



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. (*Manual of Procedures for the PIDS, 2014*)

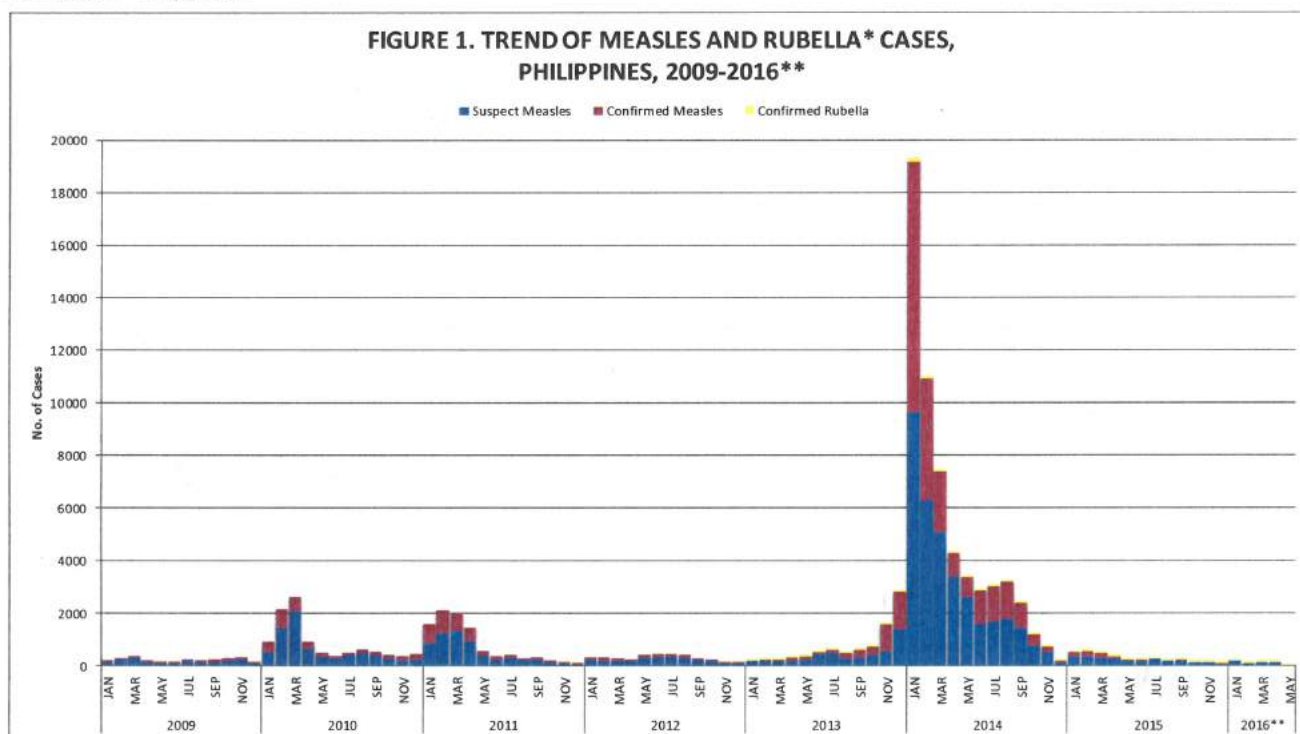
Rubella is an acute, contagious viral infection. The rubella virus is transmitted by airborne droplets when infected people sneeze or cough. In children, the disease is usually mild, with symptoms including a rash, low fever (<39°C), nausea and mild conjunctivitis. The rash usually starts on the face and neck before progressing down the body. Swollen lymph glands behind the ears and in the neck are the most characteristic clinical feature. Infected adults, more commonly women, may develop arthritis and painful joints. Once a person is infected, the virus spreads throughout the body in about 5-7 days. Symptoms usually appear 2 to 3 weeks after exposure. The most infectious period is usually 1-5 days after the appearance of the rash. When a woman is infected with the rubella virus early in pregnancy, she has a 90% chance of passing the virus on to her fetus. This can cause miscarriage, stillbirth or severe birth defects known as Congenital Rubella Syndrome. Infants with CRS may excrete the virus for a year or more. (*WHO Fact Sheet, 2016*)

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 0.90 per 1,000,000 population. Still, efforts should be made in order to attain the elimination goal of <1/1million population.

