

2023-2024

Administered Epinephrine Auto-Injectors in Schools Report



TEXAS
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Texas Department of State
Health Services

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Executive Summary

[Texas Education Code, Section 38.209](#) and the [25 Texas Administrative Code, Part 1, Chapter 40, Section 40.68](#) require K-12 schools that adopt an epinephrine auto-injector policy to report the use of an epinephrine auto-injector. The school must submit a report within 10 business days to the:

- School district,
- Charter holder or the governing body of the school,
- Physician or other person who prescribed the epinephrine auto-injector, and
- Commissioner of the Texas Department of State Health Services (DSHS).

Schools submitted the data through the web form *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* ([Appendix A](#)) during the 2023-2024 school year. The DSHS School Health Program and the DSHS Chronic Disease Epidemiology Branch (CDE) analyzed the reported data.

During the 2023-2024 school year, a total of 189 uses of an epinephrine auto-injector in school settings were reported to DSHS. The majority of injections were given to students (89.9%). The adult dose of epinephrine, suitable for individuals weighing more than 66 pounds¹, was most frequently administered (77.8%). Over half of the injections were given to people with no known history of anaphylaxis or allergies requiring epinephrine auto-injectors (54.0%). In most cases, the school's unassigned epinephrine auto-injector was used (94.2%). The most reported symptoms were tightness in throat or chest (58.7%), trouble breathing or shortness of breath (50.8%), itchiness (49.7%), swelling of lips, tongue, or throat (42.9%), anxiety (42.3%), and rapid pulse (41.8%). Food was selected as the suspected cause or trigger for slightly more than half of the cases (51.3%).

¹ EPIPEN. (n.d). Dosage and Administration. Retrieved from <https://www.epipen.com/hcp/about-epipen-and-generic/dosage-and-administration>

Introduction

The purpose of this report is to understand the use of epinephrine auto-injectors in K-12 schools across Texas. This information will be used by DSHS and the [Stock Epinephrine Advisory Committee \(SEAC\)](#) to inform future program activities and areas of focus.

The [Texas Education Code, Section 38.209](#) and [25 Texas Administrative Code, Part 1, Chapter 40, Section 40.68](#) require a school district, open-enrollment charter school, or private school that adopts an epinephrine auto-injector policy under Texas Education Code, Section 38.208 to report the use of an epinephrine auto-injector.

The school must submit a report within 10 business days to the:

- School district,
- Charter holder if the school is an open-enrollment charter school, or the governing body of the school if the school is a private school,
- Physician or other person who prescribed the epinephrine auto-injector, and
- Commissioner of the Texas Department of State Health Services (DSHS).

Schools submitted the data through the web form *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* during the 2023-2024 school year. The DSHS School Health Program collaborated with the DSHS Chronic Disease Epidemiology Branch (CDE) to analyze the reported data.

Methods

The method used to report use of an epinephrine auto-injector in a school is the *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* web form. This action is required within ten days of the use of an epinephrine auto-injector in a school ([Appendix A](#)).

The web form consists of 25 questions, including 10 open-ended, eight single-answer and seven multi-select questions. The web form can be found on the [DSHS website](#).

The School Health Program staff collected the data from the webform to prepare the database for CDE to analyze. In August 2024, a CDE program evaluator analyzed the K-12 School records submitted between August 1, 2023 and July 31, 2024, using Microsoft Excel.

Note: No Youth Facilities or Certain Entities records were submitted between August 1, 2023 and July 31, 2024.

Results

A total of 189 records were submitted during this period. DSHS received records from 74 independent school districts (ISDs), five private schools, and one charter school. The age range of people (student, school personnel, or school volunteer) who received an epinephrine auto-injector injection in the school setting was three to 68 years old. The average age of recipient was 14 years old, and the median age was 13 years old.

Note: Early childhood schools such as preschools were included. Not all schools adopt this policy and hence are not required to report DSHS. This limitation should be kept in mind when interpreting the data.

Table 1: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by ESC Region (N=189)

Education Service Center (ESC) Region	Frequency (n)	Percent (%)
Region 1	5	2.6
Region 2	6	3.2
Region 3	2	1.1
Region 4	3	1.6
Region 6	1	0.5
Region 7	2	1.1
Region 8	4	2.1
Region 10	61	32.3
Region 11	29	15.3
Region 12	1	0.5
Region 13	20	10.6
Region 14	6	3.2
Region 16	7	3.7
Region 17	1	0.5
Region 18	1	0.5
Region 19	9	4.8
Region 20	31	16.4
Total	189	100.0

Table 1 Interpretation:

Seventeen Education Service Centers (ESC) regions submitted 189 records in total. The most records were submitted by ESC Region 10 (32.3%), ESC Region 20 (16.4%), and ESC Region 11 (15.3%) ([Appendix B](#)).

