Tracheostomy CARE

This book is provided to help you better manage the care of your Tracheostomy.

UnityPoint Health Des Moines
Tracheostomy Care

This book belongs to:

UnityPoint Health
Des Moines
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Patient’s Full Name: 

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<tr>
<td>Phone:</td>
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<tr>
<td>Pulmonologist (Lung Doctor):</td>
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<td>Phone:</td>
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<tr>
<td>Ear, Nose, Throat (ENT) Doctor:</td>
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<td>Phone:</td>
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<td>Other:</td>
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<td>Phone:</td>
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<td>Other:</td>
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<td>Phone:</td>
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Call 911 for emergency
# GENERAL INFORMATION

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<tr>
<td>Phone:</td>
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<td>Phone:</td>
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<td>Home health nurse:</td>
<td></td>
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<tr>
<td>Phone:</td>
<td></td>
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<tr>
<td>Pharmacy (name and address):</td>
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<td>Phone:</td>
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**Ventilator Information:**

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<tr>
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## GENERAL INFORMATION

### MEDICINES

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<th>WHEN GIVEN</th>
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**Patient’s Name:**

**Patient’s Home Phone:**

**Date Last Updated:**
EMERGENCY PLAN

Doctor’s Telephone Number: ________________________________

Home Health Care Nurse’s Number: __________________________

Emergency: Call 911 or ________________________________

Notes:____________________________________________________________
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____________________________________________________________________
This book will help with the tasks of basic home care. This book will be yours to keep and use as a guide.

You will learn about the respiratory system and tracheostomy care. Depending on specific needs, you may also learn about ventilator care.

This book serves only as a guide. Be sure to follow the doctor’s instructions if they are different than what is printed in this book.

GETTING READY TO GO HOME

During the hospital stay, a team of healthcare workers will prepare you to go home.

Teaching you how to provide care at home will begin in the intensive care unit. You and your caregivers will learn skills and practice how to provide care at home.

To make sure you and your caregivers have the basic skills to provide home care, about one week before discharge from the hospital the caregivers will do all the cares for the patient in the hospital room for 24 to 48 continuous hours. This means the caregivers will sleep in the patient’s room overnight. The caregivers will provide all cares, including bathing, feeding, and skin care as well as taking care of the necessary equipment. The hospital staff will be there to act as your backup team in case there is an emergency.

Feel free to ask questions at anytime.
Advance directives are legal papers such as a Living Will or a Durable Power of Attorney for Health Care that say what a person wants done medically, in case he or she is not well enough to make decisions. Advance directives make sure a person’s values and important wishes are carried out.

Do-not-resuscitate (also called “DNR”, “no code” or “allow natural death”) is not the same as having an advance directive. DNR means that cardiopulmonary resuscitation (CPR) will not be done when the heart has stopped beating. CPR actions include pressing down on the chest to get blood moving through the heart again, and using a bag to push air into the lungs. If CPR is not to be done, the doctor must write an order on the patient’s chart each time the patient comes to the hospital.

If you would like information on making advance directives, please ask your nurse.
What is a Tracheostomy?

A tracheostomy (tra-kee-AH-stuh-mee) or trach (trake) is a tube to help you breathe. It is put into a small opening in the neck called a stoma, and passes into the trachea. The trachea is also called the windpipe. The outer cannula of the trach (sometimes it is called a trach tube) fits into the stoma. The inner cannula fits inside the outer cannula.

Trach tubes (outer cannulas) come in different sizes and may be made of metal, plastic or foam. Trach tubes vary in length and diameter. It is important to know the size and brand of your trach tube.

IMPORTANT: You should ALWAYS have a REPLACEMENT (spare) Tracheostomy tube of the same size and a size smaller in case of emergency.

Parts of the trach tube:

**Outer Cannula**
The outer cannula (trach tube) is the outer tube that is inserted into the trachea through the surgical opening called the stoma. It provides a passage for breathing and often has a removable inner cannula. The outer cannula is shown at the bottom in the photo to the right.

**Obturator**
The obturator (shown at the top of the above photo) fits into the trach tube to make insertion of the trach easier. A fitted obturator should be packaged with each trach tube and is designed for use with only one size trach tube. The obturator should be kept wrapped and placed close by, in case re-insertion of the trach tube becomes necessary.

**Inner Cannula**
The inner cannula is only found on a two-piece trach tube system. The inner cannula is put inside the outer trach tube. It is locked inside the trach tube, either by a twist lock or snap lock. (See above photo. The inner cannula is the middle item).

**Flange** (faceplate)
The flange is the hard plastic piece located at the top of the trach tube that lies against the neck and is used to hold the trach ties. The flange also contains markings to tell the size and make of the trach tube. (See photo on following page. The flange is shown attached to the outer cannula, the bottom item in the photo).
What is a Tracheostomy?

Parts of the trach tube:

- Obturator: Used to guide the tube into the opening when changing the trach tube.
- Flange/neck plate: “Wings” on the trach tube that the ties are secured to. The flange will have the brand and size of trach tube printed on it.
- Cannula: Part of the trach tube that is inside the windpipe.
- Inner cannula: Part that is inside the cannula of a double cannula trach. The inner cannula may be removed for cleaning.

Uncuffed Trach
Reasons for a Tracheostomy Tube

There are many reasons you may need to have a tracheostomy tube placed. Some of the common reasons are listed below. Your doctor and healthcare team will decide if and when you will have surgery for a tracheostomy. The tracheostomy tube may stay in place permanently or only for a short time depending on your needs.

Common reasons a trach may be needed:
- Subglottic stenosis
- Tracheomalacia
- Vocal cord paralysis
- Problems of the airway present at birth (example: Pierre Rubin Syndrome)
- Sleep apnea
- Infections, such as epiglottitis or croup
- Laryngectomy
- Laryngeal, severe neck, face or mouth injuries
- Burns of the airway
- Bronchopulmonary Dysplasia (BPD)
- Chronic (long lasting) lung disease
- Diaphragm problems
- Need for long-term ventilator support
- Aspiration
- Fractured vertebrae or spinal cord injury
- Neuromuscular diseases such as muscular dystrophy that weaken the muscles needed to breathe
- Long-term coma
- Chronic Obstructive Pulmonary Disease (COPD)
- Pulmonary Fibrosis
The respiratory system allows you to breathe. Breathing (ventilation) is when the lungs take in and send oxygen throughout the body, and collect and get rid of the carbon dioxide the body makes. This is called gas exchange. In healthy people, gas exchange happens in small air sacs of the lungs, called “alveoli.”

Oxygen is needed to survive. All of our body’s organs need oxygen. Oxygen is breathed in through the mouth or nose and passed through the larynx then through the trachea (wind pipe) to the lungs. The oxygen from the air we breathe (inhalke) is exchanged in the alveoli – oxygen goes into the alveoli while carbon dioxide comes out of the alveoli. When we breathe out (exhale), the carbon dioxide leave the body.

