ISSN 0915-5813

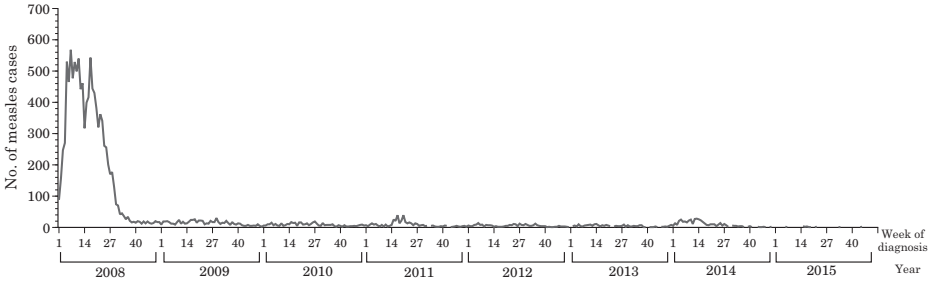
IASR

Vol. 37 No. 4 April 2016
Infectious Agents Surveillance Report
http://www.nih.go.jp/niid/en/iasr-e.html

National Institute of Infectious Diseases and
Tuberculosis and Infectious Diseases
Control Division,
Ministry of Health, Labour and Welfare

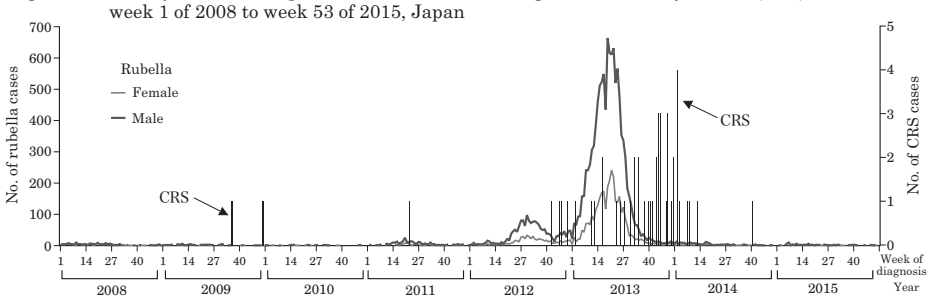
<THE TOPIC OF THIS MONTH>
Measles and Rubella/Congenital Rubella Syndrome in Japan, as of March 2016

Figure 1-1. Weekly number of reported measles cases, week 1 of 2008 to week 53 of 2015, Japan



(National Epidemiological Surveillance of Infectious Diseases: as of March 7, 2016)

Figure 1-2. Weekly number of reported rubella cases and congenital rubella syndrome (CRS) cases, week 1 of 2008 to week 53 of 2015, Japan



(National Epidemiological Surveillance of Infectious Diseases: as of March 7, 2016)

The World Health Organization (WHO) proposed to achieve regional measles and rubella/congenital rubella syndrome (CRS) elimination goals by the end of 2015, and achieve measles and rubella elimination in at least five of the six WHO regions by 2020 (Global Measles and Rubella Strategic Plan, WHO, 2012). These measles and rubella elimination goals were included in the global vaccine action plan (GVAP) endorsed at the 65th World Health Assembly in 2012. Here, "elimination" is defined as the absence of endemic transmission of measles or that of rubella/CRS in a defined geographical area (e.g. region or country) for ≥12 months in the presence of a well performing surveillance system. WHO's Western Pacific Regional Office started the measles elimination program in 2003, and verified the elimination status of Australia, Macao SAR (China), Mongolia and the Republic of Korea in 2014, and that of Brunei Darussalam, Cambodia and Japan in 2015 (see p. 62 of this issue). Japan, while maintaining measles elimination status under the "Guidelines for the Prevention of Specific Infectious diseases: Measles (Ministry of Health, Labour and Welfare notice No. 442, December 28, 2007; http://www.mhlw.go.jp/bunya/kenkou/kekkaku-kansenshou21/dl/241214a.pdf)", now targets attaining rubella elimination status by FY2020 under the "Guidelines for the Prevention of Specific Infectious diseases: Rubella (Ministry of Health, Labour and Welfare notice No. 122, March 28, 2014; http://www.mhlw.go.jp/file/06-Seisakujouhou-10900000-Kenkoukyoku/0000041928.pdf)" (see p. 81 of this issue).