Table 2: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by Recipient (N=189)

Administered to	Frequency (n)	Percent (%)
Students	170	89.9
School Personnel/Volunteer	17	9.0
Visitor	2	1.1
Total	189	100.0

Table 2 Interpretation:

Schools reported the majority of epinephrine auto-injector injections were administered to students (89.9%). School personnel and/or volunteers received 9.0% of epinephrine auto-injector injections. Visitors received 1.1% of epinephrine auto-injector injections.

Table 3: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by Administrator (N=189)

Administered by	Frequency (n)	Percent (%)
Nurse	174	92.1
Other	7	3.7
Clinic Staff	6	3.2
Parent	2	1.1
Total	189	100.0

Note: Nurse includes RN, LVN, Campus Nurse, School Nurse, or Head Nurse. Others include assistant principal, teacher, athletic trainer or coach, or office staff. Clinic Staff includes a medical assistant, clinic aide, nurse assistant, or health coordinator. Percent by administrator may not total 100.0 due to rounding.

Table 3 Interpretation:

Epinephrine auto-injector injection was most frequently administered by a nurse (92.1%), followed by "other" such as an assistant principal, teacher,

athletic trainer or coach, or office staff (3.7%), clinic staff (3.2%), or a parent (1.1%).

Table 4: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by Location Administered (N=189)

Location Administered	Frequency (n)	Percent (%)
Clinic/Nurse's Office	163	86.2
Other	17	9.0
Classroom or hallway	9	4.8
Total	189	100.0

Note: Clinic/Nurse's Office includes nurse's office, school clinic, nurse clinic, health room/office, or student health center. Other includes a school office, outside, school bus, parking lot, gym, stadium, library, restroom, or student's home.

Table 4 Interpretation:

Most respondents reported the epinephrine auto-injector injection was administered in a clinic/nurse's office (86.2%). A few respondents (9.0%) indicated other locations including a school office, outside, school bus, parking lot, gym, stadium, library, restroom, or student's home.

Table 5: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by Dosage Type (N=189)

Dosage Type	Frequency (n)	Percent (%)
Adult	147	77.8
Child	42	22.2
Total	189	100.0

Table 5 Interpretation:

While 77.8% of individuals received the adult dose of the epinephrine auto-injector injection, 22.2% received the child dose. The adult dose of epinephrine is suitable for individuals weighing more than 66 pounds.²

² EPIPEN. (n.d). Dosage and Administration. Retrieved from <https://www.epipen.com/hcp/about-epipen-and-generic/dosage-and-administration>

Table 6: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by Number of Doses (N=189)

Number of Doses	Frequency (n)	Percent (%)
One	184	97.4
Two	5	2.6
Total	189	100.0

Table 6 Interpretation:

While most individuals received one dose of the epinephrine auto-injector injection (97.4%), a few received two doses (2.6%).

Table 7: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by History of Anaphylaxis (N=189)

History of Anaphylaxis	Frequency (n)	Percent (%)
Yes	82	43.4
No	102	54.0
Unknown	5	2.6
Total	189	100.0

Table 7 Interpretation:

Approximately 43.4% of individuals who received the epinephrine auto-injector injection had a known history of anaphylaxis or allergies requiring epinephrine auto-injectors. More than half of individuals who received the epinephrine auto-injector injection did not have a known history of anaphylaxis (54.0%). The history of anaphylaxis was unknown for 2.6% of cases reported.

Table 8: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by History of Asthma (N=189)

History of Asthma	Frequency (n)	Percent (%)
Yes	35	18.5
No	133	70.4
Unknown	21	11.1
Total	189	100.0

Table 8 Interpretation:

Approximately 18.5% of individuals who received the epinephrine auto-injector injection had a known history of asthma. Most individuals who received the epinephrine auto-injector injection did not have a known history of asthma (70.4%). The history of asthma was unknown for 11.1% of cases reported.

Table 9: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools by Utilization of Unassigned Auto- Injector (N=189)

