

Caring for Children with Asthma in Community Program Settings

Unified Referral and Intake System (URIS)
4th edition
2026

Asthma

This document was created with health care professionals in asthma and community health. The Unified Referral and Intake System (URIS) wishes to acknowledge the contribution of the following individuals.

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CONTENTS

INTRODUCTION	1
CLINICAL INFORMATION	2
Asthma	2
Asthma episode	2
Triggers of asthma	3
Asthma medication	4
Medication devices	6
Supporting a child with asthma in the community program	10
When a child experiences an asthma episode	11
STANDARD HEALTH CARE PLAN	13
TRAINING	13
RESOURCES	14
REFERENCES	15

INTRODUCTION

The Unified Referral and Intake System (URIS) is a collaborative initiative of the provincial departments of Health, Families, and Education and Early Childhood Learning. It offers a standardized approach to classifying health care needs based on their complexity and determines the level of professional qualification required to safely support children with these health care needs.

URIS is designed to support community programs in meeting the needs of children with specific health care needs. Community programs eligible for URIS support include schools, licensed child care facilities, and publicly funded agencies that provide respite services.

This document includes standards of care for children who are diagnosed with asthma and prescribed a reliever medication. It does not apply to children who are prescribed reliever medication for other medical conditions.

CLINICAL INFORMATION

Asthma

Asthma is a chronic inflammatory condition in which the airways are hyper responsive to environmental factors called triggers. When exposed to triggers, the airways can become inflamed and swollen, produce extra mucus, and the muscles around the airway tighten. The result is airway narrowing and is characterized by symptoms including coughing, wheezing, chest tightness, shortness of breath, and an increase in the rate of breathing.

Asthma can vary from mild to severe. It can also vary over time. Sometimes, asthma in children will improve with age.

There is a genetic component to asthma. Although the exact cause is unknown, a person is more likely to develop asthma if they have a positive family history - such as parents or siblings – for asthma, eczema, food allergies, and rhinitis.

There is currently no cure for asthma, but it can be effectively managed with a combination of avoiding triggers and use of medication. Asthma can be effectively controlled in most people. A child with well-controlled asthma can participate fully in all activities and lead active, healthy lives.

Asthma episode

When a child experiences an asthma episode, the following symptoms may occur. They can vary from person to person and from time to time.

- Coughing
- Wheezing – whistling sound from the chest when breathing out
- Chest tightness – feeling pressure in the chest
- Shortness of breath
- Increase in the rate of breathing, even when the child is resting

Triggers of asthma

Asthma can be made worse by certain environmental factors called triggers. There are two main types: inflammatory triggers and symptom triggers.

Inflammatory triggers cause the airways to become swollen and produce extra mucus.

Common inflammatory triggers include:

- Respiratory infections (e.g., common cold, flu)
- Smoke (e.g., cigarette smoke, environmental tobacco smoke, wildfires, stubble burning, vaping aerosol)
- Allergens (e.g., animal dander, house dust mites, indoor and outdoor mold, pollens)

Symptom triggers cause the muscles around the airways to tighten. Swollen airways are more likely to tighten when exposed to symptom triggers than airways that are not swollen.

Common symptom triggers include:

- Cold, dry air
- Exercise
 - Children with well-controlled asthma can participate in almost any type of physical activity. Exercise may be more difficult if a child has poorly controlled asthma, if the weather is windy, dusty or cold, or the child is feeling unwell with respiratory symptoms.
- Rapid breathing from exercise, laughing, crying
 - Activities that increase breathing rate can cause airway muscles to tighten.
- Strong odours (e.g., paint fumes, perfumes, glues, cleaning products)
- Air pollution
- Stress

A combination of triggers may lead to asthma symptoms more quickly, such as exercising in cold, dry air or exposure to smoke, or when the child is feeling unwell with respiratory symptoms.

Avoiding triggers

Avoiding triggers is an important way to prevent asthma symptoms and may reduce the need for medication. Triggers vary from child to child, so it is important to identify and manage any known triggers.

Triggers can occur at any time, but certain seasons and activities may increase the likelihood of asthma symptoms:

- Cold and flu season: late fall to early winter

- Outdoor mold: early spring, late summer, and autumn
- Tree pollen: early spring
- Grass pollen: late spring to early summer
- Weed pollen: late summer to early fall
- Some outdoor activities may increase exposure to triggers, such as allergens or air pollutants.

