

Nebulizer Guidance for School Nurses



Asthma is a chronic health condition affecting an estimated 6.1 million children younger than age 18. Students with asthma may have triggers that cause their asthma to flare up. Children react differently to their asthma triggers, but those children in the school environment who have asthma as a chronic health concern should have an asthma action plan on file in the nurse clinic along with a rescue inhaler and spacer. Being prepared for a student's asthma attack ensures there is an emergency plan in place and helps provide a consistent plan for both routine and emergent care of a student with asthma.

As you write your student's asthma care plan, encourage open discussion with the student's family to explain that metered dose inhaler (MDI) and spacer is preferred in the school's clinic and give rationale. Include the primary care physician or pediatrician in the discussion if possible. MDI and spacer/mask have been shown to be as good as or better than nebulizers for the management of children with asthma exacerbation.

Ask questions during the case conference to ensure that the nursing staff is familiar with the specific concerns regarding the student's asthma and open discussion with the family by considering the following questions during your discussion:

- Is the child too ill to be at childcare/school? Children with chronic lung disease are at increased risk of complications and child care attendance may not be in his or her best interest.
- If a doctor determines nebulizer treatments are necessary, can they be done at home and inhaler be used during day (adding spacer and mask for younger children)?
- Has there been discussion with switching to an MDI with spacer per the American Academy of Pediatrics recommendations for children older than 12 months? Emphasize benefits of MDI including:
 - accurate and consistent dosing
 - reduced risk of bacterial contamination
 - fewer side effects
 - more convenient and portable
 - more efficient
 - less exposure to aerosols by clinicians
- Share written recommendations with the family. Here are two publications that may be helpful for families to share with healthcare providers:
 - <https://cts-sct.ca/wp-content/uploads/2018/07/2018-03-15-Ronly-Har-Even.pdf>
 - https://pediatrics.aappublications.org/content/142/1_MeetingAbstract/582

If nebulizer use is deemed absolutely necessary, the procedure should be as follows:

1. Use a room separate from where other children are receiving care (if possible) or one that has limited other use, with nearby sink.
2. Staff at a minimum should wear a surgical mask and eye protection. Gown and gloves are at the nurses' discretion.
3. During the treatment, staff should be only as close as necessary, taking care to keep their face as far away from and above the nebulizer as possible.

4. If child is old enough to hold nebulizer, nurse may step out of room and allow student to self-administer, but should continue to wear minimum of gloves, mask and eye protection in case child needs assist and for room tear down.
5. After the treatment rinse the tubing and wash other components.
6. Remove any PPE carefully, caring for the child first. Take care not to shake any pieces. Dispose of properly in trash.
7. Both the adult and child should their wash hands.
8. Close door to treatment room and let it remain unused for at least 60 minutes to allow for droplets to fall prior to cleaning.
9. Return child to classroom.
10. Wear gloves and mask to disinfect surfaces in the room.

References:

- Interim Infection Prevention and Control Recommendations for Healthcare personnel during the COVID-19 pandemic: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control-recommendations.html>
- Efficacy of metered-dose inhalers for children with acute asthma exacerbations: <https://pubmed.ncbi.nlm.nih.gov/21194171/>
- Bach to School with Asthma Toolkit for schools: <https://www.lung.org/lung-health-diseases/lung-disease-lookup/asthma/living-with-asthma/creating-asthma-friendly-environments/back-to-school-with-asthma-toolkit>
- School Attendance, Asthma and COVID-19: https://www.aaaai.org/Aaaai/media/MediaLibrary/PDF%20Documents/Libraries/SchoolAsthmaCoid_Final.pdf
- Asthma + Respiratory Foundation NZ: <https://www.asthmafoundation.org.nz/your-health/living-with-asthma/asthma-medication/children>
- A Guide to Aerosol Delivery Devices for Respiratory Therapists: https://www.aarc.org/wp-content/uploads/2015/04/aerosol_guide_rt.pdf
- Metered-Dose Inhaler versus nebulizer for the treatment of acute asthma exacerbation in preschool children: <https://cts-sct.ca/wp-content/uploads/2018/07/2018-03-15-Ronly-Har-Even.pdf>
- Parental perceptions about the use of metered dose inhaler vs. nebulizer in children with acute asthma: https://pediatrics.aappublications.org/content/142/1_MeetingAbstract/582

Acknowledgement: Special thanks to Sarah Bosslet, M.D., pediatrician at Riley Hospital for Children, who reviewed this guidance.

