Illinois State Board of Education

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James T. Meeks
Chairman

Tony Smith, Ph.D.
State Superintendent of Education

October 1, 2018

TO: The Honorable John J. Cullerton, Senate President
The Honorable William Brady, Senate Republican Leader
The Honorable Michael J. Madigan, Speaker of the House
The Honorable Jim Durkin, House Republican Leader

FROM: Tony Smith, Ph.D.
State Superintendent of Education

SUBJECT: The Program and Administration of Undesignated Epinephrine Report

On behalf of the Illinois State Board of Education, which is required under Section 22-30 of the Illinois School Code [105 ILCS 5/22-30] to issue this report, I am pleased to submit The Program and Administration of Undesignated Epinephrine Report, School Year 2017-18. This particular report summarizes the characteristics of cases and dosage of undesignated epinephrine administrations reported to the Illinois State Board of Education during the 2017-18 school year.

A summary of the major findings:

- There were 105 public schools across 66 districts and three nonpublic schools that reported 133 administrations of undesignated epinephrine during the 2017-18 school year. Chicago Public School District 299 (comprising 20 percent of statewide students) reported the greatest number of administrations (24.8 percent), while Northfield Township High School District 225 had the second greatest number of administrations (6.7 percent).
- Twenty-one of the 66 school districts reported more than one undesignated epinephrine administration. Eighteen of the 108 schools reported at least two administrations.

cc: The Honorable Bruce Rauner, Governor
Brad Bolin, Assistant Clerk of the House
Tim Anderson, Secretary of the Senate
Legislative Research Unit

The Program and Administration of Undesignated Epinephrine Report 2017-18

Illinois State Board of Education

Division of Regulatory Support and Wellness

and

Data Strategies and Analytics Division

September 2018

James T. Meeks, Chairman

State Board of Education

Tony Smith, Ph.D.

State Superintendent of Education

Table of Contents

Tables

Figures

Foreword

Section 22-30 of the School Code [105 ILCS 5/22-30] requires a compilation of data on the frequency and circumstances of administration of undesignated epinephrine during the preceding academic year and the names of districts or schools that have instituted a policy and procedure for the administration of undesignated epinephrine.

Inquiries regarding this report may be directed to Rebecca Doran in the Division of Regulatory Support and Wellness at (217) 782-5270 or Marjurie Ribeiro, Ph.D., in the Data Strategies and Analytics Division at (217) 782-3950.

Background

Section 22-30 of the Illinois School Code [105 ILCS 5/22-30] mandates that all Illinois public or nonpublic schools must permit the self-administration and self-carry of an epinephrine auto-injector by a student whose parents present the school with a prescription for the drug and the epinephrine auto-injector (a designated epinephrine auto-injector). School districts, public schools, and nonpublic schools are allowed to maintain a supply of undesignated epinephrine auto-injectors from a stock supply and have licensed nurses or trained personnel to recognize and respond to anaphylaxis of any person that the staff member believes is having an anaphylactic reaction. The Board shall submit an annual report to the General Assembly by October 1 every year and publish the report online on the same day of its submission. This particular report summarizes the characteristics of cases and dosage of undesignated epinephrine administrations reported to the Illinois State Board of Education during the 2017-18 school year.

Public Act 099-0711 mandates that all Illinois public or nonpublic schools report to the Board if they maintain a supply of undesignated epinephrine auto-injectors either provided by the district/school or by an independent contractor that provides transportation to students. The Board shall submit an annual report to the General Assembly by October 1 as to the availability of undesignated epinephrine auto-injectors. This report will include characteristics of those districts or schools that report having an undesignated epinephrine program during school year 2017-18.

