

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										
	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	Rash onset of last confirmed measles case
											Lab	Epi-linked	Total						
Australia	104	5.0	70	3.3	192	8.5	199	8.7	23.21	N/A ⁴	22	5	27	2.3	0	0	0	0	15-Jun-13
Brunei Darussalam	2	5.0	0	0.0	4	9.9	1	2.4	0.42	8	0	0	0	0.0	0	8	0	0	24-Jul-12
Cambodia	865	58.9	1 156	76.8	722	50.5	0	0.0	14.66	201	0	0	0	0.0	0	172	29	0	15-Nov-11
China	52 461	39.5	38 159	28.5	9 943	7.4	6 183	4.6	1 359.37	55 716	19 732	239	19 971	29.4	695	34 345	705	26	30-Jun-13
Hong Kong (China)	22	3.0	11	1.6	12	1.7	8	1.1	7.27	103	11	0	11	3.0	2	90	0	0	18-Jun-13
Macao (China)	0	0.0	0	0.0	1	1.8	1	1.8	0.58	7	1	0	1	3.5	0	6	0	0	27-Apr-13
Japan	705	5.5	432	3.4	411	3.2	228	1.8	126.35	324	80	3	83	1.3	46	193	2	0	26-Jun-13
Lao People's Democratic Republic	72	12.1	153	23.8	113	18.0	36	5.6	6.46	473	23	45	68	21.1	0	405	0	0	5-May-13
Malaysia	56	2.1	74	2.7	1 603	54.4	1868	63.7	29.79	3 763	117	1	118	7.9	26	2 999	598	0	9-Jun-13
Mongolia	8	3.0	7	2.6	0	0.0	0	0.0	2.89	117	0	0	0	0.0	0	117	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	0.4	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	1 583	249	64	313	6.4	299	971	0	7	12-Jun-13
Republic of Korea	17	0.4	111	2.3	43	0.9	2	0.0	48.77	296	68	0	68	2.8	0	204	14	0	24-Jun-13
Singapore	16	3.6	54	11.2	143	27.6	40	7.6	5.30	53	10	0	10	3.8	5	38	0	0	30-May-13
Viet Nam	5 222	59.0	1 826	20.5	745	8.4	637	5.9	90.66	485	31	0	31	0.7	93	335	26	0	24-Jun-13
Pacific island countries and areas ⁶	4	1.3	1	0.3	2	1.0	0	0.0	3.23	26	0	0	0	0.0	0	26	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	63 193	20 345	357	20 702	22.6	1 166	39 937	1 383	33	

¹ Includes all cases reported to the Western Pacific Regional Office by 20 July 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%	3.8	100.0%	100.0%	100.0%
Cambodia	6.8	58.3%	56.1%	99.2%	2.3	37.5%	55.2%	95.5%
China	2.3	71.0%	99.0%	97.9%	5.1	90.3%	99.4%	94.3%
Hong Kong (China)	2.5	100.0%	92.0%	97.3%	2.5	100.0%	98.1%	95.1%
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%	12.5	58.8%	30.1%	64.7%
Malaysia	22.7	93.8%	74.4%	83.3%	20.1	100.0%	81.3%	73.2%
Mongolia	22.0	40.9%	64.2%	100.0%	8.1	36.4%	69.2%	100.0%
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%	0.7	10.0%	68.6%	80.0%
Philippines	2.1	64.7%	56.5%	79.5%	2.0	41.2%	65.0%	76.1%
Republic of Korea	0.3	6.3%	84.0%	90.4%	0.8	6.3%	59.5%	71.3%
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%	0.7	26.6%	57.1%	76.1%
Pacific island countries and areas	5.7	Insufficient data	0.0%	Insufficient data	1.6	Insufficient data	0.0%	Insufficient data
Western Pacific Region	2.4	35.1%	88.8%	93.1%	4.4	34.8%	96.2%	92.1%

