



Texas Department of State  
Health Services



Texas Board  
of Nursing

## **DSHS-School Nurse Notes | December 2020**

### **Asthma Care in Schools**

To address the needs of school nurses, the Texas Department of State Health Services (DSHS) School Health Program has developed this repository of information. With each issue of *DSHS-School Nurse Notes* (DSHS-SNN), professionals receive the latest research, evidence-based practices, and resources in school nursing related to a topic of interest. The School Health Program wishes to thank the Texas Board of Nursing for their collaboration on this publication, in particular Linda Laws, M.S.N., R.N. for her contributions. If you have any questions or comments about this issue of DSHS-SNN, please contact the DSHS School Health Program at [schoolhealth@dshs.texas.gov](mailto:schoolhealth@dshs.texas.gov).

### **Background**

Asthma is an inflammatory disease caused by the inability to properly circulate air in and out of the lungs after inhaling environmental irritants or triggers. The most prevalent symptoms include wheezing, chest tightness, and coughing. According to the Centers for Disease Control and Prevention (CDC), asthma is one of the most common chronic diseases worldwide, affecting more than 6 million children in the United States and 479,000 in Texas. Although there is no cure for asthma, children with the disease can lead normal, healthy lives with proper treatment and management (American Lung Association, 2019; Isik, Fredland & Freysteinson, 2019; Texas Department of State Health Services, 2019). The purpose of this DSHS-SNN is to provide the latest research on asthma management in school-aged children and to highlight the role school nurses play in fostering academic success and greater quality of life through the provision of asthma care.

Children with asthma are not only impacted physically, but also academically. Asthma causes over 10 million missed school days each year and is also linked to lower student engagement and performance (American Lung Association, 2019; CDC, 2018). Further, poorly managed asthma symptoms result in a higher number of emergency room visits and hospitalizations for students (Isik

et al., 2019). Recurrent emergency medical visits and absenteeism associated with asthma pose an economic burden on schools and the United States as a whole, with an estimated cost of \$56 billion dollars per year (Isik & Isik, 2018; Nadeau & Toronto, 2016).

Students may spend up to 10 hours per day in school, approximately 180 days per year, placing school nurses in an important position to address barriers and improve asthma care outcomes. Asthma treatment and management is a major concern for school nurses due to the time-consuming tasks it involves, such as student assessments, establishing severity of symptoms, parental communication, and training staff (Evans-Agnew, Klein, & Lecce, 2015). Establishing a strong partnership between schools, families, and health care providers is critical for successful school-based asthma interventions (Nadeau & Toronto, 2016).

## **Nursing Standards and License Considerations**

### **Texas Board of Nursing (BON)**

School nurses are in a unique position to assist families and students to understand and manage chronic conditions such as asthma and to implement emergency measures when required. The Nursing Practice Act or NPA (Texas Occupations Code, Chapter 301 et. seq.) and Board rules and regulations are written broadly so all nurses can apply them in various practice settings across the state. Because each nurse has a different background, knowledge, and level of competence, it is up to each *individual* nurse to use sound judgment when deciding whether or not to perform any particular procedure or act.

The Standards of Nursing Practice, found in [Board Rule 217.11](#) are the minimum standards by which all nurses practice. Among other things, this rule requires all nurses to:

- (1)(A): Know and conform to not only the Texas NPA and the Board's rules and regulations but to all federal, state, or local laws, rules or regulations affecting the nurse's current area of nursing practice;
  - For a school nurse, there may be laws, rules, or regulations from the [Texas Education Agency](#), regarding the care of students with medical conditions. Therefore, school nurses should be familiar with the Texas Education Code and how it affects the delivery of nursing services to students.
- (1)(B): Implement measures to promote a safe environment for clients and others;

- (1)(C): Know the rationale for and the effects of medications and treatments and shall correctly administer the same;
- (1)(F): Promote and participate in education and counseling to a client(s) and, where applicable, the family based on health needs
- (1)(M): Institute appropriate nursing interventions that might be required to stabilize a client's condition and/or prevent complications.
- (1)(P): Collaborate with the client, members of the health care team and, when appropriate, the client's significant other(s) in the interest of the client's health care;
- (1)(T): Accept only those nursing assignments that take into consideration client safety and that are commensurate with the nurse's educational preparation, experience, knowledge, and physical and emotional ability.

