
PRESIDENT'S MALARIA INITIATIVE

END USE VERIFICATION SURVEY

REPUBLIC OF BENIN, DECEMBER 2017

SURVEY DATE: DECEMBER 2017
NUMBER OF FACILITIES: 16
REGIONS: ZOU AND COLLINES
RAINY SEASON: AUGUST TO OCTOBER 2017

The end use verification (EUV) survey was conducted on December 21-30, 2017, in the departments of Zou and Collines.

The main objective of the EUV survey was to verify the continuous availability of malaria commodities in malaria patients' last point of contact. The survey intended to ensure that good diagnostic and prescription practices within these last points of contact, i.e., health facilities (health clinics or zone hospitals), were in line with the new treatment guidelines. Data collection period was December 26-30, 2017.

In general, the survey produced the following observations:

SUPPLY CHAIN

- The facilities with the lowest percentages of unexpired commodities were the Djidja zone hospital and Outo health center (HC).
- In general, there were many more stock-outs of artesunate + amodiaquine treatments than artemether-lumefantrine (AL).
- 14 of the facilities visited (88%) had all AL treatments available and were therefore able to treat patients according to National Malaria Program recommendations.
- Two facilities (13%) did not have any AL treatments available during the survey period.
- In 100% of cases, the same facility orders commodities and transports them from the delivery point to the facility.

TREATMENT

The survey also assessed provider compliance with the new treatment guidelines for uncomplicated malaria by reviewing HC and zone hospital treatment records.

Surveyors reviewed a total of 3,103 consultations recorded for the month of October 2017; of those, 39% were patients under 5 and 61% were patients over 5.

The following main observations were made:

- 53% of patients who came in for a consultation were diagnosed with uncomplicated malaria; 51% of patients under 5 had uncomplicated malaria and 49% of patients over 5 had malaria. Most of these cases were diagnosed and treated in peripheral HCs, as dictated by Benin's health system. This reflects the fact that malaria remains the number one reason for patient consultations.

- The latest guideline stipulating that any suspected case must be confirmed, either by rapid diagnostic test (RDT) or microscopy, before being diagnosed with malaria, has not yet been implemented in all health facilities. The survey showed that 86% of uncomplicated malaria cases were diagnosed by RDT and 14% by microscopy.
- 63% of uncomplicated malaria cases diagnosed in children under 5 were treated with artemisinin-based combination therapy (ACT), compared to 79% of patients over 5. Ideally, 100% of uncomplicated malaria cases in all age groups would be treated with ACT, so this reflects a problem with compliance with the new national guidelines for treating uncomplicated malaria. This situation could be explained by several factors, such as stock-outs of ACT and providers not understanding the guidelines.
- 11% of children under 5 who had a positive RDT received an antibiotic in addition to ACT and 7% of patients over 5 with a positive RDT were treated with an antibiotic in addition to ACT. This shows that these patients came to their consultation with malaria associated with another infectious pathology.

% OF FACILITIES WITH STOCK-OUTS ON THE DAY OF THE VISIT OR FOR MORE THAN 3 CONSECUTIVE DAYS*

Commodity	Day of the visit	3+ days*
AL 1 × 6	4/16 25%	14/16 88%
AL 2 × 6	10/16 63%	11/16 69%
AL 3 × 6	12/16 75%	8/16 50%
AL 4 × 6	13/16 81%	13/16 81%
LLINs	3/11 27%	2/10 20%
SP	2/15 13%	3/15 20%

