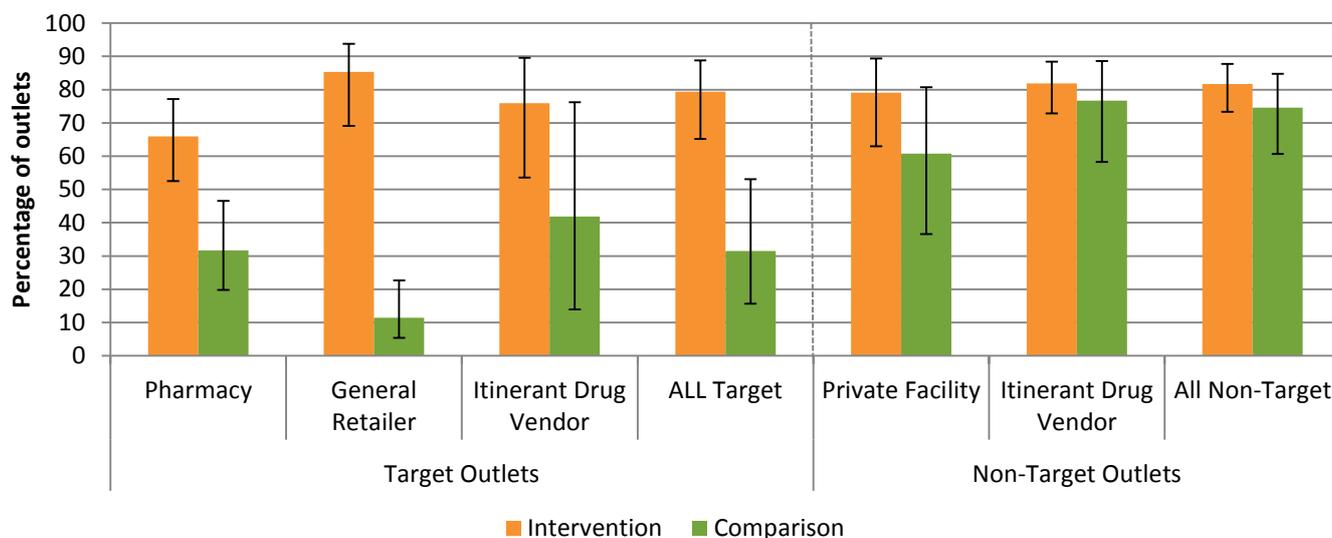


**Figure 5. Percentage of antimalarial-stocking outlets with ACT in stock on the day of the survey, 2012-14**  
*Among all outlets with at least one antimalarial in stock, across survey round*



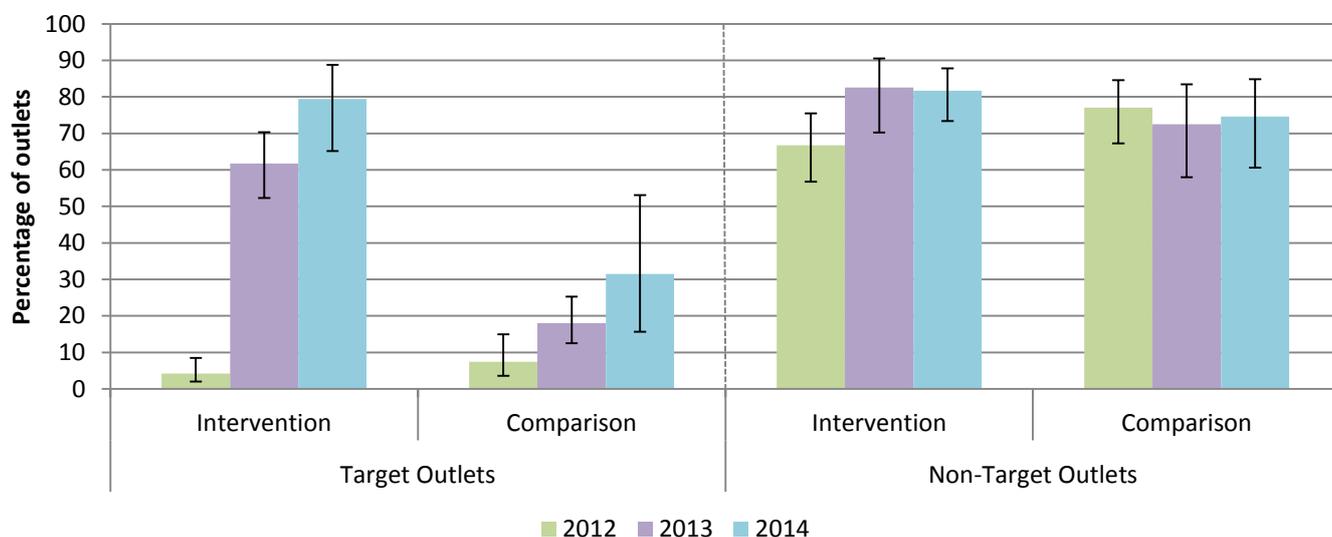
**Figure 6. Percentage of antimalarial-stocking outlets with quality-assured ACT in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



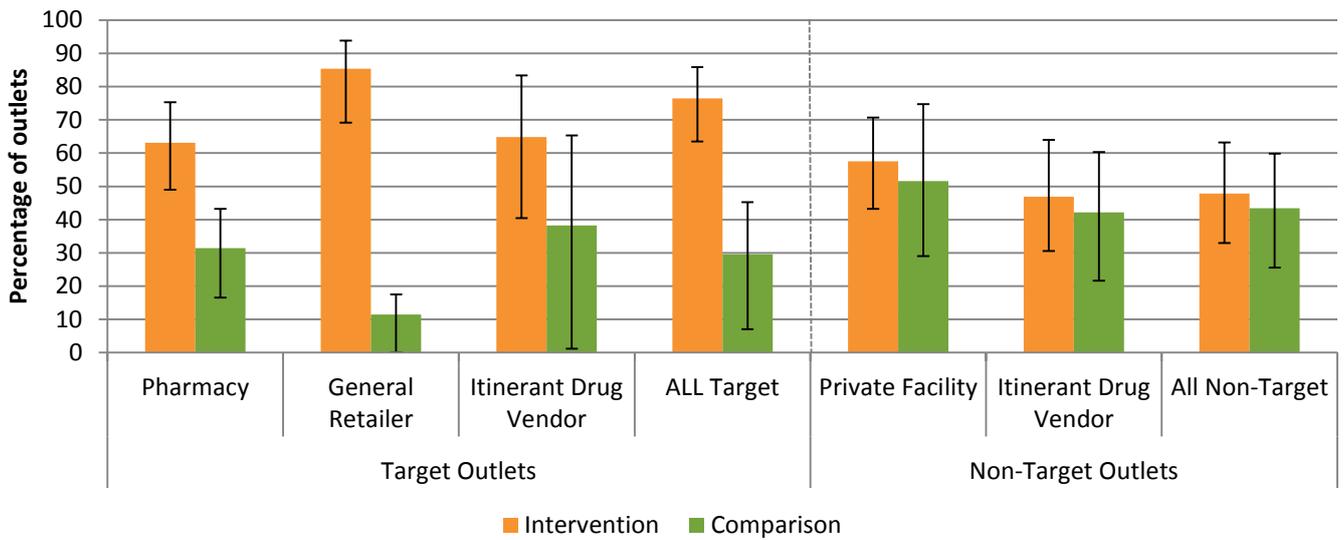
**Figure 7. Percentage of antimalarial-stocking outlets with quality-assured ACT in stock on the day of the survey, 2012-14**

*Among all outlets with at least one antimalarial in stock, across survey round*



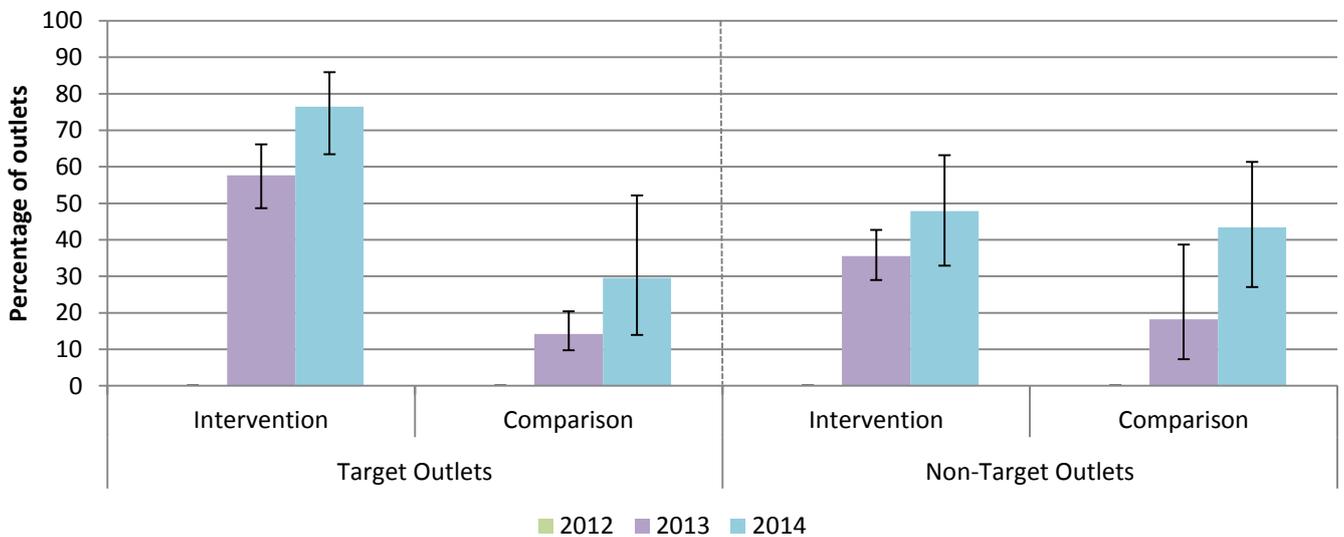
**Figure 8. Percentage of antimalarial-stocking outlets with quality-assured ACT marked with the “padonma” logo in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



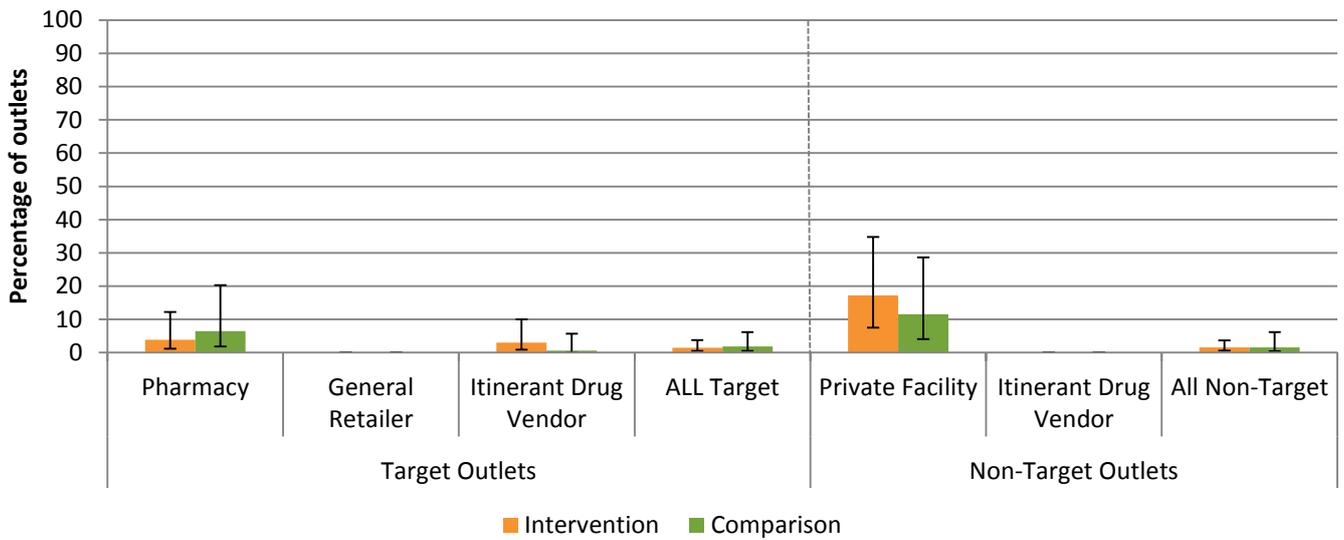
**Figure 9. Percentage of antimalarial-stocking outlets with quality-assured ACT marked with the “padonma” logo in stock on the day of the survey, 2012-14**

*Among all outlets with at least one antimalarial in stock, across survey round*



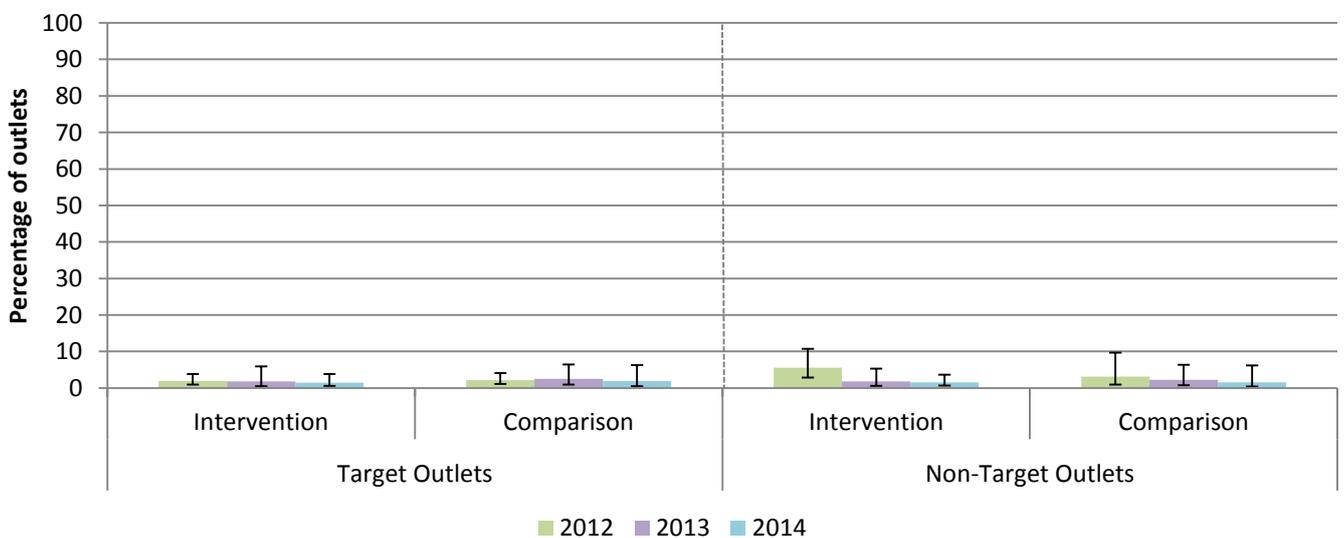
**Figure 10. Percentage of antimalarial-stocking outlets with non-quality-assured ACT in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



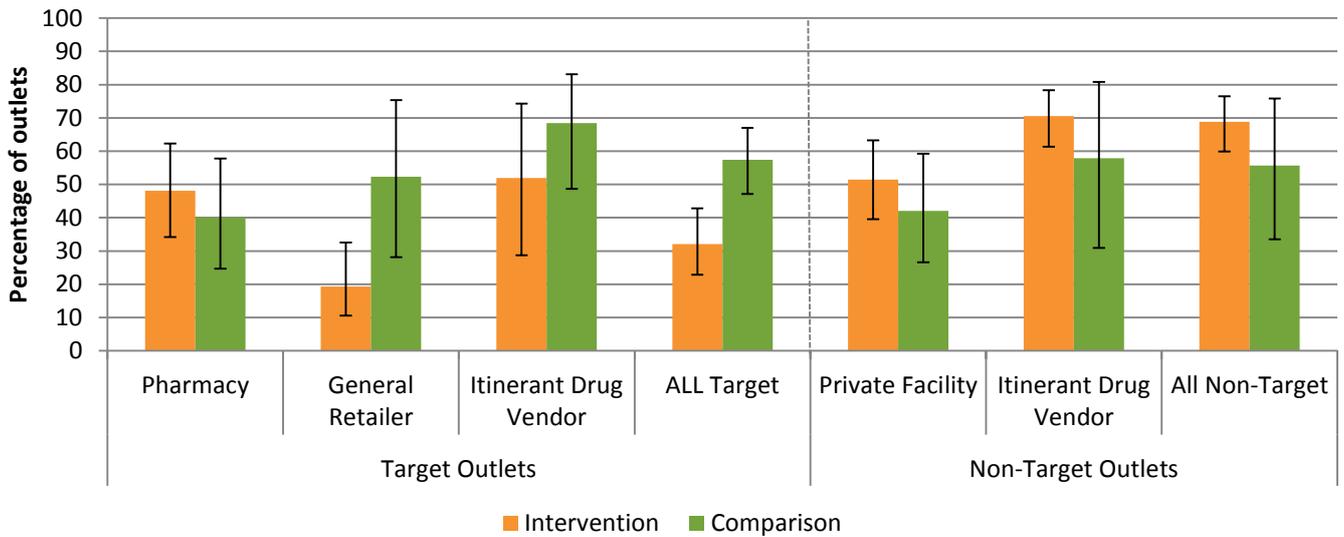
**Figure 11. Percentage of antimalarial-stocking outlets with non-quality-assured ACT in stock on the day of the survey, 2012-14**

*Among all outlets with at least one antimalarial in stock, across survey round*



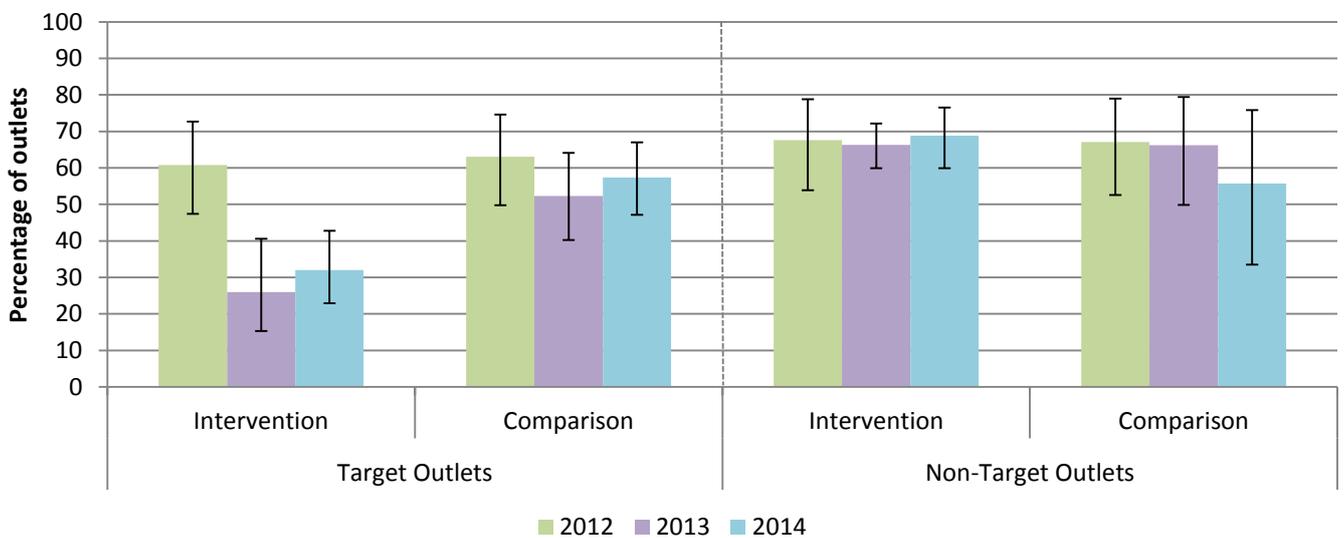
**Figure 12. Percentage of antimalarial-stocking outlets with non-artemisinin therapy in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



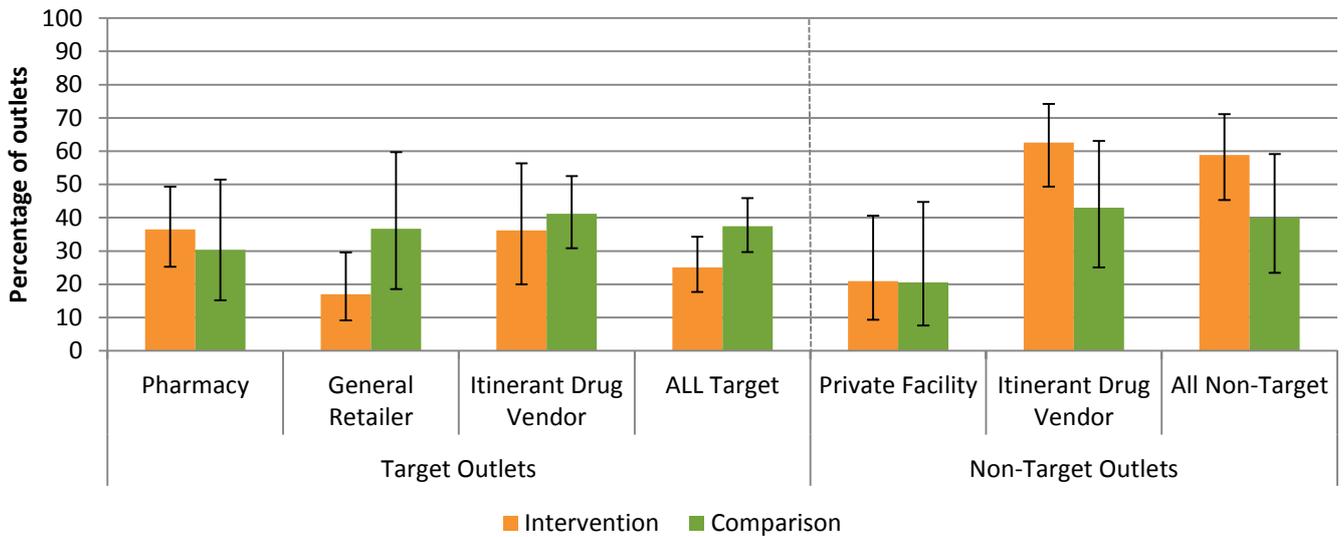
**Figure 13. Percentage of antimalarial-stocking outlets with non-artemisinin therapy in stock on the day of the survey, 2014, urban/rural**

*Among all outlets with at least one antimalarial in stock*



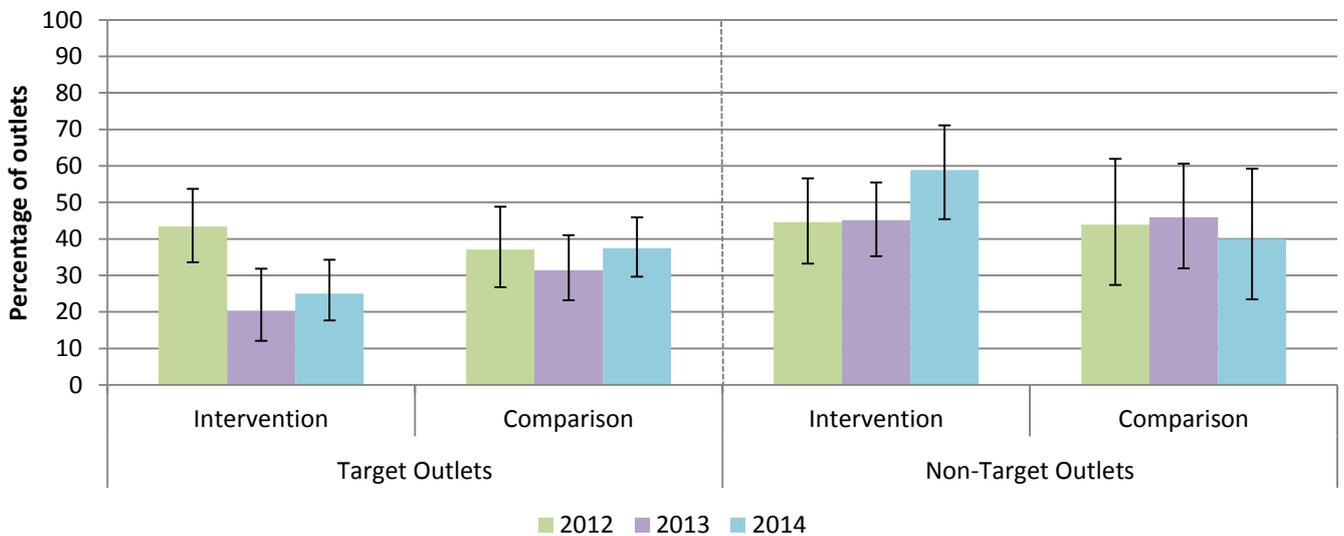
**Figure 14. Percentage of antimalarial-stocking outlets with chloroquine in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



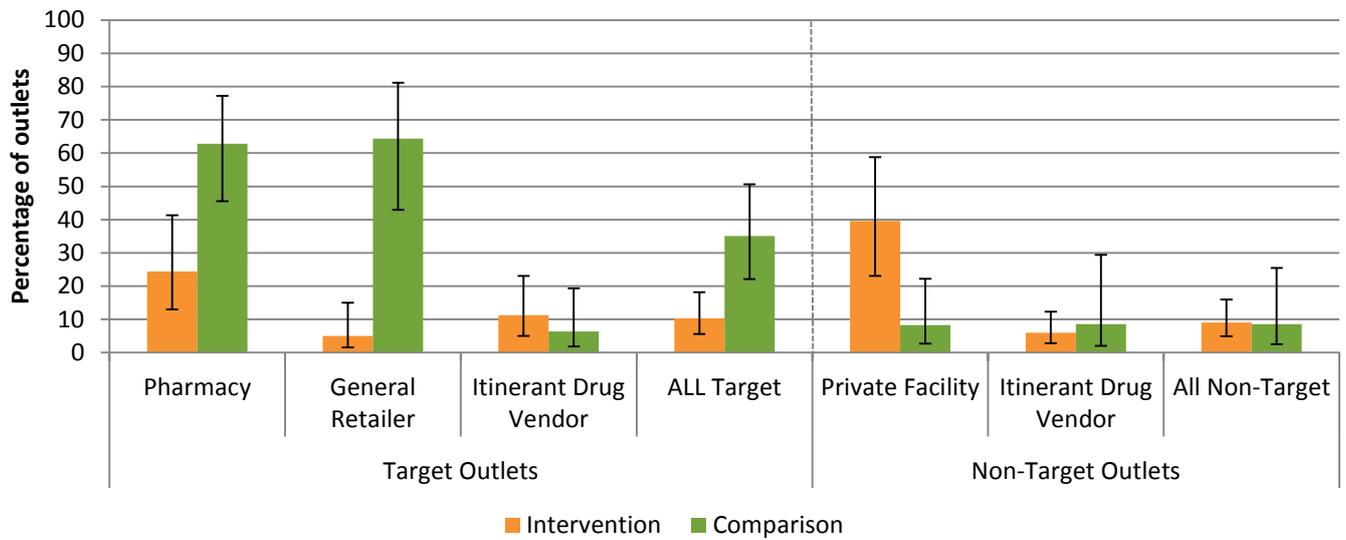
**Figure 15. Percentage of antimalarial-stocking outlets with chloroquine in stock on the day of the survey, 2012-14**

*Among all outlets with at least one antimalarial in stock, across survey round*



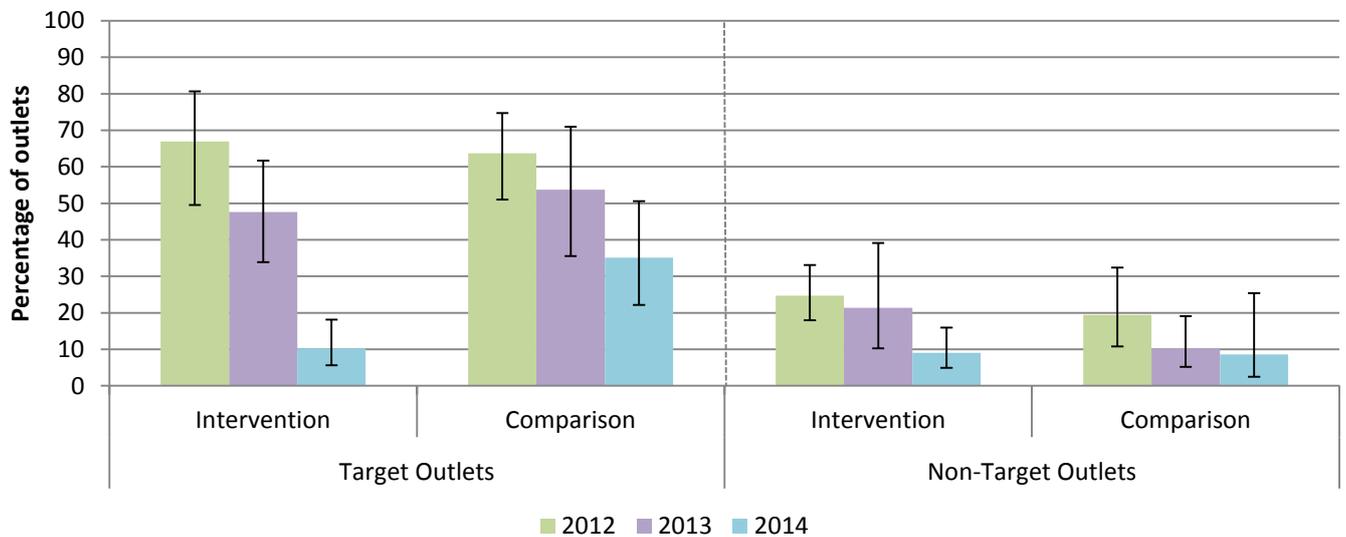
**Figure 16. Percentage of antimalarial-stocking outlets with oral artemisinin monotherapy in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



