

Editorial

The Resurgence Of Measles In Europe: A Significant Development In The Study Of Vaccine-Preventable Illnesses.

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An enveloped, negative single-stranded RNA virus that is a member of the genus Morbillivirus, family Paramyxoviridae, and subfamily Orthoparamyxovirinae is the cause of measles, a highly contagious respiratory infection [1]. Patients present with a maculopapular exanthema that extends from the face to the extremities following a 10- to 15-day incubation period. The subject is typically contagious for four days prior to the rash's onset and four days following its disappearance [2].

Infected patients typically recover swiftly and without any negative consequences. However, children under the age of five, pregnant women, and immunocompromised individuals may experience measles infection-related complications. One of the most common side effects is pneumonia, which can be either a direct result of the virus or a secondary infection [3-5]. Rarely seen neurologic complications include subacute sclerosing panencephalitis (SSPE), which develops years after the virus infection [9,10], and acute disseminated encephalomyelitis (ADEM), which primarily affects immunocompromised individuals [6-8] and occurs in 1 case per 1000.

Measles is diagnosed in laboratories using molecular biology to test for the presence of viral RNA in blood, urine, and respiratory specimens as well as serology to identify particular IgM antibodies in blood [11,12]. Numerous biological factors, such as the existence of only one serotype, the virus's genetic stability, the acquired lifelong immunity following infection, and the fact that humans are the only natural viral host, make measles a vaccine-preventable disease whose eradication is encouraged. In 1963, an efficacious vaccine was already available [13]. The live attenuated vaccines that are currently on the market

are made from the virus's wild type Edmonston strain [14]. Vaccine formulations include the monovalent vaccine, bivalent (against measles and rubella, MR), trivalent (against measles, mumps and rubella, MMR), and tetravalent vaccines (against measles, mumps, rubella and varicella, MMRV) [15,16]. One dose of the vaccine is 93% effective in preventing measles, while two doses achieve 97% efficacy. In order to ensure herd immunity for averting outbreaks and offering indirect protection to subjects who were not vaccinated, the World Health Organization (WHO) advised two doses and a coverage of at least 95% [17].

Which measles vaccination programs are in place in the various European nations? Currently, 17 countries (Albania, Bosnia and Herzegovina, Bulgaria, Czech Republic, France, Hungary, Italy, Malta, Moldova, Montenegro, North Macedonia, Russia, Serbia, Slovakia, Slovenia, and Ukraine) require the MMR vaccine, while 24 countries recommend it. Measles vaccination is required in Germany, but rubella and mumps vaccination is only advised [18]. The final goal of the WHO was to implement vaccination plans in order to obtain a reduction in measles incidence and then the elimination of measles and of rubella and mumps worldwide [19-22].

Even though vaccination campaigns were implemented in several European nations, a number of outbreaks occurred across the continent as a result of rising vaccine hesitancy and the lack of laws requiring vaccination in other nations [23]. Specifically, measles outbreaks occurred in 28 European nations in 2017, resulting in 37 recorded fatalities. The majority of them were found in Germany (929 cases), Greece (967 cases), Italy (5098 cases), and Romania (5608 cases) [24]. Measles cases were also reported in European countries in

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2018 (17,822 cases) and 2019 (13,199 cases) [25]. In 2020, measles decreased in all European countries with 2,043 cases due to the restrictions adopted during the COVID-19 pandemic, which was also responsible for a decrease in routine immunizations [25–27]. The World Health Organization reported 272 cases of measles in Europe between March 2021 and April 2022. Tajikistan (97 cases), Turkey (57 cases), Belgium (15 cases), Poland (14 cases), Italy (13 cases), France (12 cases), Ukraine (12 cases), Germany (11 cases), Georgia (5 cases), and the Russian Federation (5 cases) were the countries where 245 (90%) of them were found [28].

Between March 2021 and April 2022, the World Health Organization documented 272 measles cases in Europe. A total of 245 (90%) of them were detected in Tajikistan (97 cases), Turkey (57 cases), Belgium (15 cases), Poland (14 cases), Italy (13 cases), France (12 cases), Ukraine (12 cases), Germany (11 cases), Georgia (5 cases), and the Russian Federation (5 cases) [28]. Since measles eradication—the reduction of measles incidence to zero—has not yet been accomplished, the steady yearly presence of measles cases in Europe emphasizes the necessity of expanding access to sufficient catch-up vaccinations for disease control and outbreak prevention.

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