

# PEDIATRIC TRACHEOSTOMY CARE GUIDELINES



## Tracheostomy care for your loved one

As part of the Nexus Children's Hospital team caring for your loved one, you are especially important in our collective goal to provide the best, quality care. As your partner, we will support and educate you on how to care for the child, adolescent, or young adult's new tracheostomy. We'll work with you to develop the skills needed to continue care.

As a bridge between hospital and home, Nexus Children's Hospital wants to prepare you to feel confident and comfortable in tracheostomy care. This booklet will be a helpful resource to reference once home.



# ROAD MAP HOME



# Terminology

Below are common words and phrases that will be learned during caregiver training.

**Tracheostomy Tube:** A medical airway device used to help the individual breathe. It is placed in the neck in a hole called the stoma.

**Hub:** The front part of the tracheostomy tube where the ventilator or other devices connect, like a speaking valve, to provide respiratory support.

**Flange or Neck Plate:** What the trach ties attach to on the sides, and where the individual's tracheostomy size can be seen.

**Inner Cannula:** Neonatal and pediatric patients do not come with inner cannulas, but older children, adolescents, and young adults may have a tracheostomy tube with a removable inner cannula. The inner cannula can be disposable or reusable. If it is disposable it will need to be changed out regularly, but if it is reusable it needs to be cleaned regularly and placed back in the tracheostomy tube.

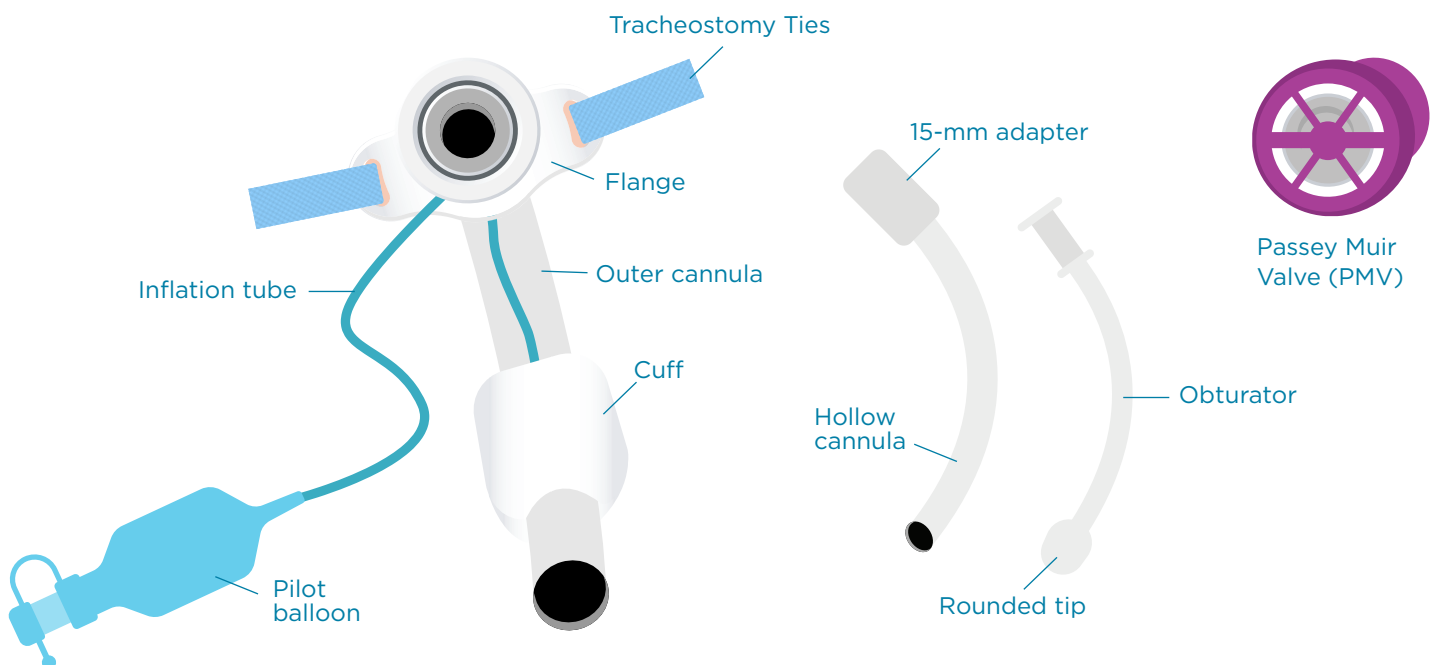
**Cuff:** The cuff is on the far end of the tracheostomy tube and is used to block air from going around the tracheostomy tube. This helps the ventilator provide quality respiratory support.