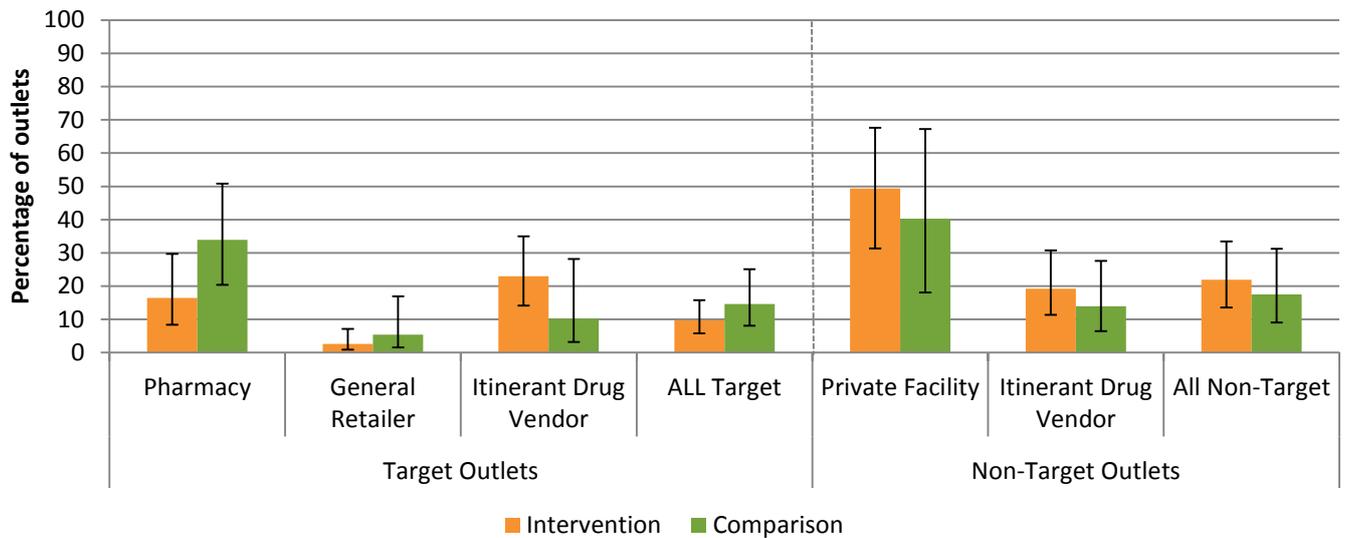
**Figure 17. Percentage of antimalarial-stocking outlets with oral artemisinin monotherapy in stock on the day of the survey, 2012-14**

*Among all outlets with at least one antimalarial in stock, across survey round*



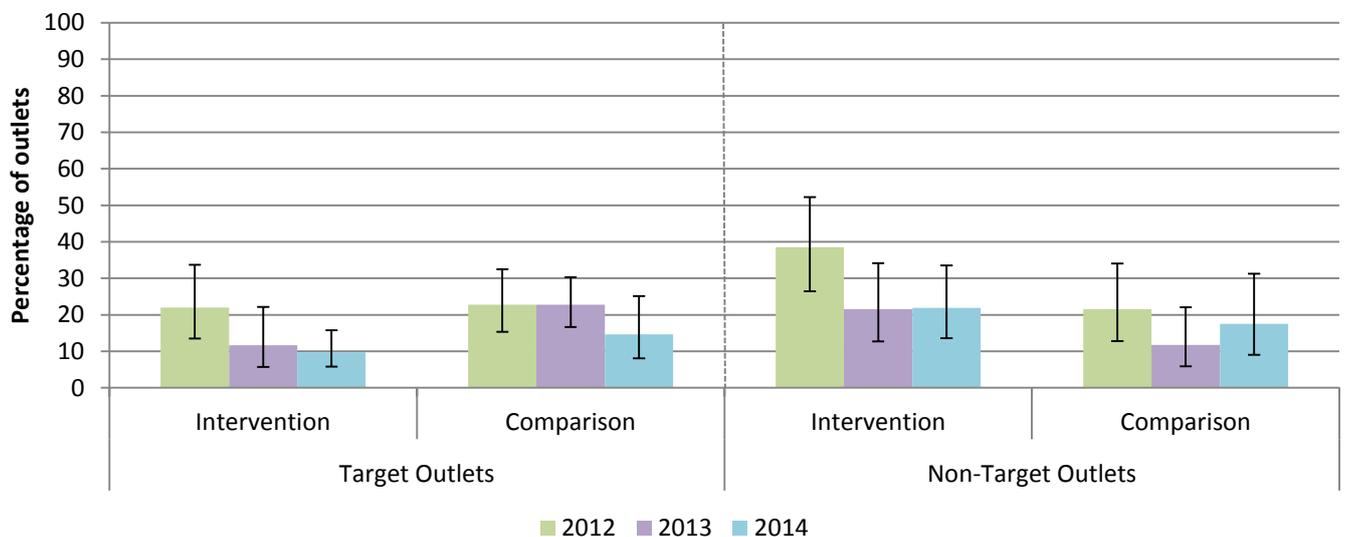
**Figure 18. Percentage of antimalarial-stocking outlets with non-oral artemisinin monotherapy in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*



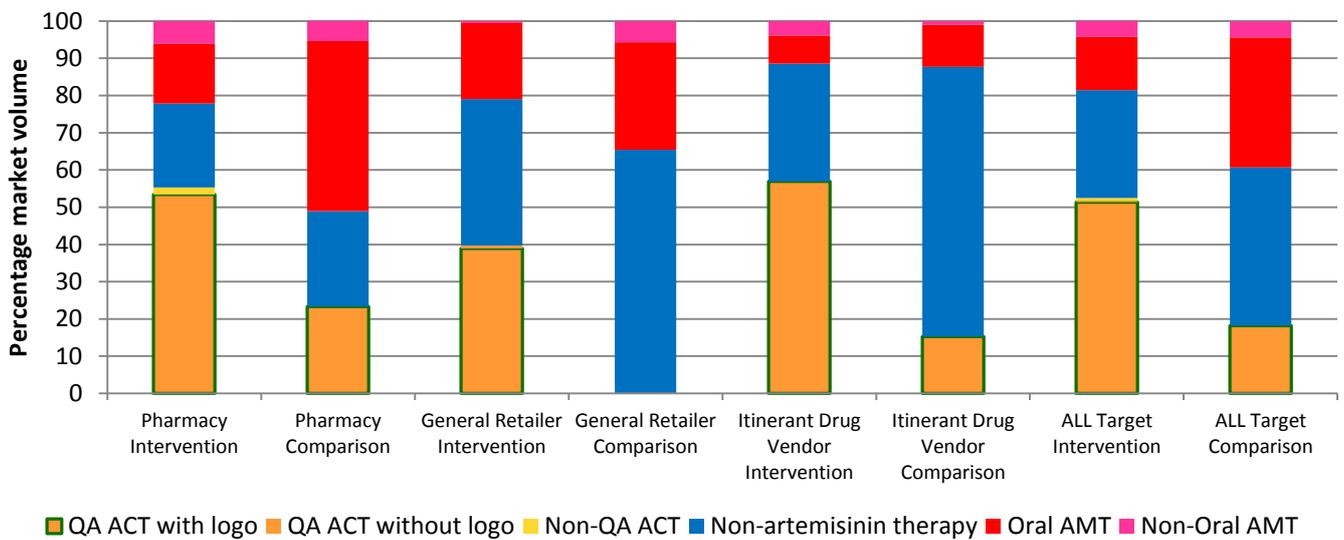
**Figure 19. Percentage of antimalarial-stocking outlets with non-oral artemisinin monotherapy in stock on the day of the survey, 2012-14**

*Among all outlets with at least one antimalarial in stock, across survey round*



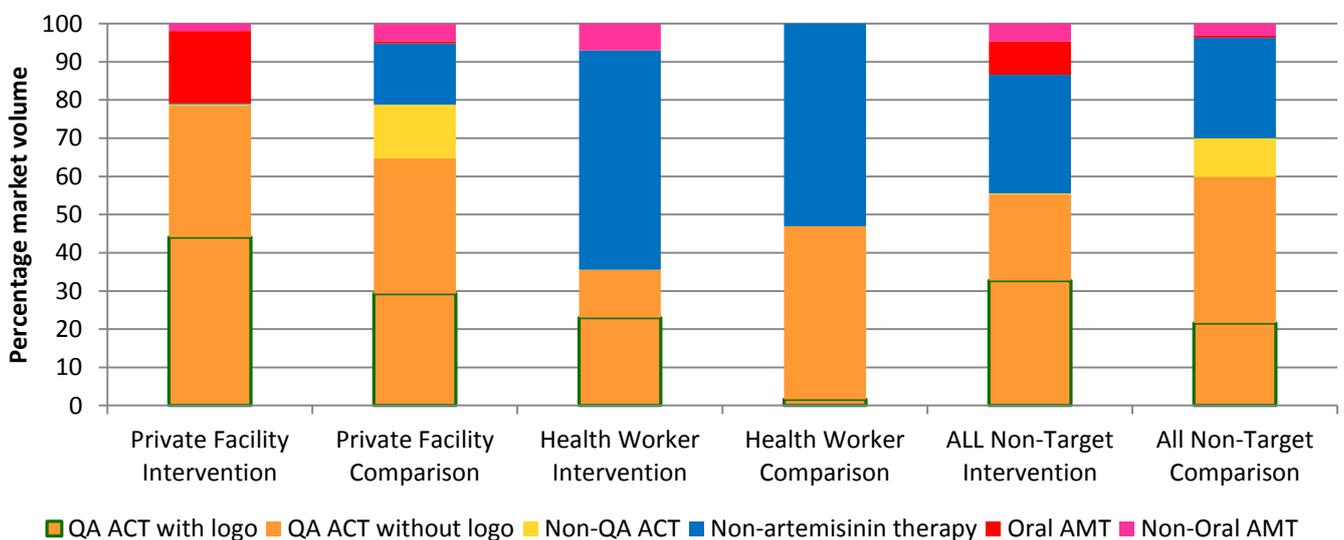
**Figure 20. Antimalarial market share among target outlet types in intervention and comparison areas, 2014**

*Relative market volume (sale/distribution) of antimalarial AETDs, by target outlet types in intervention and comparison areas*



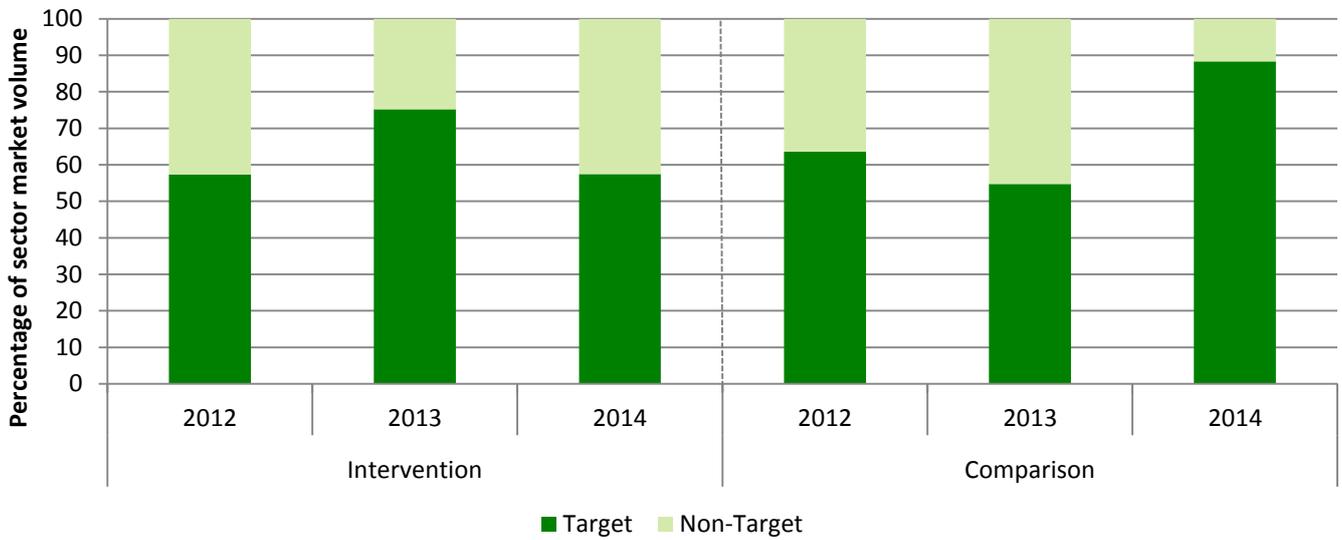
**Figure 21. Antimalarial market share among non-target outlet types in intervention and comparison areas, 2014**

*Relative market volume (sale/distribution) of antimalarial AETDs, by non-target outlet types in intervention and comparison areas*



**Figure 22. Antimalarial market share among intervention and comparison areas, 2012-14**

*Relative market volume (sale/distribution) of antimalarial AETDs, by target and non-target outlets in intervention and comparison areas, across survey round*

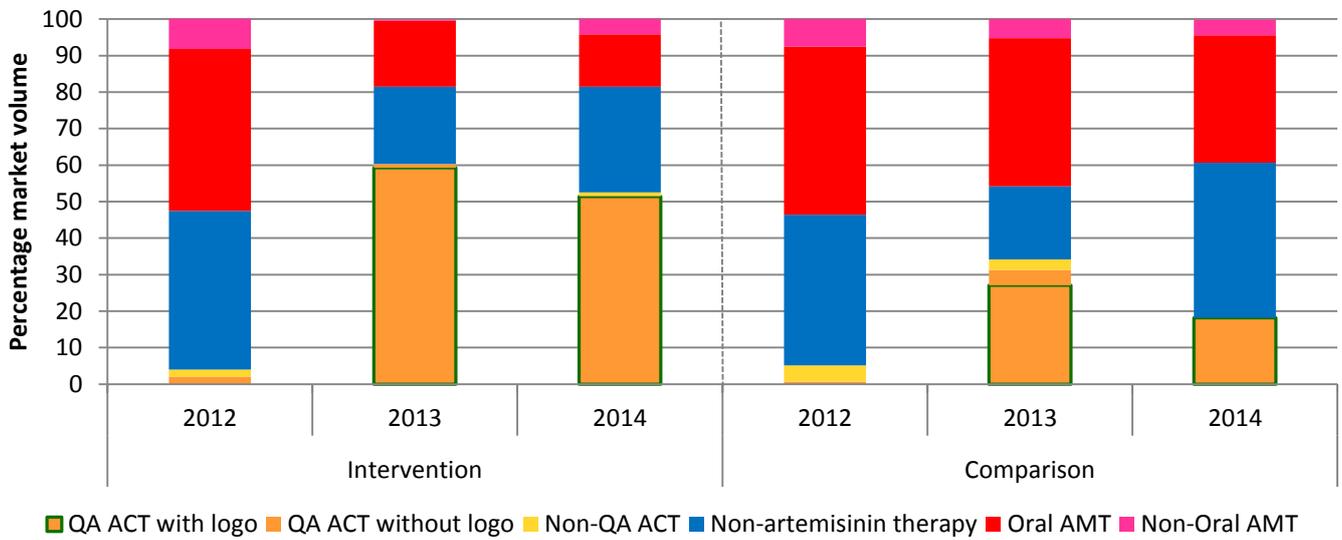


AMTR project target outlet types (pharmacies, general retailers, and itinerant drug vendors) distribute more than half of all antimalarials sold/distributed outside of government health facilities in intervention and comparison areas.

*\* Excluding volumes distributed by government facilities. Government health facilities are excluded from AMTR project evaluation outlet surveys. Government facility market share relative to target and non-target outlet types in intervention and comparison areas is unknown.*

**Figure 23. Antimalarial market share among target outlet types in intervention and comparison areas, 2012-14**

*Relative market volume (sale/distribution) of antimalarial AETDs, among pharmacies, general retailers, and itinerant drug vendors, across survey round*

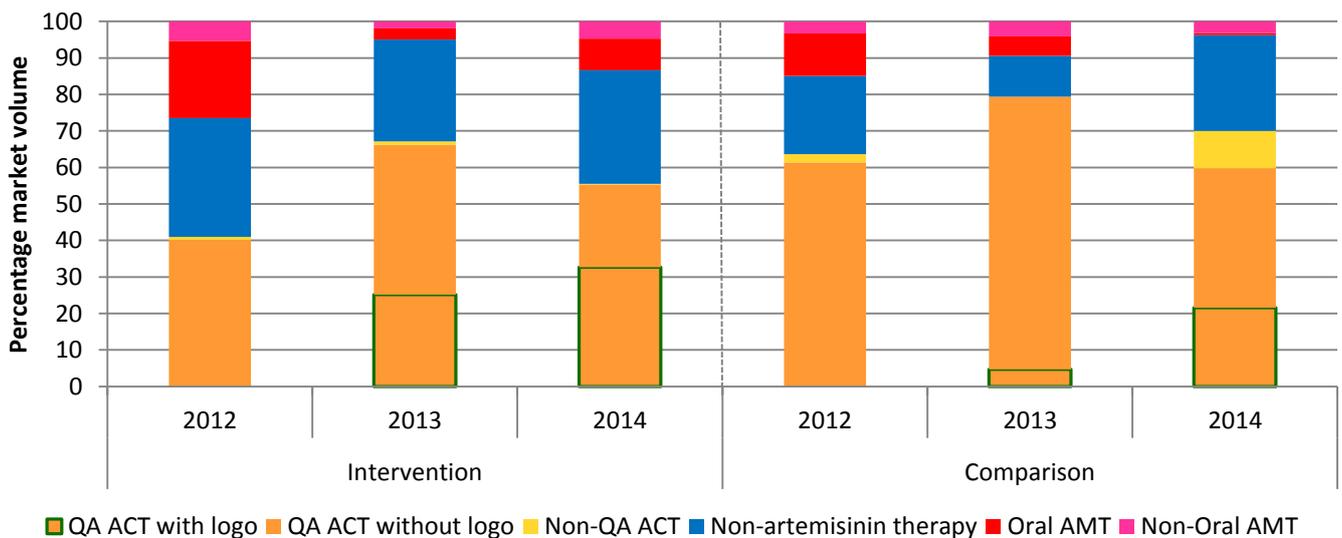


QAACT market share among antimalarials distributed by target outlet types in intervention areas increased from 2% at baseline to 60% in 2013 and 51% in 2014. Nearly all QAACT distributed by these outlet types were marked with the Padonma logo. Oral AMT market share decreased among target outlet types in intervention areas from 44% in 2012 to 14% in 2014.

Among target outlet types in comparison areas, QAACT market share increased from 1% in 2012 to 31% in 2013 and 18% in 2014. Oral AMT market share in comparison areas declined from 46% in 2012 to 41% in 2013 and 35% in 2014.

**Figure 24. Antimalarial market share among non-target outlet types in intervention and comparison areas, 2012-14**

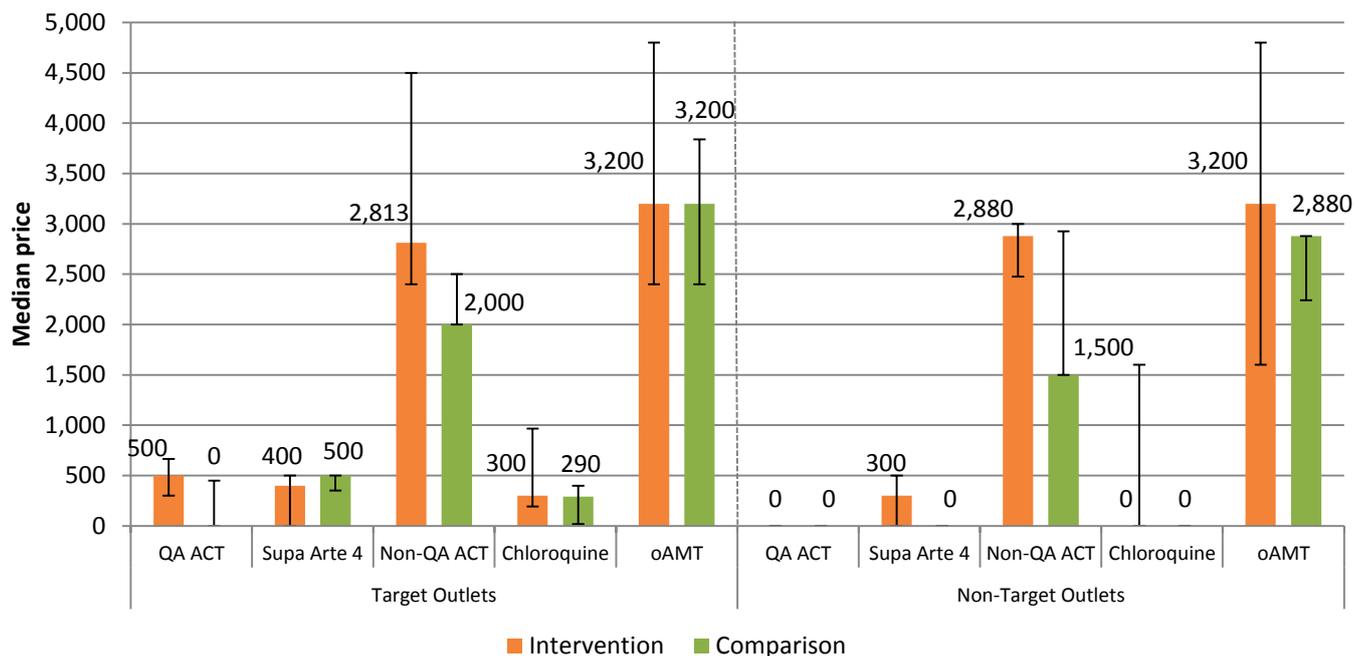
*Relative market volume (sale/distribution) of antimalarial AETDs, among private clinics, hospitals and health workers, across survey round*



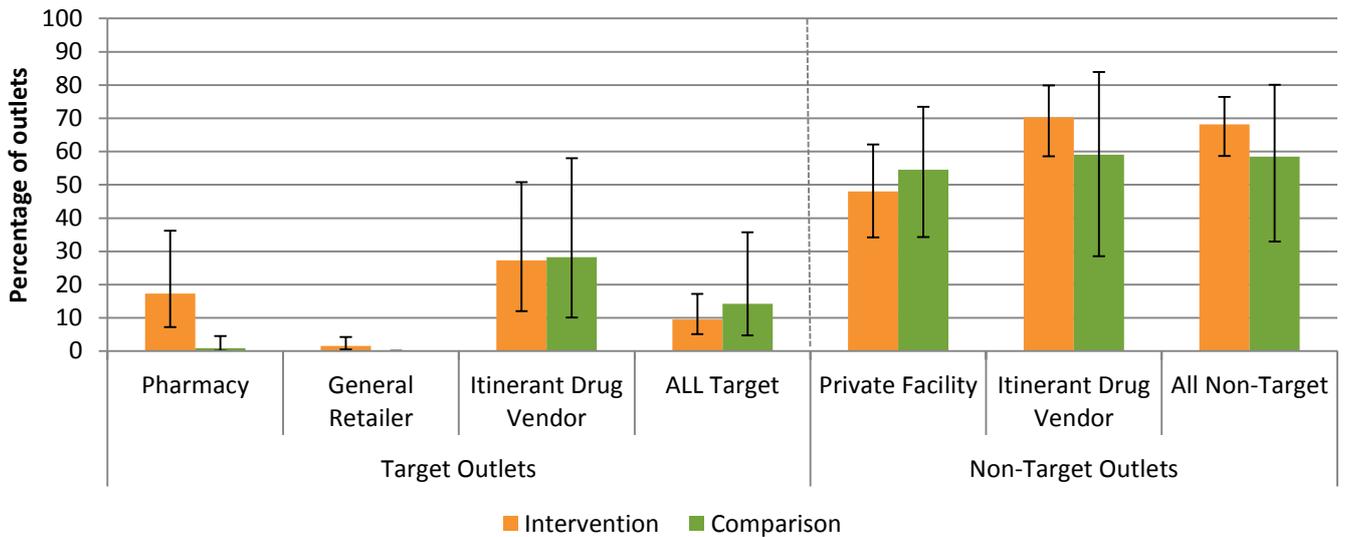
QAACT market share among antimalarials distributed by non-target outlet types in intervention areas was high relative to non-target outlets at baseline (40% versus 2% in intervention areas). QAACT market share increased among non-target outlets in intervention and comparison areas over time. In 2014, QAACT accounted for more than half of antimalarials distributed by non-target outlets in intervention (55%) and comparison areas (60%).

Oral AMT market share declined among non-target outlets in intervention and comparison areas. In 2014, oral AMT accounted for 9% and 1% of all antimalarials distributed by non-target outlets in intervention and comparison areas respectively.