If the body, because of injury or illness, cannot perform the respiratory function, gasses cannot be exchanged. With too much carbon dioxide and/or too little oxygen, our body’s tissues and organs begin to die. When the lungs cannot inflate (breathe in, inhale) or deflate (breathe out, exhale), mechanical ventilation must be done to avoid tissue damage and eventual death. Mechanical ventilation can be done with a resuscitation bag (sometimes called a BVM or an Ambu) for a very short period of time, or by a machine (ventilator) for a longer time. Use of the resuscitation bag will be covered in a later chapter.
General & Emergency Supplies Needed for Tracheostomy Care

The following supplies should be kept at the bedside or area the patient will be at most of the time. This is in addition to the supplies in the trach “to go” bag.

**Supplies:**
- Extra tracheostomy tube - same size
- Extra tracheostomy tube - one size smaller
- Obturator
- Suction catheters, machine and tubing
- Normal saline (if needed)
- Breathing bag
- Oxygen source (if needed)
- Tracheostomy tube holder (Velcro ties)
- Tracheostomy split gauze (directed by your doctor)
- Tracheostomy cleaning supplies
- Humidification device
- Pulse oximetry (if ordered)
# EMERGENCY PLAN

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<th>POSSIBLE SOLUTIONS</th>
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<td>If you have any doubts and you feel it is an emergency, call 911 for assistance</td>
<td>911</td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>Tylenol if ordered by your doctor</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Change in secretion amount, consistency, color</td>
<td>A change in color of sputum can be a sign of infection or dehydration</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Decreased responsiveness, doesn’t awaken</td>
<td>911 or Doctor or home health care nurse</td>
<td></td>
</tr>
<tr>
<td>Filling tracheostomy cuff but it doesn’t create a seal</td>
<td>The balloon or cuff may have split or burst. Requires tracheostomy change. Call contact if problem isn’t fixed.</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Coughing abnormally</td>
<td>May need suctioning or to deflate or inflate the cuff. If cough is abnormal and there is also a fever, call contact.</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Bloody secretions</td>
<td>Be careful with suctioning; try to go down gently with the suction catheter and not as far. If bloody secretions continue or if there are large amounts, call contact.</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Low-pressure alarm</td>
<td>Check all circuit connections and tighten. If cuff is not fully inflated, add more air. If alarm continues, call contact.</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>High-pressure alarm</td>
<td>Check need for suctioning. Straighten any kinks in tubing. Drain water in tubing. Listen to lungs and give albuterol treatments if ordered by doctor. If the alarm keeps sounding, call contact.</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Cannot administer medicines or flush the feeding tube</td>
<td>Make sure feeding tube is not clamped or kinked.</td>
<td>Doctor or home health care nurse</td>
</tr>
<tr>
<td>Any bloody or yellowish drainage from tube sites</td>
<td>May be a sign of infection. If also a fever, call contact.</td>
<td>Doctor or home health care nurse</td>
</tr>
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</table>
EMERGENCY CARE FOR YOUR VENTILATED PATIENT

- Any time you hear the vent alarm, you should make sure the chest is rising with each ventilator breath.
- Look for disconnected tubing.
- If in doubt, ventilate using the resuscitator bag.
- Look for changes in skin color. Darkening or blue skin tones may mean the patient is not getting enough air or oxygen to breathe.

Call 911

When a ventilator or tracheostomy is being used, the following should be at the bedside:

1. A Bag Valve Mask (BVM) resuscitator bag.
2. Complete suction set up, ready to use.
3. Appropriately sized suction catheters (14 fr. is the most commonly used). Ballard suction is set up for most vents.
4. Extra tracheostomy in correct size and type.

If you cannot ventilate using the BVM resuscitator then you should try to suction the tracheostomy. Using normal saline available in the small pink vials may loosen thick secretions allowing you to remove them enough to give breaths with the resuscitator bag.
MANUAL RESUSCITATION USING A BAG VALVE MASK

The Bag Valve Mask (BVM) is used to do the work of breathing during emergencies, such as when the ventilator stops working or it is very difficult to breath.

1. Connect the BVM to oxygen at 15 liters per minute.
2. If tracheostomy has a cuff, inflate the cuff.
3. Connect the end of the BVM to the tracheostomy.
4. Gently squeeze the bag on the BVM every 4 to 5 seconds releasing pressure between squeezes. You do not have to totally collapse the bag, just squeeze it about half way.
5. Make sure the chest is rising with each squeeze of the bag.
6. If the chest does not rise, have someone call 911 as you start to use tracheostomy emergency procedures.
Emergency Procedures

There are times that adults with tracheostomy tubes become sick and have trouble breathing. Always be prepared. You may choose to learn CPR (cardiopulmonary resuscitation) before you leave the hospital (ask your nurse for resources). The following list of instructions will remind you of the important steps of CPR.

Remember that a person will stop breathing before their heart stops beating. You must keep the trach tube open to help you breathe. Watch your breathing carefully. If you feel or look sick or are having trouble breathing—immediately call 911.

Keep emergency equipment available and ready at all times. This includes:
- Suction machine and supplies
- Oxygen
- Breathing bag (Ambu bag) and mask
- Saline
- Extra trach tube of the right size and one size smaller

Caregivers:

1. Check to see if you can wake them.
   - Tap them gently
   - Talk to them loudly

2. Call for help.
   - If they don’t move, blink, or make noise/talk.
   - If someone is with you, send them to call 911.

3. Check for breathing.
   - Lay them on firm flat surface and lift up the chin.
   - To see trach easier, place a rolled up towel or blanket under shoulders.
   - Are they breathing?
   No Response and no breathing Call 911 and begin CPR


<table>
<thead>
<tr>
<th>Hand location</th>
<th>Compressions</th>
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</thead>
<tbody>
<tr>
<td>Put heel of one hand on the lower half of breast-bone. Put other hand on top of the first hand</td>
<td>Push down at least 2 inches</td>
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<td></td>
<td>Push hard and fast, at least 100 pushes every minute.</td>
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Continued on next page.
5. Give 2 breaths.

- Breathing bag to tracheostomy tube
- Mouth to tracheostomy tube

- Breathing bag and mask to face with tracheostomy stoma plugged (using a finger or tape)
- Breathing bag and mask to the tracheostomy stoma.

