

Michigan Cold-Injury, Emergency Department Visits: January 8, 2018

Executive Summary

There were a total of 201 emergency department (ED) visits in Michigan with self-reported cold-related injury complaints December 31, 2017 – January 6, 2018, for an average of 28.7 ED visits per day (Figures 1, 2a, and 2b). This represents a 42.6% increase in these ED visits compared to the previous week. Complaints specifically associated with cold, hypothermia, and frost can be seen in Figures 3a and 3b. The majority of complaints (48.3%) were associated with the frost/freeze category (Table 2). Cold-related ED visits this year compared to previous years can be seen in Figure 8.

Cold-related ED visits by region can be seen in Tables 1 and 2 and Figure 4. The majority of cold-related ED visits was in Region 2S. Males constituted 68.2% of the visits and those aged 18-34y were most affected (Figure 5).

ED visits for falls during December 31, 2017 – January 6, 2018 remained comparable to the previous week (Figure 6). An increase was observed in the proportion of fall ED visits among the age groups between 18yrs and 64 yrs. A decrease was observed in the proportion of visits among the ≥65 yrs age group while the proportion of visits for those 0-4 yrs and 5-17 yrs remained unchanged.

Description of the Data

Cold-related emergency department (ED) visits were identified using the Michigan Syndromic Surveillance System (MSSS) which gathers data from participating hospital emergency departments across the state.

Cold-related injury complaints are defined as daily ED visits with the primary complaints of: “frost”, “freeze”, “exposure”, “elements”, “hypothermia”, or “carbon monoxide” (including word derivatives and misspellings). Terms that were identified in the search, but do not indicate cold-related injuries, such as “needle”, are excluded. With the exception of Figure 1, chief complaints were reviewed after being exported to further clean data.

Fall ED visits were identified using the MSSS and were defined as daily ED visits with the primary complaint of: “slip”, “fall”, or “fell”. Terms that were identified in the search, but do not indicate a fall injury, such as “felling”, are excluded.

Note: Due to the nature of categorizing ED complaint data, these visits do not represent all potential cases of cold-related injuries. These data may also represent non-cold-related injuries, e.g., “exposure” may not necessarily indicate exposure to cold temperatures. However, the data can be used to describe trends in illness presentations over time.

Figure 1: Daily Counts of Statewide Cold-Related ED Visits, October 1, 2017 – January 7, 2018