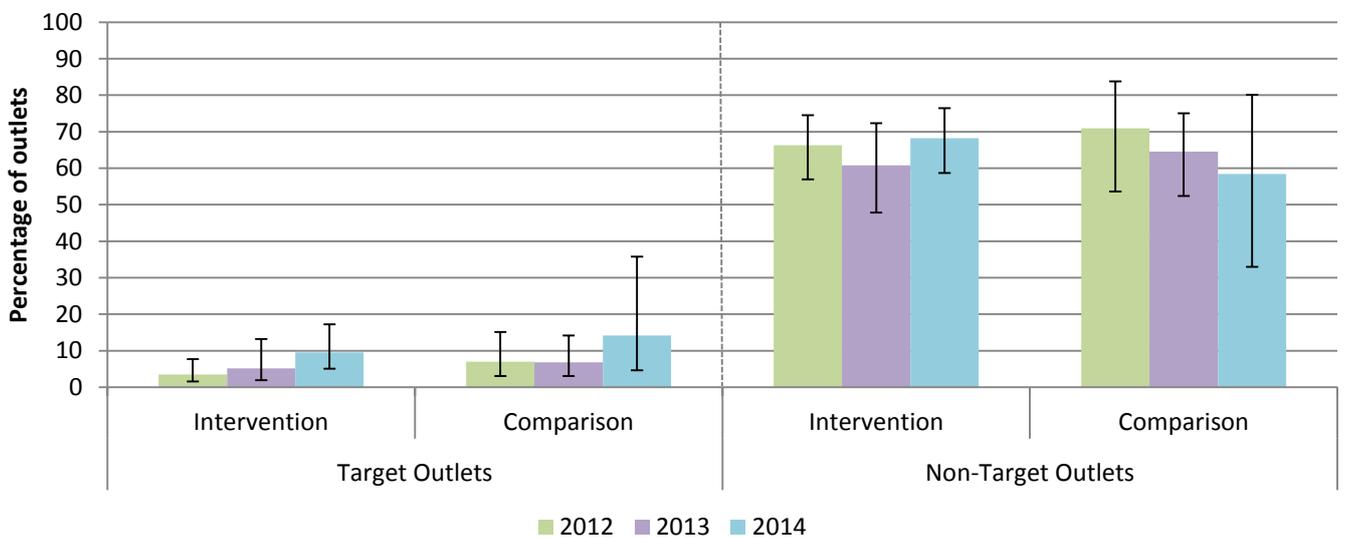
**Figure 25. Median price of antimalarial adult equivalent treatment dosages (AETD), 2014**  
*Among all tablet formulation quality-assured ACT (QA ACT), Supa Arte 4, non-QA ACT, chloroquine and oral artemisinin monotherapy (oAMT), prices in 2014 kyat*



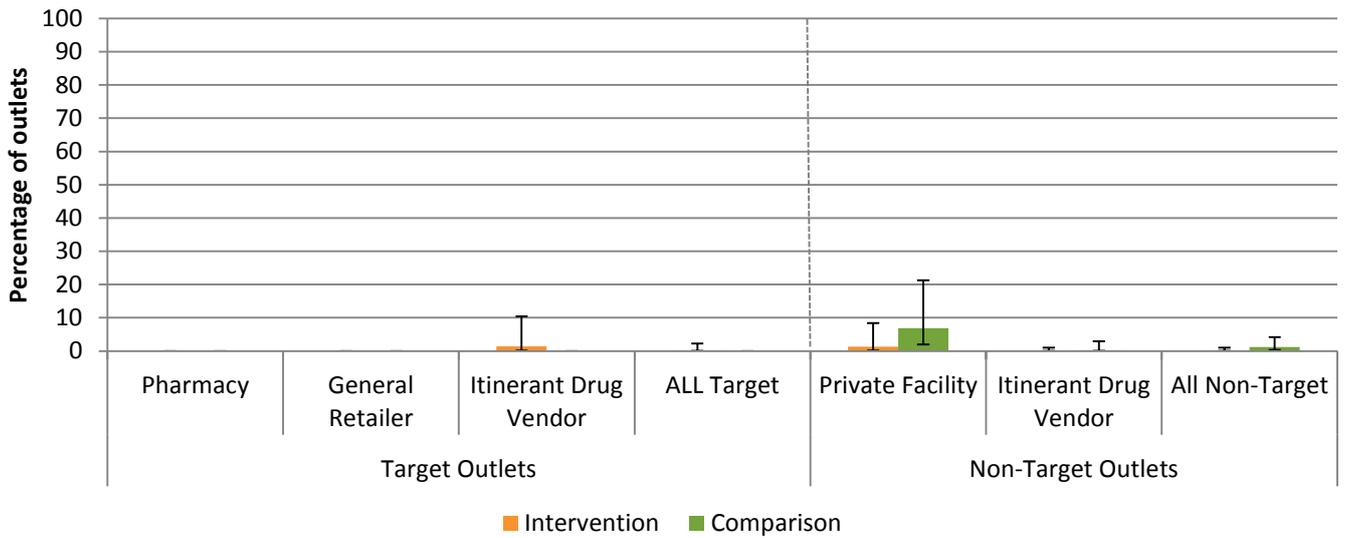
**Figure 26. Percentage of antimalarial-stocking outlets with malaria blood testing available, 2014**  
*Among all outlets with at least one antimalarial in stock on the day of the survey or within the past three months*



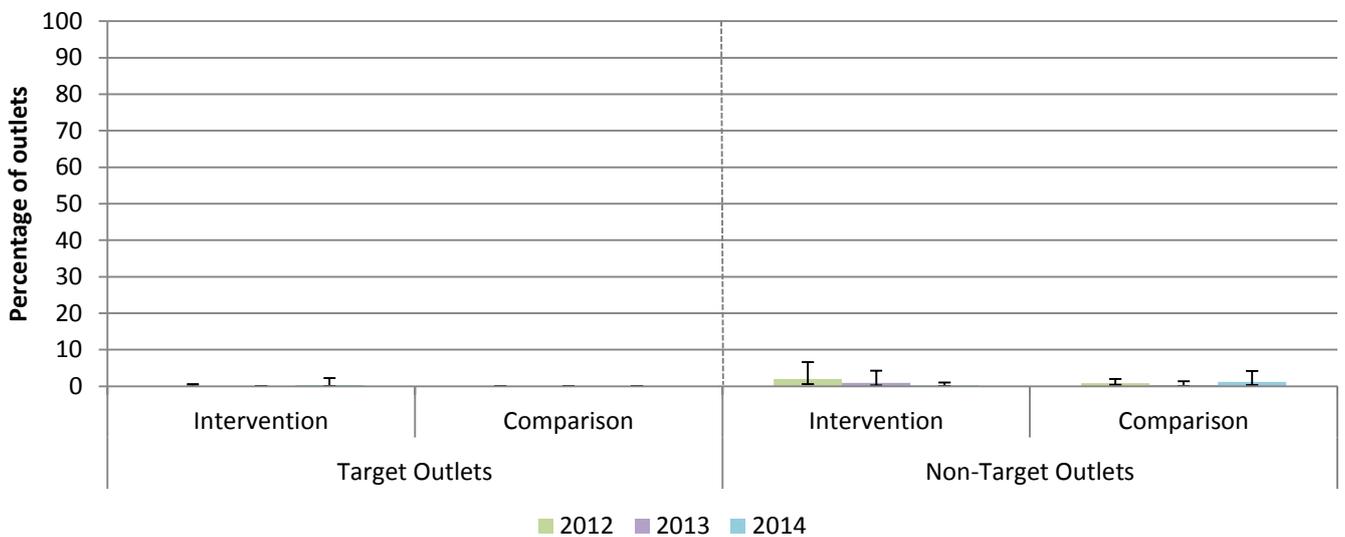
**Figure 27. Percentage of antimalarial-stocking outlets with malaria blood testing available, 2012-14**  
*Among all outlets with at least one antimalarial in stock on the day of the survey or within the past three months, across survey round*



**Figure 28. Percentage of antimalarial-stocking outlets with malaria microscopy available, 2014**  
*Among all outlets with at least one antimalarial in stock on the day of the survey or within the past three months*

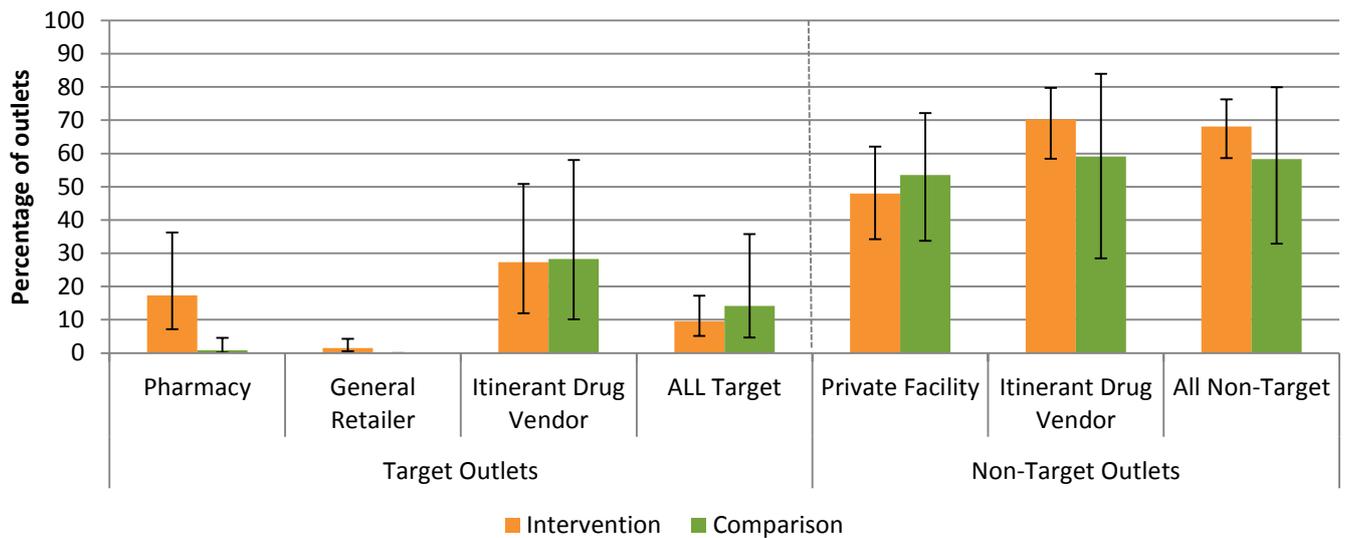


**Figure 29. Percentage of antimalarial-stocking outlets with malaria microscopy available, 2012-14**  
*Among all outlets with at least one antimalarial in stock on the day of the survey or within the past three months, across survey round*



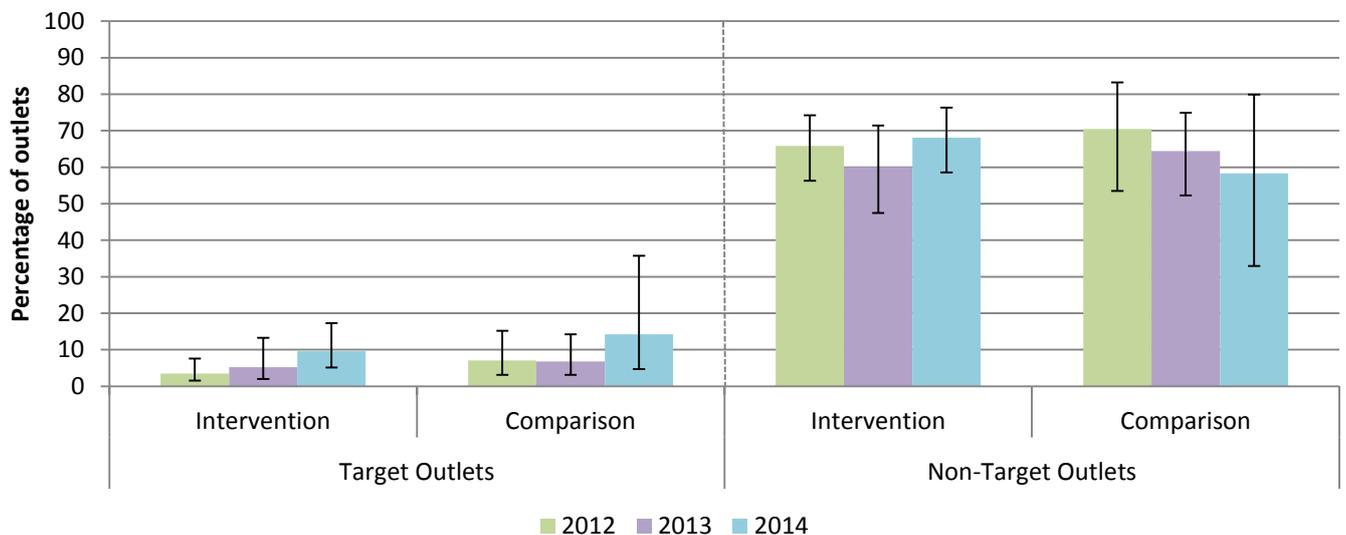
**Figure 30. Percentage of antimalarial-stocking outlets with malaria RDTs, 2014**

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



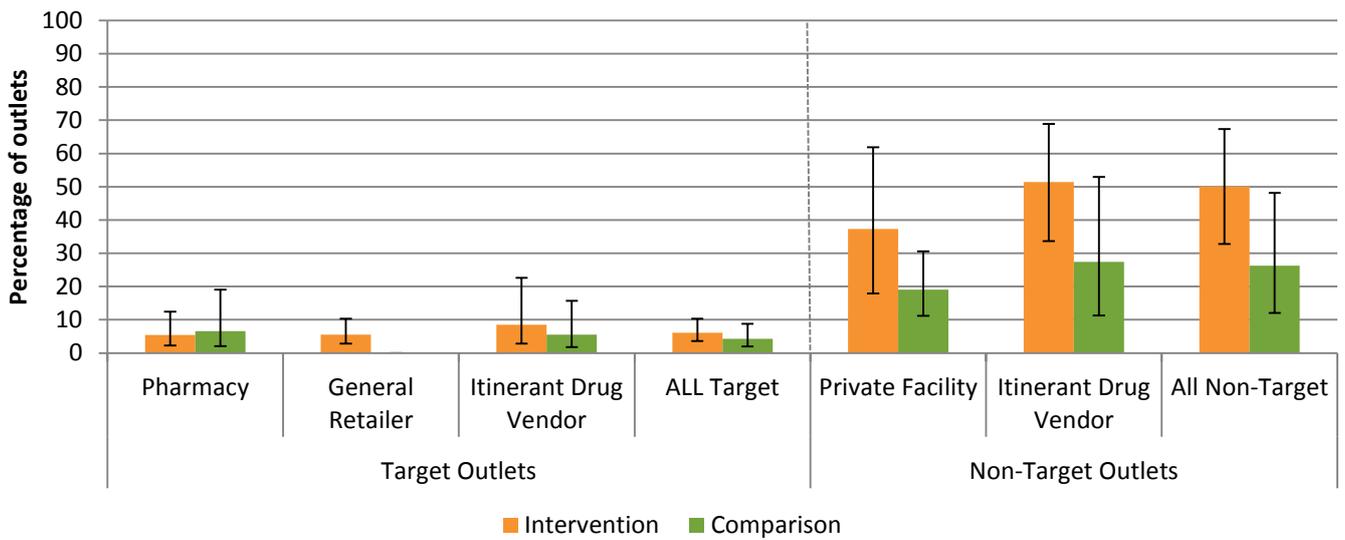
**Figure 31. Percentage of antimalarial-stocking outlets with malaria RDTs, 2012-14**

*Among all outlets with at least one antimalarial in stock on the day of the survey or within the past three months, across survey round*



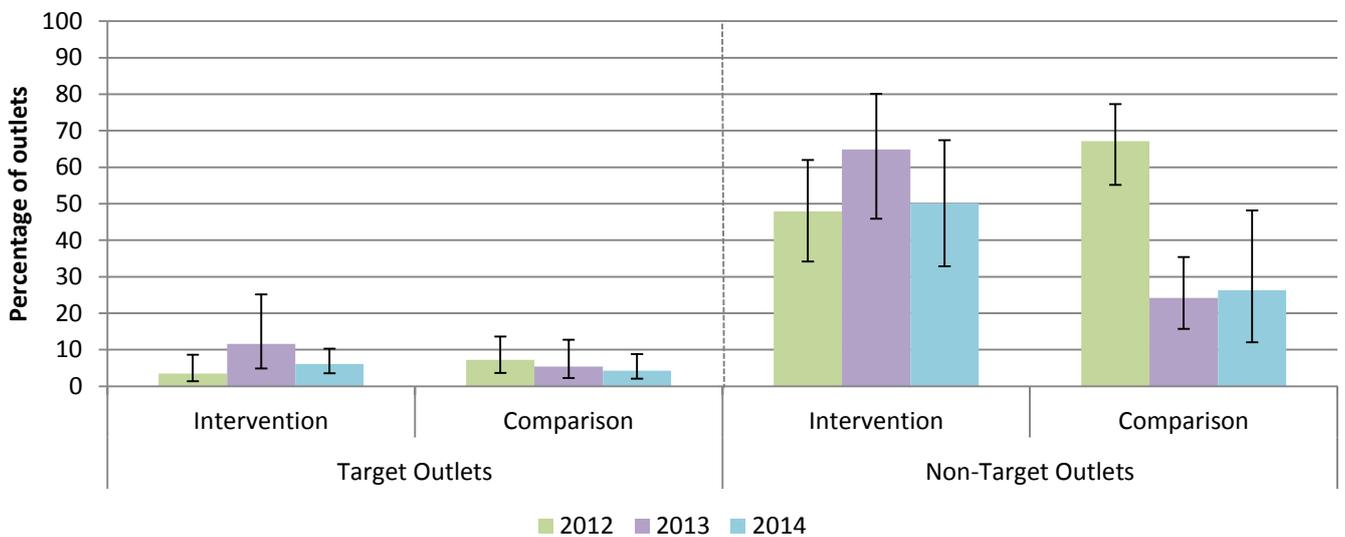
**Figure 32. Percentage of providers who correctly state the first-line treatment for uncomplicated malaria, 2014**

*Among providers in outlets providing antimalarials or malaria blood testing*

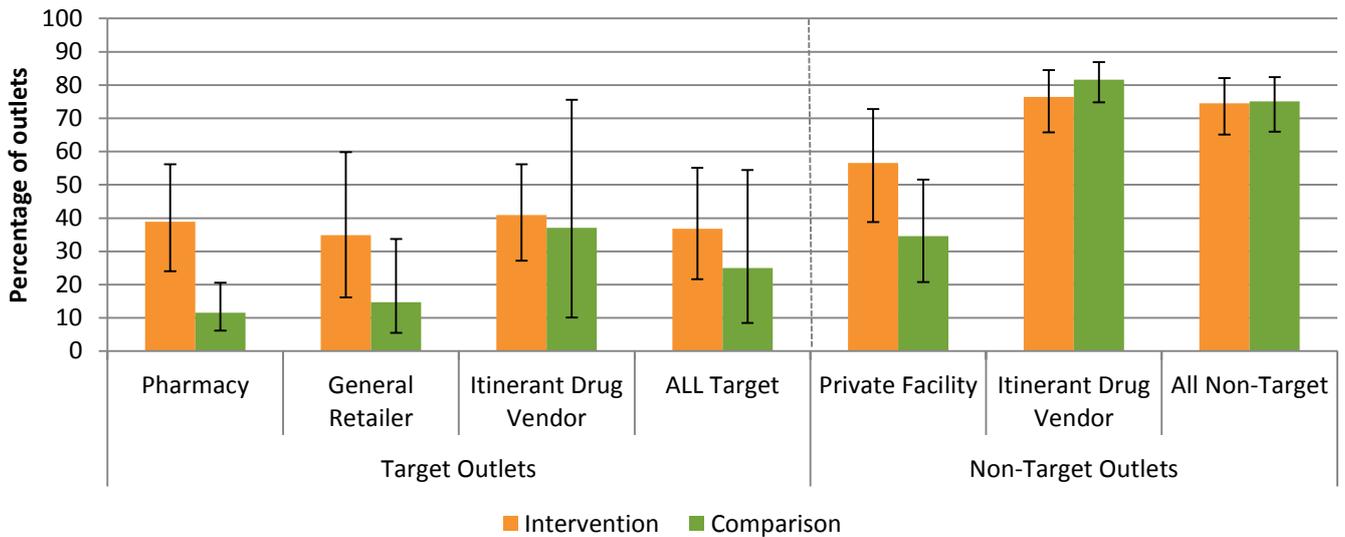


**Figure 33. Percentage of providers who correctly state the first-line treatment for uncomplicated malaria, 2012-14**

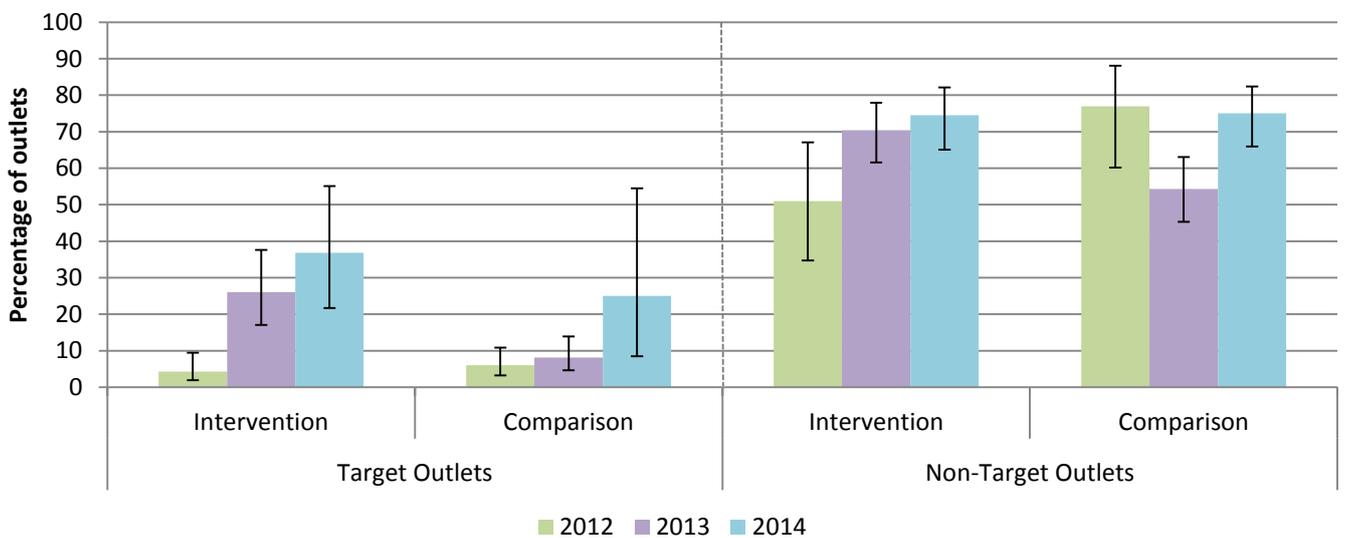
*Among providers in outlets providing antimalarials or malaria blood testing, across survey round*



**Figure 34. Percentage of providers who report the national first-line treatment as the most effective antimalarial medicine for treating uncomplicated *Pf* malaria, 2014**  
*Among providers in outlets providing antimalarials or malaria blood testing*

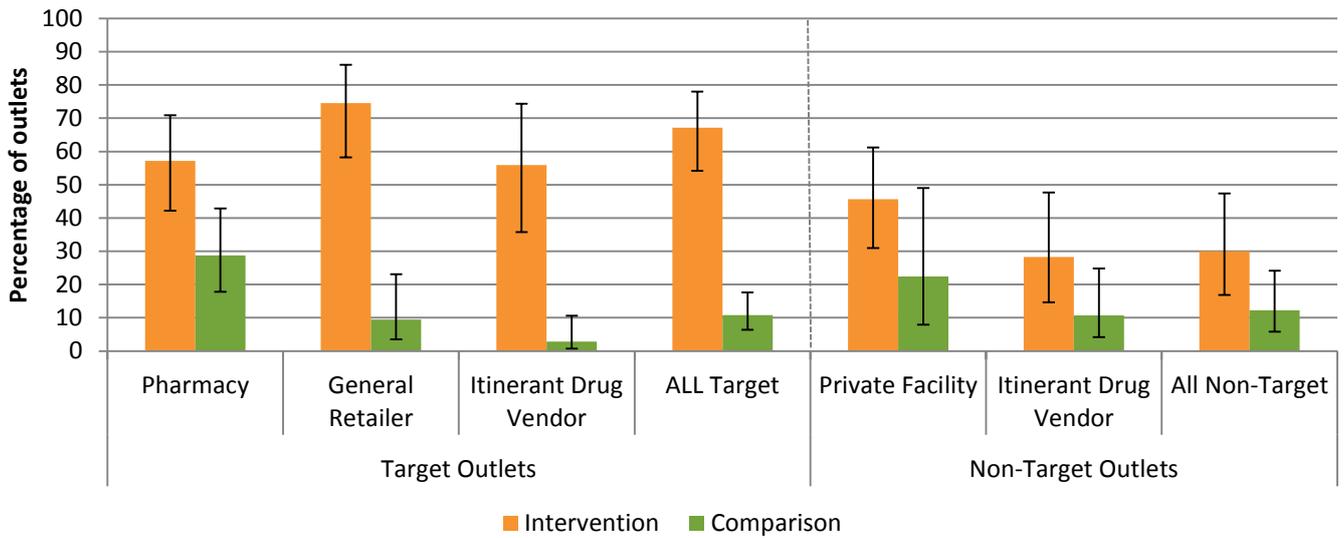


**Figure 35. Percentage of providers who report the national first-line treatment as the most effective antimalarial medicine for treating uncomplicated *Pf* malaria, 2012-14**  
*Among providers in outlets providing antimalarials or malaria blood testing, across survey round*



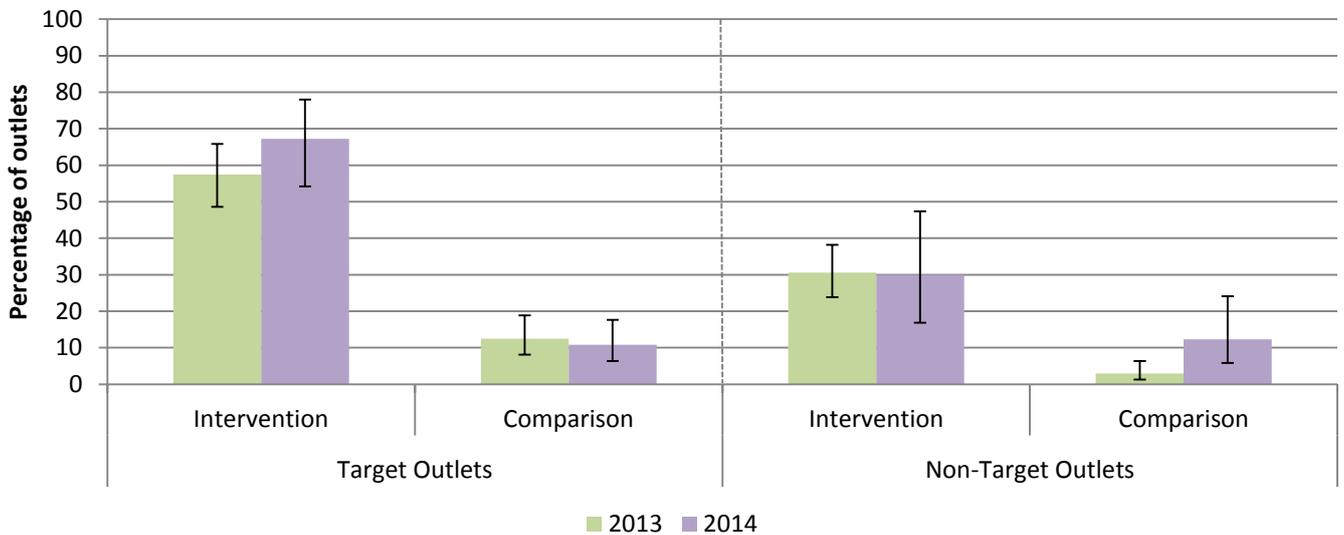
**Figure 36. Percentage of antimalarial-stocking outlets with Supa Arte 4 in stock on the day of the survey, 2014**

*Among all outlets with at least one antimalarial in stock*

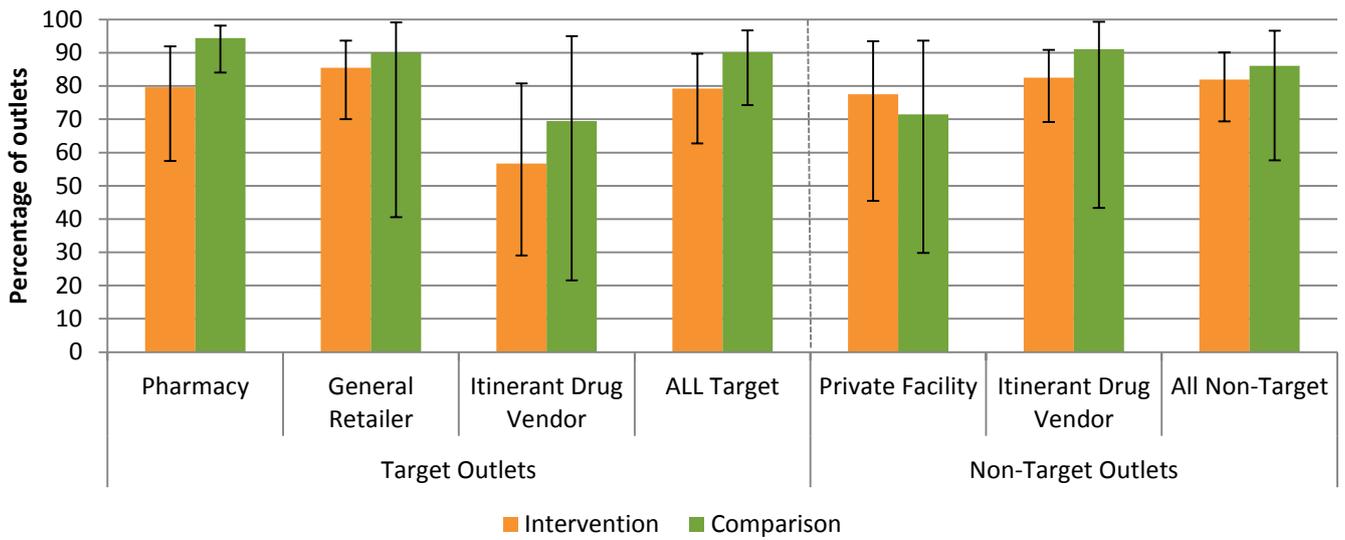


**Figure 37. Percentage of antimalarial-stocking outlets with Supa Arte 4 in stock on the day of the survey, 2013-14**

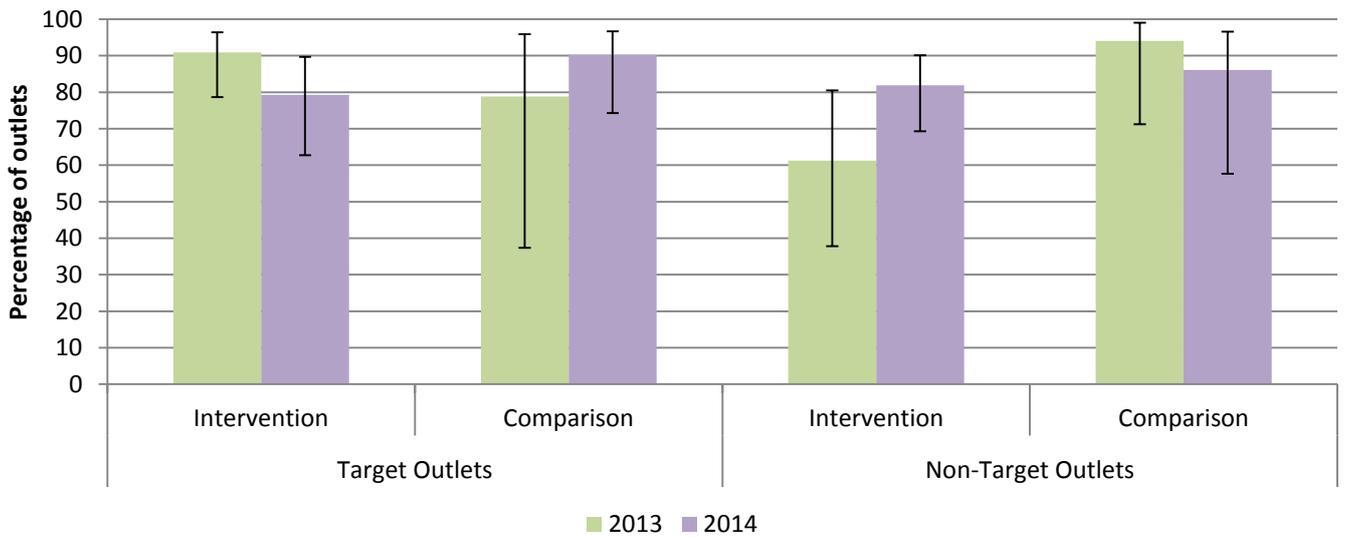
*Among all outlets with at least one antimalarial in stock, across survey round*



**Figure 38. Percentage of outlets selling Supa Arte 4 for less than 500 kyat, 2014**  
*Among outlets stocking Supa Arte 4*