Additionally, the Board's [Scope of Practice Decision-Making Model](#) (DMM) is a step-by-step tool all nurses practicing in Texas can use to determine if any given task/procedure is within their individual scope of practice. The DMM is designed to be used in sequence, beginning at the top with question number one. In the model, nurses are asked reflective questions, and depending on how they answer, they are directed to continue through the model or stop. In your progression through the model, you can also reference professional nursing organizations or specialty associations such as the [Texas School Nurse Association](#), the [National Association of School Nurses](#), or any other related professional nurses organizations, to assist nurses in determining the standard of care. At any point, if a nurse reaches a Stop Sign, he/she should consider the activity or intervention in question beyond (or outside) his/her scope of practice.

The Board recognizes that not every school campus has a nurse available and delegation to appropriate unlicensed individuals may be a useful tool for the school nurse to utilize. [Delegation](#) is defined in Board Rule 225.4 as authorizing an unlicensed person to perform tasks of nursing care in selected situations and indicates that authorization in writing. The delegation process includes nursing assessment of a client in a specific situation, evaluation of the ability of the unlicensed persons, teaching the task or verifying the unlicensed persons training in the task, ensuring supervision of the unlicensed persons and re-evaluating the task at regular intervals.

To assist school nurses in understanding the appropriate use of delegation, school nurses, representatives from the National Association of School Nurses,

Texas Health & Human Services staff and Board staff developed several algorithms to help nurses in making delegation decisions to unlicensed individuals. As an example, one such algorithm describes a scenario in which a student with asthma is well managed on inhaled corticosteroids. Using the algorithm, [School Nurse \(RN\) Delegation to UP for Students with a Stable and Predictable Condition](#), the RN determines that:

- The student's condition is stable and predictable as evidenced by a nursing assessment, evaluating the factors identified in Board Rule 225.6;
- The task is not prohibited from being delegated under Board Rule 225.13; and
- A reasonable, prudent nurse would delegate administration of the inhaled corticosteroid from the multi-dose inhaler (MDI) based on Board Rule 225.10(10)(F) and the ability to meet the criteria for delegation outlined in Board Rule 225.9.
- Specifically: the administration of 2 puffs from the MDI prior to physical education does not require the exercise of professional nursing judgment;
- The unlicensed person possesses the experience and competency to safely perform the task;
- The RN is available to the unlicensed person either in person or by telecommunications when the unlicensed person is performing the task;
- Verification of the unlicensed person's competency to perform the task is documented; and
- An emergency plan is in place in the event the student's condition becomes acute, unstable or unpredictable

There may be times when a student develops an acute, unstable or unpredictable condition associated with their asthma that requires emergency measures. [School Nurse \(RN\) Delegation to UP for a Student who Develops an Acute, Unstable or Unpredictable Condition and Requires Emergency Measures](#) is another example in the algorithms that addresses such emergency situations.

Please keep in mind that a nurse functions under his/her own nursing license, and as such has a duty to patients that is separate from any employment relationship. In other words, a physician's order, facility policy or a directive

from a supervisor cannot supersede a nurse's duty to keep a patient(s) safe. [Position Statement 15.14: Duty of a Nurse in any Practice Setting](#) illustrates the nurse's duty to implement measures to promote a safe environment [[Board Rule 217.11\(1\)\(B\)](#)] and uses a landmark court case to demonstrate a nurse's duty to patients to promote patient safety supersedes any physician order or facility policy. Additionally, [Position Statement 15.13 Role of LVNs and RNs in School Health](#) may be a helpful resource.