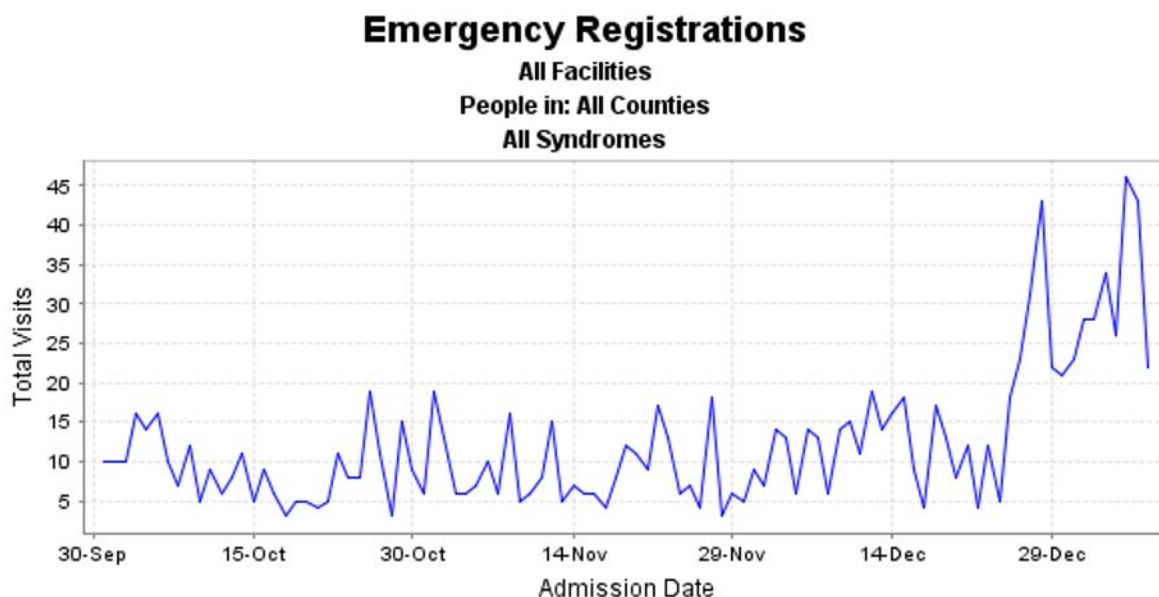


Figure 2a: Statewide Cold-Related ED Visits and National Oceanic and Atmospheric Administration (NOAA) Minimum Daily