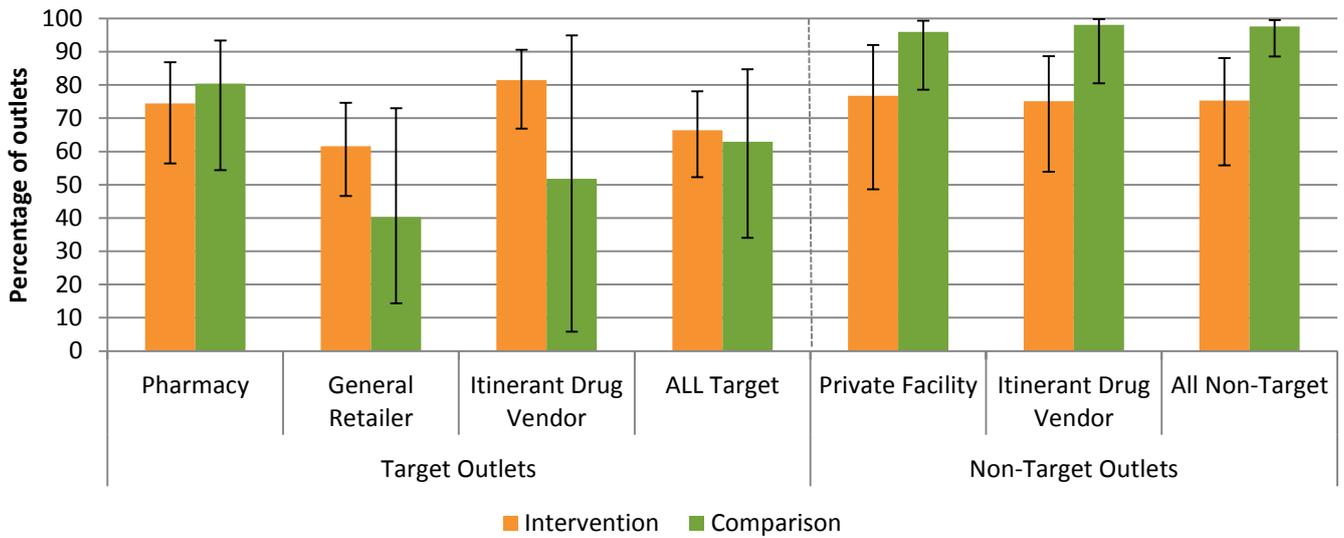


**Figure 39. Percentage of outlets selling Supa Arte 4 for less than 500 kyat, 2013-14**  
*Among outlets stocking Supa Arte 4, across survey round*



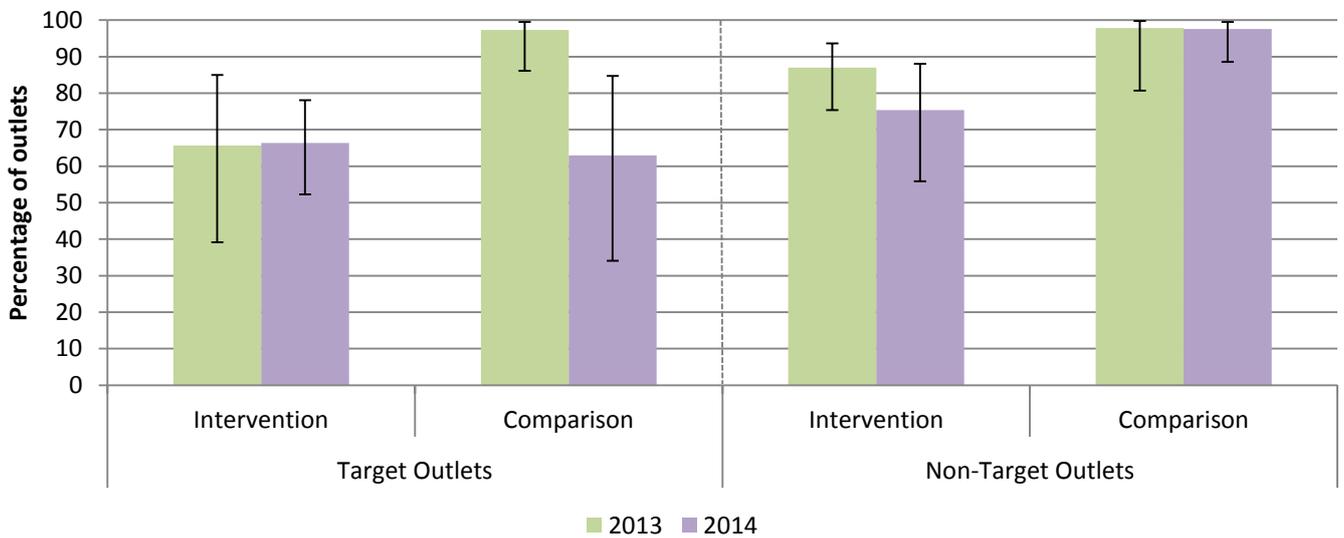
**Figure 40. Percentage of outlets who report no Supa Arte 4 disruption of stock within the past 3 months, 2014**

*Among outlets with Supa Arte 4 in stock on the day of the survey or within the past 3 month*



**Figure 41. Percentage of outlets who report no Supa Arte 4 disruption of stock within the past 3 months, 2013-2014**

*Among outlets with Supa Arte 4 in stock on the day of the survey or within the past 3 month, across survey round*



## Results Section A: Core Indicators across Intervention/Comparison Areas

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets* stocking:</b>	Intervention N=156 Comparison N=203	Intervention N=2,319 Comparison N=2,196	Intervention N=95 Comparison N=191	Intervention N=2,570 Comparison N=2,590	Intervention N=80 Comparison N=107	Intervention N=221 Comparison N=211	Intervention N=301 Comparison N=318	Intervention N=2,871 Comparison N=2,908
Any antimalarial at the time of survey visit								
Intervention	88.0 (80.6, 92.8)	9.4 (6.0, 14.3)	46.2 (16.9, 78.4)	14.4 (10.2, 20.0)	66.0 (46.6, 81.2)	77.6 (70.0, 83.8)	76.4 (69.2, 82.4)	21.0 (16.2, 26.7)
Comparison	64.6 (36.8, 85.1)	2.5 (1.5, 4.2)	40.8 (20.2, 65.3)	8.4 (5.9, 11.8)	71.9 (51.4, 86.1)	48.5 (30.3, 67.1)	50.8 (32.9, 68.4)	13.2 (9.7, 17.9)
Any ACT								
Intervention	60.6 (48.4, 71.6)	8.0 (4.7, 13.3)	35.5 (14.2, 64.6)	11.6 (7.5, 17.3)	57.6 (40.5, 73.0)	63.6 (55.0, 71.4)	63.0 (55.1, 70.2)	17.0 (12.7, 22.4)
Comparison	23.3 (12.6, 39.0)	0.3 (0.1, 0.8)	17.3 (3.8, 52.4)	2.8 (1.2, 6.1)	49.0 (32.6, 65.6)	37.2 (25.2, 51.1)	38.4 (26.7, 51.5)	6.8 (4.3, 10.6)
Quality Assured ACT (QAACT)								
Intervention	58.0 (46.4, 68.8)	8.0 (4.7, 13.3)	35.1 (14.1, 64.1)	11.4 (7.5, 17.1)	52.2 (34.7, 69.2)	63.6 (55.0, 71.4)	62.4 (54.5, 69.8)	16.8 (12.6, 22.1)
Comparison	20.4 (10.8, 35.3)	0.3 (0.1, 0.8)	17.1 (3.7, 52.3)	2.6 (1.1, 6.1)	43.7 (28.9, 59.7)	37.2 (25.2, 51.1)	37.9 (26.3, 51.0)	6.7 (4.2, 10.5)
QAACT with the "padonma" logo								
Intervention	55.5 (43.1, 67.3)	8.0 (4.7, 13.3)	30.0 (9.4, 63.8)	11.0 (7.1, 16.8)	38.0 (25.0, 52.9)	36.4 (22.6, 52.9)	36.6 (23.9, 51.4)	13.7 (9.8, 18.9)
Comparison	20.3 (10.7, 35.0)	0.3 (0.1, 0.8)	15.6 (3.1, 52.1)	2.5 (1.0, 6.1)	37.1 (22.2, 54.9)	20.5 (8.3, 42.2)	22.1 (10.0, 42.0)	4.7 (2.2, 10.0)
Supa Arte 4								
Intervention	50.0 (36.7, 63.3)	6.8 (3.8, 12.0)	25.1 (7.9, 56.6)	9.4 (5.7, 15.1)	30.0 (17.2, 46.9)	21.6 (10.8, 38.4)	22.5 (12.2, 37.7)	10.7 (7.1, 15.8)
Comparison	18.5 (9.7, 32.4)	0.2 (0.1, 0.7)	1.2 (0.4, 3.4)	0.9 (0.6, 1.5)	16.1 (6.4, 35.0)	5.2 (1.9, 13.7)	6.2 (2.7, 13.9)	1.5 (1.0, 2.2)

**Table A1: Availability of antimalarials, among all screened outlets, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Percentage of outlets* stocking:	Intervention N=156 Comparison N=203	Intervention N=2,319 Comparison N=2,196	Intervention N=95 Comparison N=191	Intervention N=2,570 Comparison N=2,590	Intervention N=80 Comparison N=107	Intervention N=221 Comparison N=211	Intervention N=301 Comparison N=318	Intervention N=2,871 Comparison N=2,908
Non-quality-assured ACT (non-QA ACT)								
Intervention	3.4 (1.0, 11.0)	0.0 -	1.4 (0.3, 6.5)	0.2 (0.1, 0.7)	11.4 (5.2, 23.0)	0.0 -	1.2 (0.5, 2.8)	0.3 (0.1, 0.8)
Comparison	4.2 (1.2, 13.5)	0.0 -	0.2 (0.0, 2.6)	0.2 (0.1, 0.5)	8.3 (3.0, 20.8)	0.0 -	0.8 (0.2, 3.1)	0.2 (0.1, 0.6)
Any non-artemisinin therapy								
Intervention	42.3 (29.1, 56.7)	1.8 (1.1, 3.0)	24.0 (10.7, 45.3)	4.6 (3.3, 6.5)	34.0 (22.5, 47.8)	54.8 (47.5, 61.9)	52.6 (45.6, 59.5)	9.7 (7.7, 12.1)
Comparison	25.9 (11.3, 48.8)	1.3 (0.7, 2.5)	27.9 (17.6, 41.2)	4.8 (3.2, 7.2)	30.2 (19.6, 43.5)	28.1 (19.7, 38.3)	28.3 (20.5, 37.6)	7.5 (5.9, 9.5)
Chloroquine								
Intervention	32.1 (21.4, 45.0)	1.6 (1.0, 2.6)	16.7 (8.6, 30.0)	3.6 (2.7, 4.9)	13.8 (6.1, 28.3)	48.6 (39.0, 58.3)	45.0 (35.2, 55.2)	8.0 (6.5, 9.8)
Comparison	19.6 (7.0, 44.1)	0.9 (0.5, 1.9)	16.8 (9.5, 27.9)	3.1 (1.9, 5.0)	14.8 (5.9, 32.2)	20.9 (15.7, 27.3)	20.3 (15.0, 26.9)	5.1 (3.9, 6.7)
Oral artemisinin monotherapy								
Intervention	21.5 (11.3, 37.1)	0.5 (0.1, 1.7)	5.2 (1.6, 15.4)	1.5 (0.7, 3.1)	26.1 (13.3, 45.0)	4.7 (2.1, 10.0)	6.9 (3.7, 12.6)	2.1 (1.0, 4.1)
Comparison	40.5 (25.5, 57.5)	1.6 (0.9, 3.0)	2.6 (0.9, 7.5)	2.9 (1.8, 4.8)	6.0 (2.2, 15.0)	4.2 (0.8, 19.6)	4.4 (1.0, 16.9)	3.1 (1.9, 5.1)
Non-oral artemisinin monotherapy								
Intervention	14.4 (7.6, 25.7)	0.2 (0.1, 0.8)	10.6 (3.7, 26.8)	1.4 (0.7, 2.6)	32.6 (17.9, 51.8)	14.9 (8.9, 23.9)	16.8 (10.4, 25.9)	3.0 (1.8, 5.0)
Comparison	21.9 (9.8, 42.1)	0.1 (0.0, 0.5)	4.2 (1.9, 9.0)	1.2 (0.7, 2.1)	28.9 (11.6, 55.8)	6.8 (3.4, 13.1)	8.9 (4.7, 16.1)	2.1 (1.3, 3.4)

\* The denominator includes 14 outlets in the intervention area and 5 outlets in the comparison area that met screening criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview).

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A2: Availability of antimalarials, among antimalarial-stocking outlets, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets* stocking:</b>	Intervention N=127 Comparison N=121	Intervention N=160 Comparison N=43	Intervention N=65 Comparison N=74	Intervention N=352 Comparison N=238	Intervention N=55 Comparison N=70	Intervention N=173 Comparison N=101	Intervention N=228 Comparison N=171	Intervention N=580 Comparison N=409
Any ACT								
Intervention	68.9 (55.4, 79.8)	85.3 (69.1, 93.8)	76.8 (54.6, 90.1)	80.2 (65.7, 89.5)	87.2 (71.4, 94.9)	81.9 (72.8, 88.4)	82.4 (74.1, 88.4)	81.0 (73.2, 87.0)
Comparison	36.1 (23.8, 50.6)	11.4 (5.4, 22.7)	42.5 (14.4, 76.5)	32.8 (17.1, 53.7)	68.1 (39.4, 87.5)	76.7 (58.3, 88.6)	75.5 (61.3, 85.8)	51.6 (39.0, 64.0)
Quality Assured ACT (QAACT)								
Intervention	65.9 (52.5, 77.2)	85.3 (69.1, 93.8)	75.9 (53.6, 89.6)	79.4 (65.2, 88.8)	79.1 (63.0, 89.4)	81.9 (72.8, 88.4)	81.7 (73.4, 87.8)	80.3 (72.6, 86.2)
Comparison	31.7 (19.8, 46.6)	11.4 (5.4, 22.7)	41.9 (14.0, 76.2)	31.5 (15.7, 53.1)	60.8 (36.5, 80.7)	76.7 (58.3, 88.6)	74.6 (60.6, 84.8)	50.4 (37.5, 63.1)
QAACT with the "padonma" logo								
Intervention	63.1 (49.0, 75.3)	85.3 (69.1, 93.8)	64.8 (40.5, 83.3)	76.5 (63.5, 85.9)	57.5 (43.2, 70.7)	46.9 (30.5, 64.0)	47.9 (32.9, 63.2)	65.5 (54.4, 75.1)
Comparison	31.4 (19.6, 46.2)	11.4 (5.4, 22.7)	38.3 (11.2, 75.3)	29.6 (14.0, 52.1)	51.6 (28.4, 74.1)	42.2 (24.0, 62.8)	43.5 (27.1, 61.4)	35.7 (20.3, 54.7)
Supa Arte 4								
Intervention	57.2 (42.2, 70.9)	74.6 (58.2, 86.1)	55.9 (35.7, 74.4)	67.2 (54.2, 78.0)	45.7 (30.9, 61.2)	28.3 (14.6, 47.7)	30.0 (16.9, 47.4)	53.2 (42.3, 63.7)
Comparison	28.8 (17.9, 42.8)	9.5 (3.5, 23.1)	2.8 (0.7, 10.7)	10.8 (6.4, 17.6)	22.4 (8.0, 49.1)	10.7 (4.2, 24.8)	12.3 (5.8, 24.1)	11.4 (7.4, 17.2)
Non-quality-assured ACT (non-QA ACT)								
Intervention	3.9 (1.2, 12.3)	0.0 -	3.0 (0.9, 10.0)	1.4 (0.5, 3.8)	17.2 (7.5, 34.8)	0.0 -	1.5 (0.6, 3.7)	1.5 (0.6, 3.4)
Comparison	6.4 (1.8, 20.3)	0.0 -	0.6 (0.1, 5.7)	1.8 (0.5, 6.2)	11.6 (4.1, 28.6)	0.0 -	1.6 (0.4, 6.2)	1.7 (0.6, 5.0)
Any non-artemisinin therapy								
Intervention	48.1 (34.2, 62.3)	19.3 (10.5, 32.6)	51.9 (28.7, 74.3)	32.0 (22.9, 42.8)	51.5 (39.5, 63.3)	70.6 (61.3, 78.3)	68.8 (59.9, 76.5)	46.2 (36.9, 55.8)
Comparison	40.1 (24.6, 57.8)	52.3 (28.2, 75.4)	68.4 (48.7, 83.2)	57.4 (47.2, 67.0)	42.0 (26.6, 59.2)	57.9 (30.9, 80.8)	55.7 (33.5, 75.8)	56.7 (46.4, 66.4)

**Table A2: Availability of antimalarials, among antimalarial-stocking outlets, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets* stocking:</b>	Intervention N=127 Comparison N=121	Intervention N=160 Comparison N=43	Intervention N=65 Comparison N=74	Intervention N=352 Comparison N=238	Intervention N=55 Comparison N=70	Intervention N=173 Comparison N=101	Intervention N=228 Comparison N=171	Intervention N=580 Comparison N=409
<b>Chloroquine</b>								
Intervention	36.5 (25.3, 49.3)	17.0 (9.1, 29.5)	36.2 (19.9, 56.3)	25.0 (17.6, 34.3)	20.9 (9.3, 40.6)	62.6 (49.3, 74.2)	58.8 (45.3, 71.1)	38.1 (28.3, 48.9)
Comparison	30.3 (15.2, 51.5)	36.7 (18.5, 59.7)	41.2 (30.8, 52.5)	37.4 (29.7, 45.9)	20.5 (7.6, 44.7)	43.0 (25.1, 63.1)	40.0 (23.4, 59.2)	38.5 (31.5, 46.1)
<b>Oral artemisinin monotherapy</b>								
Intervention	24.5 (13.0, 41.3)	5.0 (1.5, 15.0)	11.3 (5.1, 23.1)	10.3 (5.6, 18.1)	39.6 (23.1, 58.8)	6.0 (2.8, 12.4)	9.1 (5.0, 16.0)	9.8 (5.6, 16.6)
Comparison	62.8 (45.6, 77.3)	64.3 (42.9, 81.2)	6.3 (1.9, 19.3)	35.1 (22.2, 50.6)	8.3 (2.8, 22.2)	8.6 (2.1, 29.4)	8.6 (2.5, 25.4)	23.5 (16.0, 33.1)
<b>Non-oral artemisinin monotherapy</b>								
Intervention	16.4 (8.3, 29.7)	2.6 (0.9, 7.1)	22.9 (14.2, 35.0)	9.7 (5.8, 15.8)	49.4 (31.3, 67.6)	19.2 (11.3, 30.7)	21.9 (13.6, 33.5)	14.4 (10.0, 20.4)
Comparison	33.9 (20.4, 50.8)	5.4 (1.6, 17.0)	10.2 (3.2, 28.1)	14.7 (8.1, 25.1)	40.2 (18.1, 67.2)	14.0 (6.5, 27.6)	17.5 (9.0, 31.3)	15.9 (8.9, 26.7)

\* Antimalarial-stocking outlets have at least one antimalarial in stock on the day of the survey, verified by presence of at least one antimalarial recorded in the antimalarial audit sheet. The denominator includes no outlets that met screening criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview).

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A3a: Price of tablet formulation antimalarials, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
Median price of a tablet AETD*:	Median [IQR] (N of Antimalarials)							
Quality Assured ACT (QAACT)								
Intervention	500 [400-800] <sup>(162)</sup>	500 [0-600] <sup>(156)</sup>	600 [0-1000] <sup>(69)</sup>	500 [300-667] <sup>(387)</sup>	400 [0-500] <sup>(55)</sup>	0 [0-0] <sup>(264)</sup>	0 [0-0] <sup>(319)</sup>	333 [0-533] <sup>(706)</sup>
Comparison	500 [400-600] <sup>(89)</sup>	500 [450-500] <sup>(9)</sup>	0 [0-0] <sup>(39)</sup>	0 [0-450] <sup>(137)</sup>	300 [0-700] <sup>(62)</sup>	0 [0-0] <sup>(214)</sup>	0 [0-0] <sup>(276)</sup>	0 [0-0] <sup>(413)</sup>
QAACT with the "padonma" logo								
Intervention	533 [400-900] <sup>(157)</sup>	500 [0-600] <sup>(155)</sup>	600 [400-1067] <sup>(64)</sup>	500 [333-667] <sup>(376)</sup>	400 [0-500] <sup>(39)</sup>	0 [0-400] <sup>(143)</sup>	0 [0-500] <sup>(182)</sup>	400 [0-600] <sup>(558)</sup>
Comparison	500 [400-600] <sup>(88)</sup>	500 [450-500] <sup>(9)</sup>	0 [0-0] <sup>(30)</sup>	0 [0-500] <sup>(127)</sup>	400 [0-800] <sup>(47)</sup>	0 [0-0] <sup>(85)</sup>	0 [0-0] <sup>(132)</sup>	0 [0-0] <sup>(259)</sup>
Supa Arte 4								
Intervention	500 [400-500] <sup>(76)</sup>	400 [0-500] <sup>(109)</sup>	500 [0-600] <sup>(36)</sup>	400 [0-500] <sup>(221)</sup>	400 [300-500] <sup>(20)</sup>	0 [0-500] <sup>(64)</sup>	300 [0-500] <sup>(84)</sup>	400 [0-500] <sup>(305)</sup>
Comparison	400 [350-500] <sup>(49)</sup>	500 [450-500] <sup>(6)</sup>	500 [500-1500] <sup>(4)</sup>	500 [350-500] <sup>(59)</sup>	400 [0-600] <sup>(21)</sup>	0 [0-0] <sup>(14)</sup>	0 [0-0] <sup>(35)</sup>	350 [0-500] <sup>(94)</sup>
Non-quality-assured ACT (non-QA ACT)								
Intervention	2813 [2300-2813] <sup>(8)</sup>	- -	4500 [4000-4500] <sup>(4)</sup>	2813 [2400-4500] <sup>(12)</sup>	2880 [2475-3000] <sup>(11)</sup>	- -	2880 [2475-3000] <sup>(11)</sup>	2813 [2400-4000] <sup>(23)</sup>
Comparison	2000 [2000-2500] <sup>(17)</sup>	- -	- -	2000 [2000-2500] <sup>(17)</sup>	1500 [1500-2925] <sup>(8)</sup>	- -	1500 [1500-2925] <sup>(8)</sup>	2000 [2000-2500] <sup>(25)</sup>
Chloroquine								
Intervention	350 [194-500] <sup>(31)</sup>	242 [194-333] <sup>(27)</sup>	600 [500-1500] <sup>(12)</sup>	300 [194-968] <sup>(70)</sup>	484 [0-484] <sup>(4)</sup>	0 [0-100] <sup>(48)</sup>	0 [0-100] <sup>(52)</sup>	194 [0-500] <sup>(122)</sup>
Comparison	200 [150-250] <sup>(35)</sup>	300 [242-500] <sup>(14)</sup>	300 [0-500] <sup>(22)</sup>	290 [145-400] <sup>(71)</sup>	200 [0-240] <sup>(11)</sup>	0 [0-0] <sup>(17)</sup>	0 [0-0] <sup>(28)</sup>	200 [0-300] <sup>(99)</sup>

**Table A3a: Price of tablet formulation antimalarials, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			ALL Outlets
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	
<b>Median price of a tablet AETD*:</b>	Median [IQR] (N of Antimalarials)							
Oral artemisinin monotherapy								
Intervention	3200 [2240-3840] <sup>(52)</sup>	2880 [2400-3840] <sup>(21)</sup>	5600 [4800-6000] <sup>(9)</sup>	3200 [2400-4800] <sup>(82)</sup>	2720 [1600-3840] <sup>(14)</sup>	3840 [2720-9600] <sup>(13)</sup>	3200 [1600-4800] <sup>(27)</sup>	3200 [2400-4800] <sup>(109)</sup>
Comparison	2560 [2400-3200] <sup>(89)</sup>	3840 [2880-4800] <sup>(29)</sup>	4000 [2880-4800] <sup>(10)</sup>	3200 [2400-3840] <sup>(128)</sup>	2400 [1920-2880] <sup>(15)</sup>	2880 [2880-3600] <sup>(6)</sup>	2880 [2240-2880] <sup>(21)</sup>	2880 [2400-3840] <sup>(149)</sup>

\* AETD - adult equivalent treatment dose - is or the number of milligrams required to treat a 60kg adult (see Annex 8). Information provided by the respondent about price for a specific amount of antimalarial drug (e.g. price per tablet or price per specific package size) was converted to the price per AETD. Prices are reported in 2014 kyat.

Figures in this table are derived using audited products with price information. The numbers of antimalarials captured in audit sheets with missing price information are as follows:

QAACT tablet 30 (intervention 20, comparison 10), QAACT with the “padonma” logo tablet 23 (intervention 19, comparison 4), Supa Arte 4 tablet 12 (intervention 12, comparison 0), non-quality assured ACT tablet 11 (intervention 7, comparison 4), chloroquine tablet 115 (intervention 80, comparison 35), oral artemisinin monotherapy tablet 15 (intervention 8, comparison 7)

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A3b: Percentage of outlets selling Supa Arte 4 for less than 500 kyat, among outlets selling Supa Arte 4, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			ALL Outlets
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets selling Supa Arte 4 for &lt; 500 kyat:</b>	Intervention N=75 Comparison N=48	Intervention N=109 Comparison N=6	Intervention N=36 Comparison N=4	Intervention N=220 Comparison N=58	Intervention N=20 Comparison N=21	Intervention N=64 Comparison N=14	Intervention N=84 Comparison N=35	Intervention N=304 Comparison N=93
Any ACT								
Intervention	79.6 (57.5, 91.9)	85.5 (70.1, 93.6)	56.7 (29.0, 80.8)	79.3 (62.7, 89.7)	77.5 (45.4, 93.5)	82.5 (69.2, 90.9)	81.9 (69.3, 90.1)	79.9 (65.9, 89.1)
Comparison	94.4 (84.1, 98.2)	90.0 (40.6, 99.2)	69.5 (21.5, 95.0)	90.2 (74.3, 96.7)	71.5 (29.9, 93.6)	91.1 (43.3, 99.3)	86.1 (57.6, 96.6)	88.3 (73.4, 95.4)

Figures in this table are derived using audited products with price information. 12 outlets stocked Supa Arte 4 but were missing Supa Arte 4 price information (intervention 12, comparison 0).

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A4: Availability of malaria blood testing among antimalarial-stocking outlets\*, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			ALL Outlets
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	
<b>Percentage of outlets** stocking:</b>	Intervention N=129 Comparison N=123	Intervention N=199 Comparison N=46	46Intervention N=70 Comparison N=77	Intervention N=398 Comparison N=246	Intervention N=67 Comparison N=74	Intervention N=189 Comparison N=106	Intervention N=256 Comparison N=180	Intervention N=654 Comparison N=426
Any malaria blood test								
Intervention	17.3 (7.2, 36.2)	1.5 (0.5, 4.3)	27.3 (12.0, 50.8)	9.6 (5.1, 17.2)	48.0 (34.2, 62.1)	70.3 (58.6, 79.9)	68.2 (58.7, 76.4)	30.6 (22.6, 40.0)
Comparison	0.8 (0.2, 4.5)	0.0 -	28.3 (10.1, 58.0)	14.2 (4.7, 35.8)	54.5 (34.3, 73.4)	59.1 (28.5, 84.0)	58.4 (33.0, 80.1)	33.7 (23.6, 45.6)
	Intervention N=129 Comparison N=123	Intervention N=199 Comparison N=46	46Intervention N=70 Comparison N=77	Intervention N=398 Comparison N=246	Intervention N=67 Comparison N=74	Intervention N=189 Comparison N=106	Intervention N=256 Comparison N=180	Intervention N=654 Comparison N=426
Microscopic blood test								
Intervention	0.0 -	0.0 -	1.4 (0.2, 10.4)	0.3 (0.0, 2.3)	1.3 (0.2, 8.4)	0.1 (0.0, 1.0)	0.2 (0.1, 1.0)	0.3 (0.1, 1.2)
Comparison	0.0 -	0.0 -	0.0 -	0.0 -	6.9 (2.0, 21.3)	0.3 (0.0, 3.0)	1.2 (0.3, 4.2)	0.5 (0.2, 1.8)
	Intervention N=129 Comparison N=123	Intervention N=199 Comparison N=46	46Intervention N=70 Comparison N=77	Intervention N=398 Comparison N=246	Intervention N=67 Comparison N=74	Intervention N=189 Comparison N=106	Intervention N=256 Comparison N=180	Intervention N=654 Comparison N=426
Rapid diagnostic tests (RDTs)								
Intervention	17.3 (7.2, 36.2)	1.5 (0.5, 4.3)	27.3 (12.0, 50.8)	9.6 (5.1, 17.2)	48.0 (34.2, 62.1)	70.2 (58.4, 79.8)	68.1 (58.6, 76.3)	30.6 (22.6, 39.9)
Comparison	0.8 (0.2, 4.5)	0.0 -	28.3 (10.1, 58.0)	14.2 (4.7, 35.8)	53.5 (33.8, 72.2)	59.1 (28.5, 84.0)	58.3 (32.9, 79.9)	33.7 (23.6, 45.5)

\* Blood testing availability is reported among outlets that either had antimalarials in stock on the day of the survey or reportedly stocked antimalarials in the previous 3 months.

\*\* Results in this table are derived using responses captured among outlets with blood testing information. No antimalarial-stocking outlet was missing information about both availability of microscopy and availability of RDTs. No antimalarial-stocking outlet had partial information about blood testing availability and are included in the denominator of the indicator "any blood testing available".