6. Deliver a set of 30 compressions to 2 breaths until help arrives.
   - If they begin to move, you can stop the chest compressions and just give the breaths every few seconds.
   - Since they have been given extra breaths and/or chest compressions, they need to be seen in the emergency room even if they seem fine now.
What To Do If The Trach Comes Out

- If able, rinse the trach with normal saline solution. Don’t dry it. It will be easier to insert if wet.
- If you can’t clean off the trach fairly quickly, use the 2nd trach you have for a back up.
- Remove the inner cannula and insert the obturator in its place in the trach tube.
- Insert the trach tube into the stoma and down without too much force. When the trach tube is in, quickly remove the obturator. **It is not possible to breathe with the obturator in place.** Secure the trach collar and trach ties. Put the inner cannula back in.
- If the trach tube doesn’t go in easily, try turning it to one side as you insert, then back to center position as it goes in.
- If you have trouble, use the smaller trach.
- If the trach tube still doesn’t go in, call 911 for help and keep calm. The stoma won’t close up before help arrives.

**Call 911 Immediately If:**

- The trach tube falls out and you can’t get it back in.
- Suctioning does not help with shortness of breath and coughing.
- If blood is coming from the stoma or you are suctioning large amounts of blood.
- Chest pain.
Complications

Adults who have tracheostomy tubes are at higher risk for some illnesses and problems than adults without them. These complications include:

- Trouble breathing
- Pneumonia
- Dehydration
- Cardiac or respiratory arrest (stop breathing)

Trouble Breathing
Adults usually have trouble breathing because there is mucus in the trach tube. It is normal for the body to make mucus, but it must be suctioned out of the trach tube frequently to prevent problems with breathing.

Signs of trouble breathing:
- Breathing fast
- Pulling in of skin between ribs when breathing
- Irritability or restlessness
- Pale, blue, purple lips
- Nostrils moving in and out when breathing

Signs of a mucus plug OR trach tube is dislodged:
- Signs of trouble breathing
- Wheezing or whistling sound
- Mucus seen bubbling from trach tube opening
- Gurgle sound from trach tube
- Rattles felt over the chest

What to do:
- Suction the trach tube
- Give oxygen or extra breaths with the breathing bag
- If chest does not rise, change the trach tube immediately
- Try to suction again
- Call 911 for help

Continued on next page.
Complications

Pneumonia
Adults with trach tubes often get a lung infection called pneumonia. When an adult gets pneumonia, the air sacs that help you breathe get filled with fluid and mucous and air can not get through the lungs.

Signs and symptoms of pneumonia:
- Fever
- More mucus that usual
- Trouble breathing
- Increased coughing
- Mucus that is yellow or green and sometimes with an odor

What to do:
- Follow the instructions in this manual to prevent infections
- Suction the trach tube frequently
- Stay sitting up as much as possible
- Call your doctor for an appointment or go to the local emergency department

Dehydration
Adults may lose extra fluids for several reasons. The most common are fever, vomiting or diarrhea. Adults with a trach also lose extra water from breathing fast.

Signs of dehydration:
- Decreased urination
- Dark or strong smelling urine
- Dry mouth and tongue
- Thick or sticky trach mucus

What to do:
- Give lots of humidity to the trach tube (see humidity section of this manual)
- Drink lots of liquids
- Call your doctor
When is suctioning necessary?
Unable to cough up secretions.
Secretions are visible in the trach tube and are unable to be coughed out.
There might have been aspiration (breathing food or fluid into the lungs) which is causing choking.
You hear wheezing, bubbling or gurgling during breathing.

**Suctioning is a CLEAN procedure and does not require sterile gloves.**

The most common times for suctioning are:
- Before eating
- Before sleeping
- Before changing the trach tube
- When first waking up from sleeping

You will need to be suctioned more frequently if you are sick. **Do not** suction unless you have signs that it is needed. Suctioning too often can cause more mucus to be produced or damage to the trachea.

**Signs that you need to be suctioned:**
- Gurgling or bubbling of mucus from trach
- Increased coughing
- Restless or anxious
- Difficulty eating or drinking
- Difficulty breathing—nasal flaring, retractions, breathing faster than usual
- Lips, mouth, fingernails looking pale, gray or purple/blue

What to Watch For
It is normal for you to cough with suctioning. Take a few breaths and calm down between suction catheter passes. If you are pale, blue or gray, give extra oxygen or breaths with the breathing bag. If you have a pulse oximeter monitor, watch your oxygen level during suctioning. If the oxygen level is less than 92 percent, you will need extra oxygen or extra breaths using the breathing bag.

Each time you suction your trach, you need to look at the mucus to see what color it is, how thick it is and the amount removed. This information will be important to your doctor if you become sick.

**Possible kinds of mucus include:**
- Clear or white: This is normal.
- Yellow, green or foul smelling: Infection. You will need to call the doctor and suction more frequently.
- Bloody or blood streaked: Not enough humidity or moisture.
Suctioning

BALLARD IN-LINE SUCTIONING

Most home ventilators include a “closed” suction system that allows suctioning of the trach without disconnecting the ventilator. The suction system (often called a “Ballard” which is a brand name) is made up of a suction catheter that is inside a clear sleeve and is changed every one to three days. Ask your home healthcare nurse how often to change the Ballard.

At the top of the Ballard system is a “T-piece” connector and a small port where saline can be put in to flush the catheter. The long catheter is covered by a sleeve and at the end of the Ballard system is the control valve and the connector for the suction tubing.

Ballard® in-line catheter

1. It may be necessary to pre-oxygenate the lungs before suctioning.

2. Be sure to lift and turn the thumb piece to unlock it.

3. Grip the T-piece with one hand. Move the suction catheter into the trach tube with your thumb and forefinger of the other hand, going in 4 to 5 inches.

4. You can put normal saline through the port after the catheter has been moved into the trach tube. Do not apply suction when you are putting in the saline.

5. Putting in normal saline is not routine and should be done only if the secretions seem very thick or if they are hard to suction.

6. Press the control valve to apply suction. Maintain your grip on the T-piece with one hand and gently withdraw the suction catheter back out of the trach until the black mark on the suction tube is seen at the top of the T-piece. Make sure the suction catheter is fully out of the trach tube – look for the black mark. **This is a very important step.**

7. If you see the sleeve inflating, push the suction catheter in just a bit so the black mark is still visible. If the sleeve inflates, it is because the catheter is pulled out too far.

8. After suctioning, flush the catheter by pressing down on the control valve and slowly squirting saline solution into the port at the top of the Ballard system while maintaining suction.

9. Be sure to lift and turn the thumb piece to lock it.
Suctioning

USING A SUCTION CATHETER

SUPPLIES

- Suction machine
- Suction catheter
- Sterile water
- Gloves
- Clean plastic bag or container
- Clean cup

(People are sometimes able to suction themselves and will need a mirror as part of supplies.)

