



Dengue

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Outline



- Background
- Epidemiology
- Etiologic agent
- Mode of transmission
- Clinical signs/symptoms
- Supportive management
- Prevention & Control

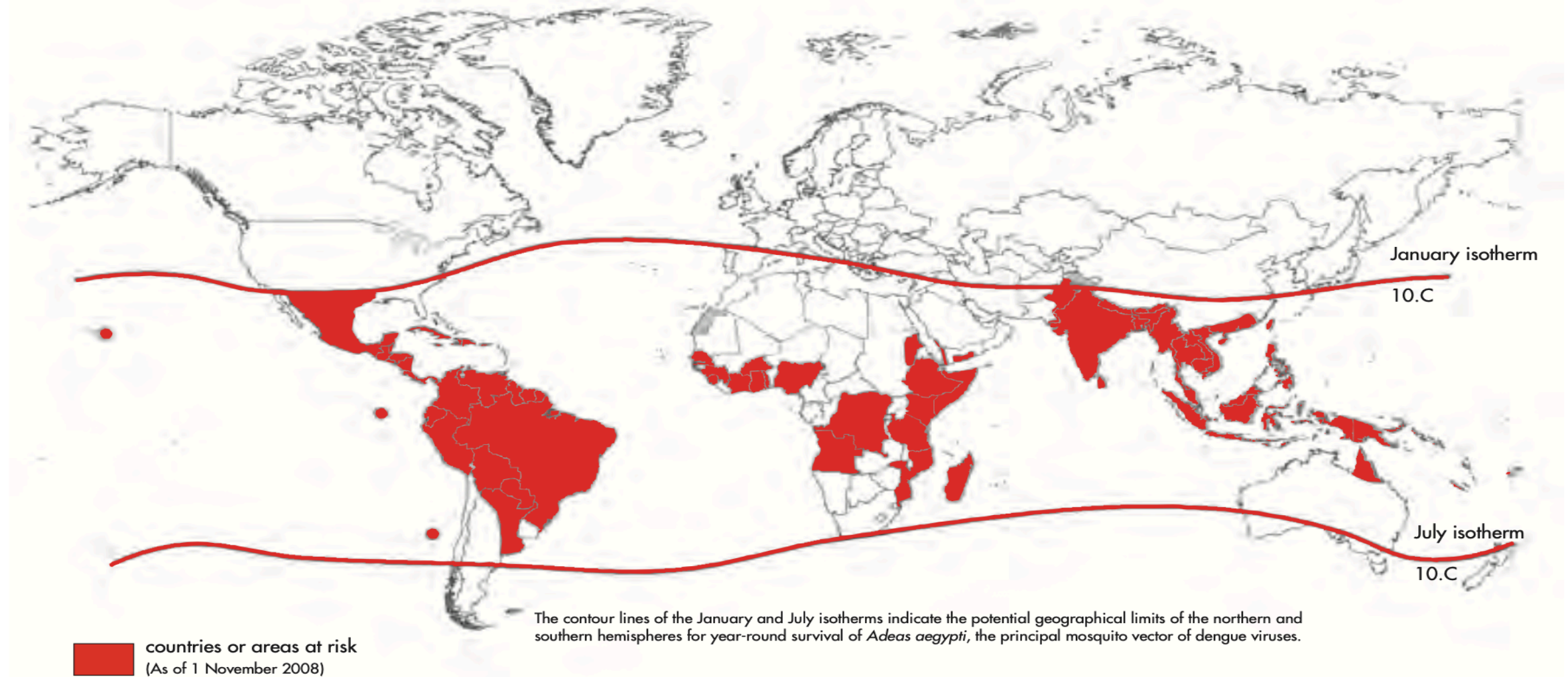
Background

- Dengue is the fastest spreading vector-borne disease in the world endemic in 100 countries.
- Dengue virus has four serotypes (DENV1, DENV2, DENV3 and DENV4)
- First infection with one of the four serotypes usually is non-severe or asymptomatic, while second infection with one of other serotypes may cause severe dengue.
- Dengue has no treatment but the disease can be early managed.
- The five year average cases of dengue is 185,008; five year average deaths is 732; and five year average Case Fatality Rate is 0.39 (2012-2016 data).

Epidemiology

- Dengue is the most rapidly spreading mosquito-borne viral disease in the world.
- In the last 50 years, incidence has increased 30-fold with increasing geographic expansion to new countries and, in the present decade, from urban to rural settings.
- An estimated 50 million dengue infections occur annually and approximately 2.5 billion people live in dengue endemic countries.
- Some 1.8 billion (more than 70%) of the population at risk for dengue worldwide live in member states of the WHO South-East Asia Region and Western Pacific Region, which bear nearly 75% of the current global disease burden due to dengue.

Figure 1.1 Countries/areas at risk of dengue transmission, 2008



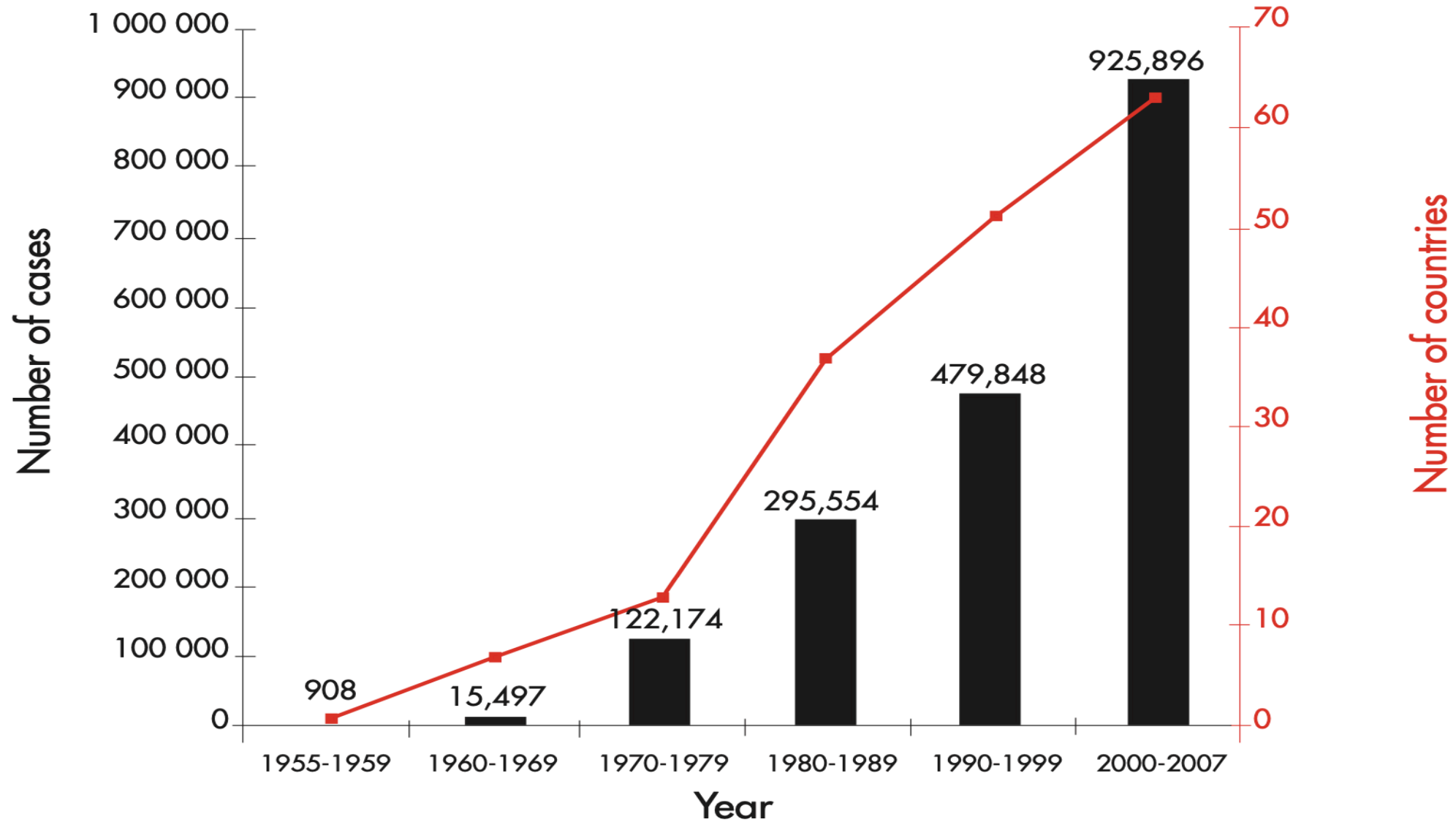
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Data Source: World Health Organization Map
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Figure 1.2 Average annual number of dengue fever (DF) and dengue haemorrhagic fever (DHF) cases reported to WHO, and of countries reporting dengue, 1955–2007



