

SUPPLEMENTARY TABLE. Characteristics of reported influenza-associated neurologic disease cases (N = 82) and all influenza-associated encephalopathy cases (N = 109) — United States, 2024–2025 influenza season

Characteristic	n/N (column %)	
	Influenza-associated neurologic disease cases	All influenza-associated encephalopathy cases
Total	82 (100)	109 (100)
Median age, yrs (IQR)	6 (3–9)	5 (3–10)
Age group, yrs		
0–4	29/82 (35)	44/109 (40)
5–11	38/82 (46)	46/109 (42)
12–17	15/82 (18)	19/109 (17)
Female sex	29/80 (36)	49/107 (46)
Race and ethnicity*		
Hispanic/Latino	18/80 (22)	16/102 (16)
Non-Hispanic, Asian	1/80 (1)	7/102 (7)
Non-Hispanic, Black or African American	18/80 (22)	19/102 (19)
Non-Hispanic, Other	6/80 (7)	7/102 (7)
Non-Hispanic, White	37/80 (46)	53/102 (52)
U.S. Region†		
Midwest	25/82 (30)	26/109 (24)
Northeast	15/82 (18)	31/109 (28)
South	18/82 (22)	31/109 (28)
West	24/82 (29)	21/109 (19)
Admission month		
Before influenza peak§ (Oct–Dec)	11/82 (13)	13/109 (12)
During influenza peak (Jan–Feb)	54/82 (66)	71/109 (65)
After influenza peak (Mar–May)	17/82 (21)	25/109 (23)
Underlying medical conditions¶, **		
None	45/82 (55)	58/106 (55)
At least one	37/82 (45)	48/106 (45)
Asthma	8/82 (10)	12/106 (11)
Seizure disorder	14/82 (17)	10/106 (9)
Neurologic/neuromuscular disease	11/82 (13)	15/106 (14)
Signs/symptoms on admission*		
Altered mental status††	64/80 (80)	93/106 (88)
Fever	65/79 (82)	92/108 (85)
Headache	22/64 (34)	22/86 (26)
Respiratory tract symptoms	67/81 (83)	91/104 (87)
Seizures	46/78 (59)	56/94 (60)
Illness onset to neurologic symptom onset (days), IQR§§	2 (0–4)	2 (1–3)
Received current seasonal influenza vaccine ≥14 days before illness onset¶¶	13/62 (21)	15/93 (16)
Treatment		
Influenza antiviral***	63/80 (79)	86/102 (84)
Systemic corticosteroids	23/73 (31)	52/98 (53)
Intravenous immunoglobulin (IVIG)§§	11/63 (17)	23/79 (29)
Plasma exchange§§	2/63 (3)	15/80 (19)
Immunomodulators§§	1/62 (2)	17/80 (21)

Vasopressors ^{§§}	16/61 (26)	25/79 (32)
Influenza virus type/subtype		
Influenza A	70/82 (85)	97/109 (89)
Influenza A (H1N1)	27/43 (63)	37/59 (63)
Influenza A (H3N2)	16/43 (37)	22/59 (37)
Influenza B	11/82 (13)	12/109 (11)
Bacterial, viral, or fungal detection^{†††}	13/82 (16)	13/109 (12)
Neuroimaging performed^{§§§}		
Yes	70/82 (85)	102/108 (94)
No	12/82 (15)	6/108 (6)
Abnormal ^{¶¶¶}	37/70 (53)	68/102 (67)
Illness severity		
Median length of hospitalization (days), IQR ^{****}	4 (2–13)	3 (2–7)
Pneumonia diagnosis at admission	14/78 (18)	19/101 (19)
Admitted to an ICU	57/79 (72)	80/108 (74)
Invasive mechanical ventilation	41/82 (50)	59/109 (54)
Not at neurologic baseline at discharge ^{††††}	14/60 (23)	33/70 (47)
Death	16/82 (19)	21/109 (19)

Abbreviations: ANE = acute necrotizing encephalopathy; IAE = influenza-associated encephalopathy; ICU = intensive care unit.

Note: Denominators are adjusted throughout the table to exclude missing and unknown responses.

*Numbers are not mutually exclusive.

[†]Represents state of residence; see: https://www.census.gov/programs-surveys/economic-census/guidance-geographies/levels.html#par_textimage_34

[§]Peak based on national activity for the 2024-2025 influenza season; see: <https://www.cdc.gov/fluview/surveillance/2025-week-25.html>

[¶]Underlying medical conditions (UMCs) include the following categories: developmental (e.g. autism, ADHD), prematurity for those aged <2 years, immunocompromising conditions, chronic metabolic disease, genetic/inborn errors of metabolism, blood disorders, lung disease, cardiovascular disease, renal disease, gastrointestinal disease, rheumatologic disease, obesity.

^{**}Three children had underlying medical conditions known as inborn errors of metabolism, which can predispose to encephalopathy in the setting of a systemic stressor such as influenza virus.

^{††}Altered mental status includes delirium, personality changes, hallucinations, and decreased level of consciousness.

^{§§}Optional survey questions include illness onset date, neurologic symptom onset date, and use of other treatments.

^{¶¶}Among those aged ≥6 months and thus eligible for influenza vaccination. Admission date was used for 1 influenza-associated neurologic disease patient without illness onset date available.

^{***}56 influenza-associated neurologic disease patients received oseltamivir alone, two received oseltamivir and peramivir, and five received peramivir alone.

^{†††}Co-detections were reported from any time during hospitalization for any of the following specimen sources: blood, urine, respiratory tract, peritoneal fluid, cerebrospinal fluid.

^{§§§}Neuroimaging performed includes computed tomography of the head or magnetic resonance imaging of the brain.

^{¶¶¶}Percentage of those with neuroimaging performed.

^{****}Days from admission to discharge (survivors) or death; data were missing for two influenza-associated neurologic disease patients.

^{††††}Among patients who survived, were no longer hospitalized, and for whom survey data were available.