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Risk Assessment of Measles Epidemic in Japan (First Edition, 2026) (As of 19 March 2026)

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■ Background

Measles is a systemic viral infectious disease characterized by fever and rash, with extremely high transmissibility. When susceptible individuals (i.e. those with insufficient immunity to measles) become infected, they typically develop symptoms after an incubation period of approximately 10–12 days. Complications include pneumonia and encephalitis, which may be fatal. Furthermore, subacute sclerosing panencephalitis (SSPE) may develop several years after recovery from measles. The most effective preventive measure is the acquisition of immunity through vaccination, and two doses of measles-containing vaccine (MCV) are expected to minimize the risk of disease and severe outcomes.¹⁾²⁾

The World Health Organization (WHO) defines “measles elimination” as “the absence of continuous transmission of measles virus (indigenous or imported) in a defined geographical area (e.g., a country or region) for a period of at least 12 months, in the presence of a well-performing surveillance system.”³⁾ Measles elimination in Japan was verified by WHO in 2015. Since then, Japan has set the maintenance of measles elimination status as a national goal and has implemented measures to prevent the outbreak and spread of measles under the “Prevention Guidelines for Specified Infectious Diseases for Measles” (hereinafter “the Prevention Guidelines”),⁴⁾ with pillars including maintaining vaccination coverage of over 95%, diagnosis based on viral genetic testing for all cases, and conducting accurate and prompt active epidemiological investigations.

Even after achieving elimination, multiple outbreaks have occurred, including those associated with international importations,⁵⁾ healthcare facility,⁶⁾ and communities with low MCV coverage.⁷⁾ In 2019, the annual number of reported cases reached 744, the highest recorded since the verification of elimination. From 2020 to 2022, cases declined substantially to 6–10, largely attributable to restrictions on domestic and international travel due to the COVID-19 pandemic. However, following the relaxation of COVID-19 countermeasures,⁸⁾ an increasing trend has been observed since 2023, with 28 cases in 2023, 45 in 2024, and 265 in 2025 (provisional, as of 18 March 2026).⁹⁾ In 2026, 32 cases were reported in epidemiological week 11 (as of 19 March), and the cumulative total of 139 cases was already 4.3 times higher than that of the same period (week 11) in 2025,¹⁰⁾ indicating a rapid increase (Figure 1).

Since 2022, the number of measles cases reported globally has been increasing annually. Furthermore, the number of international visitors to Japan has exceeded pre-COVID-19 levels since 2024, and the number of Japanese nationals traveling abroad has been rising since the relaxation of COVID-19 countermeasures.¹¹⁾ Domestically reported cases since 2023 have predominantly been secondary cases linked to imported cases, particularly from Vietnam in 2025.¹²⁾ Infections were confirmed in public transportation such as domestic aircraft and Shinkansen (bullet trains). Since week 1 of 2026, an increase in domestically acquired cases has been observed., in addition to imported cases from countries experiencing measles outbreaks such as Indonesia.

Given these circumstances, this risk assessment has been updated based on the data from the National Epidemiological Surveillance of Infectious Diseases, the National Epidemiological Survey of Vaccine-Preventable Diseases, pathogen detection reports, and the current global situation, as of 19 March 2026.

■ Domestic Situation in 2026 (As of 19 March 2026)

A total of 139 measles cases were cumulatively reported to the National Epidemiological Surveillance of Infectious Diseases from week 1 through week 11 (9–15 March) of 2026. The number of notifications increased notably from week 5 onwards, with 32 cases reported in week 11 alone.⁹⁾ Cases were reported from 20 prefectures across the country, with the majority reported from the Kanto, Chubu, and Kansai regions. At least 18 cases (13%) have required hospitalization at the time of notification.