Methodology

Data collection instruments and procedures used by schools to report data on the use of undesignated epinephrine were developed by ISBE staff in 2014 and incorporated into rules in accordance with the formal rules process found in 23 ILLINOIS ADMINISTRATIVE CODE, Part 1, Administrative Rule 1.540 at https://www.isbe.net/Documents/ONEARK.pdf. The 2017-18 epinephrine usage data collection was conducted using the "Undesignated Epinephrine Reporting Form" (ISBE 34-20) (https://www.isbe.net/Documents/34-20-undesignated-epinephrine-rptg.pdf). Schools emailed the forms to epinephrine@isbe.net, which was an email account accessible by Data Strategy and Analytics and Health Services staff. The first report for the 2017-18 school year was received on July 17, 2017, and the last on June 6, 2018. ISBE staff reviewed the forms as received and contacted school staff if additional information was needed. ISBE staff entered the data into a Microsoft Excel document. Data Strategies and Analytics Division staff analyzed the reports to create this document. There are plans for creating an online data collection system, which would ease data entry and improve data validity; however, key steps are necessary to ensure appropriate systematic measures are taken.

Data collection instruments and procedures used by districts to report program/policy data (as opposed to usage data) were developed by ISBE staff in 2017.

The 2017-18 epinephrine policy data collection was conducted using the "Undesignated Epinephrine Policy" survey and the "Undesignated Epinephrine Policy Worksheet" (ISBE 34-21) (https://www.isbe.net/Documents/Undesignated_Epinephrine_Policy_worksheet.pdf). District staff can complete the information beforehand, have it reviewed by the superintendent or head administrator, and enter it into the report form via ISBE.net. The first report for the 2017-18 school year was received on May 16, 2018, and the last on July 5, 2018. ISBE staff reviewed the forms and contacted school staff if additional information was needed. Analysts in the Data Strategies and Analytics Division analyzed the submissions to add to this report.

Limitations

Public Act 098-0795 [105 ILCS 5/22-30] took effect on Aug. 1, 2014. The enforcement of the reporting requirement of this act began for the school year 2014-15.

- The validity of the data reported is subject to the limitations of the aggregate nature and quality time.
- There are 852 districts and 1,391 nonpublic schools (Directory of Educational Entities) across the state. Seventy-three entities, including 54 districts, 14 nonpublic schools, and five special education districts/schools/operating agencies, reported on the epinephrine policy survey that they have a policy and/or procedure in place for the administration of undesignated epinephrine by school staff.

- Thirty-eight school districts and three nonpublic schools submitted an epinephrine policy either from 2016-17 or 2017-18 and reported using an undesignated epinephrine auto-injector during this school year.
- Data analyzed from this data collection is limited to the frequency counts provided by 108 schools.
- Detailed items like triggers may include multiple categories of triggers and may not indicate a case-by-case count.
- The potential trigger for the allergic reaction is not necessarily a medical diagnosis, as information on follow-up medical care was not collected.
- Percentages may not equal 100 for all data tables and figures due to rounding.
- This report does not include administration by school staff or student from the student's own supply of (designated) epinephrine.

