



Morbidity Week 24: January 1 – June 18, 2016

Epidemiology Bureau  
Public Health Surveillance Division

### Facts about Measles and Rubella

MEASLES	RUBELLA
☞ Measles is one of the leading causes of death among young children even though a safe and cost-effective vaccine is available.	☞ Rubella is a contagious, generally mild viral infection that occurs most often in children and young adults.
☞ In 2014, there were 114,900 measles deaths globally – about 314 deaths every day or 13 deaths every hour.	☞ Rubella infection in pregnant women may cause fetal death or congenital defects known as congenital rubella syndrome (CRS).
☞ Measles vaccination resulted in a 79% drop in measles deaths between 2000 and 2014 worldwide.	☞ Worldwide, over 100,000 babies are born with CRS every year.
☞ In 2014, about 85% of the world's children received one dose of measles vaccine by their first birthday through routine health services – up from 73% in 2000.	☞ There is no specific treatment for rubella but the disease is preventable by vaccination.
☞ During 2000-2014, measles vaccination prevented an estimated 17.1 million deaths making measles vaccine one of the best buys in public health.	☞ The highest risk of CRS is in countries where women of childbearing age do not have immunity to the disease (either through vaccination or from having had rubella). Before the introduction of the vaccine, up to 4 babies in every 1000 live births were born with CRS.

WHO Fact Sheet, 2016

### Measles-Rubella Surveillance Case Definition

Any individual, regardless of age, with the following signs and symptoms:

- ✓ Fever (38°C) or hot to touch; and
- ✓ Maculopapular rash (non-vesicular); and
- ✓ At least one of the following: cough, coryza (runny nose) and conjunctivitis (red eyes).

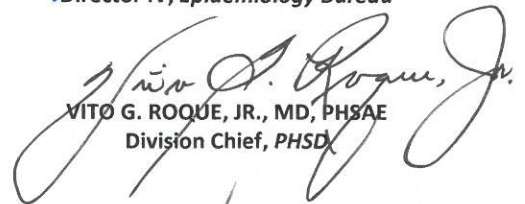
### Measles Elimination Goal in the Philippines


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

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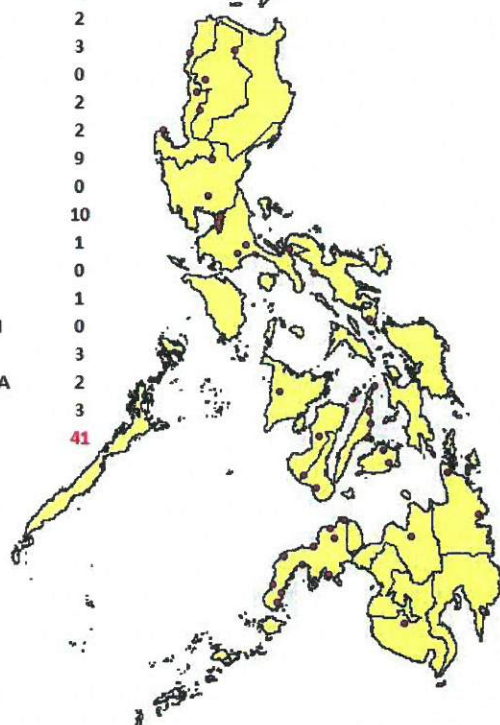


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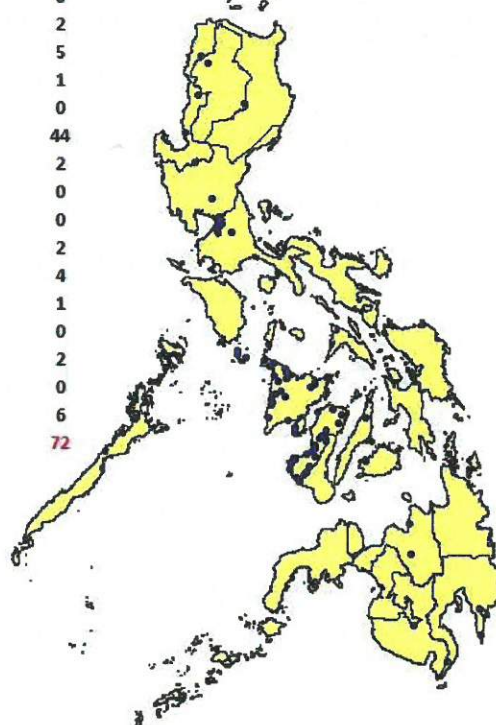
**Confirmed Measles Cases, Philippines**  
January 1 - June 18, 2016 (n=41)