Other useful Texas Board of Nursing documents include:

- [Texas Board of Nursing Rules & Regulations](#) relating to Nurse Education, Licensure and Practice. Published December 2019.
- [Position Statement 15.14 Duty of a Nurse in any Practice Setting](#):
- [Position Statement 15.13 Role of LVNs and RNs in School Health](#)
- [Decision-Making Model for Determining Nursing Scope of Practice](#)
- [Delegation FAQs](#)
- [School Nurse Delegation](#)

National Association of School Nurses (NASN)

- [Code of Ethics](#)

Texas School Nurses Organization (TSNO)

- School Nursing: [Scope and Standards of Practice](#)

## Research

The following articles come from a review of the scientific literature. For assistance in obtaining an article, please contact the DSHS Library at [library@DSHS.texas.gov](mailto:library@DSHS.texas.gov) and mention the requested article was included in the *DSHS-School Nurse Notes*. Following each citation is a portion of the article's abstract or a summary of the article.

1. Carpenter, D. M., Estrada, R. D., Roberts, C. A., Elio, A., Prendergast, M., Durbin, K., Jones, G.C., & North, S. (2017). Urban-rural differences in school nurses asthma training needs and access to asthma resources. *Journal of Pediatric Nursing*, 36, 157-162.  
doi:10.1016/j.pedn.2017.06.013

The purpose of this article was to: 1) assess school nurses' perceived asthma training needs, 2) describe nurses' access to asthma educational resources, and 3) identify urban-rural differences in training needs and access to resources in southern states. Few schools are implementing

asthma education programs. Rural nurses may be disadvantaged in terms of receiving asthma training and having access to asthma education programs and materials.

2. Evans-Agnew, R. A., Klein, N., & Lecce, S. (2015). Asthma management in educational settings. *NASN School Nurse*, 30(6), 314-319.

doi:10.1177/1942602x15607603

This article highlights key steps in implementing guideline-based care for children with asthma in Washington State schools: assessing students, establishing acuity, communicating with parents, and training staff.

Advance planning can improve outcomes for students, parents, and school staff in managing this complex and prevalent disease. Developing state-specific guidelines provides an opportunity to speak specifically to state laws and nurse practice acts while also reinforcing the importance of specialized practice to school nurses, school administrators and teachers, parents, and students.

3. Gerald, J. K., & Gerald, L. B. (2016). The unfulfilled promise of school-centered asthma care. *The Journal of Allergy and Clinical Immunology: In Practice*, 4(5), 980-981. doi:10.1016/j.jaip.2016.06.001

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. In this issue of *Journal of Allergy and Clinical Immunology In Practice*, Liptzin et al describe their implementation of the Step-Up Asthma program in the Denver Public School district.

4. Geryk, L. L., Roberts, C. A., & Carpenter, D. M. (2017). A systematic review of school-based interventions that include inhaler technique education. *Respiratory Medicine*, 132, 21-30.

doi:10.1016/j.rmed.2017.09.001

Proper use of inhaled medication is essential for the successful treatment of childhood asthma; yet, improper inhaler technique among school-aged children is common. There are many school-based asthma education programs, but the extent to which these programs teach inhaler technique is unknown. Evidence suggests that students benefit from school-based inhaler technique education; however, inconsistencies in how technique was measured limit our ability to draw firm conclusions regarding the effectiveness of inhaler technique education on student

outcomes. Future studies are needed to identify the most appropriate and feasible inhaler technique education components for use in comprehensive asthma self-management interventions.

5. Isik, E., Fredland, N. M., & Freysteinson, W. M. (2019). School and community-based nurse-led asthma interventions for school-aged children and their parents: a systematic literature review. *Journal of Pediatric Nursing*, 44, 107-114. doi:10.1016/j.pedn.2018.11.007  
Lack of asthma knowledge can lead to asthma exacerbations, more emergency room visits, school absences, and decreased quality of life. This systematic review examines the effectiveness of educational intervention programs on asthma management for school-aged children and their parents beyond inpatient clinic settings. School and community-based asthma educational intervention programs are key components for good management of asthma condition. Well-planned asthma education programs are valuable and should go beyond inpatient clinic settings for promoting and maintaining health for children with asthma and their parents. School nurses are well positioned to assume a more prominent role in asthma care to improve child health and academic outcomes and have an opportunity to establish a trusting relationship for collaborating with parents and students for better asthma management.
6. Isik, E., & Isik, I. S. (2019). Asthma care coordination in schools by school nurses: an integrative literature review. *Public Health Nursing*. doi:10.1111/phn.12610  
The purpose of this integrative literature review is to document and synthesize the available evidence on school nurse asthma care coordination challenges and explain the components of asthma care coordination/case management at schools. The results showed that care coordination was key for students with chronic diseases including asthma. Asthma care coordination has many challenges, but school nurses can drive effective asthma care by including the essential components of care coordination. Successful asthma care coordination may prevent health care fragmentation, emergency room visits, hospitalization, and school absenteeism, and can increase asthma knowledge and the quality of life for students and parents.
7. Langton, C. R., Hollenbach, J. P., Simoneau, T., & Cloutier, M. M. (2019). Asthma management in school: Parents' and school personnel