SUCTION CATHETER PROCEDURE

1. Wash your hands.
2. Turn on the suction machine and put your thumb over the suction port to test for suction (between -80 and -120).
3. Pour water into the clean cup (this will be used for rinsing the suction catheter).
4. Open the suction catheter package.
5. Put on clean gloves (avoid touching anything except the suction catheter).
6. If there are dry or thick secretions, try squirting 2 to 5 ml of saline into the trach tube before suctioning (small pink vials).
7. Put the suction catheter into the trach tube and gently move the catheter into the trachea until you meet resistance or a cough is initiated.
8. Put your thumb over the suction port and slowly pull the suction catheter out of the trach.
9. Try to keep the suctioning less than 10 seconds due to shortness of breath during suctioning.
10. Allow a rest period (if oxygen is used, put the oxygen back on between suctioning).

Continued on next page
Suctioning

USING A SUCTION CATHETER

SUCTION CATHETER PROCEDURE CONTINUED...

11. Mucous/ Secretions: What to observe when suctioning?
   - Normal: Clear, with no odor.
   - Infection: Yellow or green with a foul smelling odor.
   - Blood: It is normal to see a few streaks of blood. Please notify your home health nurse or doctor if there is a large amount of bright red or old dark blood.
   - Caution: If there is bleeding or if you think there might be an infection, call the doctor.

12. Rinse the suction catheter in the cup of water.

13. Repeat suctioning if necessary until the lungs are clear of secretions and breathing has improved.

14. Rinse the suction catheter and put it in a plastic bag or container to use again, but make sure you throw it away at the end of the day.

15. Empty the suction collection bottle daily or as needed. (You can put a small amount of vinegar in the collection container to help keep it clean.)

16. If you need to suction the mouth, use a tonsil or yankauer suction tube.

Yankaur Tip and Suction Tubing
Yankaur Suctioning

There may be times that you are able to cough the mucus to the top of the tracheostomy tube. When this happens it is all right to use a Yankaur suction tube to suction at the top of the trach tube. You will still need to suction more deeply with a catheter at least one to two times each day.

Procedure:
1. Wash your hands.
2. Attach the Yankaur adapter to the suction tubing.
3. Turn on the suction machine.
4. Place the tip of the Yankaur adapter to the trach tube opening.
5. Remove from trach tube and rinse with water.
6. Do not leave the tip near the opening for more than 5 seconds—you can’t breathe with the tip in the trach opening.
Tracheostomy Care

Diagram of a tracheal tube:

Changing the Tracheostomy Tube

Normally, the trach tube is changed once a month by the home health nurse or by the doctor. Some caregivers and patients are able to learn how to change the trach tube. Be sure to talk to your doctor about it. You will also learn how to change the inner cannula.

Cleaning the Tracheostomy

Cleaning needs to be done if the trach tube has an inner cannula (either disposable or reusable). The inner cannula allows you to see and clean out secretions which could block the trach tube. The inner cannula should be cleaned at least two times a day (morning and evening) and anytime you think the inner cannula might be partly or totally blocked.

In the hospital your health care provider used the sterile method when taking care of the trach due to a greater chance of infection in a hospital setting. At home, you will be taking care of the trach using clean method.

Equipment needed: (Some of this is provided in a trach care cleaning kit.)

- Small wash bowl for trach care use only
- Cleaning solution depending on needs
- Sterile water
- Protective gloves
- Small non-abrasive brush and/or pipe cleaners and/or quality cotton swabs (like Q-Tips©)
- Lint free cloth
- Inner cannula (depending on type of trach)
- Clean towel

Continued on next page
Tracheostomy Care

Cleaning the Tracheostomy Continued...

Procedure:
1. Lay down the clean towel, put the cleaning solution in the bowl or in the container provided in the trach care cleaning kit.
2. Put on gloves and hold the faceplate of the trach tube with one hand (using thumb and index finger to keep the faceplate from moving), take hold of the inner cannula using the other hand. Remove the inner cannula and place it in the cleaning solution. If it is a disposable inner cannula throw it away and go to step 4.
3. Using the non-abrasive brush or pipe cleaners, gently remove mucus and secretions. Rinse well with sterile water and dry completely with the cloth.
4. While holding the faceplate to make sure it doesn’t move, put the inner cannula back into the trach tube.
5. Before cleaning around the trach at the stoma, examine the stoma for any changes. Swelling, redness, drainage, foul smell, or tenderness should be reported to your home health nurse or the doctor, after you finish trach care.
6. Clean around the stoma using the cotton swabs with sterile water, starting at the stoma and cleaning outward.
7. Clean the faceplate with cotton swabs dipped in sterile water.
8. If desired, place a clean split gauze under the faceplate, up and around each side of the stoma.

Notes: Your cleaning solution will be ____________________________________
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Tracheostomy Care

Tracheostomy Ties

- Tracheostomy ties hold the trach tube in place. The ties can be changed when they become soiled or damaged.
- It is important to check the tracheostomy ties when you do trach care or suctioning to make sure they are secure so the trach tube does not come out accidentally.
- An assistant is needed when changing the ties. One person needs to hold the trach in place until the new ties are secure.

Equipment needed:

- Tracheostomy ties (there are different brands)
- Clean gloves
- Second person to be an assistant

Procedure:

1. Wash hands.
2. Remove ties from package.
3. Put on clean gloves (optional).
4. While you are doing the rest of the steps, the assistant holds the trach tube gently until both new ties are secure and in place.
5. Remove the first soiled tie from one side of the trach. Next, thread the new Velcro© tie through the hole in the trach faceplate and fold the end back onto soft cloth of neck band to secure the Velcro.
6. Pass the collar behind the neck.
7. Remove the second soiled tie from the other side of the trach faceplate and place the second clean tie. Thread the new tie through the hole in the trach faceplate and fold the end back onto soft cloth of neck band to secure the Velcro.
8. Adjust the trach collar to allow 1-2 finger widths between the neck and collar. This will make sure the trach tube is secure.
9. The excess length of collar may be trimmed.
10. Most trach collars may be washed with mild soap and water and used again. Let the collar air-dry on a towel. You must secure trach with a new collar after removing the old.

Notes: ____________________________________________________________
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Home Ventilator Guide

Many adults who receive tracheostomy tubes also need the help of a breathing machine or ventilator. Most of the teaching will be done by the home equipment company respiratory therapists. Your nurses will also be available to help you understand and answer your questions.

Reasons you may need to be on a ventilator:
- Unable to breath on own.
- Support for a weak breathing pattern.
- To prevent fatigue and allow for rest.

Some adults need the help of the ventilator all of the time. Others may only need the to use the ventilator when they are sick or sleeping.

Settings/Monitoring
The doctor will determine the ventilator settings that will help you. Only the doctor can decide when to change the ventilator settings. **Do not ever change the ventilator settings by yourself!**

Monitor your breathing and ventilator settings several times a day (ventilator settings page 2). If you are having trouble breathing, check ventilator settings. If they are different, call your home medical equipment company immediately. If you are not breathing easily call 911.