Philippines

Situation Report 9

5 November 2019

	Cases	Deaths	CFR
2018	180,072	927	0.51%
2019	371,717	1,407	0.38%
Between 1 January-19 October 2019			

Highlights

- *371,717 dengue cases, including 1,407 deaths, reported from 1 January to 19 October 2019: 106% higher than in 2018.*
- *5,927 newly reported dengue cases and 20 deaths between 13 and 19 October, decreased from 6,561 cases in the preceding week, and 23% lower than in the same epidemiological week in 2018.*
- *Weekly Case Fatality Rate (CFR) of 0.34% in epidemiological week 42 (13-19 October 2019) is lower than in same period in 2018 (0.52%). Accumulative CFR of 0.38% is also lower than in 2018 (0.51%)*
- *A National Dengue Epidemic was declared on 6 August 2019.*
- *12 out of 17 regions exceed either the alert or the epidemic threshold*

Current Situation

Between 1 January and 19 October 2019, 371,717 dengue cases including 1,407 deaths were reported through the DOH routine surveillance system, with a CFR of 0.38%.

Since the beginning of the outbreak, children aged 5-9 years have consistently been the most affected age group among dengue cases (23%) and deaths (38%). Similarly, the majority of dengue cases are consistently male (56%), and the majority of dengue deaths are female (54%).

Between 13 and 19 October, 5,927 cases and 20 deaths were reported, compared to 6,561 cases and 14 deaths in the preceding week, and 23% lower than in 2018. Similarly, the weekly CFR of 0.34% in epidemiological week 42 is lower than in the same time period in 2018 (0.52%) (Figure 2).

Please note that weekly cases are subject to change after inclusion of delayed reports.

Figure 1: Weekly reported dengue cases in #
Philippines, epidemiological week 1-42 2018 and 2019

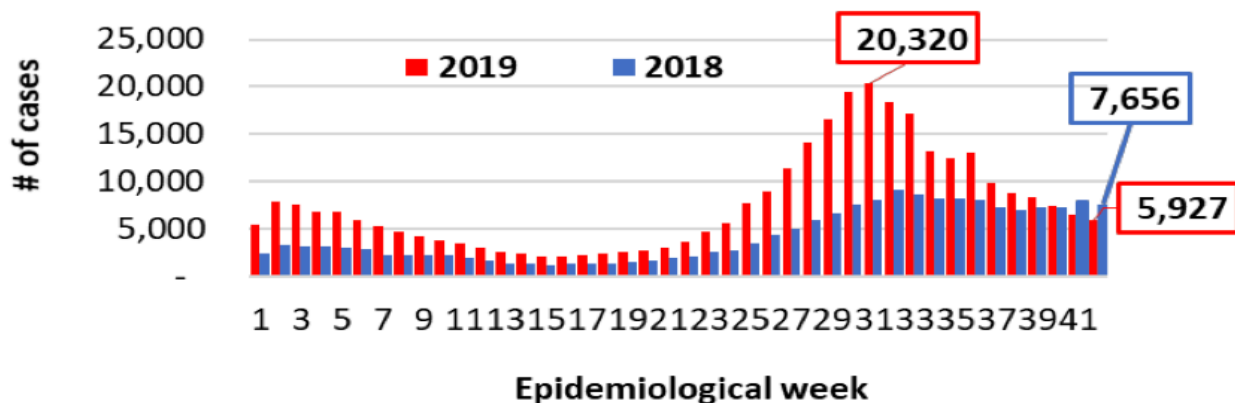


Figure 2: Weekly dengue Case Fatality Rate (CFR) in %
Philippines, epidemiological week 20-42 2018 and 2019

