Communicable diseases such as measles, pertussis and hepatitis B still pose major threats to the health of European citizens. Measles, a highly infectious disease of the respiratory system, is caused by a virus. Symptoms include fever, cough, runny nose, red eyes and skin rash. It can lead to severe health complications, including pneumonia, encephalitis, diarrhoea and blindness. Pertussis (or whooping cough) is highly infectious, and is caused by a bacteria. The disease derives its name from the sound made from the intake of air after a cough. Hepatitis B is an infection of the liver caused by the hepatitis B virus. The virus is transmitted by contact with blood or body fluids of an infected person. A small proportion of infections become chronic, and these people are at high risk of death from cancer or cirrhosis of the liver. Protection against measles, pertussis and hepatitis B is available through vaccination (see Indicator 4.9, "Childhood vaccination programmes").

A total of 13 797 confirmed measles cases were reported in the European Union in 2011, with an overall rate of 6.4 cases per 100 000 population, almost unchanged compared to 2010. Twenty countries reported rates below one case per 100 000 population which is the target for the elimination of the disease (Figure 1.11.1). France was the most affected country with a notification rate of 23 cases per 100 000 population in 2011. Several other countries reported outbreaks, including Romania, Italy, Spain, Belgium and Ireland. The most affected age group were children aged 0-4 year-olds, followed by 5-14 year-olds. Most infections occurred in late winter and early spring (ECDC, 2013). In September 2010, all European countries renewed their commitment to the elimination of indigenous transmission of measles by 2015. To achieve this goal, all efforts must be directed towards reaching a vaccination coverage of at least 95%, with at least one dose of measles-containing vaccine. This dose is generally administrated to children around the age of one year with a second dose before starting school (4/5 years old). In France, the estimated percentage of children aged around 1 year old who had received the first dose was only 89% in 2011, and this proportion remained unchanged in 2012 (see Figure 4.9.2 in Chapter 4).

In 2011, 12 529 confirmed pertussis cases were reported in EU member states. The overall incidence rate was 4.4 per 100 000 population, an increase of 25% compared with 2010, but comparable with the rates observed in previous years. Within EU countries, the highest incidence rates were reported in Estonia (36 cases per 100 000 population), the Netherlands (33 cases), the Slovak Republic (17 cases) and Slovenia (14 cases) (Figure 1.11.2). But the incidence rate was much greater in Norway, due to more extensive testing. Young children and adolescents were the most affected age groups, although increases were seen across all age groups (ECDC, 2013). Pertussis is no longer solely a paediatric infection and immunisation that is given at around one year of age as part of national childhood immunisation programmes does not confer lifelong immunity. ECDC recommends that vaccine strategies should be revisited and boosters given to adolescents and adults, to provide greater protection. Some countries have already added an adolescent pertussis booster vaccine to their vaccination schedule (e.g., Austria, Belgium, Finland, France, Germany and Italy).

A total of 16 488 hepatitis B cases were reported in EU member states in 2011, a rate of 3.4 per 100 000 population. Sweden, the United Kingdom, Latvia and Ireland had the highest incidence rates among EU countries, with more than ten cases per 100 000 population (Figure 1.11.3). The incidence rate was even higher in Norway, due to more extensive testing (including the testing of all immigrants coming from countries with high number of cases). The incidence of hepatitis B is higher in men than in women. Around one third of all reported hepatitis B cases occurs among people aged 25-34. Heterosexual transmission is the most common route of transmission, followed by nosocomial transmission for acute cases, while mother-to-child transmission was the most common route for chronic cases.

### Definition and comparability

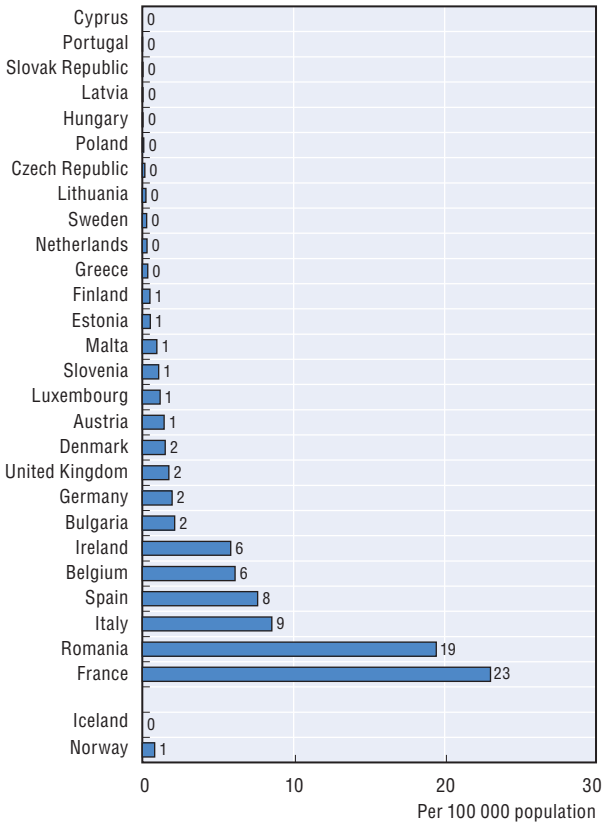
Mandatory notification systems for communicable diseases, including measles, pertussis and hepatitis B, exist in most European countries, although case definitions, laboratory confirmation requirements and reporting systems may differ. Measles, hepatitis B and pertussis notification is mandatory in all EU member states, but only the data collected by the sentinel surveillance system in France and Belgium is reported at the international level.