Of all cases, 63% (88 cases) were presumed to have been exposed domestically, 22% (30 cases) internationally, and 15% (21 cases) had an unknown place of exposure (domestic or international). Among domestically acquired cases, secondary transmission was documented in healthcare facilities, households, schools, and other settings,¹³⁾ as well as cluster events

among restaurant employees and at high schools.¹⁴⁾¹⁵⁾ Outbreaks (i.e. cluster of two or more laboratory-confirmed cases) were reported in 7 healthcare facilities, 7 households, 3 schools, and 4 other institutional settings. Although no large-scale outbreaks exceeding 50 cases—such as those observed in 2018 and 2019⁵⁾⁷⁾—have been identified, the school-associated outbreak was the first since 2017,¹⁶⁾ marking a nine-year interval. Among domestically acquired cases, 53% (47 cases) had no identified source of infection; however, active epidemiological investigations by local governments revealed that several index cases had used public transportation for daily commuting or traveling¹⁷⁾¹⁸⁾ and had traveled extensively within Japan for business or leisure during their infectious period.¹⁹⁾²⁰⁾ As a result, multiple public health centers were involved, necessitating coordination across multiple jurisdictions.

Presumed country of exposure for the imported cases included Indonesia (11 cases), New Zealand (7 cases), New Zealand/domestic (3 cases), India (3 cases), Indonesia/Singapore (1 case), Singapore (1 case), the Philippines (1 case), the Republic of Korea (1 case), Vietnam (1 case), and Finland/Italy/France (1 case). While Vietnam and Thailand were the predominant country of exposure in 2024²¹⁾ and 2025²²⁾, Indonesia has been the most frequently reported in 2026 to date.

Regarding age distribution in 2026 cases, cases aged 10–19 years accounted for 32% (44 cases), followed by those aged 20–29 years at 25% (35 cases), 30–39 at 18% (25 cases), and 40–49 at 14% (19 cases) (Figure 2).

With respect to MCV vaccination history*, 20% (28 cases) were unvaccinated, 16% (22 cases) had received one dose, 32% (45 cases) had received two doses, and 32% (44 cases) had unknown vaccination history. Those who had not completed two-dose vaccination or whose vaccination history was unknown accounted for 68% (94 cases) of all cases. Among cases aged 20 years and older, the proportion was particularly high at 84% (74 cases). At the time of this report, secondary transmission from a confirmed two-dose recipient (with documented vaccination dates) was identified in only one instance within a household. * Note: Vaccination history is based on data registered in the National Epidemiological Surveillance of Infectious Diseases.

At the time of reporting, 65% (90 cases) were clinically classified as measles (laboratory-confirmed) and 35% (48 cases) as modified measles. One case was initially clinically diagnosed but was subsequently laboratory-confirmed; thus, all cases were ultimately laboratory-confirmed. PCR testing performed as part of public health laboratory testing accounted for the diagnosis of 99% (137 cases). The median time from onset to diagnosis was 4 days (range: 0–17 days); however, among cases in their 20s, the median was longer at 6.5 days (range: 2–17 days). Cases have been reported in which the patient visited multiple medical facilities before

a definitive diagnosis of measles was reached, resulting in a delay in diagnosis.²³⁾

Among 73 cases for which measles virus genotype information was available through pathogen reporting, genotype B3 was the most frequently identified (58 cases), followed by D8 (15 cases).²⁴⁾ Currently, genotypes D8 and B3 are the two circulating genotypes worldwide; B3 is predominantly detected in the Middle East and Africa, while D8 is more commonly identified in North America, Southeast Asia, and India.²⁵⁾

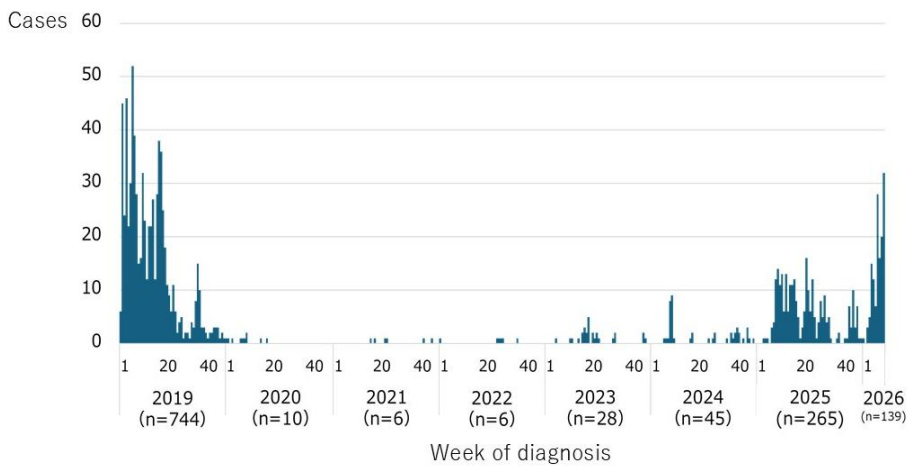


Figure 1. Number of reported measles cases (week 1, 2019 – week 11, 2026; as of 19 March 2026)