perspectives. *Journal of Asthma*, 1-11.  
doi:10.1080/02770903.2019.1568455

This study sought to understand school-based asthma care from the perspective of parents and school personnel to improve asthma care at school. In this convenience sample of parents and school personnel, parents reported overall satisfaction regarding the asthma care their children receive at school, yet a number of gaps pertaining to school-based asthma care were identified. Increased asthma training and enhanced communication among school personnel is needed to address these gaps.

8. McCabe, E. M., McDonald, C., Connolly, C., & Lipman, T. H. (2018). A review of school nurses' self-efficacy in asthma care. *The Journal of School Nursing*, 35(1), 15-26. doi:10.1177/1059840518808886

Despite the effect of education and training, gaps remain in understanding school nurses' self-efficacy (SE) in asthma care. The purpose of this integrative literature review is to gain a greater understanding of school nurses' SE in asthma care. Themes and topics in the current school nursing literature regarding SE in asthma care include the value of continuing education, educational interventions, and the use of resources in clinical practice such as the asthma action plan. This review indicates the importance of developing a greater understanding of the unique features of school nursing, the necessary resources, and the external factors that influence practice.

9. Nadeau, E. H., & Toronto, C. E. (2015). Barriers to asthma management for school nurses. *The Journal of School Nursing*, 32(2), 86-98. doi:10.1177/1059840515621607

The purpose of this integrative review is to examine barriers to asthma management for school nurses in the school setting. Findings revealed multiple barriers school nurses encounter in managing asthma. Six themes emerged that included lack of resources and support, insufficient time, communication challenges, limited knowledge, and lack of awareness of school nurses' expertise. Students, parents, primary care physicians, school administration, staff, and school nurses themselves all play a role in constructing barriers to asthma management. There is a need for school nurses and school nurse leaders to focus efforts to develop strategies to overcome barriers to ensure evidence-based, best practice management of asthma in the school setting.

10. Pappalardo, A. A., Paulson, A., Bruscatto, R., Thomas, L., Minier, M., & Martin, M. A. (2018). Chicago public school nurses examine barriers to school asthma care coordination. *Public Health Nursing, 36*(1), 36-44. doi:10.1111/phn.12574

Well documented asthma disparities in Chicago pose a continual challenge for the Chicago Public Schools (CPS). Coordinated Healthcare for Complex Kids (CHECK) is a health care demonstration project funded by a Centers for Medicare and Medicaid Services Health Care Innovation Award. A collaborative partnership was formed between CHECK and CPS. With CHECK support, CPS administered a survey to 160 nurses to understand the asthma problems nurses perceived and interest in intervention. The greatest barriers for CPS nurses with asthma management are time and communication.

11. Raun, L. H., Campos, L. A., Stevenson, E., Ensor, K. B., Johnson, G., & Persse, D. (2017). Analyzing who, when, and where: data for better targeting of resources for school-based asthma interventions. *Journal of School Health, 87*(4), 253-261. doi:10.1111/josh.12494

Rates of uncontrolled asthma vary by demographics, space, and time. This article uses data on ambulance-treated asthma attacks in children to analyze these variations so that school districts can improve their asthma management interventions. Spatial and temporal analysis of ambulance data can be valuable tools for schools to focus policy and program interventions for the students in need of improved asthma management.