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A5: Price of malaria blood testing, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
Total median price to consumers:*	Median [IQR] (N of Antimalarials)							
<b>Microscopic blood tests</b>								
Intervention	- -	- -	2500 (1)	2500 (1)	2000 [1000-3000] (3)	2500 (1)	2500 [2000-2500] (4)	2500 [2500-2500] (5)
Comparison	- -	- -	- -	- -	3000 [1000-3000] (8)	0 (1)	1000 [0-3000] (9)	1000 [0-3000] (9)
<b>Rapid diagnostic tests (RDTs)</b>								
Adult								
Intervention	500 [0-1000] (17)	500 [500-500] (4)	0 [0-1000] (12)	500 [0-1000] (33)	500 [0-1000] (27)	0 [0-0] (134)	0 [0-0] (161)	0 [0-0] (194)
Comparison	600 [0-600] (2)	- -	0 [0-0] (22)	0 [0-0] (24)	500 [0-1100] (44)	0 [0-0] (78)	0 [0-0] (122)	0 [0-0] (146)
Child under age five								
Intervention	500 [0-1000] (17)	500 [500-500] (4)	0 [0-1000] (12)	500 [0-1000] (33)	500 [0-1000] (25)	0 [0-0] (134)	0 [0-0] (159)	0 [0-0] (192)
Comparison	600 [0-600] (2)	- -	0 [0-0] (22)	0 [0-0] (24)	500 [0-1100] (44)	0 [0-0] (77)	0 [0-0] (121)	0 [0-0] (145)

\* Total price to the consumer including consultation and/or service fees. Prices are reported in 2014 kyat. Microscopic blood testing price information was not available (missing or "don't know" response) for: microscopy 2 (intervention 0, comparison 2), adult RDT 21 (intervention 15, comparison 6), child RDT 24 (intervention 17, comparison 7)

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A6: Antimalarial market share across outlet types, across intervention/comparison area**

AETDs sold or distributed in the previous week by outlet type and antimalarial type as a percentage of all AETDs sold/ distributed:*	Target Outlets				Non-Target Outlets			ANTIMALARIAL TOTAL**
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	
	%	%	%	%	%	%	%	
<b>1. Any ACT</b>								
Intervention	15.2	4.8	10.1	30.2	15.4	8.2	23.6	53.8
Comparison	12.7	0.0	3.4	16.1	6.7	1.5	8.2	24.3
Quality Assured ACT (QAACT)								
Intervention	14.7	4.8	10.1	29.6	15.3	8.2	23.5	53.2
Comparison	12.7	0.0	3.4	16.1	5.5	1.5	7.0	23.1
QAACT with the "padonma" logo								
Intervention	14.7	4.7	10.1	29.5	8.6	5.3	13.9	43.5
Comparison	12.7	0.0	3.4	16.1	2.5	0.1	2.5	18.6
Non-quality-assured ACT								
Intervention	0.5	0.0	0.0	0.5	0.1	0.0	0.1	0.6
Comparison	0.0	0.0	0.0	0.0	1.2	0.0	1.2	1.2
<b>2. Any non-artemisinin therapy</b>								
Intervention	6.2	4.8	5.6	16.6	0.0	13.2	13.2	29.9
Comparison	14.1	7.5	15.9	37.5	1.4	1.7	3.1	40.6
Chloroquine								
Intervention	6.1	4.5	3.4	14.0	0.0	10.7	10.7	24.7
Comparison	10.0	7.0	14.5	31.5	0.7	0.0	0.7	32.2
<b>3. Oral artemisinin monotherapy</b>								
Intervention	4.4	2.5	1.3	8.2	3.7	0.0	3.7	11.9
Comparison	25.0	3.3	2.5	30.8	0.1	0.0	0.1	30.9
<b>4. Non-oral artemisinin monotherapy</b>								
Intervention	1.7	0.1	0.7	2.4	0.4	1.6	2.0	4.4
Comparison	2.9	0.7	0.2	3.8	0.4	0.0	0.4	4.2
<b>OUTLET TYPE TOTAL ***</b>								
Intervention	27.5	12.2	17.8	57.5	19.5	23.0	42.5	100.0
Comparison	54.7	11.5	22.0	88.3	8.5	3.2	11.7	100.0

\* A total of 915.3 (intervention 475.7, comparison 439.6) AETDs were reportedly sold or distributed in the previous seven days. See Annex 8 for a description of AETD calculations.

\*\* Row sum – market share for the specified antimalarial medicine by intervention/comparison area.

\*\*\* Column sum – market share for the specified outlet type by intervention/comparison area.

Categories 1 through 4 sums to 100% in the far-right column – antimalarial total column. A total of 2,396 (intervention 1,373, comparison 1,023) antimalarials were audited. Of these, 267 (intervention 179, comparison 88) audited antimalarials were not included in market share calculations due to incomplete or inconsistent information.

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A7: Antimalarial market share within outlet types, across intervention/comparison area**

	Target Outlets				Non-Target Outlets		
AETDs sold or distributed in the previous week by outlet type and antimalarial type as a percentage of all AETDs sold/ distributed:*	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets
	%	%	%	%	%	%	%
<b>1. Any ACT</b>							
Intervention	55.3	39.7	56.9	52.5	78.9	35.6	55.5
Comparison	23.3	0.0	15.3	18.2	78.9	46.9	70.1
Quality Assured ACT (QAACT)							
Intervention	53.4	39.7	56.9	51.6	78.5	35.6	55.3
Comparison	23.3	0.0	15.3	18.2	64.7	46.9	59.8
QAACT with the "padonma" logo							
Intervention	53.4	38.9	56.9	51.4	44.1	23.0	32.7
Comparison	23.3	0.0	15.3	18.2	29.3	1.6	21.6
Non-quality-assured ACT							
Intervention	1.9	0.0	0.0	0.9	0.4	0.0	0.2
Comparison	0.0	0.0	0.0	0.0	14.1	0.0	10.2
<b>2. Any non-artemisinin therapy</b>							
Intervention	22.6	39.4	31.7	29.0	0.2	57.4	31.1
Comparison	25.7	65.4	72.4	42.5	16.0	53.1	26.3
Chloroquine							
Intervention	22.1	37.2	19.0	24.4	0.0	46.6	25.2
Comparison	18.3	60.6	65.8	35.7	8.1	0.0	5.9
<b>3. Oral artemisinin monotherapy</b>							
Intervention	16.0	20.4	7.5	14.3	19.0	0.0	8.7
Comparison	45.7	28.9	11.3	34.9	0.6	0.0	0.5
<b>4. Non-oral artemisinin monotherapy</b>							
Intervention	6.1	0.5	3.9	4.3	1.9	7.0	4.7
Comparison	5.4	5.7	1.0	4.3	4.5	0.0	3.2

\* A total of 915.3 (intervention 475.7, comparison 439.6) AETDs were reportedly sold or distributed in the previous seven days: pharmacy 549.8 (intervention 254.3, comparison 295.5); general retailer 59.5 (intervention 39.1, comparison 20.3); itinerant drug vendor 108.9 (intervention 64.4, comparison 44.5); private facility 139.2 (intervention 65.4, comparison 73.9); health worker 57.9 (intervention 52.5, comparison 5.4). See Annex 8 for a description of AETD calculations.

Categories 1 through 4 sum to 100% within each column.

A total of 2,396 (intervention 1,373, comparison 1,023) antimalarials were audited. Of these, 267 (intervention 179, comparison 88) audited antimalarials were not included in market share calculations due to incomplete or inconsistent information, including the following number of antimalarials by outlet type: pharmacy 42 (intervention 22, comparison 20), general retailer 11 (9 intervention, 2 comparison), itinerant drug vendor 16 (intervention 11, comparison 5), private facility 41 (intervention 31, comparison 10), health worker 157 (intervention 106, comparison 51).

Source: ACTwatch Outlet Survey, Myanmar, 2014.

**Table A8: No reported disruption of stock within the past 3 months among outlets with product in stock today or within the past 3 months\*, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>% outlets that reported no disruption of stock</b>	Intervention N=92 Comparison N=58	Intervention N=165 Comparison N=10	Intervention N=51 Comparison N=28	Intervention N=308 Comparison N=96	Intervention N=48 Comparison N=50	Intervention N=167 Comparison N=91	Intervention N=215 Comparison N=141	Intervention N=523 Comparison N=237
Quality Assured ACT (QAACT)								
Intervention	72.2 (54.8, 84.7)	56.8 (43.1, 69.5)	63.6 (46.0, 78.1)	60.2 (47.0, 72.0)	74.7 (47.4, 90.6)	77.5 (67.2, 85.2)	77.2 (66.8, 85.1)	66.6 (55.2, 76.3)
Comparison	76.9 (49.1, 92.0)	33.0 (12.6, 62.7)	90.9 (57.6, 98.7)	78.4 (40.8, 95.0)	96.0 (86.2, 98.9)	89.6 (74.8, 96.1)	90.3 (76.6, 96.3)	85.9 (66.3, 94.9)
	Intervention N=86 Comparison N=54	Intervention N=159 Comparison N=10	Intervention N=44 Comparison N=4	Intervention N=289 Comparison N=68	Intervention N=28 Comparison N=21	Intervention N=83 Comparison N=14	Intervention N=111 Comparison N=35	Intervention N=400 Comparison N=103
Supa Arte 4								
Intervention	74.5 (56.4, 86.8)	61.6 (46.6, 74.7)	81.5 (66.8, 90.6)	66.4 (52.3, 78.1)	76.7 (48.6, 92.0)	75.1 (53.9, 88.7)	75.3 (55.8, 88.1)	68.5 (54.3, 79.9)
Comparison	80.4 (54.4, 93.3)	40.3 (14.4, 73.0)	51.8 (5.8, 94.9)	62.9 (34.1, 84.8)	96.0 (78.6, 99.4)	98.1 (80.5, 99.8)	97.6 (88.6, 99.5)	76.2 (46.7, 92.2)

\* The percentage of outlets that reported no disruption of stock for the indicated product in the past 3 months, among outlets with the indicated product in stock on the day of the survey or reportedly in stock within the past 3 months.

Disruption of stock is reported among outlets that either had the antimalarial in stock on the day of the survey or reportedly stocked the antimalarial in the previous 3 months. No outlets stocking QAACT or Supa Arte 4 currently or in the previous 3 months had missing information on current or past stockouts.

**Table A9: Provider antimalarial treatment knowledge and practices, by outlet type, across intervention/comparison area**

	Target Outlets				Non-Target Outlets			
	Pharmacy	General Retailer	Itinerant drug vendor	ALL Target Outlets	Private facility	Health worker	ALL Non-Target Outlets	ALL Outlets
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets stocking:</b>	Intervention N=19 Comparison N=123	Intervention N=199 Comparison N=46	Intervention N=70 Comparison N=77	Intervention N=398 Comparison N=246	Intervention N=67 Comparison N=74	Intervention N=189 Comparison N=106	Intervention N=256 Comparison N=180	Intervention N=654 Comparison N=426
Correctly state the national first-line treatment <sup>ψ</sup> for uncomplicated <i>Pf</i> malaria								
Intervention	5.4 (2.2, 12.5)	5.5 (2.9, 10.3)	8.5 (2.9, 22.6)	6.1 (3.6, 10.3)	37.3 (17.9, 61.9)	51.4 (33.6, 68.9)	50.1 (32.8, 67.4)	21.9 (13.6, 33.3)
Comparison	6.6 (2.1, 19.1)	0.0 -	5.5 (1.8, 15.7)	4.3 (2.0, 8.8)	19.0 (11.2, 30.6)	27.4 (11.3, 53.0)	26.3 (12.0, 48.1)	14.0 (7.6, 24.2)
Report the national first-line treatment <sup>ψ</sup> as the most effective antimalarial medicine for treating uncomplicated <i>Pf</i> malaria								
Intervention	38.9 (24.0, 56.1)	34.9 (16.1, 59.8)	40.9 (27.2, 56.2)	36.8 (21.7, 55.1)	56.5 (38.8, 72.8)	76.4 (65.8, 84.5)	74.5 (65.1, 82.1)	50.3 (39.6, 61.1)
Comparison	11.5 (6.1, 20.6)	14.7 (5.5, 33.7)	37.1 (10.1, 75.6)	25.0 (8.5, 54.5)	34.6 (20.8, 51.6)	81.6 (74.8, 86.8)	75.1 (66.0, 82.4)	47.1 (30.4, 64.6)

<sup>ψ</sup> At the time of the 2014 Myanmar ACTwatch outlet survey, artemether lumefantrine was Myanmar's first line treatments for uncomplicated malaria. Numbers of providers (N) in this table are the total number of providers eligible for table indicators. No providers were missing information on the national first-line treatment, or the most effective antimalarial medicine for adults and children.

## Results Section B: Core Indicators across Survey Round: 2012, 2013, 2014

Table B1: Availability of antimalarials, among all screened outlets, by outlet type, across survey round						
	Target Outlets*		Non-Target Outlets*		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets** stocking:</b>	2012 N=1,692 2013 N=1,296 2014 N=2,570	2012 N=1,359 2013 N=1,570 2014 N=2,590	2012 N=354 2013 N=320 2014 N=301	2012 N=252 2013 N=310 2014 N=318	2012 N=2,046 2013 N=1,616 2014 N=2,871	2012 N=1,611 2013 N=1,880 2014 N=2,908
Any antimalarial at the time of survey visit						
2012	25.7 (17.0, 36.7)	22.0 (17.7, 27.0)	65.4 (57.4, 72.7)	68.2 (53.4, 80.0)	31.8 (24.1, 40.7)	28.0 (22.8, 33.9)
2013	25.7 (19.3, 33.5)	10.3 (7.2, 14.4)	76.3 (67.7, 83.1)	48.4 (32.0, 65.2)	34.7 (29.2, 40.7)	17.2 (13.0, 22.4)
2014	14.4 (10.2, 20.0)	8.4 (5.9, 11.8)	76.4 (69.2, 82.4)	50.8 (32.9, 68.4)	21.0 (16.2, 26.7)	13.2 (9.7, 17.9)
Any ACT						
2012	1.6 (0.9, 2.7)	2.1 (1.1, 3.9)	51.0 (42.5, 59.4)	55.8 (41.2, 69.5)	8.7 (6.4, 11.7)	9.1 (6.0, 13.6)
2013	16.0 (11.9, 21.2)	1.9 (1.2, 3.0)	63.3 (52.4, 73.0)	35.8 (22.3, 52.1)	24.4 (19.7, 30.0)	8.1 (5.6, 11.6)
2014	11.6 (7.5, 17.3)	2.8 (1.2, 6.1)	63.0 (55.1, 70.2)	38.4 (26.7, 51.5)	17.0 (12.7, 22.4)	6.8 (4.3, 10.6)
Quality Assured ACT (QAACT)						
2012	1.1 (0.6, 2.2)	1.7 (0.8, 3.4)	48.8 (40.8, 56.9)	53.7 (39.1, 67.7)	8.0 (5.8, 10.9)	8.5 (5.4, 13.0)
2013	15.9 (11.9, 21.0)	1.9 (1.1, 3.0)	63.0 (52.0, 72.7)	35.1 (21.9, 51.2)	24.3 (19.6, 29.7)	7.9 (5.4, 11.4)
2014	11.4 (7.5, 17.1)	2.6 (1.1, 6.1)	62.4 (54.5, 69.8)	37.9 (26.3, 51.0)	16.8 (12.6, 22.1)	6.7 (4.2, 10.5)
QAACT with the "padonma" logo						
2012	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
2013	14.8 (10.9, 19.9)	1.5 (0.9, 2.3)	27.1 (21.6, 33.5)	8.8 (3.2, 22.0)	17.0 (13.6, 21.1)	2.8 (1.5, 5.4)
2014	11.0 (7.1, 16.8)	2.5 (1.0, 6.1)	36.6 (23.9, 51.4)	22.1 (10.0, 42.0)	13.7 (9.8, 18.9)	4.7 (2.2, 10.0)
Supa Arte 4						
2012	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
2013	14.8 (10.9, 19.8)	1.3 (0.8, 2.1)	23.3 (17.5, 30.3)	1.4 (0.5, 3.7)	16.3 (12.8, 20.5)	1.3 (0.8, 2.1)
2014	9.4 (5.7, 15.1)	0.9 (0.6, 1.5)	22.5 (12.2, 37.7)	6.2 (2.7, 13.9)	10.7 (7.1, 15.8)	1.5 (1.0, 2.2)
Non-quality-assured ACT (non-QA ACT)						
2012	0.5 (0.2, 1.1)	0.5 (0.2, 1.0)	4.1 (2.1, 7.9)	2.1 (0.7, 6.7)	1.0 (0.5, 1.9)	0.7 (0.3, 1.4)
2013	0.5 (0.1, 1.6)	0.3 (0.1, 0.7)	1.4 (0.4, 4.1)	1.1 (0.4, 3.1)	0.6 (0.2, 1.6)	0.4 (0.2, 1.1)
2014	0.2 (0.1, 0.7)	0.2 (0.1, 0.5)	1.2 (0.5, 2.8)	0.8 (0.2, 3.1)	0.3 (0.1, 0.8)	0.2 (0.1, 0.6)

**Table B1: Availability of antimalarials, among all screened outlets, by outlet type, across survey round**

	Target Outlets*		Non-Target Outlets*		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets** stocking:</b>	2012 N=1,692 2013 N=1,296 2014 N=2,570	2012 N=1,359 2013 N=1,570 2014 N=2,590	2012 N=354 2013 N=320 2014 N=301	2012 N=252 2013 N=310 2014 N=318	2012 N=2,046 2013 N=1,616 2014 N=2,871	2012 N=1,611 2013 N=1,880 2014 N=2,908
Any non-artemisinin therapy						
2012	16.0 (11.3, 22.2)	14.1 (10.3, 19.0)	49.4 (38.8, 60.1)	46.8 (34.0, 60.0)	20.8 (16.1, 26.6)	18.4 (14.3, 23.3)
2013	6.7 (4.3, 10.4)	5.4 (3.7, 7.7)	50.6 (43.3, 57.8)	32.1 (23.5, 42.1)	14.5 (10.6, 19.5)	10.2 (8.4, 12.4)
2014	4.6 (3.3, 6.5)	4.8 (3.2, 7.2)	52.6 (45.6, 59.5)	28.3 (20.5, 37.6)	9.7 (7.7, 12.1)	7.5 (5.9, 9.5)
Chloroquine						
2012	11.4 (7.6, 16.8)	8.3 (5.7, 11.9)	32.6 (24.1, 42.4)	30.6 (19.7, 44.1)	14.5 (11.0, 18.9)	11.2 (8.0, 15.5)
2013	5.2 (3.2, 8.3)	3.2 (2.0, 5.1)	34.4 (25.6, 44.5)	22.3 (15.8, 30.3)	10.4 (7.1, 15.0)	6.7 (5.1, 8.8)
2014	3.6 (2.7, 4.9)	3.1 (1.9, 5.0)	45.0 (35.2, 55.2)	20.3 (15.0, 26.9)	8.0 (6.5, 9.8)	5.1 (3.9, 6.7)
Oral artemisinin monotherapy						
2012	17.7 (9.6, 30.3)	14.3 (10.6, 19.0)	18.1 (12.7, 25.1)	13.5 (8.0, 22.0)	17.7 (10.2, 28.9)	14.2 (10.7, 18.6)
2013	12.3 (7.1, 20.3)	5.5 (3.2, 9.4)	16.3 (8.1, 30.2)	5.0 (2.0, 11.7)	13.0 (7.8, 20.9)	5.4 (3.0, 9.5)
2014	1.5 (0.7, 3.1)	2.9 (1.8, 4.8)	6.9 (3.7, 12.6)	4.4 (1.0, 16.9)	2.1 (1.0, 4.1)	3.1 (1.9, 5.1)
Non-oral artemisinin monotherapy						
2012	5.8 (3.7, 9.0)	5.1 (3.2, 8.1)	28.2 (20.1, 38.0)	15.0 (8.4, 25.3)	9.0 (6.6, 12.3)	6.4 (4.2, 9.7)
2013	3.0 (1.4, 6.5)	2.3 (1.5, 3.7)	16.5 (10.0, 25.8)	5.7 (2.9, 11.0)	5.4 (3.3, 8.8)	2.9 (2.1, 4.1)
2014	1.4 (0.7, 2.6)	1.2 (0.7, 2.1)	16.8 (10.4, 25.9)	8.9 (4.7, 16.1)	3.0 (1.8, 5.0)	2.1 (1.3, 3.4)
<p>* Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.</p> <p>** The denominator includes outlets that met screening criteria for a full interview but did not complete the interview (were not interviewed or completed a partial interview).</p>						
Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.						

**Table B2: Availability of antimalarials, among antimalarial-stocking outlets\*, by outlet type, across survey round**

	Target Outlets**		Non-Target Outlets**		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)					
<b>Percentage of outlets* stocking:</b>	2012 N=421 2013 N=344 2014 N=352	2012 N=338 2013 N=224 2014 N=238	2012 N=232 2013 N=243 2014 N=228	2012 N=168 2013 N=183 2014 N=171	2012 N=653 2013 N=587 2014 N=580	2012 N=506 2013 N=407 2014 N=409
Any ACT						
2012	6.0 (3.4, 10.3)	9.5 (5.2, 16.9)	69.7 (58.7, 78.8)	80.1 (71.4, 86.6)	26.3 (18.1, 36.5)	32.0 (22.9, 42.6)
2013	62.2 (52.5, 71.0)	18.6 (13.0, 25.8)	83.0 (70.5, 90.9)	74.0 (59.2, 84.8)	70.4 (59.4, 79.4)	47.0 (36.8, 57.4)
2014	80.2 (65.7, 89.5)	32.8 (17.1, 53.7)	82.4 (74.1, 88.4)	75.5 (61.3, 85.8)	81.0 (73.2, 87.0)	51.6 (39.0, 64.0)
Quality Assured ACT (QAACT)						
2012	4.2 (2.0, 8.5)	7.4 (3.5, 15.0)	66.8 (56.7, 75.5)	77.0 (67.2, 84.6)	24.1 (16.3, 34.2)	29.6 (20.2, 41.1)
2013	61.7 (52.3, 70.4)	18.0 (12.5, 25.2)	82.6 (70.2, 90.5)	72.5 (58.0, 83.5)	69.9 (59.1, 78.9)	46.0 (35.7, 56.5)
2014	79.4 (65.2, 88.8)	31.5 (15.7, 53.1)	81.7 (73.4, 87.8)	74.6 (60.6, 84.8)	80.3 (72.6, 86.2)	50.4 (37.5, 63.1)
QAACT with the "padonma" logo						
2012	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
2013	57.7 (48.7, 66.2)	14.2 (9.7, 20.4)	35.6 (29.0, 42.8)	18.2 (7.3, 38.7)	49.0 (42.2, 55.9)	16.3 (9.4, 26.7)
2014	76.5 (63.5, 85.9)	29.6 (14.0, 52.1)	47.9 (32.9, 63.2)	43.5 (27.1, 61.4)	65.5 (54.4, 75.1)	35.7 (20.3, 54.7)
Supa Arte 4						
2012	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -	0.0 -
2013	57.4 (48.6, 65.8)	12.5 (8.1, 18.8)	30.5 (23.8, 38.2)	2.9 (1.3, 6.3)	46.9 (39.9, 54.0)	7.6 (5.2, 11.0)
2014	67.2 (54.2, 78.0)	10.8 (6.4, 17.6)	30.0 (16.9, 47.4)	12.3 (5.8, 24.1)	53.2 (42.3, 63.7)	11.4 (7.4, 17.2)
Non-quality-assured ACT (non-QA ACT)						
2012	1.9 (0.9, 3.8)	2.1 (1.1, 4.1)	5.6 (2.8, 10.8)	3.1 (0.9, 9.7)	3.0 (1.6, 5.6)	2.4 (1.2, 4.8)
2013	1.8 (0.5, 5.9)	2.5 (0.9, 6.5)	1.8 (0.6, 5.3)	2.2 (0.8, 6.3)	1.8 (0.7, 4.3)	2.3 (0.9, 6.0)
2014	1.4 (0.5, 3.8)	1.8 (0.5, 6.2)	1.5 (0.6, 3.7)	1.6 (0.4, 6.2)	1.5 (0.6, 3.4)	1.7 (0.6, 5.0)
Any non-artemisinin therapy						
2012	60.7 (47.4, 72.7)	63.1 (49.8, 74.6)	67.6 (53.9, 78.8)	67.1 (52.5, 79.0)	62.9 (51.3, 73.2)	64.3 (54.6, 73.0)
2013	26.0 (15.3, 40.6)	52.3 (40.2, 64.1)	66.3 (59.9, 72.1)	66.2 (49.9, 79.4)	41.7 (30.0, 54.4)	59.4 (48.0, 69.9)
2014	32.0 (22.9, 42.8)	57.4 (47.2, 67.0)	68.8 (59.9, 76.5)	55.7 (33.5, 75.8)	46.2 (36.9, 55.8)	56.7 (46.4, 66.4)

**Table B2: Availability of antimalarials, among antimalarial-stocking outlets\*, by outlet type, across survey round**

	Target Outlets**		Non-Target Outlets**		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)					
<b>Percentage of outlets* stocking:</b>	2012 N=421 2013 N=344 2014 N=352	2012 N=338 2013 N=224 2014 N=238	2012 N=232 2013 N=243 2014 N=228	2012 N=168 2013 N=183 2014 N=171	2012 N=653 2013 N=587 2014 N=580	2012 N=506 2013 N=407 2014 N=409
Chloroquine						
2012	43.4 (33.6, 53.7)	37.1 (26.8, 48.8)	44.6 (33.2, 56.5)	43.9 (27.4, 61.9)	43.8 (36.4, 51.5)	39.3 (28.8, 50.8)
2013	20.2 (12.0, 31.8)	31.4 (23.2, 41.0)	45.1 (35.2, 55.5)	45.9 (31.9, 60.6)	29.9 (20.5, 41.5)	38.9 (30.8, 47.6)
2014	25.0 (17.6, 34.3)	37.4 (29.7, 45.9)	58.8 (45.3, 71.1)	40.0 (23.4, 59.2)	38.1 (28.3, 48.9)	38.5 (31.5, 46.1)
Oral artemisinin monotherapy						
2012	66.9 (49.6, 80.7)	63.7 (51.0, 74.7)	24.7 (17.9, 33.1)	19.4 (10.8, 32.4)	53.5 (37.7, 68.6)	49.6 (39.7, 59.5)
2013	47.6 (33.9, 61.7)	53.7 (35.5, 71.0)	21.3 (10.3, 39.1)	10.2 (5.2, 19.1)	37.4 (23.4, 53.8)	31.4 (21.4, 43.6)
2014	10.3 (5.6, 18.1)	35.1 (22.2, 50.6)	9.1 (5.0, 16.0)	8.6 (2.5, 25.4)	9.8 (5.6, 16.6)	23.5 (16.0, 33.1)
Non-oral artemisinin monotherapy						
2012	22.0 (13.5, 33.7)	22.8 (15.4, 32.4)	38.6 (26.5, 52.2)	21.6 (12.8, 34.0)	27.3 (19.8, 36.4)	22.4 (15.5, 31.3)
2013	11.6 (5.7, 22.2)	22.8 (16.7, 30.3)	21.6 (12.7, 34.1)	11.7 (5.9, 22.0)	15.5 (9.6, 24.1)	17.1 (12.9, 22.3)
2014	9.7 (5.8, 15.8)	14.7 (8.1, 25.1)	21.9 (13.6, 33.5)	17.5 (9.0, 31.3)	14.4 (10.0, 20.4)	15.9 (8.9, 26.7)
<p>* Antimalarial-stocking outlets have at least one antimalarial in stock on the day of the survey, verified by presence of at least one antimalarial recorded in the antimalarial audit sheet.</p> <p>** Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.</p>						
Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.						