Temperatures for 6 select cities in Michigan, October 1, 2017 – January 7, 2018

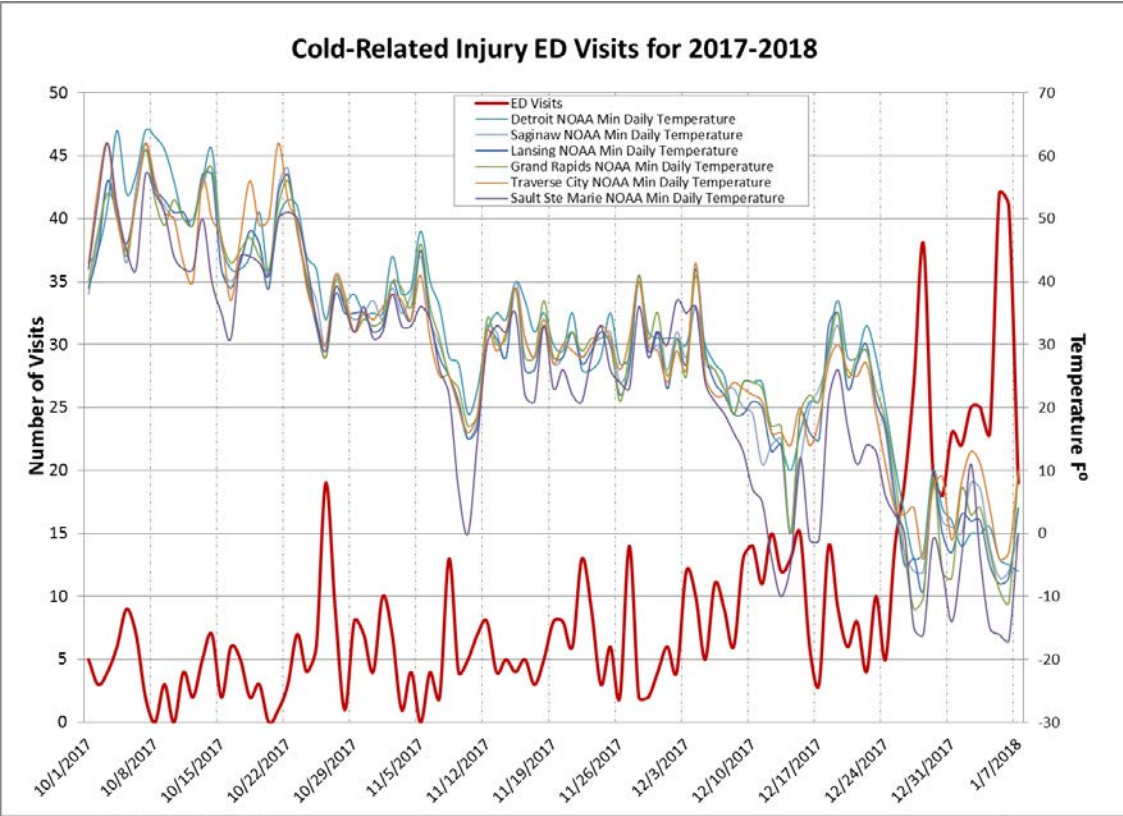
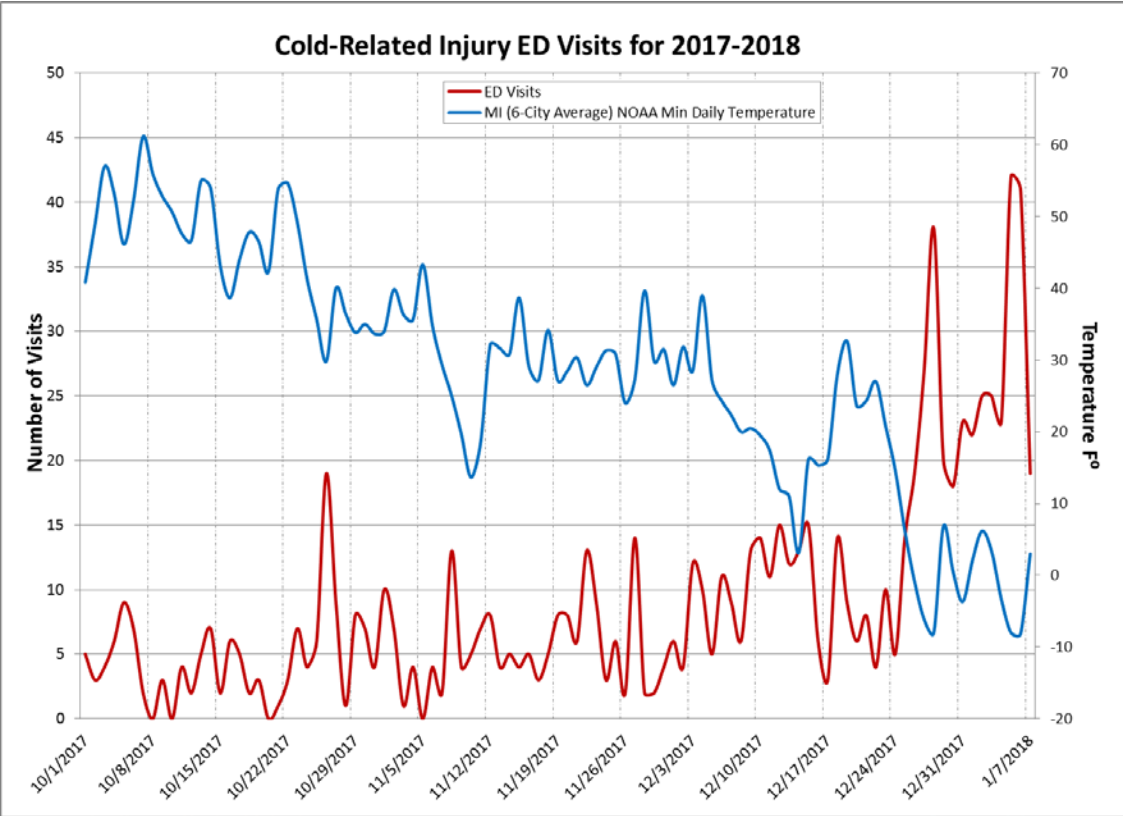