**Pilot Balloon:** Used to inflate the cuff at the end of the tracheostomy tube, also known as pilot or cuff port. If the cuff is inflated that means the cuff is filled with air or water.

**Obturator:** A tool used to guide the tracheostomy tube correctly into the stoma.

**Tracheostomy Ties:** These secure the tracheostomy tube by going around the individual's neck (one finger for infants and children and two fingers for adolescents and young adults must be able to be put in between neck and tracheostomy ties).

**Passey Muir Valve (PMV):** A device used to improve the individual's communication, also known as a speaking valve.

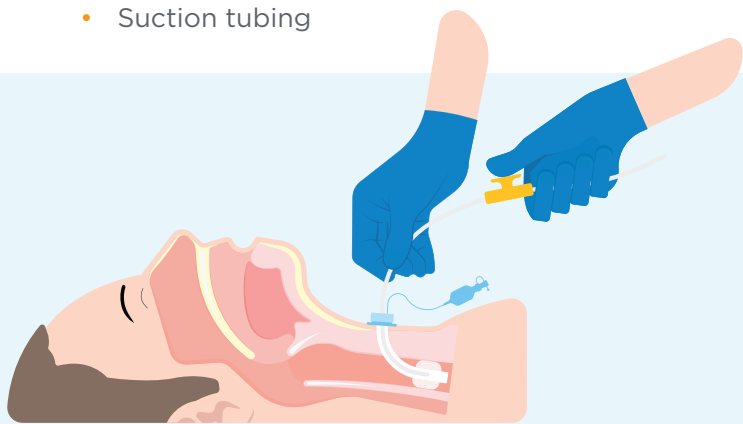


# Suctioning

From supplies to suctioning depth to the actual process, there are many topics to cover.

## Supplies

- Portable suction (while at home). Pressure gauges vary with suction machines; check with the home equipment company about setting the correct pressure limit.
- Wall suction (in hospital) pressures:
  - Premature: 80-100 mmHg
  - Children older than 1: 80-120 mmHg
  - Adults: 100-150 mmHg
- Suction tubing
- Suction Catheter (appropriate size)
- Gloves (sterile gloves for open system process)
- Disconnect wedge
- Oxygen
- Ambu bag/Resuscitation bag
- Cup/trach to flush catheter
- Saline bullets



## Suctioning depth: How far to suction

To determine the suction depth, use a tracheostomy tube and new suction catheter. Look at the number at the hub opening of the tracheostomy tube. That is the depth to go to when suctioning the individual. Write the depth down and place it where it can be easily referenced.

## Suction process (closed system)

- Attach suction catheter to tubing.
- Turn on suction machine and check suction pressure.
- Deliver oxygen to the individual before suctioning (100% oxygen; O2 tank turned all the way on).
- Insert the suction catheter to the appropriate depth. DO NOT cover/push the control button.
- Apply suction by placing the thumb over control button while pulling out suction catheter from trach tube.
- Do not continuously suction for longer than 10 seconds per attempt.
- Repeat steps if needed with no more than three passes.
- Give the individual time to recover if they still require suctioning after three passes.
- Flush catheter after suctioning to clear secretions from the catheter.

## Suction process (sleeve catheter)

- Deliver oxygen to individual before suctioning (100% oxygen; O2 tank turned all the way on).
- Wash hands and put on gloves.
- Attach suction catheter to tubing.
- Turn on suction machine and check suction pressure.
- Pull back sleeve from catheter to premeasured length and insert into trach tube.
- Apply thumb over thumb control port.
- Rotate catheter between thumb and forefinger while pulling out catheter from trach tube.
- Do not suction for longer than 10 seconds per attempt.
- Repeat steps if needed with no more than three passes.
- Give the individual time to recover if they still require suctioning after three passes.
- Rinse catheter if needed with cup or drops of saline.