Region	Cases
I	3
II	0
III	2
IVA	3
IVB	0
V	2
VI	2
VII	9
VIII	0
IX	10
X	1
XI	0
XII	1
ARMM	0
CAR	3
CARAGA	2
NCR	3
<b>PHL</b>	<b>41</b>



**Confirmed Rubella Cases, Philippines**  
January 1 - June 18, 2016 (n=72)

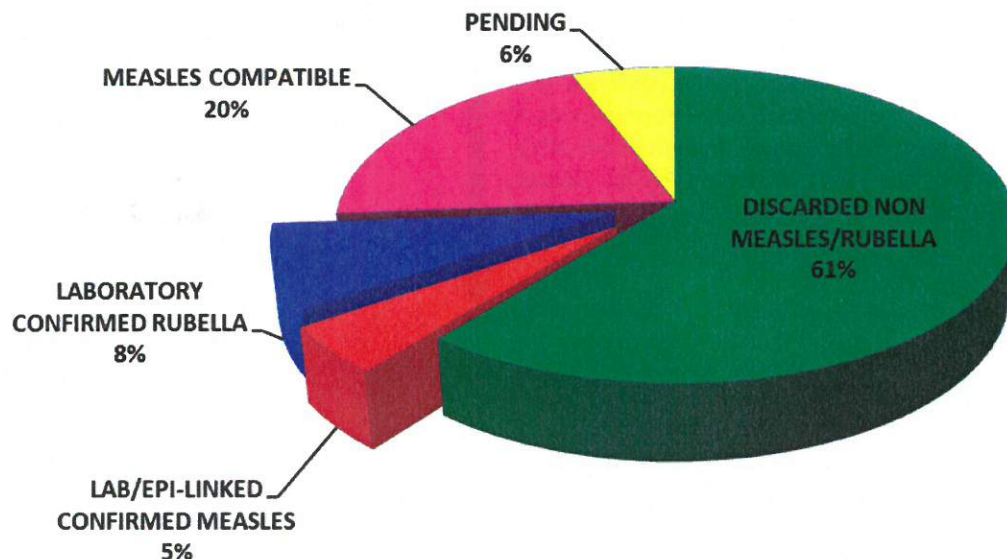
Region	Cases
I	3
II	0
III	2
IVA	5
IVB	1
V	0
VI	44
VII	2
VIII	0
IX	0
X	2
XI	4
XII	1
ARMM	0
CAR	2
CARAGA	0
NCR	6
<b>PHL</b>	<b>72</b>



Legend  
1 DOT = 1 Case

A total of 857 suspect measles cases were reported nationwide from January 1 to June 18, 2016. Of these, 41 (5%) were classified as confirmed measles cases, may it be laboratory confirmed measles or epi-linked confirmed measles (see Figure 1). The number of confirmed measles cases decreased significantly in 2016 (93.54%) 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 0.79 per 1,000,000 population. There were no reported deaths among the confirmed measles cases (CFR=0.00%).

**FIGURE 1. DISTRIBUTION OF REPORTED MEASLES-RUBELLA CASES, PHILIPPINES, JANUARY 1 - JUNE 18, 2016 (N=857)**







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Figure 1 shows the classification of the reported cases as of morbidity week 24. Seventy two cases (8%) were classified as laboratory confirmed rubella. It is distinct that the occurrence of rubella is now higher than measles. As seen in figure 1, 8% of the reported cases were laboratory confirmed rubella while 5% were laboratory and epi-linked confirmed measles.