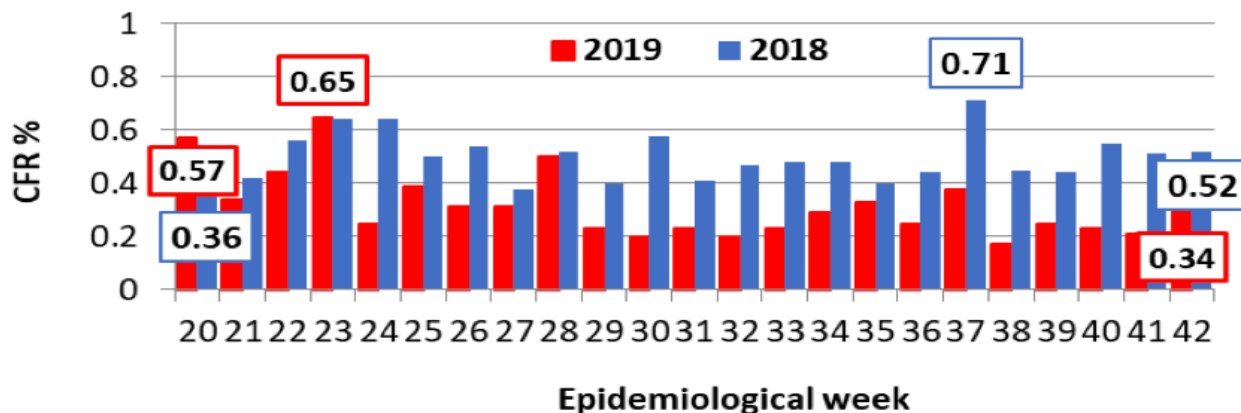
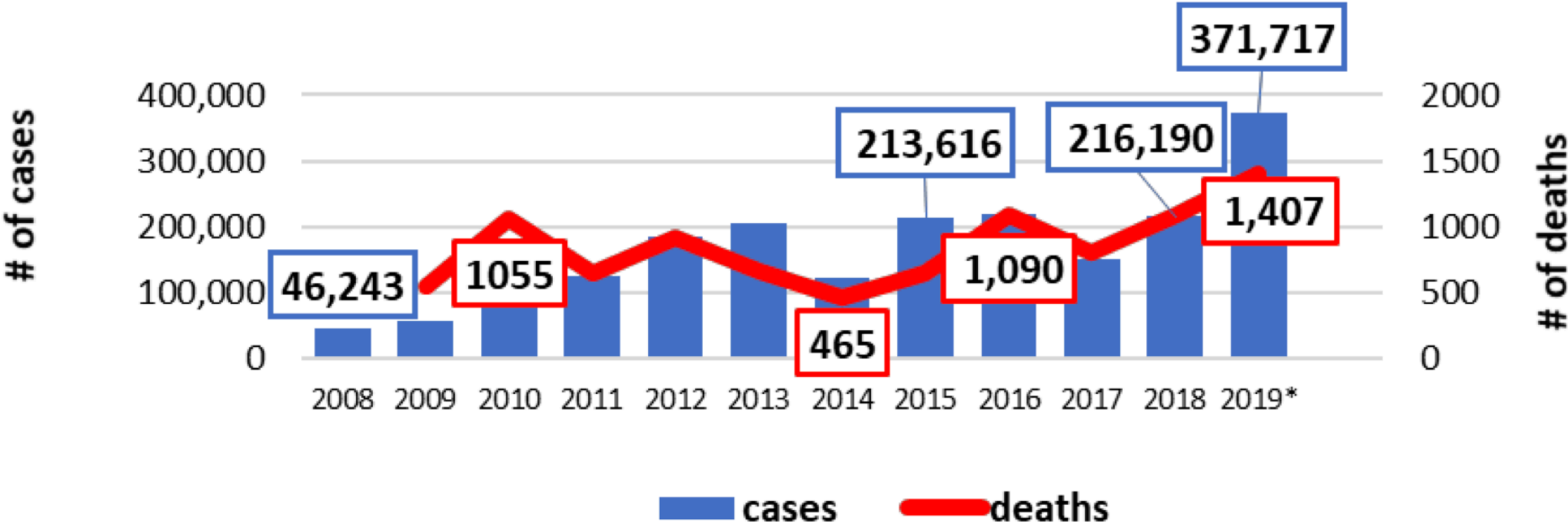


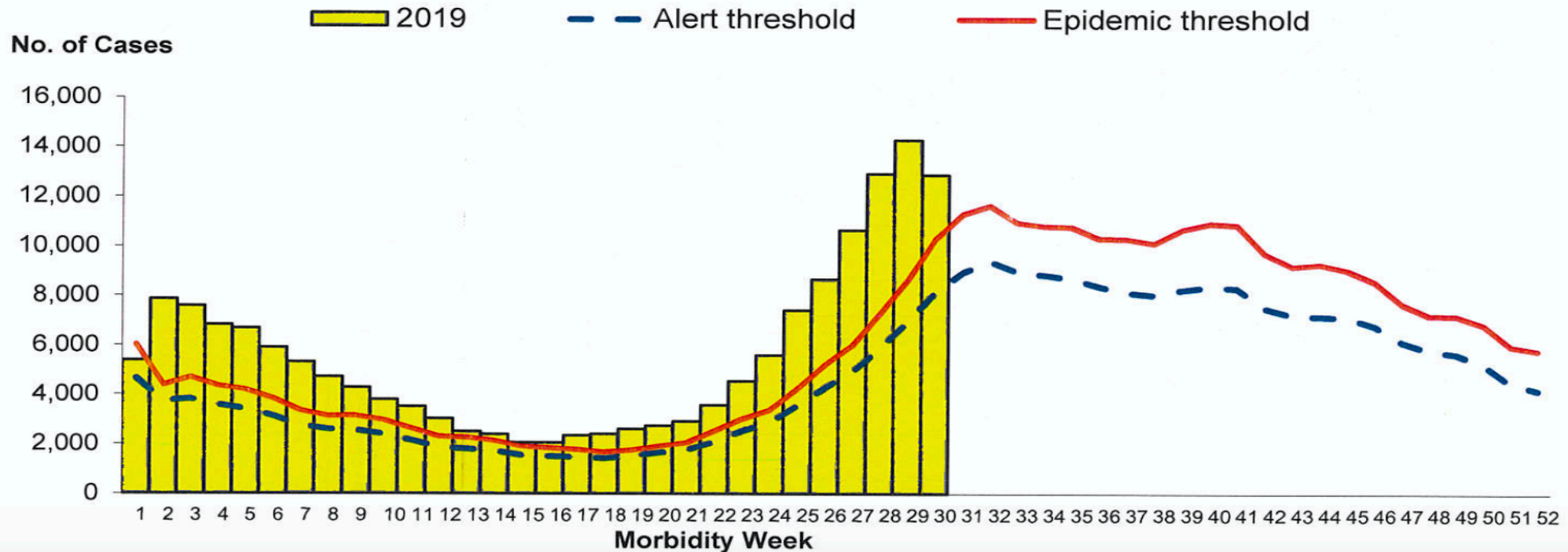
Figure 3: Annual total dengue cases and deaths
*in the Philippines 2008-2019**



** Until 19 October 2019*



Figure 1. Reported Dengue Cases (N=271,480)
Morbidity Weeks 1 - 35 (January 1- August 31, 2019) vs Epidemic and Alert Thresholds



A total of 271, 480 Dengue cases were reported nationwide from January 1 to August 31. This is 95% higher compared to the same period last year (85,981). Figure 1 shows weekly data of reported dengue cases in 2019 compared to alert and epidemic thresholds.