Figure 2b: Statewide Cold-Related ED Visits and National Oceanic and Atmospheric Administration (NOAA) Minimum Daily Temperatures for the 6-city average, October 1, 2017 – January 7, 2018



Cold-related injury complaints were further categorized based on chief complaint.

- **Carbon Monoxide/Dioxide:** “carbon”, “co”, “co2”
- **Cold exposure:** “cold”, “elements”, “weather”, “climate”
- **Frost/Freeze:** “frost”, “freez”, “froz”
- **Exposure:** “expo”
- **Hypothermia:** “hypo”
- **Exposure alone:** All of the above except carbon monoxide/dioxide, cold exposure, frost/freeze, hypothermia

Figure 3a: Statewide Cold-Related ED Visits by Symptom, October 1, 2017 – January 7, 2018

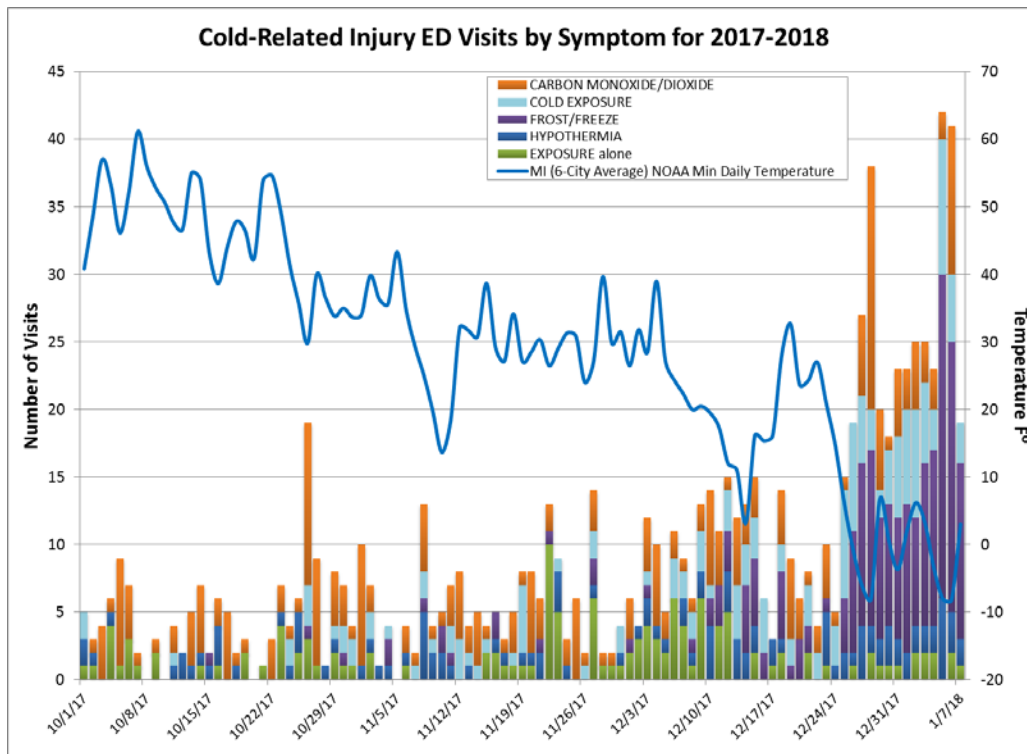


Figure 3b: Statewide Cold-Related ED Visits by Symptom (excluding “Exposure only” and “Carbon Monoxide/Dioxide”), October 1, 2017 – January 7, 2018

