

MEASLES-RUBELLA

Table 1. Measles case classification and incidence by country and area, WHO Western Pacific Region, 2008–2013¹

Country	2009		2010		2011		2012		2013 ¹									Rash onset of last confirmed measles case	
	Total confirmed ²	Measles incidence per 1 million pop.	Total confirmed ²	Measles incidence per 1 million pop.	Total confirmed ²	Measles incidence per 1 million pop.	Total confirmed ²	Measles incidence per 1 million pop.	Population (in millions) ³	Suspected measles cases	Confirmed measles cases			Annualized measles incidence per 1 million	Compatible cases	Discarded cases ⁵	Pending classification		Deaths due to measles
											Lab	Epi-linked	Total						
Australia	104	5.0	70	3.3	192	8.5	199	8.7	23.21	N/A ⁴	18	1	19	2.0	0	0	0	0	31-May-13
Brunei Darussalam	2	5.0	0	0.0	4	9.9	1	2.4	0.42	5	0	0	0	0.0	0	5	0	0	24-Jul-12
Cambodia	865	58.9	1 156	76.8	722	50.5	0	0.0	14.66	130	0	0	0	0.0	0	107	23	0	15-Nov-11
China	52 461	39.5	38 159	28.5	9 943	7.4	6 183	4.6	1 359.37	47 616	17 125	226	17 351	30.6	555	28 998	712	22	31-May-13
Hong Kong (China)	22	3.0	11	1.6	12	1.7	8	1.1	7.27	76	8	0	8	2.6	1	67	0	0	22-May-13
Macao (China)	0	0.0	0	0.0	1	1.8	1	1.8	0.58	6	1	0	1	4.1	0	5	0	0	27-Apr-13
Japan	705	5.5	432	3.4	411	3.2	228	1.8	126.35	275	70	2	72	1.4	39	162	2	0	15-May-13
Lao People's Democratic Republic	72	12.1	153	23.8	113	18.0	36	5.6	6.46	442	22	50	72	26.8	0	368	2	0	22-Mar-13
Malaysia	56	2.1	74	2.7	1 603	54.4	1868	63.7	29.79	3 168	109	1	110	8.9	38	2 663	341	0	24-May-13
Mongolia	8	3.0	7	2.6	0	0.0	0	0.0	2.89	101	0	0	0	0.0	0	101	0	0	19-Jun-10
New Zealand	253	60.0	48	11.2	599	135.7	55	12.3	4.51	3	1	0	1	0.5	0	2	0	0	2-Mar-13
Papua New Guinea	0	0.0	0	0.0	0	0.0	0	0.0	7.33	35	0	0	0	0.0	0	26	9	0	6-Jan-08
Philippines	1 490	16.6	6 388	68.2	6 555	69.1	1536	15.9	98.11	1 160	144	40	184	4.5	154	764	58	0	17-May-13
Republic of Korea	17	0.4	111	2.3	43	0.9	2	0.0	48.77	129	20	0	20	1.0	0	82	24	0	15-May-13
Singapore	16	3.6	54	11.2	143	27.6	40	7.6	5.30	45	9	0	9	4.1	4	32	0	0	11-May-13
Viet Nam	5 222	59.0	1 826	20.5	745	8.4	637	5.9	90.66	343	27	0	27	0.7	68	229	19	0	20-May-13
Pacific island countries and areas ⁶	4	1.3	1	0.3	2	1.0	0	0.0	3.23	23	0	0	0	0.0	0	23	0	0	9-Aug-11
Western Pacific Region	61 297	34.0	48 490	27.0	21 088	11.7	10 794	5.9	1 828.90	53 557	17 554	320	17 874	23.5	859	33 634	1 190	22	

¹ Includes all cases reported to the Western Pacific Regional Office by 17 June 2013.

² Includes laboratory confirmed, epi-linked and clinically confirmed cases for 2009 to 2012.

³ United Nations, Department of Economic and Social Affairs, Population Division World Population Prospects.

⁴ Australia reports confirmed cases only.

⁵ Excludes vaccine-associated cases

⁶ Classification is provisional based on laboratory data only.

