

Supplementary Data

Clinical and economic inpatient burden of influenza and influenza-like illness in Germany 2019-2025: Analysis of nationwide hospital data

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Table S1: Number of hospitalizations with a main diagnosis of influenza/influenza-like illness (ILI) in Germany coded with ICD-10-GM codes J09, J10, and J11, 2019–2020 to 2024–2025.

	J09: Influenza caused by zoonotic or pandemic influenza viruses N (%)	J10: Influenza caused by confirmed seasonal influenza viruses N (%)	J11: Influenza caused by unconfirmed seasonal influenza viruses N (%)
2019–2020	2,118 (6.0)	30,444 (86.3)	2,726 (7.7)
2020–2021	107 (9.4)	696 (61.2)	334 (29.4)
2021–2022	281 (6.0)	3,802 (81.0)	612 (13.0)
2022–2023	1,413 (2.6)	49,540 (92.0)	2,877 (5.3)
2023–2024	1,247 (2.2)	53,964 (93.1)	2,740 (4.7)
2024–2025	626 (0.7)	83,807 (95.5)	3,312 (3.8)

ILI: Influenza-like illness

Table S2: Proportion of hospitalizations with influenza/ILI main diagnosis among all hospitalizations with severe acute respiratory infection (SARI) and proportion of hospitalizations with unspecified SARI diagnosis among all SARI hospitalizations in Germany, 2019–2020 to 2024–2025.

	Age group 0-17 years	Age group 18-59 years	Age group 60 years and older	All ages
Proportion of influenza among all SARI				
2019–2020	14.5%	11.9%	4.8%	7,8%
2020–2021	0.7%	0.5%	0.2%	0,3%
2021–2022	2.2%	1.6%	0.4%	1,0%
2022–2023	16.4%	14.4%	6.6%	9,7%
2023–2024	13.6%	13.5%	8.2%	10,2%
2024–2025	22.5%	15.7%	11.4%	14,1%
Proportion of unspecific SARI among all SARI				
2019–2020	48.7%	57.6%	68.5%	62.9%
2020–2021	68.8%	20.9%	34.4%	33.7%
2021–2022	43.2%	31.2%	46.4%	43.0%
2022–2023	37.8%	52.4%	49.3%	47.1%
2023–2024	38.1%	56.8%	55.8%	52.1%
2024–2025	17.9%	23.7%	31.2%	27.6%

ILI: Influenza-like illness; SARI: Severe acute respiratory infection

SARI defined as any inpatient record with a primary diagnosis of J09-J22. Unspecific SARI defined as inpatient record primary diagnosis of J12.9, J15.8, J18, J20.9, J21.8, J21.9, or J22, excluding cases with a secondary diagnosis of Covid-19 (U07.1 or U07.2).

Table S3: Mean costs per hospitalized influenza/ILI case, total costs for influenza/ILI cases, and proportion of cases with available cost data in Germany by season and age group, 2019–2020 to 2024–2025.

Age group	Season	Mean costs per case in €	Proportion with available DRG codes	Total costs
0-17	2019–2020	1,879.50	99.7%	23,333,982
0-17	2020–2021	1,744.39	99.0%	357,601
0-17	2021–2022	1,867.04	98.7%	4,215,784
0-17	2022–2023	2,304.15	97.3%	47,290,428
0-17	2023–2024	2,532.85	98.6%	43,169,860
0-17	2024–2025	2,650.26	99.3%	66,998,659
18-59	2019–2020	2,683.66	99.4%	23,975,778
18-59	2020–2021	2,225.36	94.7%	968,033
18-59	2021–2022	2,155.94	96.2%	2,681,984
18-59	2022–2023	3,301.27	95.6%	30,114,220
18-59	2023–2024	4,678.39	98.3%	55,242,476
18-59	2024–2025	4,456.65	98.8%	70,250,179
≥60	2019–2020	3,634.17	99.3%	50,656,650
≥60	2020–2021	2,920.86	89.9%	1,451,668
≥60	2021–2022	2,959.67	93.7%	3,530,883
≥60	2022–2023	4,789.01	94.7%	115,817,322
≥60	2023–2024	5,429.70	99.1%	157,998,894
≥60	2024–2025	5,420.57	99.3%	253,151,576

DRG: Diagnosis-related group; ILI: Influenza-like Illness

Table S4: Crude and age-adjusted influenza/ILI hospitalization rates per 100,000 individuals aged 60 years and older by federal state and season, 2022–2023 to 2024–2025.

Federal state	Season	Crude rate per 100,000 inhabitants aged 60 and older	Adjusted rate per 100,000 inhabitants aged 60 and older
Baden-Württemberg	2022–2023	95.2	95.4
Bavaria	2022–2023	124.0	125.1
Berlin	2022–2023	85.5	84.0
Brandenburg	2022–2023	63.1	63.1
Bremen	2022–2023	61.5	60.5
Hamburg	2022–2023	73.8	71.5
Hesse	2022–2023	92.2	92.8
Mecklenburg-Vorpommern	2022–2023	97.0	99.5
Lower Saxony	2022–2023	72.4	72.4
North Rhine-Westphalia	2022–2023	90.6	91.0
Rhineland-Palatinate	2022–2023	95.5	97.7
Saarland	2022–2023	90.6	92.4
Saxony	2022–2023	133.1	126.8
Saxony-Anhalt	2022–2023	128.8	127.5
Schleswig-Holstein	2022–2023	66.3	65.2
Thuringia	2022–2023	161.8	161.9
Baden-Württemberg	2023–2024	127.7	127.9
Bavaria	2023–2024	176.3	177.5
Berlin	2023–2024	85.5	84.1
Brandenburg	2023–2024	56.5	56.6
Bremen	2023–2024	80.6	79.6
Hamburg	2023–2024	98.8	96.3
Hesse	2023–2024	127.1	127.8
Mecklenburg-Vorpommern	2023–2024	105.0	107.1
Lower Saxony	2023–2024	74.0	74.0
North Rhine-Westphalia	2023–2024	102.9	103.4
Rhineland-Palatinate	2023–2024	122.9	125.6
Saarland	2023–2024	101.7	103.8
Saxony	2023–2024	139.7	134.8
Saxony-Anhalt	2023–2024	111.4	110.7
Schleswig-Holstein	2023–2024	67.1	66.1
Thuringia	2023–2024	122.9	122.6
Baden-Württemberg	2024–2025	129.9	130.2
Bavaria	2024–2025	219.6	221.5
Berlin	2024–2025	208.8	203.5
Brandenburg	2024–2025	143.0	143.7
Bremen	2024–2025	117.9	115.8
Hamburg	2024–2025	222.5	216.3
Hesse	2024–2025	202.3	203.6
Mecklenburg-Vorpommern	2024–2025	205.3	209.1
Lower Saxony	2024–2025	161.4	161.6
North Rhine-Westphalia	2024–2025	190.4	192.0
Rhineland-Palatinate	2024–2025	177.8	182.9

Saarland	2024–2025	155.1	158.6
Saxony	2024–2025	199.8	190.2
Saxony-Anhalt	2024–2025	177.9	175.5
Schleswig-Holstein	2024–2025	157.0	154.2
Thuringia	2024–2025	224.8	222.8

ILI: Influenza-like illness