**Table 1. Reported Dengue Cases by Region
Philippines, January 1 – August 31, 2019 vs January 1 – August 31, 2018**

Region	2019		2018		% Change of Reported Cases	
	Cases	Deaths	Cases	Deaths		
PHILIPPINES	271,480	1,107	127,478	655	↑	113
I	10,892	25	9,988	38	↑	9
II	10,982	59	6,701	18	↑	64
III	19,088	55	19,307	61	↓	1
IVA-CALABARZON	39,810	124	16,005	92	↑	149
IV-B MIMAROPA	7,272	19	4,761	36	↑	53
V	6,976	52	2,033	23	↑	243
VI	45,345	201	9,551	67	↑	375
VII	16,338	97	7,584	39	↑	115
VIII	18,107	52	4,219	26	↑	329
IX	18,505	94	3,493	28	↑	430
X	19,925	76	11,223	71	↑	78
XI	5,975	31	3,371	15	↑	77
XII	16,956	67	5,383	26	↑	215
BARMM	3,456	26	1,601	18	↑	116
CAR	5,272	17	4,332	7	↑	22
Caraga	8,445	19	3,450	13	↑	145
NCR	18,136	93	14,476	77	↑	25

**Figure 2. Attack Rate of Reported Dengue Cases by
Region Philippines, January 1 – August 31, 2019**

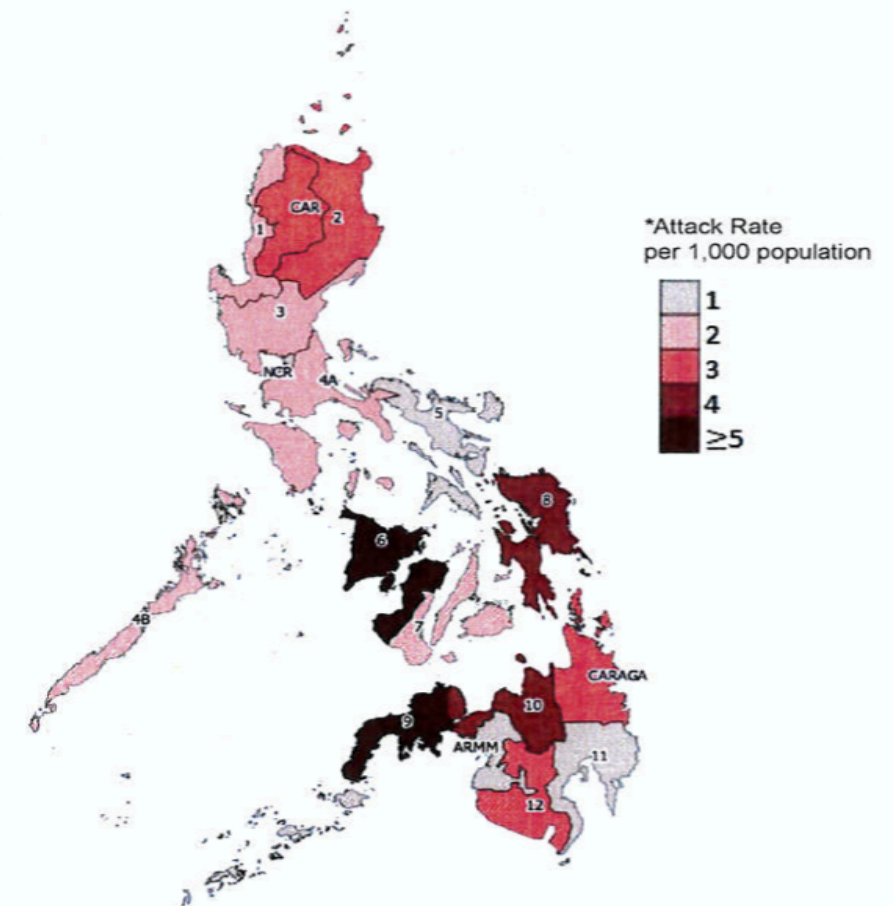


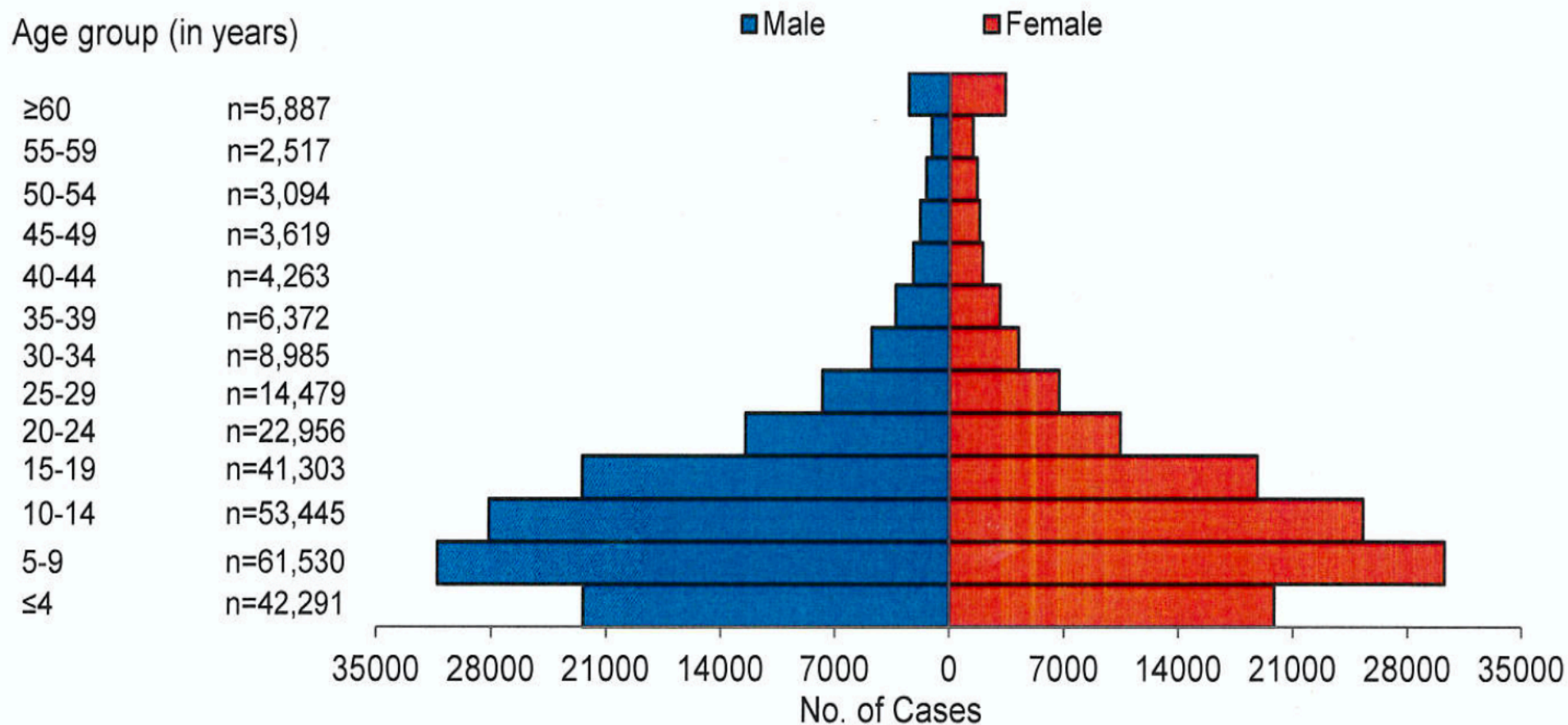
Table 1 shows that majority of the cases were from the following regions: **Region VI** (45,436 or 17%), **Region IV-A** (39,810 or 15%), **Region X** (19,925 or 7%), **Region III** (19,088 or 7%) and **NCR** (18,136 or 7%).

