Objectives

- Discuss delivery devices for inhaled medications
- Demonstrate use of delivery devices
- Discuss recommendations for cleaning devices
- Discuss use of peak flow meters
- Recommendations for use of management plans
Devices

- Device Demonstration
- Advantages versus Disadvantages
- Cleaning Recommendations
- Age Recommendations
Metered Dose Inhalers
What is a Spacer?

- A spacer or holding chamber is a tool used with a metered dose inhaler (MDI).

- When used correctly, spacers help more medicine get to the lungs.
Spacers with Mouthpiece
Spacers with Mask
Reservoir Bag
Autohaler
Common MDI Mistakes

- Failure to remove cap from MDI
- Failure to shake MDI before using
- Using empty canister
- Failure to completely exhale prior to using
- Incorrect timing of actuation
- Incomplete inhalation
- Inhale through nose
- Fast instead of slow inhalation – whistle sound
- Failure to hold breath for 10 seconds
- Activate MDI several times instead of once
Flexhaler
Twisthaler
Aerolizer
Nebulizers

- A tool that lets you take medicine as a mist.
- Nebulizers may be used by children under 5 years of age and people who have problems using a metered dose inhaler.
- Generally, not required at school or place of work.
Air Compressor And Nebulizer Set-ups

Air Compressor

Nebulizer with Face Mask

Nebulizer with Mouthpiece
Nebulizer Concerns

- Expense
- Proper Maintenance of Air Compressor
- Bacterial Source
- Electricity
- Bulky
- Timely
- Medication Waste
What Are Peak Flow Meters?

- Devices that measure the amount of air that can be blown out of the lungs
- Peak flow meters can detect changes in the lungs hours, even days, before symptoms appear
- Predicted peak flow numbers are based on a combination of your height, your gender, your age and your normal values when you are not having symptoms
- The colored zones on the peak flow can help determine how your overall management plan is working, when to take your medicine, and when to call the doctor
Peak Flow Meters

[Image of peak flow meters]
Stickers
What Is An Action Plan?

- A color coded plan giving instructions for treatment based on symptoms and/or peak flow readings.

- Warning signs are not the same for everyone.

Common signs are listed in the plan using **green - yellow - red** the colors of a stoplight, to help you determine what type of treatment is needed.
# Asthma Action Plan

**Emergency Contact:**

**Doctor’s Name:**

**Phone number:**

**DOB:**

**Date:**

**Pharmacy:**

### Asthma Severity:
- Intermittent
- Persistent
- Mild
- Moderate
- Severe

### Asthma Triggers:
- Tobacco Smoke
- Animals (furry or feathered)
- Dust, mold, pollen, cockroaches
- Colds/Respiratory Infection
- Exercise
- Strong odors or cologne
- Other

### Peak Flow:
- Height (inches):
- Predicted Best
- Personal Best

### Last Fit Shot:

### Protected Airway:

#### CONTROLLER - Green
- Breathing is good
- No cough or wheeze
- Can play and work

Peak Flow > __________

(80-100% of best)

1. Use **CONTROL** medicine **EVERY DAY** (don’t stop taking without talking to your doctor).

   - __________ puffs of __________ times a day, everyday.

2. (check of applicable) __________ puffs of

   - 10-15 minutes before every active exercise.

### CAUTION - Yellow

- Coughing (may be worse at night or with exercise)
- Wheezing
- Chest tightness

Peak Flow _________ to _________

(60-80% of best)

1. Take your **RESCUE** medicines and continue your **CONTROL** medicines.

2. __________

3. Call your doctor if you need rescue medicine for more than 24 hours or 2 times a week.

4. Always check for improvement in symptoms and/or repeat peak flow meter 10-15 minutes after using rescue medicine. Continue to follow plan.

### EMERGENCY - Red

- Breathing hard and fast (shortness of breath)
- Nose flares out
- Sinking in of skin between ribs and neck (retracting)
- Grunting
- Gray or blue lips or fingernails

Peak Flow < __________

(<50% of best)

1. Take your **RESCUE** medicine immediately and get help!

2. __________

3. If you cannot contact your doctor or your parent/guardian: Call 911 or go directly to the Emergency Department.

### Helpful Hints:
- Always use a spacer device when using metered dose inhalers.
- Always rinse your mouth after using controller medicine.

### WHITE - PATIENT  YELLOW - CHART  PINK - SCHOOL

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*Disclaimer: This material is provided for educational purposes only and is not intended as medical advice.*

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*University Health System of Eastern Carolina*
Asthma Action Plan

Green Zone Action Steps
1. Avoid triggers that cause your asthma to be worse (smoke, cold weather, allergies, infections, etc.).
2. Monitor peak flow and check for warning signs at least two times a day and always before and after using rescue medicine. Record these numbers as instructed.
3. Take the daily controller medicines listed below:
   - Number of puffs: ___
   - Times a day, every day: ___
   - Times a day, everyday: ___

   These medicines are used to control and prevent asthma symptoms. Do not stop taking these without talking to your doctor.
4. (check if applicable) ___ puffs of ___
   - 10-15 minutes before exercise.

Yellow Zone Action Steps
1. Take ___ puffs of ___ every ___ hours until back in Green Zone. This is your rescue medicine. Continue for 24-48 hours. If you continue to require rescue medicine after 24-48 hours or if you experience asthma symptoms over 2 times a week, call your doctor. Your controller medicine may need to be changed.
2. Always repeat your peak flow and check for improvement in warning signs 10-15 minutes after using rescue medicine.
3. Continue taking your daily controller medicine as follows:
   - Number of puffs: ___
   - Times a day for ___ days; then continue as written in the above Green Zone Plan.
4. ___

Red Zone Action Steps
This is an emergency and could be life threatening.
1. Take ___ puffs (or a reliever) of___
   - and repeat your peak flow and/or check for improvement in warning signs in 10 minutes.
2. If you are not back in the Yellow or Green Zone, repeat above step every ___
   - for a total of ___ treatments.
3. Always call your doctor at ___ to notify him or her of your Red Zone event.

Seek medical care immediately if you remain in the Red Zone. If you continue to have difficulty breathing, if you have trouble walking or talking due to shortness of breath or if your lips or fingernails are blue.

Parents’ name: ___
School: ___
Doctor’s name: ___
Date: ___
Pharmacy: ___
Contact Information

Pediatric Asthma Program
Vidant Medical Center
Phone: 252-847-6834
Email: lcjohnso@VidantHealth.com