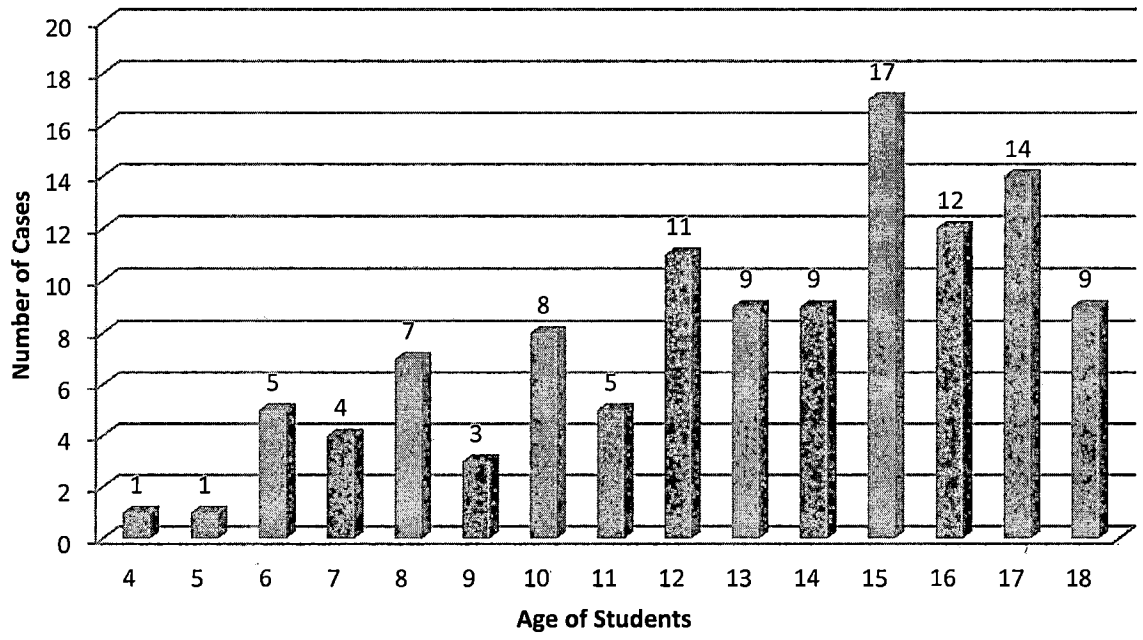
School Year 2017-18 Results

There were 105 public schools across 66 districts and three nonpublic schools that reported 133 administrations of undesignated epinephrine during the 2017-18 school year. Chicago Public School District 299 (comprising 20 percent of statewide students) reported the greatest number of administrations (24.8 percent), while Northfield Township High School District 225 had the second greatest number of administrations (6.7 percent). Twenty-one of the 66 school districts reported more than one undesignated epinephrine administration. Eighteen of the 108 schools reported at least two administrations.

Background and age

One hundred and nineteen (89.5 percent) of the individuals receiving epinephrine were students (including three students and one high school student of unknown age who received epinephrine administrations) and 14 (10.5 percent) were staff members and other adults (including one staff member of unknown age who received epinephrine administration). Figure 1 presents the distribution of students' age levels.

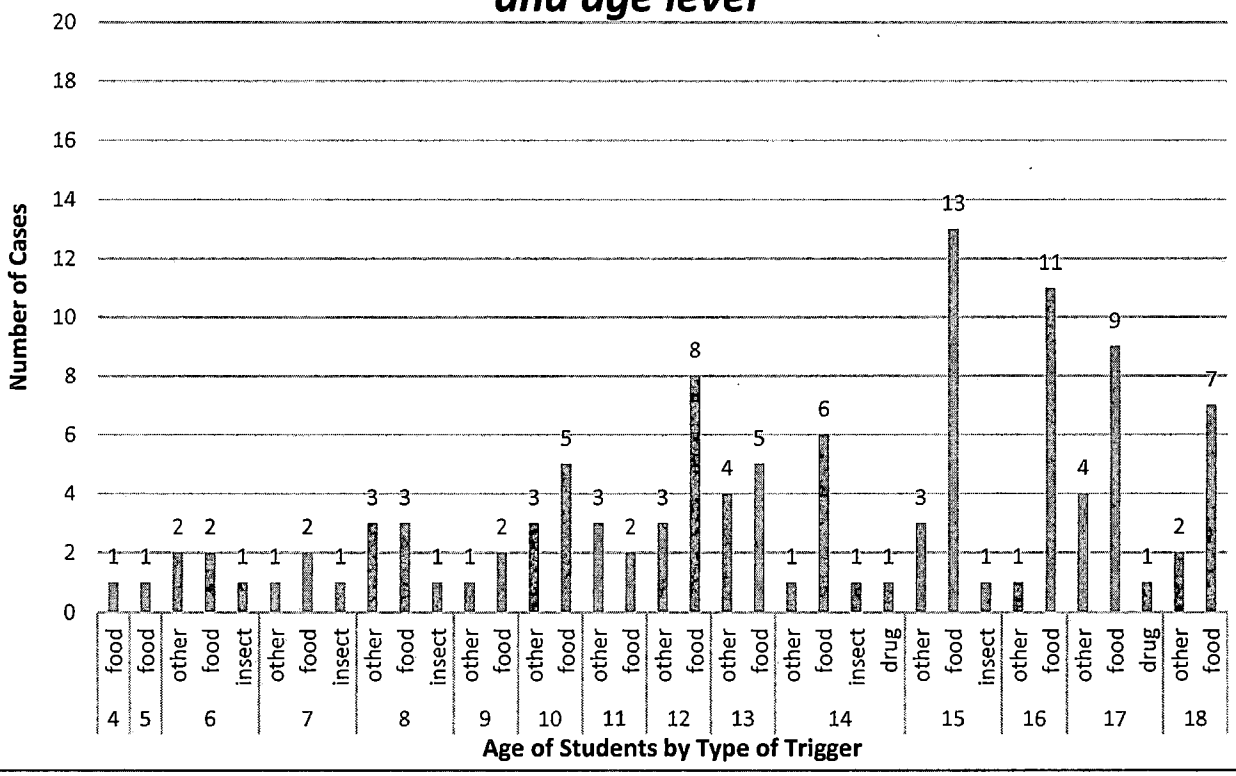
Figure 1: Number of undesignated epinephrine administrations among students by age level*