Measles notifications under National Epidemiological Surveillance of Infectious Diseases: Measles is a category V infectious disease that requires notification of all diagnosed cases (notification criteria: http://www.nih.go.jp/niid/images/iasr/35/410/de4101.pdf). Since 21 May 2015, notification requires additional case information, such as full name, address, and occupation, so as to facilitate prompt implementation of preventive measures.

The reported number of measles cases in 2015 was 35, the lowest ever since 2008 when all cases became required to be reported (Fig. 1-1). In 2016, as of week 9, three cases have been reported, which was the lowest in the past 9 years for the same period. The reduction in number of cases was the most remarkable for those in the 10-19 year age group, followed by those 1-4 years

(Continued on page 60′)

(THE TOPIC OF THIS MONTH-Continued)

of age. As a consequence, adult measles cases (≥20 years of age) have been increasing in proportion (33% in 2008, 36% in 2009, 37% in 2010, 48% in 2011, 58% in 2012, 69% in 2013, 48% in 2014 and 71% in 2015) (Fig. 2-1). As shown in Fig. 3-1 in p. 61 of this issue, cases that had received two doses of vaccine were rare. For the year 2015 (as of 7 March 2016), 16 cases were unvaccinated, among which 3 were under the vaccine eligible age i.e. <1 year, 6 had one dose, and 13 had unknown vaccination history. None of the cases had received two doses of vaccine. Emergency school closure due to measles has not been reported since the temporary closure of a primary school in February 2014 (http://www0.nih.go.jp/niid/idsc/idwr/diseases/measles/measles2015/measschool15_16.pdf).

Figure 2-1. Age distribution of measles cases, 2008-2015, Japan

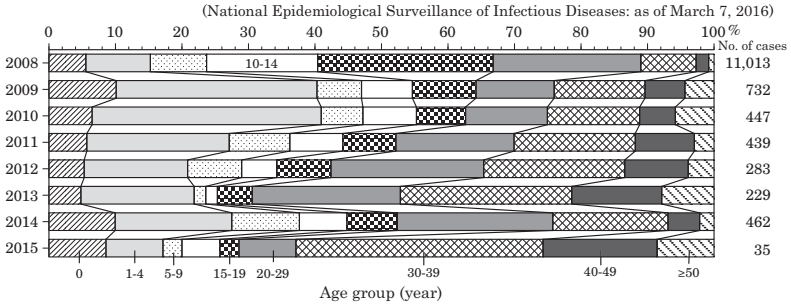
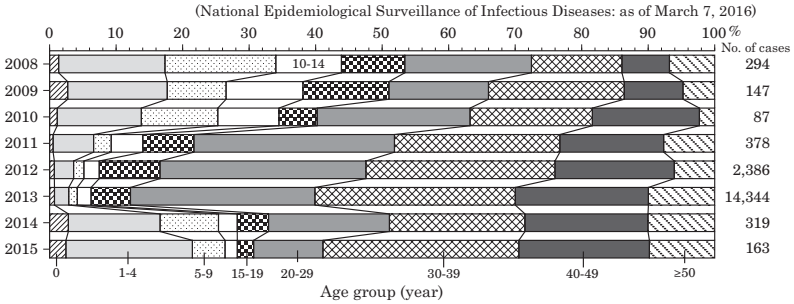


Figure 2-2. Age distribution of rubella cases, 2008-2015, Japan



Rubella/CRS notifications under National Epidemiological Surveillance of Infectious Diseases: Rubella/CRS is a category V infectious disease that requires notification of all diagnosed cases to a health center within 7 days of diagnosis, but preferably within 24 hr under the above-mentioned special guidelines (Notification criteria are found at http://www.nih.go.jp/niid/images/iasr/36/425/de4251.pdf for rubella and http://www.nih.go.jp/niid/images/iasr/36/425/de4252.pdf for CRS).

The reported number of rubella cases in Japan was 2,386 in 2012, 14,344 in 2013, 319 in 2014, and 163 in 2015. During the outbreak in 2012 and 2013, adult cases composed 83.4% and 87.8%, respectively (Fig. 2-2), and many had unknown vaccination history. There were few cases who had received two doses of vaccine (Fig. 3-2 in p. 61 of this issue). For 2015 (as of 7 March 2016), among 163 cases, 36 cases including 4 cases before the vaccine eligible age were unvaccinated, 30 cases had received one dose, and 8 cases two doses; the remaining 89 had unknown vaccination history (Fig. 3-2 in p.61 of this issue). For CRS, there were 4 cases in 2012, 32 in 2013, 9 in 2014 and none in 2015; the last case was notified in week 40 of 2014 (Fig. 1-2).

