



Introduction

Measles (Tigdas, Tipdas) is an acute highly communicable viral illness caused by the measles virus in the Paramyxoviridae family. Measles is characterized by a prodrome of fever, conjunctivitis, cough, coryza, and small spots with white or bluish centers on the erythematous base on the buccal mucosa known as Koplik's spots followed by maculopapular rash on the 3rd to the 7th day beginning on the face then becoming generalized. Measles can be transmitted through direct contact with nasal or throat secretions of infected persons or by articles freshly soiled with nose and throat secretions. The incubation period of Measles range from 7 to 21 days from exposure to onset of fever.

Measles Elimination Goal in the Philippines

Measles elimination goal is the absence of endemic measles virus transmission in a defined geographical area (e.g. region or country) for at least 12 months in the presence of a surveillance system that has been verified to be performing well. It was set in 2005 in the Western Pacific Region. In September 2012, the Regional Committee for the Western Pacific Region encouraged its member states to undertake the challenges for Measles elimination.

The Department of Health through the Epidemiology Bureau takes part in achieving this goal by closely monitoring the standard surveillance indicators to ensure that the Measles elimination goal will be attained and sustained. Currently, the Philippines has an incidence rate of 0.64 per 1,000,000 population. But efforts should still be made in order to attain the elimination goal of <1/1million population.

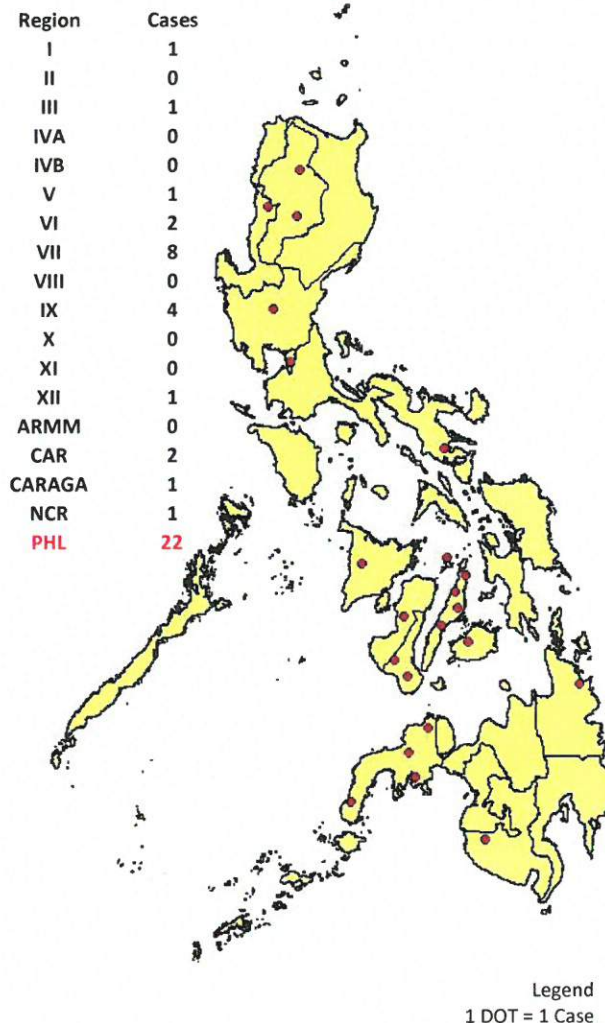
Trend in the Philippines

A total of 537 suspect measles cases were reported nationwide from January 1 to April 16, 2016. Of these, 22 (4.10%) were classified as confirmed measles cases, may it be laboratory confirmed measles or epi-linked confirmed measles (see Table 1). The number of confirmed measles cases decreased significantly in 2016 (95.95%) compared to last year's cases (see Table 2). Currently, the Philippines is achieving the target (<1/1,000,000) with an incidence rate of 0.64 per 1,000,000 population. There were no reported deaths among the confirmed measles cases (CFR=0.00%).

Geographic Distribution

The distribution of confirmed measles cases varied considerably among the regions. Most of the confirmed cases came from Region VII (36.36%), Region IX (18.18%) and Regions VI and CAR (9.09%).

