



January 1- December 31, 2016

Epidemiology Bureau
 Public Health Surveillance Division

Table 1. Quick Facts

Demographic Data	Week 1 to 52 (2016)	Week 1 to 52 (2015)
Total Reported Case	6922	8,050
Sex		
Male	57%	57%
Female	43%	43%
Age Range		
less than 1 y/o	52	66
1 to 4 y/o	1516	1832
5 to 9 y/o	1574	1939
10 to 14 y/o	1185	1279
15 to 19 y/o	639	754
20 to 24 y/o	439	437
25 to 29 y/o	334	383
30 to 34 y/o	260	306
35 to 39 y/o	221	268
40 to 44 y/o	167	209
45 to 49 y/o	162	163
50 to 54 y/o	149	159
55 to 59 y/o	68	94
above 60 y/o	149	161
Unspecified	7	0
History of Travel to Endemic Area		
Yes	95%	3%
No	5%	97%
Outcome		
Alive	6915	8034
Died	7	16
Case Fatality Rate	0.10%	0.20%

Trend in the Philippines

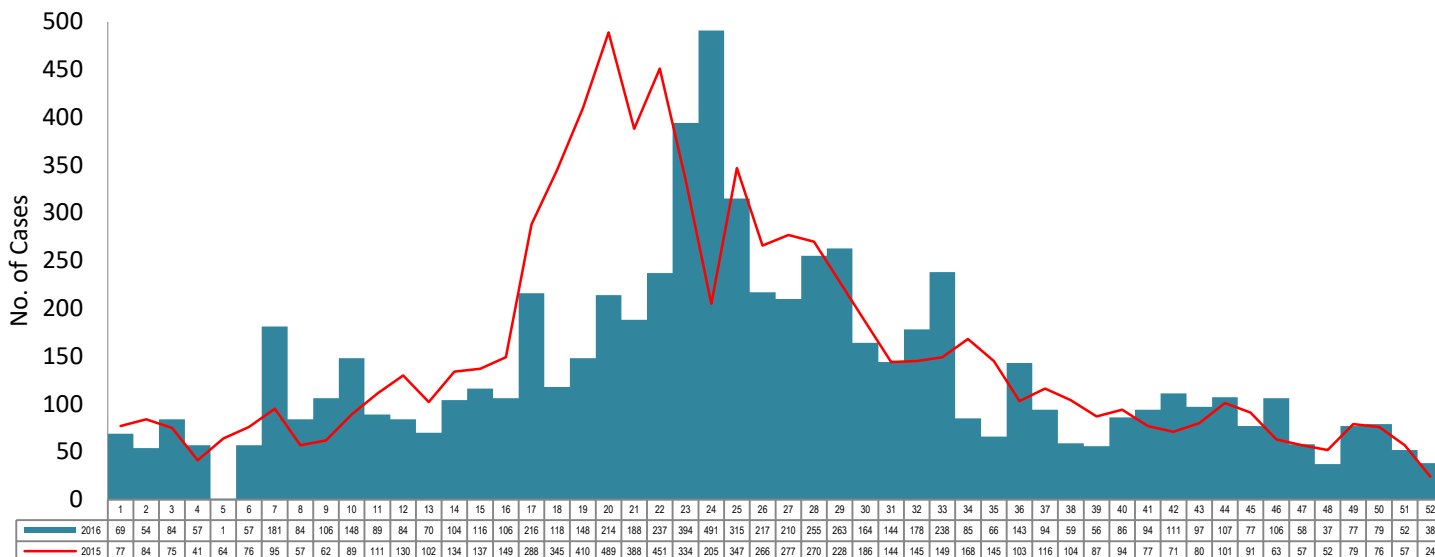
A total of **6922** suspect malaria cases were reported nationwide from January 1 to December 31, 2016. This is 14% lower compared to the same period last year (Fig. 1).

As of December 2016, there were 32 provinces declared as Malaria free, 41 provinces on Elimination status while the remaining 9 provinces were still malaria endemic (Fig.2).

Geographic Location

Most of the cases (Fig.3) were from the following regions: **Region IV-B** (93%), **Region 12** (2%), **Region 11** (2%), and **ARMM** (1%) while the remaining 2% came from the rest of the regions in the country. Palawan (Table 2) accounted 92% % of the reported cases followed by Sultan Kudarat (2%), Davao Del Norte (2%) while the rest came from the rest of the provinces in the country.