**TABLE 1. MEASLES AND RUBELLA CASES BY REGION  
PHILIPPINES, JANUARY 1 –JUNE 18, 2016 (n=857)**

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	68	3	0	29	3	32	1
2	3,510,762	70	37	0	0	5	0	26	6
3	11,534,111	231	52	2	0	7	2	38	3
4A	15,172,632	303	89	2	1	19	5	56	6
4B	3,057,039	61	26	0	0	12	1	9	4
5	5,920,478	118	13	2	0	1	0	10	0
6	7,703,570	154	169	2	0	6	44	116	1
7	7,565,674	151	44	9	0	1	2	31	1
8	4,430,334	89	32	0	0	25	0	2	5
9	3,814,158	76	40	9	1	9	0	14	7
10	4,865,413	97	51	1	0	20	2	25	3
11	5,033,163	101	39	0	0	6	4	25	4
12	4,768,455	95	36	1	0	1	1	33	0
ARMM	3,566,757	71	6	0	0	2	0	1	3
CAR	1,792,078	36	40	3	0	6	2	29	0
CRG	2,657,380	53	20	2	0	8	0	9	1
NCR	13,205,216	264	95	3	0	18	6	64	4
<b>PHL</b>	<b>103,711,049</b>	<b>2,074</b>	<b>857</b>	<b>39</b>	<b>2</b>	<b>175</b>	<b>72</b>	<b>520</b>	<b>49</b>

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

REGION	CASES			DEATHS			
	2016	2015	% CHANGE	2016	CFR (%)	2015	CFR (%)
1	3	4	↓ -25.00	0	0.00	0	0.00
2	0	13	↓ -100.00	0	0.00	0	0.00
3	2	4	↓ -50.00	0	0.00	0	0.00
4A	3	11	↓ -72.73	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	43	↓ -79.07	0	0.00	0	0.00
8	0	18	↓ -100.00	0	0.00	0	0.00
9	10	102	↓ -90.20	0	0.00	0	0.00
10	1	62	↓ -98.39	0	0.00	0	0.00
11	0	122	↓ -100.00	0	0.00	2	1.64
12	1	63	↓ -98.41	0	0.00	0	0.00
ARMM	0	15	↓ -100.00	0	0.00	1	6.67
CAR	3	37	↓ -91.89	0	0.00	0	0.00
CRG	2	62	↓ -96.77	0	0.00	0	0.00
NCR	3	16	↓ -81.25	0	0.00	0	0.00
<b>PHL</b>	<b>41</b>	<b>635</b>	<b>↓ -93.54</b>	<b>0</b>	<b>0.00</b>	<b>3</b>	<b>0.47</b>

