Abstract

The Malaria Situation and the Results of the Project to Eliminate Malaria, 2019

Kwon Jeong Ran, Jeon Byoung-Hak, Park Kyeongeun, Park Sookkyung, Kim Miyoung
Division of Control for Zoonotic and vector borne Diseases, Center of Infectious Diseases Control, KCDC
Cho Eun Hee
Division of VPD control &NIP, Center of Infectious Diseases Control, KCDC
Lee Hee-Il, Lee Sang-Eun
Division of Vectors and Parasitic Diseases, Center for Laboratory Control of Infectious Diseases, KCDC

This paper is a report on the current status of malaria and the results of the "Malaria Re-Elimination Five-Year Action Plan(2019-2023)" developed and implemented in 2019.

Of the 559 malaria confirmed cases reported in 2019, a total of 485(86.8%) were indigenous cases, 74(13.2%) were imported cases. which accounted for 93%(520) of all patients occurring between May and October, 2019. Among the indigenous cases, persumptive infected region were investigated from Gyeonggi province 314(64.7%), Incheon province 98(20.2%), Gangwon Province 25(5.2%) and 48(9.9%) was unknown.

226 persons(46.6%) was aged 20s to 30s; 389(80.2%) were male, 96(19.8%) were female. Of them, 364 cases(75.1%) were civilians and 70 cases(14.4%) were soldiers serving near the demilitarized zone(DMZ), others 51 cases(10.2%) were veterans.

The main goals in 2019 under the five-year plan to eliminate malaria were to add diagnostic criteria for rapid diagnosis of infectious diseases, strengthen patient management by changing the amount of therapeutic agents per weight, and monitor the media through the expansion of each vector control and surveillance and protozoal infection rate. In addition, to expand research and development, the goal was to strengthen control, develop a discrimination diagnosis method for patients with recurrence and long-term incubation period, and conduct research on drug treatment monitoring for patients with malaria. Furthermore, as a result of the project, education and R&D were expanded to strengthen the medical-military cooperation system.

Keywords: Malaria, Elimination, Indigenous case, Import case, Patient management, Vector control and surveillance

Table 1. General characteristics of confirmed cases by case classification

Category	Total		Indigenous case		Imported case	
	n	%	n	%	n	%
Gender						
Male	444	(79.4)	389	(80.2)	55	(74.3)
Female	115	(20.6)	96	(19.8)	19	(25.7)
Age (years)						
〈 20	31	(5.5)	28	(5.8)	3	(4.1)
20–29	169	(30.2)	155	(32.0)	14	(18.9)
30–39	92	(16.5)	71	(14.6)	21	(28.4)
40–49	97	(17.4)	82	(16.9)	15	(20.3)
50–59	84	(15.0)	69	(14.2)	15	(20.3)
60–69	52	(9.3)	46	(9.5)	6	(8.0)
≥ 70	34	(6.1)	34	(7.0)	0	(0.0)
At risk groups						
Civilian	438	(78.4)	364	(75.1)	74	(100.0)
Veteran	51	(9.1)	51	(10.5)	0	(0.0)
Soldier	70	(12.5)	70	(14.4)	0	(0.0)
Total	**559**	**(100.0)**	**485**	**(100.0)**	**74**	**(100.0)**