¹ Includes all cases reported to the Western Pacific Regional Office by 20 July 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	Samples tested for rubella IgM		Rubella IgM (+)		
			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.	No.	No.	%	No.	No. received	No. (+)	%	No. of samples tested	No. of isolates	No. of samples tested	No. of (+)	No.	No.	No.	No.		
Australia	11	22	7	5	0	2	29%	0	0	-	100%	0	0	16	11	9	2	0	0	0
Brunei Darussalam	10	10	9	0	0	9	100%	0	0	-	100%	0	0	0	0	0	8	1	0	0
Cambodia	201	201	145	0	0	145	100%	0	27	0	100%	0	0	0	0	0	172	66	0	0
China																				
Hong Kong (China)	293	345	316	11	2	303	96%	0	0	-	99%	14	6	19	13	11	292	8	6	0
Macao (China)	14	14	14	1	0	13	93%	0	0	-	100%	0	0	0	0	1	14	0	0	0
Japan ²	281	321	120	76	14	29	24%	0	0	-	No data	158	14	0	0	83	No data	No data	No data	No data
Lao People's Democratic Republic	289	305	289	29	20	240	83%	0	0	-	96%	0	0	0	0	29	289	16	42	0
Malaysia	4 247	4 252	3 339	161	32	3 146	94%	0	0	-	94%	914	9	0	0	163	3 260	499	125	0
Mongolia	117	117	117	0	0	117	100%	0	0	-	99%	0	0	0	0	0	117	7	5	0
New Zealand	75	77	44	1	1	42	95%	0	0	-	93%	1	0	24	2	4	39	4	0	0
Papua New Guinea	20	20	15	0	0	15	100%	0	3	0	90%	0	0	0	0	0	19	0	2	0
Philippines	1 677	1 789	1 617	262	39	1 315	81%	1	45	4	99%	113	17	30	4	268	1 395	75	2	0
Republic of Korea	328	392	264	53	32	179	68%	0	0	-	96%	26	25	164	54	104	254	12	7	0
Singapore	214	311	93	3	3	87	94%	0	0	-	97%	99	3	0	0	3	150	10	6	0
Viet Nam (northern)	358	358	358	31	5	310	87%	12	0	-	94%	2	0	9	7	31	358	8	6	12
Viet Nam (southern)	87	87	87	0	1	86	99%	0	0	-	92%	0	0	0	0	0	87	1	2	0
Fiji	27	27	27	0	0	27	100%	0	0	-	88%	0	0	0	0	0	20	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	8 256	8 655	6 864	633	149	6 068	88%	13	75	4	95.7%	1 327	74	262	91	706	6 481	709	203	12