\* as of June 18, 2016

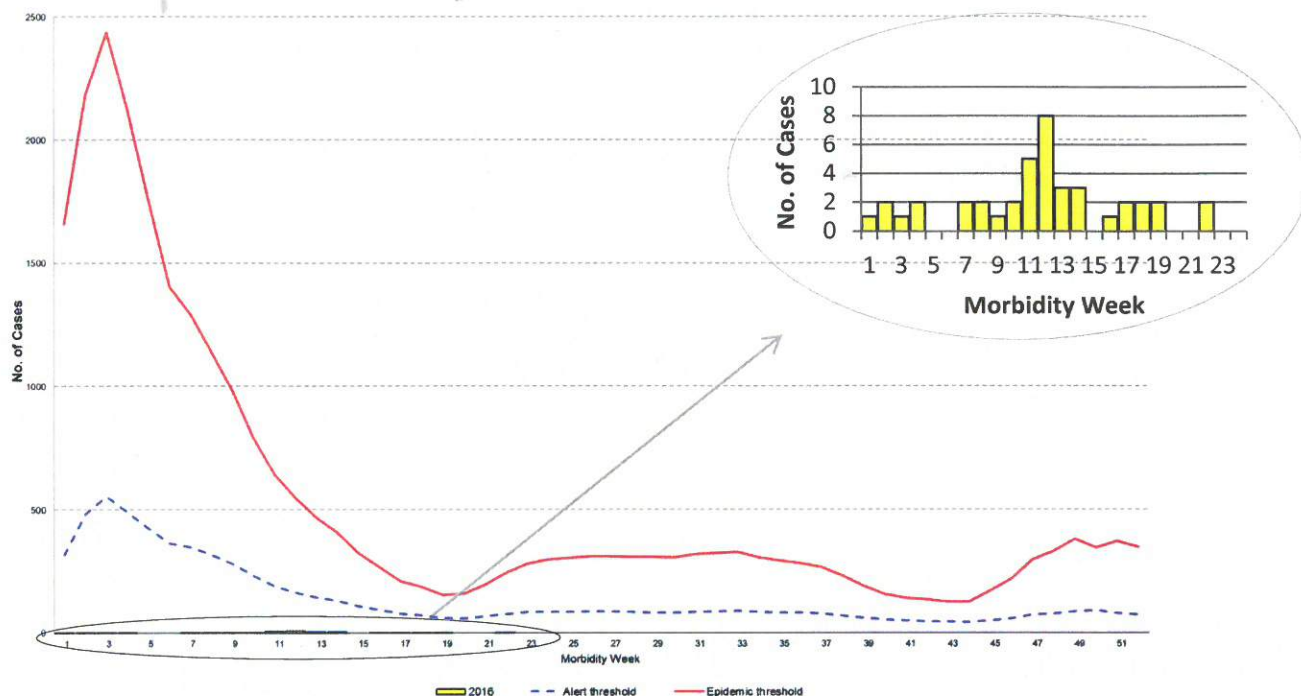




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**FIGURE 2. CONFIRMED MEASLES ALERT AND EPIDEMIC THRESHOLD  
PHILIPPINES, JANUARY 1 – JUNE 18, 2016\* (n=41)**



\*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 2 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\*\***

\*see Annex B  
\*\* as of June 18, 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	1.17	76	54	66	50	3.27	2.66	1.96	1.25	30	43
2	3,510,762	4.04	0.00	74	78	70	76	3.61	2.11	1.33	1.48	49	14
3	11,534,111	0.71	0.35	85	88	80	79	1.40	0.90	1.00	0.66	18	13
4A	15,172,632	1.29	0.40	65	75	57	65	2.41	1.17	1.17	0.74	40	21
4B	3,057,039	1.00	0.00	47	46	38	42	2.83	1.70	0.93	0.59	55	46
5	5,920,478	0.17	0.68	96	100	92	100	0.41	0.44	0.33	0.34	13	8
6	7,703,570	8.29	0.52	97	95	89	86	5.10	4.39	3.12	3.01	7	4
7	7,565,674	6.86	2.38	98	98	86	91	2.14	1.16	1.14	0.82	5	2
8	4,430,334	4.80	0.00	20	22	16	16	4.59	1.44	0.11	0.09	87	78
9	3,814,158	28.04	5.24	70	72	62	65	10.81	2.10	4.03	0.73	35	23
10	4,865,413	13.42	0.41	44	59	42	45	6.94	2.10	0.78	1.03	69	39
11	5,033,163	25.12	0.00	93	87	87	79	6.04	1.55	2.15	0.99	20	15
12	4,768,455	17.40	0.42	60	94	57	83	8.12	1.51	2.94	1.38	42	3
ARMM	3,566,757	4.55	0.00	47	67	46	67	2.33	0.34	0.34	0.06	66	33
CAR	1,792,078	21.56	3.35	90	75	87	75	9.02	4.46	5.45	3.24	14	15
CRG	2,657,380	24.05	1.51	76	60	64	60	6.07	1.51	1.79	0.68	30	40
NCR	13,205,216	1.39	0.45	60	78	50	69	1.82	1.44	0.87	0.97	39	19
PHL	103,711,049	6.85	0.79	70	77	64	70	3.64	1.65	1.48	1.00	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%	>10%
												<50%	>50%