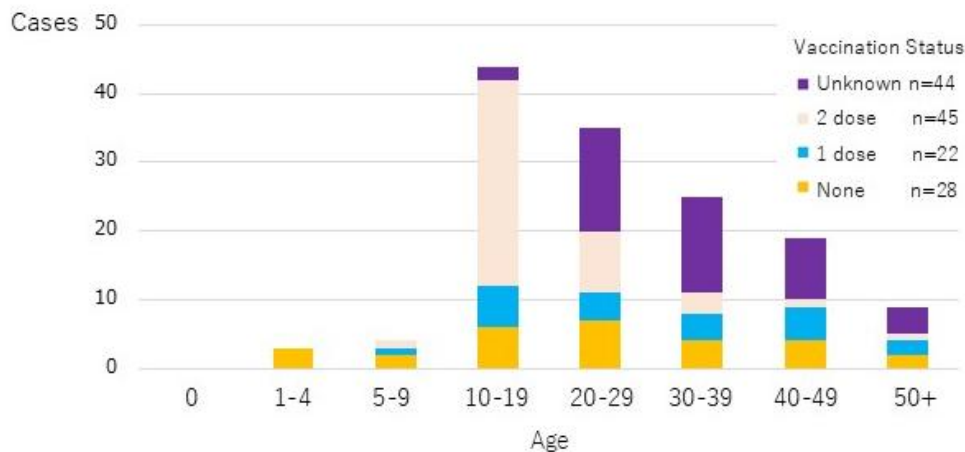


Figure 2. Number of reported measles cases by age group and MCV vaccination history* (n = 139; weeks 1–11, 2026; as of 19 March 2026). *Based on data registered in the National Epidemiological Surveillance of Infectious Diseases.

■ Domestic Measles Vaccination Coverage and Antibody Seroprevalence

The Prevention Guidelines set a target of achieving and maintaining a coverage above 95% for each of the two routine MCV doses to sustain measles elimination. In fiscal year 2024, the national MCV coverage rates were 92.7% for the first dose and 91.0% for the second dose, both below 95%,²⁶⁾ representing a further decline from the previous year (FY2023: first dose 94.9%, second dose 92.0%; FY2022: first dose 95.4%, second dose 92.4%). For the second dose, coverage fell below 90% in nine prefectures (Hokkaido, Miyagi, Gifu, Shizuoka, Kochi, Nagasaki, Oita, Kagoshima, and Okinawa), with Okinawa reporting coverage below 85%.

Figure 3 shows the age-specific measles antibody seroprevalence for FY2024. The proportion of individuals with an enzyme immunoassay (EIA) antibody titer of 4.0 or above—the threshold considered seropositive for measles—was 86.6% overall. By age, the antibody seroprevalence was below 95% at nearly all ages under 50 years (with the exception of ages 4, 10, and 48), while it reached 95% or above at most ages over 50 years (with the exception of ages 57 and 65). The proportion of individuals with an EIA titer of 16.0 or above—a threshold used as an indicator that additional vaccination is unnecessary when vaccination or disease history is unknown²⁷⁾—was below 50% among those aged 8 to 47 years.²⁸⁾