Confirmed Measles Cases by Region
Philippines, January 1 - April 16, 2016





Morbidity Week 15: January 1 - April 16, 2016

Epidemiology Bureau
Public Health Surveillance Division

**TABLE 1. MEASLES AND RUBELLA CASES BY REGION
PHILIPPINES, JANUARY 1 – APRIL 16, 2016 (N=537)**

REGION	POPULATION 2016	TARGET 2/100K	REPORTED	CONFIRMED MEASLES		MEASLES COMPATIBLE	CONFIRMED RUBELLA		DISCARDED AS NON- MEASLES/RUBELLA	PENDING CLASSIFICATION
				LABORATORY CONFIRMED	EPI-LINKED CONFIRMED		LABORATORY CONFIRMED	EPI-LINKED CONFIRMED		
1	5,113,827	102	24	1	0	5	0	0	15	3
2	3,510,762	70	22	0	0	4	0	0	15	3
3	11,534,111	231	28	1	0	2	1	0	21	3
4A	15,172,632	303	64	0	0	14	4	0	41	5
4B	3,057,039	61	11	0	0	6	1	0	4	0
5	5,920,478	118	8	1	0	1	0	0	6	0
6	7,703,570	154	129	2	0	3	39	0	80	5
7	7,565,674	151	37	8	0	0	2	0	25	2
8	4,430,334	89	29	0	0	23	0	0	2	4
9	3,814,158	76	33	3	1	6	0	0	11	12
10	4,865,413	97	24	0	0	12	0	0	9	3
11	5,033,163	101	23	0	0	4	3	0	14	2
12	4,768,455	95	27	1	0	1	1	0	22	2
ARMM	3,566,757	71	4	0	0	1	0	0	1	2
CAR	1,792,078	36	11	2	0	2	0	0	6	1
CRG	2,657,380	53	14	1	0	9	0	0	3	1
NCR	13,205,216	264	49	1	0	7	3	0	33	5
PHL	103,711,047	2,074	537	21	1	100	54	0	308	53

**TABLE 2. CONFIRMED MEASLES CASES AND DEATHS BY REGION
PHILIPPINES, 2015 vs. 2016***

REGION	CASES			DEATHS			
	2016	2015	% CHANGE	2016	CFR (%)	2015	CFR (%)
1	1	3	-66.67	0	0.00	0	0.00
2	0	10	-100.00	0	0.00	0	0.00
3	1	1	0.00	0	0.00	0	0.00
4A	0	4	-100.00	0	0.00	0	0.00
4B	0	1	-100.00	0	0.00	0	0.00
5	1	0	0.00	0	0.00	0	0.00
6	2	57	-96.49	0	0.00	0	0.00
7	8	41	-80.49	0	0.00	0	0.00
8	0	13	-100.00	0	0.00	0	0.00
9	4	79	-94.94	0	0.00	0	0.00
10	0	57	-100.00	0	0.00	0	0.00
11	0	111	-100.00	0	0.00	2	1.80
12	1	52	-98.08	0	0.00	0	0.00
ARMM	0	8	-100.00	0	0.00	0	0.00
CAR	2	33	-93.94	0	0.00	0	0.00
CRG	1	60	-98.33	0	0.00	0	0.00
NCR	1	13	-92.31	0	0.00	0	0.00
PHL	22	543	-95.95	0	0.00	2	0.37

