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**Nationales Referenzzentrum
für Meningokokken und *H. influenzae***

Data from the NRZMHi for *H. influenzae* in 2025

1. Introduction

The tasks of the National Reference Laboratory for Meningococci and *Haemophilus influenzae* (NRZMHi) assigned by the Robert Koch-Institute for the surveillance of **invasive *Haemophilus influenzae* disease** include serotyping of clinical isolates from blood or cerebrospinal fluid (CSF) and the detection of antibiotic resistance against β-lactam antibiotics. In 2025, all in all 1,371 submissions were analyzed including submissions from 1,255 patients with invasive infections. The NRZMHi could confirm the diagnosis *Haemophilus influenzae* in 1,228 cases where disease isolates were available. In eleven cases, *H. influenzae* was detected and serotyped by PCR from submitted DNA or native material. In nine cases *H. parainfluenzae* and in one case *H. haemolyticus* from blood was detected. Furthermore, six *H. influenzae* isolates derived from primarily sterile sites other than blood or CSF. These cases do not meet the criteria of the reference definition for a notifiable invasive infection.

In 1,186 invasive cases, *H. influenzae* was detected from blood, in 38 invasive cases from cerebrospinal fluid (CSF) only. Additionally, there were four invasive cases where *H. influenzae* was isolated from both, blood and cerebrospinal fluid (CSF). Detection of *H.influenzae* from these materials must be notified according to the German Infection Protection Act (IfSG).

In 2025 the statutory notification system registered 1,538 invasive *H. influenzae* infections. Since the NRZMHi transmits all laboratory results to the local health authorities in charge, the coverage of the laboratory surveillance can be estimated based on these data. Thus, a coverage of 82 % can be assumed for 2025.

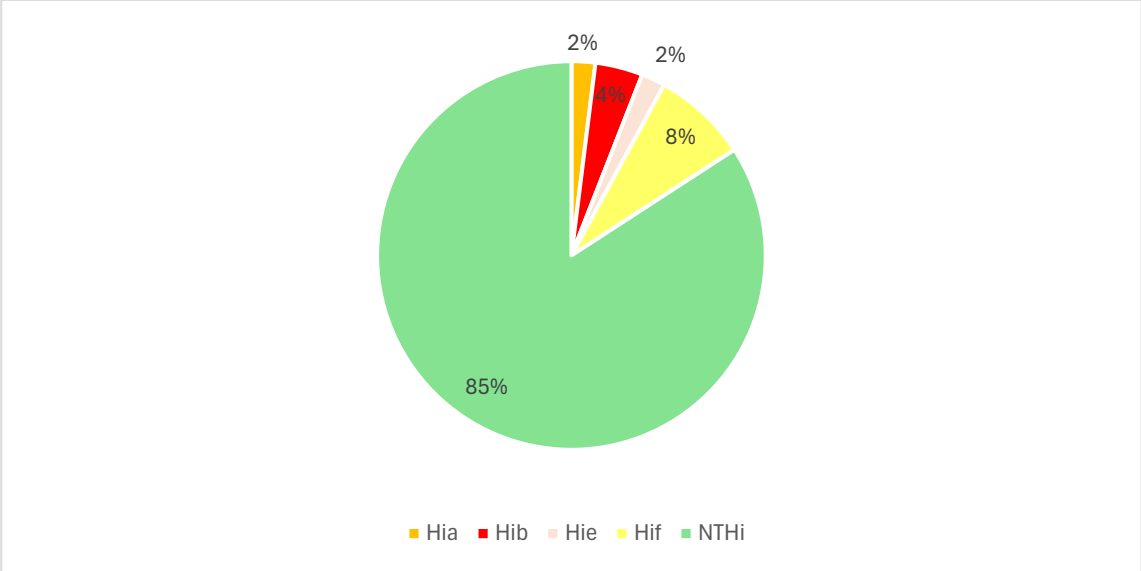
As in previous years, the majority of blood or CSF isolates was uncapsulated, also known as non-typable *H. influenzae* (NTHi, 1,040 isolates, 84,7 %), followed by Hif as the most frequent capsular serotype (94 cases; 7,7 %). In 2025 Hib showed the second highest frequency among the serotypes (47 cases; 3,8 %), followed by Hia (28 cases, 2,1 %). Hie was found in 22 cases (1,8 %). Neither Hic, nor Hid were isolated.

Among the analyzed cases, the age group most affected was > 40 years (1,077 cases; 87,7 % of all cases).
Despite the relatively low percentage, 48 cases (4.0%) were accounted for by children in their first year of life. The NRZMHi does not systematically record infections in newborns, so this group includes newborns. They are at risk of infection with NTHi, which can be transmitted through vaginal colonization during birth or through ascending infection.