12. Salazar, G., Tarwala, G., & Reznik, M. (2018). School-based supervised therapy programs to improve asthma outcomes: current perspectives. *Journal of Asthma and Allergy, Volume 11*, 205-215. doi:10.2147/jaa.s147524

Daily administration of preventive asthma medications improves asthma control. However, poor medication adherence is one of the barriers in achieving improved asthma outcomes. School-based supervised asthma therapy programs have been implemented to address this barrier. The objective was to conduct a review of the literature on school-based supervised asthma therapy interventions and the effect on outcomes in children with persistent asthma.

13. Trivedi, M., Patel, J., Lessard, D., Kremer, T., Byatt, N., Phipatanakul, W., Pbert, L., & Goldberg, R. (2017). School nurse asthma program reduces healthcare utilization in children with persistent asthma. *Journal of Asthma, 55*(10), 1131-1137. doi:10.1080/02770903.2017.1396473

This study examined the impact of a novel, school nurse-supervised asthma therapy program on healthcare utilization. The authors demonstrate a significant reduction in healthcare utilization for children enrolled in this unique school nurse-supervised asthma program, which utilizes a clinical-school partnership to deliver preventative asthma medication to school-aged children under sustainable conditions.

## Resources

### General Information

- American Lung Association
  - [Asthma Basics](#)
  - [Asthma Checklist for School Nurses](#)
  - [Asthma Initiatives: Asthma in Schools](#)
  - [Asthma Policy for Schools](#)
  - [Managing Asthma](#)
- American Thoracic Society
  - [Asthma Center](#)
  - [Asthma Today](#)
- Asthma & Allergy Foundation of America
  - [Asthma Action Plan](#)
  - [Managing Asthma in Schools](#)
- Asthma & Allergy Network
  - [Healthcare Professionals](#)
- BlueCross BlueShield of Texas
  - [Taking on Asthma: For Schools](#)
- Centers for Disease Control and Prevention
  - [Asthma in Schools](#)
  - [National Asthma Control Program](#)
  - [School and Childcare Providers](#)
  - [Asthma: Texas](#)
- National Association of School Nurses
  - [Evidence-Based Clinical Guidelines: Asthma](#)
  - [Position Statement: Chronic Health Conditions \(Students with\): The Role of School Nurses](#)
- National Heart, Lung, and Blood Institute
  - [Asthma](#)
- Texas Department of State Health Services Health Promotion and Chronic Disease Prevention

- [Asthma: Schools](#)
- World Health Organization
  - [Management of Asthma](#)
  - [Management of Chronic Respiratory Diseases Training Manual](#)

## References

1. American Lung Association. (2019). Learn About Asthma. Retrieved from <https://www.lung.org/lung-health-and-diseases/lung-disease-lookup/asthma/learn-about-asthma/>
2. CDC. (2018). Controlling Asthma in Schools. Retrieved from [https://www.cdc.gov/asthma/controlling\\_asthma\\_factsheet.html](https://www.cdc.gov/asthma/controlling_asthma_factsheet.html)
3. CDC. (2018). Learn How to Control Asthma. Retrieved from <https://www.cdc.gov/asthma/faqs.htm>
4. Evans-Agnew, R. A., Klein, N., & Lecce, S. (2015). Asthma management in educational settings. *NASN School Nurse*, 30(6), 314-319. doi:10.1177/1942602x15607603
5. Isik, E., Fredland, N. M., & Freysteinson, W. M. (2019). School and community-based nurse-led asthma interventions for school-aged children and their parents: a systematic literature review. *Journal of Pediatric Nursing*, 44, 107-114. doi:10.1016/j.pedn.2018.11.007
6. Isik, E., & Isik, I. S. (2019). Asthma care coordination in schools by school nurses: an integrative literature review. *Public Health Nursing*. doi:10.1111/phn.12610
7. Nadeau, E. H., & Toronto, C. E. (2015). Barriers to asthma management for school nurses. *The Journal of School Nursing*, 32(2), 86-98. doi:10.1177/1059840515621607
8. Texas Department of State Health Services. (2019). What is Asthma? Retrieved from <https://www.dshs.state.tx.us/asthma/overview.aspx>

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