Fig. 1 Reported Malaria Cases by Morbidity Week, Philippines, Jan 1 – Dec 31, 2016
 2015 v.s 2016 (N=6922)



*NOTE: Case counts reported here do NOT represent the final number and are subject to change after inclusion of delayed reports and review of cases.
 Data Source: 2015 & 2016 Cases-Philippine Integrated Disease Surveillance and Response & Phil. Malaria Information System Database



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Fig. 2 Malaria Provincial Classification & Reported Cases Jan1 – Dec 31, 2016, (N=6922)

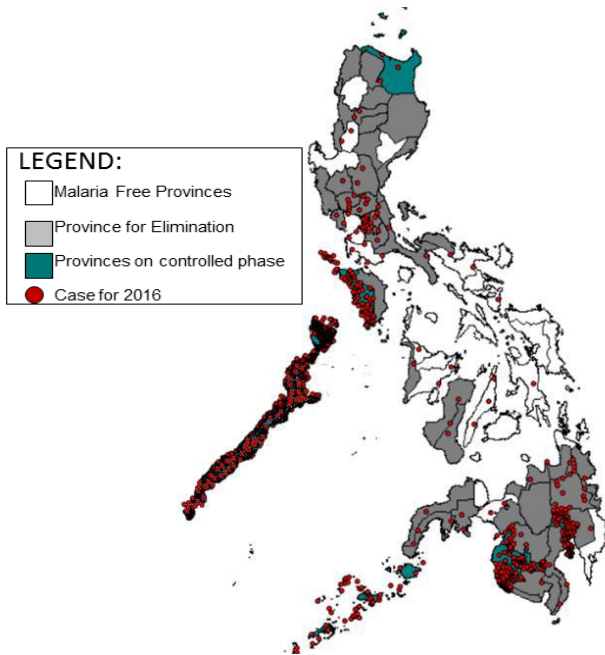


Fig. 4 Reported Malaria Cases by Change Rate, Palawan 2015 vs. 2016

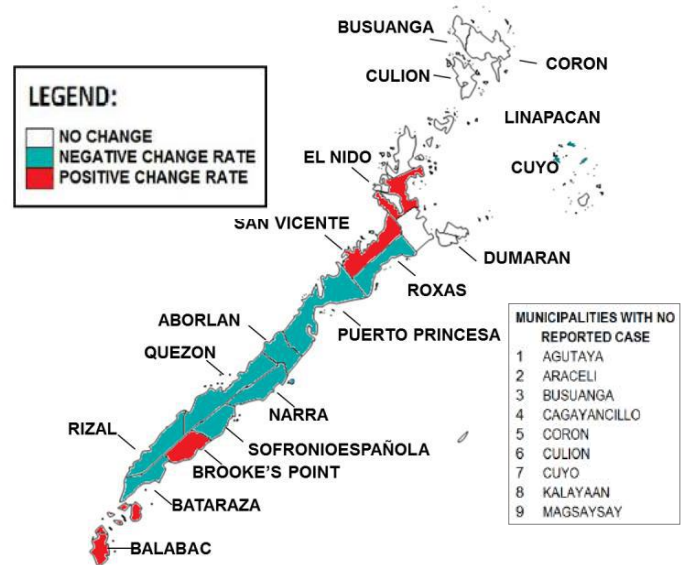


Fig. 3 Reported Malaria Cases by Region, Jan1 –Dec 31, 2016, (N=6922)

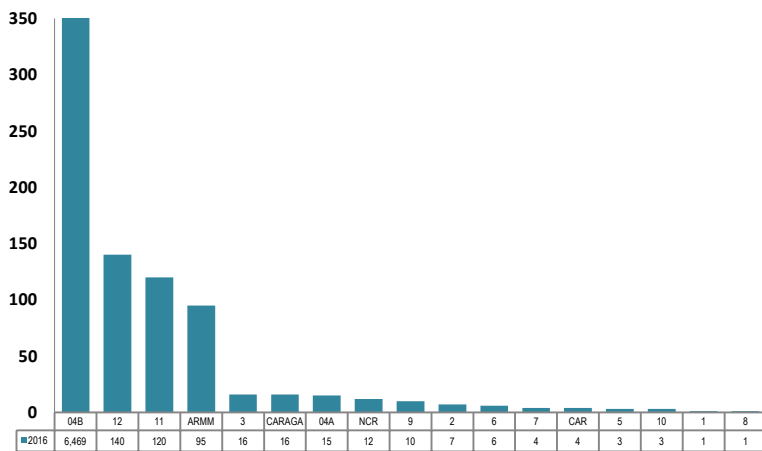


Table. 2 Reported Malaria Cases by Province, Jan1 – Dec 31, 2016, (N=6922)