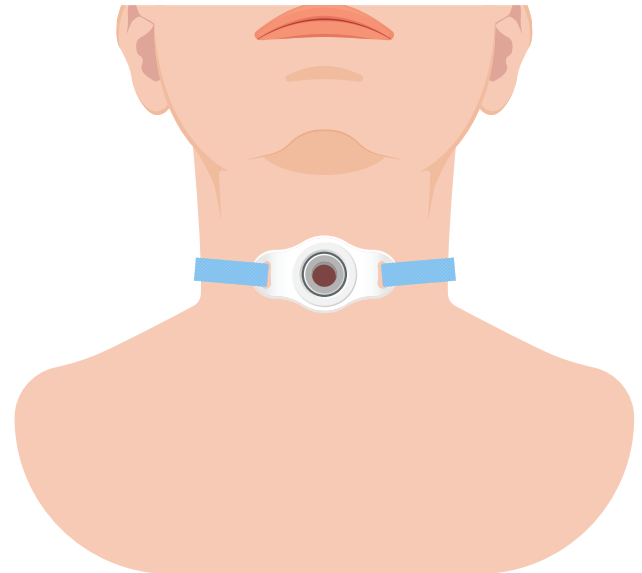
# Tracheostomy care

## Supplies

- Trach Care Kit: Gauze pad (pre-cut), saline, cotton tip applicators, and wire brush for disposable reusable inner cannula
- Three wash cloths: one soap, one water, and one dry
- Gloves
- Disconnect wedge
- New trach ties (changed only one time per day at home)
- New inner cannula (if disposable; change daily)
- Shoulder/Neck roll

## Tracheostomy care process

- Tracheostomy care should be done twice a day (once in the morning and once in evening). During this process observe neck and stoma for any redness, drainage, or granulomas.
- Prepare clean area for tracheostomy care.
- Suction prior to beginning tracheostomy care.
- Place shoulder roll under individual's neck.
- Reusable and disposable inner cannula: Remove the inner cannula and replace with new inner cannula. Clean the inner cannula (if not disposable) with saline and wire brush if needed and reinsert.
- Change trach ties: Remove the old trach ties by pulling the velcro apart and sliding behind the neck and undoing the remaining side.
- Remove the old gauze pad.
- Clean the neck plate and skin under it with cotton tip applicators and saline.
- Clean neck working from one side to the other then back of neck with soap and water on a wash cloth.
- Attach trach ties to both ends of the flange.
- Place split gauze under trach.
- Fasten ties at the back securely, ensuring the appropriate width for tightness at the back of the neck (one finger for infants and children and two fingers for adolescents and young adults must be able to be put in between neck and tracheostomy ties).



## How do you tell the difference between a reusable inner cannula and disposable inner cannula?



Reusable inner cannula displays which way to lock it in place.



Disposable inner cannula reads "do not clean or reuse."



# Tracheostomy change

## Supplies

- Sterile/clean trach tube with obturator
- Surgilube
- Split gauze
- Disconnect wedge
- New suction catheter
- Rolled towel
- Clean trach ties
- Suction unit and supplies
- Spare trachs
- Ambu bag/resuscitation bag
- Syringe and sterile water (if individual has a water cuffed trach)

## Trach change process

*Tracheostomy tube change should be done every seven days unless otherwise specified or sooner if emergency.*

- Wash hands thoroughly with soap and water.
- Prepare sterile or clean trach tube; insert the obturator in the cannula and insert new trach ties into one side of the flange on the new trach tube.
- Lubricate the end of the trach and place it back on the working area.
- If the individual is wearing a cuffed tube, check the cuff for leaks.
- Using the rolled towel, position the individual so their chin is pointing to the ceiling and their head is tilted back. The head should be tilted in a natural position. Too far back will cause difficulty to insert the tube.
- Put on gloves and suction the individual prior to preparing for the trach change.
- Depending on the individual's needs, they may need to be ventilated with the self-inflating bag or bag valve mask.
- Suction the mouth and trach tube.
- IF CUFFED TUBE, DEFLATE CUFF FIRST.
- Hold the old trach in place while undoing the trach ties.
- Remove the old trach and lay it to the side.
- Pick up the new trach and make sure to hold the obturator firmly in place. The curve of the tube should be inserted downward toward the trachea.
- Insert the new tube removing the obturator as quickly as possible with the free hand while still holding the new trach in place.
- Perform trach care steps.
- Secure the ties around the individual's neck.
- Check to confirm appropriate tightness (one finger for infants and children and two fingers for adolescents and young adults must be able to be put in between neck and tracheostomy ties).
- Do not let go of the trach until the ties are secure.