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

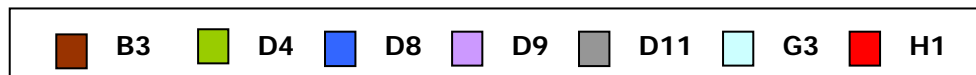
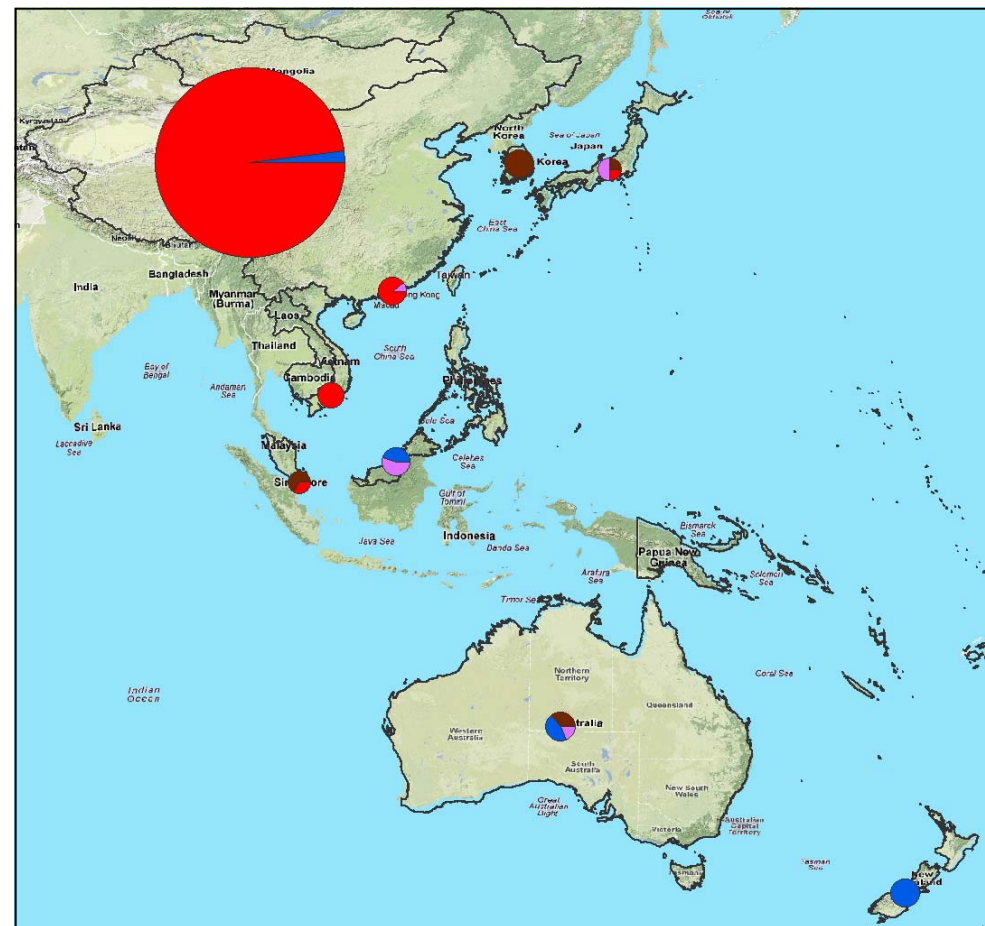
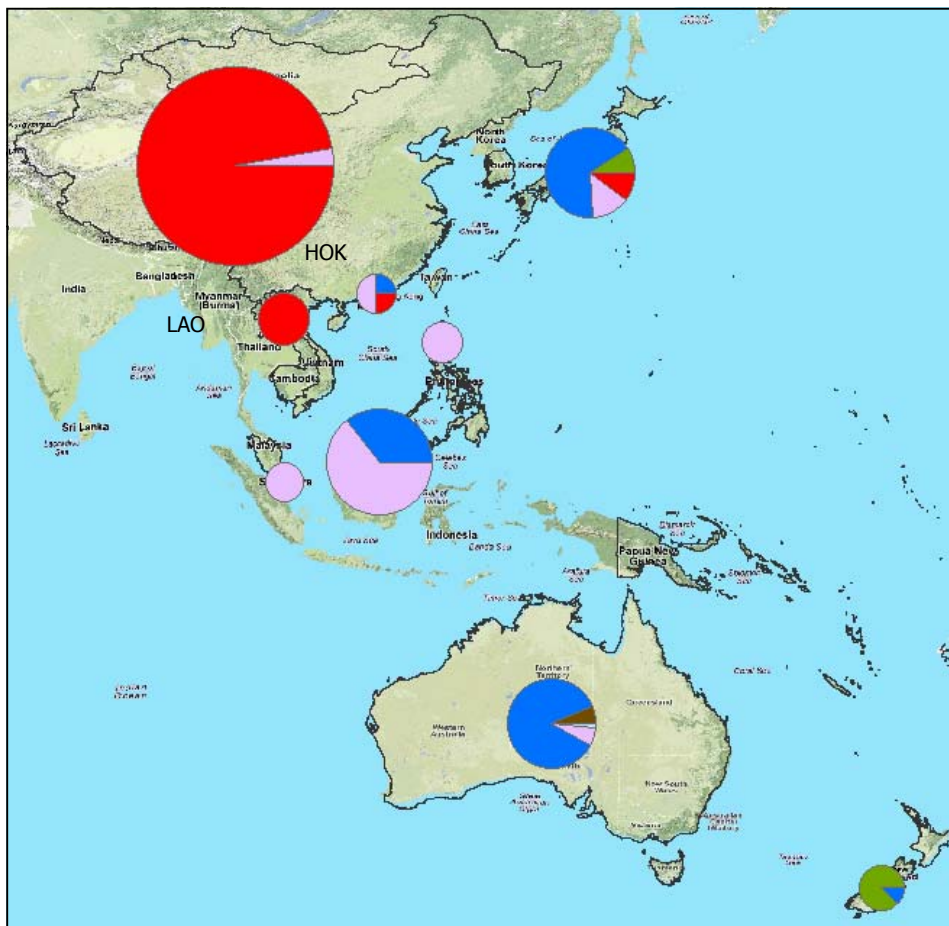
² Data from the national measles surveillance report received in the Western Pacific Regional Office by 20th of July 2013

