

2020-2021

**ADMINISTERED EPINEPHRINE
AUTO-INJECTORS IN SCHOOLS
REPORT**



TEXAS
Health and Human
Services

Texas Department of State
Health Services

Contents

Executive Summary	3
Introduction	4
Methods.....	4
Results.....	4
Analysis and Discussion	8
Conclusion.....	8
Appendix A. Required Reporting of Administered Epinephrine Auto-Injectors to DSHS Form 9	9
Appendix B: Education Service Center Map	14
General Informational Page.....	15

Executive Summary

Texas Education Code Section 38.209 and the **Texas Administrative Code, Title 25, Part 1, Chapter 37, Section 37.608** requires a school district, charter school, or private school that adopts an epinephrine auto-injector policy to report the use of an epinephrine auto-injector within ten business days to the school district, charter holder or the governing body of the school, the physician or other person who prescribed the epinephrine auto-injector, the commissioner of the Texas Education Agency, and the commissioner of the Department of State Health Services.

The Texas Department of State Health Services (DSHS) School Health Program worked with the DSHS Chronic Disease Epidemiology Branch (CDE) to analyze data submitted through the *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* web form during the 2020-2021 school year. The purpose of this report is to understand the use of epinephrine auto-injectors in schools across Texas.

Fifty-nine uses of an epinephrine auto-injector in a school were reported to DSHS during the 2020-2021 school year. Most injections were given to students, who received one adult dose of epinephrine. Many injections were given to people with known history of anaphylaxis or allergies. In most cases, the school's unassigned epinephrine auto-injector was used. The most reported symptoms were trouble breathing, itchiness, anxiety, and rapid pulse. In almost half of cases the suspected cause or trigger was food.

It is important to note that schools in the state of Texas were impacted by the COVID-19 pandemic. Thus, epinephrine auto-injector need and reporting may also have been affected by the pandemic with reduced in-person attendance and the availability of virtual learning.

Introduction

The **Texas Education Code, Section 38.209** and **Texas Administrative Code, Title 25, Part 1, Chapter 37, Section 37.608** requires, requires a school district, open-enrollment charter school, or private school that adopts an epinephrine auto-injector policy under Section 38.209 to report the use of an epinephrine auto-injector within ten 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, the physician or other person who prescribed the epinephrine auto-injector, the commissioner of the Texas Education Agency, and the commissioner of the Department of State Health Services (DSHS).

The DSHS School Health Program worked with the DSHS Chronic Disease Epidemiology Branch (CDE) to analyze data submitted through the *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* web form during the 2020-2021 school year.

The purpose of this report is to understand the use of epinephrine auto-injectors in schools across Texas. This information will be used by DSHS and the Stock Epinephrine Advisory Committee to inform future program activities and areas of focus. It is important to note that schools in the state of Texas were impacted by the coronavirus disease (COVID-19) pandemic. Thus, epinephrine auto-injector reporting may also have been affected by the pandemic with reduced in-person attendance and the availability of virtual learning.

Methods

School health services personnel completed the *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* web form within ten days of the use of an epinephrine auto-injector in a school (**Appendix A**). The web form consists of 22 questions, including ten open-ended, seven multiple-choice and five multi-select questions. The web form can be found on the **DSHS website**.

The School Health Program staff collected the data from the webform and then prepared the database for CDE to analyze. In August 2021, a CDE program evaluator analyzed the records submitted between August 1, 2020 to July 31, 2021 using Microsoft Excel.

Results

A total of 59 records were submitted during this period. Records were submitted from 45 independent school districts (ISD). Most records were submitted from Education Service Center (ESC) Region 10 (27.7 percent), Region 13 (22.0 percent), and Region 11 (11.9 percent) (**Appendix B**).

The age range of people who received an epinephrine auto-injector injection was 4 to 60 years old, with an average age of 17 years. The mode age was 10 years old (n=7). Most respondents reported that the epinephrine auto-injector injection was administered in a nurse’s clinic, office or school clinic (72.9 percent) by a nurse (89.8 percent).

Table 1 shows the frequency and percent of responses to each question on the web form. The majority of epinephrine auto-injector injections were administered to students (81.4 percent). The majority of the individuals received adult dosage (72.9 percent) and received one dose (94.9 percent) of epinephrine.

Almost half the individuals who received the epinephrine auto-injector injection had a known history of anaphylaxis (49.2 percent). In most cases (83.1 percent) the school’s unassigned epinephrine auto-injector was used. Lastly, 74.6 percent of those who received the epinephrine auto-injector were transported to local emergency medical services.