**The age levels of four student cases were not reported.*

- The age groups most represented in the figure above were 15 (n=17) and 17 (n=14).
- The third most frequent age group was age 16 (n=12).

*Figure 2: Number of undesignated epinephrine administrations among students by type of trigger and age level **



- Cross-referencing with the type of triggers that precipitated the allergic episode reveals two groups of 13 students and 11 students had a food-related episode. Both were in the first and third highest population groups, age 15 and age 16, respectively.

Seventy-four (56.9 percent) of the 130 cases of students and staff members who received epinephrine had a previously known diagnosis of a severe allergy, while 56 (43.1 percent) were not previously diagnosed with a severe allergy. Three reports of epinephrine usage indicated no specific triggers. It should be stated that students or staff with a known diagnosis of severe allergy may have used their own (designated) epinephrine, and that overall total number of administrations of epinephrine in schools is not revealed in this report. In a few comments provided in the reports, a school staff person noted that the student's own epinephrine was not at school so the undesignated supply was used. Otherwise, this report does not address why a student or staff member who had a previous history of known allergy did not have his or her own (designated) epinephrine.

Triggers by category

Sixty (81.1 percent) of the 74 cases of persons with a known history of anaphylaxis had a food-related trigger that precipitated the reported allergic episode, one (1.3 percent) had a drug-related trigger, four (5.4 percent) had an insect-related trigger, and nine (12.2 percent) could not specify the trigger. Twenty-seven (48.2 percent) of the 56 cases with no previously known diagnosis of severe allergy had a food-related trigger that precipitated the reported allergic episode, one (1.8 percent) had a drug-related trigger, four (7.1 percent) had an insect-related trigger, and 24 (42.9 percent) had an unknown trigger. Three cases with no indication of previously known diagnosis had no suspected trigger. Overall, there were 87 cases (66.9 percent) that had food as a trigger, two cases (1.5 percent) that had a drug as a trigger, eight cases (6.1 percent) that had insect as a trigger, and 33 cases (25.4 percent) that had an unknown trigger.

There are four broad categories of triggers (food, drug, insect, other), with specific triggers noted per each case. Table 1 features the breakdown of categories among the noted food triggers, Table 2 with noted drug triggers, Table 3 with noted insect triggers, and Table 4 with other types of triggers across all 133 cases. There are some items that one or more cases have indicated as a trigger as noted by a superscript asterisk and there are items repeated below due to the individual cases with multiple categorical triggers.

