

Identifying barriers to implementation of emergency epinephrine bills: The Texas experience

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Clinical Implications

- Despite the passage of a law allowing use of undesignated stock epinephrine in public schools, a surprisingly small number of school districts in Texas have implemented the policy. We identified the most common barriers to widespread adoption.

TO THE EDITOR:

Food allergies are common, affecting 8% to 10% of the general population, and the prevalence in the past 2 to 3 decades has been increasing.^{1,2} In a 2-year study that used a questionnaire to determine the incidence of anaphylaxis in schools, it was found that 24% of food-allergic children have their first anaphylaxis episode at school.³ Students with a first anaphylactic reaction at school may have no known history of anaphylaxis and no designated epinephrine autoinjector of their own.

Current guidelines recommend that students with known life-threatening food allergies carry their prescribed autoinjectable epinephrine at all times.⁴⁻⁶ Every state has legislation in place allowing students to carry their prescribed epinephrine. For students without a known history of food allergies or an epinephrine prescription at school, undesignated stock epinephrine allows for ready-use in emergencies.

In 2013, the School Access to Emergency Epinephrine Act was signed into federal law, encouraging states to adopt policies that increase access to epinephrine to protect students who are at risk of fatal anaphylaxis. This act permits public schools to maintain a supply of epinephrine in a secure location that is easily accessible for any individual experiencing a life-threatening anaphylactic event. After the School Access to Emergency Epinephrine Act was signed into law, many states, including the state of Texas, developed legislation to permit public schools to maintain a supply of undesignated stock epinephrine.⁷

The Texas Legislature passed Senate Bill 66 (SB66) in 2015,⁸ allowing use of undesignated stock epinephrine autoinjectors in Texas public schools in the event of an emergency. Legal liability protection was provided to prescribers and school personnel. As a result of the Texas legislation, we hypothesized that a portion of Texas public schools would have undesignated stock epinephrine, and those without undesignated stock epinephrine policy faced identifiable barriers that could inform future efforts.

The Department of Texas State Health Services Stock Epinephrine Advisory Committee designed an electronic questionnaire (see [Figure E1](#) in this article's Online Repository at www.jaci-inpractice.org) and the questionnaire was distributed to all Texas public school nurses via email through the Department of State Health Services distribution list. The questionnaire included dichotomous questions concerning the school policy regarding the undesignated stock epinephrine autoinjectors. If the school had a policy in place, details of location, personnel involved, and prescriber information were obtained. Selected questions addressed the barriers to implementation of Texas SB66, and explored ways to facilitate developing undesignated stock epinephrine policies.

The questionnaire was distributed on February 21, 2017, to 1266 public schools with nurse in Texas, and was closed on March 25, 2017. There were 43 responding schools (3.4% response rate) within the 20 school districts designated by the Texas Education Service Center. Each survey represents 1 school, and all 43 respondents together represent 13 school districts (see [Figure E2](#) in this article's Online Repository at www.jaci-inpractice.org). Twenty-six percent of the school respondents (n = 11) reported that their school had an active policy for use of undesignated stock epinephrine autoinjectors ([Figure 1](#)). Of the 11 schools who reported that their school had an active policy, 1 of them was in school district number 1, 1 in district number 6, 2 of them were located in district number 13, 2 of them were in district number 19, and another 2 were located in district number 20. Three of 11 schools with an active policy were located in school district number 10. Of the 32 respondents without a school policy, 1 of them was in district number 7, 1 in district 8, 1 in district 11, 1 in district 15, and 1 in district 17. Two of the 32 respondents without a policy were located in district 2. Four of the 32 respondents were located in districts 6, 13, and 20, respectively. Six of the 32 respondents were located in district 10, and 7 of them were in district 4. There were no school respondents from districts 3, 5, 9, 12, 14, 16, and 18.