Trend in the Philippines



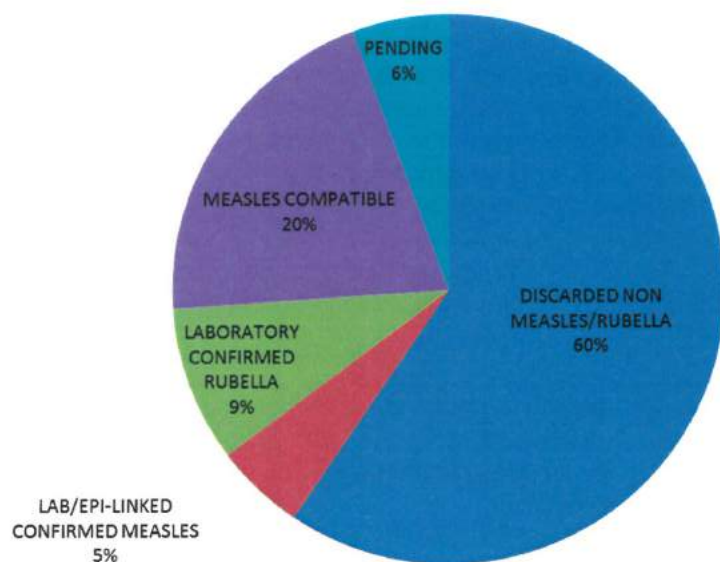
*Rubella surveillance integrated in 2013

**partial data as of May 21, 2016

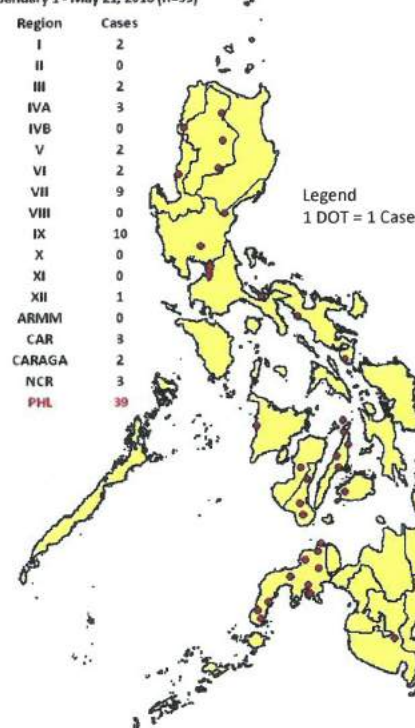


For the past years, the trend of measles and rubella has been very dynamic. As seen in figure 1, spikes in the number of cases has been evident in early 2010, early 2011, end of 2013 and year-round in 2014. Despite the country's efforts towards measles elimination, increasing incidence of measles continues to be a challenge. For the past year (2015), 3,708 reported cases equivalent to 6.8/1,000,000 population incidence rate has been achieved. From January to May, the Philippines has achieved an incidence rate of 0.90/1,000,000 population and aims to sustain the target until the end of the year.

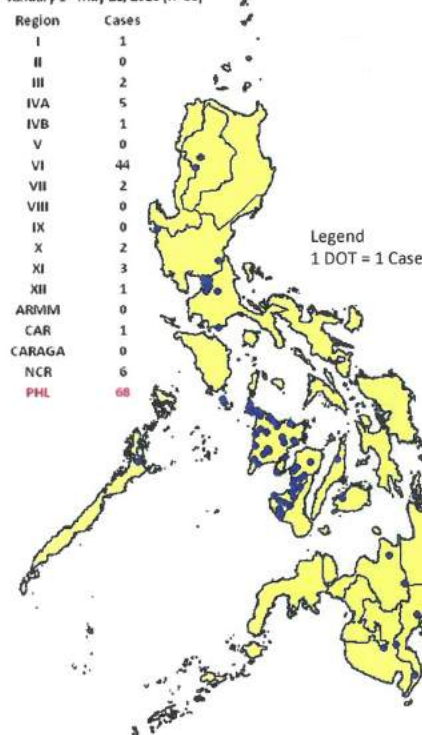
FIGURE 2. DISTRIBUTION OF REPORTED MEASLES-RUBELLA CASES, PHILIPPINES, JANUARY 1 - MAY 21, 2016 (n=741)



Confirmed Measles Cases, Philippines January 1 - May 21, 2016 (n=39)



Confirmed Rubella Cases, Philippines January 1 - May 21, 2016 (n=68)



A total of 741 suspect measles cases were reported nationwide from January 1 to May 21, 2016. Of these, 39 (5.26%) 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 (93.56%) compared to last year's cases of the same time period (see Table 2). Currently, the Philippines is achieving the target (<1/1,000,000) with an incidence rate of 0.90 per 1,000,000 population. There were no reported deaths among the confirmed measles cases (CFR=0.00%).