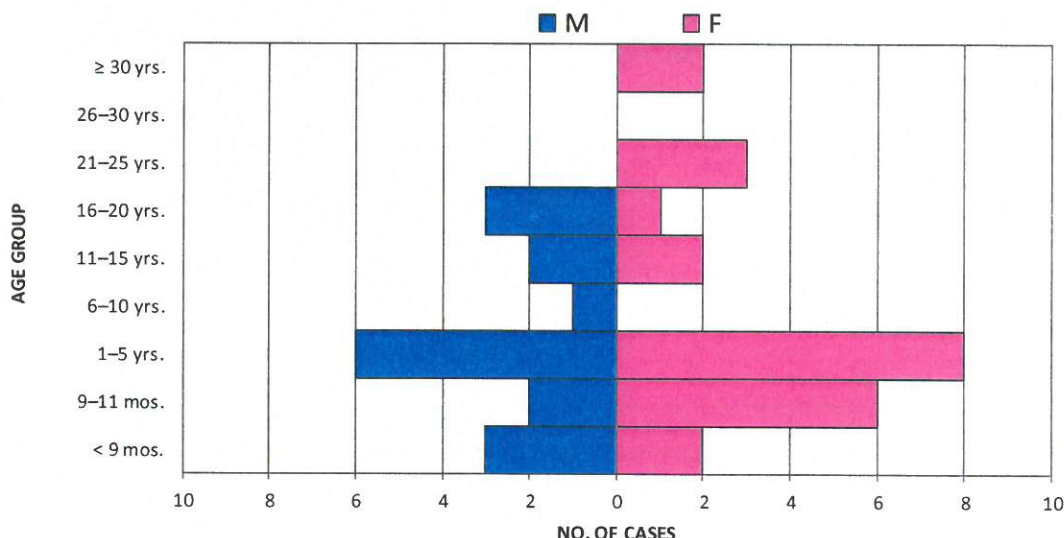
### Geographic Distribution

The distribution of confirmed measles cases varied considerably among the regions. Most of the confirmed cases came from Region IX (24.39%), Region VII (21.95%) and Regions I, IVA, CAR and NCR (7.32% per region). On the other hand, confirmed rubella cases are concentrated in the Visayas region. Region VI has the bulk of the cases which totals to 44, comprising 61.11% of the country's rubella counts. Most of the confirmed rubella cases came from Region VI (61.11%), NCR (8.33%) and Region IVA (6.94%). Upon investigation, transmission of rubella in Region VI was in a public high school. Immunization of close contacts and community catch-up immunization were already done in response to the increasing number of cases.

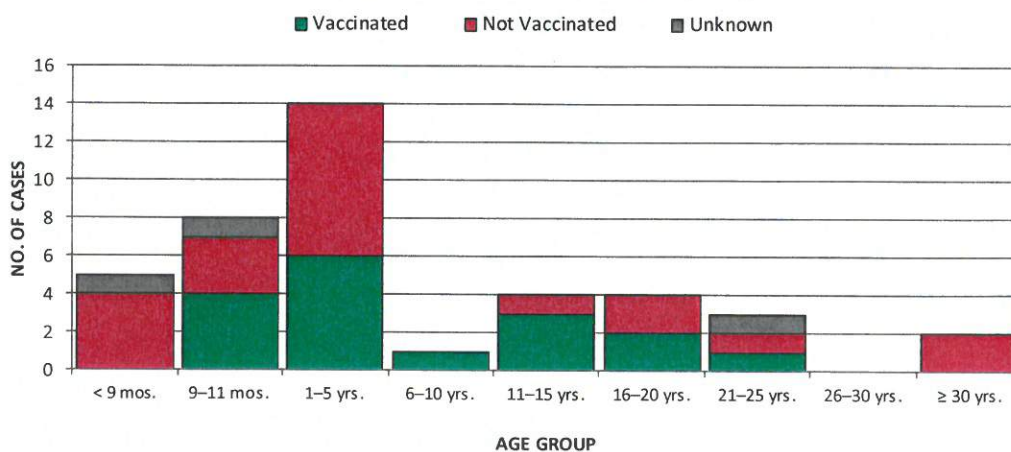
### Profile of Cases

Fifty nine percent (59%) of the confirmed measles cases were female. Majority of the confirmed cases belonged to children aged 1 to 5 years old (34%) as shown in Figure 3. Among the confirmed measles cases, 21 (51%) were not vaccinated, 17 (42%) were vaccinated and 3 (7%) have an unknown vaccination status (Figure 4).