* as of April 16, 2016



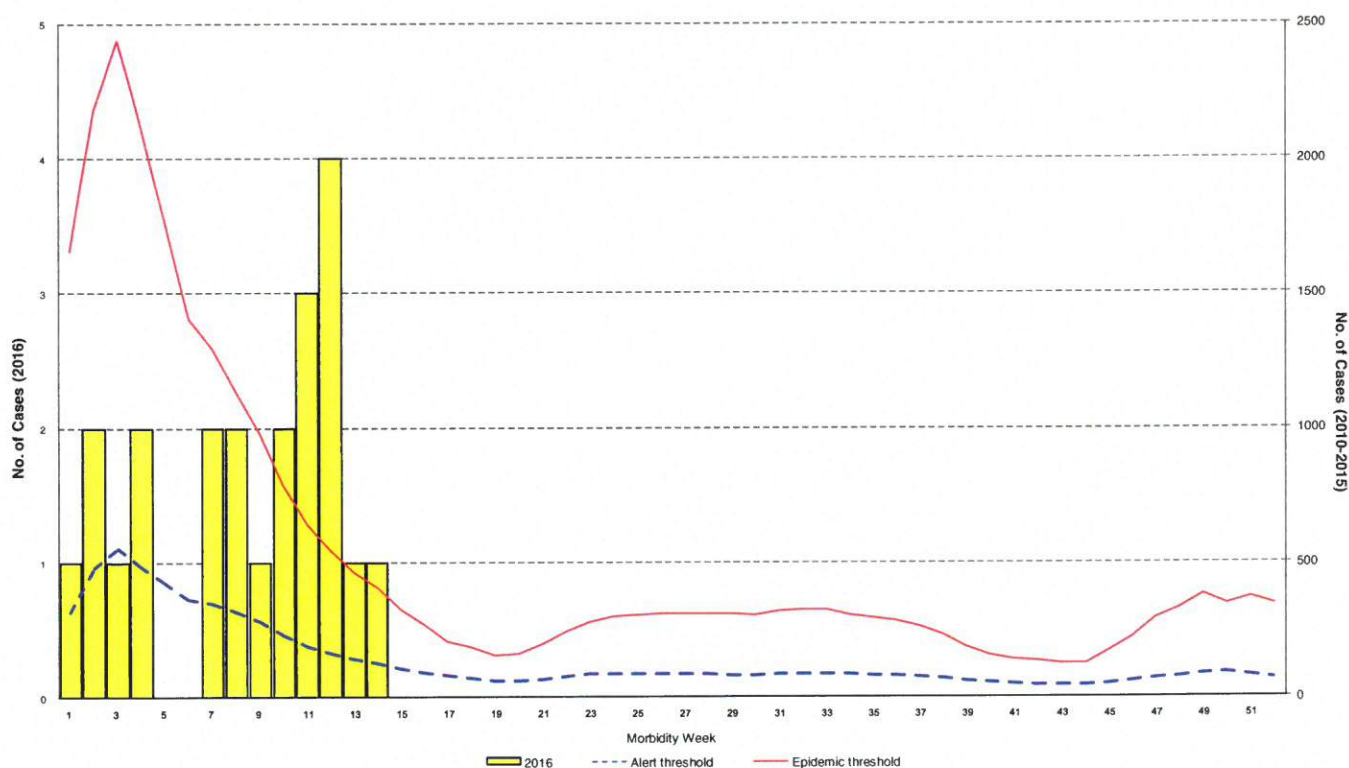
Morbidity Week 15: January 1 - April 16, 2016

Epidemiology Bureau
Public Health Surveillance Division

**TABLE 3. CONFIRMED MEASLES CASES BY REGION, MUNCITY AND BARANGAY
PHILIPPINES, JANUARY 1 – APRIL 16, 2016 (N=22)**

REGION	MUNCITY	BARANGAY	NO. OF CASES
01	LAOAG CITY	BGY. NO. 2, SANTA JOAQUINA (POB.)	1
03	SANTA CRUZ	POBLACION SOUTH	1
05	USON	QUEZON	1
06	ILOILO CITY	M. V. HECHANOVA	1
	TOBIAS FORNIER	YSULAT	1
07	BARILI	MINOLOS	1
	CEBU CITY	APAS	1
		BUSAY (POB.)	1
	DANAO CITY	LAWAAN	1
	LAPU-LAPU CITY	BASAK	1
	MANDAUE CITY	CUBACUB	1
		JAGOBIAO	1
	UBAY	SAN PASCUAL	1
09	LABASON	GIL SANCHEZ	1
	ZAMBOANGA CITY	SAN ROQUE	1
		TUMAGA	2
		POBLACION	1
12	ALABEL	POBLACION	1
CAR	BAGUIO CITY	TEODORA ALONZO	1
	LA TRINIDAD	ALNO	1
CARAGA	SAN FRANCISCO	BAYUGAN 2	1
NCR	QUEZON CITY	BRGY. DOÑA IMELDA	1
TOTAL NO. OF CASES			22

**FIGURE 1. CONFIRMED MEASLES ALERT AND EPIDEMIC THRESHOLD
PHILIPPINES, JANUARY 1 – APRIL 16, 2016* (n=22)**



*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.