Sixty eight cases (9.18%) were classified as laboratory confirmed rubella. It is distinct that the occurrence of rubella is now higher than measles. As seen in figure 2, 9% of the reported cases were laboratory confirmed rubella while 5% were laboratory and epi-linked confirmed measles. The distribution of confirmed rubella cases varied among the regions. The map of confirmed rubella cases shows that the concentration of the rubella cases are in the Visayas region. Region VI has the bulk of the cases which totals to 44, comprising 65% of the country's rubella counts. Most of the confirmed cases came from Region VI (64.7%), NCR (8.82%) and Region IVA (7.35%).

Rubella surveillance is currently integrated with the existing measles surveillance of the country, therefore, the active and focused monitoring and controlling of the spread of the disease remains to be a challenge. Observing the trend of rubella occurrence may lead the country in the establishment of a surveillance system which may address congenital rubella syndrome in a more enhanced and systematic manner.



Morbidity Week 20: January 1 – May 21, 2016

Epidemiology Bureau
Public Health Surveillance Division

**TABLE 1. MEASLES AND RUBELLA CASES BY REGION
PHILIPPINES, JANUARY 1 – MAY 21, 2016 (n=741)**

REGION	POPULATION 2016	TARGET 2/100K	REPORTED	CONFIRMED MEASLES		MEASLES COMPATIBLE	LABORATORY CONFIRMED RUBELLA	DISCARDED AS NON- MEASLES/RUBELLA	PENDING CLASSIFICATION
				LABORATORY CONFIRMED	EPI-LINKED CONFIRMED				
1	5,113,827	102	50	2	0	20	1	24	3
2	3,510,762	70	29	0	0	4	0	23	2
3	11,534,111	231	39	2	0	5	2	28	2
4A	15,172,632	303	78	2	1	18	5	46	6
4B	3,057,039	61	22	0	0	10	1	9	2
5	5,920,478	118	13	2	0	1	0	10	0
6	7,703,570	154	154	2	0	6	44	101	1
7	7,565,674	151	44	9	0	1	2	31	1
8	4,430,334	89	30	0	0	24	0	2	4
9	3,814,158	76	38	9	1	9	0	14	5
10	4,865,413	97	41	0	0	16	2	20	3
11	5,033,163	101	27	0	0	5	3	16	3
12	4,768,455	95	34	1	0	1	1	28	3
ARMM	3,566,757	71	6	0	0	2	0	1	3
CAR	1,792,078	36	33	3	0	6	1	22	1
CRG	2,657,380	53	18	2	0	8	0	8	0
NCR	13,205,216	264	85	3	0	15	6	58	3
PHL	103,711,049	2,074	741	37	2	151	68	441	42

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

REGION	CASES			DEATHS			
	2016	2015	% CHANGE	2016	CFR (%)	2015	CFR (%)
1	2	4	↓ -50.00	0	0.00	0	0.00
2	0	11	↓ -100.00	0	0.00	0	0.00
3	2	3	↓ -33.33	0	0.00	0	0.00
4A	3	9	↓ -66.67	0	0.00	0	0.00
4B	0	1	↓ -100.00	0	0.00	0	0.00
5	2	1	↑ 100.00	0	0.00	0	0.00
6	2	61	↓ -96.72	0	0.00	0	0.00
7	9	42	↓ -78.57	0	0.00	0	0.00
8	0	15	↓ -100.00	0	0.00	0	0.00
9	10	98	↓ -89.80	0	0.00	0	0.00
10	0	61	↓ -100.00	0	0.00	0	0.00
11	0	120	↓ -100.00	0	0.00	2	1.67
12	1	58	↓ -98.28	0	0.00	0	0.00
ARMM	0	9	↓ -100.00	0	0.00	0	0.00
CAR	3	36	↓ -91.67	0	0.00	0	0.00
CRG	2	61	↓ -96.72	0	0.00	0	0.00
NCR	3	16	↓ -81.25	0	0.00	0	0.00
PHL	39	606	↓ -93.56	0	0.00	2	0.33

