

Life-Threatening Allergies, Anaphylactic Events and the Administration of Epinephrine in School

Massachusetts

2015-2016 School Year

1. Allergy Prevalance and Epinephrine Prescription Rates (Public School Students)

Type of allergy	Number of Students	Percent of Enrollment
Insect sting	2,877	0.5
Food	37,643	6.5
Latex	1,449	0.2

Students with epinephrine prescriptions	16,928	2.9
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	Number of Students	% of MA public school enrollment
Student enrollment in districts reporting allergy and prescription data*	582,419	61.1
Total MA public school enrollment	953,429	100.0

* n = 138 districts

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

Type of person treated for anaphylaxis	Number of Individuals	Percent of Total
Staff/Visitor	34	11.4
Student	264	88.6
TOTAL	298	100.0

Age		
5 or under	16	5.4
6	14	4.7
7	15	5.0
8	14	4.7
9	20	6.7
10	16	5.4
11	14	4.7
12	16	5.4
13	19	6.4
14	31	10.4
15	22	7.4
16	30	10.1
17	24	8.1
18 or older	44	14.8
Unknown	3	1.0
TOTAL	298	100.0

Gender		
Female	163	54.7
Male	135	45.3
TOTAL	298	100.0

Race/Ethnicity		
African American non-Hispanic	36	12.1
Asian non-Hispanic	26	8.7
Hispanic	40	13.4
White non-Hispanic	171	57.4
Unknown or Other	25	8.4
TOTAL	298	100.0

History of life threatening allergy

Did not have an allergy history	72	24.2
Had an allergy history	218	73.2
Unknown	8	2.7
TOTAL	298	100.0

Existence of an allergy action plan

Did not have an allergy action plan	60	20.1
Had an allergy action plan	196	65.8
Unknown	0	0.0
Not applicable (there was no history of allergy)	42	14.1
TOTAL	298	100.0

History of anaphylaxis

No history of anaphylaxis	120	40.3
Had a history of anaphylaxis	140	47.0
Unknown	38	12.8
TOTAL	298	100.0

Previous epinephrine use

No prior epinephrine use	141	47.3
Prior epinephrine use	118	39.6
Unknown	39	13.1
TOTAL	298	100.0

Previous epinephrine prescription

No prior epinephrine prescription	72	24.2
Prior epinephrine prescription	216	72.5
Unknown	10	3.4
TOTAL	298	100.0

History of asthma

No history of asthma	157	52.7
Had a history of asthma	120	40.3
Unknown	21	7.1
TOTAL	298	100.0

3. Characteristics of Anaphylactic Events

Trigger

Food	180	60.4
Insect sting	11	3.7
Other	19	6.4
Unknown	88	29.5
TOTAL	298	100.0

Mode of contact with food allergen

Ingested	147	49.3
Inhaled	17	5.7
Touched	6	2.0
Unknown	30	10.1
Not applicable (food was not the trigger)	98	32.9
TOTAL	298	100.0

Location where symptoms developed

Bus	9	3.0
Cafeteria	58	19.5
Classroom	144	48.3
Health office	23	7.7
Playground	12	4.0
Other	52	17.5
TOTAL	298	100.0

Location where epinephrine was administered

Health office	248	88.3
Other	33	11.7
TOTAL	281	100.0
<i>Not reported: 17</i>		

Location where epinephrine was stored

Health office	212	76.0
Carried by person given epinephrine	40	14.3
Main office or administrative office	8	2.9
Other	19	6.8
TOTAL	279	100.0
<i>Not reported: 19</i>		

Type of person that administered the epinephrine

Registered nurse	242	86.1
Student	20	7.1
Teacher	9	3.2
Other	10	3.6
TOTAL	281	100.0
<i>Not reported: 17</i>		

Self-administration

Epinephrine was self-administered	26	9.3
Epinephrine was not self-administered	255	90.8
TOTAL	281	100.0
<i>Not reported: 17</i>		

Time elapsed between onset of symptoms and communication of symptoms

Less than or equal to 5 minutes	137	49.1
6 - 10 minutes	54	19.4
11 - 15 minutes	21	7.5
16 - 30 minutes	21	7.5
31 - 60 minutes	12	4.3
Greater than 60 minutes	12	4.3
Unknown	22	7.9
TOTAL	279	100.0
<i>Not reported: 19</i>		

Time elapsed between communication of symptoms and administration of epinephrine

Less than or equal to 5 minutes	126	44.8
6 - 10 minutes	76	27.0
11 - 15 minutes	24	8.5
16 - 30 minutes	35	12.5
31 - 60 minutes	14	5.0
Greater than 60 minutes	3	1.1
Unknown	3	1.1
TOTAL	281	100.0
<i>Not reported: 17</i>		

Emergency room transfer

Individual was transferred to the ER	272	97.5
Individual was not transferred to the ER	3	1.1
Unknown	4	1.4
TOTAL	279	100.0
<i>Not reported: 19</i>		

Presence of a biphasic reaction

A biphasic reaction occurred	19	6.9
No biphasic reaction occurred	143	51.6
Unknown	115	41.5
TOTAL	277	100.0
<i>Not reported: 21</i>		

Second dose of epinephrine

A second epinephrine dose was required	19	6.8
A second epinephrine dose was not required	190	68.1
Unknown	70	25.1
TOTAL	279	100.0
<i>Not reported: 19</i>		

Notes for Section 1: 1) While the epinephrine administration data in sections 2 and 3 are the main focus of this report, allergy prevalence and epinephrine prescription data are included here to put those administrations in context. Note that the allergy and prescription data are only available for public school districts affiliated with the Essential School Health Services program, and while these data include more than 60% of the state's public school population, they may not be representative of the entire state. 2) Charter schools and collaboratives are counted as districts for purposes of this report. 3) For consistency, the allergy prevalence and epinephrine prescription rates that are shown in the table only include districts that reported data in both categories. 4) For calculating allergy prevalence, a student may be counted as having an allergy even if that student has never experienced an anaphylactic reaction.

Notes for Sections 2 and 3: 1) These data show the number of epinephrine administrations due to suspected anaphylactic events. 2) These data are compiled from reports of epinephrine administration submitted by public and private schools throughout Massachusetts, and are not limited to schools participating in the Essential School Health Services program. 3) An online data collection tool is used to facilitate the collection of epinephrine administration data. 4) "Other" race/ethnicity includes American Indian/Alaskan Native and Native Hawaiian/Other Pacific Islander. 5) "Not reported" 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, however, and indicates that the respondent answered the question by selecting "unknown." If a response was "not reported" it is also "unknown," but not all "unknown" answers are "not reported."

Note for Sections 1, 2, and 3: Percentages may not sum to 100% due to rounding.