

Abstract

Analysis of the Occurrence of Measles in Korea, 2019

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Measles is a highly contagious infectious disease caused by the measles virus within the family *Paramixoviridae* manifesting as a febrile rash illness.

Korea became certified as measles-eliminated by the World Health Organization-Western Pacific Regional Office (WPRO) in March 2014. The country manages measles cases and contacts promptly, maintains high childhood immunization coverage and conducts disease surveillance. Nevertheless, imported individual cases and small outbreaks in medical institutions have occurred.

This report aimed to serve as basic data for the prevention and management of measles by identifying the status and epidemiological characteristics of measles in Korea in 2019.

A total of 194 measles cases were reported in 2019. Seventy-seven percent of the total cases in 2019 occurred from January to April. Among them, 190 cases (97.9%) were classified as imported or import-related. Twelve outbreaks (105 persons) were included, eight outbreaks (42 persons) transmitted by an index case with international travel history and four outbreaks (63 persons) of which genetic types were import-related. Eighty-nine cases were sporadic cases, 77 cases were imported (86.5%) and eight cases were import related (9.0%).

Fifty-four cases (27.8%) were females in their 20s which accounted for the highest proportion compared to other age groups and gender, and 21.6% of the measles cases were non-Koreans. Twelve (6.2%) measles cases had a history of more than two doses of MMR vaccination. Seven outbreaks (73 cases) were associated with nosocomial infections.

As indicated, this report found that the measles cases reported in 2019 were imported or import-related. Therefore, it is important to strengthen monitoring at the quarantine stage and promote MMR vaccination for travelers from Korea to countries with active measles transmission. Also, community infection control measures need to take place through prompt response to community cases by early recognition, patient isolation and contact management, and prevention efforts in medical institutions. The high number of measles susceptible people in a community can increase the chance of measles prevalence. Therefore, high immunization coverage should be maintained through conducting national immunization programs for children and the school entry requirement program for preschool aged children.

Keywords: Measles, Outbreak, Sporadic cases, KCDC, Surveillance, Vaccination

Table 1. Number of outbreak-associated and sporadic measles cases in 2019

	Overall	Outbreak-associated cases by region													Sporadic cases
		Total	Daegu	Gyeonggi (Ansan)	Gyeonggi (Uijeongbu)	Incheon	Gyeongbuk (Gyeongsan)	Gyeonggi (Anyang)	Daejeon	Seoul	Jeonnam (Jangseong)	Jeonnam (Muan)	Daegu (Dalseo)	Gyeongbuk (Gimcheon)	
Number of cases	194	105	13	22	4	3	4	26	20	3	3	2	3	2	89
Clinically compatible (Import-related)	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-
Confirmed (Imported)	86	9	-	-	1	2	1	-	1	1	1	-	1	1	77
Confirmed (Import-related)	103	95	13	21	3	1	3	26	19	2	2	2	2	1	8
Confirmed (Unknown)	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4