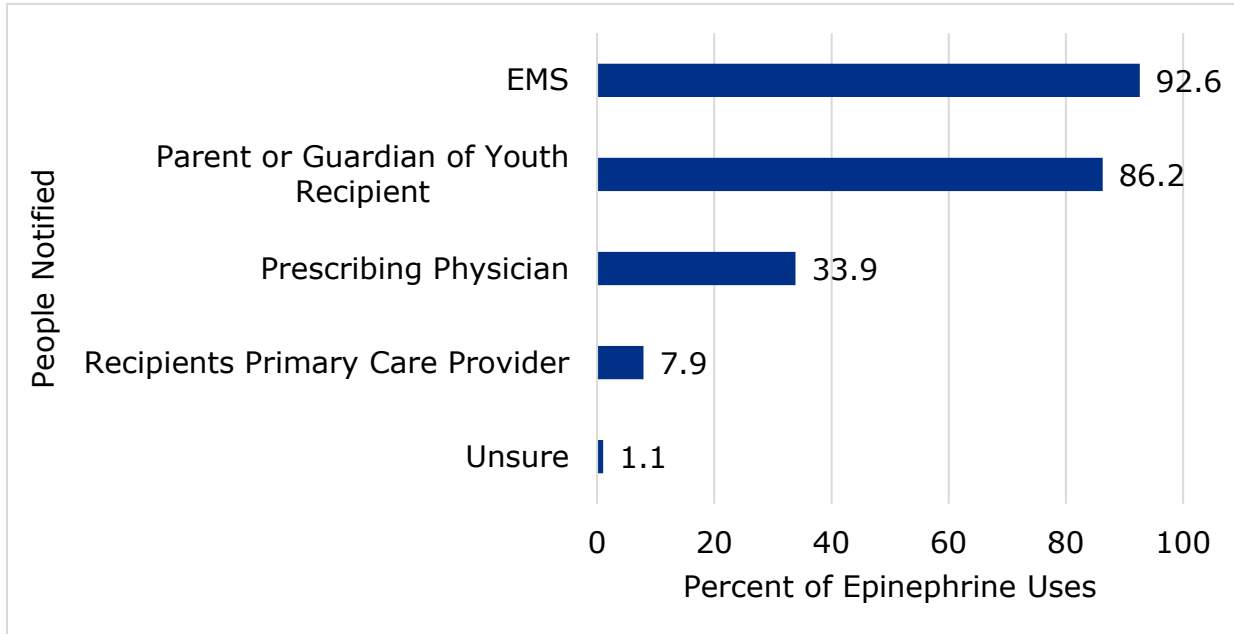
Unassigned Auto- Injector Utilized	Frequency (n)	Percent (%)
Yes	178	94.2
No	11	5.8
Total	189	100.0

Note: The unassigned auto-injector is assigned to the school and not to a specific student. Texas Education Code, Section 38.209 relates to unassigned auto-injectors. However, the Stock Epinephrine Advisory Committee (SEAC) suggested schools also report the administration of assigned auto-injectors to show the extent to which anaphylactic reactions are treated in schools. As such, some schools report the administration of both assigned and unassigned auto-injectors.

Table 9 Interpretation:

The unassigned auto-injector is assigned to the school and not to a specific student. In most cases (94.2%), the school’s unassigned epinephrine auto-injector was used.

Figure 1: Percent of Epinephrine Auto-Injector Uses in Texas Schools by People Notified of Medication Administration (N=189)