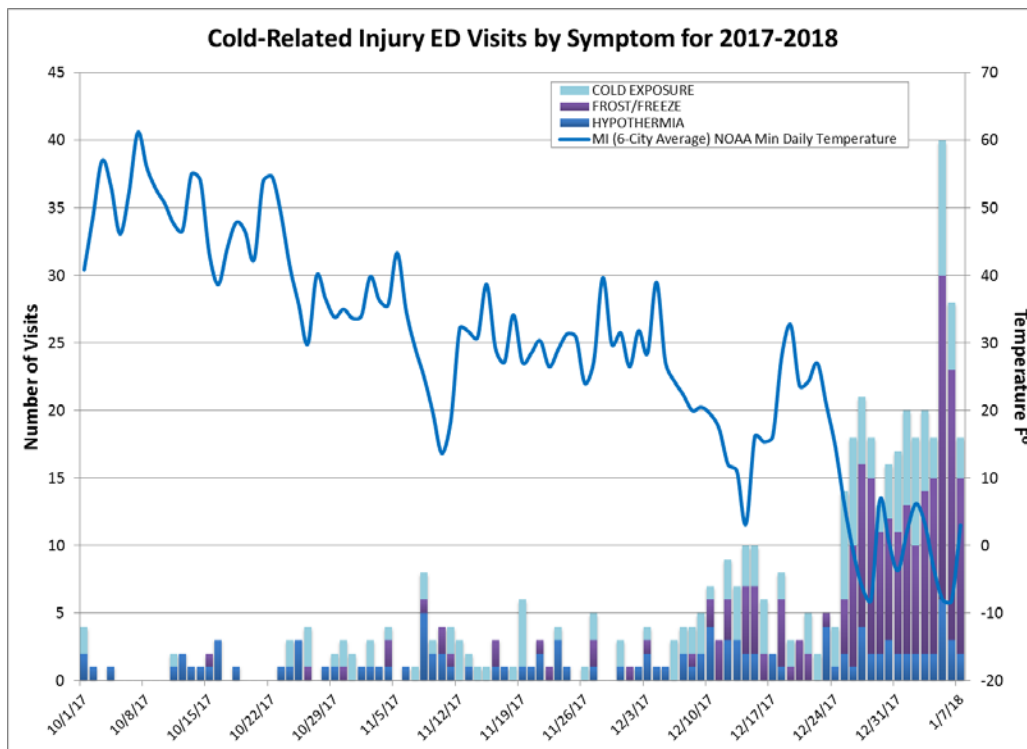


Table 1, Figure 4: Cold-Related ED Visits by Region, December 31, 2017 – January 6, 2018

Michigan Total Visits	Visits by Michigan Public Health Preparedness Region							
	1	2S	2N	3	5	6	7	8
201	15	90	33	22	15	16	8	2

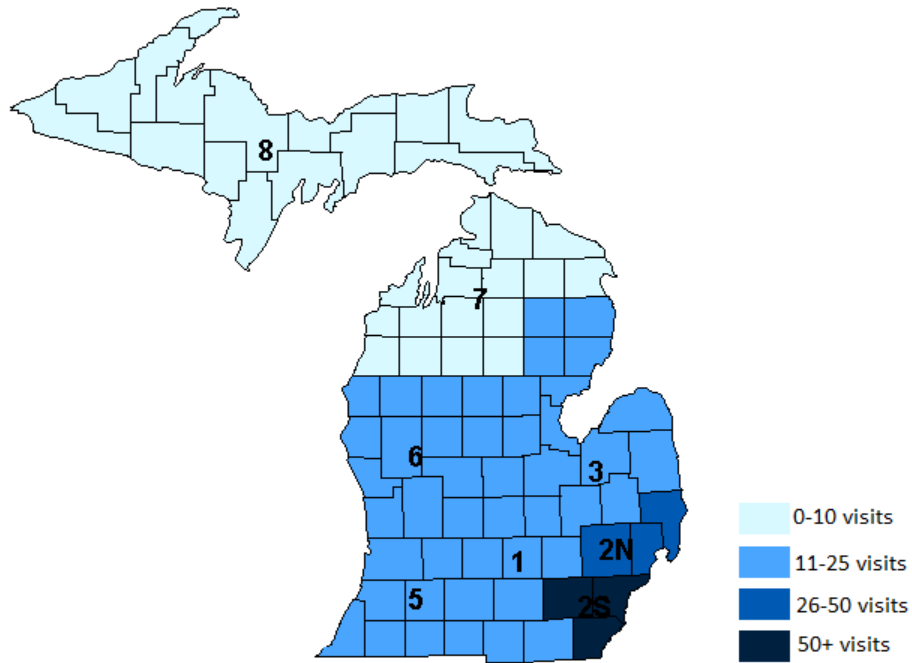


Table 2: Cold-Related ED Visits by Selected Symptoms and Region, December 31, 2017 – January 6, 2018

	Michigan Total Visits	Visits by Michigan Public Health Preparedness Region							
		1	2S	2N	3	5	6	7	8
Hypothermia	19	1	3	4	5	1	3	1	1
Cold	45	1	29	4	2	6	2	0	1
Frost/Freeze	97	8	42	20	12	8	5	2	0

Figure 5: Age Distribution of Cold-Related ED Visits, December 31, 2017 – January 6, 2018

