

Measles Infection Despite 2-dose Vaccination in Health Care Workers

To The Editors:

A 17-year-old boy presented at the emergency department with headache, cough, conjunctivitis, mild photophobia and subfebrile temperature since 6 days and high fever (40.5 degrees Celsius) and a maculopapular rash on the face and trunk since 1 day. He had visited a reformatory school where 2 confirmed measles cases were known. He did not participate in the Dutch national vaccination program because of religious reasons. Measles infection was confirmed by a positive polymerase chain reaction on a throat swab and detection of measles IgM antibodies by enzyme-linked immunosorbent assay.

The medical doctor (30 years), who examined the patient under routine infection prevention control measures but without a facial mask, had had 2 documented measles-mumps-rubella vaccinations at the age of 14 months and 9 years. She left for holidays the next day and became ill at day 10 after exposure with headache, cold shivers, sore throat and persistent cough. A mild maculopapular rash developed on the face, trunk and extremities at day 14. In specimens taken on day 19, measles virus was detected through polymerase chain reaction in a throat swab and both measles IgM and IgG were positive.

Measles vaccination is routinely offered for free at ages 14 months and 9 years to all children in The Netherlands since 1976. Despite high vaccination rates (96% for the first and 92% for the second), measles epidemics do recur every 5–7 years, mostly originating from communities with a low vaccination rate. Measles vaccination is recommended but not mandatory in health care workers (HCWs) in the Netherlands. HCWs with a relatively high risk of measles exposure (eg, those working on emergency or pediatric departments) are checked for their measles immune status. HCWs who received the 2 vaccinations in childhood are considered protected.¹ This report shows that even fully vaccinated people can be infected and pose a risk for virus transmission. It is estimated that a vaccine effectiveness of around 95% is reached with a 2-dose regimen.¹ Moreover, immunity does wane slowly after vaccination.² In the past years,

many HCWs with vaccination-acquired measles immunity have entered the labor market. Their susceptibility to measles may be associated with reduced circulation of the wild virus in the population, which results in an absence of viral challenge and its titer-boosting effect.³ Indeed, the mild disease in the physician is suggestive for secondary vaccine failure (waning immunity), although this was not proven in the laboratory because of the absence of a pre-exposure serum sample. Measles in vaccinated people may be less contagious than measles in measles virus-naïve people as subsequent transmission to a third person has not been described.^{4,5} In health care settings, measles infection among personnel should be prevented. Spreading of measles in a hospital may not only lead to increased morbidity and mortality among its patients, but also to increased economic cost and shortage of personnel.

It is important that the measles immune status of HCW be registered. HCWs with uncertain immune status or incomplete immunization should be promptly (re)vaccinated. However, this would not have prevented the here presented case. It is important to raise the awareness of measles, as HCWs may be less alert to the disease in the postvaccination era. Moreover, HCWs should adhere to infection prevention control measures in case of clinical suspicion of measles irrespective of their vaccination status.

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Burden of Rotavirus in Hospitalized Children in Turkey

To the Editors:

We read the article by Enweronu-Laryea et al¹ regarding acute rotavirus gastroenteritis in children in Southern Ghana with great interest. Turkey is a developing country with a population of 73 million people and a diarrhea-associated mortality rate of 3.84 deaths per 1000 children <5 years of age.² A model described by Parashar et al³ projected 13,371,800 episodes of diarrhea annually in Turkey among children <5 years, corresponding to 94,817 hospitalizations and 1,182,046 outpatient visits.

In study of Enweronu-Laryea et al,¹ rotavirus was detected in 49.4% (1504/3044) of cases, and caused over 30% of acute gastroenteritis hospitalizations all year round and up to 70% of cases during peak seasons. In that study mortality from acute gastroenteritis occurred in 1.5% (45/3044) of cases and 49% (22/45) of these were rotavirus positive.

In our study, of 5435 hospitalizations in a tertiary referral hospital between January 2008 and January 2009, 509 pediatric patients were hospitalized with a diagnosis of acute gastroenteritis.⁴ Among these patients, rotavirus was isolated in 198 patients (38.9%). There was no mortality in our study. Average total cost of hospital stay for gastroenteritis was 171.25 USD for each patient. In another study from Turkey,⁵ a total of 411 children <5 years who were hospitalized for gastroenteritis in 4 centers were enrolled and rotavirus was identified in 53% of samples from the 338 children tested.

In developing countries, rotavirus causes significant morbidity and mortality such as in Ghanaian children. Ghana introduced rotavirus vaccination in the national immunization program in 2012. Epidemiologic data on rotavirus disease burden are useful for guiding rotavirus vaccination recommendations, including assessment of the need for vaccination and the potential impact of the vaccine in reducing the burden of rotavirus disease. In Turkey and other developing countries, studies are warranted for decision making to include a rotavirus vaccine in the national immunization program.

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