Morbidity Week 15: January 1 - April 16, 2016

Epidemiology Bureau
Public Health Surveillance Division

**TABLE 4. MEASLES SURVEILLANCE INDICATORS* BY REGION
PHILIPPINES, 2015 vs. 2016****

REGION	POPULATION 2016	ANNUALIZED MEASLES INCIDENCE RATE		BLOOD ADEQUACY RATE		SUSPECT MEASLES CASES ADEQUATELY INVESTIGATED		ANNUALIZED SUSPECT MEASLES REPORTING RATE		ANNUALIZED NON- MEASLES/ NON- RUBELLA RATE		MEASLES COMPATIBLE %	
		Target: <1/1,000,000 Pop.		Target: ≥80%		Target: ≥80%		Target: ≥2/100,000 Pop.		Target: ≥2/100,000 Pop.		Target: <10%	
		2015	2016	2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
1	5,113,827	1.58	0.59	76	79	66	71	3.27	1.41	1.96	0.88	30	21
2	3,510,762	4.04	0.00	73	73	70	73	3.61	1.88	1.33	1.28	49	18
3	11,534,111	0.71	0.26	85	96	80	86	1.40	0.73	1.00	0.55	18	7
4A	15,172,632	1.29	0.00	65	75	57	63	2.41	1.27	1.17	0.81	40	22
4B	3,057,039	1.00	0.00	47	45	38	36	2.83	1.08	0.93	0.39	55	55
5	5,920,478	0.17	0.51	96	100	92	100	0.41	0.41	0.33	0.30	13	13
6	7,703,570	8.29	0.78	97	97	89	88	5.10	5.02	3.12	3.12	7	2
7	7,565,674	6.86	3.17	98	100	86	95	2.14	1.47	1.14	0.99	5	0
8	4,430,334	4.80	0.00	19	21	16	14	4.59	1.96	0.11	0.14	87	79
9	3,814,158	28.04	3.15	68	75	62	67	10.81	2.60	4.03	0.87	35	18
10	4,865,413	13.42	0.00	43	50	42	50	6.94	1.48	0.78	0.55	69	50
11	5,033,163	25.12	0.00	90	87	87	83	6.04	1.37	2.15	0.83	20	17
12	4,768,455	17.40	0.63	59	93	57	81	8.12	1.70	2.94	1.38	42	4
ARMM	3,566,757	4.55	0.00	46	75	46	75	2.33	0.34	0.34	0.08	66	25
CAR	1,792,078	21.56	3.35	90	73	87	73	9.02	1.84	5.45	1.00	14	18
CRG	2,657,380	24.05	1.13	69	36	64	36	6.07	1.58	1.79	0.34	30	64
NCR	13,205,216	1.39	0.23	60	80	50	61	1.82	1.11	0.87	0.75	39	14
PHL	103,711,047	6.85	0.64	69	80	64	71	3.64	1.55	1.48	0.89	36	19

