SEROTYPE DYNAMICS AMONG CHILDREN WITH INVASIVE PNEUMOCOCCAL DISEASE (IPD) IN GERMANY

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BACKGROUND

IPD among children in Germany has been under surveillance since 1997. PCV vaccination has been recommended since 2006 and currently includes PCV13 and PCV15. Here, we present data on serotype dynamics of IPD cases among individuals under the age of 18 years.

METHODS

IPD in children and adolescents in Germany has been monitored since 1997. Isolates were serotyped using the Neufeld Quellung reaction. IPD surveillance in Germany was, in part, sponsored by Pfizer and Merck.

RESULTS

The serotype dynamics of IPD among children <18 years of age has fluctuated over the last 9 seasons (**Fig. 1**). In 2025/26 (*June '25-April '26, incomplete season), serotypes 22F, 33F and 38 have disappeared from the top 20 most prevalent serotypes, and serotype 4 cases were not detected.

In 2025/26, the GRLS received 198 IPD isolates from individuals <18y. Prevalence of PCV7 serotypes was 12.1%, PCV13: 34.8%, PCV15: 36.4%, PCV20: 53.0% (**Fig. 2**).

Among children <2y. (n=71), prevalence of vaccine serotypes was: PCV7: 15.5%, PCV13: 31.0%, PCV15: 32.4%, PCV20: 49.3% (**Fig. 3**). For children 2-4y. (n=60), prevalences were 6.7%, 35.0%, 35.0% and 46.7% (**Fig. 4**), for 5-17y. (n=67), 13.4%, 38.8%, 41.8% and 62.7% (**Fig. 5**), respectively.

Compared to 2024/25, prevalence of PCV13/15 serotypes has dropped in children <2y., but that of PCV20 has increased. In children <18y., PCV13/15 serotypes are still more prevalent compared to the pre-SARS-CoV-2-pandemic season 2018/19. Main persisting PCV13/15 serotypes were 3 (14.6%), 19F (9.1%) and 19A (8.1), most prevalent non-vaccine serotype was 24F (11.6%).

In children <2y., serotype 3 prevalence has dropped from 15.8% in 2023/24 to 8.5% in 2025/26 (**Table 1**). A reduction was also observed in 2-4y. olds, but not in 5-17y. olds (**Fig. 6A**). Serotype 22F has strongly decreased in all three age groups in 2015/26 (**Fig. 6B**). The most prevalent non-vaccine serotype among children was 24F (11.6%; **Fig. 6C**), whereas serotype 38 (1.5%), has strongly decreased (**Fig. 6D**).

In 2025/26, 230 IPD isolates from children <18 years were sent to the GRLS, of which 198 were confirmed. The notification system has reported 281 cases to date (15 May 2026). This result in a pick-up rate of 70.5% (81.8% if non-confirmed cases are included; **Fig. 7**).