Isolation and detection of measles & rubella virus: In 2015, a total of 24 measles virus strains were detected/isolated by prefectural and municipal public health institutes (PHIs). Eleven were genotype D8 strain, 5 were H1 strain and there were 4 each of D9 and B3 strains. Fifteen among the 24 cases had history of travel abroad, to Indonesia (B3: 1 case; D8: 4 cases; D9: 1 case), Malaysia (1 case each of D8 and D9), State of Qatar (D8: 2 cases), India (D8: 1 case), China (H1: 2 cases) and Mongolia (H1: 2 cases) (see p.67 of this issue). Among 21 rubella cases whose virus strains were detected/isolated in 2015, 10 were genotype 2B strain, 4 were 1E strain and 7 were unknown.

National Epidemiological Surveillance of Vaccine-Preventable Diseases: The 2015 seropositivity data in the population was similar to those from FY2012 to FY2014 (Fig. 4-1 & 4-2 in p. 61 of this issue). In 2015, 23 prefectures conducted the seropositivity survey for measles (n=6,601) and 17 prefectures for rubella (n=5,361). Measles antibody level was assayed by particle agglutination (PA) assay and rubella antibody level by hemagglutination inhibition (HI) test (see p. 72 of this issue). More than 95% of all age groups ≥2 years were measles seropositive (antibody titer ≥1:16). For rubella, majority of those aged 2 to 34 years were seropositive (antibody titer ≥1:8); however, among those aged 35 to 54 years, 97% of females were seropositive but only 78% of males were seropositive.

Vaccination rate: Since FY2006, when the routine immunization program in Japan adopted the measles-rubella (MR) combined vaccine, coverage of measles and rubella vaccination have been comparable. The vaccination coverage for the first dose given to children at age one year (1st vaccination) was ≥95% from FY2010 to FY2014. The vaccination coverage for the second dose, given to children one year before school entry (2nd vaccination), was 93% in FY2014, less than the targeted 95% (similar to FY2013).

Further measures to be taken: All children should receive the first dose of MR vaccine as soon as they attain vaccine eligible age (1 year), and the second dose within 1 year before primary school entrance. Primary schools should confirm children's vaccination record or infection history (e.g., dates of vaccination or infection) as soon as possible, such as at the time of children's school entrance registry or at annual routine health checks, by obtaining the information from records in the mother-and-child notebooks (Guidelines for prevention of measles in schools, http://www.nih.go.jp/niid/images/idsc/disease/measles/guideline/school_200805.pdf). In addition, those found to be rubella antibody negative or weakly positive (found during special antibody check program for adults, for instance), should receive the MR vaccine immediately (see p. 75 of this issue). As pregnant women cannot receive MR vaccine, women who are found to be rubella antibody negative or at insufficient levels during maternity health checks should be vaccinated as soon as possible after delivery (see p. 80 of this issue).

In order to prevent further spread of measles or rubella imported into Japan, the coverage of the 1st and the 2nd doses of MR vaccine should be maintained above 95%. In addition, vaccination is recommended for those going to measles/rubella-endemic countries, particularly if they have not been vaccinated or infected before. Active surveillance should be initiated promptly after detection of a single case, and preventive measures taken immediately so as to prevent further transmission (see pp. 64 & 65 of this issue). As with measles, in order to evaluate the progress of rubella elimination definitively, a system that ensures laboratory testing of all suspected rubella cases should be implemented (see pp. 68, 69 and 71 of this issue).

The statistics in this report are based on 1) the data concerning patients and laboratory findings obtained by the National Epidemiological Surveillance of Infectious Diseases undertaken in compliance with the Law Concerning the Prevention of Infectious Diseases and Medical Care for Patients of Infections, and 2) other data covering various aspects of infectious diseases. The prefectural and municipal health centers and public health institutes (PHIs), the Department of Food Safety, the Ministry of Health, Labour and Welfare, and quarantine stations, have provided the above data.