		Frequency (n)	Percent (%)
Education Service Center (ESC) Regions	2	2	3.4
	4	3	5.1
	6	2	3.4
	7	2	3.4
	8	1	1.7
	10	16	27.1
	11	7	11.9
	12	3	5.1
	13	13	22.0
	14	1	1.7
	15	1	1.7
	17	1	1.7
	20	6	10.2
Unspecified	1	1.7	
Administered to	Students	48	81.4
	School Personnel/Volunteer	10	16.9
	Visitors	1	1.7
Dosage Type	Adult	43	72.9
	Pediatric	16	27.1
Number of Doses Administered	One	56	94.9
	Two	3	5.1
History of Anaphylaxis	Yes	29	49.2
	No	27	45.8
	Unknown	3	5.1

Table 1: Frequency and Percent of Epinephrine Auto-Injector Use in Texas Schools. (n=59)			
		Frequency (n)	Percent (%)
Unassigned ¹ Auto-Injector Utilized	Yes	49	83.1
	No	10	16.9
Transported to local emergency medical services	Yes	44	74.6
	No	15	25.4
Total		59	100.0

¹The unassigned auto-injector is assigned to the school and not a specific student. Texas Education Code, Section 38.209 relates to unassigned auto-injectors. However, the Stock Epinephrine Advisory Committee (SEAC) suggested that 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.

²Totals may not add up to 100 percent due to rounding.

Table 2 shows the reported signs and symptoms experienced by the individuals who received the injection. Respondents could select multiple symptoms. All respondents (100.0 percent) reported at least one symptom.

Of those individuals who experienced respiratory symptoms, 44.9 percent reported having trouble breathing or shortness of breath, and 25.6 percent reported wheezing or coughing. Of those who experienced skin symptoms, 36.4 percent reported itchiness, 33.3 percent reported hives, and 30.3 percent reported rash. The majority of the individuals (83.1 percent, data not shown) did not experience gastrointestinal symptoms. Of those who experienced central nervous system symptoms, 60.9 percent reported experiencing anxiety, 29.3 percent reported swelling of lips, tongue or throat, and 13.0 percent reported headache. Lastly, of those who experienced cardiovascular symptoms, 68.6 percent reported rapid pulse.

Thirty-one respondents wrote in “other” symptoms. Thirteen respondents noted that the individual experienced face swelling. Several respondents noted other symptoms that included but are not limited to runny nose, sneezing, paleness, nausea, stridor, watery eyes, excessive sweating, itchiness of the throat, flushing, and seizure.

Table 2: Frequency and Percent of Symptom Information¹			
Symptoms		Frequency (n)	Percent (%)
Respiratory	Trouble breathing or shortness of breath	35	44.9
	Wheezing or coughing	20	25.6
	Tightness in throat or chest	15	19.2
	Tingling or numbing sensation	8	10.3
	Total	78	100.0
Skin	Itchiness	24	36.4
	Hives	22	33.3
	Rash	20	30.3
	Total	66	100.0
Gastrointestinal	Cramps	5	50.0
	Vomiting	5	50.0
	Diarrhea	0	0.0
	Total	10	100.0
Central Nervous System	Anxiety	28	60.9
	Swelling of lips, tongue or throat	11	23.9
	Headache	6	13.0
	Loss of consciousness	1	2.2
	Total	46	100.0
Cardiovascular system	Rapid pulse	24	68.6
	Dizzy or lightheaded	9	25.7
	Low blood pressure	2	5.7
	Total	35	100.0

¹Respondents could select all that apply. Totals may not add up to 100% due to rounding.

Table 3 shows the suspected causes or triggers of the anaphylaxis. Over half (52.5 percent) of the cases were suspected to be due to food while a quarter (25.4 percent) had an unknown trigger.

Twelve respondents expanded on “Unknown” (n=6), “Other” (n=4), and “Food” (n=2) suspected causes or triggers. Of those that provided text responses for “Unknown” suspected cause, respondents noted pesticides or sunflower seeds, outdoor allergen, exercise, fish, or mosquito bites, and environmental causes or triggers. Of those that provided text responses for “Other” suspected cause, respondents noted grass and the smell of a substance. Of those that provided text responses for “Food” as a suspected cause, respondents noted nut allergies as the suspected cause or trigger.

Table 3: Frequency and percent of suspected cause (n=59)		
	Frequency (n)	Percent (%)
Food	31	52.5
Unknown	15	25.4
Insect Bite/Sting	8	13.6

Table 3: Frequency and percent of suspected cause (n=59)		
	Frequency (n)	Percent (%)
Other	4	6.8
Medication	1	1.7

Analysis and Discussion

During the 2020-2021 school year, 59 uses of an epinephrine auto-injector in a school were reported to DSHS through the *Required Reporting of Administered Epinephrine Auto-Injectors to DSHS* web form. Most of these injections were given to students who received one adult dose of epinephrine. Almost half of the injections were given to people with a known history of anaphylaxis or allergies. In most cases, the school’s unassigned epinephrine auto-injector was used. The most reported symptoms were trouble breathing or shortness of breath, itchiness, anxiety, and rapid pulse. In over half of the reports, the suspected cause or trigger was food.

It is important to note that the administered epinephrine auto-injectors reporting may have been affected due to the reduced in-person attendance in school by the COVID-19 pandemic and the availability of virtual learning during this school year.

This report will be presented to the Stock Epinephrine Advisory Committee for their feedback and recommendations. The school health program plans to look at 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 and schools.

Conclusion

The purpose of this report is to understand the use of administered epinephrine auto-injectors in schools across Texas during the 2020-2021 school year. The school health program plans to share this report with stakeholders who are interested in the use of epinephrine in schools. 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.