PROVINCE	CASES	%	PROVINCE	CASES	%
PALAWAN	6,384	92.23%	ILOILO	2	0.03%
SULTAN KUDARAT	138	1.99%	LAGUNA	2	0.03%
DAVAO DEL NORTE	115	1.68%	LANAO DEL NORTE	2	0.03%
OCCIDENTAL MINDORO	85	1.23%	MOUNTAIN PROVINCE	2	0.03%
SULU	38	0.55%	NEGROS OCCIDENTAL	2	0.03%
MAGUINDANAO	29	0.42%	NUEVA ECLIA	2	0.03%
TAWI-TAWI	24	0.35%	QUEZON	2	0.03%
AGUSAN DEL SUR	14	0.20%	ZAMBOANGA SIBUGAY	2	0.03%
METRO MANILA	12	0.17%	AGUSAN DEL NORTE	1	0.01%
BASILAN	8	0.12%	AKLAN	1	0.01%
CAGAYAN	7	0.10%	ANTIQUE	1	0.01%
BULACAN	6	0.09%	COMPOSTELA VALLEY	1	0.01%
PAMPANGA	5	0.07%	LEYTE	1	0.01%
RIZAL	5	0.07%	MISAMIS ORIENTAL	1	0.01%
BATANGAS	4	0.06%	NEGROS ORIENTAL	1	0.01%
DAVAO DEL SUR	4	0.06%	NORTH COTABATO	1	0.01%
CEBU	3	0.04%	PANGASINAN	1	0.01%
ZAMBOANGA DEL SUR	3	0.04%	SORSOGON	1	0.01%
BATAAN	2	0.03%	SOUTH COTABATO	1	0.01%
BENGUET	2	0.03%	SURIGAO DEL SUR	1	0.01%
CAMARINES SUR	2	0.03%	TARLAC	1	0.01%
CAVITE	2	0.03%	ZAMBOANGA DEL NORTE	1	0.01%

Palawan reported 15% decrease in cases than last year (7471). Large proportion (36%) of reported cases were from the municipality of Rizal ; followed by Brooke’s Point (25%) , Bataraza (18%), and Balabac (9%) while the remaining 12% came from the other municipalities in Palawan. In terms of change rate, the municipality of San Vicente (343%) , Taytay (150%), Balabac (108%) and Brooke’s Point (37%) had more cases than the last year while the city of Puerto Princesa, municipalities of Rizal, Roxas, Bataraza, Narra, Quezon, Aborlan, Sofronio Española and Linacapan had lower reported cases (Fig 4). No case was reported among the municipalities of Agutaya, Araceli, Busuanga, Cagayancillo, Coron. Culion, Kalayaan, and Magsaysay.

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Profile of Cases

Ages of cases ranged from 0 to 96 years old with median of 11 y/o. Majority of cases were male (57%), most (23%) of the cases belonged to the 5-9 year old age-group (Fig. 5).

Majority (67%) of the reported cases were indigenous people (IP), (Fig. 6) with the IP group of Palaw'an having the largest (72%) proportion of cases followed by Molbog (10%) and Manobo (3%).

The tendency of IPs to live in mountainous areas in connection to their livelihood put them at higher risk not only of malaria exposure but as well as limited access to health care.

Malaria Parasite Distribution

Majority (79%) of parasite detected were *P. Falciparum* followed by *P. Vivax* (12%) with a small proportion of Mixed Parasites (4%) and *P Malariae* (2%) while the rest (2%) were unspecified.

The distribution of parasites varied in Palawan and non-Palawan provinces. Large proportion (83.7%) of parasite detected in Palawan was *P. Falciparum* while *P. Palciparum* (28.8%) and *P. Vivax* (23.4%) comprise most of parasites in non-Palawan provinces.

Laboratory Confirmation

Majority (53.8 %) of malaria screening test was performed thru the use of Rapid Diagnostic Test (RDT) while a smaller proportion (39.8%) thru microscopy (Fig. 8). Although microscopy remains a gold standard in diagnosing malaria, the use of RDT was beneficial as an initial test especially among provinces where trained malaria microscopists were no longer available.