Green <1 confirmed measles case / 1 000 000 population
Yellow 1–9.9 confirmed measles case / 1 000 000 population
Red ≥ 10 confirmed cases / 1 000 000 population

Table 2. Measles surveillance performance indicators by country and area, WHO Western Pacific Region, 2012–2013¹

Country	2012				2013 ¹			
	Discarded non-measles rate per 100 000 pop	Second level units with ≥ 1 discarded cases per 100 000 pop (annualized)	Suspected cases with adequate investigation	Suspected cases with adequate blood specimens ²	Annualized discarded non-measles rate per 100 000 pop	Second level units with ≥ 1 discarded cases per 100 000 pop (annualized)	Suspected cases with adequate investigation	Suspected cases with adequate blood specimens ²
	≥ 2	≥ 80%	≥ 80%	≥ 80%	≥ 2	≥ 80%	≥ 80%	≥ 80%
Australia ³	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data
Brunei Darussalam	1.5	100.0%	71.4%	85.7%	2.9	100.0%	100.0%	100.0%
Cambodia	6.8	58.3%	56.1%	99.2%	1.8	25.0%	49.2%	95.4%
China	2.3	71.0%	99.0%	97.9%	5.1	90.3%	99.4%	94.0%
Hong Kong (China)	2.5	100.0%	92.0%	97.3%	2.2	100.0%	98.7%	96.1%
Macao (China)	3.9	100.0%	95.7%	100.0%	2.1	100.0%	100.0%	100.0%
Japan	0.1	0.0%	Insufficient data	Insufficient data	0.3	4.3%	Insufficient data	Insufficient data
Lao People's Democratic Republic	7.6	64.7%	49.3%	76.6%	13.7	47.1%	26.5%	63.0%
Malaysia	22.7	93.8%	74.4%	83.3%	21.5	93.8%	81.4%	89.4%
Mongolia	22.0	40.9%	64.2%	100.0%	8.4	36.4%	64.4%	99.0%
New Zealand	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data
Papua New Guinea	0.6	10.0%	61.9%	81.0%	0.9	10.0%	68.6%	80.0%
Philippines	2.1	64.7%	56.5%	79.5%	1.9	17.6%	76.4%	85.1%
Republic of Korea	0.3	6.3%	84.0%	90.4%	0.4	6.3%	76.7%	89.9%
Singapore	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data
Viet Nam	0.9	25.0%	44.3%	55.0%	0.6	25.0%	54.5%	70.6%
Pacific island countries and areas	5.7	Insufficient data	0.0%	Insufficient data	1.7	Insufficient data	0.0%	Insufficient data
Western Pacific Region	2.4	35.1%	88.8%	93.1%	4.4	31.1%	96.7%	93.2%

¹ Includes all cases reported to the Western Pacific Regional Office by 17 June 2013.

² Excludes epidemiologically-linked cases.

³ Reports only confirmed cases.

Green Reached or surpassed target
Yellow Nearly reached target: 1.00–1.99 for non-measles suspected case rate; 10.1–25% for percent clinically confirmed cases; 60–79% for other indicators
Red Substantially below target

Table 3A. Measles and rubella laboratory performance, WHO Western Pacific Region, 2012¹