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

Required Reporting of Administered Epinephrine Auto-Injectors to DSHS

If you are a school district, open-enrollment charter school, private school, or institution of higher education, there are reporting rules. The rules apply to unassigned epinephrine auto-injectors. The rule says you must report the administration of unassigned epinephrine auto-injectors. This requirement is in the Texas Education Code, [§38.209](#) and [§51.883](#).

You must report no later than the 10th business day after the date of an unassigned epinephrine auto-injection is administered in accordance with the [Texas Administrative Code, Title 25, Part 1, Chapter 37, Section 37.608](#) 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

NOTE: Texas Education Code, Chapter 61, §61.003 defines institution of higher education as a:

- Technical Institute,
- Junior College or Community College,
- College or University,
- Medical or Dental School,
- Public State College, and an
- Agency of Higher Education.

We do not require private institutions of higher education to submit reports at this time. DSHS encourages all institutions of higher education to report the use of epinephrine auto-injectors.

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:*

Email address of person completing this form:*

[Education Service Center region](#) for your school district, open-enrollment charter school, or private school: (Enter N/A if this report is for an institution of higher education.)*

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:*

[None]  

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

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

- Yes
 No

Was the individual who received the epinephrine auto-injector injection transported to local emergency medical services?*

- Yes
 No

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	<input type="checkbox"/> Wheezing or coughing <input type="checkbox"/> Trouble breathing or shortness of breath <input type="checkbox"/> Tightness in throat or chest <input type="checkbox"/> N/A (no respiratory symptoms)
Skin	<input type="checkbox"/> Rash <input type="checkbox"/> Hives <input type="checkbox"/> Itchiness <input type="checkbox"/> N/A (no skin symptoms)
Gastrointestinal	<input type="checkbox"/> Cramps <input type="checkbox"/> Diarrhea <input type="checkbox"/> Vomiting <input type="checkbox"/> N/A (no gastrointestinal symptoms)
Central Nervous System	<input type="checkbox"/> Headache <input type="checkbox"/> Tingling or numbing sensation (lips, tongue, or throat) <input type="checkbox"/> Loss of consciousness <input type="checkbox"/> Anxiety <input type="checkbox"/> N/A (no CNS symptoms)
Cardiovascular System	<input type="checkbox"/> Dizzy or lightheaded <input type="checkbox"/> Rapid pulse <input type="checkbox"/> Low blood pressure <input type="checkbox"/> N/A (no cardiovascular symptoms)
Other	<p>Please list signs or symptoms not listed above, if applicable:</p> <div style="border: 1px solid #ccc; height: 40px; width: 100%;"></div>

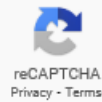
Suspected Cause

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:

I'm not a robot



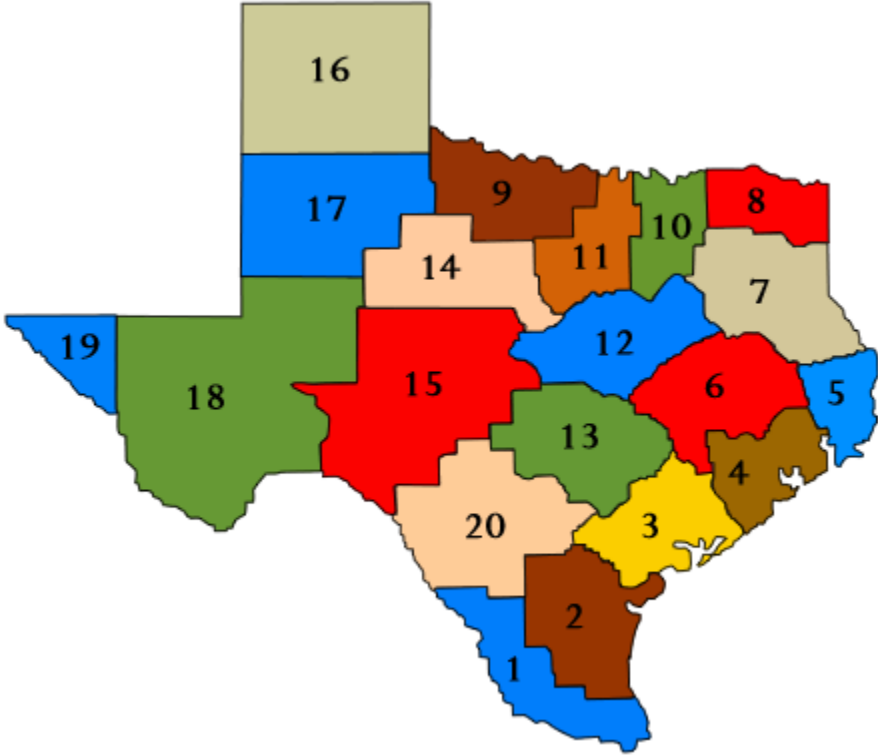
Submit Request

Clear Form

[RETURN TO SCHOOL HEALTH HOME PAGE](#)

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Appendix B: Education Service Center Map



General Informational Page

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Health and Human Services

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