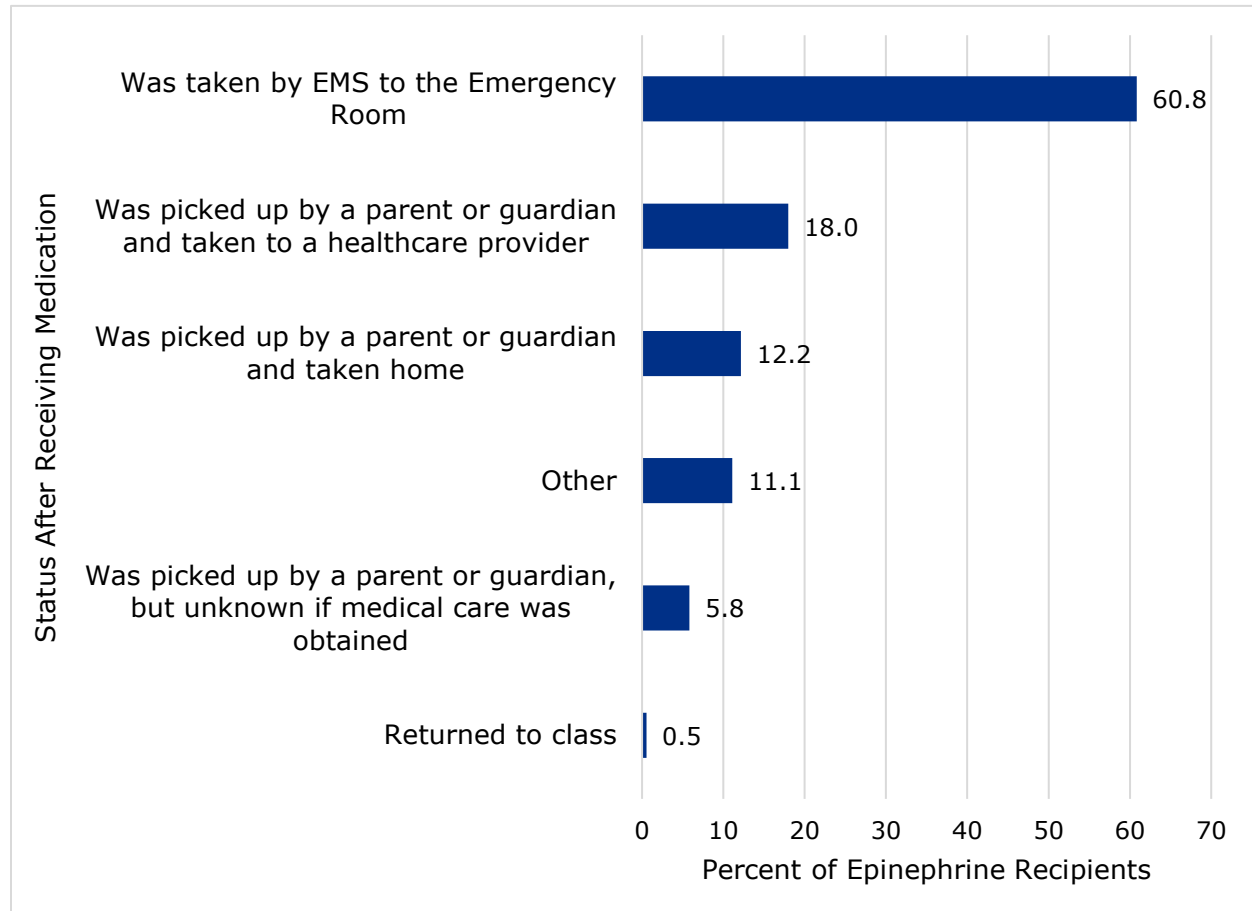


Note: Percent was calculated by using the total number of participants (189) as the denominator for each notification. Respondents could select all applicable notifications. Therefore, the total frequency will not equal to 189, and the total percent will not equal to 100.0.

Figure 1 Interpretation

Figure 1 shows the percentage of epinephrine auto-injector uses that reported notifying different people the medication was administered. Respondents could select multiple people. Local emergency medical services were notified for 92.6% of individuals who received the epinephrine auto-injector. A parent or guardian of a youth recipient was notified for 86.2% of individuals who received the epinephrine auto-injector. Though required by statute, a prescribing physician was notified for only one-third of individuals who received the epinephrine auto-injector (33.9%). Approximately 7.9% of recipients had a primary care provider notified. Notification of medication administration submitted was unknown for 1.1% of recipients.

Figure 2: Percent of Epinephrine Auto-Injector Uses in Texas Schools by Status After Receiving Medication (N=189)



Note: Percent was calculated by using the total number of participants (189) as the denominator for each action. Respondents could select all actions that apply. Therefore, the total frequency will not equal to 189, and the total percent will not equal to 100.0.