The regions with the highest percent increase in the number of reported cases for this year compared to last year were: **Region IX** (430%), **Region VI** (375%), **Region VIII** (329%), **Region V** (243%), and **Region XII** (215%).

Profile of Cases

Age of suspect cases ranged from less than 1 month to 100 years (median age of 12 years). Majority of the cases (142,190 or 52%) were male. Most of the cases belonged to the 5-9 years age group (61,530 or 23%) (Figure 3).

Figure 3. Reported Dengue Cases by Age Group and Sex (N=271,480)
Philippines, January 1 – August 31, 2019



Profile of Confirmed Dengue Cases by Serotype

The predominant serotype from January 1 to August 31 is **DENV3** (481 cases or 67%) followed by **DENV 1** (122 cases or 17%), **DENV 2** (97 cases or 14%), **DENV 4** (11 cases or 2%) and **mixed serotype** (3 case or 0.4%). Majority of the confirmed Dengue cases were from the following regions: **Region IVA** (127 or 18%), **Region IX** (105 or 15%), **Region II** (97 or 14%), and **Region XI** (73 or 10%) (Table 2).

Table 2. Confirmed Dengue Cases by Region and Serotype (n=714)
Philippines, January 1 – August 31, 2019

Region	Serotype					Total
	Dengue 1	Dengue 2	Dengue 3	Dengue 4	Mixed Serotype	
PHILIPPINES	122	97	481	11	3	714
I	9	12	28	1	0	50
II	0	2	94	1	0	97
III	25	14	25	1	0	65
IV-A CALABARZON	20	6	98	1	2	127
IV-B MIMAROPA	0	0	13	0	0	13
V	2	1	8	1	0	12
VI	0	1	10	0	0	11
VII	0	5	9	0	0	14
VIII	2	3	7	0	0	12
IX	4	22	76	3	0	105
X	2	0	0	0	0	2
XI	37	16	20	0	0	73
XII	4	5	28	2	0	39
BARMM	5	4	10	0	0	19
CAR	2	3	14	0	0	19
CARAGA	5	1	6	0	0	12
NCR	5	2	35	1	1	0

Profile of Reported Dengue Deaths

Figure 6. Reported Dengue Deaths by Age Group and Sex (n=1,107)
Philippines, January 1 – August 31, 2019

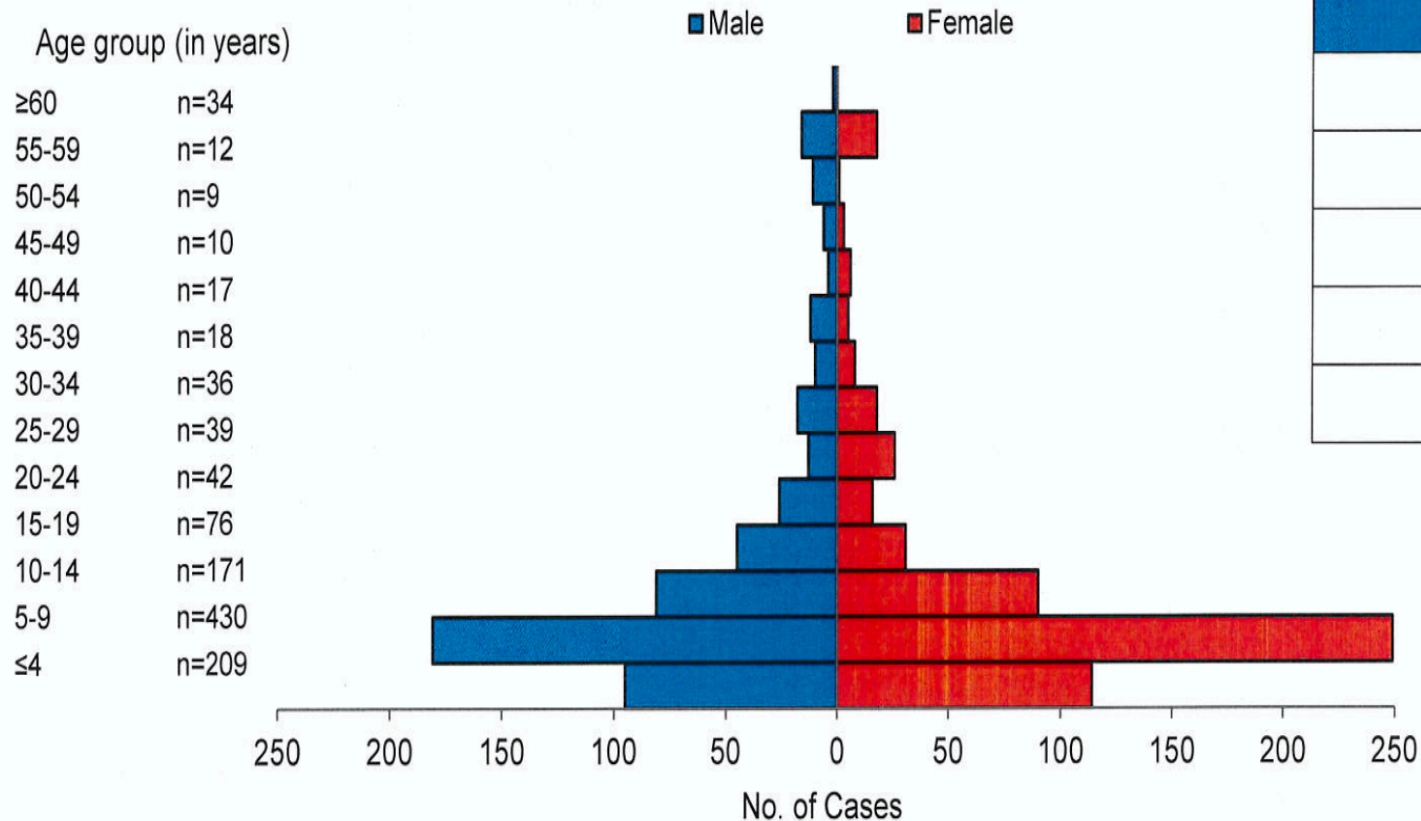


Table 3. Top Provinces/Cities with Highest Reported Dengue Deaths (n=1,107)
Philippines January 1 – August 31, 2019

