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| **Anaphylactic Events and the Administration of Epinephrine in Schools in Massachusetts2022-2023 School Year** |
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|  |  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 |

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| **Race/Ethnicity**1,2 | **Number of Reports** | **Percent of Total Administrations** |
| 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-Latinx3 | 4 | 1.2 |
| Unknown non-Hispanic/non-Latinx | 36 | 10.8 |
| TOTAL | 333 | 100.0 |
| *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.*  |

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| **History of any known allergies** | **Number of Reports** | **Percent of Total Administrations** |
| Did not have an allergy history | 63 | 18.9 |
| Had an allergy history | 265 | 79.6 |
| Unknown | 5 | 1.5 |
| TOTAL | 333 | 100.0 |
| **Existence of an allergy action plan** |  |  |
| 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 |
| **History of anaphylaxis** |  |  |
| No history of anaphylaxis | 119 | 35.7 |
| Had a history of anaphylaxis | 151 | 45.3 |
| Unknown | 63 | 18.9 |
| TOTAL | 333 | 100.0 |
| **Previous epinephrine use** |  |   |
| 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 |
| **Previous epinephrine prescription** |  |  |
| 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 |
| **History of asthma** |  |  |
| 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 |

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| ***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*4* | 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*5* | 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”.* |

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| **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*6* | 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 |
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| **Emergency room transfer** | **Number of Reports** | **Percent of Total Administrations** |
| 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 |
| TOTAL | 333 | 100.0 |
| **Presence of a biphasic reaction** |  |  |
| 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 |
| TOTAL | 333 | 100.0 |
| **Second dose of epinephrine**  |  |  |
| 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 |
| TOTAL | 333 | 100.0 |
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| 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 s 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/. |

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