Country	Measles and rubella		Measles													Rubella				
			Serology									Virus detection				Serum and blood (includes DBS)				
	Total number of cases tested	Total number of samples received	Serum					Blood		Results ≤ 7 days	Measles virus isolation/detection (swab, urine and others)		Measles Reverse Transcription-Polymerase Chain Reaction		Total number of lab confirmed cases	Samples tested for rubella IgM	Rubella IgM (+)	Rubella IgM equiv	Rubella IgM pending	
			Samples tested for measles IgM	Measles IgM (+)	Measles IgM equiv	Measles IgM (-)		Measles IgM pending	DBS samples		No. of samples tested	No. of isolates	No. of samples tested	No. of (+)						
No.	No.	No.	No.	%	No.	No. received	No. (+)	%	No. of samples tested	No. of isolates	No. of samples tested	No. of (+)	No.	No.	No.	No.				
Australia	116	133	14	9	1	4	28.6	0	0	-	100.0	0	0	112	108	104	14	7	0	0
Cambodia	985	987	872	0	1	871	99.9	0	112	0	98.3	0	0	0	0	0	962	185	0	0
China																				
Hong Kong (China)	489	560	511	6	8	497	97.3	0	0	-	98.7	18	3	29	7	7	470	21	5	0
Macao (China)	58	58	58	2	0	56	96.6	0	0	-	96.6	0	0	0	0	2	58	3	0	0
Japan ²	362	462	248	142	39	67	27.0	0	0	-	No data	214	78	0	0	184	3	0	0	0
Lao People's Democratic Republic	396	396	396	7	6	383	96.7	0	0	-	73.7	0	0	0	0	7	396	50	68	0
Malaysia	9 195	9 644	8 619	1 829	128	6 662	77.3	0	0	-	97.7	1 512	87	0	0	1 863	6 732	1 011	318	1
Mongolia	627	628	606	0	0	606	100.0	0	0	-	100.0	2	0	22	0	0	626	240	10	0
New Zealand	331	362	171	11	5	155	90.6	0	0	-	99.3	4	0	165	46	54	51	5	2	1
Papua New Guinea	66	66	66	0	0	66	100.0	0	0	-	57.6	0	0	0	0	0	66	24	8	0
Philippines	3 065	3 080	3 048	654	125	2 269	74.4	0	3	0	95.3	62	3	12	2	657	2 405	131	147	0
Republic of Korea	243	251	249	18	15	216	86.7	0	0	-	100.0	1	0	30	0	18	242	13	23	0
Singapore	590	781	249	14	5	230	92.4	0	0	-	96.9	179	4	0	0	18	406	23	14	0
Viet Nam (northern)	563	563	483	5	9	465	96.3	4	0	-	82.3	0	0	0	0	5	563	97	35	7
Viet Nam (southern)	349	370	349	1	1	347	99.4	0	0	-	97.7	21	0	21	0	1	349	24	19	0
Fiji	182	183	181	0	1	180	99.4	0	2	0	93.4	0	0	0	0	0	183	25	9	0
Samoa ³	10	16	5	0	0	5	100.0	0	0	-	No data	0	0	0	0	0	9	0	0	3
Solomon Islands ³	10	10	4	0	0	4	100.0	0	0	-	No data	0	0	0	0	0	10	3	3	0
Total	17 637	18 550	16 129	2 698	344	13 083	81.1	4	117	0	96.0	2 013	175	391	163	2 920	13 545	1 862	661	12

¹ National measles laboratory monthly reports received in the Western Pacific Regional Office by 20th of January 2013

² Data from the national measles surveillance report received in the Western Pacific Regional Office by 20th of January 2013

³ Specimens were tested in Victorian Infectious Diseases Reference Laboratory, Australia

Table 3B. Measles and rubella laboratory performance, WHO Western Pacific Region, 2013¹