**FIGURE 3. CONFIRMED MEASLES CASES BY AGE GROUP AND SEX  
PHILIPPINES, JANUARY 1- JUNE 18, 2016 (n=41)**



**FIGURE 4. IMMUNIZATION STATUS OF CONFIRMED MEASLES CASES BY AGE GROUP  
PHILIPPINES, JANUARY 1-JUNE 18, 2016 (n=41)**



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.

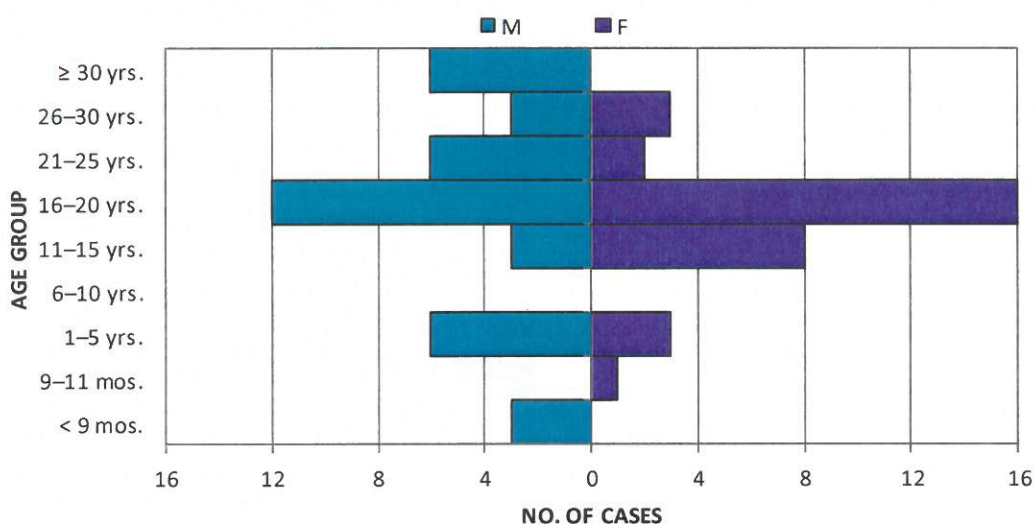




Fifty four percent (54%) of the confirmed rubella cases were male. Majority of the confirmed cases belonged to the young adult age group ranging from 16 to 20 years old (39%) as shown in Figure 5. Among the female confirmed rubella cases, one case was 17-18 weeks pregnant and tested negative for both measles and rubella IgM. (*Pregnancy data source: CIF encoded by RITM*)

Age, sex and pregnancy data of cases are essential in analyzing the increasing cases of rubella and its impact, specifically the risk of congenital rubella syndrome. These may eventually support the establishment of CRS surveillance in the future.

**FIGURE 5. CONFIRMED RUBELLA CASES BY AGE GROUP AND SEX  
PHILIPPINES, JANUARY 1- JUNE 18, 2016 (n=72)**



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.

#### Actions Taken for Unmet Measles Surveillance Indicators

1. Communication among regions regarding factors affecting their surveillance performance
2. Provision of technical assistance
3. Empowerment of disease surveillance officers through discussions during the Second Quarter Program Review for VPD Surveillance



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### Annex A. Definition of Terms

<b>Laboratory confirmed measles case</b>	☞ A suspect measles case with a positive laboratory test result for measles-specific IgM antibodies or other approved laboratory test method
<b>Laboratory confirmed rubella case</b>	☞ A suspect measles case with a positive laboratory test result for rubella-specific IgM antibodies or other approved laboratory test method
<b>Clinically measles compatible case</b>	☞ 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
<b>Confirmed Measles cases</b>	☞ Laboratory confirmed + Epidemiologically-linked measles cases
<b>Epidemiologically-linked measles (or rubella) case</b>	☞ 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.
<b>Discarded as non-measles/non-rubella</b>	☞ A case that meets the clinical case definition for measles and discarded as non-measles/rubella case.
<b>Pending Classification</b>	☞ Cases with blood specimen collected and pending laboratory results.
<b>Alert threshold</b>	☞ 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.
<b>Epidemic threshold</b>	☞ 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.