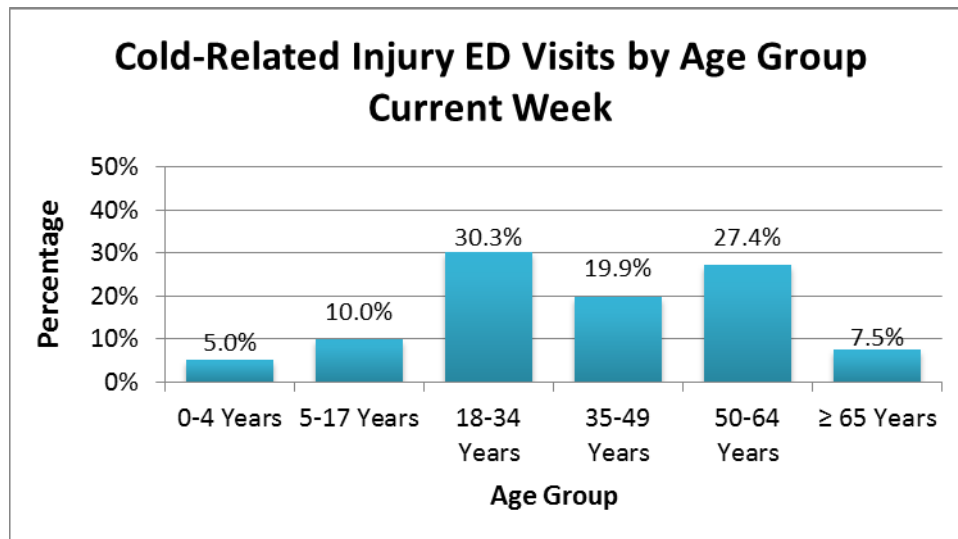


Figure 6: Statewide Fall ED Visits and National Oceanic and Atmospheric Administration (NOAA) 6-city average Minimum and Maximum Daily Temperatures, October 1, 2017 – January 7, 2018