Country	Measles and rubella		Measles													Rubella				
			Serology									Virus detection				Serum and blood (includes DBS)				
	Total number of cases tested	Total number of samples received	Serum					Blood		Results ≤ 7 days	Measles Virus isolation/detection (swab, urine and others)		Measles Reverse Transcription-Polymerase Chain Reaction		Total number of lab confirmed cases	Serum and blood (includes DBS)				
			Samples tested for measles IgM	Measles IgM (+)	Measles IgM equiv	Measles IgM (-)		Measles IgM pending	DBS samples		No. of samples tested	No. of isolates	No. of samples tested	No. of (+)		Samples tested for rubella IgM	Rubella IgM (+)	Rubella IgM equiv	Rubella IgM pending	
No.	No.	No.	No.	%	No.	No. received	No. (+)	%	No. of samples tested	No. of isolates	No. of samples tested	No. of (+)	No.	No.	No.	No.				
Australia	7	16	5	4	0	1	20%	0	0	-	100%	0	0	12	9	6	1	0	0	0
Brunei Darussalam	6	6	5	0	0	5	100%	0	0	-	100%	0	0	0	0	0	4	1	0	0
Cambodia	107	107	91	0	0	91	100%	0	16	0	100%	0	0	0	0	0	91	54	0	0
China																				
Hong Kong (China)	236	281	256	8	2	246	96%	0	0	-	98%	11	4	16	10	8	236	7	6	0
Macao (China)	12	12	12	1	0	11	92%	0	0	-	100%	0	0	0	0	1	12	0	0	0
Japan ²	275	299	109	50	0	19	17%	16	0	-	No data	126	12	0	0	58	No data	No data	No data	No data
Lao People's Democratic Republic	257	273	257	28	19	210	82%	0	0	-	96%	0	0	0	0	28	257	15	41	0
Malaysia	3 631	4 202	3 289	159	32	3 098	94%	0	0	-	98%	826	6	0	0	163	3 212	490	122	0
Mongolia	101	101	101	0	0	101	100%	0	0	-	99%	0	0	0	0	0	101	7	5	0
New Zealand	67	70	39	1	1	37	95%	0	0	-	94%	1	0	22	2	4	36	4	0	0
Papua New Guinea	20	20	15	0	0	15	100%	0	3	0	-	0	0	0	0	0	19	0	2	0
Philippines	1 148	1 163	1 123	176	31	915	81%	1	39	2	98%	58	8	0	0	180	972	67	69	1
Republic of Korea	158	175	158	23	25	110	70%	0	0	-	100%	1	0	31	11	26	158	8	3	0
Singapore	182	264	81	3	3	75	93%	0	0	-	97%	86	3	0	0	6	124	9	4	0
Viet Nam (northern)	266	275	266	27	3	236	89%	0	0	-	92%	9	0	9	7	28	266	5	0	0
Viet Nam (southern)	67	67	67	0	1	66	99%	0	0	-	90%	0	0	0	0	0	67	1	0	0
Fiji	24	24	24	0	0	24	100%	0	0	-	88%	0	0	0	0	0	17	1	0	0
Samoa ³	3	3	3	0	0	3	100%	0	0	-	100%	0	0	0	0	0	1	0	0	0
Solomon Islands ³	4	4	0	0	0	0	-	0	0	-	100%	0	0	0	0	0	4	1	0	0
Total	6 571	7 362	5 901	480	117	5 263	89%	17	58	2	97.8%	1 118	33	90	39	508	5 578	670	252	1

¹ National measles laboratory monthly reports received in the Western Pacific Regional Office by 17th of June 2013

