CONCLUSIONS. Increased empowerment scores directly correlated with increased parental comfort with EpiPen use. Although increased knowledge scores did not prove to be a significant contributor to parental comfort, training on EpiPen use is an important component in improving parental comfort. The authors question the impact of other psychological factors, such as fear, that may contribute to underuse of the EpiPen.

REVIEWER COMMENTS. Previous studies of parental EpiPen administration have reported incorrect use of autoinjectors despite training at the time of prescription. This study suggests that factors beyond parental knowledge are critical for proper administration of this potentially life-saving medication. The importance of hands-on training to increase caregiver comfort is underscored by this study. Demonstration units and training videos are available free of charge through the manufacturers for EpiPen and the Twinject, another epinephrine self-injection unit not discussed in this study.


**PURPOSE OF THE STUDY.** Although many young children with a history of allergic reactions or anaphylaxis spend considerable time in child care centers, little is known about the centers’ knowledge of, experience with, and capacity to treat anaphylaxis. The purpose of this study was to evaluate the ability of child care centers to recognize, evaluate, and treat anaphylaxis episodes.

**STUDY POPULATION.** Children aged 1 to 6 who attended child care center in the suburbs of Chicago, Illinois.

**METHODS.** Eighty-five independent child care centers in suburbs of Chicago were selected randomly. They were contacted by telephone and asked to join the study by completing an initial questionnaire about allergic reactions and anaphylaxis. The center directors and teachers were then offered an allergy seminar on anaphylaxis avoidance, recognition, evaluation, and treatment. After the seminar, center directors were given a posttest that included some of the questions from the original questionnaire.

**RESULTS.** Of the 85 centers, 44 agreed to participate. Forty-two centers completed the surveys before the seminar and 39 after the seminar. On average, each center had up to 7 children with an identifiable food allergy. The most commonly reported source of education concerning allergies was information provided by the parents. Before the seminar, 24% of child care centers would administer intramuscular epinephrine for a severe allergic reaction. After the seminar, 77% of centers stated they would administer intramuscular epinephrine ($P < .001$). In addition, center staff significantly improved their knowledge of symptoms of allergic reactions and the correct methods of intramuscular epinephrine administration.

**CONCLUSIONS.** There is a knowledge deficit in anaphylaxis education at child care centers for children 1 to 6 years old. Intervention with individual education seminars can significantly increase the ability of child care center staff to recognize, evaluate, and treat anaphylaxis.

REVIEWER COMMENTS. Although it is encouraging that the staffs at child care centers seem to be able to learn how to recognize and treat allergic reactions and anaphylaxis, it is at the same time discouraging that such a small percentage would have done so correctly before the seminar. Most child care centers receive their education from discussions with parents. However, studies have shown that only 50% of parents could identify all the critical steps for proper usage of epinephrine. Therefore, I agree with the authors that it is critical that health care professionals become more involved in the education of parents and the staffs of child care centers. In addition, detailed treatment plans should be written to help guide centers in the proper care of allergic reactions.

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**REVIEWER COMMENTS.** It is encouraging that the staffs at child care centers seem to be able to learn how to recognize and treat allergic reactions and anaphylaxis. However, studies have shown that only 50% of parents could identify all the critical steps for proper usage of epinephrine. Therefore, I agree with the authors that it is critical that health care professionals become more involved in the education of parents and the staffs of child care centers. In addition, detailed treatment plans should be written to help guide centers in the proper care of allergic reactions.

Differences in Race, Ethnicity, and Socioeconomic Status in Schoolchildren Dispensed Injectable Epinephrine in 3 Massachusetts School Districts


**PURPOSE OF THE STUDY.** To analyze the demographic characteristics of schoolchildren dispensed injectable epinephrine in 3 school districts with widely diverse socioeconomic, racial, and ethnic populations.

**STUDY POPULATION.** Students (prekindergarten to grade 12) from 3 school districts in Massachusetts ($n = 21,875$) were evaluated. Two of the school districts were affluent, suburban towns outside of Boston (5855 students). The third district (16,020 students) was also a Boston suburb but with a very low per-capita income, with 23% of the school-age population living below the poverty line. The 2 suburban districts were 92% and 95% white, respectively, and the third district was 60% nonwhite.

**METHODS.** All school districts in Massachusetts are required to report the number of students using daily or as-needed prescription medications to the Department of Health, which provided the data for this study. The study included all students in grades 1 through 12 in the 3 school districts. The study excluded students with allergies to fish or shellfish or who had a history of anaphylaxis.

**RESULTS.** The percentage of students using injectable epinephrine was significantly lower in the affluent suburban district compared to the poor suburban district ($P < .001$). The percentage of students using injectable epinephrine was significantly higher in the affluent suburban district compared to the poor suburban district ($P < .001$). The percentage of students using injectable epinephrine was significantly higher in the affluent suburban district compared to the poor suburban district ($P < .001$). The percentage of students using injectable epinephrine was significantly higher in the affluent suburban district compared to the poor suburban district ($P < .001$).

**CONCLUSIONS.** The percentage of students using injectable epinephrine was significantly higher in the affluent suburban district compared to the poor suburban district ($P < .001$). These findings suggest that there are significant differences in the use of injectable epinephrine among schoolchildren in Massachusetts. Further research is needed to determine the reasons for these differences and to develop strategies to improve access to injectable epinephrine for all schoolchildren.
Recognition, Evaluation, and Treatment of Anaphylaxis in the Child Care Setting

Helen Skolnick

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