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



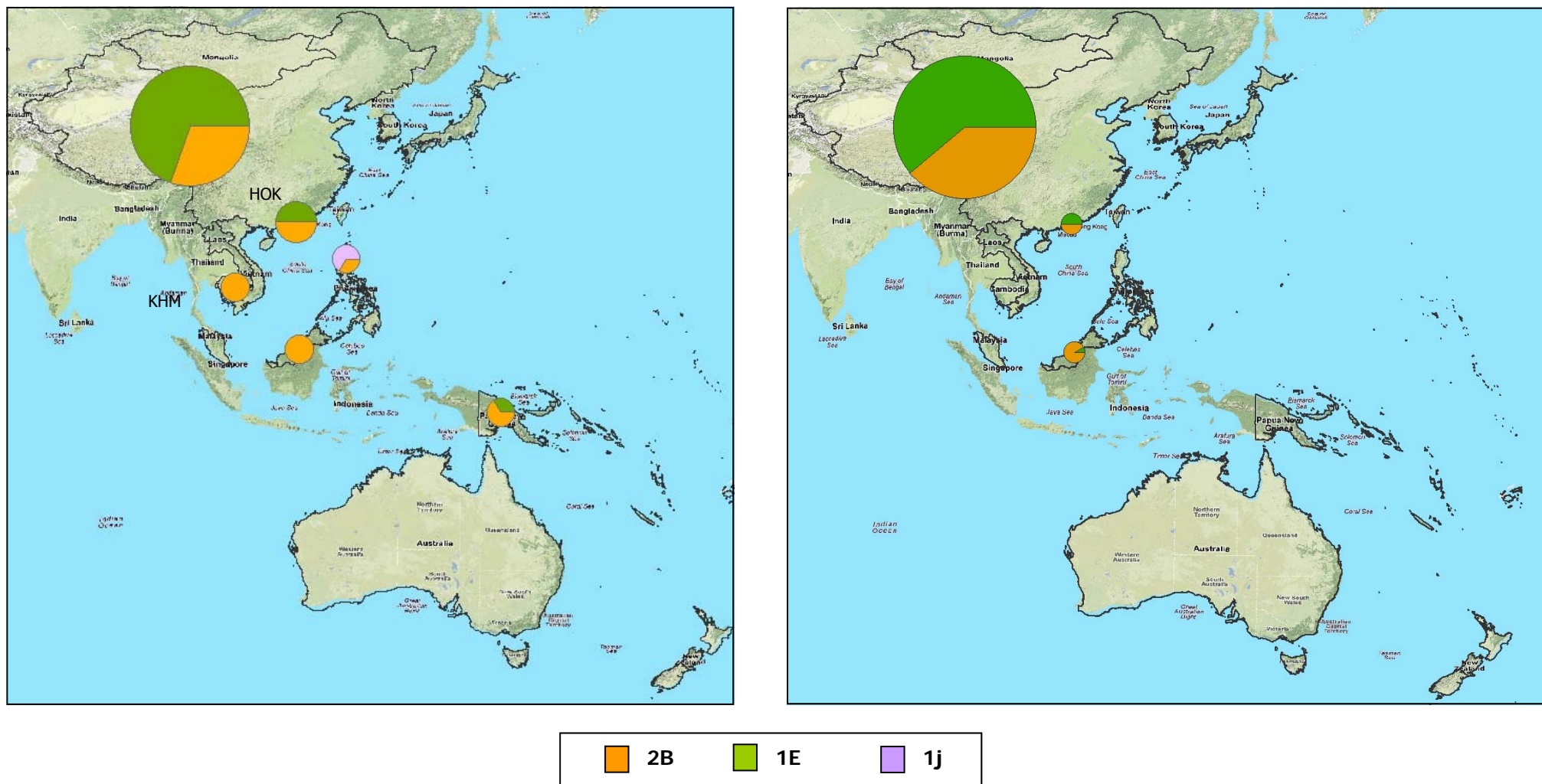
Sources: National and regional measles reference laboratory monthly reports from June 2013 and the Measles Nucleotide Sequence online database (MeaNS).