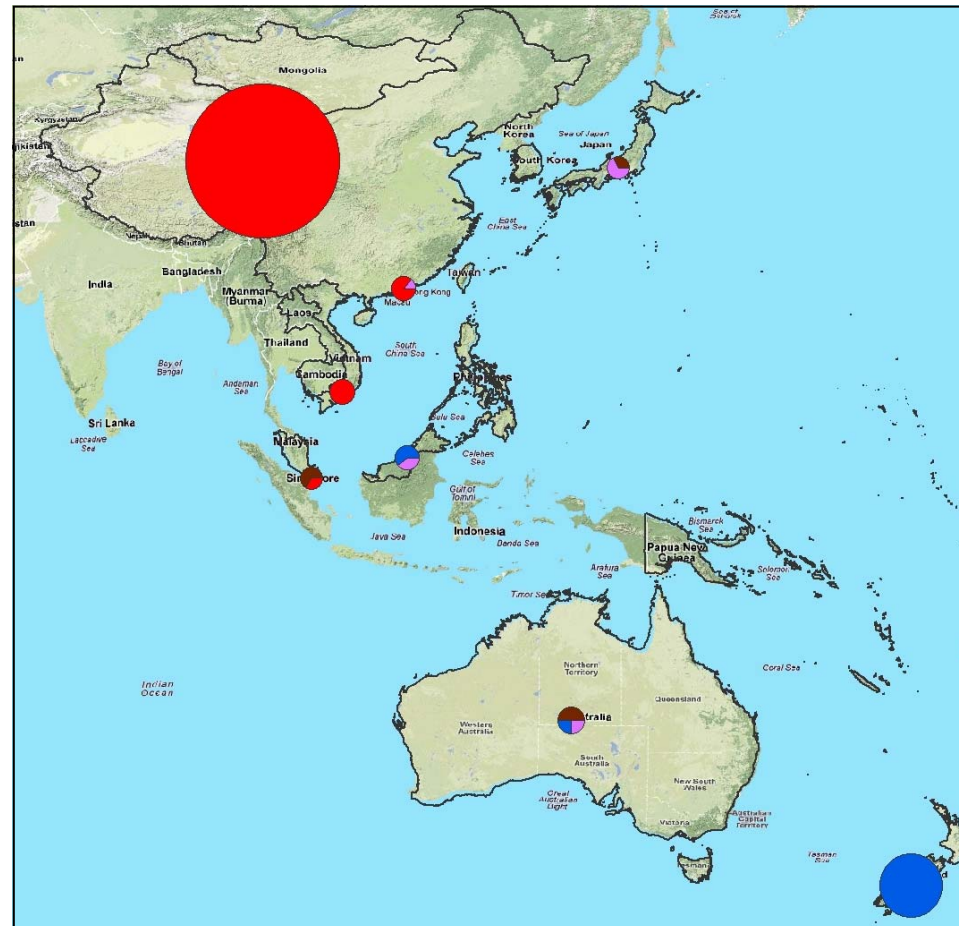
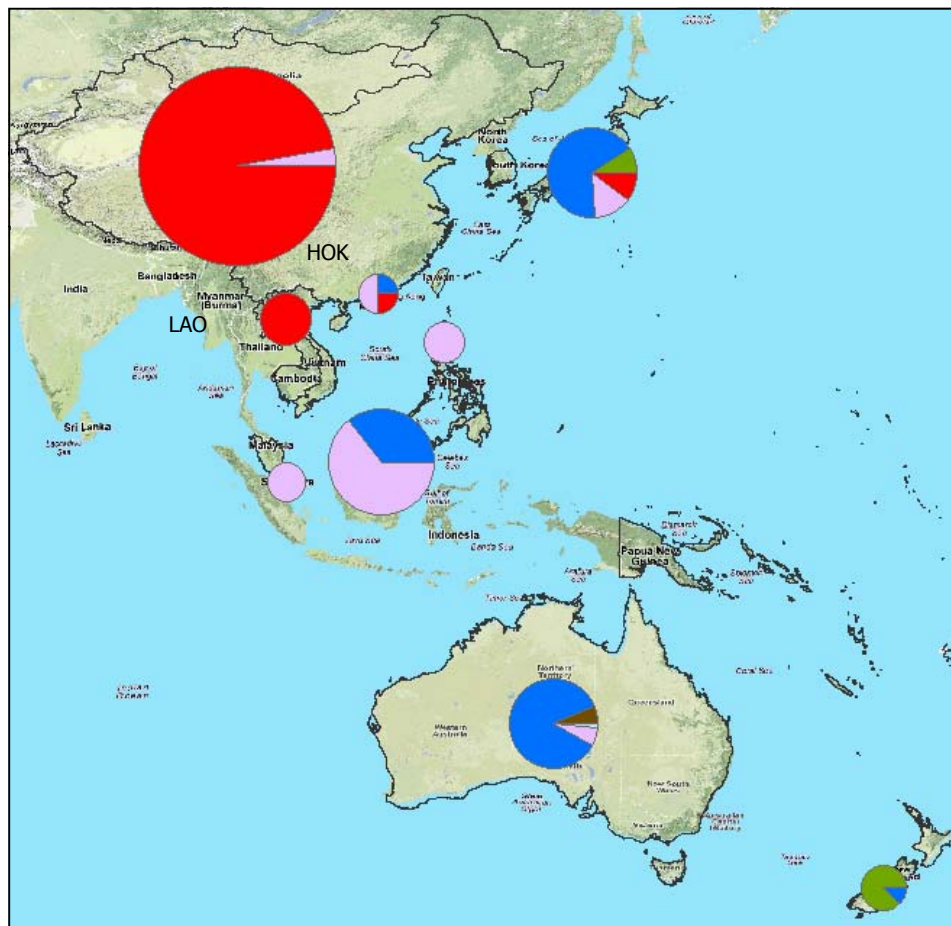
² Data from the national measles surveillance report received in the Western Pacific Regional Office by 17th of June 2013

³ Specimens were tested in Victorian Infectious Diseases Reference Laboratory, Australia

Figure 1. Measles genotype distribution of cases with onset in 2012 and 2013, WHO Western Pacific Region

