**Right childhood immunization uptake in Vietnam from 2000 to 2011: a multilevel analysis of individual and contextual determinants.**

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# Abstract

**Background:** Since the beginning of 2014, nearly 6000 confirmed measles cases occurred in Northern area in Vietnam of which more than 86% have not been immunized or their vaccination statuses were not confirmed.Moreover, there were some adverse events following immunization (AEFI) cases in period from 2007 to 2013 that made pparents delay immunization for their children.

**Aims:** To describe the likelihood of children <= 5 years old getting right immunization from 2000 to 2011 and identify factors account for variations in right immunization.

**Methods:** Secondary data use of the Multiple Indicator Cluster Survey (MICS) which sampled households and household women aged 15-49 years old from the 1999 Vietnamese Population and Housing Census frame. Multilevel analysis using Poisson regression was performed.

**Results:** Generally, proportions of children <= 5 years old receiving right immunizations was low but increased progressively from 2000 to 2011 except HBV dose 2 (HBV\_2) and HBV dose 3 (HBV\_3). Among 7 vaccines of the National Expanded Program of Immunization (EPI) vaccinated in 2000, 2006, and 2011, Measles dose 1 (Measles\_1) got the highest right vaccination at 65.3%, 66.7%, 73.6%, respectively while Hepatitis B dose 1 (HBV\_1) got the lowest at 17.5%, 19.3%, 45.5%, respectively. Pattern of right immunization clusters within households and communities. Low right immunization was belonged to children whose mothers of marginal groups such as minority ethnicity, living in rural areas, having lower education and wealth index. At the community level, region of child's living was main factor of right immunization while hospital delivery and community prenatal care are minor influences.

**Conclusion:** The EPI communication program should take into account indicator of right immunization beside full immunization to be quality indicator of the immunization and focus more on mothers who have children <= 5 years old living in rural areas, have lower education, belonged to minority groups, and poor. Studies on right immunization designed for multilevel analysis should be urged to develop.