A case of infant Japanese encephalitis (JE) in Chiba Prefecture in summer 2015 ................................................. 153
Epidemiological investigation of JE in Tsushima City, Nagasaki Prefecture ................................................. 155
Cluster of JE cases in Tsushima City, Nagasaki Prefecture in 2016, and investigation of mosquitos and wild boars in the region........ 157
Trends in laboratory detections of JE and description of diagnostic methods used in Japan, 2007-2016 ................................................. 158
Seroprevalence of JEV neutralizing antibody and JE vaccine coverage in Japan, FY 2007-2016-National Epidemiological Surveillance of Vaccine-Preventable Diseases .................................. 159
Prevalence of anti-JEV HI antibody among farmed pigs in Japan, FY 2016-National Epidemiological Surveillance of Vaccine-Preventable Diseases ................................................. 161
Prevalence of JEV among mosquitoes ................................................. 162

Japanese encephalitis (JE) is caused by JE virus (JEV) transmitted by Culex tritaeniorhynchus. Most infections are asymptomatic, but when symptomatic, after 1-2 weeks of incubation, case fatality can be 20-40% and half of the survivors will have sequelae. JE is a category IV notifiable infectious disease under the Infectious Diseases Control Law and all diagnosed cases shall be notified immediately (see http://www.nih.go.jp/nhid/images/iasr3/38450.pdf). Prefectural public health institutes (PHIs) measure JEV antibody levels among humans and JEV infection levels among farmed pigs on a periodic basis, annually or once every few years, under the National Epidemiological Surveillance of Vaccine-Preventable Diseases (NESVPD) system. The collected data are collated and summarized at the National Institute of Infectious Diseases. This article describes the trends in JE from 2007-2016 (see IASR 38:147-148, 2009 for data prior to 2008).

Notifications of JE: Until the 1960s, more than 1,000 JE cases were reported every year. With introduction of JEV vaccine in 1954 and reduction of mosquitoes due to environmental management, the number of reported cases decreased. The annual number of reported JE cases was reduced to under 50 (range 21-40) during the 1990s and to ~10 since 1992 (Fig. 1). During 2007-2016, a total of 55 JE cases (including one case that had developed symptoms in 2006) were reported. As of July 2017, no JE case has been reported so far in 2017.

During 2007-2016, among the 55 reported cases, all but one case from India were infected in Japan. Among these 54 cases infected domestically, the month of onset for the majority of cases was August-September (Fig. 2); the earliest onset was April 14 (case infected in Hyogo Prefecture, 2014) and the latest November 18 (case infected in Nagasaki Prefecture, 2011). The suspected place of infection was from 23 prefectures, all located in the western half of the country (i.e. none east of the Kanto region), with many being in Kyushu region and Okinawa Prefecture (22 among 54 cases) (Fig. 3 in p. 152 of this issue). Among the total of 55 cases reported, 25 were males and 22 were females; 39 were aged ≥60 years and 7 were aged ≥10 years (Fig. 4 in p. 152 of this issue). Six of the cases (2 male cases and 4 female cases) were fatal at the time of notification.

JE vaccine (see pp. 164 & 165 of this issue): The vaccination schedule consists of two rounds. Under the routine vaccination scheme, vaccination in the first round consists of 2 shots at 3 years of age and 1 shot at 4 years of age; for the second round, one shot is administered at 9 years of age. However, after the occurrence of a 10-month-old infant JE case in 2015 (see p. 153 of this issue), some local governments have implemented administration of vaccination at 6 months of age.
Prevalence of neutralizing antibody to JEV among humans

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, the Department of Food Safety, the Ministry of Health, Labour and Welfare, and quarantine stations, 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