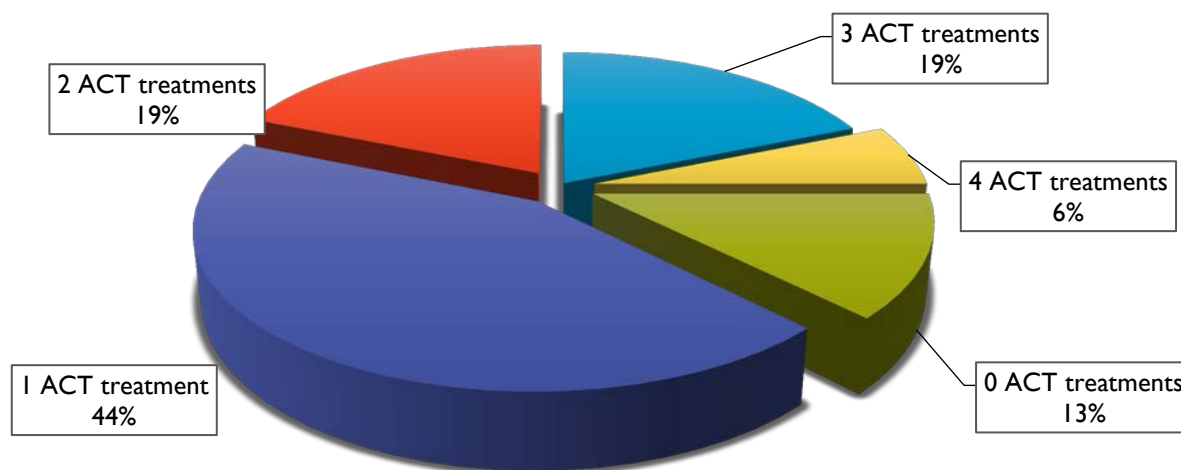
LLIN = Long-lasting insecticidal net
 SP = Sulfadoxine/pyrimethamine

Commodity	Day of the visit	3+ days*
Quinine 100**	9/28 32%	12/26 46%
Quinine 300**	6/31 19%	10/30 33%
Quinine 600	2/15 13%	2/15 13%
RDTs	5/16 31%	4/15 27%
Folic acid	3/15 20%	7/15 47%

* Requires an available stock record with up-to-date information for the last 3 months

** Quinine 100 tablets and inj.; quinine 300 tablets and inj.

ACT availability on the day of the visit



COMMODITIES AVAILABLE IN HEALTH FACILITIES* (BY MIN/MAX PARAMETERS)

Commodity	No. of health facilities*	Understocked	Appropriate stock level	Overstocked
AL 1 × 6	16	62.50%	25.00%	6.25%
AL 2 × 6	15	80.00%	20.00%	0.00%
AL 3 × 6	15	80.00%	6.67%	0.00%
AL 4 × 6	15	93.33%	6.67%	0.00%
LLINs	6	16.67%	16.67%	50.00%
RDTs	14	64.29%	14.29%	14.29%
SP	13	23.08%	38.46%	30.77%
Quinine 100	24	12.50%	8.33%	37.50%
Quinine 300	26	30.77%	30.77%	26.92%
Quinine 600	13	23.08%	15.38%	46.15%
Folic acid	14	42.86%	50.00%	7.14%

* These indicators could only be calculated for facilities with a stock record containing information on what was delivered during the previous 3 months.

HEALTH WORKERS TRAINED BY TECHNICAL DOMAIN*

Technical domain	Percentage
Treatment	116/128 90.6%
IPT**	35/49 71.4%
RDT	147/168 87.5%
Microscopy	25/26 96.2%
Logistics Management Information System	47/60 78.3%

* Workers trained at a 3-day workshop in each technical domain.

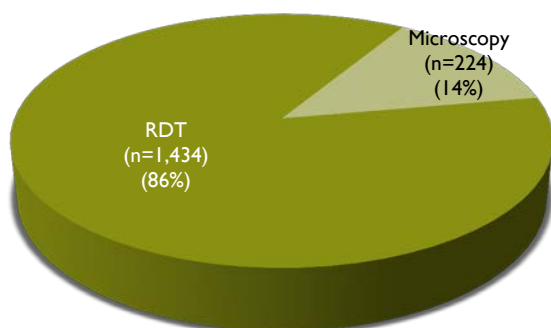
** Intermittent preventive treatment (IPT)

