

Asthma Call Back Survey Results: A need for increase of asthma actions plans and allowance to carry medication



Rachel Wilkins, B.S.¹, Sadie Schiffmacher, B.S.¹, Ashton Gatewood, M.P.H.¹, Savannah Nicks, B.S.¹, Benjamin Greiner, D.O., M.P.H.,³ Micah Hartwell Ph.D.^{2,3}

¹ Oklahoma State University Center for Health Sciences, Office of Medical Student Research; ² Oklahoma State University Center for Health Sciences, Department of Psychiatry and Behavioral Sciences; ³ University of Texas Medical Branch, Galveston, Department of Internal Medicine

INTRODUCTION

- Asthma is the most common childhood chronic disease in the United States, with over 7.1 million children currently diagnosed. Moreover, one-third of those diagnosed with asthma in the US are children.^{1,6}

- Quality treatment of complex conditions, such as asthma, requires appropriate patient screening and education.^{1,3}

- Long-term goals of asthma management include achieving symptom control, maintaining a normal activity level, and minimizing risk of asthma-related mortality, exacerbations, persistent airflow, and side-effects of treatment.^{1,3,5}

RESEARCH QUESTION

- Our objective was to analyze the amount of children with asthma permitted to carry medications in school and to assess the prevalence of children with an asthma action plan in school.

METHODS

- Using the CDC's 2017 & 2018 BRFSS Asthma Call Back Survey for children, we assessed the prevalence of children in school that are allowed to carry medication and if they had an asthma action plan.

- We included only children who were *in school* and were reported to *currently have asthma*, ranging in age from 0-17 in BRFSS defined *age groups* show in Figure 2..

- We assessed if there was a difference in allowance of asthma medication in schools or having asthma action plans based on *urbanicity* (rural vs. metro area).

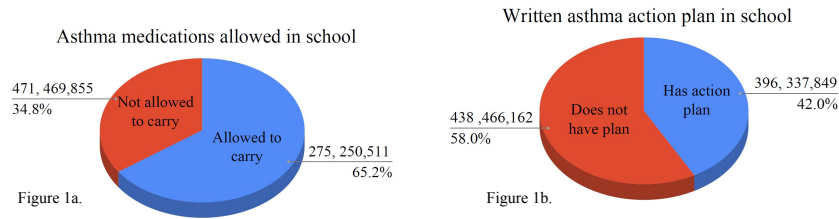


Figure 1a. Asthma medications allowed in school
Figure 1b. Written asthma action plan in school

Age groups of children with asthma whose school did not allow children to carry their medication with them (Left) and did not have an asthma action plan.

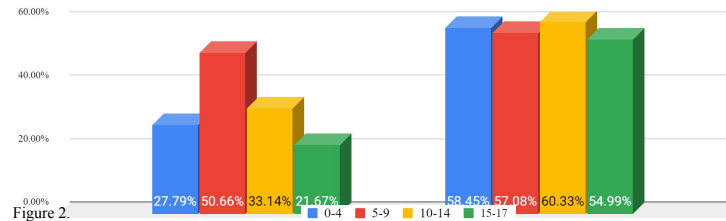


Figure 2.

SIGNIFICANCE OF FINDINGS

- Improving asthma control status positively impacts school absenteeism, academic success, and quality of life. These factors are further elevated with increased levels of asthma control, school environmental conditions, and teacher knowledge of student's condition.⁹

- Establishing relationships between schools, healthcare students, and physicians is essential for effective asthma management plan implementation, especially in the educational setting.^{4,7}

- Implementing protocols for stock albuterol to be supplied in schools increases access to medication for children who are not permitted to carry it.⁸

- This is particularly important in Oklahoma due to the fact that in our State the amount of children with uncontrolled asthma is 10% above the National average.¹⁰

RESULTS

- Nearly 35% of students reported that they were not allowed to carry asthma medications (Figure 1a) and 58% did not have a written asthma action plan (Figure 1b).

- Reported urbanicity was not significantly associated with either medication access at school ($P=.46$) or having an action plan ($P=.57$).

- Further, nearly 51% of children ages 5 - 9 and 33% of children ages 10-14 were unable to carry medications at school (Figure 2).

CONCLUSION

- More than one-third of students were not permitted to carry asthma medications and nearly 3 out of 5 did not have a written asthma action plan.

- These findings reflect the need for Oklahoma, along with many other states, to improve access to medication in schools in addition to written action plans to improve asthma management in school.

REFERENCES

- Hunda, E., Parsky, V., Cissam, G., Dimmit, M., Williams, R., & Irsyk, M. (2015). Exposure to home and school environment triggers and asthma morbidity in Chicago inner-city children. *Pediatric Allergy and Immunology*, (24), 734-741. doi:10.1111/pai.12162
- Stee, L. G., O'Leary, R. A., O'Leary, M. A., & Yuchacz, J. M. (2016). Humoral immune factors and asthma among American Indian children in a case-control study. *BMC Pulmonary Medicine*, 16(1), 93. <https://doi.org/10.1186/s12890-016-0257-6>
- Global Initiative for Asthma (GINA). (2019). *Global strategy for asthma management and prevention*. Retrieved from <https://ginasthma.org/wp-content/uploads/2019/06/GINA-2019-main-report-june-2019-wms.pdf>
- Lemanske, Robert F., Jr, et al. "Creation and Implementation of SAAAP (SAA) A School-Based Asthma Management Program." *The Journal of Allergy and Clinical Immunology*, vol. 138, no. 3, Sept. 2016, pp. 711-23. doi:10.1016/j.jaci.2016.06.015.
- Marabata, S. B. (2013). Evidence based public health practice: Brief introduction. *Journal of Manmohan Memorial Institute of Health Sciences*. Retrieved from
- Sawicki, G. & Haver, K. (2018). Asthma in children younger than 12 years: Initial evaluation and diagnosis. https://www.uptodate.com/contents/asthma-in-children-younger-than-12-years-initial-evaluation-and-diagnosis?search=pediatric%20asthma&source=search_result&objectTitle=2-150&usage=type=4&fullURLdisplay_rank=2
- McCure, Natascha, et al. "Using Academic Continuity Paraphrases to Improve Asthma Care in Elementary Schools with Limited School Nurse Services." *The Journal of School Health*, vol. 90, no. 2, Feb. 2020, pp. 158-61. doi:10.1111/josh.12859.
- Volmeran, Anna, et al. "Ensuring Access to Albuterol in Schools' From Policy to Implementation: An Official ATS/ANMA/ALA/ANSP Policy Statement." *American Journal of Respiratory and Critical Care Medicine*, vol. 204, no. 5, Sept. 2021, pp. 508-22. doi:10.1164/rccm.202106-1550ST.
- Tozman, M., et al. "Asthma Control Affects School Absence, Achievement and Quality of School Life: a Multicenter Study." *Allergologia et Immunopathologia*, vol. 46, no. 6, Elsevier, Riyadh, S.A.U., 2020, pp. 545-52. <https://doi.org/10.1016/j.aller.2020.05.003>
- Querdability CD, Williams B, Wetherill MS, et al. Environmental Health-Related Policies and Practices of Oklahoma Licensed Early Care and Education Programs: Implications for Childhood Asthma. *Int J Environ Res Public Health*. 2021;18(16):doi:10.3390/ijerph18168491