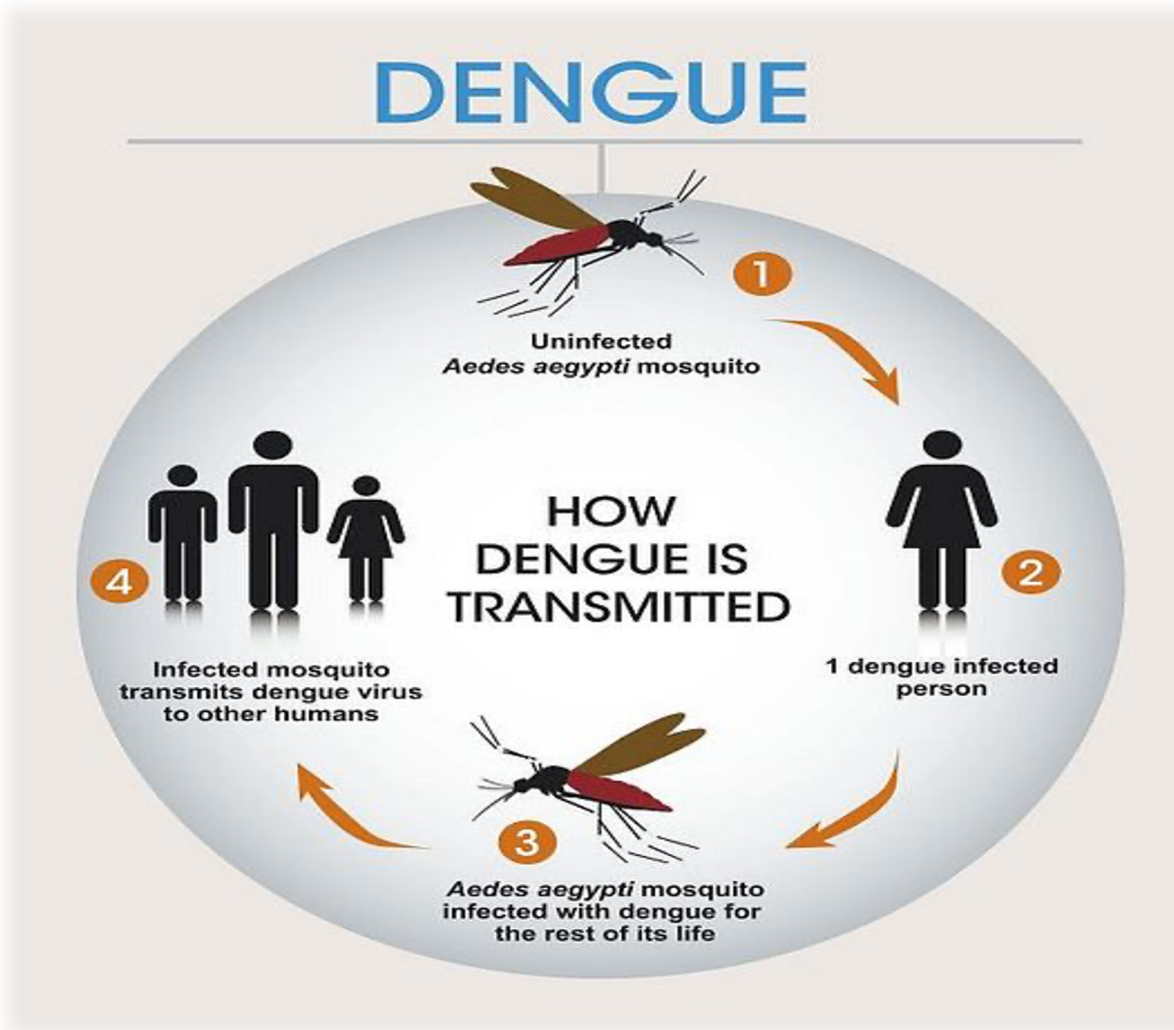
Province	Deaths	% among Deaths
Iloilo	84	8
Negros Occidental	60	5
Cebu	56	5
Zamboanga Del Sur	50	5
Cavite	43	4

Etiologic Agent

- The various serotypes of the dengue virus are transmitted to humans through the bites of infected *Aedes* mosquitoes, principally *Aedes aegypti*.
- The immature stages are found in water-filled habitats, mostly in artificial containers closely associated with human dwellings and often indoors.
- Dengue outbreaks have also been attributed to *Aedes albopictus*.