Infectious Disease Surveillance Center, National Institute of Infectious Diseases
Toyama 1-23-1, Shinjuku-ku, Tokyo 162-8640, JAPAN Tel (+81-3)5285-1111

(特集つづき)

(THE TOPIC OF THIS MONTH-Continued)

図3-1. 麻疹患者の予防接種歴別割合, 2008～2015年 (感染症発生動向調査 : 2016年3月7日現在報告数)
Figure 3-1. No. and proportion of measles cases by vaccination status, 2008-2015, Japan
(National Epidemiological Surveillance of Infectious Diseases: as of March 7, 2016)

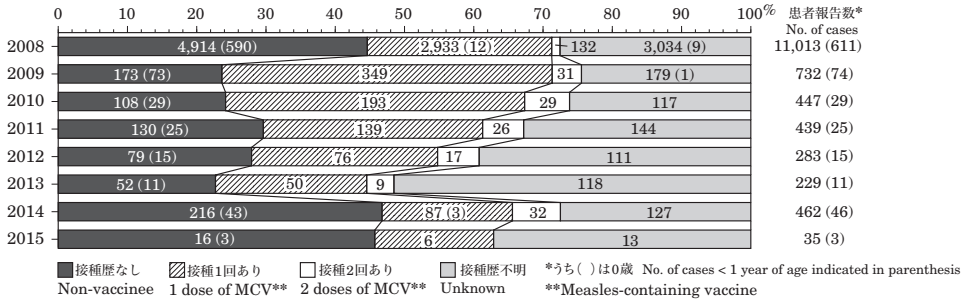


図3-2. 風疹患者の予防接種歴別割合, 2008～2015年 (感染症発生動向調査 : 2016年3月7日現在報告数)
Figure 3-2. No. and proportion of rubella cases by vaccination status, 2008-2015, Japan
(National Epidemiological Surveillance of Infectious Diseases: as of March 7, 2016)

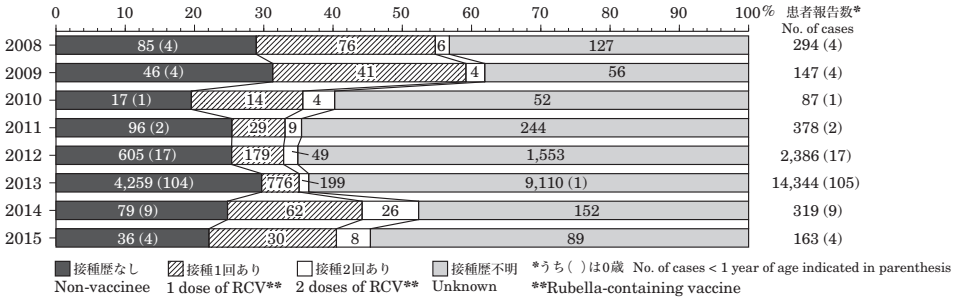


図4-1. 年齢別麻疹抗体保有状況, 2015年度 (感染症流行予測調査 : 2016年3月現在暫定値)
Figure 4-1. Proportion seropositive against measles virus by age and vaccination status, fiscal year 2015, Japan
(National Epidemiological Surveillance of Vaccine-Preventable Diseases: as of March, 2016)

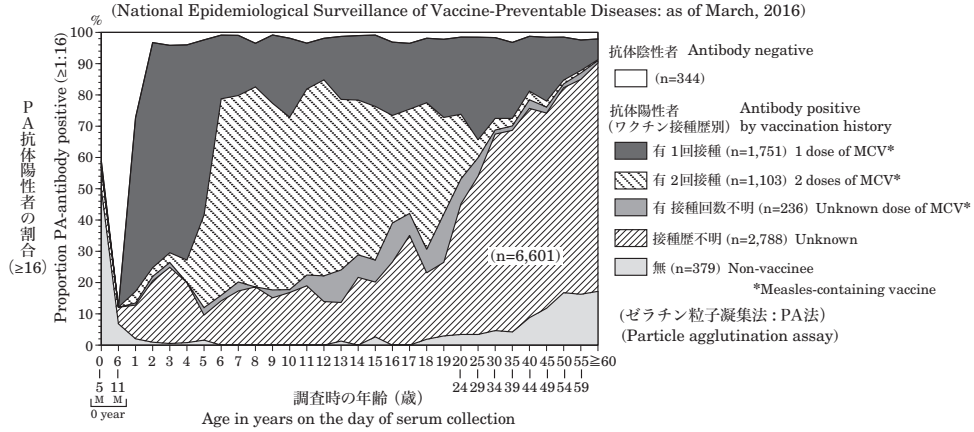


図4-2. 年齢別風疹抗体保有状況, 2015年度 (感染症流行予測調査 : 2016年3月現在暫定値)
Figure 4-2. Proportion seropositive against rubella virus by age, gender and vaccination status, fiscal year 2015, Japan
(National Epidemiological Surveillance of Vaccine-Preventable Diseases: as of March, 2016)