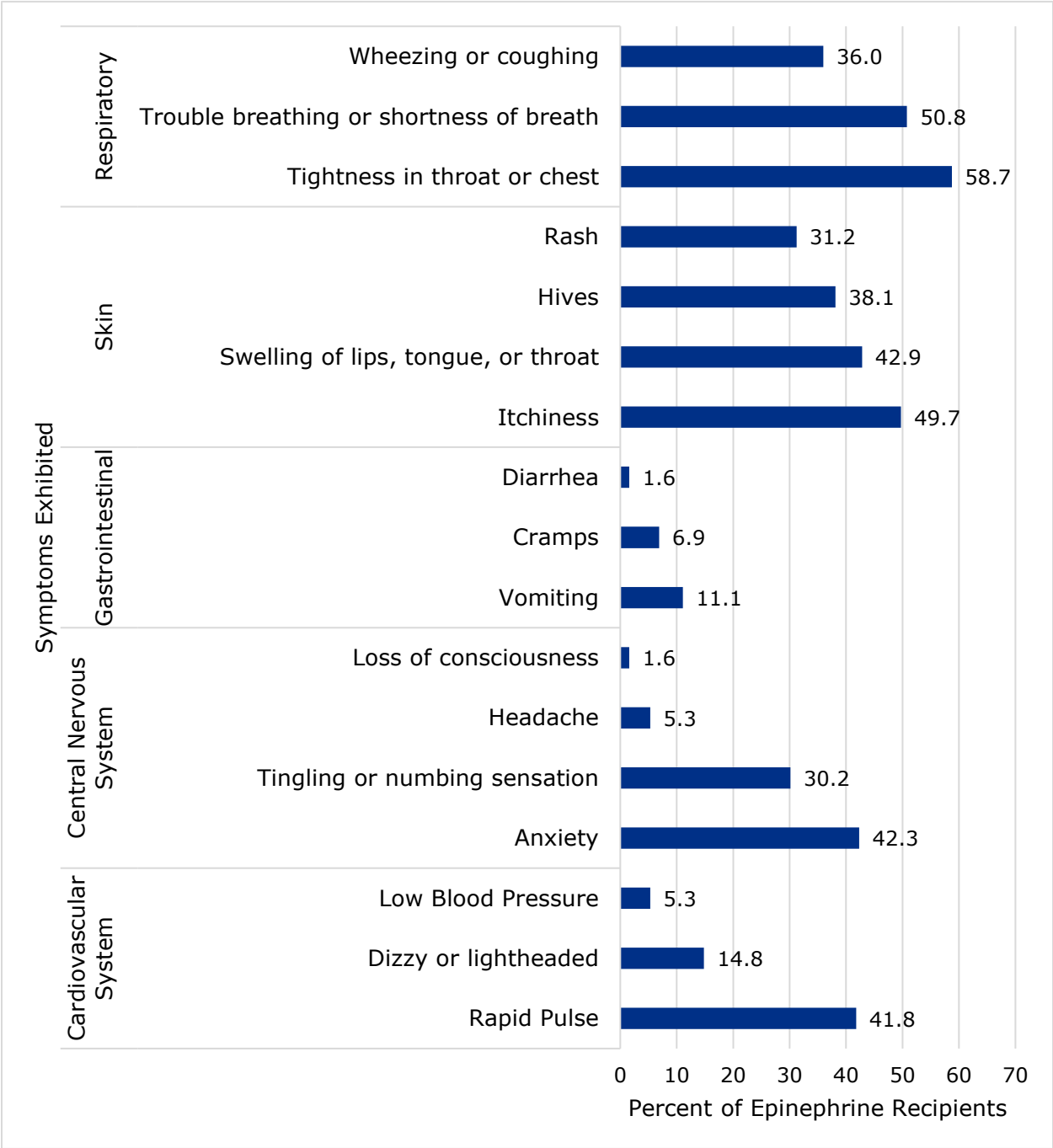
Figure 2 Interpretation

Figure 2 shows the percentage of epinephrine auto-injector recipients who took different actions after the medication was administered. Respondents could select multiple actions. Over half of individuals (60.8%) were taken by EMS to the Emergency Room after the medication was administered. 18.0% were picked up by a parent or guardian and taken to a healthcare provider, and 12.2% were picked up by a parent or guardian and taken home. 5.8% of individuals were picked up by a parent or guardian, but unknown if

medical care was obtained. Less than one percent (0.5%) of individuals returned to class.

Respondents were also asked to provide text responses for actions not already listed in the form. Forty-two respondents provided text responses. Some actions mentioned included parent refused EMS transport, was picked up by parent and taken to the emergency room or primary care physician, staff member returned to work, and staff member refused EMS transport.

Figure 3: Percent of Epinephrine Auto-Injector Uses in Texas Schools by Symptoms Exhibited (N=189)



Note: Percent was calculated by using the total number of participants (189) as the denominator for each symptom. Respondents could select all symptoms that apply.

Therefore, the total frequency will not equal to 189, and the total percent will not equal to 100.0.

Figure 3 Interpretation

Figure 3 shows the percentage of anaphylaxis symptoms experienced by recipients of epinephrine auto-injector medication. Respondents could select multiple symptoms.

- Among individuals who experienced respiratory symptoms, 58.7% reported tightness in the throat or chest, 50.8% reported having trouble breathing or shortness of breath, and 36.0% reported wheezing or coughing.
- Among individuals who experienced skin symptoms, 49.7% reported itchiness, 42.9% reported swelling of lips, tongue, or throat, 38.1% reported hives, and 31.2% reported a rash.
- Among individuals who experienced gastrointestinal symptoms, 11.1% reported vomiting, 6.9% reported cramps, and 1.6% reported diarrhea.
- Among individuals who experienced central nervous system symptoms, 42.3% reported experiencing anxiety, 30.2% reported a tingling or numbing sensation, 5.3% reported a headache, and 1.6% reported a loss of consciousness.
- Lastly, of those who experienced cardiovascular symptoms, 41.8% reported rapid pulse, 14.8% reported feeling dizzy or lightheaded, and 5.3% reported low blood pressure.

In addition to selecting from the listed signs or symptoms, respondents were also given the opportunity to provide text responses for any other signs or symptoms. Seventy-two respondents provided text responses. Some symptoms mentioned included swelling (eyes, lips, tongue, face), difficulty speaking, difficulty swallowing, flushed or red skin, pallor, nausea, or low oxygen.