**Table B3a: Price of tablet formulation antimalarials, by outlet type and intervention/comparison area, across survey round**

	Target Outlets*		Non-Target Outlets*		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
<b>Median price of a tablet AETD**:</b>	Median [IQR] (N of Antimalarials)					
<b>Quality Assured ACT (QAACT)</b>						
2012	0 [0-1500] (32)	0 [0-0] (18)	0 [0-0] (285)	0 [0-0] (171)	0 [0-0] (317)	0 [0-0] (189)
2013	379 [284-568] (407)	331 [0-947] (91)	0 [0-442] (369)	0 [0-0] (248)	284 [0-474] (776)	0 [0-0] (339)
2014	500 [300-667] (387)	0 [0-450] (137)	0 [0-0] (319)	0 [0-0] (276)	333 [0-533] (706)	0 [0-0] (413)
<b>QAACT with the "padonma" logo</b>						
2012	- -	- -	- -	- -	- -	- -
2013	442 [284-568] (387)	379 [284-568] (70)	474 [0-947] (122)	0 [0-0] (54)	474 [284-568] (509)	0 [0-331] (124)
2014	500 [333-667] (376)	0 [0-500] (127)	0 [0-500] (182)	0 [0-0] (132)	400 [0-600] (558)	0 [0-0] (259)
<b>Super Arte 4</b>						
2012	- -	- -	- -	- -	- -	- -
2013	379 [0-474] (204)	331 [284-474] (48)	474 [0-663] (67)	0 [0-284] (12)	379 [0-474] (271)	331 [284-474] (60)
2014	400 [0-500] (221)	500 [350-500] (59)	300 [0-500] (84)	0 [0-0] (35)	400 [0-500] (305)	350 [0-500] (94)
<b>Non-quality-assured ACT (non-QA ACT)</b>						
2012	3600 [2500-8400] (28)	2200 [0-3000] (23)	0 [0-3000] (23)	4000 [2800-4000] (11)	2500 [0-3600] (51)	3000 [1500-4000] (34)
2013	2368 [2368-2368] (13)	1705 [1231-2083] (21)	0 [0-4697] (7)	1894 [1421-1894] (6)	2368 [1989-2368] (20)	1818 [1231-2083] (27)
2014	2813 [2400-4500] (12)	2000 [2000-2500] (17)	2880 [2475-3000] (11)	1500 [1500-2925] (8)	2813 [2400-4000] (23)	2000 [2000-2500] (25)
<b>Chloroquine</b>						
2012	484 [213-500] (99)	250 [180-484] (53)	0 [0-250] (22)	0 [0-0] (12)	300 [150-484] (121)	242 [97-300] (65)
2013	183 [142-568] (30)	189 [142-379] (35)	142 [0-1421] (37)	275 [0-947] (17)	142 [57-1136] (67)	189 [114-568] (52)
2014	300 [194-968] (70)	290 [145-400] (71)	0 [0-100] (52)	0 [0-0] (28)	194 [0-500] (122)	200 [0-300] (99)
<b>Oral artemisinin monotherapy</b>						
2012	3840 [2880-5760] (483)	3200 [2560-4800] (367)	3200 [2496-3840] (63)	2400 [1600-3200] (28)	3840 [2880-4800] (546)	3200 [2400-4800] (395)
2013	3637 [2727-5455] (201)	2727 [2576-3637] (162)	3182 [2879-4546] (34)	3030 [2121-3637] (33)	3637 [2727-5455] (235)	2727 [2424-3637] (195)
2014	3200 [2400-4800] (82)	3200 [2400-3840] (128)	3200 [1600-4800] (27)	2880 [2240-2880] (21)	3200 [2400-4800] (109)	2880 [2400-3840] (149)

\* Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.

\*\* AETD - adult equivalent treatment dose - is or the number of milligrams required to treat a 60kg adult (see Annex 8). Information provided by the respondent about price for a specific amount of antimalarial drug (e.g. price per tablet or price per specific package size) was converted to the price per AETD. Prices are reported in 2012 kyat.

Figures in this table are derived using audited products with price information.

Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.

**Table B3b: Percentage of outlets selling Supa Arte 4 for less than 500 kyat, among outlets selling Supa Arte 4, by outlet type, across intervention/comparison area and survey round**

	Target Outlets**		Non-Target Outlets**		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>Percentage of outlets* stocking:</b>	2012 N=0 2013 N=204 2014 N=220	2012 N=0 2013 N=48 2014 N=58	2012 N=0 2013 N=67 2014 N=84	2012 N=0 2013 N=12 2014 N=35	2012 N=0 2013 N=271 2014 N=304	2012 N=0 2013 N=60 2014 N=93
Any ACT						
2012	- -	- -	- -	- -	- -	- -
2013	90.9 (78.7, 96.4)	78.9 (37.4, 95.9)	61.3 (37.8, 80.5)	94.1 (71.2, 99.0)	83.5 (75.0, 89.5)	81.7 (43.6, 96.3)
2014	79.3 (62.7, 89.7)	90.2 (74.3, 96.7)	81.9 (69.3, 90.1)	86.1 (57.6, 96.6)	79.9 (65.9, 89.1)	88.3 (73.4, 95.4)

Figures in this table are derived using audited products with price information. In 2013, 19 outlets stocked Supa Arte 4 but were missing Supa Arte 4 price information (intervention 16, comparison 3). In 2014, 12 outlets stocked Supa Arte 4 but were missing Supa Arte 4 price information (intervention 12, comparison 0).

Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.

**Table B4: Availability of malaria blood testing among antimalarial-stocking outlets\*, by outlet type and intervention/comparison area, across survey year**

	Target Outlets**		Non-Target Outlets**		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)					
<b>Percentage of outlets** stocking:</b>	2012 N=448 2013 N=380 2014 N=398	2012 N=366 2013 N=237 2014 N=246	2012 N=256 2013 N=257 2014 N=256	2012 N=178 2013 N=198 2014 N=180	2012 N=704 2013 N=637 2014 N=654	2012 N=544 2013 N=435 2014 N=426
Any malaria blood test						
2012	3.6 (1.6, 7.7)	7.0 (3.1, 15.1)	66.3 (57.0, 74.5)	71.0 (53.6, 83.8)	24.1 (15.7, 35.1)	26.9 (17.3, 39.2)
2013	5.2 (1.9, 13.2)	6.8 (3.1, 14.2)	60.8 (47.8, 72.4)	64.5 (52.4, 75.1)	25.2 (14.4, 40.2)	36.3 (26.9, 47.0)
2014	9.6 (5.1, 17.2)	14.2 (4.7, 35.8)	68.2 (58.7, 76.4)	58.4 (33.0, 80.1)	30.6 (22.6, 40.0)	33.7 (23.6, 45.6)
	2012 N=448 2013 N=380 2014 N=398	2012 N=366 2013 N=237 2014 N=246	2012 N=256 2013 N=257 2014 N=256	2012 N=178 2013 N=198 2014 N=180	2012 N=704 2013 N=637 2014 N=654	2012 N=544 2013 N=435 2014 N=426
Microscopic blood test						
2012	0.1 (0.0, 0.6)	0.0 -	1.9 (0.5, 6.6)	0.8 (0.4, 2.0)	0.7 (0.2, 2.1)	0.3 (0.1, 0.7)
2013	0.0 -	0.0 -	0.9 (0.2, 4.2)	0.3 (0.1, 1.4)	0.3 (0.1, 1.7)	0.2 (0.0, 0.7)
2014	0.3 (0.0, 2.3)	0.0 -	0.2 (0.1, 1.0)	1.2 (0.3, 4.2)	0.3 (0.1, 1.2)	0.5 (0.2, 1.8)
	2012 N=448 2013 N=380 2014 N=398	2012 N=366 2013 N=237 2014 N=246	2012 N=256 2013 N=257 2014 N=256	2012 N=178 2013 N=198 2014 N=180	2012 N=704 2013 N=637 2014 N=654	2012 N=544 2013 N=435 2014 N=426
Rapid diagnostic tests						
2012	3.5 (1.6, 7.6)	7.0 (3.1, 15.1)	65.8 (56.3, 74.2)	70.5 (53.4, 83.3)	23.9 (15.4, 35.1)	26.7 (17.2, 39.0)
2013	5.2 (1.9, 13.2)	6.8 (3.1, 14.2)	60.0 (47.4, 71.5)	64.4 (52.2, 75.0)	24.9 (14.3, 39.7)	36.3 (26.8, 46.9)
2014	9.6 (5.1, 17.2)	14.2 (4.7, 35.8)	68.1 (58.6, 76.3)	58.3 (32.9, 79.9)	30.6 (22.6, 39.9)	33.7 (23.6, 45.5)
<p>* Blood testing availability is reported among outlets that either had antimalarials in stock on the day of the survey or reportedly stocked antimalarials in the previous 3 months.</p> <p>** Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.</p> <p>Results in this table are derived using responses captured among outlets with blood testing information.</p>						
Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.						

**Table B5: Price of malaria blood testing, by outlet type and intervention/comparison area, across survey year**

	Target Outlets*		Non-Target Outlets*		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
<b>Total median price to consumers:**</b>	Median [IQR] (N of Antimalarials)					
<b>Microscopic blood tests</b>						
2012	- -	- -	0 [0-500] <sup>(7)</sup>	500 [500-500] <sup>(4)</sup>	0 [0-500] <sup>(7)</sup>	500 [500-500] <sup>(4)</sup>
2013	- -	- -	947 [947-1894] <sup>(4)</sup>	1894 [947-3788] <sup>(5)</sup>	947 [947-1894] <sup>(4)</sup>	1894 [947-3788] <sup>(5)</sup>
2014	2227 (1)	- -	2227 [1781-2227] <sup>(4)</sup>	891 [0-2672] <sup>(9)</sup>	2227 [2227-2227] <sup>(5)</sup>	891 [0-2672] <sup>(9)</sup>
<b>Rapid diagnostic tests</b>						
2012	500 [0-1000] <sup>(25)</sup>	0 [0-500] <sup>(20)</sup>	0 [0-50] <sup>(192)</sup>	0 [0-0] <sup>(104)</sup>	0 [0-50] <sup>(217)</sup>	0 [0-0] <sup>(124)</sup>
<b>Adult</b>						
2013	284 [0-1184] <sup>(24)</sup>	1421 [0-19694] <sup>(27)</sup>	0 [0-474] <sup>(156)</sup>	0 [0-0] <sup>(120)</sup>	0 [0-474] <sup>(180)</sup>	0 [0-189] <sup>(147)</sup>
2014	445 [0-891] <sup>(33)</sup>	0 [0-0] <sup>(24)</sup>	0 [0-0] <sup>(161)</sup>	0 [0-0] <sup>(122)</sup>	0 [0-0] <sup>(194)</sup>	0 [0-0] <sup>(146)</sup>
<b>Child under age 5</b>						
2013	284 [0-1184] <sup>(24)</sup>	2273 [0-19694] <sup>(27)</sup>	0 [0-474] <sup>(156)</sup>	0 [0-0] <sup>(120)</sup>	0 [0-474] <sup>(180)</sup>	0 [0-189] <sup>(147)</sup>
2014	445 [0-891] <sup>(33)</sup>	0 [0-0] <sup>(24)</sup>	0 [0-0] <sup>(159)</sup>	0 [0-0] <sup>(121)</sup>	0 [0-0] <sup>(192)</sup>	0 [0-0] <sup>(145)</sup>
<p>* Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.</p> <p>** Total price to the consumer including consultation and/or service fees. Prices are reported in 2012 kyat.</p> <p>Notes: Microscopy and 2012 RDT cost to consumer was not captured specifically for children under five and adults.</p>						
Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.						

**Table B6: Antimalarial market share, across survey round**

AETDs sold or distributed in the previous week by outlet type and antimalarial type as a percentage of all AETDs sold/ distributed:	Target Outlets*		Non-Target Outlets*		ANTIMALARIAL TOTAL**	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	%	%	%	%	%	%
<b>1. Any ACT</b>						
2012	2.3	3.3	17.5	23.2	19.8	26.4
2013	45.4	18.7	16.6	35.9	62.0	54.6
2014	30.2	16.1	23.6	8.2	24.3	53.8
Quality Assured ACT (QACT)						
2012	1.2	0.5	17.1	22.3	18.3	22.8
2013	45.3	17.2	16.4	35.9	61.7	53.0
2014	29.6	16.1	23.5	7.0	53.2	23.1
QAACT with the "padonma" logo						
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	44.6	14.8	6.3	2.1	50.8	17.0
2014	29.5	16.1	13.9	2.5	43.5	18.6
Non-quality assured ACT						
2012	1.1	2.8	0.4	0.8	1.5	3.6
2013	0.1	1.6	0.2	0.0	0.3	1.6
2014	0.5	0.0	0.1	1.2	0.6	1.2
<b>2. Any non-artemisinin therapy</b>						
2012	24.9	26.3	13.8	7.8	38.8	34.1
2013	16.0	11.0	6.9	5.1	22.9	16.0
2014	16.6	37.5	13.2	3.1	29.9	40.6
Chloroquine						
2012	9.0	20.1	4.3	0.1	13.2	20.2
2013	13.9	6.3	5.2	2.4	19.1	8.7
2014	14.0	31.5	10.7	0.7	24.7	32.2
<b>3. Oral artemisinin monotherapy</b>						
2012	25.4	29.3	9.0	4.2	34.5	33.5
2013	13.6	22.2	0.8	2.4	14.3	24.6
2014	8.2	30.8	3.7	0.1	11.9	30.9
<b>4. Non-oral artemisinin monotherapy</b>						
2012	4.8	4.8	2.3	1.2	7.0	6.0
2013	0.3	2.9	0.5	1.9	0.8	4.7
2014	2.4	3.8	2.0	0.4	4.4	4.2
<b>OUTLET / AREA***</b>						
2012	57.4	63.6	42.6	36.4	100.0	100.0
2013	75.2	54.8	24.8	45.2	100.0	100.0
2014	57.5	88.3	42.5	11.7	100.0	100.0

\* Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.

\*\* Row sum – market share for the specified antimalarial medicine by year.

\*\*\* Column sum – market share for the specified outlet type, intervention/comparison area by year.

Categories 1 through 4, for each survey round, sums to 100% in the two far-right columns – antimalarial total columns.

Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.

**Table B7: Antimalarial market share, across outlet type, across survey round**

AETDs sold or distributed in the previous week by outlet type and antimalarial type as a percentage of all AETDs sold/ distributed:	Target Outlets*		Non-Target Outlets*		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	%	%	%	%	%	%
<b>1. Any ACT</b>						
2012	4.0	5.1	41.0	63.6	19.8	26.4
2013	60.3	34.2	67.1	79.4	62.0	54.6
2014	52.5	18.2	55.5	70.1	53.8	24.3
Quality Assured ACT (QACT)						
2012	2.1	0.7	40.1	61.4	18.3	22.8
2013	60.2	31.3	66.2	79.4	61.7	53.0
2014	51.6	18.2	55.3	59.8	53.2	23.1
QAACT with the "padonma" logo						
2012	0.0	0.0	0.0	0.0	0.0	0.0
2013	59.3	27.1	25.2	4.7	50.8	17.0
2014	51.4	18.2	32.7	21.6	43.5	18.6
Non-quality assured ACT						
2012	1.9	4.4	0.9	2.2	1.5	3.6
2013	0.1	2.9	0.9	0.0	0.3	1.6
2014	0.9	0.0	0.2	10.2	0.6	1.2
<b>2. Any non-artemisinin therapy</b>						
2012	43.5	41.3	32.5	21.5	38.8	34.1
2013	21.2	20.0	27.9	11.2	22.9	16.0
2014	29.0	42.5	31.1	26.3	29.9	40.6
Chloroquine						
2012	15.6	31.6	10.0	0.2	13.2	20.2
2013	18.5	11.5	21.0	5.2	19.1	8.7
2014	24.4	35.7	25.2	5.9	24.7	32.2
<b>3. Oral artemisinin monotherapy</b>						
2012	44.3	46.0	21.2	11.6	34.5	33.5
2013	18.0	40.6	3.1	5.3	14.3	24.6
2014	14.3	34.9	8.7	0.5	11.9	30.9
<b>4. Non-oral artemisinin monotherapy</b>						
2012	8.3	7.6	5.3	3.2	7.0	6.0
2013	0.4	5.2	1.9	4.1	0.8	4.7
2014	4.3	4.3	4.7	3.2	4.4	4.2

\* Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.

Categories 1 through 4, for each survey round, sum to 100% within each column.

Source: ACTwatch Outlet Survey, Myanmar, 2012, 2013, 2014.

**Table B8: No reported disruption of stock within the past 3 months among outlets with product in stock today or within the past 3 months\*, by outlet type and intervention/comparison area, across survey round**

	Target Outlets**		Non-Target Outlets**		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<b>% outlets that reported no disruption of stock</b>	2012 N=21 2013 N=242 2014 N=308	2012 N=20 2013 N=59 2014 N=96	2012 N=146 2013 N=197 2014 N=215	2012 N=109 2013 N=129 2014 N=141	2012 N=167 2013 N=439 2014 N=523	2012 N=129 2013 N=188 2014 N=237
Quality Assured ACT (QAACT)						
2012	21.5 (7.5, 47.9)	22.2 (6.5, 54.1)	11.8 (4.2, 28.8)	12.0 (5.9, 22.9)	13.0 (5.4, 27.9)	13.9 (7.1, 25.6)
2013	66.2 (40.4, 85.0)	95.6 (83.6, 99.0)	89.5 (82.2, 94.0)	95.4 (88.3, 98.2)	75.3 (53.2, 89.1)	95.4 (90.1, 97.9)
2014	60.2 (47.0, 72.0)	78.4 (40.8, 95.0)	77.2 (66.8, 85.1)	90.3 (76.6, 96.3)	66.6 (55.2, 76.3)	85.9 (66.3, 94.9)
	2012 N=0 2013 N=227 2014 N=289	2012 N=0 2013 N=49 2014 N=68	2012 N=0 2013 N=71 2014 N=111	2012 N=0 2013 N=15 2014 N=35	2012 N=0 2013 N=298 2014 N=400	2012 N=0 2013 N=64 2014 N=103
Supa Arte 4						
2012	- -	- -	- -	- -	- -	- -
2013	65.6 (39.2, 85.0)	97.3 (86.1, 99.5)	87.0 (75.3, 93.6)	97.9 (80.7, 99.8)	69.8 (45.9, 86.3)	97.4 (89.0, 99.4)
2014	66.4 (52.3, 78.1)	62.9 (34.1, 84.8)	75.3 (55.8, 88.1)	97.6 (88.6, 99.5)	68.5 (54.3, 79.9)	76.2 (46.7, 92.2)

\* The percentage of outlets that reported no disruption of stock for the indicated product in the past 3 months, among outlets with the indicated product in stock on the day of the survey or reportedly in stock within the past 3 months.

\*\* Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.

**Table B9: Provider antimalarial treatment knowledge and practices, by outlet type and intervention/comparison area, across survey round**

	Target Outlets*		Non-Target Outlets*		ALL Outlets	
	Intervention	Comparison	Intervention	Comparison	Intervention	Comparison
	% (95% CI)					
<b>Percentage of outlets stocking:</b>	2012 N=448 2013 N=380 2014 N=398	2012 N=366 2013 N=237 2014 N=246	2012 N=256 2013 N=257 2014 N=256	2012 N=178 2013 N=198 2014 N=180	2012 N=704 2013 N=637 2014 N=654	2012 N=544 2013 N=435 2014 N=426
Correctly state the national first-line treatment <sup>Ψ</sup> for uncomplicated <i>Pf</i> malaria						
2012	3.5 (1.4, 8.6)	7.2 (3.7, 13.6)	47.9 (34.1, 62.0)	67.2 (55.2, 77.3)	18.0 (12.3, 25.5)	25.8 (19.4, 33.5)
2013	11.6 (4.9, 25.1)	5.4 (2.2, 12.7)	64.9 (45.9, 80.1)	24.2 (15.7, 35.4)	30.7 (16.2, 50.5)	15.0 (9.6, 22.8)
2014	6.1 (3.6, 10.3)	4.3 (2.0, 8.8)	50.1 (32.8, 67.4)	26.3 (12.0, 48.1)	21.9 (13.6, 33.3)	14.0 (7.6, 24.2)
Report the national first-line treatment <sup>Ψ</sup> as the most effective antimalarial medicine for treating uncomplicated <i>Pf</i> malaria						
2012	4.3 (1.9, 9.4)	6.0 (3.3, 10.9)	51.0 (34.7, 67.1)	77.0 (60.2, 88.1)	17.8 (10.7, 28.2)	24.4 (16.8, 34.1)
2013	26.1 (17.1, 37.7)	8.2 (4.7, 13.9)	70.4 (61.6, 77.9)	54.3 (45.3, 63.0)	42.0 (35.1, 49.3)	31.8 (24.4, 40.1)
2014	36.8 (21.7, 55.1)	25.0 (8.5, 54.5)	74.5 (65.1, 82.1)	75.1 (66.0, 82.4)	50.3 (39.6, 61.1)	47.1 (30.4, 64.6)
<p>** Target outlets include pharmacies, general retailers and itinerant drug vendors. Non-target outlets include private facilities (hospitals and clinics) and itinerant drug vendors.</p> <p>Ψ At the time of the 2012, 2013 and 2014 Myanmar ACTwatch outlet surveys, artemether lumefantrine was Myanmar's first line treatments for uncomplicated malaria.</p> <p>Numbers of providers (N) in this table are the total number of providers eligible for table indicators.</p>						

## Annex 1: Artemisinin Monotherapy Replacement Project

ACTwatch is a multi-country research project implemented by PSI ([www.psi.org](http://www.psi.org)). Standardized tools and approaches are employed to provide comparable data across countries and over time. Project countries include: Benin, the Cambodia, Democratic Republic of Congo, Kenya, Myanmar, Myanmar, Tanzania (currently mainland only, previous work in Zanzibar), Uganda, Zambia, Myanmar, Myanmar. The project was launched in 2008 with funding from the Bill and Melinda Gates Foundation (BMGF), and is currently funded through mid-2016 by the BMGF, UNITAID, and DFID.

ACTwatch is designed to provide timely, relevant, and high quality antimalarial market evidence.<sup>1</sup> The goal of providing this market evidence is to inform and monitor national and global policy, strategy, and funding decisions for improving malaria case management. ACTwatch is monitoring antimalarial markets in the context of policy shifts and investments in the scale-up of first-line ACT and blood testing using RDTs. This has included adaptation of project methods for the evaluation of the Affordable Medicines Facility-malaria (AMFm) pilot.<sup>2</sup> The project implements a set of research tools designed to:

- 1) **Provide a picture of the total market for malaria case management** including: all providers carrying antimalarials and RDTs and providing case management services; the relative antimalarial market share for each provider type; the antimalarial supply chain; and price markups within the supply chain for antimalarials and RDTs.
- 2) **Monitor the readiness of market components for appropriate malaria case management**, including: availability of antimalarials and malaria blood testing; consumer price of antimalarial treatment and malaria blood testing; and provider qualifications, training and knowledge.
- 3) **Monitor the performance of market components for appropriate malaria case management**, including: the relative market share for quality-assured ACT relative to other antimalarial medicines; the demand for appropriate malaria case management captured through consumer knowledge, attitudes, and fever treatment seeking behavior; and the quality of provider service delivery measured against national policies, guidelines and minimum standards.

ACTwatch research tools for malaria market monitoring include:

### 1. Outlet surveys

Outlet surveys entail collecting quantitative data from all outlets and providers with the potential to sell or distribute antimalarials and/or provide malaria blood testing. These include health facilities, community health workers, pharmacies, drug stores, retail outlets, market stalls, and mobile providers. A screening process identifies outlets that provide antimalarials and/or malaria blood testing. Among these eligible outlets, service providers are interviewed and all antimalarials and RDTs are audited. The audit collects information about each antimalarial and RDT in stock (e.g. brand name, drug active ingredients and strengths, manufacturer, etc.) and retailer reports on consumer price and sale/distribution volumes for each product. A representative sample of outlets is identified within target study domains such that findings from the outlet survey provide estimates of antimalarial and RDT availability, price, and relative market share across the entire market as well as within key market segments.<sup>3</sup>

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<sup>1</sup> Shewchuk T, O'Connell KA, Goodman C, Hanson K, Chapman S, Chavasse D. 2011. The ACTwatch project: methods to describe anti-malarial markets in seven countries. *Malaria Journal*, 10: 325.

<sup>2</sup> AMFm Independent Evaluation Team. 2012. *Independent evaluation of Phase 1 of the Affordable Medicines Facility – malaria (AMFm), multi-country independent evaluation report: final report*. Calverton, MD and London: ICF International and London School of Hygiene and Tropical Medicine.

<sup>3</sup> O'Connell KA, Poyer S, Solomon T, et al. 2013. Methods for implementing a medicine outlet survey: lessons from the anti-malarial market. *Malaria Journal*, 12: 52.

From 2008 through 2014, ACTwatch conducted 35 national outlet surveys across the 10 project countries.<sup>4</sup> Reports are available at [www.actwatch.info](http://www.actwatch.info), and peer-reviewed publications have appeared in *Malaria Journal* and *The Lancet*.<sup>5</sup>

## 2. Supply chain studies

Supply chain studies employ quantitative and qualitative research methods to effectively map the antimalarial supply chain in a given country. The supply chain is mapped from the antimalarial outlets (service delivery points) identified during an outlet survey to national importers and distributors with identification of all mid-level distributors in between. Retail prices are documented along the supply chain to facilitate calculation of commodity mark-ups. From 2008 through 2012, ACTwatch conducted 8 national supply chain studies. Reports are available at [www.actwatch.info](http://www.actwatch.info), and a peer-reviewed publication has appeared in *PLoS One*.<sup>6</sup>

## 3. Population-based surveys

Population-based surveys are conducted among consumers to document fever treatment-seeking behavior. A representative sample of the target population (caregivers of children and/or adults according to burden and risk) is identified, and a screening tool is used to identify individuals who have recently experienced fever. The surveys investigate the extent to which health care was sought, as well as common sources of care received. Respondent reports of malaria blood testing and antimalarials acquired are documented and summarized. The survey includes measures of demographic and other individual, household/family, and community characteristics which can be used to develop consumer profiles as well as monitor equity in access to malaria case management. From 2008 through 2012, ACTwatch conducted 14 household surveys focused on fever treatment-seeking behavior. Reports are available at [www.actwatch.info](http://www.actwatch.info), and a peer-reviewed publication has appeared in *Malaria Journal*.<sup>7</sup>

## 4. Service delivery quality monitoring

Service delivery quality is monitored using a set of research tools designed to measure aspects of the interaction between providers and clients. In 2014-2016, ACTwatch will launch service delivery quality monitoring studies in a subset of project countries. The tool or set of tools that is most appropriate and feasible in a given context is employed. These include:

- Exit interviews conducted with target consumers immediately after receiving fever case management services from target providers. A structured interview documents client reports about key aspects of service delivery including malaria blood testing, test results, medicines recommended/prescribed and obtained, counseling, and costs of services and commodities received. Exit interviews are also used to measure client recall and comprehension of provider counseling including instructions for completing prescribed drug regimens, as well as client satisfaction with services provided. Exit interviews may include measures of demographic characteristics to monitor equity in access to services and commodities.
- Simulated client surveys (a.k.a. mystery client surveys) document provider practices in response to specific scenarios in the form of simulated clients. Trained fieldworkers present to providers with symptoms of malaria according to scripted scenarios. Following the interaction with providers, fieldworkers complete a structured checklist indicating key aspects of case management. Providers are not aware that they are under observation

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<sup>4</sup> Surveys in the DRC (2) and Myanmar (3) were sub-national.

<sup>5</sup> O'Connell K, Gatakaa H, Poyer S, et al. 2011. Got ACTs? Availability, price, market share and provider knowledge of anti-malarial medicines in public and private sector outlets in six malaria-endemic countries. *Malaria Journal*, 10: 326.

Tougher S, the ACTwatch Group, Ye Y, et al. 2013. Effect of the Affordable Medicines Facility-malaria (AMFm) on the availability, price, and market share of quality-assured artemisinin-based combination therapies in seven countries: a before-and-after analysis of outlet survey data. *Lancet*, 380: 1916-26.

<sup>6</sup> Palafox B, Patouillard E, Tougher S, et al. 2014. Understanding private sector antimalarial distribution chains: a cross-sectional mixed methods study in six malaria-endemic countries. *PLoS One*, 9(4).

<sup>7</sup> Littrell M, Gatakaa H, Evance I, et al. (2011). Monitoring fever treatment behavior and equitable access to effective medicines in the context of initiatives to improve ACT access: baseline results and implications for programming in six African countries. *Malaria Journal*, 10: 327.

during simulated client surveys, and therefore the behaviors that are documented may well-represent typical provider behavior.

- Structured observation documents aspects of the provider-client interaction using a checklist. A trained observer completes the checklist designed to document provider compliance with standard practice and procedures as well as aspects of client demand for specific products or services. The observer remains silent during the consultation.

### **ACTwatch in Myanmar**

ACTwatch baseline surveys were conducted in Myanmar in 2008-09 including an outlet survey (2008) and a household survey (2009). Follow-up outlet surveys were conducted in 2010, 2011, and 2014. A supply chain study was conducted in 2011 and a follow-up household survey was conducted in 2012. All reports are available at [www.actwatch.info](http://www.actwatch.info).

## Annex 2: Outlet Survey Methods

### Design and Study Population

ACTwatch implements repeat cross-sectional outlet surveys in project countries. The study population is defined as all outlets with the potential to sell or distribute antimalarial medicines and/or provide malaria blood testing. In Myanmar, this includes the following outlet types:

Public health facilities	Government public health facilities including health centers, and national, regional and district hospitals.
Community health worker	A network of government and NGO community health volunteers.
Private not-for-profit health facilities	Non-governmental (NGO) or mission/faith-based health facilities including hospitals and clinics.
Private for profit health facilities	Private hospitals, clinics and diagnostic laboratories.
Pharmacies	Pharmacies are licensed by the National Drug Authority (NDA) and regulated by the Pharmacists' Council. Pharmacies are owned by registered pharmacists or individuals who employ the services of a registered pharmacist. Pharmacies are authorized to sell all classes of medicines including prescription-only medicines.
Drug stores	Typically located in rural areas, these are small pharmacies that are licensed by the NDA and are legally permitted to sell over-the-counter medicines including antimalarial medicines. These outlets are manned by qualified health dispensers/practitioners.
General retailers	Grocery stores, bars and gargotes primarily sell fast-moving consumer goods, food and provisions. Gargotes are points of sale located in small wooden stalls that serve food, beverages and household goods. Although retailers may have over-the-counter medicines including antimalarials available, national authorities do not regulate the sale of medicines by retailers.
Itinerant drug vendors	Mobile providers selling medicines and other goods. They are not registered with any national regulatory authority.

### Stratification

The Myanmar outlet survey is stratified to provide estimates for urban and rural domains. Urban and rural designations for all wards was obtained from the 3<sup>rd</sup> population and housing census mapping exercise.