Figure 5. Reported Malaria Cases by Age & Sex, Jan 1 – Dec 31 2016, Philippines (n=6915*)

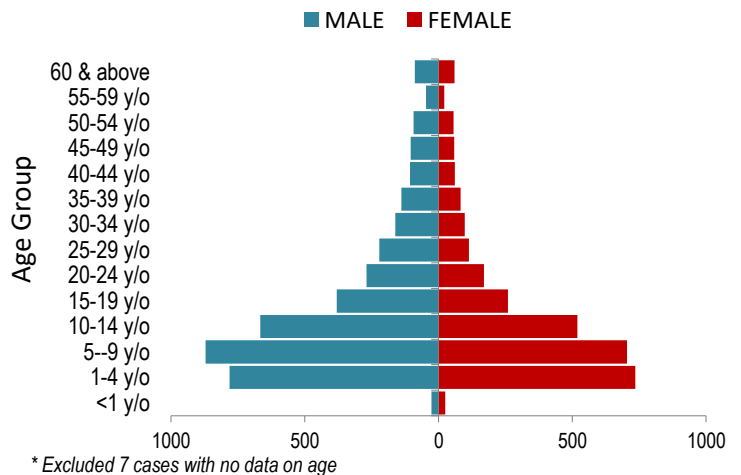


Figure 6. Reported Malaria Cases by Ethnicity, Jan 1 – Dec 31, 2016, Philippines (N=6922)

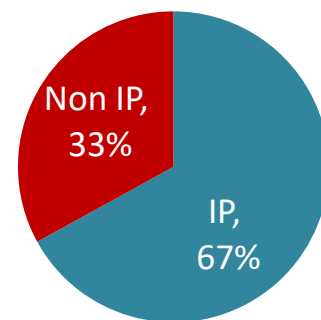
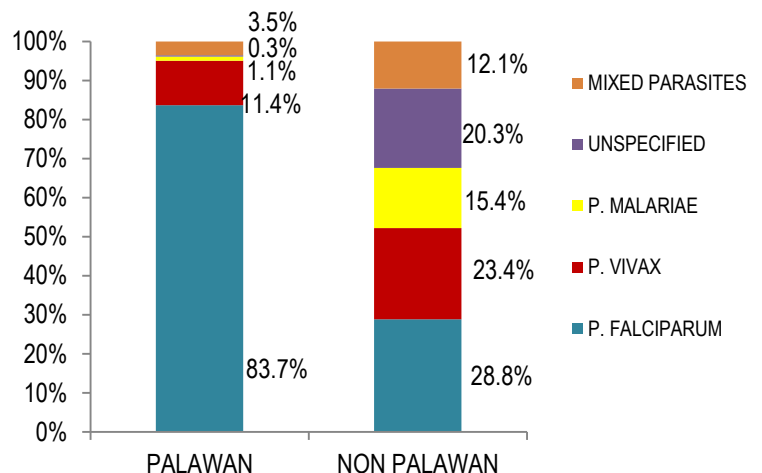


Figure 7. Reported Malaria Cases by Parasite, Jan 1 – Dec 31, 2016, Palawan vs. Non Palawan Provinces (N=6,922)



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Case Classification

Majority (94.1%) of case were Confirmed Uncomplicated, a small proportion were Confirmed Severe (5.3%) while the rest were classified either as Confirmed Malaria Death, Probable Uncomplicated, Probable Severe and Asymptomatic Malaria (Table 3).

Severity of the Disease

Out of the 6,922 reported malaria cases, 366 (5.3%) were classified as severe malaria and hospitalized. Seven (7) deaths were reported with a Case Fatality Rate (CFR) of 0.10%, significantly lower by two folds compared last Year (0.20%).

Majority (86%) of deaths due to malaria were from the IP group of Palaw'an in the municipalities of Bataraza, Brooke's Point, Quezon and Marcos (Fig. 9). Six (6) out of the seven deaths were due to P. Falciparum while a single death was from a mixed infection (P. Falciparum & P. Malariae). No History of travel was reported among these deaths suggesting that these cases including the parasites were transmitted locally.