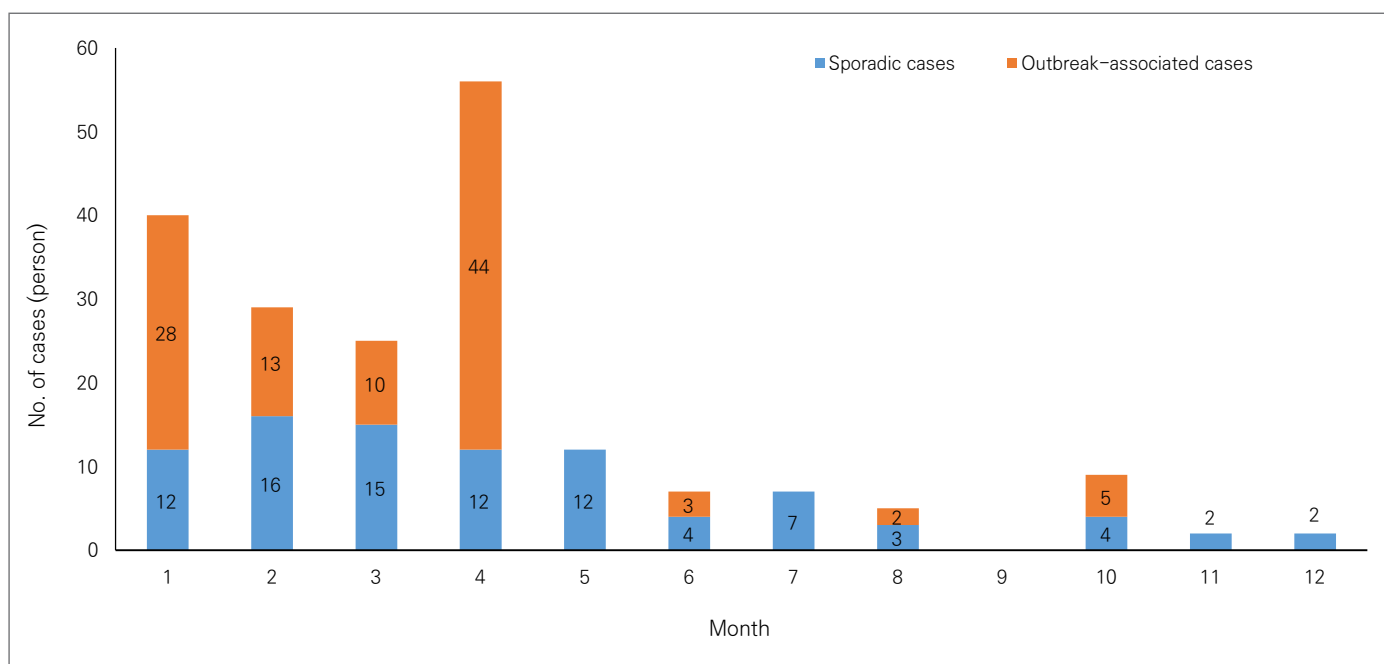


Figure 1. Number of outbreak-associated and sporadic measles cases by month in 2019