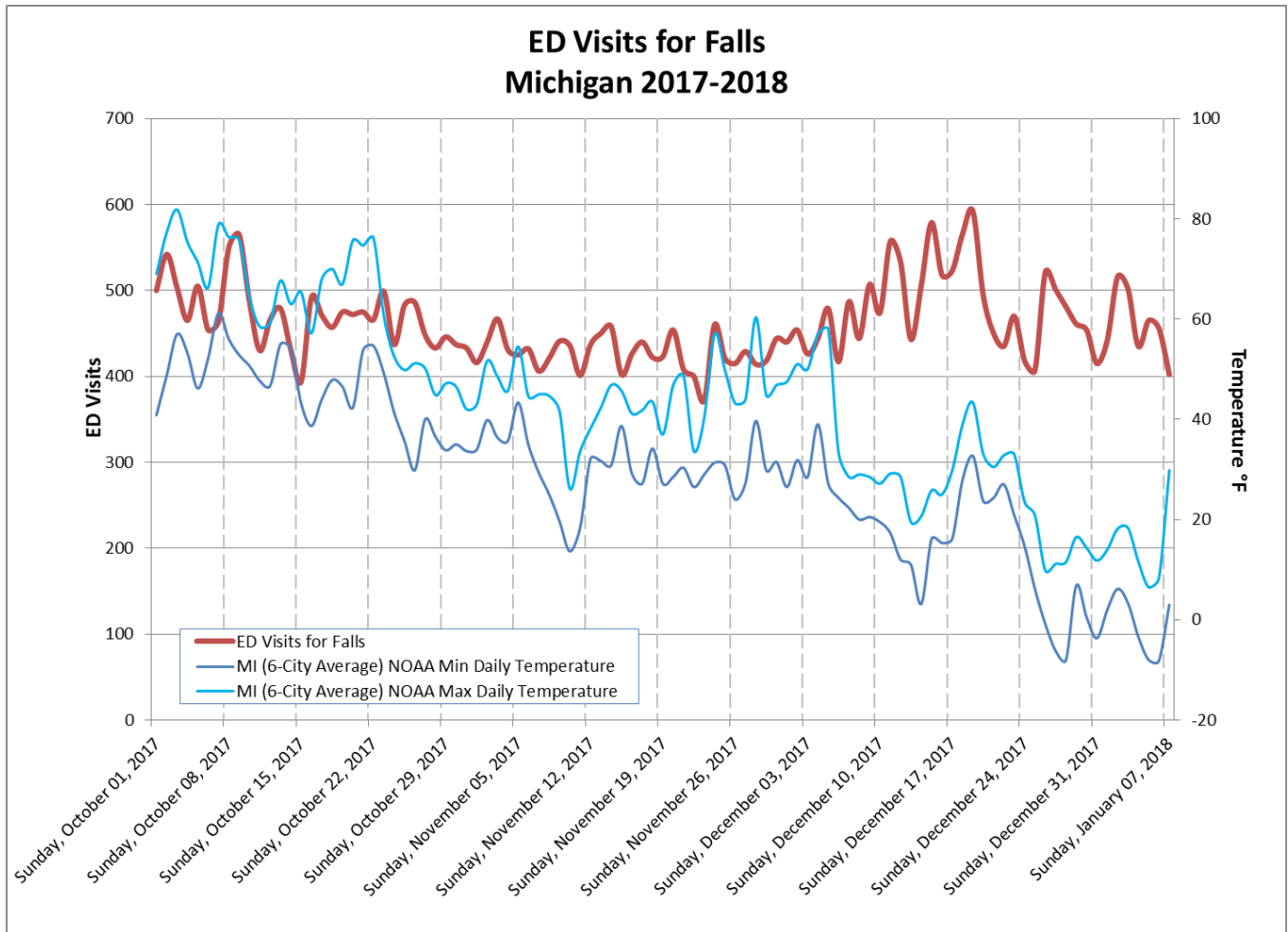


Figure 7: Age Distribution of Fall ED Visits, December 31, 2017 – January 6, 2018 compared to previous week