Caution is required in interpreting the data because of the diversity in surveillance systems, case definitions and reporting practices (for example, several countries only collect data on acute cases, not chronic cases). Variation between countries also likely reflects differences in testing as well as differences in immunisation and screening programmes (ECDC, 2013).

### *References*

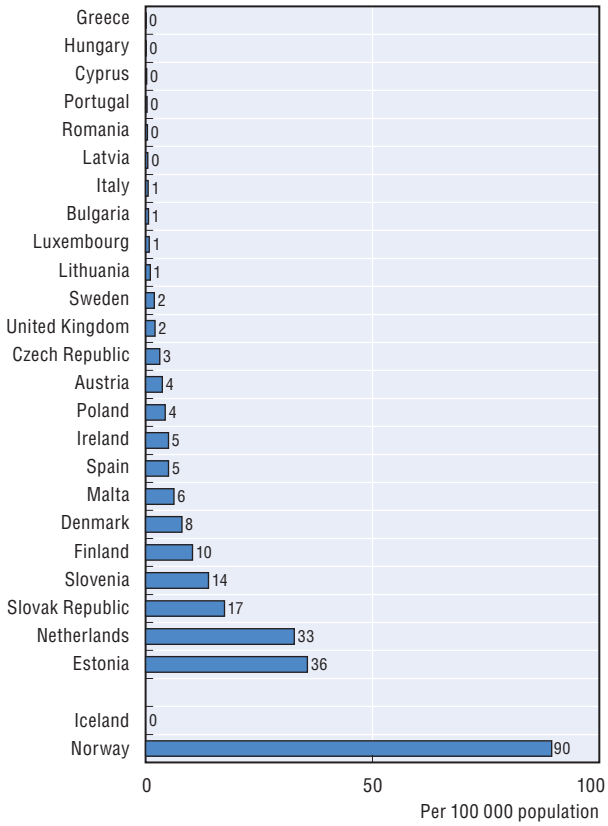
ECDC (2013), *Annual Epidemiological Report 2013. Reporting on 2011 Surveillance Data and 2012 Epidemic Intelligence Data*, ECDC, Stockholm.

### 1.11.1. Notification rate of measles, 2011



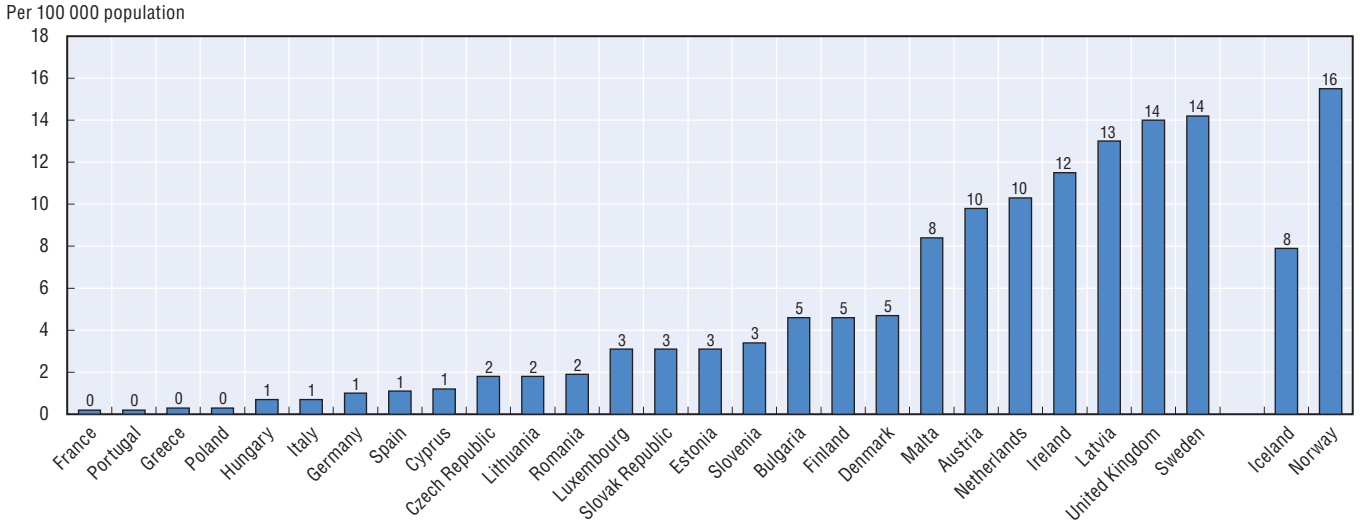

Source: ECDC (2013), *Annual Epidemiological Report 2013*.

### 1.11.2. Notification rate of pertussis, 2011




Source: ECDC (2013), *Annual Epidemiological Report 2013*.

### 1.11.3. Notification rate of hepatitis B, 2011




Source: ECDC (2013), *Annual Epidemiological Report 2013*.

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