ON-TIME REPORTING OF MALARIA COMMODITY STOCKS*

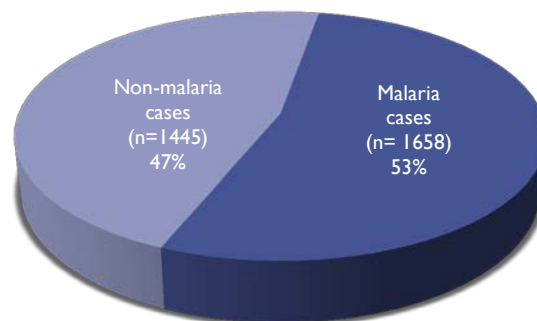
Status	Percentage
On-time	9/16 56%
Late	2/16 13%
Unknown	5/16 31%

* On-time reporting was calculated based on the reports confirmed available to surveyors on the day of the visit.

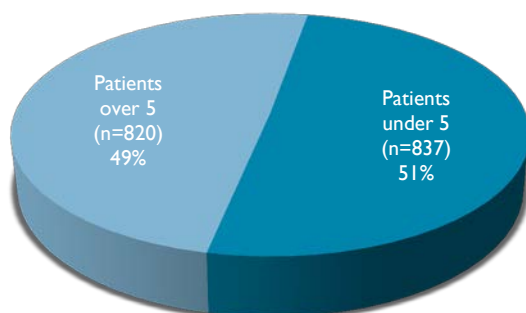
Diagnosis method (confirmed malaria cases)



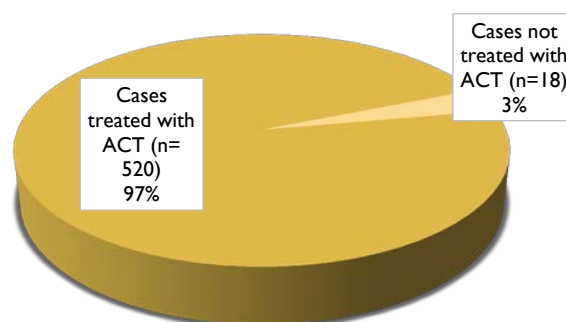
Cases of malaria (uncomplicated + severe)



Cases of malaria (uncomplicated + severe) by age



Uncomplicated malaria cases in children under 5 treated with ACT



1. Confirmed cases are only cases that have tested positive, either by RDT or microscopy. A clinical diagnosis of malaria cannot be made without testing.
2. According to Benin's malaria treatment policy, ACT is only prescribed to patients with a confirmed diagnosis of uncomplicated malaria. Therefore, n = confirmed cases of uncomplicated malaria in patients under 5.

MALARIA TREATMENT SUMMARY

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|---|--|
| <ol style="list-style-type: none"> 1. Total number of patients: 3,103 2. Total number of patients under 5: 1,207 3. Total number of patients over 5: 1,896 4. Total number of patients who came to a consultation because of fever: 1,771 | <ol style="list-style-type: none"> 5. Total number of cases of malaria: 1,658 6. Total number of patients under 5 with malaria: 837 7. Total number of patients over 5 with malaria: 820 8. Total number of RDTs used: 1,797 |
|---|--|

	TOTAL
Patients under 5, RDT performed	836
Patients under 5, positive (+) RDT	705
Patients under 5, ACT administered	520
Patients under 5, positive (+) RDT, ACT administered	520
Patients under 5, positive (+) RDT, antibiotic administered	178
Patients under 5, negative (-) RDT, antibiotic administered	88
Patients under 5, negative (-) RDT, ACT administered	4
Patients over 5, RDT performed	960
Patients over 5, positive (+) RDT	734
Patients over 5, ACT administered	694
Patients over 5, positive (+) RDT, ACT administered	627
Patients over 5, positive (+) RDT, antibiotic administered	97
Patients over 5, negative (-) RDT, antibiotic administered	138
Patients over 5, negative (-) RDT, ACT administered	7
Quinine tablets	173
Quinine injectables	307
SP (not for IPT)	5
Monotherapy	200
Thick smear administered	231
Clinical diagnosis performed	224
Patients with malaria who did not receive appropriate antimalarial treatment	112