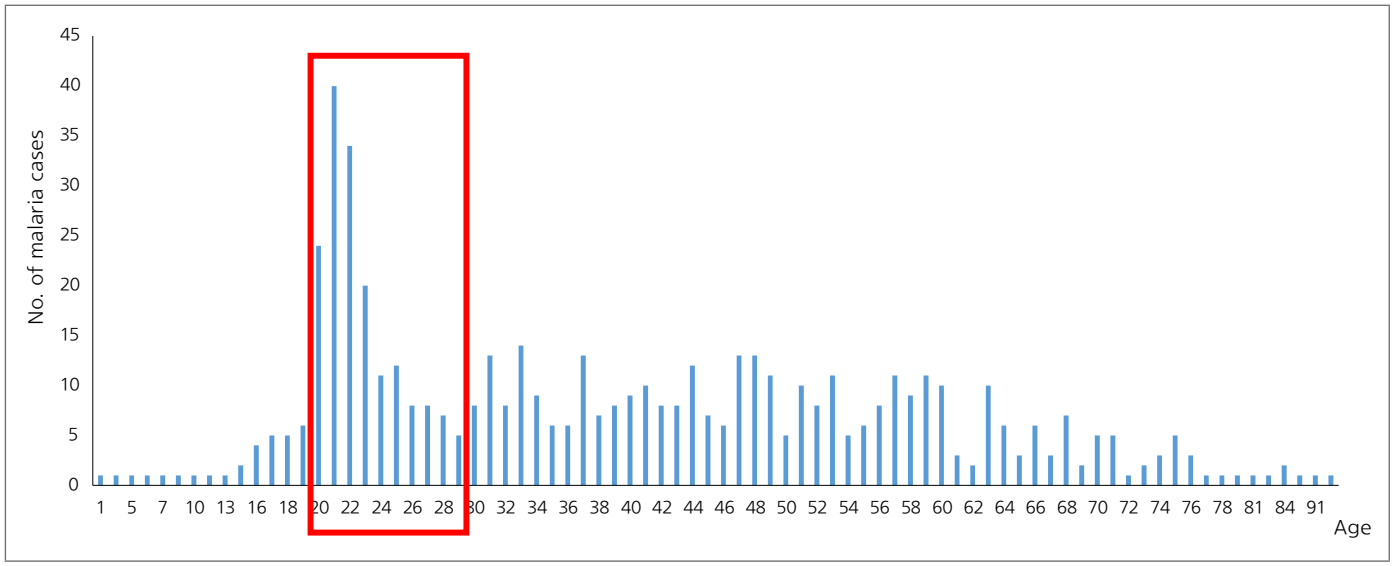

Figure 1. Distribution by age of malaria patients, 2019

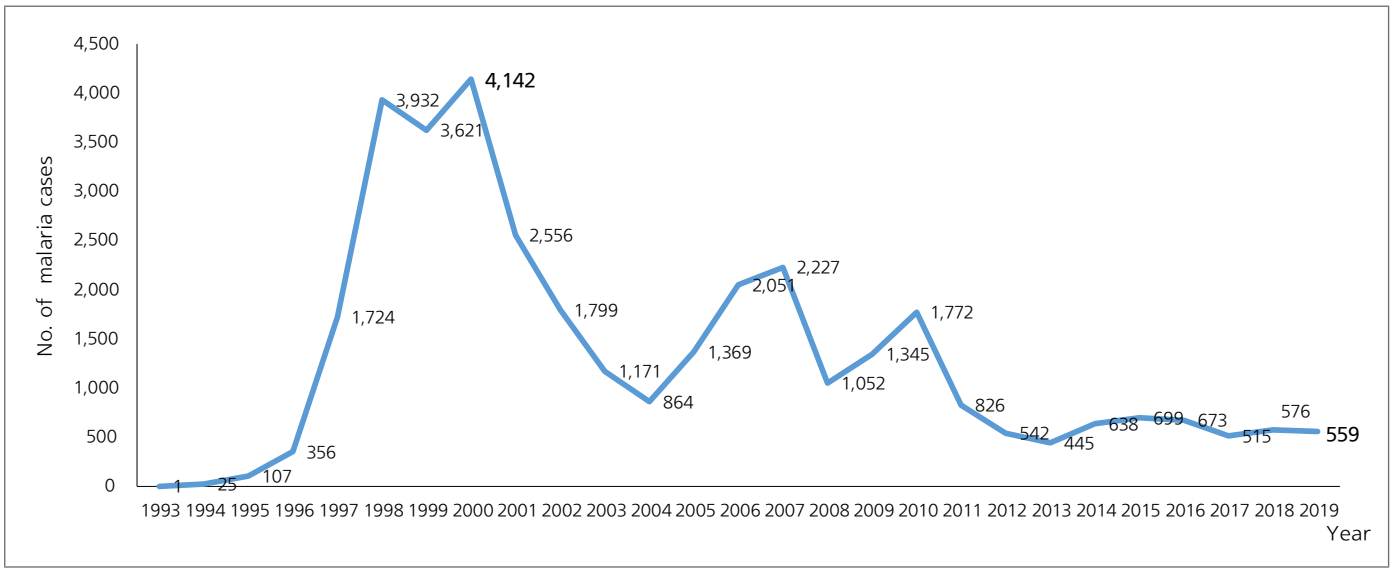

Figure 2. Trend of number of notified