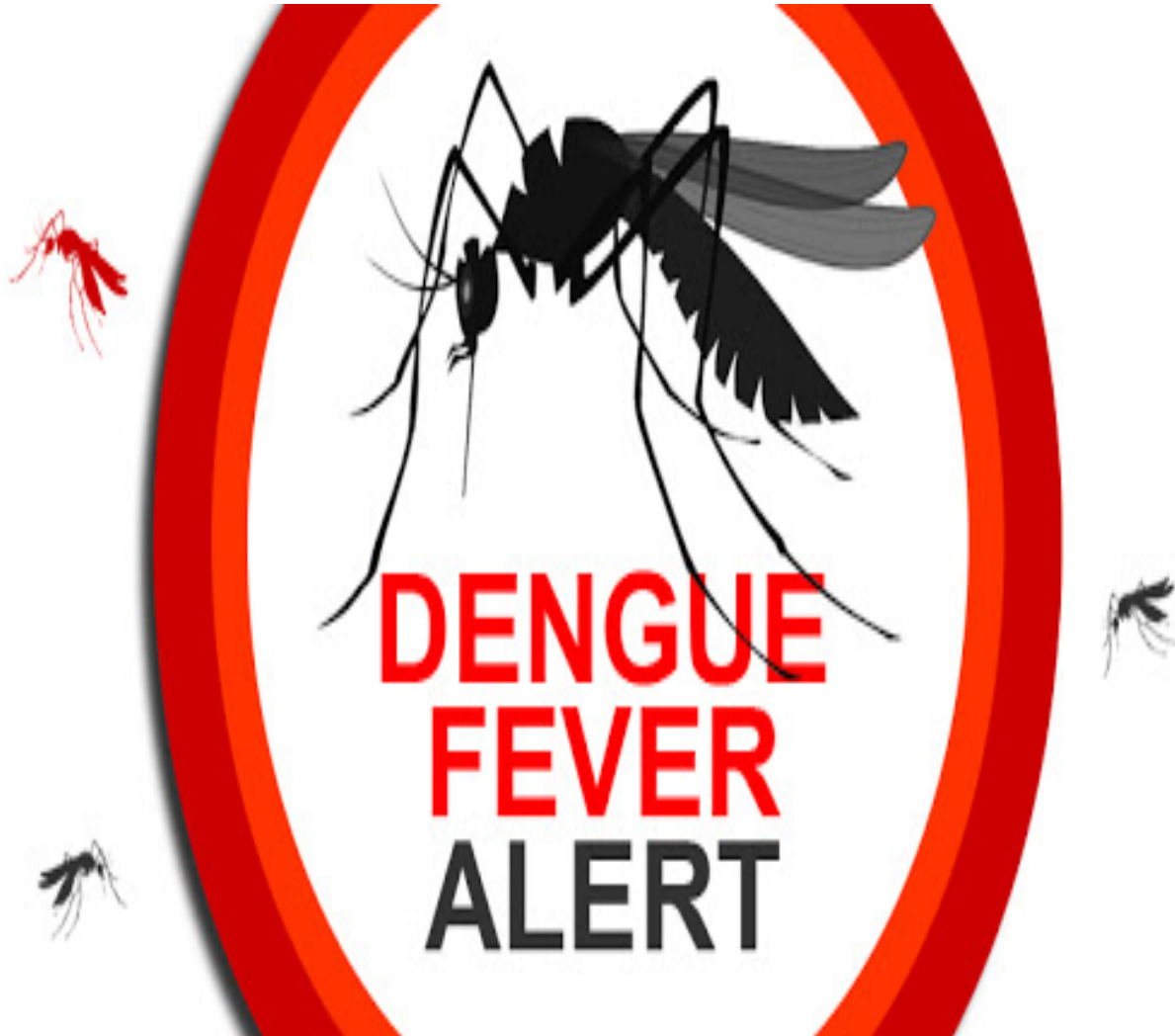


Transmission of the Dengue Virus



- Dengue virus circulating in the blood of humans is ingested by female mosquitoes during feeding.
- The virus then infects the mosquito mid-gut and subsequently spreads systemically over a period of 8-12 days.
- The virus can be transmitted to other humans during subsequent probing or feeding.
- Thereafter the mosquito remains infective for the rest of its life.

Clinical Signs and Symptoms



- Sudden onset of high fever which may last from 2 to 7 days.
- Joint and muscle pain and pain behind the eyes
- Weakness
- Skin rashes
- Nosebleeding when fever starts to subside
- Abdominal pain
- Vomiting of coffee-colored matter
- Dark-colored stools
- Difficulty of breathing

ANG DENGUE AY NAKAMAMATAY

Alamin ang mga

SINTOMAS NG DENGUE:



Lagnat



Pananakit sa likod
ng mata



Pananakit ng ulo



Rashes



Pananakit at pamamaga
ng mga kasu-kasuan



Pagsusuka

Kumonsulta agad sa pinakamalapit na health facility kapag nilagnat o nakaramdam ng alinman sa mga sintomas ng dengue.



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Know the 7 Symptoms of Dengue



fever



vomiting
inclusive of nausea



muscle &
joint pain



diarrhea



skin rash



headache
inclusive of pain
behind the eye



bleeding
nose & gums

What to do if with symptoms of Dengue?

- 1.** Seek doctor's advice immediately
- 2.** Get tested for dengue even when there is no alarming symptom
- 3.** Focus more on children, pregnant women and elderly people
- 4.** Take extra precautions if having already contracted the disease before



Mga dapat gawin kapag nilagnat o nakaramdam ng alinman sa mga sintomas ng dengue.



Agad na kumonsulta sa pinakamalapit na health facility at sundin ang payo ng doktor.



Huwag basta uminom ng gamot nang walang pahintulot ng doktor lalo na kung may ibang karamdaman.



Uminom ng maraming tubig at kumain ng mga masusustansiyang pagkain.

Kumonsulta agad sa pinakamalapit na health facility kapag nilagnat o nakaramdam ng alinman sa mga sintomas ng dengue.



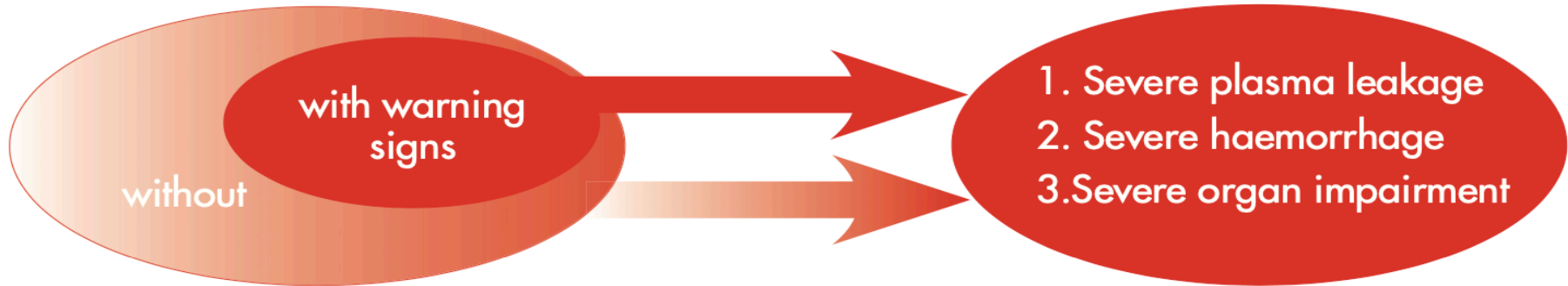
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Dengue Disease Case Classification

DENGUE ± WARNING SIGNS



SEVERE DENGUE

CRITERIA FOR DENGUE ± WARNING SIGNS

Probable dengue

live in /travel to dengue endemic area.

Fever and 2 of the following criteria:

- Nausea, vomiting
- Rash
- Aches and pains
- Tourniquet test positive
- Leukopenia
- Any warning sign

Laboratory-confirmed dengue

(important when no sign of plasma leakage)

Warning signs*

- Abdominal pain or tenderness
- Persistent vomiting
- Clinical fluid accumulation
- Mucosal bleed
- Lethargy, restlessness
- Liver enlargement >2 cm
- Laboratory: increase in HCT concurrent with rapid decrease in platelet count

*(requiring strict observation and medical intervention)

CRITERIA FOR SEVERE DENGUE

Severe plasma leakage

leading to:

- Shock (DSS)
- Fluid accumulation with respiratory distress

Severe bleeding

as evaluated by clinician

Severe organ involvement

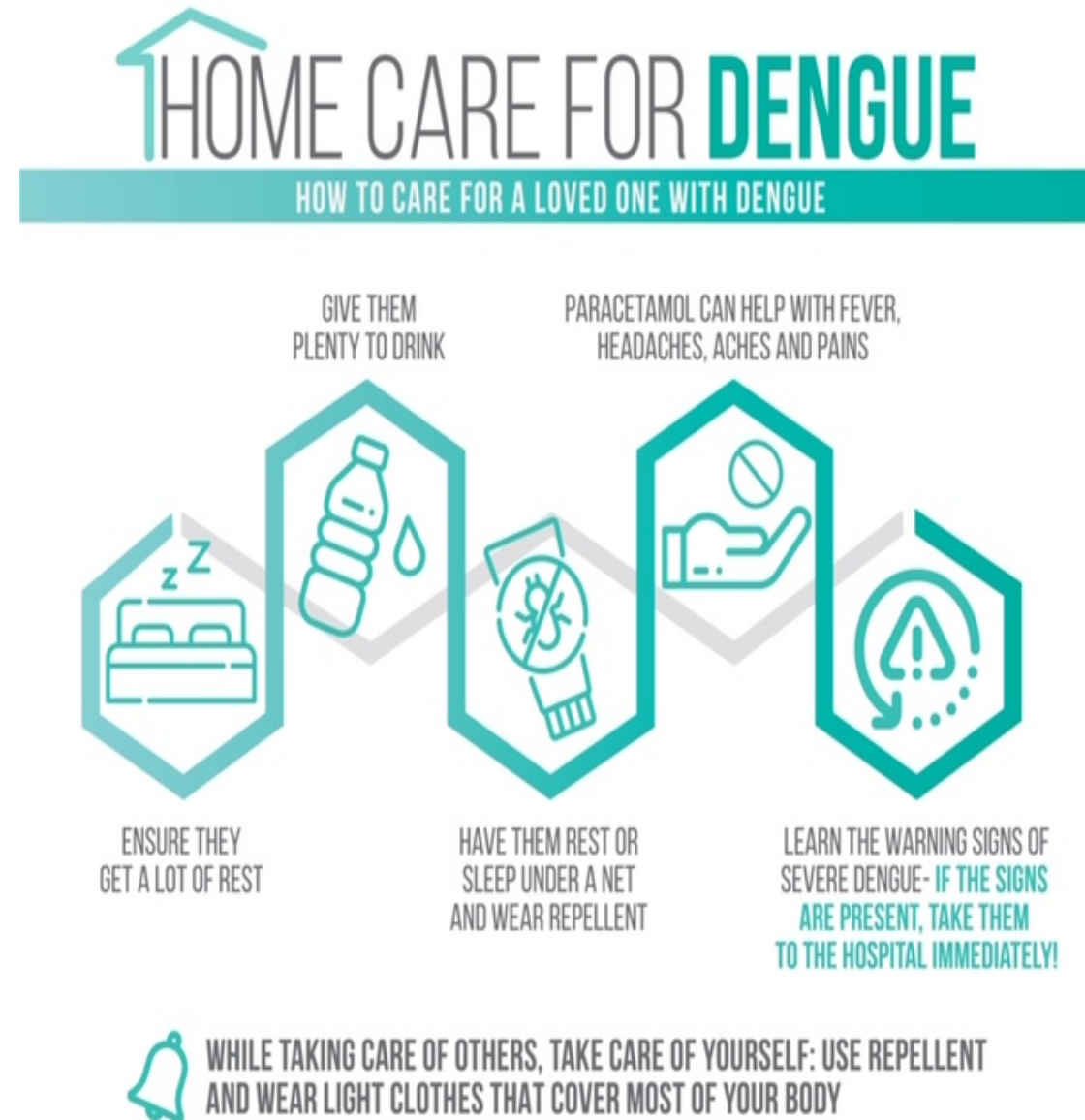
- Liver: AST or ALT ≥ 1000
- CNS: Impaired consciousness
- Heart and other organs

Management

Group A: Patients who may be sent home

These are patients who are able to:

- Tolerate adequate volumes of oral fluids
- Pass urine every 6 hours
- Do not have any of the warning signs particularly when the fever subsides
- Have stable hematocrit



Management

Group B: Patient who should be referred for in-hospital management

Patients shall be referred immediately to in-hospital management if they have the following conditions:

- Warning signs
- Without warning signs but with co-existing conditions that may make dengue or its management more complicated
- Social circumstances such as living alone or living far from health facility or without a reliable means of transportation.
- The referring facility has no capability to manage dengue with warning signs and/or severe dengue.



Management

Group C: Patient with severe dengue requiring emergency treatment and urgent referral

These are patients with severe dengue who require emergency treatment and urgent referral because they are in the critical phase of the disease and have the following:

- Severe plasma leakage leading to dengue shock and/or fluid accumulation with respiratory distress;
- Severe hemorrhages;
- Severe organ impairment (hepatic damage, renal impairment, cardiomyopathy, encephalopathy or encephalitis)
- Patients in Group C shall be immediately referred and admitted in the hospital **within 24 hours**.



Prevention and Control



Seek & Destroy
Breeding Places



Secure Self-Protection



Seek early consultation



Support spraying to prevent
impending outbreak

Pag-iwas at pagsugpo:

- Magpakonsulta sa doktor kung may lagnat na ng 2-7 araw.
- Magsuot ng mahahabang kasuotan upang hindi madaling makagat ng lamok.
- Maaari din gumamit ng insect repellent.
- Itaob ang mga bote, lata at iba pang maaaring mapagipunan ng tubig at pangitluran ng mga lamok.
- Linisin at takpan ang mga dram at iba pang imbakan ng tubig.



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**TO-DOH GALING
PARA SA KALUSUGAN!**



Health Advisory DENGUE

Mag**4S** Laban sa Dengue

SEARCH and DESTROY

Para di maipunan ng tubig at pamugaran ng kiti-kiti:

- Palitan ang tubig at linisin ang flower vase minsan sa isang linggo.
- Takpan ng lupa o buhangin ang mga butas sa paligid ng inyong bahay.
- Takpan ang mga timba, drum o iba pang imbakan ng tubig.
- Tanggalin at butasan ang mga gulong sa ibabaw ng inyong bubong o mga gulong sa inyong paligid.
- Itaob ang mga bote, lata at iba pang maaring pag-ipunan ng tubig at pangitluran ng lamok.
- Linisin at alisin ang tubig sa paminggalan.



SELF-PROTECTION MEASURES

- Iwasan ang maikling kasuotan upang di madaling makagat ng lamok.
- Maaari ding gumamit ng mosquito repellent sa araw.

SEEK EARLY CONSULTATION

- Kung may lagnat na ng 2 araw at may rashes sa balat, pumunta at komunsulta agad sa pinakamalapit na health center o ospital.

SAY NO TO INDISCRIMINATE FOGGING

- Yes to fogging only during outbreaks.



DOH

**TO-DOH LABAN
SA DENGUE!**

SA KAGAT NG LAMOK NANGGAGALING ANG DENGUE, KUNG WALANG LAMOK WALANG DENGUE.

HANAPIN AT SIRAIN

ang mga lugar na maaaring pangitluran ng lamok



Alisan ng laman, linisin, kuskusin ng isang beses kada linggo ang mga dram, timba, plorera, tray at basurahan.

Itaob ang mga bote, lata at butasan din ang mga gulong upang hindi maipunan ng tubig

Linisin ang alulod ng bubong ng bahay

Kumonsulta agad sa pinakamalapit na health facility kapag nilagnat o nakaramdam ng alinman sa mga sintomas ng dengue.



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Pangalagaan ang sarili laban sa kagat ng lamok



Magpahid ng insect repellants.



Maglagay ng screen sa mga pintuan at bintana.



Magsuot ng pantalon at mga damit na may mahabang manggas lalo na kapag mayroon ka ng dengue.



Gumamit ng kulambo upang hindi makagat ng lamok at maiwasang mahawaan ang iba pang mga kasama sa bahay.

Kumonsulta agad sa pinakamalapit na health facility kapag nilagnat o nakaramdam ng alinman sa mga sintomas ng dengue.



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**THANK
YOU**