

Implementation of Stock Epinephrine in Chartered Versus Unchartered Public-School Districts

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ABSTRACT

BACKGROUND: Access to unassigned epinephrine is critical for schools to treat anaphylaxis. Low socioeconomic status is associated with decreased access to epinephrine in the school setting. In and around New Orleans, physicians partner with schools to assist with stocking unassigned epinephrine autoinjectors (EAI). New Orleans' decentralized public charter school district makes widespread adoption challenging.

METHODS: Physicians partnered with New Orleans decentralized public charter schools, as well as neighboring centralized public school districts, to perform training on recognizing and treating anaphylaxis, assist with the adoption of school policy for stock epinephrine, and aid with obtaining stock EIAs free-of-cost through the EpiPen4Schools[®] program. We used publicly available school enrollment data and our own calendar records to calculate how many children we covered with stock epinephrine per hour of physician or administrator time.

RESULTS: For centralized school districts, we cover approximately 4000 children with stock epinephrine per hour of time. For the decentralized district of New Orleans, we estimate covering only 400 children with stock epinephrine per hour of time.

CONCLUSION: Decentralized school districts reduce educational disparities, but require more time and energy to get EIAs in place than centralized school districts do.

Keywords: epinephrine; EAI; anaphylaxis; advocacy; schools; school health; charter schools; New Orleans.

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Low socioeconomic status is associated with decreased access to epinephrine in the school setting.¹ Several studies have demonstrated the importance of stock epinephrine autoinjectors (EIAs) in large, urban school districts.²⁻⁴ Implementing stock EAI in New Orleans Public Schools (NOPS), poses a unique challenge because New Orleans is the first major US city with an all-charter, de-centralized school district. Here, we highlight the impact of a

physician-led program to address the barriers related to the adoption of stock EAI use in schools.

BACKGROUND

Chartering and other reforms of public schools have been progressive nationally with particular benefit to children living in poverty and those who identify as black and/or Hispanic.⁵ The rapid transition to

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a complete public charter school model in New Orleans was possible due to the flooding in 2005, as well as other factors that accelerated the process in the city, but reflects trends seen nationally.^{6,7} This transformation has increased student achievement and reduced educational disparities⁶ but also resulted in a loss of centralized school nurse reporting and district-wide policy and processes. In this new public charter system, large-scale adoption of new health policies like the use of stock EAI has become cumbersome.

METHODS

Following a sentinel event within a NOPS charter school, our team began advocating for unassigned stock epinephrine in New Orleans schools and in the nearby parishes of St. Bernard, St. Charles, and Jefferson. A subsequent 2012 Louisiana law allowed physicians to prescribe EAI to schools, provided that the school: (1) adopts and publicizes an EAI use policy and (2) trains school personnel in appropriate use of the device (*RS 17: 436.1 (2012)*). These 2 requirements and funding to procure the EAI were the barriers to implementation for schools in our area. To address these barriers, we designed and implemented a school partnership program to provide training, policies, and prescriptions to schools. For NOPS, this included working directly with charter networks. We partnered with the school nurse(s) or school administrators and conducted an in-person training session to anyone able to attend, including nurses, teachers, administrators, coaches, and other school staff. Training was conducted by allergists who reviewed recognition and treatment of allergic reactions, and utilized the same outline for content. During the training, attendees had hands-on practice with EAI trainers and feedback from allergists on their technique. After training, we connected schools to the EpiPen4Schools[®] program to provide access to EAI free of charge, which overcame one barrier to stock EAI use.⁸ We evaluated the scope of our impact covering children with unassigned stock EAI per hour of invested time by reviewing public enrollment data for NOPS, examining stock EAI prescription records from our team, and evaluating calendar records for EAI training sessions with specific schools in NOPS. We then contrasted this data with the same information collected from 3 other Parishes near New Orleans with centralized school districts with whom we have worked over the same time period.

RESULTS

As of October 2019, 90 NOPS (run by 46 autonomous charter organizations) served approximately 48,500 students, 83% of which are economically disadvantaged.⁹ By using publicly available enrollment

data we estimated the number of children covered by our program (<https://previous.opsb.us/schools/data/>). These enrollment data for charter schools are only available through the 2017 to 2018 school year and therefore these numbers served only as estimates. Our program has contacted all public schools within the parish offering our services, resulting in:

- 36 training sessions on anaphylaxis recognition and EAI use
- 55 schools adopting school-specific stock EAI policies
- 54 schools provided with stock EAI prescriptions, which correlates with an estimated 29,308 of 50,306 total students enrolled at NOPS (58.3%) being covered by stock EAI

To accomplish this, our physicians and administrative staff volunteered an average of 2 hours of volunteer time per group of charter schools. This amounts to covering approximately 400 children with stock epinephrine per hour.