malaria cases, 1993–2019

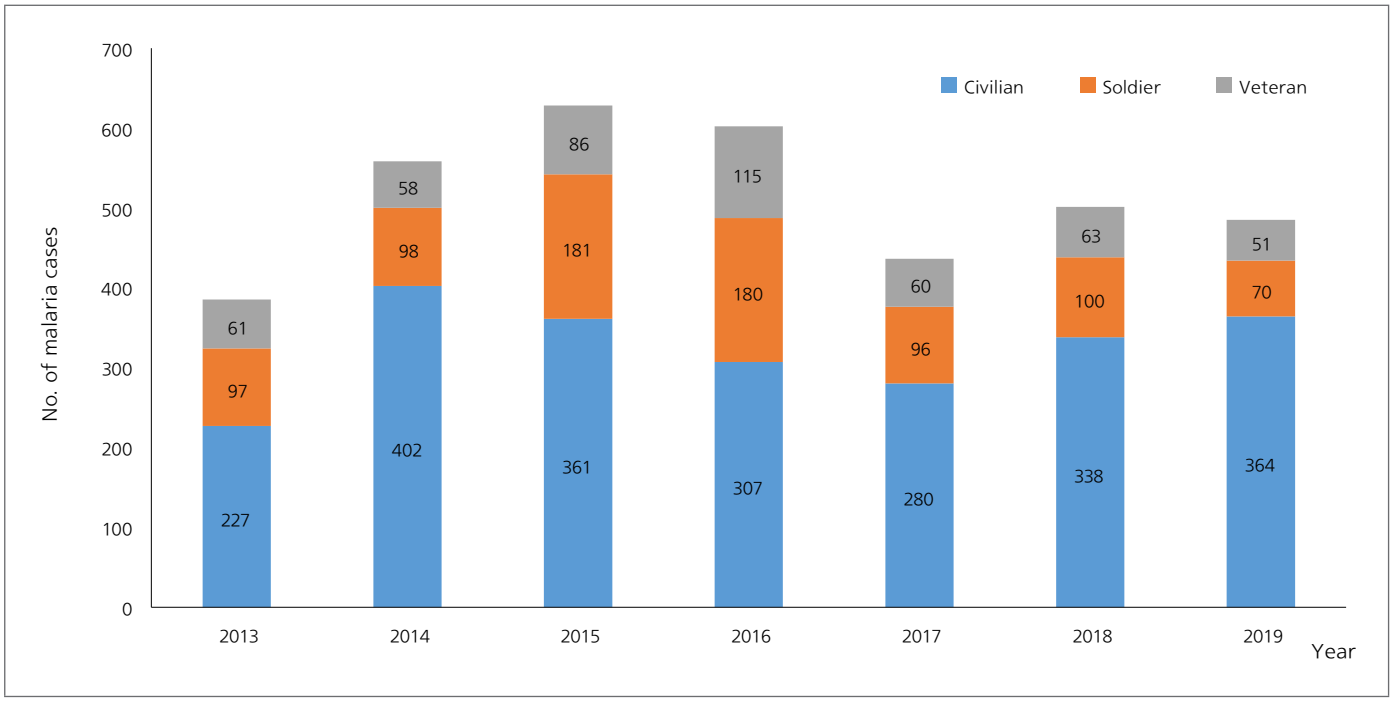

Figure 3. Current status of occurrence distribution by year and occupational–related malaria (2013–2019)