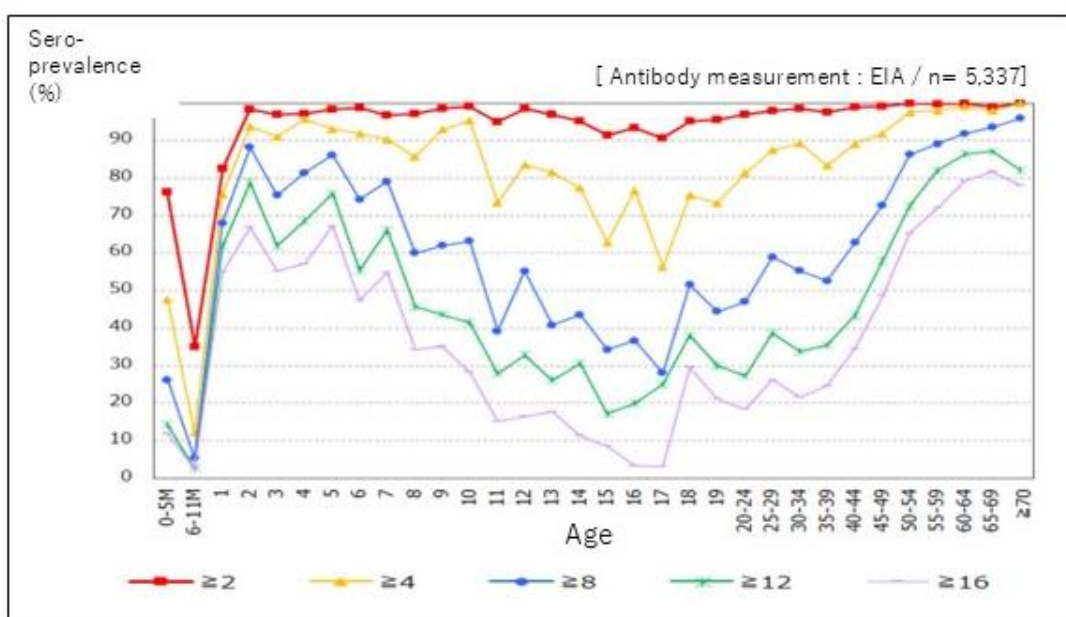


Figure 3. Measles antibody seroprevalence by age group, 2024. Source: National Institute of Infectious Diseases, National Epidemiological Survey of Vaccine-Preventable Diseases. (<https://id-info.jihs.go.jp/surveillance/nesvpd/graph/2024/measles/seroprevalence/index.html>)

■ Global Measles Situation

According to WHO, the global number of reported measles cases declined markedly from 541,401 in 2019 to 93,840 in 2020 and 59,619 in 2021. However, cases subsequently rose to 176,408 in 2022, 321,876 in 2023, 359,450 in 2024, and 276,240 in 2025 (Figure 4). As of 18 March 2026, a total of 30,557 cases have been reported for 2026. In recent years, the Region of the Americas (AMR), the African Region (AFR), and the South-East Asia Region (SEAR) have accounted for 74% of the global total.²⁵⁾ The top 10 countries reporting the highest number of cases during the most recent six-month period (August 2025 – January 2026) were India, Angola, Indonesia, Yemen, Pakistan, Cameroon, Mexico, Sudan, Kazakhstan, and Lao PDR, indicating that outbreaks have also been reported in South-East Asia from which a large number of visitors travel to Japan.

Indonesia reported 17,204 measles cases in 2025, representing a substantial increase compared with 7,191 cases reported in 2024.²⁵⁾ In August 2025, a large-scale outbreak was identified in East Java Province, attributed to delayed diagnosis and suboptimal vaccination coverage.²⁹⁾ Reports have continued to increase in 2026, with 8,224 suspected cases reported by week 7.³⁰⁾

In the United States, which achieved measles elimination in 2000, 2,285 cases (including 3 deaths) were reported in 2025, the highest number recorded since 2019. From 1 January to 26 March 2026, 1,575 cases (no deaths) were reported, exceeding the pace observed in 2025. Of these, 1,483 cases (94%) were associated with outbreaks, including 1,124 cases linked to outbreaks that began in 2025.³¹⁾ South Carolina reported the highest number of cases, with 990 cases as of 3 March, of which 945 (95%) were in individuals who were unvaccinated or had unknown vaccination history.³²⁾

In Canada, sustained domestic transmission was identified in areas with low vaccination coverage, following an imported case in New Brunswick in October 2024. Canada reported 146 confirmed cases in 2024 and 5,081 in 2025, and in October 2025, lost its measles elimination status, which had been maintained since 1998.³³⁾³⁴⁾ Mexico reported 7,403 confirmed cases as of 18 March, predominantly in regions along the United States border and in densely populated areas.³⁵⁾