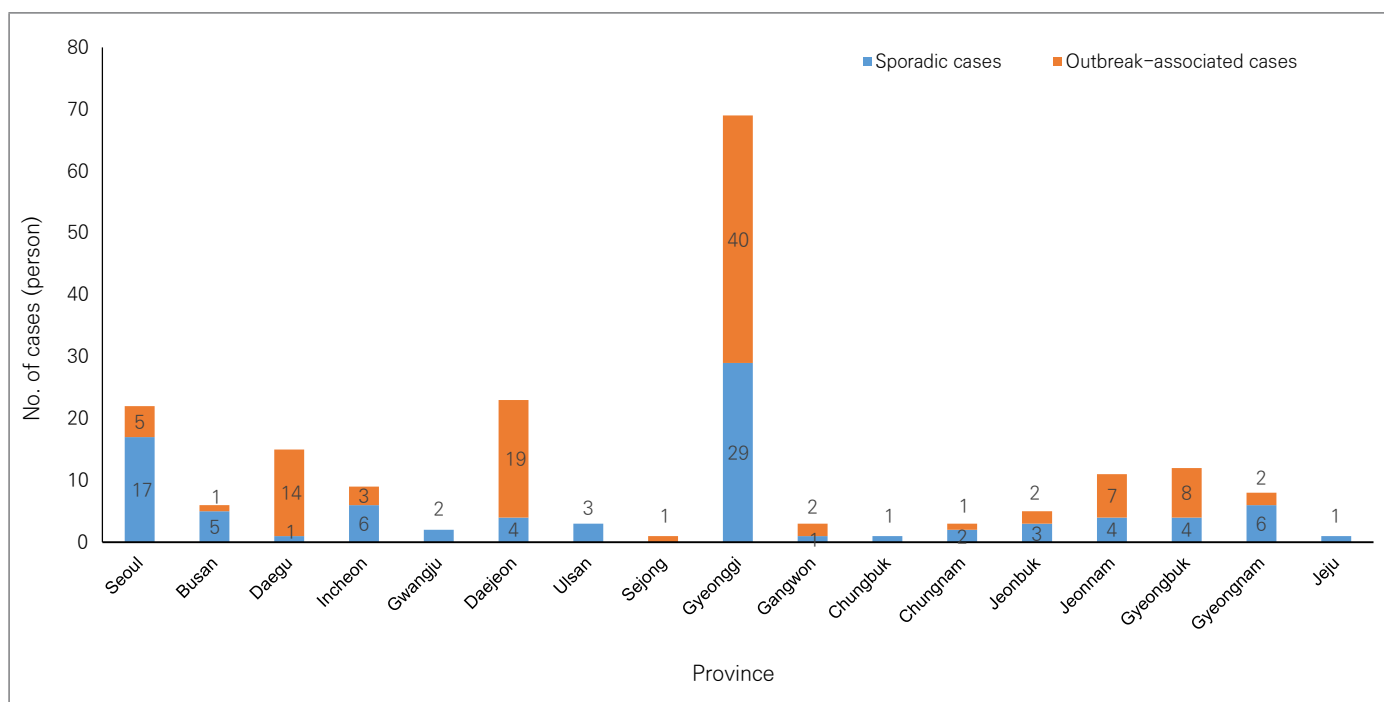


Figure 2. Number of reported outbreak-associated and sporadic measles cases by province

Table 2. Demographic characteristics of measles cases

Unit: no. (%)

		Total	Female	Male
Total		194 (100.0)	110 (56.7)	84 (43.3)
Age group	< 9Y	48 (24.7)	27	21
	0-11M	28 (14.5)	18	10
	12M-3Y	18 (9.3)	8	10
	4-9Y	2 (1.0)	1	1
	10-19Y	12 (6.2)	5	7
	20-29Y	82 (42.3)	54	28
	30-39Y	38 (19.6)	20	18
	40-49Y	11 (5.7)	3	8
	50-59Y	3 (1.5)	1	2
Nationality	Koreans	152 (78.4)	90 (46.4)	62 (32.0)
	Non-Koreans	42 (21.6)	20 (10.3)	22 (11.3)

Table 3. Number of non-Korean measles cases by nationality

Nationality	Total	Vietnam	USA	Thailand	Uzbekistan	Philippines	Madagascar	Algeria	Ukraine	China	Kazakhstan	Cambodia
No. of cases (persons)	42	18	6	6	4	2	1	1	1	1	1	1