Table 1. Breakdown of food-related triggers by category

Trigger (provided verbatim by reporting school/district)	Category
1. "All nuts"	Nuts
2. "Almond"[4]	Nuts
3. "An OIT maintenance dose"	Medical Treatment for food allergy
4. "Basil"	Herb
5. "cashew"	Nuts
6. "Cashews in granola bar"	Nuts
7. "Cashews in Lara Bar"	Nuts
8. "cashews"	Nuts
9. "cheese"	Cheese
10. "chicken"	Chicken
11. "Chinese candy containing 4 nuts and sesame seeds"	Nuts
12. "Chinese candy containing 4 nuts and sesame seeds"	Seeds[1]
13. "Chinese food being consumed by other student nearby"	Chinese Food
14. "cookie"	Cookie
15. "egg in frozen dinner from home"	Eggs
16. "egg whites in granola bar"	Granola with egg whites
17. "fish nugget"	Fish[2]
18. "Fish"[4]	Fish[2]
19. "gluten and eggs"	Gluten
20. "gluten and eggs"	Eggs
21. "Granola bar likely containing peanuts"	Granola with peanut[3]

Trigger (provided verbatim by reporting school/district)	Category
22. "Granola Bar"	Granola
23. "Green Pepper"	Vegetable
24. "homemade Chex mix"	Nuts
25. "Kind Bar (cashews)"	Granola with nuts
26. "KIND granola bar"	Granola
27. "Lara Bar (ingredients include cashews)"	Granola with nuts
28. "Lentils"	Legumes
29. "Macaroon"	Nuts, Coconut, Sugar, Flavoring or Food color
30. "Mango"	Fruit
31. "Mustard"	Seeds[1]
32. "nut butter at home the night before"	Nuts
33. "nuts"	Nuts
34. "Oatmeal or salsa"	Oat
35. "Oatmeal or salsa"	Fruit, Herb
36. "Orange juice, goldfish crackers"	Fruit
37. "Orange juice, goldfish crackers"	Wheat flour, milk, cheese
38. "orange soda"	Food coloring
39. "peanut butter cookie"	Sugar, flour, eggs, peanut
40. "peanut butter"	Peanut[3]
41. "Peanut"[4]	Peanut[3]
42. "Peas"	Legumes
43. "pecan in breakfast bar"	Nuts
44. "Pesto - student allergic to pine nuts"	Nuts
45. "pineapple in fruit salad"	Fruit
46. "Pineapple in pasta from a friend"	Fruit
47. "pistachios"	Nuts
48. "plum"	Fruit
49. "popcorn with peanuts"	Corn
50. "popcorn with peanuts"	Peanut[3]
51. "Possible was eating raisins before symptoms began"	Fruit
52. "Possibly caramel popcorn or other food given to student"	Food coloring, corn
53. "possibly cupcake in teacher's lounge"	Food coloring, egg whites
54. "Possibly tilapia - student ate on the way to school"	Fish[2]
55. "protein bar with cashews"	whey protein with nuts
56. "Protein Bar"	Whey protein
57. "store bought cookie a friend gave student"	Sugar, flour, eggs
58. "Strawberries, sugar snap peas"	Fruit
59. "Strawberries, sugar snap peas"	Legumes
60. "Student has history of pork allergy, was not supposed to be pork in lunch "	Red meat
61. "Sun Butter - made with sunflower seeds"	Seeds[1]
62. "Tree Nuts"[4]	Nuts
63. "Yogurt Parfait"	Yogurt
64. "Had rash last night, took Benadryl. History of fish allergy"	Fish[2]

Trigger (provided verbatim by reporting school/district)	Category
65. "Has a known allergy to peanuts and tree nuts - did not ingest any of these items"	Peanut[3]
66. "Has a known allergy to peanuts and tree nuts - did not ingest any of these items"	Tree nuts
67. "Student had no food at school. Dad thought it might have been peanuts. His sister ate in the car previously. Dad said he cleaned the car, but maybe not good enough."	Peanut[3]
68. "Student receiving OIT"	Medical treatment for food allergy
69. "Sunflower allergy (unofficial diagnosis)"	Seeds[1]
70. "Unknown"[4]	Unknown

[1] Seeds (not sunflower seeds etc.) is the appropriate category to capture all variations where noted.

[2] Fish (not seafood) is the appropriate category to distinguish between fish and shellfish where noted.

[3] Peanuts are considered to be legumes in the same category as peas and lentils, but legumes is more of a biological category not utilized in the interest of consistency.

[4] Frequency is greater than 1.

