

What is Syndromic Surveillance?

Syndromic surveillance (SS) is a nearly real-time method of categorizing visits to Emergency Departments (EDs) and Urgent Care Facilities (UCFs) across Georgia into disease or illness syndromes, based on the patient chief complaint upon admission and/or discharge diagnosis. At a minimum, EDs/UCFs across Georgia automatically send data about chief complaints, and date and time of visit to the Georgia Department of Public Health (DPH) daily. Many facilities also send patient demographics such as age, sex, race, and residential zip code, as well as discharge diagnosis in some cases.

Because the majority of SS data are based on chief complaint upon admission to EDs/UCFs, it does not always reflect the patients' final diagnosis, and can have limited ability to understand the true nature of the visit. For example, it may initially appear that a patient has overdosed, but the patient may receive a different diagnosis upon further medical examination. For this reason, overdoses identified by SS are only **SUSPECT** overdoses until DPH receives more definitive diagnoses. Additionally, variability in data documentation across health care facilities can make it difficult to interpret the reason for a patient visit.

Syndromic Surveillance Appropriate Data Use/Importance

By searching the chief complaint and/or discharge diagnosis for text indicative of a drug overdose, these data can be used **as an early detection method for a rise in overdoses, potential drug overdose clusters and to alert DPH and partners of events that require immediate public health action.** It is important to note that SS relies heavily on the chief complaint field, since only 50-60% of the visits reported to the DPH SS system include the ICD-10 discharge diagnosis codes. DPH monitors SS data daily for unusual overdose activity.

Representation

SS is conducted statewide and captures over 85% of all annual visits to Georgia EDs/UCFs, with 127 facilities currently reporting. However, it is important to note that SS does not obtain data from all facilities where a patient may seek or be provided care, thus SS data underestimates the occurrence of overdose events. Additionally, the actual number of facilities reporting to the SS system can vary from day to day and from week to week, therefore the data quality can also have significant variance between facilities. While DPH continues to onboard new facilities to report SS data and to refine SS data quality, there are still several large facilities in Georgia that do not participate. Additionally, some facilities may not report on any given day due to temporary technical difficulties. There are also seasonal variations in SS data caused by increases and decreases in the number of visits due to occurrences like holidays and seasonal population changes (e.g. school, vacation) that could affect visit numbers. These data gaps and outages cause fluctuations in visit numbers, and are important to consider when interpreting SS data. Finally, SS data reflect the number of visits rather than the number of cases; patients with repeat visits are potentially counted multiple times.

SS data are not meant to characterize the true burden of overdoses in Georgia. There are many overdose events that are not represented in the system, including those who die before reaching an emergency department, or overdose cases who are treated by non-ED/UCF entities (e.g., EMS). Additionally, Georgia has large population centers which border other states, so Georgia's SS does not capture in-state residents who overdose in Georgia and seek care out of state. On the other hand, Georgia's SS data include out-of-state residents who overdose in another state and seek care at Georgia facility. Furthermore, SS overdoses are geographically analyzed using patient residence zip code and/or county, which can be misleading as people do not always overdose/seek care in the areas where they live. For this reason, SS may not be entirely accurate even for patients who live, overdose, and seek care in Georgia.

Data Reliability

Due to the above limitations, SS data are often reported in rates and percent change, rather than visit counts. We can better account for these limitations by putting these data in the context of population size and/or showing trends. Rates for counties with fewer than 15 visits are excluded from analysis, as these small rates are unreliable due to random variation, and result in the appearance of extreme fluctuation. For example, a county with 2 visits one month and 4 visits the next month would appear to have had a dramatic increase, when in reality there were only 2 more visits.