VDH VIRGINIA DEPARTMENT OF HEALTH

How are Emergency Department (ED) and Urgent Care Data Used?

The Virginia Department of Health receives near real-time emergency department (ED) and urgent care data from Virginia healthcare facilities. The data are stored in Virginia's syndromic surveillance system, ESSENCE. VDH staff review the data to find communicable disease cases, detect outbreaks, monitor disease trends, and track health impacts of weather events. Below are some examples of how the data are used.

Finding Cases and Detecting Outbreaks

Find cases during an E. coli outbreak – In June 2024, VDH investigated an outbreak of shiga toxin-producing E. coli (STEC) associated with Lake Anna. Epidemiologists searched ED and urgent care visits for signs and symptoms of STEC with a mention of Lake Anna. They also searched for visits with hemolytic uremic syndrome (HUS), a serious complication of STEC infection. ESSENCE was the first method of detection for 3 of 9 (33%) HUS cases and 2 of 25 (8%) probable/confirmed STEC cases.

Identify individuals exposed to a workplace ammonia leak – In August 2024, a local health district in Northern Virginia was notified of a chemical leak resulting in dangerous ammonia exposure among employees. The district used ED and urgent care data to identify individuals seeking healthcare following the exposure.

Find cases of mpox – Beginning in May 2022, VDH used ED and urgent care data to look for possible cases of mpox. From May 2022 through January 2025, 168 mpox cases were identified using ED and urgent care data (27.7% of total cases). While some of these cases were also reported to public health through traditional means, the timely nature of syndromic data allowed for early identification of possible cases to help control the outbreak and limit further spread of the virus.

Identify pediatric flu cases with severe neurological symptoms – In February 2025, the Centers for Disease Control and Prevention reported cases of severe neurological complications among children with influenza. Healthcare providers were asked to report possible cases to the health department, but reporting was not required. VDH used ED data to identify two previously unreported cases of influenza-associated encephalopathy.

Detect a chickenpox (varicella) outbreak – In July 2023, ESSENCE daily visits of interest email notifications included several ED and urgent care visits with diagnosed chickenpox. The visits occurred among children in the same health district. The health district epidemiologist discovered that all cases were associated with the same daycare facility. The daycare also had additional cases that had not been reported to the health department.

VDH VIRGINIA DEPARTMENT OF HEALTH

Monitoring Disease Trends

Monitor pediatric pneumonia trends – In August 2024, the VDH enhanced surveillance team noticed an unusual increase in the number of ED and urgent care visits among children with pneumonia. These trends were shared with local, regional, and federal partners during the fall as the number of children with pneumonia continued to increase. ESSENCE data were included in a notification letter from VDH to healthcare professionals across the Commonwealth.

Track gastrointestinal illness – VDH epidemiologists monitor trends in the percent of ED and urgent care visits with gastrointestinal (GI) illness, like vomiting or diarrhea. Increases in GI illness visits are one sign of increased norovirus activity. The data are combined with data on GI outbreaks to provide a statewide and regional picture of GI illness. This can help nursing homes, schools, and other facilities to prevent and respond to norovirus outbreaks.

Describing Weather-Related Health Impacts

Describe health effects of winter storm – In early January 2025, a winter storm impacted Virginia, with snow accumulations up to 11 inches and ice up to 0.29 inches (National Weather Service). Immediately after the storm, the Richmond metropolitan area experienced a sustained disruption to the public water supply. VDH used ED and urgent care data to monitor the potential health impacts of these events. Such health impacts included hypothermia or cold exposure, gastrointestinal illness, injuries resulting from falls, and visits related to dialysis and medication refills. Healthcare visit data were included in situation reports to Virginia leaders managing the emergency response for their awareness and decision-making.

Describe health impacts of extreme heat – Extreme heat is the leading cause of weather-related deaths in the U.S. Heat-related illness (HRI) can range from mild cramps to severe heat stroke or death. Every summer, VDH publishes HRI data on a dashboard. Users can compare monthly HRI rates to average rates over previous years. During May through September 2024, there were over 3,200 HRI visits in Virginia. The data can help to show which areas and groups are most affected by HRI. Local planners might use the data to inform prevention and response activities such as opening cooling centers.

Questions?

Email **syndromic@vdh.virginia.gov**

Visit https://www.vdh.virginia.gov/surveillance-and-investigation/syndromic-surveillance/