2012

2013



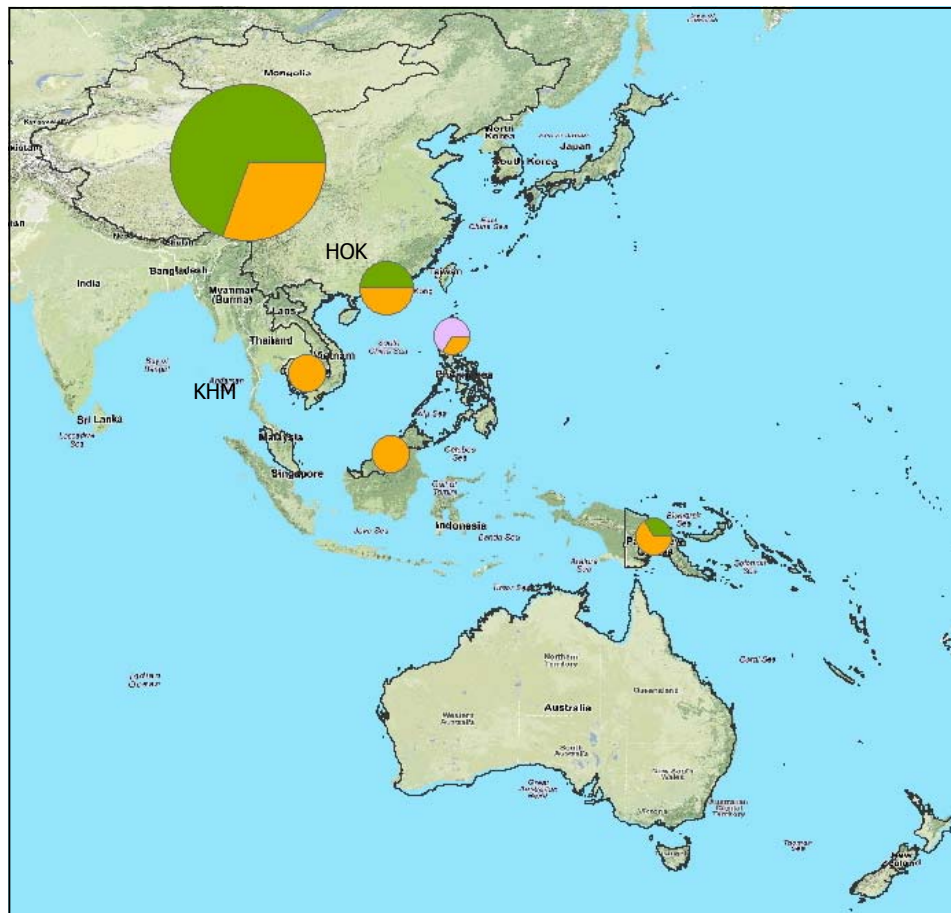
Sources: National and regional measles reference laboratory monthly reports from May 2013 and the Measles Nucleotide Sequence online database (MeaNS).

