Authors' reply. Spotlight on measles 2010: Timely administration of the first dose of measles vaccine in the context of measles outbreak in France

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Citation style for this article:

Floret D. Authors' reply. Spotlight on measles 2010: Timely administration of the first dose of measles vaccine in the context of measles outbreak in France. *Euro Surveill.* 2010;15(41):pii=19686. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19686>

Article published on 14 October 2010

To the editor: We thank Gagneur and Pinquier for their interest to the paper [1] and share their concern with respect to the high incidence of measles in children under one year of age, as observed in the ongoing measles epidemics in France.

General immunisation at the age of nine months has been discussed in 2005 when the immunisation schedule has been modified in the context of the implementation of the French National Plan for elimination of measles and congenital rubella [2]. At that time, this was considered not relevant because the majority of childbearing women had acquired immunity through natural infection and would thus transfer to their newborn a high level of antibodies able to inhibit living vaccine measles virus for a long time. We agree with Gagneur and Pinquier that the situation has changed and that at present, the majority of childbearing women, born in 1983 or later, have acquired immunity through vaccination, which results in more rapidly waning antibody levels in the newborns. In theory, administration of measles-mumps-rubella (MMR) vaccine at nine months of age seems now possible.

However, in the opinion of doctors who provide vaccination, repeated modifications of immunisation schedules appear worrisome. Measles vaccine was recommended for children in France in 1983 and changed to one dose of MMR vaccine in 1986. A second dose at the age of 11-13 years was recommended in 1993, then at the age of 3-6 years in 1997. In 2005, the immunisation schedule was again changed with the first dose at one year of age and the second dose during the second year of life. Other modifications in the general immunisation schedule of young children might be considered in the near future. It would probably be more convenient to reconsider the age of first administration of MMR vaccine at that time. Furthermore, our immunisation schedule is somewhat crowded in the first year of life and could become more so if new vaccines (such as meningococcal B vaccines) are introduced.

As stressed by Gagneur and Pinquier, some studies [3] have demonstrated the existence of both a humoral and cellular immune response to measles vaccine when administered early in life, even in the presence of maternal antibodies. "However, since a modification of the summary of product characteristics (SPC) of the M-M-R-VAXPRO vaccine was needed to allow its administration at nine months of age, the immune response according to the age of administration has been studied [4]: after the second dose (administered three months after the first), children who had received the first dose at nine months of age had a seroprotection rate against measles of 94.6%, (95% confidence interval (CI): 92.3–96.4) compared to 98.9% (95% CI: 97.5–99.6) for those vaccinated at 12 months of age. Similarly, geometric mean antibodies titres for measles was significantly lower in children immunised at age nine months. So, the SPC mentions that administration of this vaccine at nine months of age should be reserved to certain circumstances (for example for children admitted to day-care centres, for epidemics and for travel in countries with high incidence of measles) and that an additional dose (i.e. a third dose) of vaccine should be provided to children who received the first dose at nine months of age [4].

In our study 135 (56%) of the notified cases in children aged under one year were under nine months-old. Thus, starting the immunisation at nine months of age would have left the majority of them unprotected.

Finally, we know that the current prolonged outbreak of measles in our country is due to the existence of a large cohort of susceptible children, adolescents and young adults who had neither the vaccination nor the disease. In our opinion, reducing the size of this cohort by catch-up vaccination campaigns in the unvaccinated population (according to the official recommendations) is the best way to interrupt the circulation of measles virus and to protect the infants through herd immunity.

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