Table 2. Breakdown of drug-related triggers by category

Trigger (provided verbatim by reporting school/district)	Category
1. "Amoxicillin"	Prescription drug
2. "Motrin"	Over-the-counter anti-inflammatory drug
3. "Triple antibiotic ointment and desitin (sic) applied to skin"	Over-the-counter topical antibiotic

Table 3. Breakdown of insect-related triggers by category

Trigger (provided verbatim by reporting school/district)	Category
1. "Bee"*	Bee
2. "Bee Sting"*	Bee
3. "wasp"	Wasp
4. "unknown"*	Unknown

*Frequency is greater than 1.

Table 4. Breakdown of other triggers by category

Trigger (provided verbatim by reporting school/district)	Category
1."Cold"	Weather-induced reaction
2."Cold weather, did have history of hives from cold air"	Weather-induced reaction
3."In art class working with paints"	Latex-induced reaction
4."May be exercised induced, had just finished long distance run"	Exercise-induced reaction
5."Newly diagnosed - unspecified allergy"	Unknown
6."None known"	Unknown
7."Outside when occurred. Unsure of trigger"	Unknown
8."Received allergy shot in the morning"	Unknown

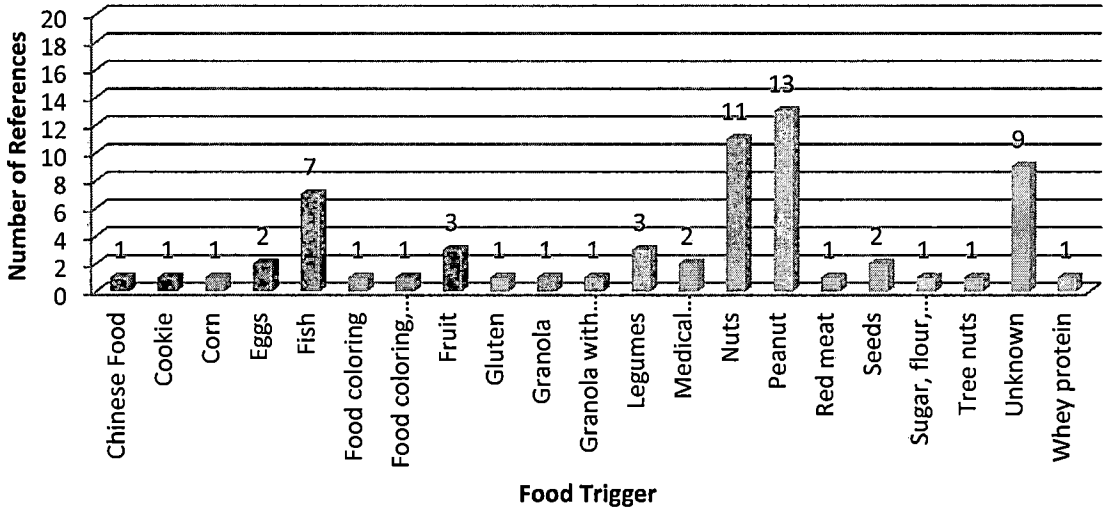
9."family history of food allergy; was on a new antibiotic for 24 hours"	Unknown, possible medication
10."severe asthma, season allergy trigger"	Weather-induced reaction
11."unknown"*	Unknown
12."was outside at the time, unknown trigger"	Unknown

*Frequency is greater than 1.

Characteristics of cases with a previously known severe allergy

Figure 3 presents the distribution of students and staff members who were previously diagnosed with a severe allergy (n=64) and their cited food triggers. There were no cases where those who were previously diagnosed with a severe allergy did not react to a type of trigger. There were four cases that indicated an "insect" as a trigger and there were nine cases that indicated "other."