Figure 4: Percent of Epinephrine Auto-Injector Uses in Texas Schools by Suspected Causes or Triggers of Anaphylaxis (N=189)

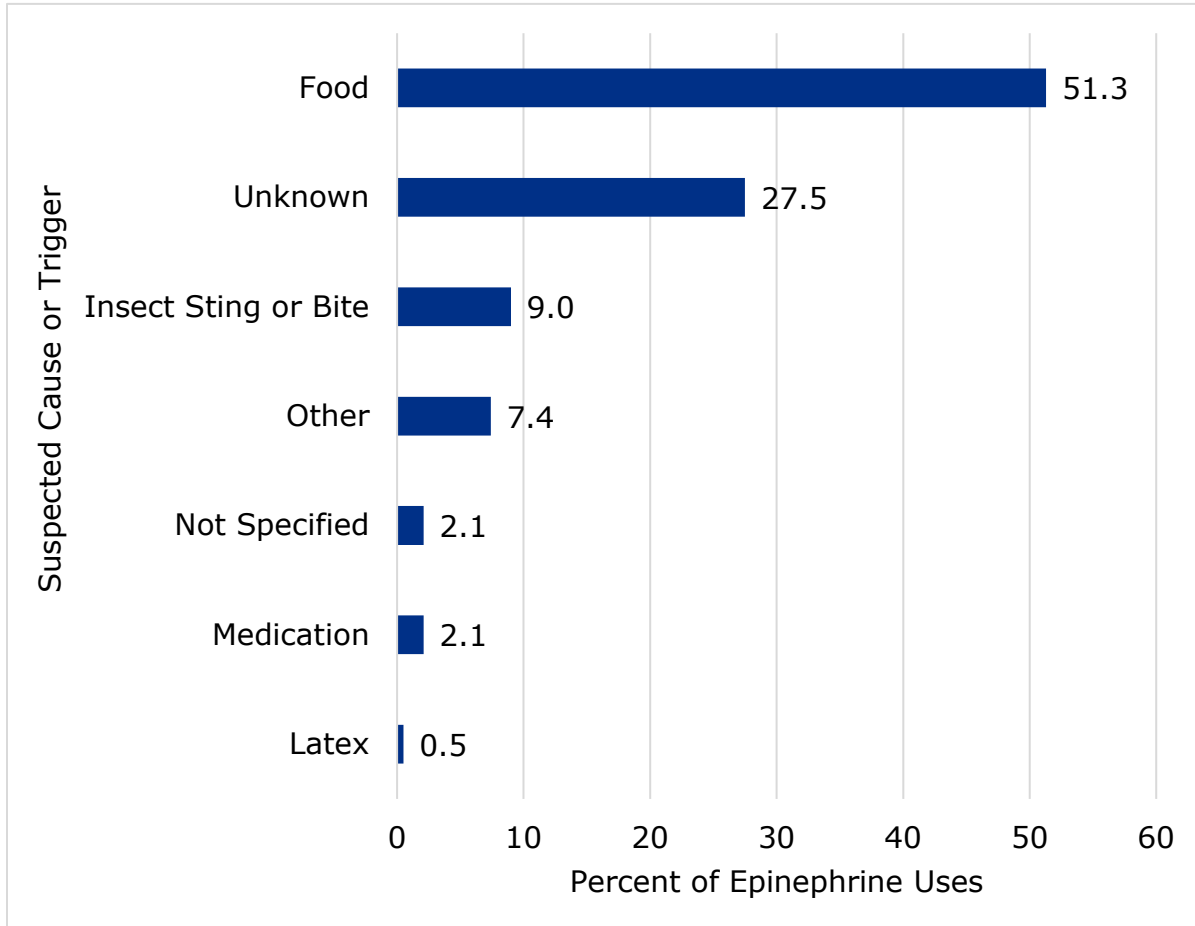


Figure 4 Interpretation:

Figure 4 shows the percent of epinephrine auto-injector uses that reported different suspected causes or triggers of anaphylaxis. Over half (51.3%) of the cases were suspected to be due to food, while over a quarter (27.5%) had an unknown trigger. Fewer respondents selected an insect bite or sting as a suspected trigger (9.0%).

Twenty-three respondents provided text responses for other suspected triggers. Some triggers noted included food allergies, fragrance/spray, soap or laundry detergent, grass, ants, or seasonal allergies.

Ninety-five respondents provided text responses to identify the suspected food trigger. The most common identified food trigger was peanuts (33.7%),

followed by tree nuts (15.8%). An additional 6.3% of respondents identified peanuts or tree nuts as a trigger.

Analysis and Discussion

The main purpose of this analysis was to understand the use of epinephrine auto-injectors in K-12 schools throughout Texas.