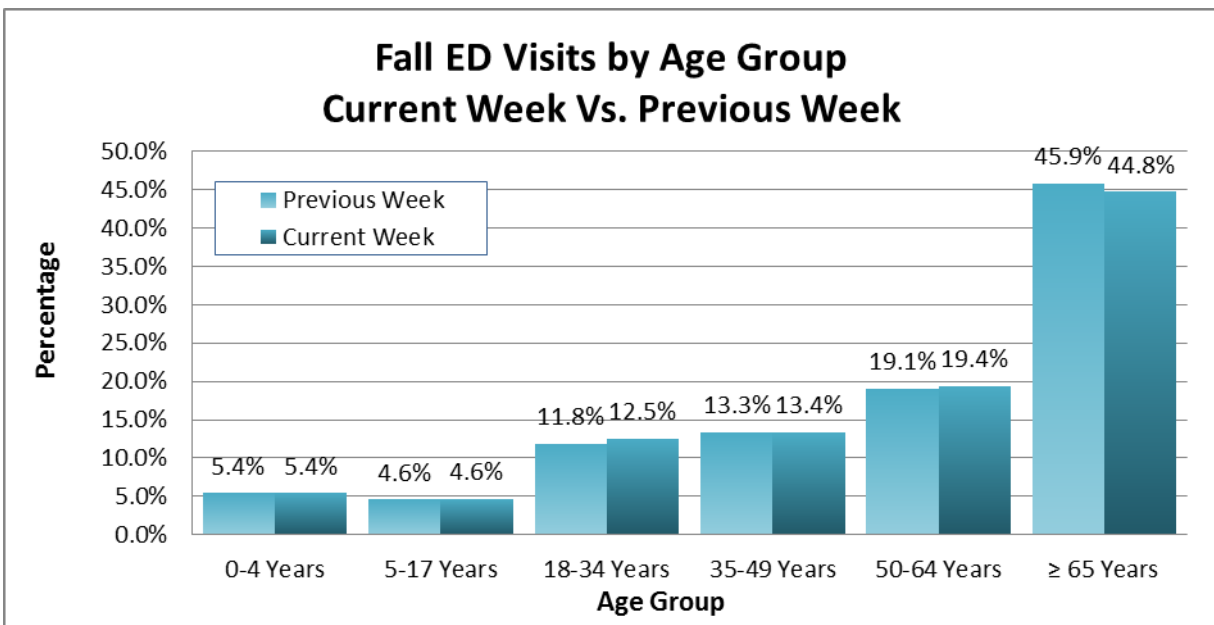
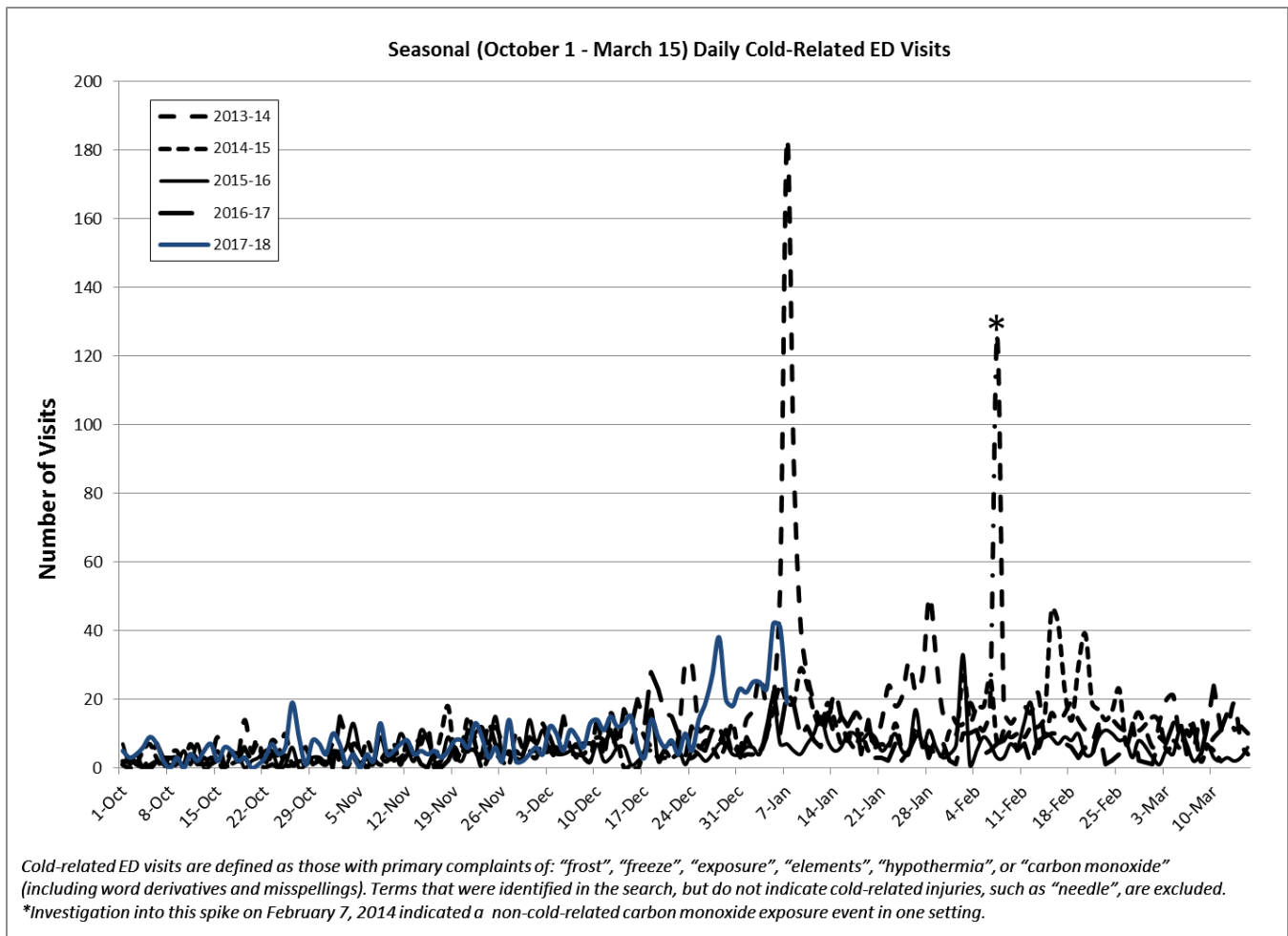


Figure 8: Seasonal (October 1 – March 15) Daily Cold-Related ED Visits, Winter 2013-14 – Winter 2017-18 (To Date)



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