Figure 3:
Undesignated epinephrine administration to those with a previously known diagnosed severe allergy who had a food-related trigger



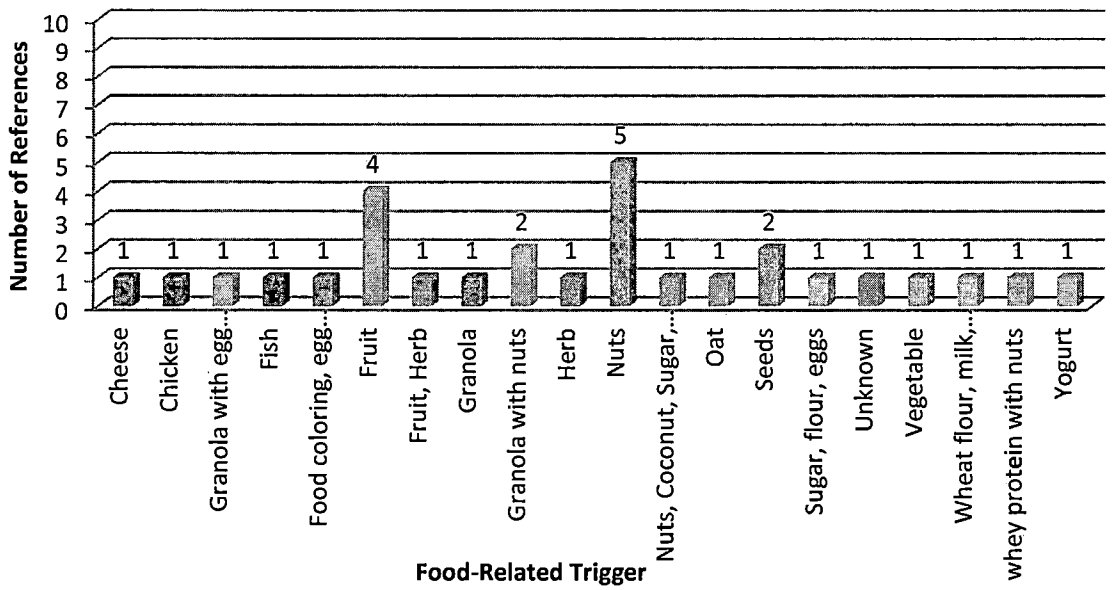
- All specified triggers (64total references) were categorized, revealing that peanut caused the highest percentage (20.3) of reactions among all students and staff who had an allergic episode.
- Eleven cases involved a person with a known diagnosed severe allergy with nuts as the specified food allergy. Nine cases involved a person with a known diagnosed severe allergy with unknown food item.

There was one drug-related case that had a trigger for over-the-counter anti-inflammatory drug. All cases with "insect" as a trigger cited bee and wasp. For those that had indicated "other" as a trigger (n=9), only one case was said to have a weather-induced trigger reaction (11.1 percent). The remaining eight cases indicated unknown or provided nonspecific information.

Characteristics of cases without a previously known severe allergy

Figure 4 presents the distribution of students and staff members who did not have a previous diagnosis of severe allergy (n=27) and their cited food triggers. The remaining cases initially indicated "drug" as a trigger (n=1), "insect" as a trigger (n=4), and "other" (n=24) as a trigger.

Figure 4:
Undesignated epinephrine administration to those without a previously known diagnosis of severe allergy who had a food-related trigger



- Peanut triggers have the highest percentage (20.3 percent) among cases with a previously known severe allergy. Nuts (which include cashews, almonds) triggers have the highest percentage (17.2 percent) compared to all specified, categorized triggers (29 total references) among cases without a previously known severe allergy.
- There was one case that involve no history of severe allergy with unknown food-related triggers and another case provided no information.

Two of the four insect-related cases involve a bee and two unknown insects. One drug-related trigger was cited as a prescription drug. The second most number of cases (n=21) without a previously known severe allergy indicated "other" as a trigger, but not specified. The remaining are two cases involving a weather-induced reaction (8.3 percent) and

another case may have been exposed to latex (4.2 percent). (Twenty-four total cases indicated "other.")