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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 June 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	Jun		
					10 Feb	10 Mar	10 Apr	10 May	10 Jun	10 Jul		
Australia	100%	100%	100%	100%	07 Feb	06 Mar	05 Apr	09 May	07 Jun	08 Jul	100%	100%
Brunei Darussalam	100%	100%	100%	100%	10 Feb	09 Mar	08 Apr	07 May	08 Jun	08 Jul	100%	100%
Cambodia	75%	42%	100%	92%	10 Feb	10 Mar	10 Apr	10 May	10 Jun	10 Jul	100%	100%
China	100%	100%	100%	83%	13 Feb	13 Mar	16 Apr	16 May	15 Jun	15 Jul	100%	67%
Hong Kong (China)	100%	100%	100%	100%	08 Feb	07 Mar	09 Apr	10 May	10 Jun	10 Jul	100%	100%
Macao (China)	100%	100%	100%	100%	05 Feb	04 Mar	03 Apr	08 May	06 Jun	05 Jul	100%	100%
Japan	100%	100%	100%	100%	13 Feb	08 Mar	10 Apr	13 May	10 Jun	10 Jul	100%	67%
Lao People's Democratic Republic	92%	92%	100%	75%	06 Feb	10 Mar	10 Apr	03 May	10 Jun	17 Jul	100%	100%
Malaysia	100%	92%	100%	92%	09 Feb	08 Mar	09 Apr	10 May	05 Jun	08 Jul	100%	100%
Mongolia	100%	100%	100%	100%	08 Feb	07 Mar	09 Apr	09 May	07 Jun	09 Jul	100%	100%
New Zealand	100%	83%	100%	83%	08 Feb	08 Mar	08 Apr	10 Jun	10 Jun	08 Jul	100%	83%
Papua New Guinea	75%	42%	83%	33%	08 Feb	05 Mar	10 Apr	09 May	07 Jun	04 Jul	100%	100%
Philippines	100%	92%	100%	100%	08 Feb	10 Mar	09 Apr	02 May	10 Jun	10 Jul	100%	100%
Republic of Korea	100%	92%	100%	100%	07 Feb	08 Mar	05 Apr	10 May	10 Jun	10 Jul	100%	100%
Singapore	100%	92%	100%	100%	04 Feb	05 Mar	04 Apr	07 May	04 Jun	05 Jul	100%	100%
Viet Nam	75%	50%	100%	92%	10 Feb	10 Mar	10 Apr	10 May	10 Jun	10 Jul	100%	100%
Pacific island countries and areas	75%	67%	100%	100%	06 Feb	05 Mar	08 Apr	02 May	05 Jun	03 Jul	100%	100%
Completeness	95%		99%		100%	100%	100%	100%	100%	100%	100%	
Timeliness		89%		92%	94%	100%	94%	82%	100%	94%		94%

¹ National measles surveillance monthly reports from June 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	Jun		
					05 Feb	01 Mar	09 Apr	01 May	04 Jun	01 Jul		
Australia	100%	100%	100%	100%	05 Feb	01 Mar	09 Apr	01 May	04 Jun	01 Jul	100%	100%
Brunei Darussalam ⁴								07 May	10 Jun	11 Jul	100%	67%
Cambodia	100%	100%	100%	100%	08 Feb	10 Mar	10 Apr	09 May	07 Jun	10 Jul	100%	100%
China	0%	0%	17%	17%	09 Feb	01 Mar	07 Apr	02 May	08 Jun	10 Jul	100%	100%
Hong Kong (China)	100%	100%	100%	100%	08 Feb	08 Mar	09 Apr	09 May	08 Jun	09 Jul	100%	100%
Macao (China)	100%	100%	100%	100%	07 Feb	05 Mar	04 Apr	03 May	07 Jun	08 Jul	100%	100%
Japan	100%	100%	100%	100%	08 Feb	08 Mar	10 Apr	08 May	10 Jun	10 Jul	100%	100%
Lao People's Democratic Republic	100%	100%	100%	92%	08 Feb	10 Mar	10 Apr	09 May		10 Jul	83%	83%
Malaysia	100%	100%	100%	58%	08 Feb	05 Mar	09 Apr	10 May	10 Jun	10 Jul	100%	100%
Mongolia	100%	100%	100%	100%	07 Feb	08 Mar	05 Apr	06 May	05 Jun	05 Jul	100%	100%
New Zealand	100%	92%	100%	100%	08 Feb	07 Mar	09 Apr	10 May	10 Jun	08-Jul	100%	100%
Papua New Guinea	83%	67%	92%	50%	10 Feb	08 Mar		08 May	07 Jun	10 Jul	83%	83%
Philippines	100%	100%	100%	92%	06 Feb	08 Mar	10 Apr	07 May	10 Jun	09 Jul	100%	100%
Republic of Korea	100%	100%	100%	100%	08 Feb	08 Mar	09 Apr	10 May	07 Jun	09 Jul	100%	100%
Singapore	100%	100%	100%	100%	08 Feb	08 Mar	09 Apr	09 May	06 Jun	09 Jul	100%	100%
Viet Nam (northern)	100%	75%	92%	83%	07 Feb	12 Mar	07 Apr	12 May	10 Jun	11 Jul	100%	83%
Viet Nam (southern)	100%	100%	83%	83%	09 Feb	08 Mar	10 Apr	09 May	07 Jun	10 Jul	100%	100%
Fiji	92%	58%	100%	100%	06 Feb	05 Mar	08 Apr	02 May	05 Jun	03 Jul	100%	100%
Completeness	93%		93%		100%	100%	94%	100%	94%	100%	98%	
Timeliness		88%		87%	100%	94%	94%	94%	100%	94%		94%

¹ National measles laboratory monthly reports from June 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