Twenty-seven percent (n = 3) of schools stored the autoinjectors at the school clinic or health office; 18.2% (n = 2) with the school nurse; 27.2% (n = 3) stored at other locations; and 27.2% (n = 3) did not report. Eighteen percent (n = 2) of the schools with the policy had the autoinjectors maintained by the school nurse; 18% (n = 2) by the health service personnel or wellness department; and 63.6% (n = 7) did not respond. With regard to the prescriber of undesignated stock epinephrine, 27% (n = 3) indicated the autoinjectors were prescribed by the district medical director; 9% (n = 1) by the community pediatricians; 9% (n = 1) by the allergists; and 36.4% (n = 4) did not respond. Most schools (91%, n = 10) with the policy made autoinjectors available only during regular school hours and not during after-school transportation or on buses. The proportion of schools with both a pediatric dose (0.15 mg) and an adult dose (0.3 mg) on each campus was 73%, with 3 schools having either a pediatric dose (9%) or an adult dose. In 36% (n = 4) of the schools with the policy, autoinjectors were supplied through an industry-sponsored program⁹; in 18% (n = 2) by the school district; in 9% (n = 1) through donations; and 36% (n = 4) did not respond. There was a trend toward differences in the rate of

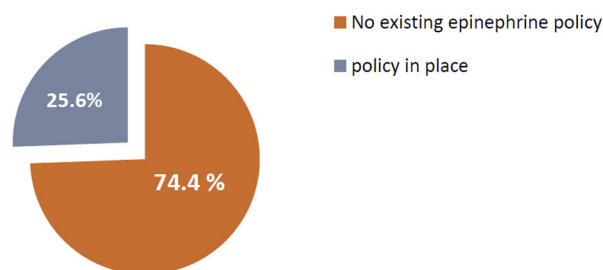


FIGURE 1. Only 25.6% of Texas public school responders have undesignated stock epinephrine policies (N = 43).

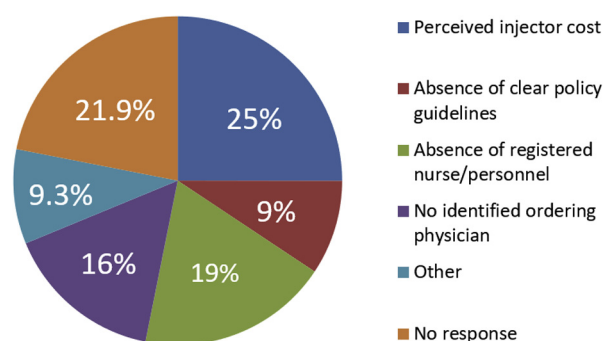


FIGURE 2. Most common identified barriers to implementation of the maintenance supply of school-specific epinephrine policy from schools without a policy (N = 32).

adoption of the SB66 implementation between rural (lower rates) and urban schools, but this was not statistically significant ($P = .07$) using the Wilcoxon rank-sum test. All schools with policy have pediatric epinephrine dose at each campus and have administering personnel receive training online through the Department of Texas State Health Services website.

In schools without a policy, the most common barrier was perceived epinephrine cost (25%, $n = 8$), followed by an absence of registered nurses or other trained personnel at the school (18.8%, $n = 6$); no identified ordering physician (15.6%, $n = 5$); an absence of clear state policy guidelines (9.3%, $n = 3$); others (9.3%, $n = 3$); and no response (21.9%, $n = 7$) (Figure 2). Those “other barriers” include superintendent did not want to support it (3.1%, $n = 1$); too much responsibility and procedure (3.1%, $n = 1$); since the school is a private/parochial school, the school is not covered by civil immunity (3.1%, $n = 1$). These barriers were similar in schools with and without an undesignated stock epinephrine policy. Sixty-four percent of the schools without a policy reported having anaphylaxis at school with no emergency epinephrine available, which underscores the need for these policies.