Look for these problems:
- Very fast or very slow breathing, sucking in of chest.
- Blue, gray or purple color of lips, skin or fingernails.
- Are you extra sleepy or extra irritable?
Home Ventilator Guide

A ventilator, also known as a respirator, is the equipment used to assist breathing by pushing air into the lungs.

Mechanical ventilators are used by people of all ages for a number of reasons. The mechanical ventilator is a form of “life support” that helps a person breathe. Ventilators make breathing more comfortable, recovery faster, and they allow some people to live at home.

Photo from www.NYU.edu.com
COMMON VENTILATOR DEFINITIONS

These are some common ventilator definitions provided just for your information. Your home health nurse will be able to answer your questions.

**Tidal Volume**: Size of breath.

**Rate**: How many breaths the ventilator gives every minute.

**Assist/Volume Control**: Setting in which a breath is given at a set size at a set rate. If breathing is faster than the set rate, the ventilator will give the pre-set tidal volume for any extra breaths.

**Pressure Control**: Setting similar to volume control but the pressure of each breath is set instead of the size. Size of the breath will vary depending on how stiff or stretchy the lungs are.

**SIMV**: Setting in which a breath is given at a set size and at a set rate. If breathing is faster than the set rate, the patient will control the size of the extra breaths.

**Pressure Support**: Used to boost the size of the patient’s own breaths. It can be used with SIMV or alone.

**Peep**: Positive end expiratory pressure. The lungs are kept slightly filled at the end of each breath. This helps to get oxygen into the blood stream.

**Pressure limit**: Safety feature on the ventilator to prevent excess pressure in the lungs.
Home Ventilator Guide

Ventilator Problem Guide
If problems occur with the ventilator refer to the directions for “trouble shooting” or call the home equipment agency.

If there is a concern related to your medical needs call your doctor (increased oxygen needs, trouble breathing or agitation when on the ventilator).

Problem solving ventilator alarms:

- **Low pressure alarm.** Things to check:
  - Is the ventilator tubing secure on the trach?
  - Is the trach cuff blown up (if you have one)?
  - Is the ventilator tubing disconnected?
  - Is there water in the tubing?

- **High pressure alarm.** Things to check:
  - Do you need to be suctioned?
  - Is there water in the tubing?
  - Is the tubing kinked or pinched?
  - Is the trach tube blocked?
  - Are you coughing?

- **Low power alarm.**
  - Check to see if the ventilator is plugged into an electrical outlet. If you are using the battery and you get a low power alarm, change to a new battery or plug into the electrical outlet.

Caregivers:
If the electricity goes off in your home and your battery does not work:
1. Remove ventilator tubing from the trach tube.
2. Give breaths with breathing bag until power comes on or help arrives.
3. Call 911 if the power does not come back on immediately.
RESPIRATORY MEDICINES WITH A VENTILATOR

MEDICATED NEBULIZERS WITH A VENTILATOR

Special medicines to help breathing can be given through the ventilator circuit (tubing) using a small machine that has a compressor and a dispenser called a “nebulizer.”

The medicine is usually:

A. A bronchodilator which is a rescue medicine because it is designed to quickly open the airways of the lungs, or

B. An anti-inflammatory medicine that treats and prevents swelling in the airways of the lungs.

To use a nebulizer with a ventilator circuit:

1. Assemble the nebulizer. Do not use the mouthpiece or flex tube.
2. Connect the hose to compressor.
3. Place the medicine in the nebulizer cup.
4. Turn on the compressor.
5. Place the nebulizer into the ventilator circuit. The T from the nebulizer can be used or a special adapter that is left in the ventilator circuit. The nebulizer T or adapter should be placed in the tubing coming from the ventilator or between the Y and the trach. The nebulizer or adapter should be placed between the trach and any filter or artificial nose.
6. Wait until all the medicine is used. Shake the nebulizer to move the medicine to the bottom, to make sure all the medicine has been given.
7. Remove the nebulizer, and close the adapter if one is used.
8. Shut off the compressor.
9. Suction if needed.
10. Take apart and rinse the nebulizer. Wipe the nebulizer with mild soap at least daily. Allow drying before putting it back together.
RESPIRATORY MEDICINES WITH A VENTILATOR

METER DOSE INHALER WITH A VENTILATOR

Medicine can be given through a ventilator circuit using a metered dose inhaler and a special adaptor. The medicine is usually either a bronchodilator (rescue medicine) designed to open the airways in the lungs or an anti-inflammatory medicine that treats and prevents swelling in the airways.

To use an inhaler with a ventilator circuit:

1. Suction if needed.
2. Remove the inhaler from the mouthpiece.
3. Shake the inhaler.
4. Open the inhaler adapter. This adapter should be placed in the tubing coming from the ventilator side of the circuit or between the Y and the trach. The adapter should be placed between the trach and any filter or artificial nose.
5. Insert the inhaler into the inhaler adapter in the ventilator circuit.
6. Watch the breathing and press down on the top of the inhaler to activate it after the patient has exhaled (breathed out) completely. You should see the medicine enter the ventilator tubing and be delivered on the next breath.
7. Wait one minute and give the next dose of medicine.
8. Continue until the prescribed number of doses is given, waiting one minute between each dose.
9. Remove the inhaler, placing it back into the mouthpiece and recap the inhaler adapter.

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Monitoring

Adults who have tracheostomies often need some type of medical monitor when they are not being directly supervised. The best and most reliable monitor is a trained caregiver; however, 24-hour supervision is not always possible.

Two of the most common type of monitors are a pulse oximeter or apnea monitor. The purpose of these monitors is to let the caregiver know if there is a change in your breathing pattern. A pulse oximeter measures the oxygen level and heart rate. An apnea monitor measures the heart rate and breathing rate. Your doctor will decide if a monitor is needed. Complete education on the monitor ordered will be done by the home equipment company. When using a pulse oximeter, change the probe site every eight hours.

A baby monitor may be used to help your caregiver know when you are awake.
Equipment Maintenance

It is very important to clean and take care of your medical equipment to control infection. Many of the supplies you will be using are disposable (used one time and then thrown away). Supplies in the hospital are almost always disposable. However, when you are at home it is often necessary to wash and reuse some supplies to help save money. Many insurance companies have a set amount of supplies that they will pay for each month and supplies may need to be carefully washed and reused to have enough supplies for a whole month. The cleaning of some items is not recommended. You will need to check with your doctor, manufacturer or equipment supplier for their recommendations. The following information can be used as a guide for the cleaning of supplies.