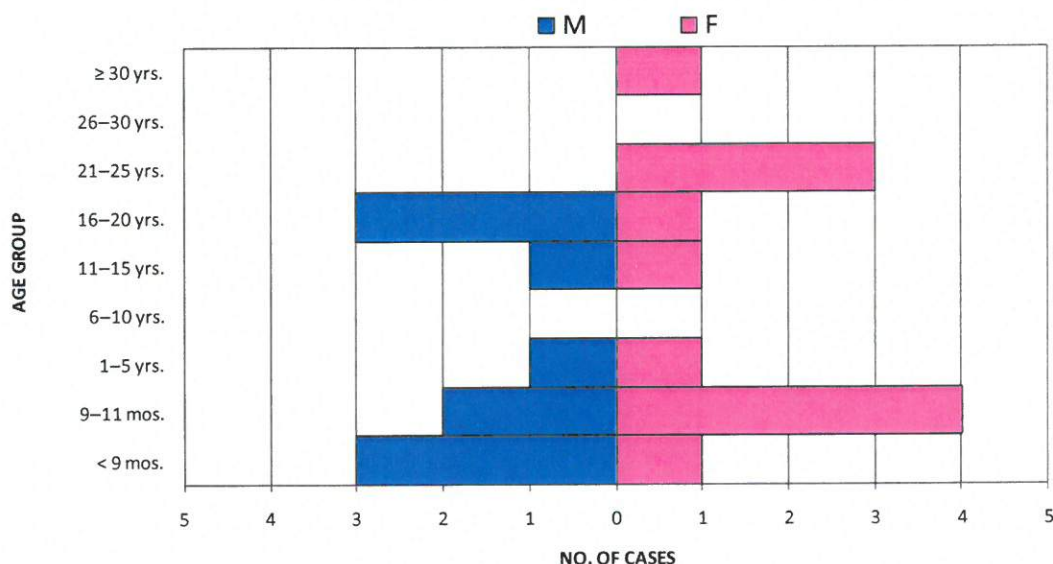
*see Annex B

** as of April 16, 2016

Profile of Cases

Fifty five percent of the confirmed measles cases were female. Majority of the confirmed cases belonged to children aged 9 to 11 months old (27.27%) as shown in Figure 2. Among the confirmed measles cases, 13 (59%) were not vaccinated, 6 (27%) were vaccinated and 3 (14%) have an unknown vaccination status (Figure 3).

**FIGURE 2. CONFIRMED MEASLES CASES BY AGE GROUP AND SEX
PHILIPPINES, JANUARY 1- APRIL 16, 2016 (n=22)**



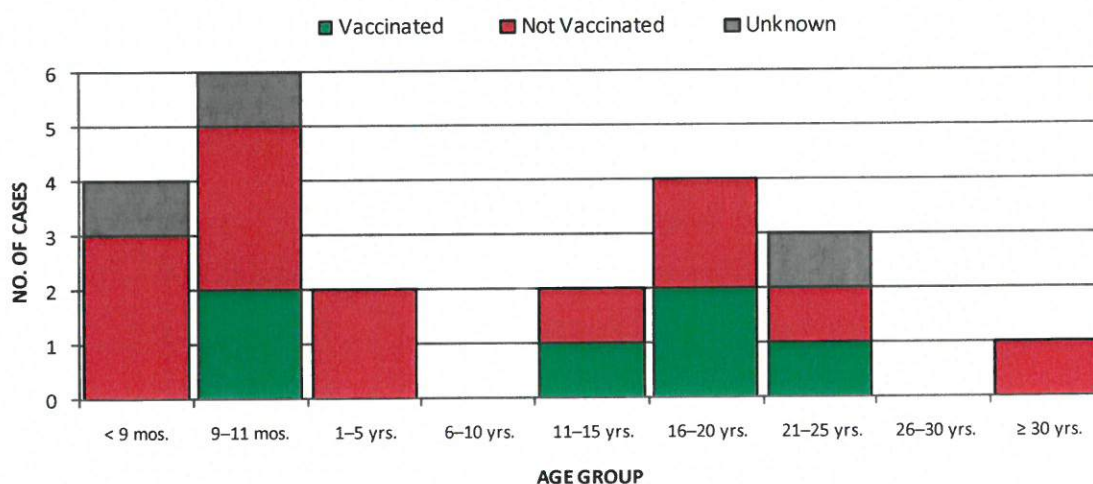
NOTE: Case counts reported here do NOT represent the final number and are subject to change after inclusion of delayed reports and review of cases.



