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**Medline ® Abstracts for References 21,22  
of 'Measles: Clinical manifestations, diagnosis, treatment, and prevention'**

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**21** PubMed

TI Laboratory characterization of measles virus infection in previously vaccinated and unvaccinated individuals.

AU Hickman CJ, Hyde TB, Sowers SB, Mercader S, McGrew M, Williams NJ, Beeler JA, Audet S, Kiehl B, Nandy R, Tamin A, Bellini WJ  
SO J Infect Dis. 2011 Jul;204 Suppl 1:S549-58.

Waning immunity or secondary vaccine failure (SVF) has been anticipated by some as a challenge to global measles elimination efforts. Although such cases are infrequent, measles virus (MeV) infection can occur in vaccinated individuals following intense and/or prolonged exposure to an infected individual and may present as a modified illness that is unrecognizable as measles outside of the context of a measles outbreak. The immunoglobulin M response in previously vaccinated individuals may be nominal or fleeting, and viral replication may be limited. As global elimination proceeds, additional methods for confirming modified measles cases may be needed to understand whether SVF cases contribute to continued measles virus (MeV) transmission. In this report, we describe clinical symptoms and laboratory results for unvaccinated individuals with acute measles and individuals with SVF identified during MeV outbreaks. SVF cases were characterized by the serological parameters of high-avidity antibodies and distinctively high levels of neutralizing antibody. These parameters may represent useful biomarkers for classification of SVF cases that previously could not be confirmed as such using routine laboratory diagnostic techniques.

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PMID21666212

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**22** PubMed

TI Outbreak of measles among persons with prior evidence of immunity, New York City, 2011.

AU Rosen JB, Rota JS, Hickman CJ, Sowers SB, Mercader S, Rota PA, Bellini WJ, Huang AJ, Doll MK, Zucker JR, Zimmerman CM  
SO Clin Infect Dis. 2014;58(9):1205. Epub 2014 Feb 27.

**BACKGROUND:** Measles was eliminated in the United States through high vaccination coverage and a public health system able to rapidly respond to measles. Measles may occur among vaccinated individuals, but secondary transmission from such individuals has not been documented.

**METHODS:** Suspected patients and contacts exposed during a measles outbreak in New York City in 2011 were investigated. Medical histories and immunization records were obtained. Cases were confirmed by detection of measles-specific immunoglobulin M and/or RNA. Tests for measles immunoglobulin G (IgG), IgG avidity, measurement of measles neutralizing antibody titers, and genotyping were performed to characterize the cases.

**RESULTS:** The index patient had 2 doses of measles-containing vaccine; of 88 contacts, 4 secondary patients were confirmed who had either 2 doses of measles-containing vaccine or a past positive measles IgG antibody. All patients had laboratory confirmation of measles infection, clinical symptoms consistent with measles, and high-avidity IgG antibody characteristic of a secondary immune response. Neutralizing antibody titers of secondary patients reached >80 000 mIU/mL 3-4 days after rash onset and that of the index was <500 mIU/mL 9 days after rash onset. No additional cases of measles occurred among 231 contacts of secondary patients.

**CONCLUSIONS:** This is the first report of measles transmission from a twice-vaccinated individual with documented secondary vaccine failure. The clinical presentation and laboratory data of the index patient were typical of measles in a naive individual. Secondary patients had robust anamnestic antibody responses. No tertiary cases occurred despite numerous contacts. This outbreak underscores the need for thorough epidemiologic and laboratory investigation of suspected cases of measles regardless of vaccination status.

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