Triggers by location and time

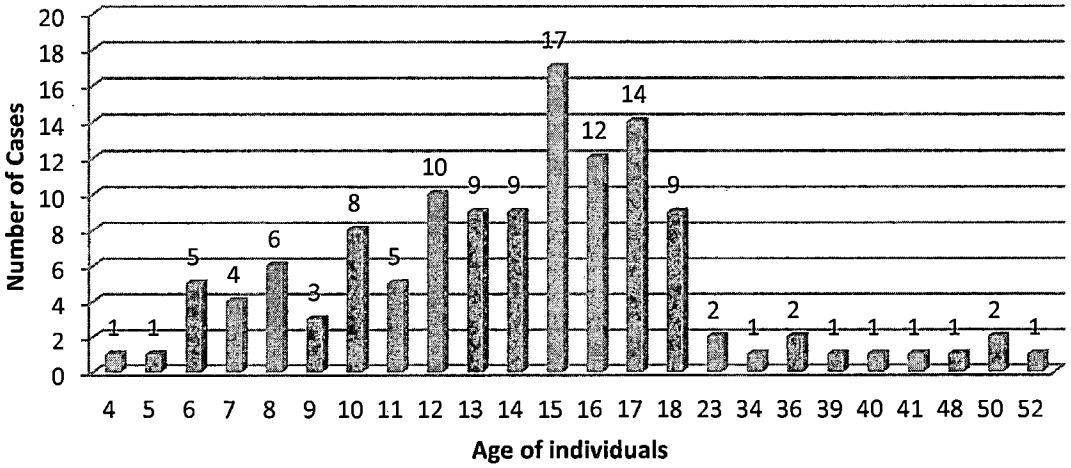
Triggers took place within a school building in 84.2 percent (n=112) of 133 cited cases. A little more than 10 percent (n=17) of the cases took place on school grounds. A slightly higher volume of incidents took place in the afternoon (n=66) with 49.6 percent of the cases. Morning incidents accounted for 47.3 percent (n=63).

Dosage Administration and Age

Registered nurses (RNs) administered the undesignated epinephrine in the majority of cases (81.5 percent). (One hundred and thirty total cases indicated type of person administered the epinephrine.) Trained personnel (non-RN) were involved in 3.8 percent of all cases of administration of undesignated epinephrine; one among the trained personnel was an athletic trainer. Other persons who were not RNs and not separately trained by the district but administered epinephrine in multiple incidents included six administrators, seven people whose status was unknown or unspecified and two teachers. Two of the doses were self-administered by staff members, one was administered by a parent, and one was administered by an athletic trainer.

A single dose was administered in the majority of all doses of epinephrine administered (99.2 percent). The remaining cases included three missing that information and one case with two doses administered. Figure 5 presents the distribution of ages of individuals by number of cases of one dose of epinephrine.

Figure 5:
Number of epinephrine administrations - 1 dose among individuals by age level*



**The age level of four cases was not reported.*

- The most prevalent age of those receiving one dose of epinephrine is age 15 (n=17). The second most frequent age group is age 17 (n=14).
- Among the individuals who received one dose of epinephrine and did not indicate age, two students attended an elementary school, one student attended a high school, and one person was a staff member at an elementary school.

Characteristics of schools or districts operating undesignated epinephrine programs

A total of 73 entities responded to a survey that asked if a district or school operated a program that makes undesignated epinephrine available. Fifty-four districts, 14 nonpublic schools, and five special education districts/schools/operating agencies indicated yes for having an undesignated epinephrine policy and no for having contracted student bus transportation service with a separate epinephrine policy.

Among the 73 entities that have an undesignated epinephrine policy, there is a range of zero to 76 auto-injectors on hand, with an average of 11 auto-injectors maintained in any dosage strength by those that had an undesignated epinephrine policy and procedure in place. Champaign Community School District #4 reported the largest supply (76). Among the 54 public districts with the same range of auto-injectors, there is an average of 14 auto-injectors maintained in any dosage strength. As for the 14 nonpublic schools, there is a range of two to 24, with an average of five auto-injectors. Lastly, among the five special education districts/schools/operating agencies, there is a range of two to 16, with an average of seven auto-injectors. In contrast to the 2016-17 submissions for epinephrine policy, no entity among the 73 that had newly reported a program this year had an independent contractor providing student transportation that maintained a supply of undesignated epinephrine auto-injectors during any portion of school year 2017-18.