Morbidity Week 15: January 1 - April 16, 2016

Epidemiology Bureau
Public Health Surveillance Division

**FIGURE 3. IMMUNIZATION STATUS OF CONFIRMED MEASLES CASES BY AGE GROUP
PHILIPPINES, JANUARY 1-APRIL 16, 2016 (n=22)**



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.

Annex A. Definition of Terms

Laboratory confirmed measles case

- A suspect measles case with a positive laboratory test result for measles-specific IgM antibodies or other approved laboratory test method

Laboratory confirmed rubella case

- A suspect measles case with a positive laboratory test result for rubella-specific IgM antibodies or other approved laboratory test method

Clinically measles compatible case

- A case that meets the suspect case definition for measles but for which no adequate blood specimen was taken and which has not been linked epidemiologically to another case positive for measles IgM or another laboratory-confirmed communicable disease

Confirmed Measles cases

- Laboratory confirmed + Epidemiologically-linked measles cases

Epidemiologically-linked measles (or rubella) case

- A suspect measles case that has not been confirmed by laboratory but that is geographically AND temporally related (with dates of rash onset occurring between 7 and 21 days apart) to a laboratory-confirmed case or (in the event of an outbreak) to another epidemiologically confirmed measles case.

Discarded as non-measles/non-rubella

- A case that meets the clinical case definition for measles and discarded as non-measles/rubella case.

Pending Classification

- Cases with blood specimen collected and pending laboratory results.

Alert threshold

- Refers to the level of occurrence of disease that serves as an early warning for epidemics. An increase in the number of cases above the threshold level should trigger an investigation, epidemic preparedness and implement appropriate prevention and control measures.

Epidemic threshold

- Refers to the level of occurrence of disease above which an urgent response is required. The threshold is specific to each disease and depends on the infectiousness, other determinants of transmission and local endemicity levels.



Annex B. Measles Surveillance Indicators

Measles incidence rate*, target: $<1 / 1,000,000$ of the total population. It measures the progress of a country towards measles elimination. High incidence rate indicates persistence of measles transmission in some areas.

Suspect Measles Reporting Rate (or Measles Rate)*, target: >2 per 100,000 of the total population. It measures the ability to detect suspect measles cases. Reporting an adequate number of suspected cases provides confidence that the system is sensitive to detect measles cases.

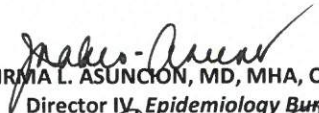
Non-Measles Reporting Rate*, target: >2 per 100,000 of the total population. If non-measles reporting rate is equal or proportion to the number of suspected measles cases in all regions, it gives us higher chance in attaining our goal of measles elimination.

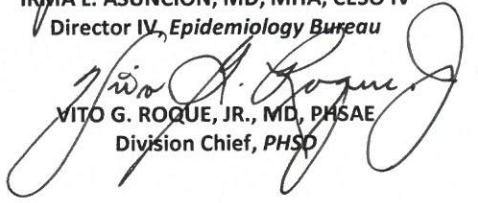
Adequacy of blood specimen (blood adequacy rate), target: $\geq 80\%$ adequate specimen collection rate. This will facilitate the specificity (ability to determine measles virus as the cause of illness) of reported measles cases. With adequate specimen collection there will be an access to identify the circulating measles virus in the community.

Timeliness of investigation, provides venue to prevent further transmission of measles cases in the community, furthermore, provides immediate response to prevent potential outbreaks. It's target rate is $>80\%$ of cases were investigated within 48 hours of notification.


*Annualized rate, measures the incidence or reporting in a period of 1 year. This is computed by the number of specific measles cases over the target measles cases divided by 12 months then multiplied by the number of months to be analyzed.


EDITORIAL BOARD


IRMA L. ASUNCION, MD, MHA, CESO IV
Director IV, Epidemiology Bureau


VITO G. ROQUE, JR., MD, PHSAE
Division Chief, PHSD


JUNE CANTATA B. CORPUZ, RN
Nurse III, PIDSR National Coordinator


JEZZA JONAH D. CRUCENA, RN
Nurse III, VPDS National Coordinator


ALLAN P. IGNACIO
Statistician II, PHSD