

# Anaphylactic Events and the Administration of Epinephrine in Schools in Massachusetts 2022-2023 School Year

July 1, 2022- June 30, 2023

These data are compiled from reports of epinephrine administration submitted by public and private schools throughout Massachusetts. Reports were submitted by school nurses via an online data collection tool. These data describe intentional epinephrine administrations due to suspected anaphylactic events. We expect that most of these reports are for separate people, but it is possible that some are for the same person on a different day because of how this information is reported.

Percentages may not sum to 100% due to rounding.

## 1. Characteristics of Individuals Who Experienced an Anaphylactic Event (Public and Private Schools)

Type of person treated for anaphylaxis	Number of Reports	Percent of Total Administrations
Staff	40	12.0
Student	292	87.7
Visitor	0	0.0
Don't know	1	0.3
TOTAL	333	100.0

### Age

5 or under	19	5.7
6	12	3.6
7	15	4.5
8	17	5.1
9	12	3.6
10	19	5.7
11	20	6.0
12	20	6.0
13	24	7.2
14	37	11.1
15	25	7.5
16	25	7.5
17	25	7.5
18 or older	51	15.3
Unknown	12	3.6
TOTAL	333	100.0

### Sex

Female	173	52.0
Male	159	47.7
Unknown	1	0.3
TOTAL	333	100.0

<b>Race/Ethnicity<sup>1,2</sup></b>	<b>Number of Reports</b>	<b>Percent of Total Administrations</b>
African American/Black non-Hispanic/non-Latinx	36	10.8
American Indian/Alaskan Native non-Hispanic/non-Latinx	1	0.3
Asian non-Hispanic/non-Latinx	28	8.4
Hispanic/Latinx	65	19.5
White non-Hispanic/non-Latinx	151	45.3
Multi-race non-Hispanic/non-Latinx	12	3.6
Another race non-Hispanic/non-Latinx <sup>3</sup>	4	1.2
Unknown non-Hispanic/non-Latinx	36	10.8
<b>TOTAL</b>	<b>333</b>	<b>100.0</b>

1. Race/ethnicity was determined by the school nurse using school records or other available information. The data that was entered into forms used specific race options and separate ethnicity options that do not align with the current DPH data standards. So, the categories presented in these tables take those entries and try to map them as closely as possible to the current data standard. For example, "Spanish/Hispanic/Latino" was modified to "Hispanic/Latinx" and "African American" to "African American/Black" in an effort to align with current data standards.

2. Race/ethnicity categories are mutually exclusive, so each person who was administered epinephrine is classified in only one of the rows in the table. If someone is noted as Hispanic/Latinx they are not included in any of the race categories.

3. "Another race" includes those whose race was noted as "other" and may include American Indian/Alaska Native or Native Hawaiian/Other Pacific Islander for the data collected in one of the two data collection forms used in this school year. Only one entry from one of the forms noted that the person who received epinephrine was American Indian/Alaskan Native and non-Hispanic/non-Latinx.

<b>History of any known allergies</b>	<b>Number of Reports</b>	<b>Percent of Total Administrations</b>
Did not have an allergy history	63	18.9
Had an allergy history	265	79.6
Unknown	5	1.5
TOTAL	333	100.0
<b>Existence of an allergy action plan</b>		
Did not have an allergy action plan	91	27.3
Had an allergy action plan	190	57.1
Unknown	8	2.4
Not applicable (there was no history of allergy)	40	12.0
School nurse reporter did not select an answer	4	1.2
TOTAL	333	100.0
<b>History of anaphylaxis</b>		
No history of anaphylaxis	119	35.7
Had a history of anaphylaxis	151	45.3
Unknown	63	18.9
TOTAL	333	100.0
<b>Previous epinephrine use</b>		
No prior epinephrine use	133	39.9
Prior epinephrine use	116	34.8
Unknown	82	24.6
School nurse reporter did not select an answer	2	0.6
TOTAL	333	100.0
<b>Previous epinephrine prescription</b>		
No prior epinephrine prescription	71	21.3
Prior epinephrine prescription	237	71.2
Unknown	19	5.7
School nurse reporter did not select an answer	6	1.8
TOTAL	333	100.0
<b>History of asthma</b>		
No history of asthma	197	59.2
Had a history of asthma	108	32.4
Unknown	23	6.9
School nurse reporter did not select an answer	5	1.5
TOTAL	333	100.0

## 2. Characteristics of Anaphylactic Events

Trigger	Number of Reports	Percent of Total Administrations
Food	235	70.6
Insect sting	13	3.9
Latex	3	0.9
Medication	3	0.9
Other <sup>4</sup>	1	0.3
Unknown	78	23.4
School nurse reporter did not select an answer	0	0.0
TOTAL	333	100.0

4. Data for this school year was collected in two forms. "Other" was not an option in the newer form, so we expect that those who would have selected "other" if it were presented likely instead selected "unknown".