Tracheostomy tubes:
- Do not use harsh detergents or hydrogen peroxide for cleaning.
- Soak trach tube and obturator briefly in mild soap (like dish soap) solution.
- Use pipe cleaners or trach brush to clean the inside of the tube. Rinse well.
- Air dry completely for several hours.
- Place in clean or sterile container labeled with the date the trach was originally opened—they are typically good to use for 30 days.
- Throw away any trach that has cracks, scratches, tears or decreased flexibility. Also throw away the trach if you cannot read the size letters printed on the neck plate.
- Metal tracheostomy tubes can be cleaned and reused. Wash with soap and water. You may use a pipe cleaner or trach brush to clean the inside. Boil the trach tube in a pan of water for 15 minutes. Allow the tube to cool and dry, then place in a clean or sterile container for storage.

Suction equipment:
- Empty the suction container every day. Flush the contents down the toilet.
- Wash the suction container with soap and water every day.
- Change the suction tubing and container every one to two weeks.
- Suction catheters: Rinse and dry after each use, store in clean plastic bag. Throw away at the end of each day or if dropped on the floor.

Humidification equipment:
- Nebulizer: Take apart and clean with soapy water once a day. Soak in vinegar solution once a week. Replace every two weeks if needed.
- Trach mask: Clean daily with soap and water. Change trach mask, tubing and drain bag weekly.
- Room humidifiers: Empty, clean with soap and water, rinse and refill each day.
- Humidity bottle (bubbler): Every three days, empty the water, wash in warm soapy water then rinse. Once a week soak bottle in vinegar solution for 30 minutes and rinse with plain water.
- Disposable, pre-filled humidity bottles need to be changed when empty.
Oxygen

Some adults with tracheostomies need extra oxygen. You may need it at all times or just when you are sleeping, sick, eating or being more active. When you are receiving oxygen, it is important to use humidity with it to decrease drying of your airway. (See humidity section of this book for more information.)

Different sources of oxygen:
- Tanks
- Liquid
- Concentrator

It is important to know how much oxygen your child usually needs. Oxygen may be given by the following equipment:
- **Trach ring**: A plastic piece that is connected to tubing and attaches to the oxygen source and onto your trach.
- **Trach mask**: A plastic mask that covers your trach and is connected to the oxygen source with tubing.
- **Ventilator**: Oxygen can be given through the ventilator tubing when breaths are given to you with the ventilator.
- **Breathing bag**: Used during an emergency to give you oxygen and breaths.

Signs that you may need more oxygen are:
- Breathing faster than usual
- Grunting noises while breathing
- Nasal flaring
- Retractions (pulling in of skin over chest)
- Not eating
- Irritability, fussy, crying
- Trouble sleeping and/or increased sleeping
- Shortness of breath
- Gray or bluish color around the mouth
- Low readings on a pulse oximeter monitor, usually below 92 percent

Check with your doctor if your child needs more oxygen than usual.
Oxygen Safety

1. Oxygen will not catch fire by itself, but it will make a fire spread easy and fast. Therefore:
   - Never smoke in the home when oxygen is in use.
   - Place a no smoking sign on the doors to your house.
   - Do not cook while holding your oxygen
   - Do not use grease or oil on your oxygen equipment
   - Do not use perfumes, aerosol cans (hairspray).
   - Do not use a hair dryer, electric blanket, space heater, or other heat producing electronics around your oxygen equipment because they may spark and start a fire.
   - Keep away from fireplaces and wood burning stoves.
   - Have working smoke detectors and a fire extinguisher in your home.

2. Store oxygen tanks standing up in a secure and well-ventilated area.

3. Be careful not to trip on the oxygen tubing.

Leaving Home

1. Oxygen tanks are heavy and may tip over a wheelchair—place the tank carefully.

2. Always expect to need more oxygen in case you are delayed on your return home. Bring extra oxygen with you.

3. If you are traveling out of town, talk to your oxygen supply company before leaving to get extra oxygen delivered in the town you are staying.

4. If traveling by airplane, call the airline a few weeks ahead of time to make special arrangements for passengers using oxygen.

Humidification

Humidity, the moisture that is in the air, will change the secretions or mucus you make. Normally, it is the mouth and nose that heat, moisture and filter the air we breathe. The tracheostomy tube bypasses the mouth and nose, so additional moisture and filtering must be given. If you do not have enough humidity, your secretions will become thick and hard to suction out, which may result in trouble breathing. The amount of fluids you drink, the air in your home and the weather outside all change the amount of humidity. There are several ways to increase the amount of humidity.

**Fluid Intake**

It is important that you drink a lot of fluids. Drinking a lot of liquids will help to keep the mucus thin. It is especially important to be sure you get enough liquids when you are sick with any infection, especially vomiting, diarrhea or fever-type illness. Check with your doctor if you think you are not getting enough to drink.

**Room/Home Humidifiers**

Heating your home in the winter and air conditioning in the summer can dry out the air. Room humidifiers can be a helpful, but they must be washed, rinsed and refilled every day to prevent bacteria growth.

**Trach Ring**

A trach ring with a water bubbler may be used to give small amounts of humidity with oxygen.
Humidification

Trach Mask
Trach mask gives the most humidity. The mask sits in front of the trach and has a strap that goes around the neck to keep it in place. Moist air travels through the tubing and blows a constant mist. Care must be taken to be sure your skin stays as dry as possible. You should be positioned above the water trap that collects the excess moisture. This will prevent water from accidentally spilling into the trach tube. The trach mask limits mobility and is best used during sleep.

Saline
Saline may be put into the trach tube to help with humidity. One to three drops every few hours is usually enough. These drops may cause you to cough. Your doctor may also order saline nebulizer treatments. Follow the instructions in this manual for giving a nebulizer treatment, but use only a 3ml vial of plain saline without any medicines.
Tracheostomy Safety

**Clothing**
Keep clothing away from the tracheostomy tube except for a protective scarf. You may want to use a size larger to make dressing easier.

**Don’t wear:**
- Anything that blocks the trach tube opening
- Turtlenecks
- Clothes that close in back
- Necklaces
- Clothes that shed lint
- Clothes with buttons

**Do wear:**
- V-neck tops
- Clothes that open in front
- Clothes with snaps, zippers or Velcro
- Cotton napkins when eating

**Food**
Most adults with tracheostomy tubes can eat normally. A speech therapist and your doctor can decide if you can eat safely.

**Trach Guard**
The tracheostomy guard is a plastic device that fits over the trach tube to prevent it from being blocked by clothes and your chin. It can be worn day or night. Ask your nurse for more information about trach guards.
Tracheostomy Safety

Use of Skin Care Products
Don’t use perfume, powder or aerosol sprays, like hairspray. These will make you cough and could hurt your lungs or make it hard to breathe.

Activities to Avoid
- Swimming
- Sprinklers
- Sandy dusty areas

Smoking
Don’t Smoke!
If your family members smoke ask your nurse about information to help them stop.

