



# Basic immunization against meningococcus C

## Analysis of the implementation of the recommendations of the German Standing Committee on Vaccination from 2009 until 2014

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### Abstract

#### Background:

Invasive meningococcal diseases exhibit very high rates of complications, sequelae and lethality, which make prevention of particular importance. Since 2006, the German Standing Committee on Vaccination (STIKO) recommends the earliest possible vaccination against serogroup C meningococcal disease with a meningococcal C conjugate vaccine for all children in the second year of life. For Children aged up to 17 years with missing vaccination, a catch-up vaccination is recommended. The subjects of the current study were statutory health insured children between their first and second birthdays, who took part in the U6 early detection screening (a child's sixth regular medical examination) from 2009 until 2013. Meningococcus C vaccination coverage rates were stratified by region, and corresponding trend developments were calculated.

#### Methodology:

We used national claims data of statutory health insurance (SHI) physicians (so-called VDX data) from 2009 until 2014 in accordance with article 295 of Book V of the German Social Code (Sozialgesetzbuch V). All children who received the U6 early detection screening in the years from 2009 through 2013 were included. Children who participated in the U6 screening in 2009 were designated "U6 cohort 2009"; those who had the U6 screening in 2010 were designated "U6 cohort 2010", and so on. Meningococcus C vaccination rates of the U6 cohorts 2009 through 2013 were calculated on the following regional levels: district, SHI physician association region, federal state, Eastern / Western Germany, and all of Germany. To describe vaccination rate development in Germany and in the health insurance association regions, the annual percent change (APC) values were calculated using Joinpoint Regression. The federal state of Saxony could not be included in this study because of its deviating vaccination recommendation.

#### Results:

In the U6 cohort 2009 nation-wide vaccination rate was 76.8% and in the U6 cohort 2013 it was 80.2%. However, the national meningococcus C vaccination rate stagnated since the U6 cohort of 2011. Differences between the former Eastern Germany including Berlin and the former Western Germany were 4 percentage points for the cohort of 2009 and 2 points in 2013, tending toward equal rates.

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The vaccination rates at federal state level for the U6 cohort of 2009 ranged from 69.3% in Bavaria to 82.6% in Mecklenburg-Western Pomerania, and in the U6 cohort 2013 from 74.9% in Bavaria to 84.6% in Mecklenburg-Western Pomerania. At district level, the vaccination rates ranged from a low of 22% in Bad Tölz-Wolfratshausen (Bavaria) to 94.4% in Dessau-Roßlau (Saxony-Anhalt) in 2009. In 2013, vaccination coverage ranged from 31.6% in Bad Tölz-Wolfratshausen (Bavaria) to 94.8% in Peine (Lower Saxony). The trend analysis revealed a significant increase in the vaccination rate (APC value = 1.08%, p-value = 0.03) in all of Germany; in the majority of SHI association regions increasing trends were identified with the exception of Thuringia, although not all of them were statistically significant.

#### Conclusion:

Eight years after the implementation of a national meningococcus C immunization program, the vaccination rate of the U6 cohort of 2013 had reached a high level at 80% in Germany. Significant regional differences were identified at state level, but were more pronounced at district level. In some districts, vaccination rates of the U6 cohort of 2013 were still well below the national average, thereby indicating considerable room for improvement. The results of this study can guide local decision-makers to investigate specific reasons for the regional differences in vaccination rates and might help to identify appropriate actions to sustainably increase vaccination rates in the below-average districts.

#### Keywords

Early detection screening, basic immunization, vaccination rate, vaccination, utilization, infectious diseases, meningococcus, STIKO recommendations, U6

#### Citation

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