Strategies to reduce exposure to triggers

Avoidance strategies should be tailored to the child's triggers and the community program setting. Strategies may include:

- Apply paint, varnish, or tar when children are not present.
- Keep windows closed during pollen and mold seasons.
- Limit exposure to pets with fur, hair, or feathers (e.g., dogs, cats, rabbits).
- Clean equipment, such as gym mats, chalk boards, and bookshelves, regularly to prevent dust buildup.
- Prohibit smoking in the facility and within 15 feet of any entrance or air intake vent.
- Inform the parent/guardian of activities such as smudging and allow time for alternative arrangements.
- Avoid wearing perfume or other strongly scented products.
- Use cleaning products with low or no strong odours.
- Include warm-up and cool-down exercises to help children adjust to changes in their breathing rate.
- Encourage children to wear a scarf or a winter exercise face mask over their mouth when exercising outdoors in cold weather.

Asthma medication

Medication is used to prevent or reduce airway inflammation and control asthma symptoms. Most asthma medications are administered by inhalation, either as an aerosol or dry powder. This method delivers medicine directly to the lungs where it is needed and minimizes side effects.

There are two main types of asthma medications: controllers and relievers.

Controllers (inhaled corticosteroids) prevent or decrease swelling in the airways and reduce mucus production over the long term.

- Also called "preventers".
- Taken daily, usually at home.
- Do **not** provide quick relief of asthma symptoms.

- Common controller medications include:

- Fluticasone (Flovent)
- Budesonide (Pulmicort)
- Beclomethasone (Qvar)

Relievers (bronchodilators) provide fast, temporary relief of asthma symptoms by relaxing muscles around the airways.

- Used when a child is experiencing asthma symptoms.
- Often identified by a blue cap.
- Side effects such as tremors, hyperactivity, racing heart, headache, and nausea may occur with high doses of reliever medication.
- Common reliever medications include:
 - Salbutamol (Ventolin, Airomir)
 - Terbutaline (Bricanyl)

Reliever medication must be available at the community program. It can be carried by the child or stored in an easily accessible location (e.g., child's backpack) to ensure it is available while the child is at the community program, during travel to and from, and for off-site activities such as field trips.

Children who experience exercise-induced asthma symptoms may be prescribed a reliever medication prior to exercise. It should be given as prescribed, usually 10 minutes before exercise begins. If asthma symptoms occur during exercise, reliever medication is administered and the child stops the activity until asthma symptoms have resolved. If the child needs assistance from community program personnel, it is recommended the parent/guardian complete an administration of medication form to specify when the reliever medication is administered.

It is not recommended to use reliever medication on a regular basis (e.g., every 4 hours) unless directed by a physician. Frequent use of reliever medication (without a combination controller medication in the same inhaler) is a risk for severe asthma exacerbations.

Combination medications (controller and reliever)

Combination medications control asthma symptoms by making the airways less sensitive to triggers. They include a corticosteroid and a long-acting bronchodilator in the same inhaler. They are available for certain age groups.

In Canada, Symbicort is the only combination medication approved for use as a reliever medication. If the child is prescribed any other combination medication (e.g., Zenhale), it is not used to treat an asthma episode in the community program.

Additional information on asthma medications can be found on the Asthma Canada website: <https://asthma.ca/get-help/treatment/>.

Medication devices

The most common device for delivering asthma medication is the metered dose inhaler (MDI). Turbuhaler and Diskus are other devices that may be used.

Resources on the use of medication devices and spacers are available online.

www.aboutkidshealth.ca/asthmaspacer

Metered dose inhaler

A metered dose inhaler (MDI) or “puffer” is an aerosol inhaler with a canister filled with liquid medication suspended in a propellant. When the canister is pushed down, a dose of medication is pushed out and into the lungs when the person breathes in.

Storage and Preparation of Metered Dose Inhalers (MDIs)

- MDIs are stored at room temperature (15-30°C).
- Do not leave MDIs in extreme temperatures for extended periods of time.
- If a MDI freezes, it should be replaced.
- For a new, unused MDI, shake it and release four puffs into the air to ensure that it is working properly.
- Inform parent/guardian if the reliever medication is expired. Do not use expired medication.

Spacer devices

It is recommended to use a spacer device with the metered dose inhaler (MDI). The MDI can be used without a spacer device for older children or a child who is able to use it with assistance. The Aerochamber is the most commonly used spacer device and comes with a mouthpiece or mask.

- The mouthpiece of a MDI fits into the spacer.
- The spacer ensures more medication reaches the airways, improving effectiveness.
- It can make it easier for children to administer the medication.
- A spacer device with a mask is recommended for children who cannot use a mouthpiece correctly. This may include younger children or a person with developmental or physical limitations. Transition to a spacer device with a mouthpiece is recommended when the child can use it correctly, as it delivers medication more efficiently.
- If the spacer device is cracked, broken, or coated in white, it is the parent/guardian's responsibility to clean or replace it. If the spacer device is cracked or white and the child is experiencing an asthma episode, it can still be used.

