

# SIREN: The Statewide Incident Reporting Network

## Current Data Limitations

### Data Limitations

#### 1. *Selection Bias*

SIREN data is entered by Vermont licensed EMS providers from across the state. Since there are many providers submitting data, it should be recognized that individual, agency, or even regional tendencies and/or subjectivities in data reporting may exist. For this reason, an outcome of interest (medication administration, provider interventions, cause of injury, etc.) may be over- or under-reported.

#### 2. *Duplicate Data*

A single patient may be represented in more than one EMS record for a variety of reasons. Several agencies may respond to the same event, such as the case of a patient treated by first responders who then transfer care to a transporting ambulance crew. If a patient received pre-hospital care involving more than one data-submitting EMS agency, that patient may be counted multiple times (once for each EMS agency encounter). Analysts at the Health Department take this into consideration when utilizing the data and attempt to remove duplicate encounters, however, some duplicates may remain.

#### 3. *Incomplete Data*

- a. While the state implemented SIREN in 2009, it wasn't until mid-2014 that 100% of all transporting ambulance agencies began reporting data into SIREN. Statewide EMS data prior to 2014 is generally considered incomplete and is typically not used in research or analysis.
- b. First Response agencies are currently not required to submit incident reports to SIREN. Since there are many First Response agencies that exist in the state, there may be EMS incidents that are not documented electronically in SIREN. Case counts and outcome measures may be under-reported.

#### 4. *Data Elements*

In 2016, Vermont transitioned from collecting and reporting NEMSIS Version 2.2 compliant EMS data to the new national standard of NEMSIS Version 3.4 compliant data. As a result, some NEMSIS Version 2.2 values that were previously collected in legacy SIREN do not match the new NEMSIS Version 3.4 data that is collected in SIREN Elite. Analysts at the Health Department take this into consideration when utilizing the data.

#### 5. *EMS Activation*

SIREN only captures incidents that result in EMS activation. Consequently, incidents in which EMS was not activated are not included in data briefs and other reports that utilize SIREN data. For this reason, some reports may underestimate the total burden of certain types of outcome measures.

For more information regarding SIREN data, please contact Chelsea Dubie, M.Ed., AEMT at: [siren@vermont.gov](mailto:siren@vermont.gov) or [Chelsea.Dubie@vermont.gov](mailto:Chelsea.Dubie@vermont.gov)