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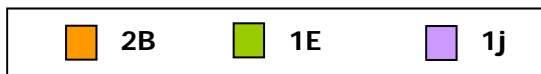
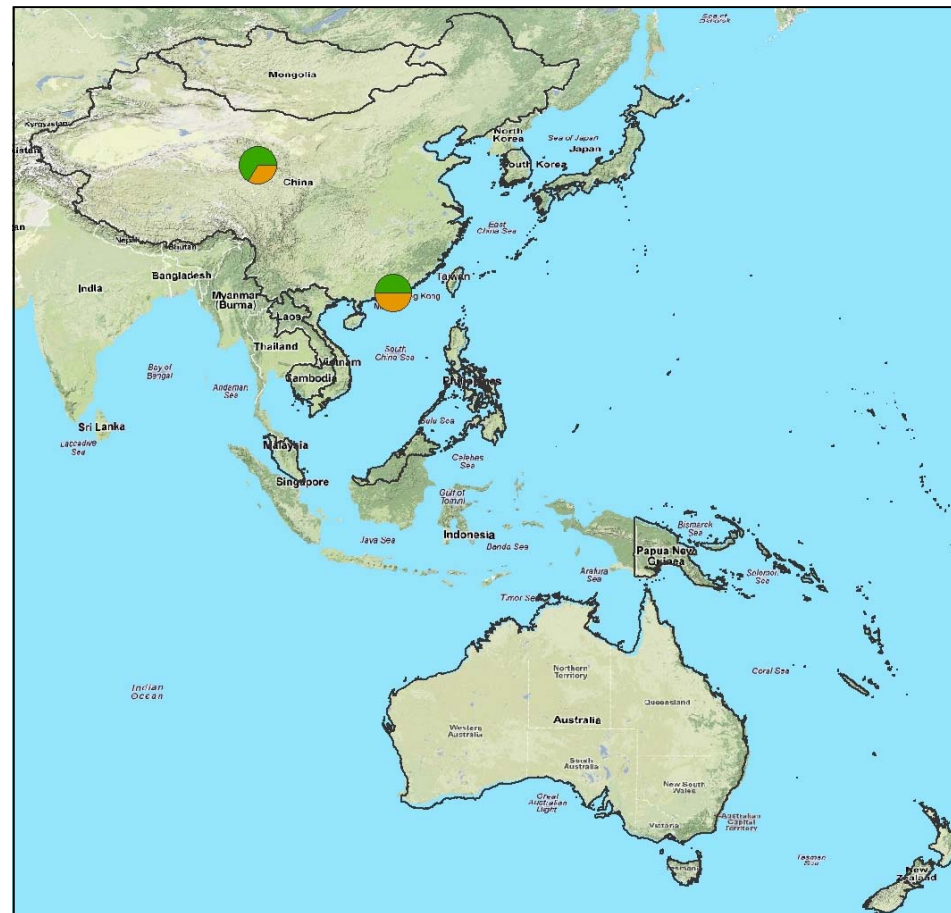
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Figure 2. Rubella genotype distribution of cases with onset in 2012 and 2013, WHO Western Pacific Region

2012



2013



Sources: National and regional measles reference laboratory monthly reports from May 2013 and the Measles Nucleotide Sequence online database (MeaNS).

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Table 4A. Completeness and timeliness of epidemiologic reporting, WHO Western Pacific Region, 2011–2013

Country	2011		2012		2013 ¹					Completeness ²	Timeliness ³
	Completeness	Timeliness	Completeness	Timeliness	Jan	Feb	Mar	Apr	May		
					10 Feb	10 Mar	10 Apr	10 May	10 Jun		
Australia	100%	100%	100%	100%	07 Feb	06 Mar	05 Apr	09 May	07 Jun	100%	100%
Brunei Darussalam	100%	100%	100%	100%	10 Feb	09 Mar	08 Apr	07 May	08 Jun	100%	100%
Cambodia	75%	42%	100%	92%	10 Feb	10 Mar	10 Apr	10 May	10 Jun	100%	100%
China	100%	100%	100%	83%	13 Feb	13 Mar	16 Apr	16 May	15 Jun	100%	60%
Hong Kong (China)	100%	100%	100%	100%	08 Feb	07 Mar	09 Apr	10 May	10 Jun	100%	100%
Macao (China)	100%	100%	100%	100%	05 Feb	04 Mar	03 Apr	08 May	06 Jun	100%	100%
Japan	100%	100%	100%	100%	13 Feb	08 Mar	10 Apr	13 May	10 Jun	100%	60%
Lao People's Democratic Republic	92%	92%	100%	75%	06 Feb	10 Mar	10 Apr	03 May	10 Jun	100%	100%
Malaysia	100%	92%	100%	92%	09 Feb	08 Mar	09 Apr	10 May	05 Jun	100%	100%
Mongolia	100%	100%	100%	100%	08 Feb	07 Mar	09 Apr	09 May	07 Jun	100%	100%
New Zealand	100%	83%	100%	83%	08 Feb	08 Mar	08 Apr	10 Jun	10 Jun	100%	80%
Papua New Guinea	75%	42%	83%	33%	08 Feb	05 Mar	10 Apr	09 May	07 Jun	100%	100%
Philippines	100%	92%	100%	100%	08 Feb	10 Mar	09 Apr	02 May	10 Jun	100%	100%
Republic of Korea	100%	92%	100%	100%	07 Feb	08 Mar	05 Apr	10 May	10 Jun	100%	100%
Singapore	100%	92%	100%	100%	04 Feb	05 Mar	04 Apr	07 May	04 Jun	100%	100%
Viet Nam	75%	50%	100%	92%	10 Feb	10 Mar	10 Apr	10 May	10 Jun	100%	100%
Pacific island countries and areas	75%	67%	100%	100%	06 Feb	05 Mar	08 Apr	02 May	05 Jun	100%	100%
Completeness	95%		99%		100%	100%	100%	100%	100%	100%	
Timeliness		89%		92%	94%	100%	94%	82%	100%		94%

