INTRODUCTION
Anaphylaxis is a serious, acute, and potentially life-threatening allergic reaction. In the United States, anaphylaxis affects between 1.1% and 1.5% of the population. The prevalence of food allergy may be increasing among school-aged children. As children spend much of their day in school, there is a need for school staff to be prepared to manage life-threatening reactions to food and other triggers of anaphylaxis that could be encountered in this setting.

To better understand the prevalence and triggers of anaphylaxis across types of school settings, additional data collection occurred from individual schools from large districts in the United States. Schools that were represented in this analysis included those that were added to initial findings in a comprehensive, combined, school-level analysis recently conducted.

OBJECTIVE
To describe the characteristics of anaphylactic events and epinephrine auto-injector (EAI) use in children and adults in US schools.

METHODS
This cross-sectional, web-based pilot survey was distributed to US schools participating in the EPIPEN4SCHOOLS® program. The survey consisted of 15 web-based questions, 8 of which were repeated for each anaphylactic event reported. Respondents were encouraged to report all anaphylactic events at each school. The survey described characteristics of anaphylactic events occurring in an initial set of participating schools during the 2013-2014 school year. The survey was submitted to one school in each US state and additional schools from large districts were added to initial findings in a comprehensive, combined analysis.

RESULTS

EPIGEN4SCHOOLS® Survey Combined Analysis: Prevalence and Triggers of Anaphylactic Events

Grade level information was reported for 811 events. 6.6% (54/811) occurred in kindergarten, 19.0% (156/811) occurred in middle school students (6th through 8th grade), 32.4% (265/811) occurred in middle school students (7th through 9th grade), and 37.7% (306/811) occurred in students whose grade level was unknown. (Figure 2)

Sample contact and notification
US schools registered with the EPIPEN4SCHOOLS® program (>40,000) were matched to Common Core of Data (US Department of Education, Washington, DC) or to the Private School Universe Survey (US Department of Education, Washington, DC) databases to obtain demographic and school contact information, which were used to request participation in the survey. Of the events occurring in schools with data on grade level (811), 64.3% (524/811) occurred in students in high school, 19.8% (164/811) occurred in students in middle school, and 25.3% (203/811) occurred in elementary school students. Twenty-five percent of reported events (203/811) occurred in individuals with no known allergies. Triggers were reported for 1020 events. These, food triggers were most frequent (61.9% (635/1020)), followed by unknown triggers (34.5% (351/1020)).

Conclusions:
The prevalence of anaphylaxis is highlighted by the frequency of events with unknown triggers (203/811) and events occurring in individuals with no known allergies (203/811).

DISCUSSION AND CONCLUSIONS

• The combined analysis incorporated school-level results from 3 data collections, including this exploratory survey and a follow-up survey of large school districts in the United States during the 2013-2014 school year. The survey was submitted to one school in each US state and additional schools from large districts were added to initial findings in a comprehensive, combined analysis.

ACKNOWLEDGMENTS

• Responses were limited by the level of detailed information retained at the schools related to anaphylaxis and were subject to respondent modification of the events.

• This combined analysis provides a more comprehensive picture of anaphylaxis in US schools, and these data may be instrumental toward raising awareness for the importance of anaphylaxis recognition and management training in schools.