How to use a MDI and spacer

1. Perform hand hygiene.*
2. Shake the inhaler well (3 to 4 shakes) and remove its cap.
3. Put the inhaler into the spacer and remove its cap.
4. The child breathes out, away from the spacer.
5. Put the spacer mouthpiece in their mouth, between the teeth with lips closed around it.
6. Press the canister at the top of the inhaler.
7. The child breathes in slowly and fully through their mouth and holds their breath for 10 seconds or as long as is comfortable. The child may breathe in and out 5 to 6 times if they are unable to hold their breath.
8. Remove the spacer from the child's mouth.
9. Remove the inhaler from the spacer and replace the caps.
10. If a second dose is needed, wait 30 seconds and repeat the steps.

*Wash hands with soap and water or clean hands with an alcohol-based hand rub.

How to use a MDI and spacer with a mask

1. Perform hand hygiene.*
2. Shake the inhaler well (3 to 4 shakes) and remove the cap.
3. Put the inhaler into the spacer.
4. The child breathes out, away from the spacer.
5. Place the mask over the child's nose and mouth, ensuring there is a tight seal. The mask must fit snugly, with no gaps between the mask and the skin.
6. Press the canister at the top of the inhaler.
7. The child breathes in and out for 5 to 6 breaths.
8. Remove the mask from the child's face.
9. Remove the inhaler from the spacer and replace its cap.
10. If a second dose is needed, wait 30 seconds and repeat the steps.

*Wash hands with soap and water or clean hands with an alcohol-based hand rub.

How to use a metered dose inhaler (MDI) without a spacer device

1. Perform hand hygiene.*
2. Shake the inhaler well (3 to 4 shakes) and remove its cap.
3. The child breathes out, away from the inhaler.
4. Put the mouthpiece in their mouth, between the teeth with lips closed around it.
5. Press the canister at the top of the inhaler while the child breathes in slowly and fully through their mouth and holds their breath for 10 seconds or as long as is comfortable.
6. Remove the inhaler from the child's mouth.
7. Replace the cap.
8. If a second dose is needed, wait 30 seconds and repeat the steps.

*Wash hands with soap and water or clean hands with an alcohol-based hand rub.

Turbuhaler

The Turbuhaler is a dry powder inhaler where the medication is drawn out of the device and into the lungs when the person breathes in.

How to use a Turbuhaler

1. Perform hand hygiene.*
2. Unscrew and remove the cover.
 - Do **not** shake the Turbuhaler.
3. To load a new dose, hold the Turbuhaler upright, turn the coloured base one way and then back, until it clicks.
4. With their head tilted back slightly, the child breathes out, away from the device.
5. Put the mouthpiece in their mouth, between the teeth, with lips closed around it.
6. The child breathes in deeply and quickly and holds their breath for 10 seconds or as long as is comfortable.
7. Remove the Turbuhaler from the child's mouth.
8. Replace the cap.
9. If a second dose is given, repeat the steps.

*Wash hands with soap and water or clean hands with an alcohol-based hand rub.

Diskus

The Diskus is a dry powder inhaler where the medication is drawn out of the device and into the lungs when the person breathes in.

How to use a Diskus

1. Perform hand hygiene.*
2. Hold the Diskus level with one hand.
3. Place your thumb of the other hand on the thumb grip.
4. To open the Diskus, push your thumb away from you until the Diskus clicks. This will open the Diskus.
5. Slide the lever until you hear a click to load the medication.
6. The child breathes out, away from device.
7. Place the mouthpiece in the child's mouth, between the teeth, with lips closed around it.
8. The child breathes in deeply and quickly through the mouth and holds their breath for 10 seconds or as long as is comfortable.
9. Remove the Diskus from the child's mouth.
10. To close the device, slide the thumb grip back as far as it will go until you hear a click.
11. If a second dose is given, repeat the steps.

*Wash hands with soap and water or clean hands with an alcohol-based hand rub.

Nebulizer

A nebulizer, driven by an electric compressor, forces air through a liquid medicine to produce a fine mist that is inhaled through a mask or mouthpiece. A nebulizer treatment usually takes 10 to 15 minutes.

Nebulizers are rarely used for children with asthma but may be recommended in specific circumstances. The child's physician or nurse practitioner should be consulted to confirm that a nebulizer is required for the child in the community program.

Supporting a child with asthma in the community program

Children should be encouraged to manage their asthma independently. Most children can administer their asthma medication between the ages of 8 to 10 years, depending on their maturity, development, and cognitive abilities. Younger children, or those with developmental delays, may need assistance. Any child may need assistance if their asthma symptoms are severe.

