

The Unfulfilled Promise of School-Centered Asthma Care



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Asthma is a common chronic condition among children that is associated with significant morbidity, particularly among disadvantaged and minority children.¹ Schools are a logical setting in which to intervene because they are where children gather, spend much of their day, and are frequently monitored. To improve student well-being and educational outcomes, schools frequently deliver services that protect students from harm and/or promote healthy living.² In this issue of *Journal of Allergy and Clinical Immunology In Practice*, Liptzin et al³ describe their implementation of the Step-Up Asthma program in the Denver Public School district. The program identified at-risk children, offered asthma education to students and school personnel, facilitated access to health insurance and/or medical care, and provided stop-gap medications until care was established. A community health worker (asthma counselor) served as the program's lynchpin by connecting students, caregivers, and schools with the traditional health care system. The program was funded by the Colorado Department of Public Health and Environment (CDPHE).

Schools typically lack the resources and expertise to independently implement health programs; therefore, collaborations with community agencies and researchers can help develop the needed infrastructure. These collaborations facilitate program evaluation, policy development, and long-term sustainability.⁴ The most critical element is external funding because many of our nation's schools are underfunded and understaffed. Public funding is difficult to obtain because disagreement exists between those who view health as an individual responsibility versus those who view it as a collective obligation.⁵ Private funding is difficult to obtain because programs are likely to require additional resources to improve health outcomes, meaning they are cost-effective, not cost-saving.⁶ Therefore, obtaining CDPHE support to implement the Step-Up Asthma program represents a substantial feat.

For many working with schools, the most frustrating aspect is abandoning successful programs once research funding ends. The

most logical partners to support programs targeting disadvantaged and minority populations are state and local health departments and/or state Medicaid programs. Like Liptzin et al,³ we have had most success engaging health departments. Regulatory bureaucracy, ideological inflexibility, and political conflict make it nearly impossible to partner with state Medicaid programs. One of the most important barriers is Medicaid's narrow mandate to provide "medically necessary services to individual recipients." This commitment to the traditional health system and its emphasis on individual responsibility for health precludes public health efforts to engage populations and improve community health outcomes. Future advocacy efforts should target expansion of Medicaid's capacity to support school-centered health programs given the high proportion of Medicaid-eligible students who participate (eg, 59% of Step-Up participants).

The Step-Up Asthma program contained many elements recommended for successful school-centered asthma programs.^{4,7-9} Three additional elements are worthy of consideration. Stock inhaler programs improve access to quick relief medication (albuterol) during school hours by making a single inhaler along with disposable or reusable holding chambers available to all students with asthma. Stock inhalers provide a failsafe mechanism to protect all students with asthma when personal inhalers are not available. These programs are acceptable to parents, well-liked by school nurses, and reduce 911 calls and medical transports.¹⁰ Supervision of daily controller medication (inhaled corticosteroid) use at school improves adherence and asthma control and can be cost-effective.^{6,11,12} Major barriers include obtaining medications from caregivers for at-school use and burdening school health personnel. Home visits to identify and remediate environmental exposures is another potentially cost-effective option but like the Step-Up Asthma program requires a stable source of funding.¹³

Unfortunately, considerable uncertainty remains regarding the effectiveness and cost-effectiveness of school-centered asthma programs. For practical reasons, school-centered interventions are often evaluated using designs that are less rigorous than those of traditional clinic-based efficacy trials. For example, conducting a matched-pair randomized design trial in which some schools will be assigned to a nonintervention control is difficult because many schools (and parents) are reluctant to participate when many can expect no benefit.¹⁴ Pre-post designs, like that used to evaluate the Step-Up Asthma program, are more acceptable to schools and to community partners who may face political, regulatory, or mission barriers that preclude participation in randomized controlled trials. However, pre-post designs are subject to selection bias and confounding.

Therefore, the reported reductions in oral corticosteroid requiring exacerbations, emergency department visits, and school

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absences should be viewed cautiously. It is plausible that the observed reductions were in part attributable to regression to the mean, naturally occurring temporal changes in exacerbation rates, and/or selection bias. For example, symptom days and health care utilization naturally decline by approximately 20% per year among children with asthma.¹⁵ However, improvements in the processes of care including greater availability of action plans, rescue medication, and controller medication as well as improved inhaler technique and asthma knowledge scores suggest that children were more likely to receive guideline-concordant asthma care. It was not reported how many additional children who needed controller treatment actually obtained it because of their participation in the Step-Up Asthma program.

Requirements imposed by the research process including resource constraints, informed consent, in-person or telephone follow-up interviews, and personal data disclosures limit the reach of school-centered asthma programs and may distort the types of families who participate. For example, the Step-Up Asthma program enrolled only 25% of the children with asthma, thereby introducing selection bias and threatening both validity and generalizability. Should the program be sustained, it is possible that more caregivers could be “nudged” to participate if many of the services were structured as opt-out rather than opt-in.

Using dedicated community health workers (asthma counselors) was both a strength and a weakness of the Step-Up Asthma program. Strategically, it likely strengthened CDPHE's commitment because its resources were focused on a single, salient problem. It also likely allayed the concerns of Denver Public School that the program would be overly burdensome because few schools, particularly those in Western states, meet the Health People 2020 goal of 1 school nurse for every 750 students.¹⁶ Using asthma counselors also targeted children whose needs were most addressable by the traditional health care system. Last, training community health workers to competently manage one condition rather than several was likely much easier to accomplish. However, sustaining dedicated funding for the program will be difficult as the program scales up and the aggregate costs mount. Although CDPHE will bear the full cost of the program, it will obtain no benefit. Rather the benefits will accrue to state's Medicaid program, which will be shared between state and federal taxpayers.

The Step-Up Asthma program represents a model program for school-centered asthma care. CDPHE support of the program provides hope that it can be expanded and sustained to reach the totality of disadvantaged and minority students who experience the greatest asthma-related burden and need. Leveraging public health resources to improve students' access to the traditional health care system without burdening schools is an approach born out of necessity. Hopefully, such funding models represent a temporary fix as optimal public policy would instead increase schools' intrinsic capacity to provide health services by

augmenting the existing school health workforce. Doing so is needed to improve the health and well-being of all our nation's school children and not just those with asthma. The findings presented by Lipkzin et al³ add to those showing that it is possible to use school-centered programs to improve the processes of care for children with asthma. However, for reasons largely outside the control of researchers, we may never know to what extent these process improvements lead to accompanying improvements in health outcomes. Nevertheless, these programs are deserving of consideration because they address known disparities in access to and utilization of guideline-concordant care in populations with great need.

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