If they want to keep smoking, they have to:
- Smoke outside of your house
- Change their clothes, wash their hands and use mouthwash after every cigarette
- Not smoke in the car, even with the windows down

Smoke will hurt your lungs and make it very hard for you to breathe. The strong smell of smoke stays the body for a long time so washing after every cigarette is necessary to help you breathe.
Tracheostomy Safety

Bath Time
Adults with tracheostomy tubes should be bathed whenever needed. You must keep water out of the trach tube. If water goes into the trach tube it will go right into the lungs.

- Bath instead of shower—if you must shower-point water spray at stomach or lower. Special shower shields are available from home care suppliers.
- **If water does get into the tracheostomy tube, you will cough. Suction the trach tube right away.**

Dust/Pets
Dust and hair can easily get into you trach tube. These things will cause you to cough and could cause an infection. To stop this from happening:
- Keep your home as free from lint and dust as possible.
- Keep away from dust and molds.
- In cold or dusty weather, use a loose scarf or mask to warm the air and keep dust out of the tracheostomy tube.
- Do not keep pets with fine hair in your home, such as dogs, cats, rabbits, hamsters or ferrets.

Illness
If you become sick, call your doctor right away. Here are some things you can do to help you stay healthy:
- Eat healthy foods and drinks
- Get immunized (booster shots, flu shots, Pneumonia Shot)
- Avoid people who are sick

This is a list of common treatments that may help you:
- Increase suctioning.
- Increase the amount of humidity.
- Use oxygen or increase the amount of oxygen usually given.
- Take nebulizer treatments if ordered by your doctor.
- Drink extra fluids

If you are vomiting:
- Loosely cover the trach with a scarf, trach cap, or speaking valve to keep the vomit out of the tracheostomy tube.
- **If vomit gets into the trach tube, suction the trach tube immediately.**
Traveling with Your Trach

Traveling with a trach is possible with a few precautions. The most important thing to have with you when leaving your home is an emergency supply bag. This bag is also called a “To Go” bag. The following is a list of supplies that should be kept in your “To Go” bag:

- Trach tubes—one regular size, one a size smaller
- Saline
- Suction machine
- Hand sanitizer
- Scissors
- Breathing bag with mask
- Trach ties
- Suction catheters
- Cotton swabs
- Tissues

Traveling tips:
- Always travel with another person.
- Be sure the suction machine’s battery is charged and take the cigarette lighter adapter with you, if one is available.
- Use seatbelts
- In cold, windy or dusty conditions, cover the trach loosely with a scarf, blanket or mask.
Speech with a Tracheostomy

Talking occurs by a continuous stream of air that comes from the lungs and passes by the vocal cords as we breathe out. The vocal cords then move and shape the air as it passes through to produce sound. That sound is then shaped in the mouth to produce speech. When you have a tracheostomy, speech/voice production may be affected because the trach tube changes the route of all or some of the exhaled air away from the vocal cords and out the trach.

How much sound you can make will depend on how open the airway is and how the vocal cords are working. Different sizes of trach tubes are needed based on your medical condition. If the tube is large, all of the exhaled air will be pushed out the tube and no air will be able to pass around and go up the vocal cords to make sound. Adults with smaller tubes sometimes can get air around the trach tube and by the vocal cords to create sound. If the airway is very small, you may not be able to move enough air past the vocal cords to talk.

Vocalization with a tracheostomy:

- You may learn to move air around the trach, if it is not a snug fit.

- Plugging the tracheostomy tube by holding a finger or placing a cap over the tube for short periods of time. This requires cuff deflation if it is a cuffed tube.

- You may learn to cover the trach with his/her chin or finger when talking.

- A Speaking Valve is a one-way valve that allows air in but not out. This forces the air around the tracheostomy tube, through the vocal cords, and out of the mouth upon breathing out, letting you make sounds. Speaking valves cannot be used if you are having trouble breathing. You can speak with your physician or speech-language pathologist to see if a Speaking Valve would be helpful for you.

- Fenestrated tracheostomy tubes have an opening, which allows air to pass through the vocal cords. Cuff on trach tube may remain inflated.

If you are not able to speak using any of the above possibilities, then a different way of communication is necessary. Different ways of communication include written communication, sign language, picture communication, or augmentative communication/voice output devices.
Passy-Muir Speaking Valve (PMV)

The Passy-Muir Speaking Valve (PMV) gives patients with tracheostomy tubes the ability to breathe more normally and help them talk.

**How the Passy-Muir Valve Works**
The PMV opens when you breathe in, letting air enter the trach tube and lungs. At the end of breathing in, the PMV closes and remains closed while breathing out, without any leakage. When breathing out, the air is then moved around the trach tube and up through the vocal cords and mouth. This gives you a more normal closed respiratory system. The valve will open when breathing out if necessary and/or be “shot off” (forced off with the breath). This allows the vocal cords to move and sound to be made.

**Potential benefits with use of the PMV are as follows:**
1. Makes a closed respiratory system that gives positive airway pressure. That pressure gives louder sounds, improves swallowing, and increases the amount of oxygen received.

2. Improves feeling in the throat as well as smell sensation, which can improve swallowing and may reduce the chances of food or liquids entering the lungs (aspiration).

3. Improved swallowing also gives a stronger, better cough.

**Important reminders:**
- You must be awake to have PMV on. **Do not wear while sleeping.**
- Trach cuff needs to be deflated prior to placing the PMV.
- Some adults with severe airway blockage or respiratory problems can not use the PMV.
- Humidification may be decreased. You may need more humidity at night if using the PMV during the day.
- PMV may be used with oxygen, a ventilator or humidity in place.
Home Care

If home nursing care is needed, there are several things that will happen in order for the nursing care to begin. These include:

1. Insurance approval for payment. Some insurance companies do not pay for home nursing care, especially extended care nursing. Other insurance companies will sometimes approve nursing care for a week or two and then re-evaluate you and your family needs. The frequent re-evaluation for nursing care can be frustrating at times, and it is important for you to know that the nursing care is not usually forever. Most insurance companies decrease the amount of nursing care allowed over time.

2. Meeting with the home health care manager or nurse.

3. Develop a schedule that will meets your needs.

4. Home visit by the nursing agency. This is a safety check of your home.

**Things that the agency will be looking for might include:**
- Safe electrical outlets
- Running water
- Smoke detectors
- Telephone
- Lighting
- Space for storage of supplies/equipment
- Safe entrance/exit in case of fire

The home nursing company that you choose will do everything they can to meet your needs. However, there will probably be times that the nurse is not able to come and care for you due to illness or weather. It is important that you know all the skills to care for your tracheostomy in case this happens.

It is a huge adjustment to have strangers in your home for several hours of each day. Try to have reasonable expectations and if you experience problems, talk to the nurse directly about your concerns. If you continue to have problems, then call the nurse manager of your home nursing agency.
**Home Care**

**Other key parts of the discharge process include:**
- Arranging specialized therapies such as physical, speech or occupational therapy.
- Contacting the local ambulance service and nearest hospital to provide education and equipment your child may need.
- Contacting the local power and phone companies.