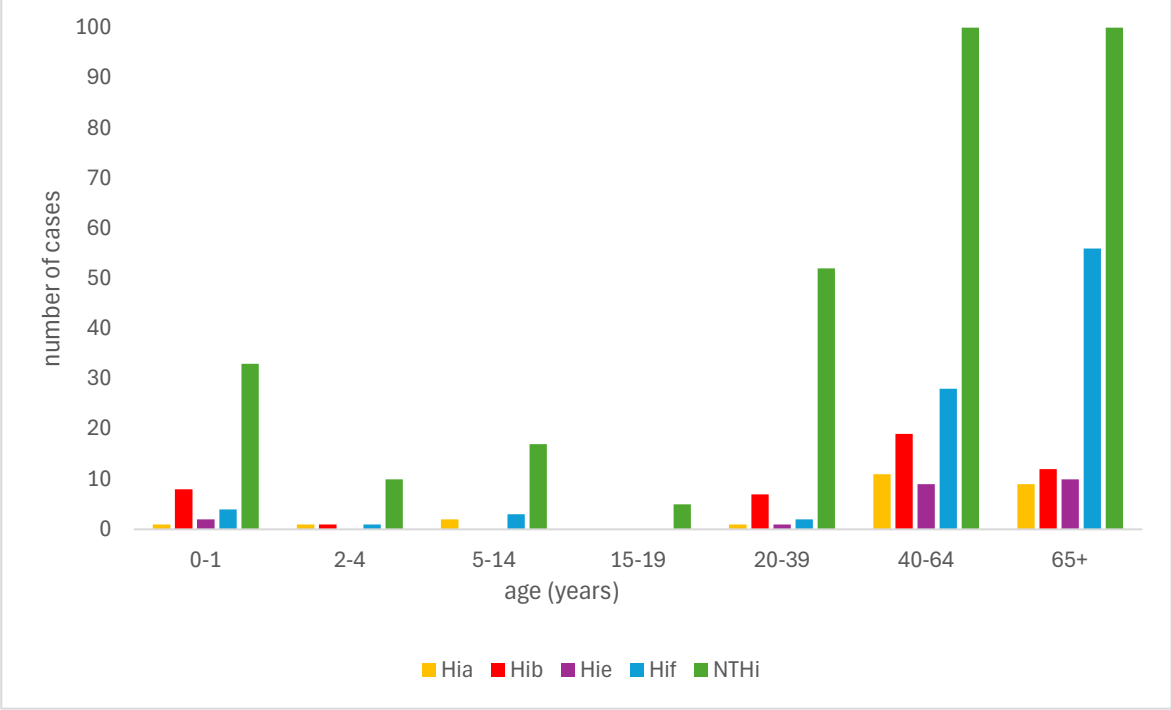
The NRZMHi analyzed the frequency of ampicillin resistance using gradient agar diffusion tests. Of the 1,228 cases processed, 299 isolates (24%) were resistant to ampicillin (MIC > 1 µg/ml). Of these, 125 (42%) isolates showed β-lactamase production.
The NRZMHi tested all isolates for cefotaxime susceptibility. Resistance to cefotaxime was found in 29 isolates (2.3 %).

The number of cases of invasive *H. influenzae* infections fell by 6% in 2025 compared to 2024. There was no significant change in the proportion of non-encapsulated strains compared to the previous year (87% in 2024 versus 85% in 2025). Among the encapsulated strains, the proportion of Hib increased from 2,3 % to 3,8 %, mainly due to increased case numbers in the 40-64 age group. Hib was therefore the second most common capsule type after Hif in 2025. The resistance rate to amipicillin has decreased by 6 %. Resistance to cefotaxime was 2.3%, which was comparable to previous years.

2. Serotype distribution of *H. influenzae* isolates from blood or CSF in 2025



3. Age distribution of patients with *H. influenzae* detected in blood or CSF



4. Serotype distribution in Federal States

	BW	BY	BE	BB	HB	HH	HE	MV	NI	NW	RP	SL	SN	ST	SH	TH	Summe
Hia	3	5	1	2	1	0	1	0	2	3	0	0	2	0	2	3	25
Hib	4	4	3	0	0	17	1	0	4	7	1	0	1	1	1	3	47
Hic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hie	4	3	0	0	0	0	1	0	1	7	2	0	2	1	1	0	22
Hif	12	22	4	2	1	1	7	1	8	20	6	1	5	1	2	1	94
NTHi	166	146	45	31	11	29	74	20	80	242	67	10	39	22	39	19	1040
Total	189	180	53	35	13	47	84	21	95	279	76	11	49	25	45	26	1228

BW: Baden-Württemberg, BY: Bayern, BE: Berlin, BB: Brandenburg, HB: Bremen, HH: Hamburg, HE: Hessen, MV: Mecklenburg-Vorpommern, NI: Niedersachsen, NW: Nordrhein-Westfalen, RP: Rheinland-Pfalz, SL: Saarland, SN: Sachsen, ST: Sachsen-Anhalt, SH: Schleswig-Holstein, TH: Thüringen

5. Ampicillin resistance in isolates *H. influenzae* from blood or CSF