During the 2023-2024 school year, 189 uses of an epinephrine auto-injector in a school setting were reported to DSHS. Most of these injections were given to students who received one adult dose of epinephrine. Over half of the injections were given to people with no known history of anaphylaxis or allergies requiring epinephrine auto-injectors. In most cases, the school's unassigned epinephrine auto-injector was used. The most reported symptoms were tightness in throat or chest, trouble breathing or shortness of breath, itchiness, swelling of lips, tongue, or throat, anxiety, and rapid pulse. In over half of the reports, the suspected cause or trigger was food.

Conclusion

This report sought to understand the use of administered epinephrine auto-injectors in schools across Texas during the 2023-2024 school year. Over half of the injections were given to people with no known history of anaphylaxis or allergies requiring epinephrine auto-injectors. Food was the top suspected cause or trigger, and the most common symptoms reported were tightness in throat or chest, trouble breathing or shortness of breath, itchiness, swelling of lips, tongue, or throat, anxiety, and rapid pulse.

The DSHS School Health Program plans to use the data provided in this report to monitor and guide future reporting and projects for allergy control in the school setting. The School Health Program will examine trends in stock epinephrine reporting over time to guide future reporting and projects. These projects may include greater outreach, revisions to the reporting forms for additional information, or collaboration with other stakeholders interested in epinephrine auto-injector use in schools in Texas.

List of Acronyms

Acronym	Full Name
DSHS	Texas Department of State Health Services
CDE	Chronic Disease Epidemiology
ISD	Independent School District
ESC	Education Service Center

General Information

Contact Information

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Appendix A. Schools - Required Reporting of Administered Epinephrine Auto-Injectors to DSHS Form

Schools - Required Reporting of Unassigned Administered Epinephrine Auto-Injectors to DSHS

School districts, open-enrollment charter schools, private schools, and institutions of higher education must report the administration of unassigned epinephrine auto-injectors. This requirement is in the Texas Education Code, [§38.209](#) and [§51.883](#).

[Texas Education Code, Chapter 61, §61.003\(8\) and \(15\)](#) defines institution of higher education as a:

- Technical institute
- Junior college or community college
- College or university
- Medical or dental school
- Public state college
- Agency of higher education

No later than 10 business days after the date of an unassigned epinephrine auto-injection is administered, school campuses and institutions of higher education must submit a report in accordance with the [Texas Administrative Code, Title 25, Part 1, Chapter 40, Section 40.68](#) and [Texas Administrative Code, Title 25, Part 1, Chapter 40, Section 40.7](#).

School districts, open-enrollment charter schools, and private schools must report to the:

- School district
- Charter holder if the school is an open-enrollment charter school
- Governing body of the school if the school is a private school
- Prescribing physician
- Commissioner of the Department of State Health Services (DSHS)

Institutions of higher education must report to the:

- Prescribing physician
- Commissioner of DSHS

Private or independent institutions of higher education are not required to submit reports. DSHS encourages all institutions of higher education to report the use of epinephrine auto-injectors.

Note: [Texas Administrative Code §40.65\(e\)](#) requires schools to notify local emergency medical services when an individual is suspected of experiencing anaphylaxis and when an epinephrine auto-injector is administered. For information on this requirement, please read [EMS Evaluation After Administering Epinephrine in Schools](#) (PDF).

Submission of this electronic form meets the reporting requirement for DSHS. Be sure to report complete and accurate information.

Please fill out the entire form and provide detailed information.

All fields with an asterisk () must be completed.*

School Information

Select if you are reporting for a K-12 school or an institution of higher education: *

- K-12 School
- Institution of Higher Education

Name of the institution of higher education, school district, open-enrollment charter school, or private school: *

Name of person completing this form: *

Email address of person completing this form: *

Confirm email address of person completing this form: *

Education Service Center region for your school district, open-enrollment charter school, or private school: *

(Select N/A if this report is for an institution of higher education.)

County where the institution of higher education is located: *

(Type N/A if this report is for a school district, open-enrollment charter school, or private school.)

Recipient Information

Person who received the epinephrine auto-injector injection: *

- Student
- School Personnel or School Volunteer
- Visitor

Age of person who received the epinephrine auto-injector injection: *

Location and Dosage Information

Physical location where you administered the injection: *

(Examples: cafeteria, classroom, school bus, hallway, football field, etc. You do not need to include mailing address.)

Number of doses administered: *

(1 dose = 1 epinephrine auto-injector)

Type of dosage administered: *

- Child dose
 Adult dose

Other Information

Date Administered: *

Title of the person who administered the injection: *

(Examples: 6th grade teacher, school librarian, basketball coach, school volunteer, etc.)