¹ National measles surveillance monthly reports from May 2013.

Legend: black = timely report; red = untimely report

² Completeness is defined as the number of reports received by the end of the reporting month divided by the number of expected reports for the year.

³ Countries and areas should submit reports by the 10th (or the next working day) of the following month; Pacific island countries and areas and China may report to the Regional Office by the 15th (or the next working day) of the following month.

Table 4B. Completeness and timeliness of laboratory reporting, WHO Western Pacific Region, 2011–2013

Country	2011		2012		2013 ¹					Completeness ²	Timeliness ³
	Completeness	Timeliness	Completeness	Timeliness	Jan	Feb	Mar	Apr	May		
Australia	100%	100%	100%	100%	05 Feb	01 Mar	09 Apr	01 May	04 Jun	100%	100%
Brunei Darussalam ⁴								07 May	10 Jun	100%	100%
Cambodia	100%	100%	100%	100%	08 Feb	10 Mar	10 Apr	09 May	07 Jun	100%	100%
China	0%	0%	17%	17%	09 Feb	01 Mar	07 Apr	02 May	08 Jun	100%	100%
Hong Kong (China)	100%	100%	100%	100%	08 Feb	08 Mar	09 Apr	09 May	08 Jun	100%	100%
Macao (China)	100%	100%	100%	100%	07 Feb	05 Mar	04 Apr	03 May	07 Jun	100%	100%
Japan	100%	100%	100%	100%	08 Feb	08 Mar	10 Apr	08 May	10 Jun	100%	100%
Lao People's Democratic Republic	100%	100%	100%	92%	08 Feb	10 Mar	10 Apr	09 May		80%	80%
Malaysia	100%	100%	100%	58%	08 Feb	05 Mar	09 Apr	10 May	10 Jun	100%	100%
Mongolia	100%	100%	100%	100%	07 Feb	08 Mar	05 Apr	06 May	05 Jun	100%	100%
New Zealand	100%	92%	100%	100%	08 Feb	07 Mar	09 Apr	10 May	10 Jun	100%	100%
Papua New Guinea	83%	67%	92%	50%	10 Feb	08 Mar		08 May	07 Jun	80%	80%
Philippines	100%	100%	100%	92%	06 Feb	08 Mar	10 Apr	07 May	10 Jun	100%	100%
Republic of Korea	100%	100%	100%	100%	08 Feb	08 Mar	09 Apr	10 May	07 Jun	100%	100%
Singapore	100%	100%	100%	100%	08 Feb	08 Mar	09 Apr	09 May	06 Jun	100%	100%
Viet Nam (northern)	100%	75%	92%	83%	07 Feb	12 Mar	07 Apr	12 May	10 Jun	100%	80%
Viet Nam (southern)	100%	100%	83%	83%	09 Feb	08 Mar	10 Apr	09 May	07 Jun	100%	100%
Fiji	92%	58%	100%	100%	06 Feb	05 Mar	08 Apr	02 May	05 Jun	100%	100%
Completeness	93%		93%		100%	100%	94%	100%	100%	98%	
Timeliness		88%		87%	100%	94%	94%	94%	100%		95%

¹ National measles laboratory monthly reports from May 2013.

² Completeness is defined as the number of reports received by the end of the reporting month divided by the number of expected reports for the year.

³ National measles and rubella laboratories should submit monthly reports by the 10th (or the next working day) of the following month.

⁴ Brunei Darussalam joined WHO accreditation programme from April 2013