### Eligibility Criteria

All outlets with the potential to sell or distribute antimalarials are included in the census screening. Outlets are eligible for a provider interview and malaria product audit if they meet at least one of three study criteria: 1) one or more antimalarials reportedly in stock the day of the survey; 2) one or more antimalarials reportedly in stock within the three months preceding the survey; and/or 3) provides malaria blood testing (microscopy or RDT). Outlets that do not serve the general public (e.g. military facilities) were excluded from the study.

## Sample Size

The outlet survey was powered to detect a 20 percentage point increase between 2011 and 2013 within each research domain (and nationally) in the indicator, *the proportion of outlets that have quality-assured ACT in stock among all outlets with antimalarials in stock at the time of the survey*. The required sample size for each research domain (urban and rural strata) was calculated in three steps: 1) determine the required number of antimalarial-stocking outlets; 2) determine the number of outlets to be enumerated to arrive at this number of antimalarial-stocking outlets; and 3) determine the number of clusters for the census to arrive at this number of outlets.

### Required number of private sector antimalarial-stocking outlets

The number of antimalarial-stocking outlets required to detect a change over time in availability of ACT between survey rounds is given by:

$$n = \frac{\text{deff} \left[ Z_{\alpha} \sqrt{2P(1-P)} + Z_{1-\beta} \sqrt{P_1(1-P_1) + P_2(1-P_2)} \right]^2}{(P_2 - P_1)^2}$$

where:

- n= desired sample size
- P<sub>1</sub>= the proportion of antimalarial-stocking outlets with quality-assured ACT in stock in 2011
- P<sub>2</sub>= the expected proportion of antimalarial-stocking outlets with quality-assured ACT in stock in 2013.
- P= (P<sub>1</sub>+P<sub>2</sub>)/2
- Z<sub>α/2</sub>= The standard normal deviate value for a α type I error (two-sided)
- Z<sub>1-β</sub>= The standard normal deviate value for a β type II error
- Deff= design effect anticipated due to the cluster survey design. A design effect of 3 was used for all calculations.

The required size for the 2013 survey has been calculated based on the following assumed values of key parameters, taken from the 2011 ACTwatch survey:

	Urban	Rural
P <sub>1</sub>	0.284	0.28
P <sub>2</sub>	0.484	0.48
Z <sub>α</sub>	1.96	1.96
Z <sub>1-β</sub>	0.84	0.84
Deff	2.9	8.9

Applying the above parameters to the stated formula yields the following required sample sizes: urban: 268; rural 813; total: 1,081.

### Required number of antimalarial-stocking outlets

The estimated total number of outlets enumerated needed for the QAACT availability indicator was determined by the following formula for each urban/rural strata separately:

$$N = n / P_{am}$$

Where P<sub>am</sub> is the proportion of outlets having antimalarial stocks at the time of the survey among all outlets enumerated. In this equation, the assumptions are as follows: N = desired sample size of all outlets for monitoring availability indicators, n is the number of outlets with antimalarial stocks at the time of the survey. P<sub>am</sub> is the proportion of outlets with antimalarials in stock at the time of the survey among all outlets enumerated estimated from 2011 survey data for each domain (see below).

	<b>Urban</b>	<b>Rural</b>
Proportion of outlets with antimalarials in stock	0.164	0.236

Applying the above parameters to the stated formula yields the following required sample sizes: urban: 1,635; rural 3,445; total: 5,080.

### Required number of clusters (communes)

The primary sampling approach taken for ACTwatch outlet surveys entails sampling a set of administrative units (geographic clusters) with a corresponding population of approximately 10,000 to 15,000 inhabitants. Clusters are selected with cluster probability proportionate to size (PPS). A census of all outlets with the potential to sell or distribute antimalarials is then conducted in sampled clusters. The most appropriate administrative unit in Myanmar corresponding to this desired population size is commune.

The average number of outlets screened per cluster from the 2011 outlet survey was used to estimate the number of clusters required in 2013 to achieve the desired sample size. Applying these averages to the required number of outlets for the study, the number of clusters required in each domain was: urban: 12; rural: 32; total: 44.

### Sampling

A representative sample of communes was selected in each research domain. From a list of all communes in each domain, the required number of communes was selected with probability proportional to size (PPS). Selection of communes with PPS was completed based on population estimates obtained from the 3<sup>rd</sup> population and housing census mapping exercise. A sampling frame with population sizes was used for selecting the sample because accurate estimates on the total number of outlets per geographic/administrative unit that may be eligible for a medicine outlet survey do not exist. Excluded communes (non-endemic) included those within central Antananarivo, Antananarivo I, Antsirabe I and Fianarantsoa districts. Communes with an altitude of 1,500m or greater were also excluded from the sampling frame. A list of selected communes is provided in Annex 3.

The major assumption in using population figures for sampling is that distribution of outlets and/or distribution of medicines moving through outlets in a given cluster is correlated with population size. Within each commune, a census of all outlets with the potential to sell or distribute antimalarials and/or provide malaria blood testing was conducted. The sample was extended to achieve a sufficient sample size for estimating key indicators for important outlet types. The geographic area for sampling was extended to the district for public health facilities in the urban domain. In the rural domain, the sample was extended to all higher-level public health facilities (i.e. hospitals) and to the number of low-level PHFs (i.e. health centers) that would result in approximately 60% of all PHFs being visited within the district. All pharmacies and drug stores were also censused within the extended sample. This booster sampling strategy was used to obtain a sufficient sample size for indicator estimates within public health facilities, pharmacies and drug stores.

### Data Collection

Interviewers, supervisors, and quality controllers received training that included an orientation to the study, questionnaire and use of PDAs, classroom training on completing antimalarial and RDT audits, and a field exercise. Following training, data collection was implemented from November 7 to December 13, 2013.

For all interviews, a structured questionnaire was administered using PDAs (see Annex 4). A series of screening questions were administered at all outlets to determine eligibility for the survey. Outlets where antimalarial medicines were reportedly sold and/or malaria blood testing was reportedly provided were invited to participate in the survey. Following informed consent procedures, an audit of all available antimalarial medicines and RDTs was conducted. Antimalarial audit information included formulation, package size, brand name, active ingredients and strengths, manufacturer, country of manufacture, reported sale/distribution in the week preceding the survey, retail price, and wholesale price. RDT audit information included brand name, manufacturer, country of manufacture,

reported sale/distribution in the week preceding the survey, retail price, and wholesale price. Detailed descriptions of antimalarials and RDTs audited are provided in Annex 5. In addition to the product audit, a series of questions was administered to the senior-most provider regarding malaria case management knowledge and practices as well as provider training and qualifications. Geo-coordinates were recorded for each outlet using a handheld Global Positioning System (GPS) unit.

Up to three visits were made to all outlets to complete the screening process, audit, and provider interview as needed (e.g. where outlets were closed or providers were not available).

### Data Entry, Processing, and Analysis

Data was collected using PDAs. The electronic data collection application was programmed using Visual CE 12 (©Syware, Cambridge, MA). All data cleaning and analysis was completed using Stata 12.1 (©StataCorp, College Station, TX). Sampling weights were applied to account for variations in probability of selection (see Annex 6) and standard error estimation accounted for clustering at the commune and district levels. Indicator definitions are provided in Annex 7.

### Protection of Human Subjects

The 2013 outlet survey protocol received ethical approval from the Comité d'Ethique après du Ministère de la Santé Publique in Myanmar. The PSI Research Ethics Board ceded review to the ethics committee in Myanmar. Provider interviews and product audits were completed only after administration of a standard informed consent form and provider consent to participate in the study. Providers had the option to end the interview at any point during the study. Standard measures were employed to maintain provider confidentiality and anonymity.

## Annex 3: Sampled Clusters

<b>Table X1. Sampled Clusters</b>				
<b>Intervention / Comparison</b>	<b>State / Division</b>	<b>Township</b>	<b>Population</b>	<b>Malaria Burden</b>
Control	Bago (East)	Bago	Medium	491,130
Control	Bago (East)	Oaktwin	High	160,054
Control	Bago (East)	Yedashe	High	213,480
Control	Bago (West)	Padaung	High	145,512
Control	Mandalay	Lewe	High	284,144
Control	Mandalay	Myittha	Medium	195,570
Control	Mandalay	Pyinmana	High	187,415
Control	Mandalay	Yamethin	High	248,792
Control	Sagaing	Kale	Medium	347,363
Control	Sagaing	Kawlin	Medium	145,064
Control	Sagaing	Tamu	Medium	59,315
Control	Shan (South)	Hsihseng	Medium	152,755
Control	Shan (South)	Pindaya	Medium	79,846
Intervention	Kayin	Hlaingbwe	Medium	155,280
Intervention	Kayin	Hpa-An	Medium	421,415
Intervention	Mandalay	Thabeikkyin	High	127,252
Intervention	Mon	Kyaikhto	Medium	184,333
Intervention	Mon	Thanbyuzayat	Medium	170,480
Intervention	Mon	Ye	Medium	152,252
Intervention	Shan (East)	Tachileik	Medium	147,655
Intervention	Shan (North)	Lashio	Medium	321,861
Intervention	Shan (North)	Namhsan	Medium	71,984
Intervention	Shan (South)	MongNei	High	28,611
Intervention	Tanintharyi	Kawthaung	High	9,370
Intervention	Tanintharyi	Palaw	High	9,370
Intervention	Tanintharyi	Yebyu	High	100,295

## Annex 4: Questionnaire

### Malaria Outlet Survey (Round-3), 2014

#### Section I: Census Information (Interviewer to complete this section for all outlets)

<b>Outlet ID</b>				
Interviewer-Township-Ward/Village tract-Outlet Code:		[ ][ ]-[ ][ ]-[ ][ ][ ][ ]-[ ][ ][ ][ ]		
C1. Today's date (DD/MM/YYYY)		[ ][ ]-[ ][ ]-[ 2   0   1   4 ]		
C2. Interviewer's name [ _____ ]		C2a. Interviewer's code [ ][ ]		
C3. Division/State [ _____ ]		C3a. Division/State code [ ][ ]		
C4. Township [ _____ ]		C4a. Township code [ ][ ]		
C5. Ward/Village tract [ _____ ]		C5a. Ward/Village tract Code [ ][ ][ ][ ]		
C6. Village [ _____ ]		C6a. Village code [ ][ ][ ][ ]		
C7. Name of outlet [ _____ ] <i>If no name, record "no name" or owner's name</i>		C7a. Outlet code [ ][ ][ ][ ]		
<b>C8. Type of Outlet</b>				
1 Private Hospital	5 SPH	9 General store/Convenient store		
2 Poly Clinic	6 Government Health Staff (Specify): [ _____ ]	10 Village shop		
3 Non-SQHC Clinic (GP)	7 Informal Provider (Quack)	96 Other (specify) [ _____ ]		
4 SQHC clinic	8 Pharmacy/drug shop (specify): <b>(circle only one)</b> 8a. mainly whole sale 8b. mainly retail			
<p><b>Interviewer enters outlets.</b> Hello, My name is [interviewers name], and I work for PSI/Myanmar. We are conducting a study on the availability of antimalarial medicines. The results will be used to improve the availability of appropriate antimalarial treatment in Myanmar. I would like to ask you a few questions to see if you could be part of the study.</p> <p><b>(Interviewer to read the verbal consent form aloud to the participant here.)</b></p>				
<b>Screening</b>				
Sr	Questionnaire	Response	Code	Skip
S1	Do you have any antimalarial medicines in stock today? <b>If necessary, prompt with common antimalarial names. If necessary, prompt those antimalarials are for provision/sale to patients.</b>	Yes No	1 0	Provide information on study and gain consent. Record start time in C10, then go to Tablet Audit Sheet. 0 → go to S2
S2	Are there any antimalarial medicines that are out of stock today, but that you stocked in the past <b>3 months?</b>	Yes No Don't know	1 0 99	Provide information on study and gain consent. Record start time in C10 and go to Q13. 0,99 → go to S3
S3	Are you offering any diagnostic services or selling any diagnostic tests for suspected malaria	Yes No	1 0	Provide information on study and gain consent. Record start time in C10 and go to Q15. 0, → Go to C10 and complete Result of Visit, then record details in Ending the Interview.

<b>Result of Visits</b>		
<b>C10. Interviewer record result of visit(s)</b>		
	<b>Visit 1</b>	<b>Visit 2</b>
Date (dd/mm/yy)	[ ]-[ ]-[ ]	[ ]-[ ]-[ ]
Time started (use 24hr clock) 95:95 = NA	[ ]:[ ]	[ ]:[ ]
Time completed (use 24hr clock) 95:95 = NA	[ ]:[ ]	[ ]:[ ]
Result	[ ]	[ ]
1 = Completed (Provider interview conducted) → Go to E1 2 = Outlet does not meet screening criteria → Go to E1 3 = Interview interrupted → Go to C12 and note time convenient for call back 4 = Eligible respondent not available → Go to C12 and note time convenient for call back 5 = Outlet not open at the time → Go to C12 and note time convenient for call back 6 = Outlet closed permanently → Go to E1 7 = Refused → Go to C11 8 = Other (specify): [ ]		

<b>Refusal / Appointments</b>
<b>C11. If the provider refused, why? Circle one answer.</b> 1 = Client load <b>Ask for a time provider would prefer to be interviewed, note in C12 and return at this time.</b> 2 = Thinks it's an inspection / nervous about license <b>Go to E1</b> 3 = Not interested <b>Go to E1</b> 4 = Refuses to give reason <b>Go to E1</b> 5 = Other (specify): <b>Go to E1</b>
<b>C12. Interviewer: use this space to record any appointment that has been made for a call back to complete the interview</b>

<b>Section VII: Ending the Interview</b>
<b>E1. Physical address or location identifiers of outlet (not PO box)</b> <b>(Give detailed description that will help to find the outlet)</b>
<b>E2. Telephone number</b> [ ] 9999999995 = Not applicable/no respondent/no telephone 9999999997 = Refused
<b>E3. Do you have any questions or comments for us? Record any questions or comments from provider.</b>

E4. **Additional observations by interviewer (if any)**

**THANK THE PROVIDER AND END INTERVIEW**

**Section II: Antimalarial Audit (Interviewer to follow instructions outlined on this page)**

A1. Can you please show me the full range of antimalarials that you currently have in stock.

Do you currently have any of the following antimalarials in stock?

**Prompt entire list using antimalarial prompt card. No response to be recorded.**

- Artemether lumefantrine, such as *Coartem20/120, Artemether and lumefantrine, Coartem Dispersible, Artefam 20/120, lumartem*
- Artesunate amodiaquine, such as *Artemodi (Adults/Children), Quinsunat, Arsuamoon, Co-Artesun, Macsunate FD(kid)*
- Other artemisinin combination therapies, such as *Duo-cotecxin, D-Artepp, Arco, Artesospe(Adults), Artemcom, Arfloquine*
- Artemisinin monotherapies, such as *AA Artesunate (tab), AA Artemether, Artesunate injection, Artemedine, Aretemether, Lurither, Traphasunate, Artesun, Arcomether, Glinther, Betamotil, Falcinate, Artim 80, Arthesis, EMAL, Artesiane 80, Artemether injection*
- Artemether, such as *Artem, AA-Artemether, Armether, Artemedine, Betamotil*
- Artesunate, such as *AA -Artesunate, Artesunate(tablets), Traphasunate, Falcinate, Arthesis*
- Chloroquine, such as *Chloroquine tablets, Chlorofos, Chloroquine Phosphate, Paraquine, Tabellaechloro-quin, Jasochlor, Malacin, Chloroquine*
- SP, such as *Pyrixine, Malidar, SP*
- Quinine, such as *quinine tablets, quinine sulphate, Jasoquin*
- Mefloquine, such as *Mefloquine*
- Injectables, such as *Artem, Quinine Dihydrochloride, Quinine (Injection), Artesunate for Injection, Artemedine, Larither, Artesun, Arcomether, Pekquine Injection, Glinther, Betamotil, Artim 80, Malacin, EMAL, Artesiane 80, Artemether injection*
- Granules or powders, such as *Artesunate for Injection, Artim 80*

**If the outlet has no antimalarials in stock, go to Question 13**

**Interviewer to separate the antimalarials into two piles:**

- **The first pile should contain all the antimalarials in the form of tablets, suppositories, or granules. Use the *Tablets, Suppositories & Granules Drug Audit Sheet* to record these.**
- **The second pile should contain all the antimalarials in any form other than tablets, suppositories or granules. Use the *Non-Tablet Drug Audit Sheet* to record these.**

**Interviewer to proceed to the drug audit.**

**Different Drug Audit sheets should be used to record the product information based on the dosage form of the medicine.**

**If additional audit sheets are needed add these sheets after the ones provided and staple the questionnaire again.**

**Number each drug by assigning a product number**

**Number each audit sheet in the bottom of the page**

**All pages should be in order before you move onto the next outlet.**

TABLET, SUPPOSITORY AND GRANULE AUDIT SHEET

[ ]-[ ]-[ ]-[ ]-[ ]-[ ]-[ ]-[ ]-[ ]-[ ]-[ ]

Product number [ ] [ ] [ ] [ ] [ ] [ ]	1. Generic name		2. Strength		2a. Is this base strength?  [ ] 1 = Yes [ ] 0 = No 8 = Don't know [ ] <i>If no, specif salt:</i> [ ]	3. Dosage form 1 = Tablet 2=Suppository 3 = Granule  [ ]	4. Brand name		5. Manufacturer	6. Country of manufacture   [ ] [ ] [ ]
	[ ] [ ]		[ ] [ ] [ ] [ ] mg				[ ] [ ] [ ] [ ] [ ] [ ]			
	[ ] [ ]		[ ] [ ] [ ] [ ] mg				[ ] [ ] [ ] [ ] [ ] [ ]			
	[ ] [ ]		[ ] [ ] [ ] [ ] mg				[ ] [ ] [ ] [ ] [ ] [ ]			
7. Package size  There are a total of [ ] [ ] [ ] [ ] tablets / suppositories / granule packs 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 Padonma logo? 1 = Yes 0 = No [ ]	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 <u>last 7 days</u>  OR  This outlet sold [ ] [ ] [ ] [ ] tablets/ suppositories or granule packs in the <u>last 7 days</u>  <i>Not applicable = 995; Refused = 997; Don't know = 998</i>		10a. Has product been stocked out at any time in past 2 weeks? 1 = Yes 0 = No 8 = Don't know [ ]	10b. Has product been stocked out at any time in past 3 months? 1 = Yes 0 = No 8 = Don't know [ ]	11. Retail selling price [ ] [ ] [ ] [ ] [ ] [ ] tablets, suppositories or granule packs cost an individual customer [ ] [ ] [ ] [ ] [ ] [ ] KYAT	12. Wholesale purchase price For the outlet's most recent wholesale purchase [ ] [ ] [ ] [ ] [ ] [ ] tablets, suppositories or granule packs cost [ ] [ ] [ ] [ ] [ ] [ ] KYAT	13. Comments

TABLET, SUPPOSITORY AND GRANULE AUDIT SHEET [ ] [ ] OF [ ] [ ]

**NON-TABLET DRUG AUDIT SHEET (NT): SYRUP, SUSPENSION, INJECTIONS & OTHERS**

Product number [ ][ ] [ ][ ] [ ][ ]	1. Generic name	2. Strength		2a. Is this base strength?	3. Dosage form 1 = Syrup 2 = Suspension 3 = Liquid inj. 4 = Powder inj. 6 = Other <i>(specify)</i> [ ]	4. Brand name		5. Manufacturer	
	[ ]	[ ][ ][ ][ ] . [ ] mg / [ ][ ][ ][ ] . [ ] mL		[ ] 1 = Yes					
	[ ]	[ ][ ][ ][ ] . [ ] mg / [ ][ ][ ][ ] . [ ] mL		[ ] 0 = No					
[ ]	[ ]	[ ][ ][ ][ ] . [ ] mg / [ ][ ][ ][ ] . [ ] mL		[ ] 8 = Don't know					
	[ ]	(Note: no mL recorded for powder injection)		If no, specify salt: [ ]					
6. Country of manufacture [ ][ ][ ]	7. Package size There are a total of [ ][ ][ ][ ][ ] . [ ] mL (or mg for powder injections) in each: 1 = Bottle 2 = Ampoule/vial [ ]	8. Does this product have the Padonma logo? 1 = Yes 0 = No [ ]	9. Amount sold/ distributed in the <u>last 7 days</u> to individual consumers This outlet sold [ ][ ][ ][ ] bottles, ampoules or vials in the <u>last 7 days</u>  <i>Refused = 9997; Don't know = 9998</i>	10a. Has product been stocked out at any time in the past <u>2 weeks</u> ? 1 = Yes 0 = No 8 = Don't know [ ]	10b. Has product been stocked out at any time in the past <u>3 months</u> ? 1 = Yes 0 = No 8 = Don't know [ ]	11. Retail selling price [ ][ ][ ][ ] bottles ampoules or vials cost an individual customer [ ][ ][ ][ ][ ] KYAT	12. Wholesale purchase price For the outlet's most recent wholesale purchase: [ ][ ][ ][ ][ ] bottles, ampoules or vials cost [ ][ ][ ][ ][ ][ ] KYAT	13. Comments	
				10c. The stock out period in past 3 month (Ask only those who answered "1" in 10b) 1. <1week 2. ≥1week 8. Don't know [ ]					
						Free= 00000; Refused = 99997; Don't know=99998			

NON-TABLET DRUG AUDIT SHEET (NT): SYRUP, SUSPENSION, INJECTIONS & OTHERS [ ][ ] of [ ][ ]

Sr	Questionnaire	Response	Code	Skip
13	Are there any antimalarial medicines that are out of stock today, but that you stocked in the past <b>2 weeks</b> ?	Yes No Don't know	1 0 99	0,99→Q14
13a	Do you know the names of these treatments? (Use Show Card to help the provider to memorize)	Yes [ ] [ ] [ ] No	1   0	<i>Specify below, record one medicine per line. Will accept generic or brand names.</i>
14	Are there any antimalarial medicines that are out of stock today, but that you stocked in the past <b>3 months</b> ?	Yes No Don't know	1 0 99	0,99→Q15
14a	Do you know the names of these treatments? (Use Show Card to help the provider to memorize)	Yes [ ] [ ] [ ] No	1   0	<i>Specify below, record one medicine per line. Will accept generic or brand names.</i>

<b>Microscopy</b>				
15	Is malaria microscopic testing available here today?	Yes No	1 0	0→Q16
15a	Please show me the microscopic test that is available in this outlet. <b>(Ask for the permission to see the microscopic test.)</b> <b>Interviewer: Is the microscopic test observed?</b>	Yes No	1 0	
15b	How much do you charge for a microscopic test for malaria?	[ ] [ ] [ ] [ ] [ ] Kyats <b>00000 = Free; 99999 = Don't know</b>		
15c	How many microscopic tests for malaria were conducted in this outlet over the past 7 days?	[ ] [ ] [ ] <b>999 = Don't know</b>		
15d	Including the owner and yourself, have any staff members in this outlet been trained to prepare a blood slide and read the results of a microscopic test for malaria?	Yes No	1 0	
<b>Section III: RDT Audit</b>				
Sr	Questionnaire	Response	Code	Skip
16	Are malaria rapid diagnostic test kits (RDTs) available here today?	Yes No	1 0	0→Q17
16a	Please show me the full range of RDTs that you currently have in stock. <b>Do you currently have any of the following? Read entire list. No response to be recorded.</b> <b>Proceed to the RDT audit. If additional audit sheets are used, add these sheets after the ones provided and staple the questionnaire again. All pages should be in order before you move onto the next outlet.</b>	SD Bioline P.f/P.v SD Bioline P.f/Pan First Response Care Start Accurate Clungene ParaHit Others (specify) [_____]	1 2 3 4 5 6 7 96	

**RAPID DIAGNOSTIC TEST AUDIT SHEET (RDT)**

[ ][ ]-[ ][ ]-[ ][ ][ ][ ]-[ ][ ][ ][ ]

<b>Product number</b>  [ ][ ]	<b>1. Brand name</b>	<b>1a. Antigen test</b> <i>(circle ALL that apply)</i>  Not indicated <b>Z</b> HRP2 <b>A</b> pLDH <b>B</b> Aldolase <b>C</b>	<b>1b. Parasite species</b> <i>(circle ALL that apply)</i>  Not indicated <b>Z</b> Pf <b>A</b> Pv <b>B</b> Po <b>C</b> pan <b>D</b> vom/Pvom <b>E</b>	<b>2. Manufacturer</b>	<b>3. Country of Manufacture</b>  <i>Not indicated = 998</i>  [ ][ ][ ]	<b>4. Lot Number</b>	<b>5. Number of tests sold/ distributed /used in the last 7 days to individual consumers</b> <i>(Record total # of tests)</i> This outlet sold or distributed  [ ][ ][ ][ ] tests in the last 7 days  <i>Refused = 9997 ; Don't know=9998</i>
<b>6a. Has this test been stocked out at any time in the past 2 weeks?</b>  1 = Yes 0 = No 8 = Don't know  [ ]	<b>6b. Has this test been stocked out at any time in the past 3 months?</b>  1=Yes 0 = No 8 = Don't know  [ ]	<b>7. Price for adults</b> For an <u>adult</u> who needs a test, how much do you charge:  To buy the test: [ ][ ][ ][ ][ ] KYAT  For consultation fees: [ ][ ][ ][ ][ ] KYAT  For other fees <i>(specify)</i> : [ ][ ][ ][ ][ ] KYAT  [ ]		<b>8. Price for children under 5</b> For a <u>child under five</u> who needs a test, how much do you charge:  To buy the test: [ ][ ][ ][ ][ ] KYAT  For consultation fees: [ ][ ][ ][ ][ ] KYAT  For other fees <i>(specify)</i> : [ ][ ][ ][ ][ ] KYAT  [ ]		<b>9. Wholesale purchase price</b> For the outlet's most recent wholesale purchase:  [ ][ ][ ][ ][ ] tests cost  [ ][ ][ ][ ][ ] KYAT	<b>10. Comments</b>
<p align="center"><i>Free = 00000; NA = 99995; Refused = 99997; Don't know=99998</i></p>							

RDT Audit Sheet [ ][ ] of [ ][ ]

Sr	Questionnaire	Response	Code	Skip
17	Are there any RDTs that are out of stock today, but that you stocked in the past <b><u>2 weeks?</u></b>	Yes No Don't know	1 0 99	0,99→18
17a	Do you know the names of these RDTs?	Yes [ ] [ ] [ ] No	1   0	Specify below, record one RDT per line.
18	Are there any RDTs that are out of stock today, but that you stocked in the past <b><u>3 months?</u></b>	Yes No Don't know	1 0 99	0,99→Q P1
18a	Do you know the names of these RDTs?	Yes [ ] [ ] [ ] No	1   0	Specify below, record one RDT per line.