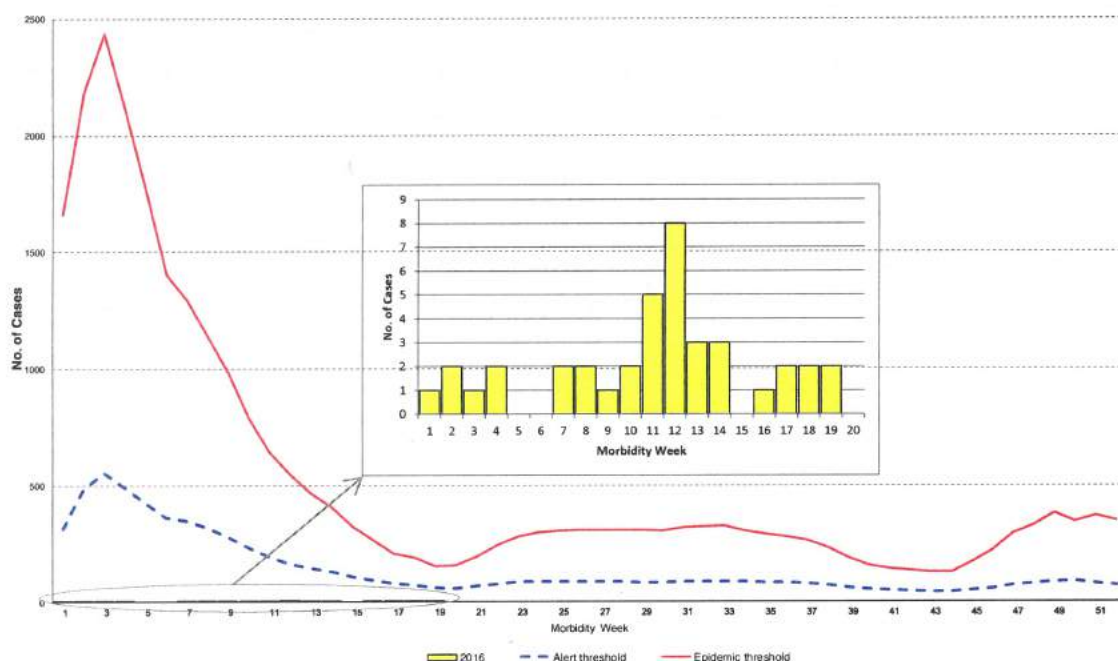
* as of May 21, 2016



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**FIGURE 3. CONFIRMED MEASLES ALERT AND EPIDEMIC THRESHOLD
PHILIPPINES, JANUARY 1 – MAY 21, 2016* (n=39)**



*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.

Figure 3 reflects the current number of confirmed measles cases in relation with the measles alert and epidemic threshold. It can be noted that the number of measles cases is still way below the threshold.

**TABLE 3. 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	0.94	76	56	66	50	3.27	2.35	1.96	1.13	30	40
2	3,510,762	4.04	0.00	74	76	70	76	3.61	1.98	1.33	1.57	49	14
3	11,534,111	0.71	0.42	85	90	80	79	1.40	0.81	1.00	0.58	18	13
4A	15,172,632	1.29	0.47	65	75	57	65	2.41	1.23	1.17	0.73	40	23
4B	3,057,039	1.00	0.00	47	45	38	41	2.83	1.73	0.93	0.71	55	45
5	5,920,478	0.17	0.81	96	100	92	100	0.41	0.53	0.33	0.41	13	8
6	7,703,570	8.29	0.62	97	95	89	86	5.10	4.80	3.12	3.15	7	4
7	7,565,674	6.86	2.86	98	98	86	91	2.14	1.40	1.14	0.98	5	2
8	4,430,334	4.80	0.00	20	20	16	13	4.59	1.63	0.11	0.11	87	80
9	3,814,158	28.04	6.29	70	70	62	63	10.81	2.39	4.03	0.88	35	24
10	4,865,413	13.42	0.00	44	59	42	46	6.94	2.07	0.78	0.99	69	39
11	5,033,163	25.12	0.00	93	85	87	78	6.04	1.29	2.15	0.76	20	19
12	4,768,455	17.40	0.50	60	94	57	82	8.12	1.71	2.94	1.41	42	4
ARMM	3,566,757	4.55	0.00	47	67	46	67	2.33	0.40	0.34	0.07	66	33
CAR	1,792,078	21.56	4.02	90	73	87	79	9.02	4.47	5.45	2.35	14	18
CRG	2,657,380	24.05	1.81	76	56	64	56	6.07	1.63	1.79	0.72	30	44
NCR	13,205,216	1.39	0.55	60	80	50	71	1.82	1.54	0.87	1.05	39	18
PHL	103,711,049	6.85	0.90	70	78	64	70	3.64	1.71	1.48	1.02	36	20
LEGEND:		<1	>1	≥80%	≤80%	≥80%	≤80%	≥2/100,000 Pop.	≤2/100,000 Pop.	≥2/100,000 Pop.	≤2/100,000 Pop.	<10%	>50%

