

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

Massachusetts

2014-2015 School Year

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

Type of allergy	Number of Students	Percent of Enrollment
Insect sting	2,988	0.5
Food	36,555	6.2
Latex	1,465	0.2

Students with epinephrine prescriptions	17,115	2.9
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	Number of Students	% of MA public school enrollment
Student enrollment in districts reporting allergy and prescription data*	589,463	61.7
Total MA public school enrollment	955,844	100.0

* n = 133 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	23	8.4
Student	251	91.6
TOTAL	274	100.0

Age		
5 or under	11	4.0
6	13	4.7
7	14	5.1
8	13	4.7
9	26	9.5
10	13	4.7
11	18	6.6
12	24	8.8
13	21	7.7
14	23	8.4
15	20	7.3
16	30	11.0
17	20	7.3
18 or older	28	10.2
TOTAL	274	100.0

Gender		
Female	159	58.0
Male	115	42.0
TOTAL	274	100.0

Race/Ethnicity		
African American non-Hispanic	26	9.5
Asian non-Hispanic	21	7.7
Hispanic	48	17.5
White non-Hispanic	142	51.8
Unknown or other	37	13.5
TOTAL	274	100.0

History of life threatening allergy

Did not have an allergy history	65	23.7
Had an allergy history	199	72.6
Unknown	10	3.7
TOTAL	274	100.0

Existence of an allergy action plan

Did not have an allergy action plan	52	19.0
Had an allergy action plan	177	64.6
Unknown	3	1.1
Not applicable (there was no history of allergy)	42	15.3
TOTAL	274	100.0

History of anaphylaxis

No history of anaphylaxis	111	40.5
Had a history of anaphylaxis	127	46.4
Unknown	36	13.1
TOTAL	274	100.0

Previous epinephrine use

No prior epinephrine use	131	47.8
Prior epinephrine use	99	36.1
Unknown	44	16.1
TOTAL	274	100.0

Previous epinephrine prescription

No prior epinephrine prescription	68	24.8
Prior epinephrine prescription	188	68.6
Unknown	18	6.6
TOTAL	274	100.0

History of asthma

No history of asthma	143	52.2
Had a history of asthma	113	41.2
Unknown	18	6.6
TOTAL	274	100.0

3. Characteristics of Anaphylactic Events

Trigger

Food	167	60.9
Insect sting	10	3.6
Other	20	7.3
Unknown	77	28.1
TOTAL	274	100.0

Mode of contact with food allergen

Ingested	138	50.4
Inhaled	7	2.6
Touched	9	3.3
Unknown	10	3.6
Not applicable (food was not the trigger)	110	40.1
TOTAL	274	100.0

Location where symptoms developed

Bus	7	2.6
Cafeteria	47	17.2
Classroom	141	51.5
Health office	13	4.7
Playground	18	6.6
Other	48	17.5
TOTAL	274	100.0

Location where epinephrine was administered

Health office	249	90.9
Other	25	9.1
TOTAL	274	100.0

Location where epinephrine was stored

Health office	232	84.7
Carried by person given epinephrine	22	8.0
Main office or administrative office	3	1.1
Other	17	6.2
TOTAL	274	100.0

Type of person that administered the epinephrine

Registered nurse	249	90.9
Student	10	3.6
Teacher	5	1.8
Other	10	3.6
TOTAL	274	100.0

Self-administration

Epinephrine was self-administered	10	3.7
Epinephrine was not self-administered	263	96.0
Unknown	1	0.4
TOTAL	274	100.0

Time elapsed between onset of symptoms and communication of symptoms

Less than or equal to 5 minutes	134	48.9
6 - 10 minutes	67	24.5
11 - 15 minutes	18	6.6
16 - 30 minutes	15	5.5
31 - 60 minutes	10	3.7
Greater than 60 minutes	5	1.8
Unknown	25	9.1
TOTAL	274	100.0

Time elapsed between communication of symptoms and administration of epinephrine

Less than or equal to 5 minutes	116	42.3
6 - 10 minutes	63	23.0
11 - 15 minutes	39	14.2
16 - 30 minutes	32	11.7
31 - 60 minutes	18	6.6
Greater than 60 minutes	5	1.8
Unknown	1	0.4
TOTAL	274	100.0

Emergency room transfer

Individual was transferred to the ER	265	96.7
Individual was not transferred to the ER	9	3.3
TOTAL	274	100.0

Presence of a biphasic reaction

A biphasic reaction occurred	23	8.8
No biphasic reaction occurred	140	53.2
Unknown	100	38.0
TOTAL	263	100.0

Not reported: 11

Second dose of epinephrine

A second epinephrine dose was required	18	6.8
A second epinephrine dose was not required	179	68.1
Unknown	66	25.1
TOTAL	263	100.0
<i>Not reported: 11</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.