

# School's in for asthma medication adherence

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Stephen J. Teach, M.D., M.P.H., and colleagues tried to reduce missed doses of daily medications, improve asthma control and tamp down on schoolchildren's asthma attacks by outsourcing morning delivery of inhaled corticosteroids to the school nurse. Credit: Children's National Health System

Doctors and researchers have long known that the level of stress patients experience is inversely linked to how adherent they are with taking

medications: The higher the stress, the less likely patients are to take doses of their medication correctly, on time or at all. For families of school-aged children, there are few times more stressful than mornings, when parents or caregivers need to get kids ready for their school day, pack everything they need and get them out the door on time.

These stressful mornings, says Stephen J. Teach, M.D., M.P.H., chair of the Department of Pediatrics at Children's National Health System, can spell danger for children with [persistent asthma](#). This chronic condition is typically treated with nightly and morning doses of inhaled corticosteroids (ICS), medications that decrease lung inflammation to prevent [asthma](#) attacks. When children miss a morning dose because their families are too busy, their asthma symptoms can exacerbate, causing them to miss school, be unable to participate in activities like sports or lose sleep at night.

But Dr. Teach and colleagues had a simple idea to bypass the morning struggle for many families: Instead of trying to fit delivery of ICS into an already packed schedule, why not outsource it to the school nurse?

"We thought that if we could have those morning doses administered by these medically trained individuals with great technique and regularity, then maybe we would see some improved outcomes in kids," Dr. Teach says. "And we did, in a striking way."

Dr. Teach and colleagues recruited 46 children to participate in a pilot study, published online June 8, 2017 in the *Journal of Asthma*. To be eligible, these participants had to be in grades kindergarten through eighth in the Washington, D.C. public school system and on Medicaid, demonstrating the type of financial need that can add to the cumulative stress a family already faces. The children were scattered across 18 schools.

Twenty-one of these participants received morning doses of ICS (the [intervention group](#)), which the researchers provided to school nurses along with an asthma action plan. The rest (the control group) remained on their prescribed morning and evening doses at home.

After 60 days, the researchers followed up with schools and families. Through electronic records kept by each school, the researchers found that the intervention group received more than 90 percent of their prescribed morning doses—about the same number reported by parents of the control group. However, the two groups demonstrated impressive differences in quality-of-life measures:

- While about 24 percent of the intervention group missed one or fewer days of school due to asthma during the 60-day trial, about 44 percent of the control group did.
- About 43 percent of the intervention group reported functional limitations due to their asthma, compared with 74 percent of the control group.
- The intervention group reported only 1.7 nights with asthma-related sleep loss in the previous two weeks, compared with 4.1 nights in the control group.
- Additionally, only about one-quarter of the intervention group required adjustments in [family](#) life to accommodate their asthma, compared with more than one-half of the control group.

The reasons for these differences aren't clear, says Dr. Teach. But he and colleagues suggest that they might be due to over-reporting of how many doses were delivered at home in the [control group](#) or improper administration of these drugs at home.

Regardless, he says, the results show that this type of school-based [intervention](#) was not only feasible for [children](#), school nurses and families, but also led to numerous positive health outcomes for the

participants who received it. Based on the results of this study, Dr. Teach and colleagues have started to prescribe school-based administration of morning ICS doses to families interested in receiving them as a new standard of care.

"These data, combined with data from similar studies at other institutions, suggest that [school](#)-based therapy is increasingly becoming a very real and proven option for clinicians and families when adherence is a struggle," he says.

**More information:** Cherise B. Harrington et al, A pilot randomized trial of school-based administration of inhaled corticosteroids for at-risk children with asthma, *Journal of Asthma* (2017). [DOI: 10.1080/02770903.2017.1323915](#)

Provided by Children's National Medical Center

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