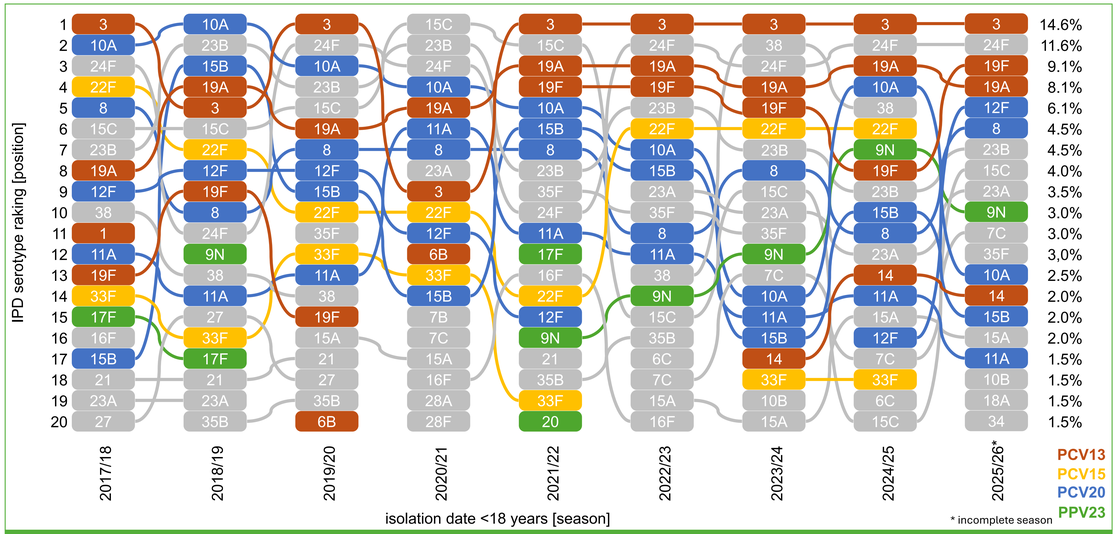

Figure 1: Serotype dynamics among IPD in children <18 years of age in Germany. Serotype prevalence values are listed for the current season 2025/26 (data from July 2025 to April 2026, n=198).

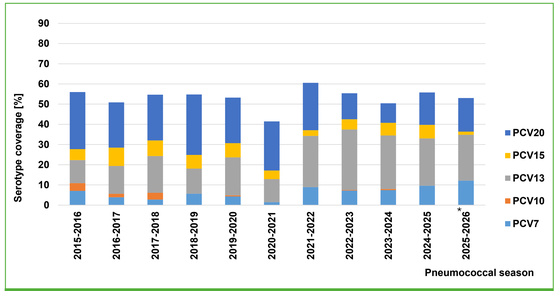

Figure 2: Serotype coverage of different vaccine formulations among IPD in children <18 years of age in Germany.

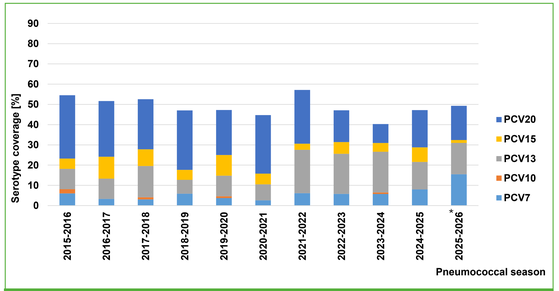

Figure 3: Serotype coverage of different vaccine formulations among IPD in children <2 years of age in Germany.

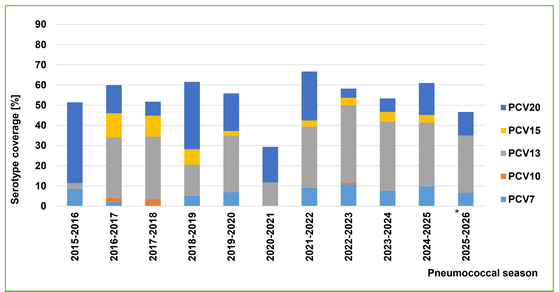

Figure 4: Serotype coverage of different vaccine formulations among IPD in children 2-4 years of age in Germany.

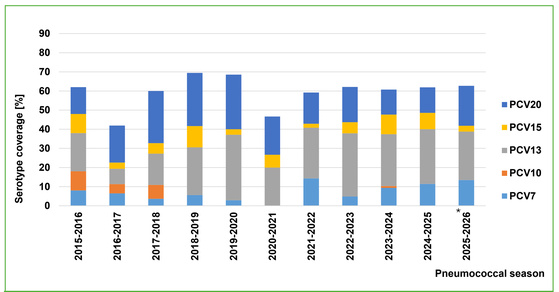

Figure 5: Serotype coverage of different vaccine formulations among IPD in children 5-17 years of age in Germany.