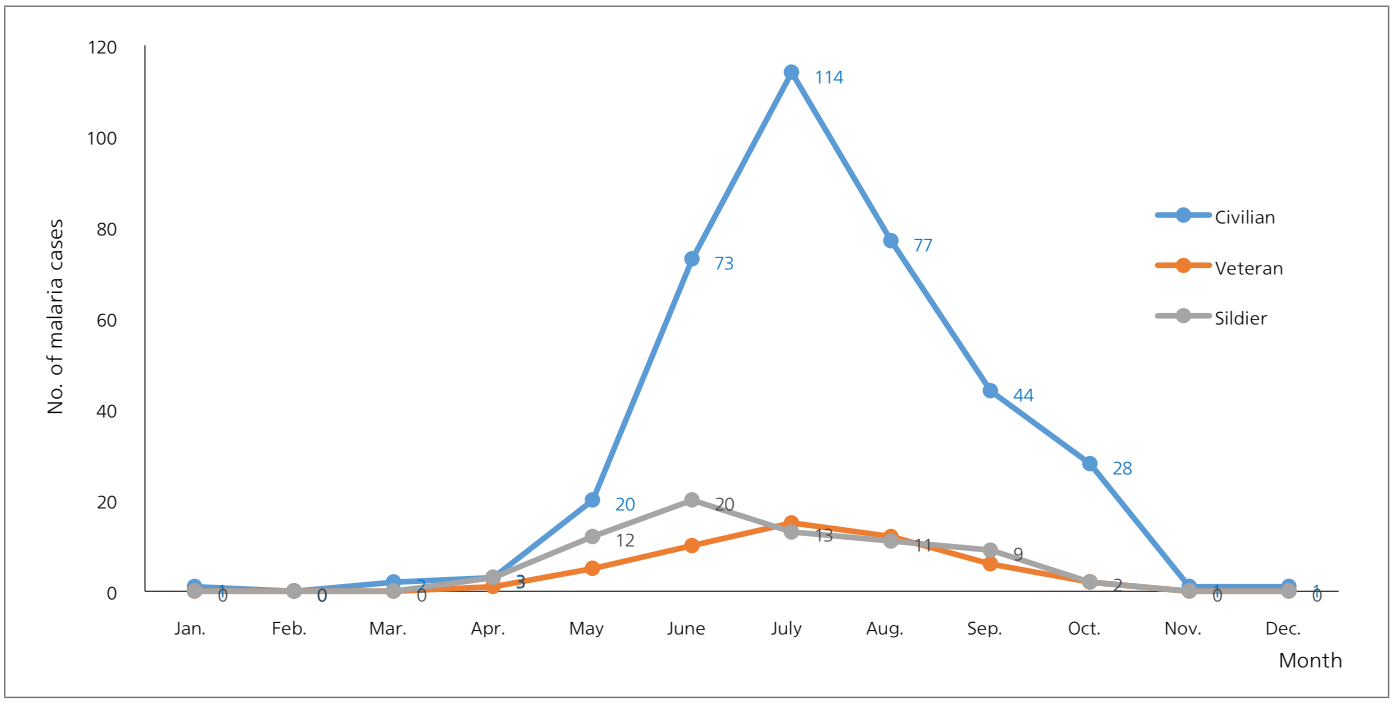

Figure 4. Current status of occurrence distribution by monthly and occupational-related malaria, 2019