Stress will be high as you learn to care for your trach and adjust to having home nursing care.

**Some things you can do to reduce your stress might include:**
- Learn as much as you can about your health.
- Train at least two other family members/friends how to care for you in case of emergency.
- Take care of yourself, eat regularly, and sleep as much as you can.
- Ask for help if you need it. If you are wondering or unsure, call your doctor or nurse.
- Keep a calendar for appointments, supply orders, doctor’s visits, prescription refills and therapy visits.
- Take a weekly inventory of supplies and order early to avoid running out.
- Use respite care services if available.
Words to Know

The following is a list of words that you will find in the manual as well as some words you may hear the doctors and medical team say while your child is in the hospital. Please ask your nurse or doctor if you do not understand a word that you hear or read.

**A**
- **Aerosol**: Solution that is given in a mist.
- **Apnea**: Not breathing.
- **Apnea monitor**: A machine that alarms when a child stops breathing.
- **Artificial airway**: Another word for tracheostomy tube.
- **Artificial nose**: A device that warms and moistens the air your child breathes.
- **Aspiration pneumonia**: Pneumonia caused by foreign material such as food entering the lungs.
- **Asthma**: Difficulty breathing with wheezing that is caused by swelling or spasms of the bronchial tubes.
- **Atresia**: A narrowing of a structure usually caused by the failure of proper fetal Development.

**B**
- **Bacteria**: Germs that grow and cause infections.
- **Breathing bag**: Device used to pump air into the lungs by hand (not machine).
- **Bronchi**: The two main branches leading from the trachea to the lungs.
- **Bronchiolitis**: Inflammation of the Bronchioles.
- **BPD (bronchopulmonary dysplasia)**: Chronic lung disease of infancy—often requires a tracheostomy for long term ventilator use.

**C**
- **Cannula**: The tube part of the tracheostomy tube.
- **Carbon Dioxide (CO₂)**: Gas eliminated from the lungs with exhalation.
- **Cardiopulmonary resuscitation (CPR)**: A method to restart breathing and the circulation of blood.
- **Catheter**: Tube used to remove fluids from the body.
- **CO₂ monitor**: A machine that measures the amount of carbon dioxide in the blood through an external monitor.
- **CPAP (continuous positive airway pressure)**: A type of ventilation mode that supports a child's own breathing efforts
- **Cuff**: The inflatable balloon on some tracheostomy tubes.
- **Cyanosis**: A bluish discoloration of the skin, lips and nail beds due to decreased oxygen in the blood.

**D**
- **Decannulation**: Removal of the trach tube.
- **Decannulation cap**: A small cap used to plug the tracheostomy opening during weaning from the tracheostomy.
- **Dysphagia**: Difficulty swallowing.
Words to Know (cont.)

**E**

**Edema**: Swelling of tissue.
**ET tube** *(endotracheal tube)*: A tube used to provide an airway through the mouth or nose into the trachea.
**ENT**: Abbreviation for ear nose and throat—term used for type of doctor that typically performs the tracheotomy surgery.
**Exhale**: Breathe out.
**Extubation**: Removal of the endotracheal tube.

**F**

**Fenestrated**: Having a opening in the trach tube to allow vocalization.
**Flange**: Part of trach tube that rests against the neck, contains information on tube brand and size.

**H**

**Heat moisture exchanger (HME)**: A filter device that fits into the end of the trach tube to warm and moisten the air the child breathes.
**Home healthcare provider**: Company who provides nursing care at home.
**Home healthcare supplier**: Also called durable medical equipment supplier where you get medical equipment.
**Humidity**: Moisture in the air.
**Hydrogen peroxide** *(H₂O₂)*: Mild antiseptic and cleaning agent.
**Hypoxia**: A low amount of oxygen in the blood.

**I**

**Influenza**: Seasonal respiratory virus often referred to as the flu.
**Inhale**: To breathe in.
**Inspiration**: To breathe in.
**Intubation**: Placement of a tube into the trachea to provide assistance with breathing.

**L**

**Larynx**: The voice box.
**Lumen**: Inside part of a tube.

**M**

**Malacia**: A softening of the affected structure.
**Mucus**: Slippery fluid that is produced in the lungs and windpipe.

**N**

**Nebulizer**: A machine that puts moisture and or medications directly into the airway and lungs.
**Neck plate**: Also called the flange.
**Neonatal**: The first 28 days after birth.
**Nosocomial infection**: An infection acquired in the hospital.

**O**

**O₂**: Oxygen, an essential gas of respiration.
**Obstruction**: Blockage.
**Obturating**: The semi-rigid guide that goes in the tracheostomy tube to help insert the tube into the trachea.
**Otolaryngologist**: Ear, nose and throat doctor.

**P**

**Pharynx**: Passageway for air from the nasal cavity to larynx.
**Pliable**: Soft and flexible.
**Pneumonia**: An inflammation of the lung itself often caused by the consolidation of the affected part by the air spaces being filled with blood, bacteria, cells or fibrin.
**Pulmonologist**: A doctor who specializes in the lungs.
**Pulse oximeter**: Device that monitors the oxygen level of the blood using an infrared sensor placed on the finger or toe.
Words to Know (cont.)

R
Respite: A break or temporary relief for caregivers who care for loved ones with disabilities at home.
Retractions: Pulling or sucking in of the chest muscles, neck muscles and diaphragm during breathing, it’s a sign of respiratory distress.

S
Saline: (normal saline or 0.9% sodium chloride) Salt water solution similar to fluids found in the body.
Secretions: Another word for mucus.
Speaking valve: Also called Passy-Muir; one-way valve that lets air come in through the trach but then sends it out the vocal cords and mouth to make talking possible.
Speech therapist: A person trained to help with speaking, swallowing and communication problems.
Stenosis: The narrowing of a structure.
Sterile: Free of germs.
Stoma: Surgical opening in the neck where you insert the tracheostomy tube.
Suctioning: Vacuuming up fluid, such as mucus from trach tube.
Swaddle: To wrap a baby like a mummy with only the head sticking out.
Syringe: Device to measure medicines.

T
Thermovent T: Brand name device that warms and moistens the air breathed in.
Tracheostomy: An opening into the trachea.
Tracheotomy: A medical procedure creating an opening in the trachea.
Trach mask: A device that fits on the end of the trach tube to provide moisture.

V
Ventilator: A machine that helps a person breathe.
Virus: A germ that can cause illness.
Viscid: Thick or sticky.
Vocal cords: Two strips of tissue in the voice box in the neck, which allows vocalization.

W
Wheeze: A whistling sound resulting from a narrowing in the respiratory tract.
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