Turnaround time: Consultation and Treatment

The interval of days from the onset of symptoms to consultation and onset of symptoms to receiving anti-malarial treatment significantly varied in terms of outcome of malaria infection (Table 4). Those who died from malaria had longer median interval from the onset of symptoms to consultation and receiving anti-malaria medication. This suggests that early recognition of the symptoms and access to anti-malaria medication have a relationship in the prognosis of the disease. Recognizing that majority of cases (76%) and those who died from malaria were IPs (86%) verified vulnerability of these groups and suggest tailored intervention among them.

The difficulty of IPs to seek early consultation and treatment may be due to their personal health behaviour, inadequacy of understanding of the disease, and proximity of the health facilities to their communities.

Figure 8. Reported Malaria Cases by Laboratory test, Jan 1- Dec 31,2016, Philippines (N=6,922)

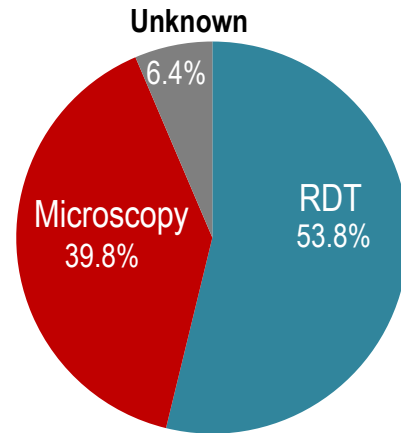
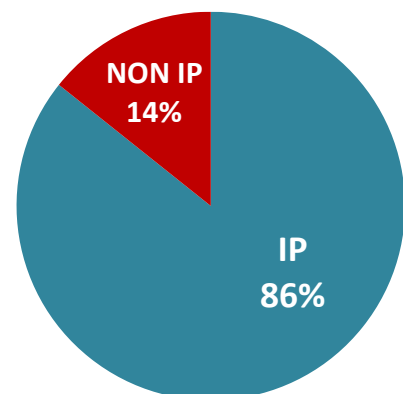


Table 3. Reported Malaria Cases by Case Classification, Jan 1-Dec 31,2016, Philippines (N=6,922)

Classification	Number of Cases	%
Confirmed Uncomplicated	6,512	94.1%
Confirmed Severe	366	5.3%
Asymptomatic Malaria	18	0.3%
Probable Uncomplicated	15	0.2%
Confirmed Malaria Death	7	0.1%
Probable Severe	4	0.1%
Total	6,922	100.0%

Figure 9. Reported Malaria Deaths by Ethnicity, Jan 1- Dec 31,2016, Philippines (n=7)



Case Fatality Rate= 0.10%

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Elimination Status

Out of the 6,922 reported malaria cases, almost all (99%) were from provinces on “Control status” such as Palawan, Davao Del Norte and Sultan Kudarat and etc. while a smaller proportion (1%) of cases were from provinces in Elimination Phase and provinces declared as Malaria Free. Although 94 cases (Table 5) were reported from provinces declared as Malaria Free and under Elimination, all had history of travel to malaria endemic areas.

Large proportion (71%) of cases with history of travel visited areas in the country with Malaria transmission such as Palawan while 12% reported history of travel to malaria endemic countries/territories such as Angola, Afghanistan, Congo, Ghana, Liberia, Mozambique, Nigeria, Papua New Guinea, Sabah Malaysia, Solomon Island and South Sudan, (Fig. 10).

Table 4. Interval of days from Onset of symptoms to consultation and Onset of symptoms to Receiving anti-malarial medication by Outcome, Jan 1- Dec 31,2016 Philippines (n=5258)

Outcome	Onset of Symptoms to Consultation		Onset of Symptoms to receiving Anti Malaria Medication	
	Mean	Median	Mean	Median
Alive	4.6	3	4.5	3
Died	7.4	7	7	7

**Excluded 1,664 on analysis due to absence of data either on onset of symptoms or date of receiving treatment*

Table 5. Reported Cases by Malaria Provincial Classification & History of Travel, Jan 1- Dec 31,2016 Philippines (N=6,922)

Provincial Classification	Cases	History of Travel
Control	6828	278
Provinces for Elimination	74	74
Malaria Free Provinces	20	20
Total	6,922	372

Table 6. Reported Cases by Place of Travel, Jan 1- Dec 31,2016 Philippines (n=374)

Place of Travel	Cases	%
Abroad	44	12%
Local	265	71%
Unspecified	65	17%
Total	374	100%



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Figure 10. Reported Malaria Cases by History of Travel to Countries/ Territories with Malaria Transmission, Jan 1- Dec 31,2016



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