In 2 nearby parishes with centralized public-school districts, our program facilitated the use of a single policy and training session each in order to implement stock EAI district-wide. A 2-hour investment per school district covered 17,784 students for the 2018 to 2019 school year, with 4446 children covered per hour investment. This is nearly one tenth the effort per child covered in NOPS.

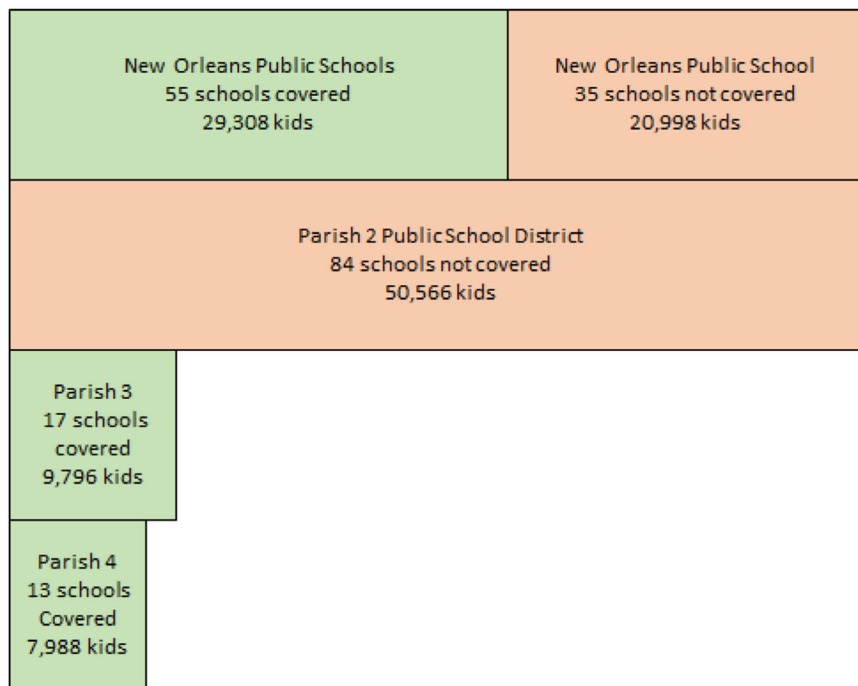
Of note, we have not successfully scheduled training in a third parish containing the second largest school district in the state despite collaboration on other school health projects, suggesting that centralized health services can both aid and hinder the adoption of policies for schools (Figure 1).

It is possible that additional schools and students in NOPS are covered through prescriptions and training provided by other physicians in schools that did not respond to our inquiries and therefore not included in these data. Also not included in this analysis is the large number of students attending Catholic and private schools in Orleans Parish, many of which also have an established partnership with our program.

DISCUSSION

Public charter schools have been helpful in reducing education disparities in New Orleans⁹ and nationally,⁵ particularly among children in socioeconomically disadvantaged communities.⁷ These same children also experience health disparities from atopic disorders including anaphylaxis,¹⁰ making advocacy for school health all the more important. A decentralized school district requires increased advocacy efforts, community outreach, and collaborative partnerships led by physicians in order to implement district-wide stock EAI. Efforts toward improving access to this life-saving medication are particularly critical for school districts

Figure 1. Student Enrollment in Public Schools With and Without Prescriptions for Stock Epinephrine by Our Team Within 4 Parishes in Southeast Louisiana



in which the majority of students are economically disadvantaged or from marginalized populations.

IMPLICATION FOR SCHOOL HEALTH

Low socioeconomic status is associated with decreased access to EAI. Physician-school partnerships can lead to anaphylaxis policy creation and implementation, school training, and free stock EAIs in schools. Unassigned EAIs in schools are critical for school personnel to treat anaphylaxis promptly and adequately. In our experience in and around New Orleans, decentralized school districts reduce educational disparities, but require more time and energy to get EAIs in place than centralized school districts do. As the chartering movement expands nationally, physicians should be prepared to invest more volunteer hours in order to engage with these new schools and provide coverage for a large number of at-risk children.

Human Subjects Approval Statement

Preparation of this paper did not involve primary research or data collection involving human subjects, and therefore, no institutional review board examination or approval was required.

Conflict of Interest

All authors of this article declare they have no conflicts of interest.

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