### Mode of contact with food allergen

Ingested	206	61.9
Inhaled	5	1.5
Touched	4	1.2
Don't know	8	2.4
Other	5	1.5
Not applicable (food was not the trigger)	98	29.4
School nurse reporter did not select an answer	7	2.1
TOTAL	333	100.0

### Location where symptoms developed

Bus	4	1.2
Cafeteria	76	22.8
Classroom	158	47.4
Gymnasium	7	2.1
Health office	19	5.7
Playground or sports field	12	3.6
Other	48	14.4
School nurse reporter did not select an answer	9	2.7
TOTAL	333	100.0

### Location where epinephrine was administered

Cafeteria	0	0.0
Classroom	4	1.2
Hallway	0	0.0
Health office	294	88.3
Other <sup>5</sup>	23	6.9
School nurse reporter did not select an answer	12	3.6
TOTAL	333	100.0

5. "Other" includes responses of "playground", "gym", and "principal/assistant principal office".

Location where epinephrine was stored	Number of Reports	Percent of Total Administrations†
Health office	290	87.1
Carried by person given epinephrine	59	17.7
Main office or administrative office	1	0.3
Classroom	8	2.4
Other	12	3.6
School nurse reporter did not select an answer	5	1.5
TOTAL	375	112.6

† Percentages sum to more than 100% since respondents could select more than one answer.

Type of person that administered the epinephrine		
Parent	1	0.3
Principal/Assistant Principal	3	0.9
Registered nurse	284	85.3
Student	0	0.0
Teacher	2	0.6
Other <sup>6</sup>	7	2.1
School nurse reporter did not select an answer	36	10.8
TOTAL	333	100.0

6. "Other" includes "Unlicensed person not listed above" and "Licensed Practical Nurse (LPN)".

Self-administration		
Epinephrine was self-administered	28	8.4
Epinephrine was not self-administered	299	89.8
School nurse reporter did not select an answer	6	1.8
TOTAL	333	100.0

Time elapsed between onset of symptoms and communication of symptoms		
Less than or equal to 5 minutes	182	54.7
6 - 10 minutes	65	19.5
11 - 15 minutes	15	4.5
16 - 30 minutes	12	3.6
31 - 60 minutes	8	2.4
Greater than 60 minutes	9	2.7
Unknown	31	9.3
School nurse reporter did not select an answer	11	3.3
TOTAL	333	100.0

Time elapsed between communication of symptoms and administration of epinephrine		
Less than or equal to 5 minutes	165	49.5
6 - 10 minutes	87	26.1
11 - 15 minutes	30	9.0
16 - 30 minutes	26	7.8
31 - 60 minutes	11	3.3
Greater than 60 minutes	1	0.3
Unknown	2	0.6
School nurse reporter did not select an answer	11	3.3
TOTAL	333	100.0

<b>Emergency room transfer</b>	<b>Number of Reports</b>	<b>Percent of Total Administrations</b>
Individual was transferred to the ER	304	91.3
Individual was not transferred to the ER	22	6.6
Unknown	2	0.6
School nurse reporter did not select an answer	5	1.5
<b>TOTAL</b>	<b>333</b>	<b>100.0</b>
<b>Presence of a biphasic reaction</b>		
A biphasic reaction occurred	20	6.0
No biphasic reaction occurred	146	43.8
Unknown	154	46.2
School nurse reporter did not select an answer	13	3.9
<b>TOTAL</b>	<b>333</b>	<b>100.0</b>
<b>Second dose of epinephrine</b>		
A second epinephrine dose was required	27	8.1
A second epinephrine dose was not required	170	51.1
Unknown	125	37.5
School nurse reporter did not select an answer	11	3.3
<b>TOTAL</b>	<b>333</b>	<b>100.0</b>

**Data Notes:**

- 1) "Did not select an answer" indicates that the respondent skipped the question or failed to complete the questionnaire, and as a result, nothing can be inferred from the answer. "Unknown" is a response option and indicates that the respondent answered the question by selecting "unknown" or "don't know."
- 2) Data for this report were collected in two different versions of the report (one in REDCap the other in Checkbox). The questions did not completely match between these two forms. For questions that did not match, or which had potential answers that did not match, anything that seems potentially important to consider about the mismatch is noted below the relevant table.
- 3) Most data (all from one of the forms) "were collected and managed using REDCap electronic data capture tools hosted at the Massachusetts Department of Public Health. REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources." This language regarding REDCap comes from <https://projectredcap.org/resources/citations/>.