## What should you do if you CANNOT get the trach back in?

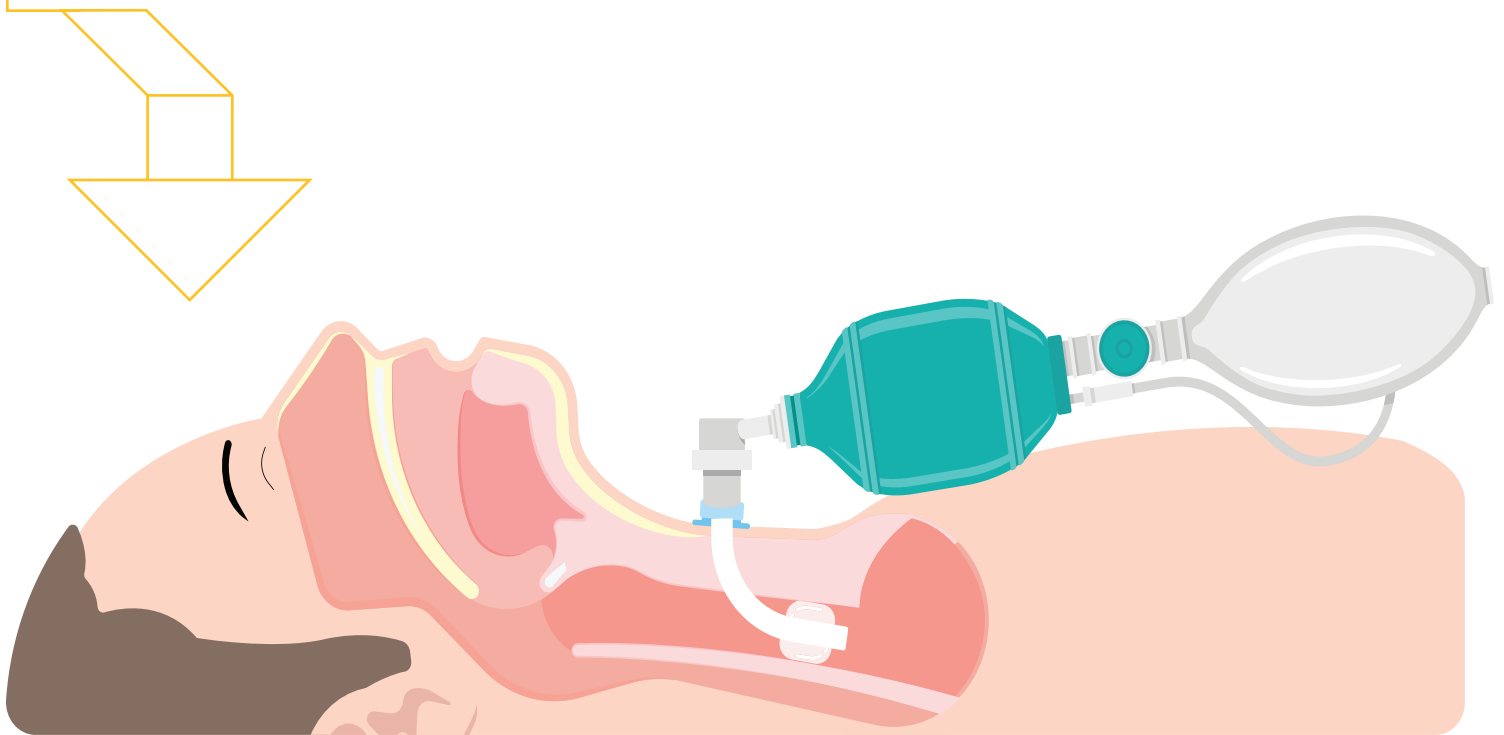
- Reposition the individual and reattempt to insert the tube.
- If you cannot insert the same size trach in place, attempt the step down tube.
- If you are unable to insert any tube back into the stoma, call 911 and use the bag valve mask with the face mask attached.
- Apply the mask over the nose and mouth and provide breaths with bag valve mask with this method (cover stoma with gauze while bagging).
- If you are able to get step down trach in, contact the doctor to notify them of the step down being in place only once the individual is stable.