In September 2025, 6 countries in the WHO European Region, including the United Kingdom and Austria, lost their measles elimination status. The European Regional Verification Commission for Measles and Rubella Elimination expressed serious concern over the loss of elimination status in some Member States, including some with high-performing immunization programmes.³⁶⁾

Global MCV first-dose (MCV1) coverage in 2024 was 84%, remaining below pre-COVID-19 pandemic levels. MCV second-dose (MCV2) coverage was 76%, the highest since 2000, yet

still below the 95% two-dose coverage required for herd immunity against measles.³⁷⁾ The accumulation of susceptible individuals due to suboptimal vaccination coverage raises concern about further increases in measles cases.³⁸⁾

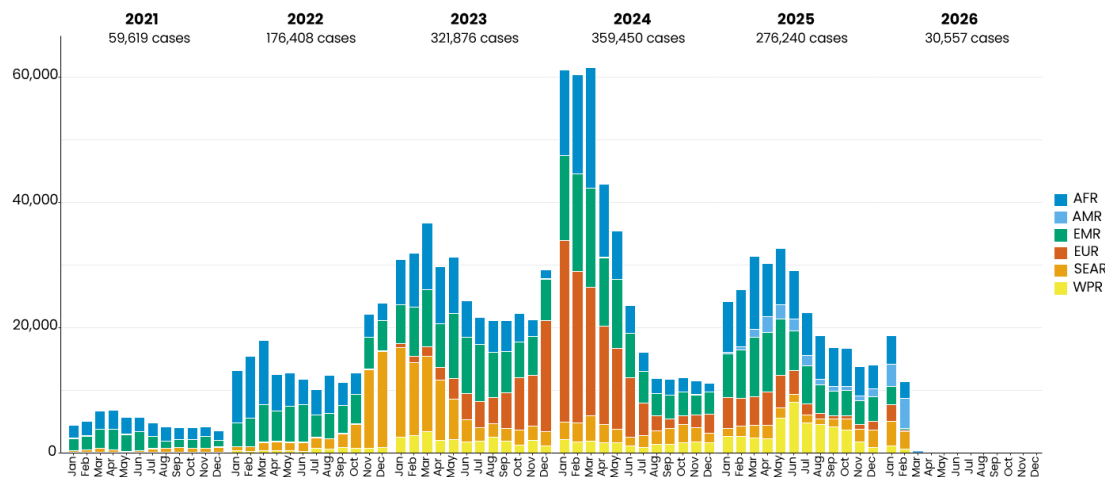


Figure 4. Global measles case reports (2021–2026). Source: WHO, Measles and Rubella Global Update, March 2026. (<https://immunizationdata.who.int/global?topic=Provisional-measles-and-rubella-data&location>)

■ Risk assessment

(1) Current Situation and Challenges

- Since 2023, the number of measles cases have increased globally, and the accumulation of susceptible individuals due to declining MCV coverage raises concern about further increases in cases. Increased international travel has heightened the risk of measles virus importation from countries experiencing outbreaks such as Indonesia.
- As of week 11 of 2026 (19 March), a total of 139 measles cases has been reported in Japan, comprising of predominantly domestically acquired cases alongside imported cases, representing a marked increase compared with the cumulative number reported for the same period in the previous year.
- Among measles cases reported through week 11, 2026, individuals aged 10-29 years accounted for 57% of all cases. Although having the opportunity to receive two routine MCV doses under the national immunization program,³⁹⁾ approximately half of the cases in this age group had not completed two-dose vaccination or had unknown vaccination history. Outbreaks occurred at restaurants and schools in Tokyo and Kagoshima City, approximately half of the affected individuals, predominantly

those aged 10-29 years, had not completed two-dose vaccination or had unknown vaccination history.