Did the person who received the epinephrine auto-injector injection have a known history of anaphylaxis or allergies requiring epinephrine auto-injectors? *

- Yes
 No
 Unknown

Did the person who received the epinephrine auto-injector injection have a known history of asthma? *

- Yes
 No
 Unknown

Was the school's unassigned epinephrine auto-injector utilized? *

- Yes
 No

Notification of medication administration was submitted to the following: Please mark all that apply. *

- EMS
- Prescribing Physician
- Recipients primary care provider
- Parent or guardian of youth recipient
- Unsure

(Examples: 9-1-1 was called, emailed prescribing physician that unassigned medication was used, etc.)

After the medication was administered, the recipient: *

- Returned to class
- Was picked up by a parent or guardian and taken home
- Was picked up by a parent or guardian and taken to a healthcare provider
- Was picked up by a parent or guardian, but unknown if medical care was obtained
- Was taken by EMS to the Emergency Room
- Other

If you selected "Other" for the question above, please explain:

Symptom Information

A person experiencing anaphylaxis may have many signs and symptoms. Please select the symptoms that the individual who received the auto-injector injection was exhibiting.

Please mark all that apply.

If no symptoms for a particular group occurred, choose "N/A."

Respiratory *

- Wheezing or coughing
- Trouble breathing or shortness of breath
- Tightness in throat or chest
- N/A (no respiratory symptoms)

Skin *

- Rash
- Hives
- Swelling of lips, tongue, or throat
- Itchiness
- N/A (no skin symptoms)

Gastrointestinal *

- Cramps
- Diarrhea
- Vomiting
- N/A (no gastrointestinal symptoms)

Central Nervous System *

- Headache
- Tingling or numbing sensation (lips, tongue, or throat)
- Loss of consciousness
- Anxiety
- N/A (no CNS symptoms)

Cardiovascular System *

- Dizzy or lightheaded
- Rapid pulse
- Low blood pressure
- N/A (no cardiovascular symptoms)

Other

Please list signs or symptoms not listed above, if applicable:

Suspected Cause

Please indicate the suspected cause or trigger of the anaphylaxis: *

- Food
- Latex
- Insect sting or bite
- Medication
- Unknown
- Other

If you selected "Other" for the suspected cause question above, please explain:

If you selected "Food" for the suspected cause question above, please identify:

(Examples: Eggs, Milk, Peanuts, Tree nuts, Fish, Shellfish, Wheat, Soy, Sesame, etc.)

CAPTCHA *

Math question *

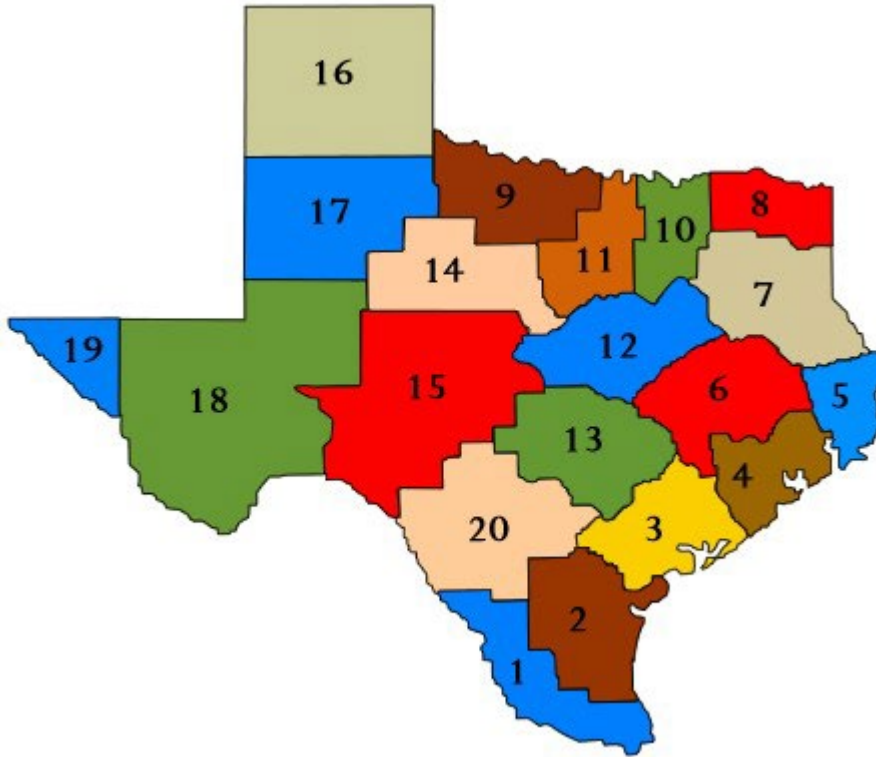
12 + 1 =

Solve this simple math problem and enter the result. E.g. for 1+3, enter 4.

This question is for testing whether or not you are a human visitor and to prevent automated spam submissions.

Submit

Appendix B: Regional Education Service Center Map



School Health Program

dshs.texas.gov/schoolhealth