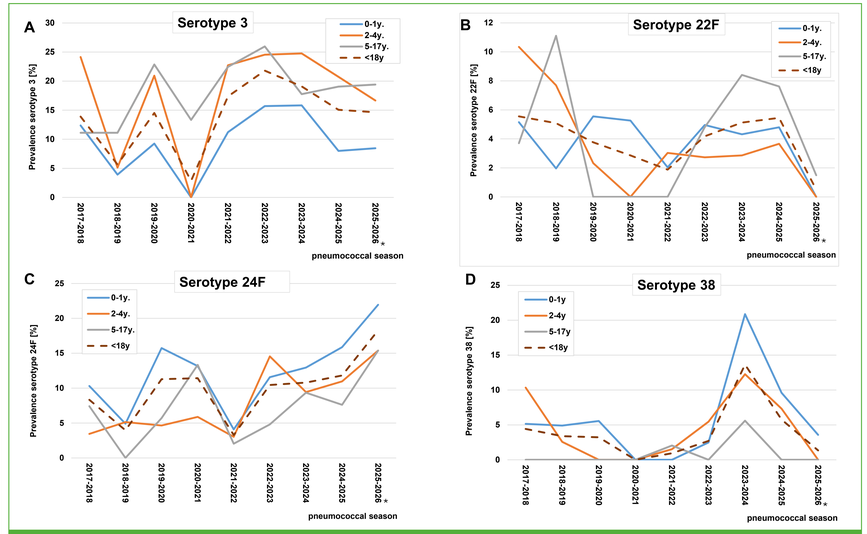

Figure 6: Prevalence of serotypes 3 (A), 22F (B), 24F (C) and 38 (D) among IPD in children <18 years of age in Germany, over the last 9 pneumococcal seasons.

	2023/24		2024/25		2025/26*	
	Serotype	%	Serotype	%	Serotype	%
1	38	20,9	24F	15,6	19F	15,5
2	3	15,8	38	9,8	24F	15,5
3	24F	12,9	3	8,2	3	8,5
4	15C	5,8	10A	7,4	19A	7,0
5	19F	4,3	19F	5,7	12F	5,6
6	19A	4,3	15B	5,7	23B	5,6
7	22F	4,3	9N	5,7	35F	5,6
8	23B	4,3	23B	5,7	10A	4,2
9	10A	3,6	19A	4,9	7C	4,2
10	8	2,9	22F	4,9	15C	4,2
11	35F	2,9	11A	2,5	38	4,2
12	7C	2,2	12F	2,5	8	2,8
13	23A	2,2	15A	2,5	15B	2,8
14	11A	1,4	NT	2,5	9N	2,8
15	17F	1,4	33F	1,6	33F	1,4
16	10B	1,4	8	1,6	11A	1,4

Table 1: Ranking by prevalence of serotypes in IPD in children < 2 years of age.

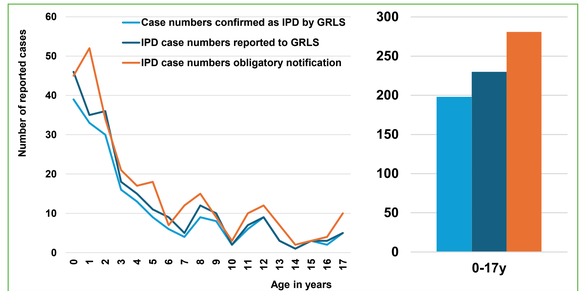

Figure 7: IPD case numbers reported to the GRLS (orange), case numbers confirmed as IPD (blue) by the GRLS laboratory routine as well as case numbers from obligatory laboratory notifications (grey), by patient age, for the season 2025/26.

CONCLUSIONS

In 2025/26, PCV13 serotype prevalence has stabilized, but PCV7 serotypes remain more prevalent than before the pandemic.

Whether the lower prevalence of serotype 3 in children <2y. and 2-4y. can be attributed to PCV15 vaccination needs to be evaluated.

Serotype 22F prevalence has strongly reduced, probably due to PCV15 vaccination.

The main non-vaccine serotype is 24F and the upsurge in serotype 38 seems to have been temporarily limited.