



# Basic measles immunization in accordance with STIKO (German Standing Committee on Vaccination) recommendations based on birth cohorts using national statutory health insurance physicians claims data from 2009 until 2014

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## Abstract

### Background:

Germany is striving, along with the entire WHO region of Europe (World Health Organization, Regional Office for Europe), to eliminate measles. A vaccination rate of at least 95% of the total population is necessary in order to achieve herd immunity. Specific objectives aimed at achieving this rate in the past were always postponed, currently until the year 2020. Regular surveillance of vaccination rates at the levels of the Associations of Statutory Health Insurance Physicians (ASHIP-areas) and the federal states is done by the Robert Koch Institute (RKI) (so-called ASHIP vaccination surveillance). The previous findings should be supplemented by more detailed analyses and inspire new approaches on how to increase vaccination rates.

### Methodology:

A longitudinal and cross-sectional descriptive analysis was carried out on the birth cohorts from 2009 to 2012. The study is based on the national claims data from statutory health insurance (SHI) physicians from 2009 until 2014. All patients who took part in the U4 early detection screening (a child's fourth regular medical examination) were included. The measles vaccinations were identified using the ASHIP-specific accounting position numbers (so-called "symbol numbers") and documentation numbers defined in the guidelines on vaccinations of the Joint Federal Committee in accordance with section 20 subsection 1 of Book V of the German Social Insurance Code. Only vaccinations given within the time period recommended by the Standing Committee on Vaccination (STIKO) were taken into account. Vaccination rates were calculated at the national, ASHIP-area, and district levels. Further statistical measured values were used to describe the situation on measles vaccination coverage.

### Results/conclusion:

The vaccination rate rose from birth cohort 2009 to birth cohort 2012 for the first measles vaccination from 78.4% to 81.2%, and for the second measles vaccination from 61.1% to 63.3%. For the first measles vaccination, the vaccination rate in eastern Germany is slightly higher than in western Germany, as well as slightly lower for the second measles vaccination. On ASHIP-area level, differences in vaccination rates for birth cohort 2012 range from about 85% in Saxony-Anhalt to 78% in Bavaria for the first measles vaccination, and from 77% in Schleswig-Holstein to 61% in Bavaria for the second measles vaccination. Differences in vaccination rates are significantly bigger within the ASHIP-areas than between these regions. Saxony-Anhalt has the highest average growth rates of all ASHIP-areas.

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The largest differences in vaccination rates can be found on district level. The lowest vaccination rates for the 2012 birth cohort were 52.5% and 36.4% for the first and second measles vaccinations, respectively, while the highest rates were 91.9% and 78.5%. Especially low vaccination rates are observable in southern Germany. Although in many parts of Germany regions with relatively homogeneous vaccination rates are predominant, in many regions differences in vaccination rates are sometimes of about 20% or more within small circumferences. Increasing vaccination rates can be observed in most districts, although only a few of them show a linear development, and there is also a small number of districts with decreasing vaccination rates. If this trend continues, the likelihood of achieving the goal of 95%-vaccination rate by 2020 is in doubt. Action should be taken in particular to increase rates of the second measles vaccination. In addition to regionally coordinated initiatives on federal state level or ASHIP-area level, one should work towards intense, locally adapted initiatives, especially in districts with low vaccination rates.

#### Keywords

early detection screening, basic immunization, vaccination rate, vaccination, utilization, infectious diseases, measles, STIKO recommendations, U4

#### Citation

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