Table 2. Regional distribution of malaria patients, 2019

Category	Total		Indigenous Case		Imported Case	
	n	%	n	%	n	%
Seoul	100	(17.9)	72	(14.8)	28	(37.8)
Busan	14	(2.5)	10	(2.0)	4	(5.4)
Daegu	2	(0.4)	2	(0.4)	0	(0.0)
Incheon	87	(15.6)	84	(17.3)	3	(4.1)
Gwangju	4	(0.7)	4	(0.8)	0	(0.0)
Daejeon	5	(0.9)	4	(0.8)	1	(1.4)
Ulsan	2	(0.4)	1	(0.2)	1	(1.4)
Sejong	1	(0.2)	0	(0.0)	0	(0.0)
Gyeonggi	294	(52.6)	270	(55.7)	24	(32.5)
Gangwon	15	(2.7)	15	(3.2)	0	(0.0)
Chungbuk	7	(1.3)	4	(0.8)	3	(4.1)
Chungnam	9	(1.6)	7	(1.4)	2	(2.7)
Jeonbuk	3	(0.5)	2	(0.4)	1	(1.4)
Jeonnam	0	(0.0)	0	(0.0)	0	(0.0)
Gyeongbuk	5	(0.9)	4	(0.8)	1	(1.4)
Gyeongnam	8	(1.4)	4	(0.8)	4	(5.4)
Jeju	3	(0.5)	2	(0.4)	1	(1.4)
Total	**559**	**(100.0)**	**485**	**(100.0)**	**74**	**(100.0)**

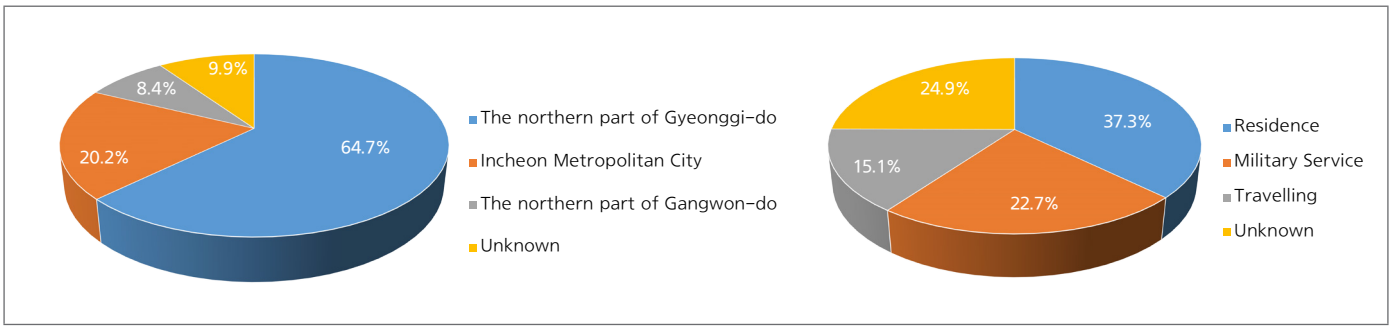

Figure 5. Distribution of the presumptive infected region area and presumptive risk factor of malaria in Korea

Table 3. Distribution of the presumptive infected region by protozoa of malaria patients from overseas, 2019

Category	Total		Indigenous cases		Imported cases	
	n	%	n	%	n	%
Plasmodium spp.						
P. vivax	501	(89.6)	485	(100.0)	16	(21.6)
P. falciparum	57	(10.2)	0	(0.0)	57	(77.0)
P. malariae	0	(0.0)	0	(0.0)	0	(0.0)
P. ovale	1	(0.2)	0	(0.0)	1	(1.4)
P.knowlesi	0	(0.0)	0	(0.0)	0	(0.0)
Total	**559**	**(100.0)**	**485**	**(100.0)**	**74**	**(100.0)**

Table 4. Distribution of protozoa for cases of malaria patients from overseas, 2019

lasmodium spp.	Total		Africa		Asia	
	n	%	n	%	n	%
Total	**74**	**(100.0)**	**59**	**(100.0)**	**15**	**(100.0)**
P. vivax	57	(77.0)	57	(96.6)	0	(0.0)
P. falciparum	16	(21.6)	1	(1.7)	15	(100.0)
P. malariae	0	(0.0)	0	(0.0)	0	(0.0)
P. ovale	1	(1.4)	1	(1.7)	0	(0.0)
P.knowlesi	0	(0.0)	0	(0.0)	0	(0.0)