- To date, domestic outbreaks have been reported in 7 healthcare facilities, 7 households, 3 schools, and 4 other institutional settings. None has escalated to the scale of the large outbreaks exceeding 50 cases observed in the past. In contrast to some regions abroad, Japan currently has a relatively few geographically concentrated communities with high proportions of unvaccinated or incompletely vaccinated individuals, which may limit the potential for large chains of measles transmission. This is considered a distinguishing feature of the current measles epidemiology in Japan.
- Use of public transportation and visits to public facilities during the infectious period were confirmed in some cases, including for daily commuting and school attendance. Among domestically acquired cases, 53% had no identified source of exposure; however, exposure during routine use of public transportation or in public facilities cannot be excluded. There remains a risk of transmission in settings where large numbers of people share enclosed spaces for extended periods.
- Diagnostic delays have been reported in multiple cases where patients sought care at several healthcare facilities before a definitive diagnosis of measles was established. More than a decade has passed since measles elimination was achieved in Japan, and clinical suspicion of measles may be challenging. This is further compounded in cases presented as modified measles or with atypical, mild symptoms in the early stages of illness.
- In 2024, the overall proportion of the population seropositive for measles (EIA antibody titer ≥ 4.0) was 86.6%. However, national MCV coverage in FY2024 declined below pre-COVID-19 pandemic levels, suggesting an accumulation of susceptible individuals in Japan. This raises concern regarding the further domestic spread of measles and the occurrence of severe cases.

(2) Recommended Measures

- Measles transmission continues to be reported internationally, with some countries and regions experiencing a rapid increase in case numbers. Travelers to areas with high measles activity are advised to verify their MCV vaccination history and measles disease history using their Maternal and Child Health Handbook (or equivalent documentation) and, if documentation of two prior MCV doses is unavailable, to consider receiving MCV prior to travel. Given the recurrent importation of cases from endemic countries, particular caution is advised for travelers to such areas.

- Transmission has also been documented following contact with measles patients in healthcare facilities and schools. Healthcare workers, who are at higher risk of contact with measles patients, as well as staff in schools and childcare facilities, are advised to confirm their two-dose MCV vaccination history as a part of preparedness measure.
- Airport personnel and public transportation workers, who frequently interact with international travelers and large numbers of the general public, are also encouraged to verify their two-dose MCV vaccination history.
- To prevent widespread transmission of measles, including severe cases, it is essential to maintain two-dose MCV coverage above 95% and to sustain sufficiently high population-level antibody seroprevalence. In light of recent MCV supply constraints, the vaccination eligibility period for individuals who were unable to receive their scheduled routine vaccination during FY2024 has been extended for up to two years (through 31 March 2027 at the latest) under Article 2-9, Item 4 of the Regulation for Enforcement of the Immunization Act, citing “a significant vaccine supply shortage or equivalent circumstances.”⁴⁰⁾ This measure has facilitated routine vaccination access in areas where vaccine distribution had previously posed a barrier.
- Under the historical immunization schedule, individuals currently in their late 30s to 40s had only one opportunity to receive routine MCV.³⁹⁾ Additionally, a certain number of individuals aged 10–29 years who were eligible for two routine doses remain incompletely vaccinated. Therefore, individuals without documentation of two MCV doses in their Maternal and Child Health Handbook or other records, particularly those planning international travel, are advised to consider receiving MCV at a travel medicine clinic.
- To effectively contain measles outbreaks in Japan, healthcare facilities should refer to the guidance leaflet “Response upon Suspected Measles”⁴¹⁾. Clinicians should assess the international travel history of patients presenting with symptoms consistent with measles. Clinicians should notify the case as clinically diagnosed at the point of clinical diagnosis of suspected measles, and arrange appropriate laboratory testing (serological testing including IgM antibody and submission of specimens for viral genetic testing at the local public health Institute). Public health authorities should conduct timely contact tracing, and the importance of source investigation should also be emphasized. Coordination among administrative bodies, healthcare facilities, and medical associations for rapid information sharing is essential. In accordance with the administrative notice issued on 31 March 2026,⁴²⁾ public health authorities should proactively encourage vaccination among eligible individuals to ensure the completion of routine immunization.

- Multi-jurisdictional events have also been reported. In accordance with the administrative notice issued on 13 February 2026,⁴³⁾ local governments are required to report clinically diagnosed/suspected and laboratory-confirmed measles cases to both the Ministry of Health, Labour and Welfare and the National Institute of Infectious Diseases upon notifications from healthcare facilities. Timely information sharing and coordinated response across relevant jurisdictions, including at the national level, are critical.

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