
Limitations of Syndromic Surveillance Data

Syndromic surveillance uses existing health data sources for the purposes of near real-time surveillance of public health issues. The primary use of emergency department (ED) and urgent care center (UCC) visit information is for clinical care of patients by the health care facility. When this information is used by the Virginia Department of Health (VDH) for syndromic surveillance, it is considered a secondary use. This secondary use is subject to limitations that should be considered when interpreting these data.

For syndromic surveillance, information on date and time of visit, residential zip code, demographics (e.g. sex, race), chief complaint, and diagnosis are reported to VDH. The chief complaint captures the patient's primary reason for seeking medical care and is commonly recorded as a free text field, which may include misspellings or abbreviations. It may also lack context that could assist public health with interpretation of the reason for visit. For example, the chief complaint may state "sick" or "feels unwell" without mentioning any symptoms such as fever, vomiting, or cough. Variability in the chief complaint across health care facilities can sometimes make it difficult to measure the exact burden of illness or injury in a community.

The diagnosis is recorded using standardized coded values outlined by the International Classification of Diseases (ICD) 9th and 10th Revision code sets. These diagnosis codes are used by health care facilities throughout the United States for medical coding, reporting, and billing purposes. Reporting of ICD-9 and ICD-10 values to VDH provides additional information on a patient's health care visit. However, transmission of diagnosis data to VDH is generally delayed and thus does not support near real-time surveillance of public health issues.

The volume and quality of data transmitted to VDH have changed over time, leading to improved coverage of Virginia's population in more recent years. This increase in data volume should be taken into consideration when interpreting trends across years. It is also important to consider fluctuations in data reporting to VDH which may result in a decrease in data volume, such as if a healthcare facility were to stop sending data or to experience a change which would cause a delay in their reporting. Please keep these data reporting changes in mind when interpreting syndromic surveillance data.

The quality of data has also improved over time because a national syndromic surveillance data reporting standard was established in 2011. This standard specifies what pieces of information should be sent to VDH to ensure consistency in the format and reporting of syndromic surveillance data. Improvements in data quality as a result of the 2011 standard should be taken into consideration when interpreting trends across years.