In conclusion, despite legislation allowing the use of undesignated stock epinephrine as an emergency medication for children with life-threatening anaphylaxis in Texas (SB66), only 25% of the questionnaire responders had undesignated stock epinephrine in their schools. There are numerous barriers to the adoption of undesignated stock epinephrine, with the most common being perceived cost. These results can inform strategies

to overcome the identified barriers, including educating schools about sponsored school epinephrine supply programs, identifying prescribers of epinephrine for school districts so that schools will have timely prescriptions, and training registered nurses and nonmedical personnel on epinephrine indications and administration.

An important limitation of this study is low questionnaire response rate. The questionnaire was sent to school district nurses via email and was collected for only 33 days. The small sample size may not represent the population. Additional noteworthy limitation is questionnaire bias. The questionnaire was designed as an open-ended questionnaire, which allowed responders to define the concerns and elaborate on the central issues in an unrestrained manner. However, this may lead to gathering additional information and misleading the data analysis.

To our knowledge, this is the first study to evaluate the barriers to the implementation of an emergency epinephrine supply law. Physicians can play an important role in raising awareness about the importance of undesignated stock epinephrine and work with school districts to facilitate the implementation of policies. We urge physicians to assist schools in learning, accepting, and implementing state guidelines about their specific state policies regarding undesignated stock epinephrine. Addressing identified barriers to the adoption of undesignated stock epinephrine policies in schools will increase preparedness for anaphylaxis in individuals with life-threatening allergies.

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ONLINE REPOSITORY

Stocking Epinephrine Auto-Injectors Questionnaire

School District Name:

Education Service Center Region:

1) Does your district currently have "unassigned epinephrine auto-injector" policy and/or procedures? ☐ **Yes** ☐ **No (Please check one)**

If yes,

Would they be willing to share it with DSHS?

Is the policy approved by the local school board?

Related to policy/procedures what does it state about:

Where the auto-injector(s) are stored?

Who is assigned to maintain the auto-injector(s)?

How schools deal with after school activities and access to the auto-injector(s), including the school bus?

Who writes the order for the auto-injector(s)?

Is there a pediatric and adult dose on each campus?

How does the district pay for the "unassigned auto-injector(s)"?

What type of training is done (and to whom) to ensure school staff know how to recognize anaphylaxis and utilize the auto-injector? How is the training of staff documented?

What was the most challenging thing the district had to deal with in getting the "unassigned epinephrine auto-injector" policy/procedures implemented?

How many schools in the district obtained unassigned auto-injector(s) after policy implementation?

If no,

What is the number one reason why the district does not have "unassigned epinephrine auto-injector" policy?

What would be helpful to the district in developing policy/procedures?

What are the major barriers to implementing an "unassigned epinephrine auto-injector" policy/procedures in the district?

2) Have you had a situation where someone was experiencing an anaphylactic reaction but you did not have an unassigned epinephrine auto-injector to utilize?

FIGURE E1. Stocking Epinephrine Auto-Injectors Questionnaire. *DSHS*, Texas Department of State Health Service.

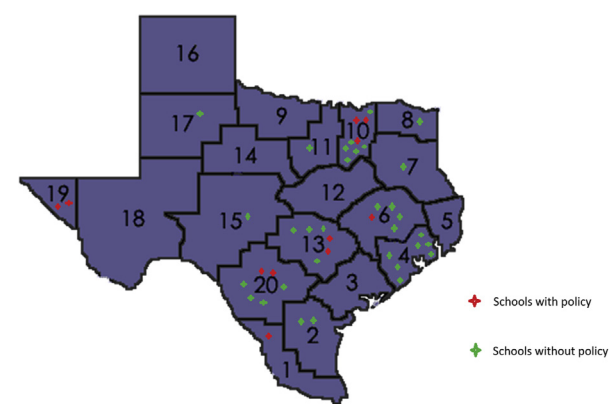


FIGURE E2. Distribution of survey respondents in school districts.