*see Annex B

** as of May 21, 2016



Geographic Distribution

The distribution of confirmed measles cases varied considerably among the regions. Most of the confirmed cases came from Region IX (25.64%), Region VII (23.08%) and Regions IVA, CAR and NCR (7.69% per region).

**TABLE 4. CONFIRMED MEASLES CASES BY REGION, MUNCITY AND BARANGAY
PHILIPPINES, JANUARY 1 –May 21, 2016 (n=39)**

REGION	MUNCITY	BARANGAY	NO. OF CASES
01	DAGUPAN CITY	BONUAN BOQUIG	1
	LAOAG CITY	BGY. NO. 2, SANTA JOAQUINA (POB.)	1
03	MARILAO	LAMBAKIN	1
	SANTA CRUZ	POBLACION SOUTH	1
04A	ANTIPOLO CITY	SAN JOSE (POB.)	2
	UNSPECIFIED	SAN JOSE	1
05	SORSOGON CITY	SANTO DOMINGO	1
	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
	TAGBILARAN CITY	UBUJAN	1
09	UBAY	SAN PASCUAL	1
	KALAWIT	PALALIAN	6
	LABASON	GIL SANCHEZ	1
	ZAMBOANGA CITY	SAN ROQUE	1
		TUMAGA	2
12	UNSPECIFIED	POBLACION	1
CAR	BAGUIO CITY	TEODORA ALONZO	1
	LA TRINIDAD	ALNO	1
	MANKAYAN	SAPID	1
CARAGA	GIGAQUIT	ALAMBIQUE	1
	SAN FRANCISCO	BAYUGAN 2	1
NCR	PASAY CITY	BRGY. 46	2
	QUEZON CITY	BRGY. DOÑA IMELDA	1
TOTAL NO. OF CASES			39

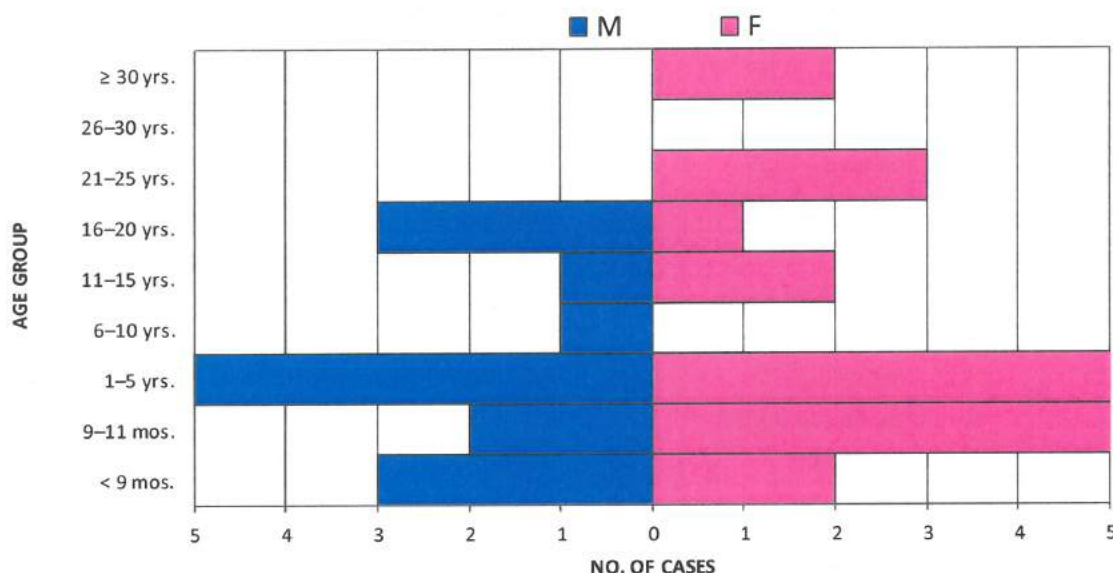
Table 4 shows the distribution of confirmed measles cases among barangays which provides evidence on the transmission of measles in certain areas.