Children with well-controlled asthma typically participate fully in routine activities, sleep through the night without asthma problems, do not experience asthma symptoms during the day, do not need reliever medication, do not have emergency room visits for asthma, and do not miss school or daycare because of asthma.

The following situations may indicate that a child's asthma is **not** well-controlled:

- Asthma symptoms prevent the child from participating in routine activities, such as recess or gym.
- The child is frequently coughing, wheezing, or experiencing shortness of breath.
- The child needs their reliever medication more than two times per week for an asthma episode. This does not include prescribed pre-exercise doses.

It is recommended to inform the parent/guardian if community program personnel observe signs that the child's asthma is not well-controlled. Sharing this information can help the parent/guardian and the child's healthcare provider address any concerns, if needed.

When a child experiences an asthma episode

When a child shows signs of an asthma episode, their reliever medication is administered as prescribed. Community program personnel are to assist the child in administering the medication, if needed.

The child is monitored until the symptoms of asthma improve.

1. Move the child away from their triggers, if known.
2. Have the child sit down.
 - Do not insist that the child lie down.
3. Ensure the reliever medication dose is administered as prescribed.
 - Assist the child if they are unable to use the medication independently.
 - If the child's medication is not with them, send another person to get it – do not have the child get it themselves.
 - If the child's reliever medication is not available, contact the parent/guardian.
4. Encourage slow deep breathing.
 - A quiet task or distraction may help the child focus.
5. Monitor the child for improvement of asthma symptoms.
 - Asthma symptoms should improve within 10 minutes of administering reliever medication.
 - Never leave a child alone during an asthma episode, even if they are independent. Supervision ensures the child takes their medication and that symptoms are monitored until they improve.
6. If asthma symptoms do not improve in 10 minutes, ensure reliever medication is administered again and contact the parent/guardian.
 - If the child is not well enough to remain at the community program, they should be picked up by the parent/guardian or emergency contact.
7. If asthma symptoms do not improve in 10 minutes after a second dose of reliever medication has been administered AND the parent/guardian cannot be reached, activate 911/EMS.

For children diagnosed with both anaphylaxis and asthma, epinephrine should be used first if it is unclear whether the child is experiencing an anaphylactic reaction or an asthma episode. Epinephrine can be used to treat life-threatening asthma episodes as well as anaphylactic reactions.

Most asthma symptoms do not require emergency care. However, immediate action is needed if any of the following signs are observed:

- Skin pulling in under the ribs (“belly breathing”)
- Skin being sucked in at the ribs or throat (“tracheal tug”)
- Greyish or bluish colour in lips and nail beds
- Shoulders held high with tight neck muscles
- Persistent coughing that does not stop
- Inability to speak in full sentences
- Difficulty walking

In a severe asthma episode, the child may not wheeze because there is not enough air moving in the lungs to generate a wheeze.

Responding to a severe asthma episode

1. Activate 911/EMS.
 - Delegate this task to another responsible adult.
 - Do not leave the child alone.
2. Give two puffs of reliever medication every five minutes until EMS personnel arrive.
3. Notify the parent/guardian.
4. Stay with the child.

STANDARD HEALTH CARE PLAN

A standard health care plan is implemented in the community program as the response to an asthma episode is consistent.

The parent/guardian provides child-specific information to the community program including:

- Asthma trigger(s), if known
- Name and dose of prescribed reliever medication
- Type of medication device used
- Location of reliever medication during attendance at the community program

The community program should also obtain written consent from the parent/guardian to administer the reliever medication if the child needs assistance.

A template that includes this information is available by contacting the URIS Provincial Coordinator.

TRAINING

Annual training is provided by a registered nurse to community program personnel on the care of children with asthma. Training includes:

- Recognizing the signs of an asthma episode
- Administering reliever medication
- Responding to an asthma episode

Training resources are available by contacting the URIS Provincial Coordinator.

RESOURCES

The following list includes resources that may be relevant to community programs in the care of children with asthma. The purpose and content of these resources may not be consistent with this document.

Children’s Allergy and Asthma Education (CAAEC) at Health Sciences Centre

Asthma and food allergy education programs for parents, school age children and teens

- YouTube channel “Allergy and Asthma Education”
[Allergy & Asthma Education – YouTube](#)
- Phone: 204-787-2551 Toll Free: 1-888-554-1141

Asthma Society of Canada

www.asthma.ca

[Short Guide for Teachers from asthma.ca](#)

Canadian Lung Association

www.lung.ca

Global Initiative for Asthma (GINA)

www.ginasthma.org

Canadian Thoracic Society

<https://cts-sct.ca/>

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