## Section IV: Provider Questionnaire

Sr	Questionnaire	Response	Code	Skip
P1	What is your job at this outlet? <b>Do not read list. Multiple responses allowed.</b>	Medical doctor Owner Nurse Clinic assistant Shop assistant Relative of the owner Other (specify) [_____]	<b>MR</b> 1 2 3 4 5 6 96	
P1a	For how many years have you worked in this outlet? <b>If less than 1 year, enter "01"</b>	[_] [_] years		
P1b	What is the highest level of education you completed?	No schooling Monastic or primary grade Middle Grade High Grade Passed matriculation Diploma or degree Post-grad	1 2 3 4 5 6 7	
P1c	Do you have any of the following health qualifications?	No health qualifications Pharmacist Laboratory technician Health assistant Medical doctor Nurse / Midwife PHS Compounder Pharmacist trained by private agency Other (specify) [_____]	0 1 2 3 4 5 6 7 8 96	
P2a	In the past 12 months, have you attended any trainings or workshops about malaria diagnosis (RDT or microscopy)?	Yes No Don't know	1 0 99	
P2b	In the past 12 months, have you attended any trainings or workshops about malaria treatment, such as how to dispense medicines; proper dosing of medicines; case management?	Yes No Don't know	1 0 99	
P3	Including the owner and yourself, how many people work here? <b>If outlet has multiple dispensaries, record number of workers at this dispensary only.</b>	[_] [_] Don't know	99	
P4	Of all the people who work here, how many prescribe or dispense medicines?	[_] [_] Don't know	99	
P5	What is the highest level of education among the people working in this outlet? <b>(Prompted. Circle <u>one</u> response)</b>	No schooling Monastic or primary grade Middle Grade High Grade Passed matriculation Diploma or degree Post-grad	1 2 3 4 5 6 7	
P6	<b>Not</b> including yourself, does anyone working in this outlet have a health-related qualification?	Yes No Don't know	1 0 99	0,99→ P8

Sr	Questionnaire	Response	Code	Skip
P7	<p><b>Not</b> including yourself, how many people working in this outlet (including the owner) have the following types of health qualifications? <i>Read list. Enter '00' if the answer is 'none.'</i></p>	<p>Pharmacist [ ] [ ] Laboratory technician [ ] [ ] Health assistant [ ] [ ] Medical doctor [ ] [ ] Nurse / Midwife [ ] [ ] PHS [ ] [ ] Compounder [ ] [ ] Pharmacist trained by private agency [ ] [ ] Other (specify) [ ] [ ]</p>		
P8	Do you have a license/temporary license to sell drugs?	<p>Yes No</p>	<p>1 0</p>	0→P10
P9	<b>Interviewer observes the license and record response based on observation.</b>	<p>Yes, license physically observed No, license not physically observed</p>	<p>1 0</p>	
P10	<p><b>(Do not ask this question if the outlet is clinic)</b> Do you know <i>P.falciparum</i> and <i>P.vivax</i> malaria?</p>	<p>Yes No</p>	<p>1 0</p>	<p>1 → P10a 0 → P11</p>
P10a	Do you treat <i>P.falciparum</i> differently compared to <i>P.vivax</i> ?	<p>Yes No</p>	<p>1 0</p>	<p>1 0</p>
P11	<p>In your opinion, for treating uncomplicated malaria, what is the most <u>effective</u> antimalarial medicine? <i>Looking for either Generic name or Brand name. Ask provider to show you the medicine if in stock.</i></p>	<p>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Cocktail Don't know</p>	<p>1 99</p>	
P11a	<p>What antimalarial medicine for treating uncomplicated malaria, do you most often <u>recommend</u> to customers? <i>Looking for either Generic name or Brand name. Ask provider to show you the medicine if in stock.</i></p>	<p>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Cocktail Don't know</p>	<p>1 99</p>	
P12	<p><b>(Do not ask this question if the outlet is clinic)</b> In your opinion, for treating uncomplicated <b><u>P. falciparum</u></b>, what is the most effective antimalarial medicine? <b>Looking for either Generic name or Brand name. Ask provider to show you the medicine if in stock.</b></p>	<p>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Cocktail Don't know</p>	<p>1 99</p>	
P12a	<p><b>(Do not ask this question if the outlet is clinic)</b> In your opinion, for treating uncomplicated <b><u>P. vivax</u></b>, what is the most effective antimalarial medicine? <b>Looking for either Generic name or Brand name. Ask provider to show you the medicine if in stock.</b></p>	<p>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Cocktail Don't know</p>	<p>1 99</p>	
P13	<p>What antimalarial medicine for treating uncomplicated <b><u>P. falciparum</u></b>, do you most often recommend to customers? <b>Looking for either Generic name or Brand name. Ask provider to show you</b></p>	<p>[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] Cocktail N/A; Don't recommend</p>	<p>1 99</p>	

Sr	Questionnaire	Response	Code	Skip
	<b>the medicine if in stock.</b>			
P13a	What antimalarial medicine for treating uncomplicated <b>P. vivax</b> , do you most often recommend to customers? <b>Looking for either Generic name or Brand name. Ask provider to show you the medicine if in stock.</b>	[ _____ ]  Cocktail  N/A; Don't recommend	1  99	
P14	How do you typically decide which antimalarials to stock?  Read list. Multiple responses allowed.	Most profitable Recommended by government Lowest priced Drug company/sales rep influence Consumer demand Brand reputation Dosage form Easily available Prescribed most often by doctors Provided by PSI More effective Other (specify) [ _____ ] Don't know	MR 1 2 3 4 5 6 7 8 9 10 11 96 99	
P14a	Which antimalarials provide a good profit margin for you? <b>Looking for either Generic name or Brand name.</b>	[ _____ ] [ _____ ] [ _____ ]  All antimalarials are the same Refuse to answer Don't know	1 2 99	
P15	Do your customers know ask for anti malarial medicines by name? <b>Read list. One response only.</b>	Yes No No, they have a written prescription Don't know	1 0 2 99	1 → P15a 0 → P16 2 → P15b 99 → P16
P15a	What are the three most common antimalarial drugs that people ask for by name? <b>Looking for either Generic name or Brand name or Cocktail. Ask provider to show you the medicine if in stock. 99 if don't know.</b>	[ _____ ] [ _____ ] [ _____ ]		Skip to P16
P15b	What are the three most common antimalarial drugs that were prescribed by providers (came to you through prescription notes)? <b>Looking for either Generic name or Brand name or Cocktail. Ask provider to show you the medicine if in stock. 99 if don't know.</b>	[ _____ ] [ _____ ] [ _____ ]		
P16	Do you normally decide which antimalarial medicines customers receive? <b>Read list. One response only.</b>	Yes No No, they have a written prescription Don't know	1 0 2 99	
P17	In the past <b>month</b> , have customers	Yes	1	

	bought antimalarials on credit?	No Don't know	0 99	0,99 → P18
P17a	In the past <b>month</b> , how many customers have bought antimalarials on credit?	[ ] [ ] [ ] <b>999 = Don't know</b>		
P18	In the past <b>month</b> , did you ever cut blister packs or sell partial courses of antimalarials?	Yes No Don't know	1 0 99	0,99 → P19
P18a	What is/are the reason(s) that you cut blisters or sell partial courses? <b>Do not read list. Probe for anything else. Multiple responses.</b>	Customers/Patients' request Cut/partial is sufficient I have small / insufficient stock Customers/Patients cannot afford full blister/pack Makes it easier for the patient to take medicine Other(specify)) [ _____ ] Don't know	<b>MR</b> 1 2 3 4 5 96 99	
P19	Please name the first-line medicine recommended by the government (National Malaria Program/VBDC) to treat uncomplicated <i>p. falciparum</i> malaria?	[ _____ ] Don't know	99	
P20	When do you refer your customers/ patients with suspected malaria to the nearest health facility? <b>Don't read answers. Multiple responses allowed.</b>	Don't refer Pregnant mother Children under age of 1 year Fever not subside when I think severe malaria Loss of consciousness/ Coma In Fits (Convulsion) Unable to sit/ eat/ drink Frequent vomiting Restlessness Jaundice or very pale Black color urine or little or no urine Other ( <b>specify</b> ) [ _____ ] Don't know	<b>MR</b> 0 1 2 3 4 5 6 7 8 9 10 11 96 99	
P21	Who is at risk of getting malaria in Myanmar? <b>Don't read answers. Multiple responses allowed.</b>	Forest related worker Migrant people/worker Plantation worker Gold/jade/gem miner Pregnant woman Children under 5 Other ( <b>specify</b> ) [ _____ ] Don't know	<b>MR</b> 1 2 3 4 5 6 96 99	
P22	Is malaria testing service using RDT available here?  <b>Show RDT images in prompt card.</b>	Yes No	1 0	0 → P27

Sr	Questionnaire	Response	Code	Skip
P23a	Did anyone from this outlet (including you) receive training on how to use RDT?	Yes No	1 0	
P23b	If yes to P23a, who received that training?	Myself (respondent) Medical doctor Owner Nurse Clinic assistant Shop assistant Relative of the owner Other (specify) [ _____ ]	1 2 3 4 5 6 7 96	
P24a	How often do you test people who have fever for malaria using a blood test?	Always Most of the time Sometimes Rarely Never	1 2 3 4 5	5 → P25
P24b	Did the last patient you provided an antimalarial to also receive a malaria diagnostic test from this outlet?	Yes No Don't know	1 0 99	If the respondent answered "1" in P24a → Skip to P26
P25	What is the <b>main</b> reason that you would not test a client with fever for malaria using a blood test?  <b>(circle one)</b>	Do not have tests in stock Do not think is necessary Customers do not want a test Customers cannot afford a test I don't know how to do that Other (specify) _____	1 2 3 4 5 96	
P26	When an RDT is <u>positive for malaria</u> , how likely do you think it is that the person tested actually has malaria?  <b>Read list. Record only one response.</b>	Certain they have malaria Very likely they have malaria Somewhat likely they have malaria Not very likely they have malaria Not at all likely they have malaria Don't know	1 2 3 4 5 99	
P27	In your opinion, how important is it for a person with fever to get tested to confirm malaria before treatment?	Very important Somewhat important Not very important Not at all important Don't know	1 2 3 4 99	1, 2, 99 → P29  3,4 → P28
P28	If answered 3 or 4 in P27, why do you think it is not important to provide a test for a person with fever before giving malaria treatment?	[ _____ ]		

Sr	Questionnaire	Response	Code	Skip
P29	Are some antimalarial drugs are banned in Myanmar?	Yes No Don't know	1 0 99	0,99→ P31
P30	Which antimalarial drugs are banned in Myanmar? <b>Looking for either Generic name or Brand name. If "Don't know", enter "99" on the first line.</b>	[ ] [ ] [ ]		
P31	Have you heard/seen any messages or information about malaria in the past month?	Yes No	1 0	0→P34
P32	Where did you see or hear these messages/information? <b>(Multiple response)</b>	TV Radio Billboard Pamphlet Newspapers/ Journals Health Talk Sales representative from AA pharma PSI detailer Others (Specify) (_____)	<b>MR</b> 1 2 3 4 5 6 7 8 96	
P33	What type of malaria messages or information did you see or hear? <b>(Multiple response)</b>	Importance of giving full course of treatment Using the quality assured ACT Using diagnostic test Selling price Not to cut the strips AM monotherapy is dangerous Monotherapies are not recommended by WHO/NMCP Monotherapies are replaced by ACTs ACTs are recommended drug for malaria by WHO/NMCP ACTs are more effective ACTs have more attractive profit margin Quality seal logo on drug/facility Messages not related to ACT Do not remember	<b>MR</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 99	
P34	What does this logo on this drug mean? <b>(Podonma Show card)</b>	<b>Quality malaria drug</b> (correct answer) Other responses (incorrect answer) Do not know	1 2 99	
P35	Had someone from PSI ever visited you?	Yes No	1 0	0→P38
P36	Had someone from PSI visited you in the last month?	Yes No	1 0	0→P38

Sr	Questionnaire	Response	Code	Skip
P37	What kind of messages/information did he/she share with you? <b>(Multiple response)</b>	Importance of giving full course of treatment Using the quality assured ACT Using diagnostic test Selling price Not to cut the strips AM monotherapy is dangerous Monotherapies are not recommended by WHO/NMCP Monotherapies are replaced by ACTs ACTs are recommended drug for malaria by WHO/NMCP ACTs are more effective ACTs have more attractive profit margin Quality seal logo on drug/facility Messages not related to ACT Do not remember	<b>MR</b> 1 2 3 4 5 6 7 8 9 10 11 12 13 99	
<b>Section V: Cocktails</b>				
P38	<b>(Do not ask this question to clinic)</b> Does this outlet provide 'cocktail' for the treatment of patients with uncomplicated malaria?	Yes No	1 0	0 → P42
P39	<b>(Do not ask this question to clinic)</b> Can you tell me, in this outlet are the 'cocktail': <b>Interviewer read out responses. One response possible</b>	Pre-made Prepared at the time when customers come for treatment Both	1 2 3	2,3 → P41
P40	<b>(Do not ask this question to clinic)</b> Where do you obtain these 'cocktail'? <b>Interviewer read out responses. Multiple responses possible.</b>	Pharmacy Made in this outlet Other ( <i>specify</i> ) [_____]	<b>MR</b> 1 2 3	
P41	Please show me the 'cocktail' you sell, or that you would prepare to sell, for adult man with symptoms of malaria and please tell me what are those?. <b>Interviewer to observe what the provider offers</b>	[_____] [ ] Tab [_____] [ ] Tab		

Sr	Questionnaire	Response	Code	Skip
P42	<b><i>Do not ask the following 3 questions. Observe and circle the appropriate response in each case.</i></b> Are medicines stored in a dry area?	Yes, stored in a dry area No, not stored in a dry area Did not observe medicines	1 0 8	
P43	Are medicines protected from direct sunlight?	Yes, protected from direct sunlight No protections from direct sunlight Did not observe medicines	1 0 8	
P44	Are medicines kept on the floor?	Yes, they are kept on the floor No, not kept on the floor Did not observe medicines	1 0 8	

**Section VI: Products tracking sheet**

1	Total number of Tablet, Suppository and Granule <b>Products</b> Audited	[ ][ ]		
2	Total number of Non-Tablet <b>Products</b> Audited	[ ][ ]		
3	Total number of RDT <b>Products</b> Audited	[ ][ ]		

***Thank the provider for their participation.***

***Return to question C10 to record final status of interview and time of completion, then complete the section Ending the Interview.***

## Annex 5: Antimalarial and RDT Product Information

Table X2: Quality-Assured (QAACT) and Non-Quality Assured ACTs	
<b>Quality-Assured ACT (QAACT)</b>	
QAACTs are ACTs that comply with the Global Fund to Fight AIDS, Tuberculosis and Malaria's Quality Assurance Policy. A QAACT is any ACT that appeared on the Global Fund's indicative list of antimalarials meeting the Global Fund's quality assurance policy* prior to data collection, or that previously had C-status in an earlier Global Fund quality assurance policy and was used in a program supplying subsidized ACTs. QAACTs also include ACTs that have been granted regulatory approval by the European Medicines Agency (EMA) – specifically Eurartesim® and Pyramax®.	
<b>Artemether Lumefantrine Tablets</b>	
Artefan 20/120 ^#	Supa Arte 1 ^#
Artemether 20mg and Lumefantrine 120mg ^#	Supa Arte 2 ^#
Coartem 20/120 ^#	Supa Arte 3 ^#
Coartem Dispersible ^#	Supa Arte 4 ^#
Lumartem ^#	
<b>Non-Quality-Assured ACT</b>	
ACTs that do not meet the definition of being quality-assured.	
<b>Artemisinin Napthoquine Tablets</b>	
Arco ^#	
<b>Artesunate Amodiaquine Tablets</b>	
Artemodi (Adults/Children) #	Co-Artesun ^#
<b>Dihydroartemisinin Piperaquine Tablets</b>	
D-Artepp ^#	Darplex ^#
Duo-Cotecxin ^#	
* <a href="http://www.theglobalfund.org/en/procurement/quality/pharmaceutical">http://www.theglobalfund.org/en/procurement/quality/pharmaceutical</a>	
^ Product audited in the intervention area.	
# Product audited in the comparison area.	

Table X3: RDT Brand Names and Manufacturers*	
Brand Name	Manufacturer
SD Malaria Ag Pf/Pv ^#	Standard Diagnostics Inc
CareStart Malaria ^#	Access Bio Inc
SD Bioline Pf/Pan #	Standard Diagnostic Inc
SD Bioline Pf/Pv ^#	Standard Diagnostic In.
Para Hit ^#	Span Diagnostics Ltd
First Response ^	Premier Medical Corp
* 361 RDTs were audited. No RDTs were missing brand name information (missing or don't know) and 4 RDTs (intervention 3, comparison 1) were missing manufacturer name (missing or don't know).	
^ Product audited in the intervention area	
# Product audited in the comparison area	

## Annex 6. Sampling Weights

Sampling weights were applied for analysis of the Myanmar 2013 outlet survey data to account for variations in probability of selection as a result of the sampling design:

- 1) **Stratification:** Disproportionate allocation stratification was used to ensure adequate sample size within the urban and rural domains to allow for domain-specific estimates. The research domains were based on national designation of urban and rural communes. A representative sample was selected within each domain.
- 2) **One-stage cluster sampling:** Communes were selected from sampling frames within each domain with probability proportional to size. Within each commune, a census of all outlets with the potential to sell or distribute antimalarials and/or provide malaria blood testing was conducted.
- 3) **Booster sample – public health facilities (PHFs):** The geographic area for sampling was extended to the district for all PHFs in the urban domain. In the rural domain, the sample was extended to the district for all high-level PHFs (i.e. hospitals) and to the number of low-level PHFs (i.e. health centers) that would result in approximately 60% of all PHFs being visited within the district.
- 4) **Second-stage sampling – low-level public health facilities:** The number of additional low-level PHFs sampled within a rural domain district was determined using the formula:

$$N_i = (0.6 \times a) - (b + c)$$

Where:

- a = number of PHFs in the district
- b = number of PHFs in the selected cluster
- c = number of high-level PHFs in the district outside of the selected cluster

Each additional low-level PHFs was randomly selected from a list of low-level PHFs within the district until N was reached.

- 5) **Booster sample – pharmacies and drug stores:** All pharmacies and drug stores were censused within communes for which a booster PHFs was selected.

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

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

Where:

- $M_\alpha$  = estimated cluster (population size)
- $\sum M_\alpha$  = sum of estimated cluster sizes (population size) in the entire stratum
- a = number of clusters selected within the stratum

Sampling weights are calculated at the cluster level and are applied to all outlets within a given cluster, irrespective of outlet type.

Market share was calculated using the full census data at the commune level only (i.e. the booster sample was not included in market share calculations). Commune sampling weights were created using the sampling weight formula ( $W_i$ ), where:

- $M_\alpha$  = estimated commune population size
- $\Sigma M_\alpha$  = sum of estimated commune population size in the entire stratum
- $a$  = number of communes selected within the stratum

The commune sampling weights were applied to all other indicators in the report for all outlet types with the exception of:

1. Urban PHFs and rural high-level PHFs: Given that urban PHFs and high-level rural PHFs were included in the sample through a district-wide census, the weights applied to urban PHFs and high-level PHFs for all indicators other than market share were calculated using the sampling weight formula ( $W_i$ ), where:

- $M_\alpha$  = estimated district population size
- $\Sigma M_\alpha$  = sum of estimated district population size in the entire stratum
- $a$  = number of districts selected within the stratum

2. Rural low-level PHFs: Given that rural low-level PHFs were selected through two stages of sampling, the probability of selection was the product of the probability of selection at first stage as outlined above (probability of selection for the commune) and the probability of selection at the second stage. At the second stage, rural low-level PHFs were randomly sampled within the district to meet  $N$ . The second stage probability of selection was calculated using the following formula:

$$P_i = \frac{a + b}{c}$$

Where:

- $a$  = number of PHFs in the selected commune
- $b$  = number of PHFs selected in the booster sample
- $c$  = number of PHFs in the district

3. Pharmacies and drug stores: Given that pharmacies and drug stores were selected through two stages of sampling, the probability of selection was the product of the probability of selection at first stage as outlined above (probability of selection for the commune) and the probability of selection at the second stage. At the second stage, pharmacies and drug stores within communes for which a booster PHF was selected were included in the sample. The second stage probability of selection was calculated using the probability of selection formula ( $P_i$ ), where:

- $a$  = selected commune population
- $b$  = combined population of all communes with a PHF selected in the booster sample
- $c$  = district population

The population estimates used to select communes with PPS and to create sampling weights were obtained from the the 3<sup>rd</sup> population and housing census mapping exercise. A sampling frame with population sizes was used for selecting the sample because accurate estimates on the total number of outlets per geographic/administrative unit that may be eligible for a medicine outlet survey do not exist. The major assumption in using population figures for sampling and weighting is that distribution of outlets and/or distribution of medicines moving through outlets in a given cluster is correlated with population size.

## Annex 7: Indicator Definitions

**Table 1: Availability of antimalarials, among all screened outlets**

Table 1 reports the proportion of all outlets enumerated that had any antimalarial in stock at the time of the survey visit. Antimalarial availability is reported among all outlets as well as among individual outlet types, all public outlets, and all private outlets. Availability is reported for any antimalarial as well as specific types of antimalarial medicines.

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

**Table 2: Availability of antimalarials, among outlets stocking at least one antimalarial**

Table 2 reports the proportion of antimalarial-stocking outlets with specific antimalarial in stock at the time of the survey visit. Antimalarial availability is reported among all outlets as well as among individual outlet types, all public outlets, and all private outlets. Availability is reported for any antimalarial as well as specific types of antimalarial medicines.

Numerator	Number of outlets with any antimalarial in stock at the time of the survey visit, as confirmed by presence of at least one antimalarial (defined as a medicine with antimalarial ingredients) recorded in the antimalarial audit 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 partial completion of interviews among antimalarial-stocking outlets and the inclusion of these outlets in the denominator, these availability indicators can be considered conservative estimates of antimalarial availability.

**Table 3: Price of antimalarials**

Table 3a provides the median price of an adult equivalent treatment dose (AETD, see Annex 8) for select tablet formulation types of antimalarials across outlet types. The inter-quartile range (IQR) is provided as a measure of dispersion.

Calculation	Median antimalarial AETD (see Annex 8) price in US dollars with inter-quartile range (25 <sup>th</sup> and 75 <sup>th</sup> percentiles).
Handling missing values	Antimalarials with missing price information are excluded from the median price calculation.
Notes and considerations	Price in US dollars is calculated based on exchange rates available from <a href="http://www.oanda.com">www.oanda.com</a> using the historical exchange rates tool. The average exchange rate over the entire data collection period is used for converting local currency captured during data collection to US dollars.

Table 3b reports the percentage of outlets selling Supa Arte 4 for less than 500 kyat of all outlets stocking Sup Arte 4.

Numerator	Number of outlets selling Supa Arte 4 for less than 500 kyat.
Denominator	Number of outlets with Supa Arte 4 in at the time of the survey visit, as confirmed by presence of Supa Arte recorded in the antimalarial audit section.
Calculation	Numerator divided by denominator.
Handling missing values	Outlets stocking Supa Arte 4 with missing price information were excluded from the denominator.

#### Table 4: Availability of malaria blood testing among antimalarial-stocking outlets

Table 4 reports the proportion of antimalarial-stocking outlets that had malaria blood testing available. Testing availability is reported among all outlets as well as among individual outlet types, all public outlets, and all private outlets. Availability is reported for any blood test as well as specific test types: microscopy and rapid diagnostic test (RDT).

Numerator	Number of outlets with malaria blood testing available (any, microscopy, RDT).
Denominator	Number of outlets with any antimalarial in stock at the time of the survey visit or reportedly stocked any antimalarial in the previous three months.
Calculation	Numerator divided by denominator.
Handling missing values	<ul style="list-style-type: none"> <li>Antimalarial-stocking outlets with missing information about both availability of microscopy and availability of RDTs are excluded from this table. The number of such outlets is provided in a footnote.</li> <li>Outlets with partial information about availability of blood testing (information about microscopy or RDTs) are included in the denominator of the indicator “any blood testing available.” The number of such outlets is provided in a footnote.</li> <li>Indicators for RDT and microscopy availability exclude outlets with missing availability information respectively (i.e. outlets missing information about microscopy availability are excluded from the microscopy indicator).</li> </ul>
Notes and considerations	Survey inclusion criteria extended to outlets providing blood testing but not stocking antimalarials (“diagnosis/testing-only outlets”). These outlets are excluded from this availability table.

#### Table 5: Price of malaria blood testing

Table 5 reports the median price of blood testing to consumers including any consultation or service fees. The inter-quartile range (IQR) is provided as a measure of dispersion.

Calculation	Median total blood test price in US dollars with inter-quartile range (25 <sup>th</sup> and 75 <sup>th</sup> percentiles).
Handling missing values	Microscopy-stocking outlets that are missing information about price of microscopy are excluded from this indicator. Audited RDTs with missing information about price of testing are excluded from this indicator.
Notes and considerations	Price in US dollars is calculated based on exchange rates available from <a href="http://www.oanda.com">www.oanda.com</a> using the historical exchange rates tool. The average exchange rate over the entire data collection period is used for converting local currency captured during data collection to US dollars.

**Table 6: Antimalarial market share**

Antimalarial market share is the amount of adult equivalent treatment doses (AETD) reportedly sold or distributed in the previous week by outlet type and antimalarial type as a percentage of all AETDs sold/distributed in the previous week. Expressed as a percentage, market share is the amount of a specific antimalarial sold/distributed by a specific outlet type relative to the entire antimalarial market (all antimalarial types sold/distributed by all outlet types). Totals are reported per antimalarial medicine type and per outlet type. Across antimalarial medicine types and outlet types, percentages in the entire table sum 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	AETDs sold/distributed are calculated among audited medicines with complete and consistent information. Antimalarials with incomplete or inconsistent information among key variables that define AETD sold/distributed (active ingredients, strength, formulation, package size, amount sold/distributed) are excluded from the calculation.
Notes and considerations	See Annex 8 for a description of AETD calculation.

**Table 7: Antimalarial market share across outlet type**

Antimalarial market share across outlet type is the amount of adult equivalent treatment doses (AETD) reportedly sold or distributed in the previous week by antimalarial type within each outlet type as a percentage of all AETDs sold/distributed in the previous week within the specified outlet type. Expressed as a percentage, outlet-type market share is the amount 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 per antimalarial medicine type for each outlet type. Across antimalarial medicine types within each outlet type, percentages sum to 100%.

Numerator	Number of AETDs sold/distributed for a specific antimalarial drug category within the specified outlet type.
Denominator	Total number of AETDs sold/distributed within the specific outlet type.
Calculation	Numerator divided by denominator.
Handling missing values	AETDs sold/distributed are calculated among audited medicines with complete and consistent information. Antimalarials with incomplete or inconsistent information among key variables that define AETD sold/distributed (active ingredients, strength, formulation, package size, amount

	sold/distributed) are excluded from the calculation.
Notes and considerations	See Annex 8 for a description of AETD calculation.

**Table 8: Antimalarial disruption of stock**

TEXT...

Numerator
Denominator
Calculation
Handling missing values
Notes and considerations

**Table 9: Provider antimalarial treatment knowledge and practices**

Table 9 reports key indicators of provider antimalarial treatment knowledge and practices. These include knowledge of the first-line treatment and citing the first-line treatment as most effective to treat uncomplicated Pf malaria.

Numerator	<p>A. State first-line: providers who responded to p17 with a generic or brand name consistent with a national first-line treatment, or responded to p17 with “ACT,” or “ACTm” and in p18 provided a generic or brand name consistent with a national first-line treatment. In other words, providers must specifically name the first-line treatment using generic or brand name language in either p17 or p18.</p> <p>B. First-line most effective uncomplicated Pf malaria: Any response for this open-ended question whereby: 1) one medicine or a set of medicines to be used in combination is mentioned only i.e. multiple antimalarial medicines mentioned will be counted as incorrect; and 2) the combination of medicines is an ACT – defined either by using a brand name, generic name, “ACT,” or “ACTm.” If the provider mentions a correct ACT response and also mentioned an anti-pyretic (e.g. paracetamol), this response will be counted as correct. However, if the provider mentions a correct ACT response and also mentioned other drugs – such as an antibiotic – this answer will be counted as incorrect.</p>
Denominator	<p>A. State first-line: All providers who responded to p17 – please name the first-line medicine.</p> <p>B. First-line most effective uncomplicated Pf malaria: All providers who responded to p13/14, including providers who responded with “don’t know,” who provided names of non-antimalarial medicines, and who responded with more than one antimalarial medicine not intended to be used as combination therapy.</p>
Calculation	Numerator divided by denominator.
Handling missing values	<p>A. Providers missing a response to this question will be excluded from this indicator.</p> <p>B. Providers missing a response to this question will be excluded from the indicator.</p>

## Annex 8. Adult Equivalent Treatment Dose (AETD)

### Definition

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

While it is recognized that the use of AETDs may over-simplify and ignore many of the complexities of medicine consumption and use, this analytical approach was selected because it standardizes medication dosing across drug types and across countries (which may sometimes vary) thus permitting comparisons on both prices and volumes calculated on the basis of an AETD.

Additional considerations:

- Where combination therapies consist of two or more active antimalarial ingredients packaged together (co-formulated or co-blistered), the strength of only one principal ingredient is used. The artemisinin derivative is used as the principal ingredient for ACT AETD calculations.
- Co-blistered combinations are generally assumed to be 1:1 ratio of tablets unless otherwise documented during fieldwork or through manufacturer websites.
- Sulfamethoxypyrazine-pyrimethamine is assumed to have the same full course adult treatment dose as sulfadoxine-pyrimethamine.

### Calculation

Information collected on drug strength and unit size as listed on the product packaging was used to calculate the total amount of each active ingredient found in the package. The number of AETDs in a unit was calculated.<sup>8</sup> The number of AETDs in a monotherapy is calculated by dividing the total amount of active ingredient contained in the unit by the AETD (i.e. the total number of mg required to treat a 60kg adult). The number of AETDs for a combination therapy was calculated by dividing the total amount of the active ingredient that was used as the basis for the AETD by the AETD.

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<sup>8</sup> The unit is dependent on the drug dosage form. The unit for antimalarials in tablet, suppository, or granule form is the package. The unit for injectable antimalarials is the ampoule. The unit for syrup and suspension antimalarials is the bottle.

**Table X4: Adult Equivalent Treatment Dose Definitions**

<b>Antimalarial Generic [Ingredient used for AETD mg dose value]</b>	<b>Dose used for calculating 1 AETD (mg required to treat a 60kg adult)</b>	<b>Source</b>
Artemether	960mg	WHO Use of Antimalarials, 2001
Artemether-Lumefantrine [Artemether]	480mg	WHO Guidelines for the treatment of malaria 2 <sup>nd</sup> edition, 2010
Artemisinin-Napthoquine [Artemisinin]	2400mg	WHO Use of Antimalarials, 2001
Artesunate	960mg	WHO Use of Antimalarials, 2001
Artesunate Amodiaquine [Artesunate]	600mg	WHO Guidelines for the treatment of malaria 2 <sup>nd</sup> edition, 2010
Chloroquine	1500mg	WHO Guidelines for the treatment of malaria 2 <sup>nd</sup> edition, 2010
Chloroquine-Primaquine [Chloroquine]	1500mg	WHO Guidelines for the treatment of malaria 2 <sup>nd</sup> edition, 2010
Dihydroartemisinin- Piperaquine [Dihydroartemisinin]	360mg	WHO Guidelines for the treatment of malaria 2 <sup>nd</sup> edition, 2010
Mefloquine	1000mg	WHO Model Formulary, 2008
Primaquine	45mg	WHO Guidelines for the treatment of malaria 2 <sup>nd</sup> edition, 2010
Quinine	10408mg	WHO Model Formulary, 2008
Sulfadoxine-Pyrimethamine	1500mg	WHO Model Formulary, 2008