Profile of Cases

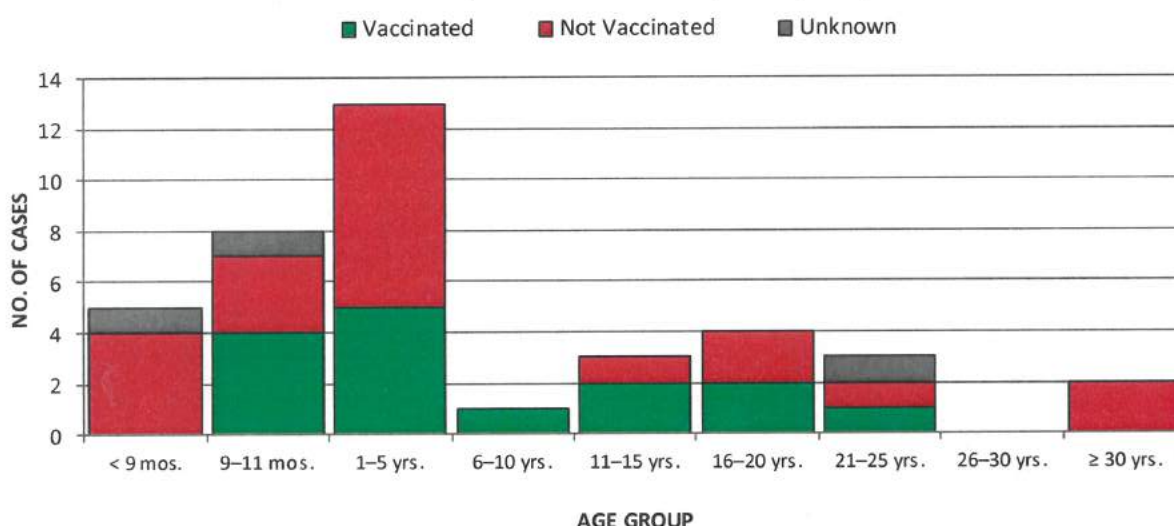
Sixty two percent (62%) of the confirmed measles cases were female. Majority of the confirmed cases belonged to children aged 1 to 5 years old (33%) as shown in Figure 4. Among the confirmed measles cases, 21 (54%) were not vaccinated, 15 (38%) were vaccinated and 3 (8%) have an unknown vaccination status (Figure 5).

**FIGURE 4. CONFIRMED MEASLES CASES BY AGE GROUP AND SEX
PHILIPPINES, JANUARY 1- MAY 21, 2016 (n=39)**



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.

**FIGURE 5. IMMUNIZATION STATUS OF CONFIRMED MEASLES CASES BY AGE GROUP
PHILIPPINES, JANUARY 1-MAY 21, 2016 (n=39)**



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: ≥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.

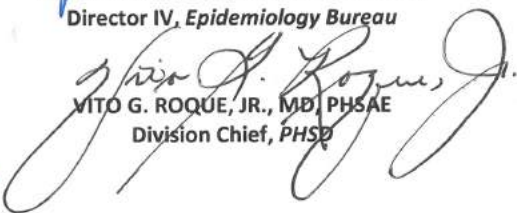
Timeliness of investigation, provides venue to prevent further transmission of measles cases in the community, furthermore, provides immediate response to prevent potential outbreaks. It's target rate is >80% of cases were investigated within 48 hours of notification.

*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.

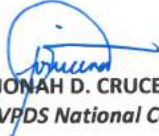



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