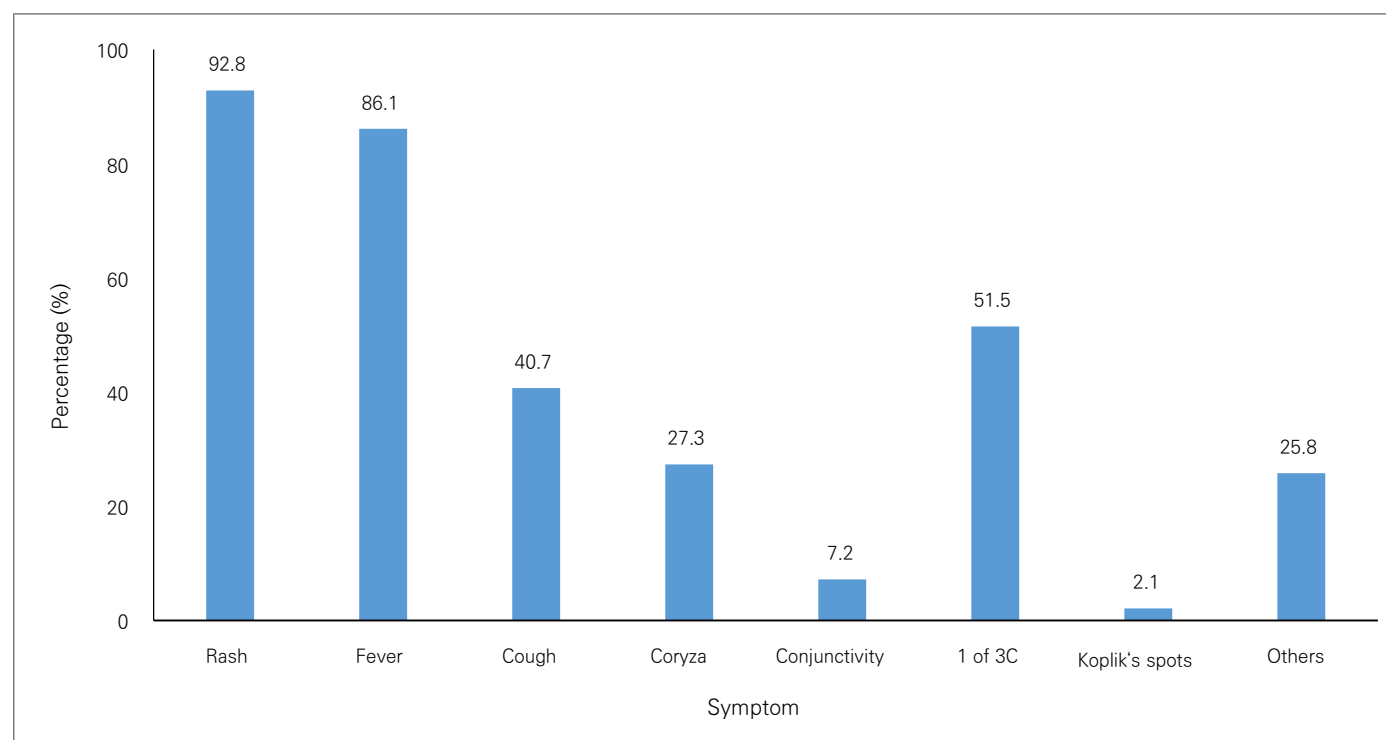


Figure 3. Percentage of manifested clinical symptoms of reported measles cases

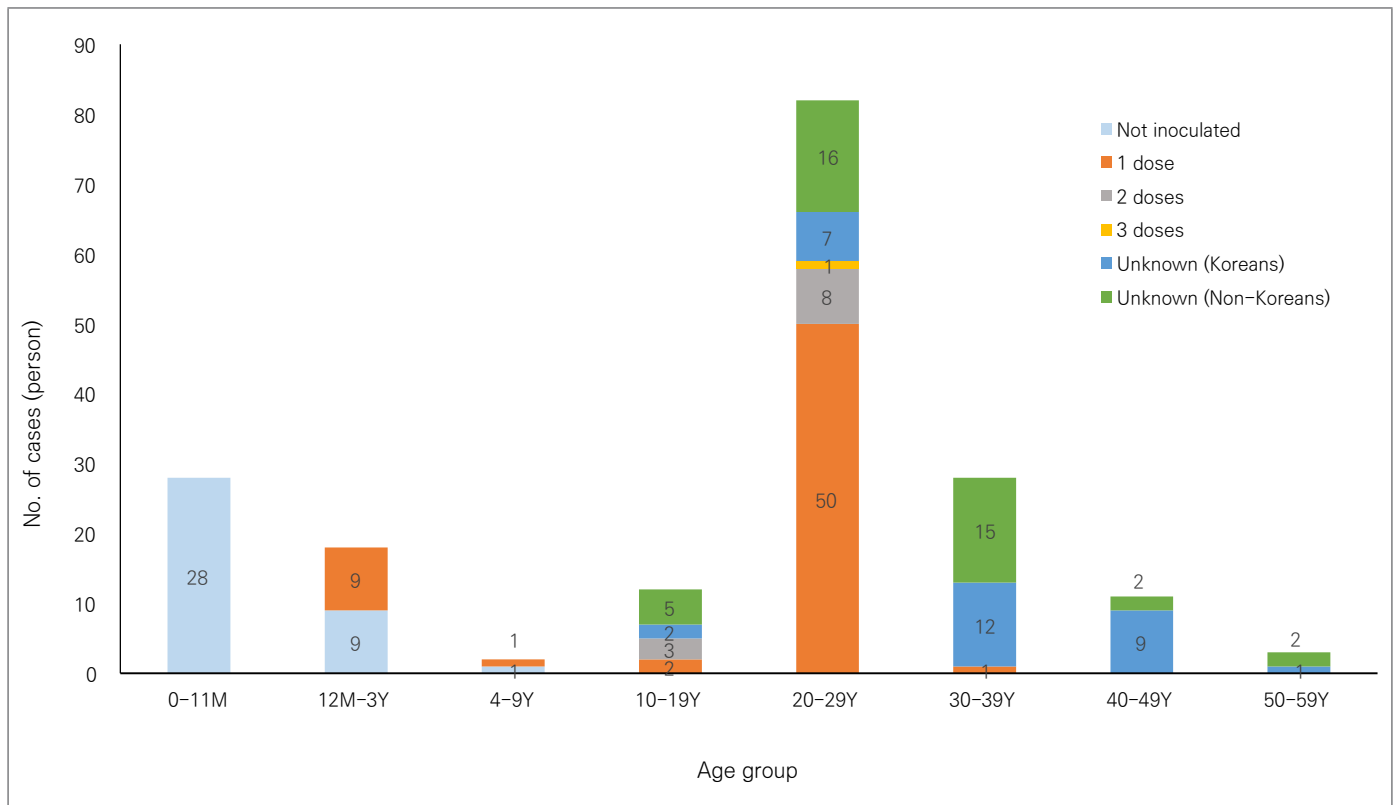


Figure 4. Number of measles cases by age group and history of MMR vaccination

Table 4. Number of measles cases by infection site

Unit: no (%)

	Total	Overseas Travel	Hospital	Cohabitation, Family	Workplace, Gathering, School	Dormitory	Unknown
Total	194 (100.0)	86 (44.3)	74 (38.1)	12 (6.2)	7 (3.6)	3 (1.5)	12 (6.2)
Sporadic cases	89 (100.0)	77 (86.5)	1 (1.1)	-	-	-	11 (12.4)
Outbreak-associated cases	105 (100.0)	9 (8.6)	73 (69.5)	12 (11.4)	7 (6.7)	3 (2.9)	1 (1.0)
Daegu	13	-	12	-	-	-	1
Gyeonggi (Ansan)	22	-	12	9	1	-	-
Gyeonggi (Uijeongbu)	4	1	-	2	1	-	-
Incheon	3	2	-	-	1	-	-
Gyeongbuk (Gyeongsan)	4	1	-	-	-	3	-
Gyeonggi Anyang	26	-	26	-	-	-	-
Daejeon	20	1	19	-	-	-	-
Seoul	3	1	1	1	-	-	-
Jeonnam (Jangseong)	3	1	2	-	-	-	-
Jeonnam (Muan)	2	-	-	-	2	-	-
Daegu (Dalseo)	3	1	-	-	2	-	-
Gyeongbuk (Gimcheon)	2	1	1	-	-	-	-

Table 5. Number of measles cases by country visited

Unit: no (%)

Country visited	Total	Vietnam	Philippines	Thailand	Uzbekistan	Ukraine	Singapore	Cambodia	Europe	Taiwan	Madagascar	Kyrgyzstan
No. of cases (%)	86 (100.0)	47 (54.6)	16 (18.6)	10 (11.6)	2 (2.3)	2 (2.3)	2 (2.3)	2 (2.3)	2 (2.3)	1 (1.1)	1 (1.1)	1 (1.1)