



Research article

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## Vaccination coverage in children can be estimated from health insurance data

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### [Abstract](#)

#### Background

The introduction of new vaccines for young children requires instruments for a rapid and timely assessment of the progressively increasing vaccination coverage. We assessed whether routine data generated by statutory health insurances (SHI) might be used to monitor vaccination coverage in young children.

#### Methods

For 90% of the population Germany's healthcare system is premium-funded through SHI. Specific medical codes on childhood vaccination are used for billing. These were used to analyse vaccine uptake up to 24 months in children born in Bavaria between 2001–10–01 and 2002–12–31. For children insured in the biggest SHI, vaccination coverage estimates based on billing data were compared to estimates considering only continuously insured children since birth, based on additional data provided by this SHI.

#### Results

Definition of an appropriate denominator from the billing data was a major challenge: defining the denominator by any consultation by children with different ID numbers yielded 196,732 children, exceeding the number of births in Bavaria by a factor of 1.4. The main causes for this inflated denominator were migration and change of health insurance number. A reduced dataset based on at least one physician's visit in the first six months and 2nd year of life yielded 111,977 children. Vaccination coverage estimates for children in the biggest SHI were at maximum 1.7% higher than in the data set based on