Health Advisory: Influenza-Associated Acute Necrotizing Encephalopathy (ANE)

Minnesota Department of Health, Thu, Feb 20 13:00 CST 2025

Action Steps

Local and tribal health department: Please forward to hospitals, clinics, urgent care centers, and emergency departments in your jurisdiction.
Hospitals, clinics and other facilities: Please forward to all health care providers who might see patients with respiratory or neurologic illness.
Health care providers:

- Watch for cases of acute necrotizing encephalitis (ANE) in hospitalized patients with influenza.
- Consider ANE in patients presenting with acute encephalopathy, particularly children.
- Report ANE to the Minnesota Department of Health (MDH) at 651-201-5414 or 1-877-676-5414; ANE is reportable under both the MDH: Influenza (https://www.health.state.mn.us/diseases/flu/hcp/report.html) and MDH: Unusual or Increased Case Incidence (https://www.health.state.mn.us/diseases/reportable/unusualillness.html) clauses of MN's communicable disease reporting rule.
- Submit influenza specimens to MDH-Public Health Laboratory for hospitalized patients presenting with ANE symptoms for whole genome sequencing. Sequencing results will not be reported back but will be used to further monitor and understand changes in influenza strains.
- Promote influenza vaccine at each visit: MDH Influenza Basics (https://www.health.state.mn.us/diseases/flu/basics/index.html).

Background

One case of influenza-associated ANE has been identified to date in Minnesota in a child under 2 years of age who resides in the Twin Cities Metropolitan Area. Additionally, pediatricians throughout the United States have noted an increase in reported influenza A-associated ANE cases during the 2024-2025 influenza season. The cases have been associated with both seasonal influenza A subtypes (H1 and H3). Cases have typically been previously healthy young children, and many were unimmunized for influenza. Clinical presentations have included high fever, obtundation, and most cases had seizures.

ANE is rare, however, the morbidity and mortality are high. Immunomodulating therapy (e.g., corticosteroids, plasmapheresis, tocilizumab, or combinations thereof) along with supportive intensive care has been offered to try to improve neurological outcomes. Oseltamivir has been given when associated with influenza. Consultation with an expert in infectious diseases and an

expert in neurology can be helpful in the diagnosis and management of ANE. Optimal treatment is not known.

Seasonal influenza activity remains high and there is still time to promote vaccine. Rates to date of influenza vaccination for the current season in Minnesota are 24% for children and 34% for adults. Vaccine efficacy estimates are not yet available for the 2024-2025 season in the northern hemisphere, but the vaccine was well matched and was moderately effective for the 2024 influenza season in the southern hemisphere. Influenza vaccine helps reduce severe illness and remains one of the best ways to protect our most vulnerable populations. In addition, influenza antivirals are widely available and may help decrease complications from influenza (see CDC: Influenza Antiviral Medications - https://www.cdc.gov/flu/hcp/antivirals/summary-clinicians.html).

For more information

- MDH: Influenza (www.mdhflu.com)
- MDH: Influenza Vaccine Information For Health Professionals (https://www.health.state.mn.us/diseases/flu/hcp/vaccine/index.html)
- Ashley Howard, Timothy M Uyeki, Jaime Fergie, Influenza-Associated Acute Necrotizing Encephalopathy in Siblings (https://doi.org/10.1093/jpids/piy033), Journal of the Pediatric Infectious Diseases Society, Volume 7, Issue 3, September 2018, Pages e172–e177.
- Chen, H., Lan, SC., Tseng, YL. et al. Acute necrotizing encephalopathy in adult patients with influenza: a case report and review of the literature (https://doi.org/10.1186/s12879-024-09844-6). BMC Infect Dis 24, 931 (2024)

A copy of this HAN is available at: MDH Health Alert Network (http://www.health.state.mn.us/han)
The content of this message is intended for public health and health care personnel and response partners who have a need to know the information to perform their duties.