## Bag valve mask

A bag valve mask should be used when an individual shows signs of having difficulty breathing, struggling to breathe, their lips and face are pale or blue, or if they have stopped breathing.

### Bag valve mask process

- If oxygen is available, attach the tubing from the bag valve mask to the oxygen tank.
- Place the adapter from the bag to the tracheostomy tube (not the mask).
- Provide breaths for the individual by squeezing both sides of the bag as taught in training (every three to five seconds). Let the bag refill before squeezing to provide another breath.
- As the bag is squeezed, look at the individual's chest to make sure it is rising with each breath.
- If the chest is not rising or the bag cannot be squeezed when the adapter is hooked up to the trach, perform a trach change and begin to bag.
- Bag until the individual is better, with no labored breathing and their color has returned.
- If bagging is taking place because the individual stopped breathing, call 911 and begin CPR as demonstrated in training.





# Signs of respiratory distress

Here's how to recognize an individual is having trouble breathing and how to act in each situation.

## Respiratory distress

- Rapid breathing
- Change in breathing pattern
- Sweaty skin and clammy
- Restlessness
- Nasal flaring
- Blue lips, fingers, and/or toes
- Increased heart rate
- Decreased oxygen saturation

### How to act

Suction the tracheostomy tube and provide breaths using the bag valve mask.



**Call 911 if in severe distress or doesn't improve**

## Mucus plug

(a collection of mucus that has plugged the tracheostomy tube)

- Can change the breathing pattern or make breathing difficult

### How to act

- Proper maintenance (suctioning, coughing, fluid intake) should prevent mucus plugs from occurring.
- Suctioning the tracheostomy tube should remove the mucus plug.



**When in doubt change the tracheostomy tube out**

## Bleeding

(causes of bleeding in tracheostomy or around tracheostomy)

- Suctioning incorrectly (too deep)
- Excessive coughing
- Dry airway
- Irritation from the tracheostomy tube
- Foreign body aspiration
- Infection

### How to act

- Suction correctly and only when necessary.
- Use humidification.



**If bleeding, contact the physician immediately**

## Aspiration

- Frequent lung infections
- Coughing or choking with swallowing
- Drooling
- Food contents in the secretions from the tracheostomy tube

### How to act

- Slow eating and smaller bites.
- Make sure they are sitting upright.
- Watch them while they are eating.
- Suction the tracheostomy tube until it is clear of liquid or food.



**When in doubt, change the tracheostomy tube out**

## Accidental decannulation

If the tracheostomy tube comes out of the stoma while the individual is coughing, pulling, or being moved, they may have difficulty breathing.

### Prevention

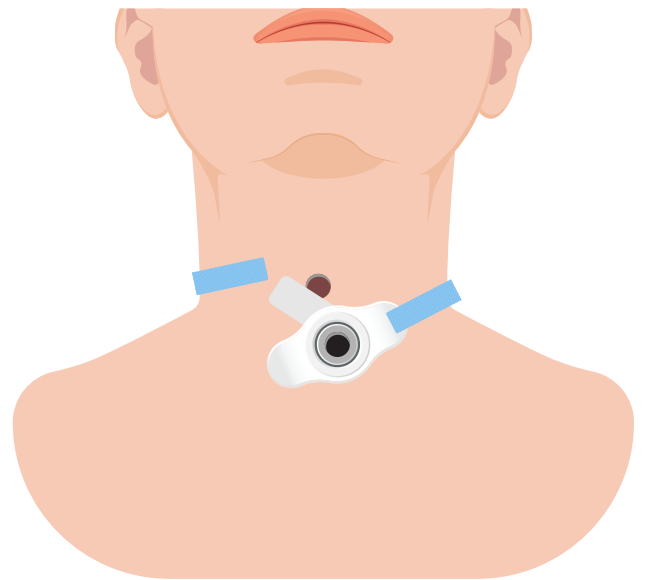
- Make sure the trach ties are secure (one finger for infants and children and two fingers for adolescents and young adults must be able to be put in between neck and tracheostomy ties)
- Change trach ties regularly
- Do not let anyone pull on the tracheostomy including the individual

### How to act

- If accidental decannulation occurs (the tracheostomy tube comes out), replace the tracheostomy tube with your spare trach



**If accidental decannulation occurs, notify physician immediately**



### Passey Muir Valve

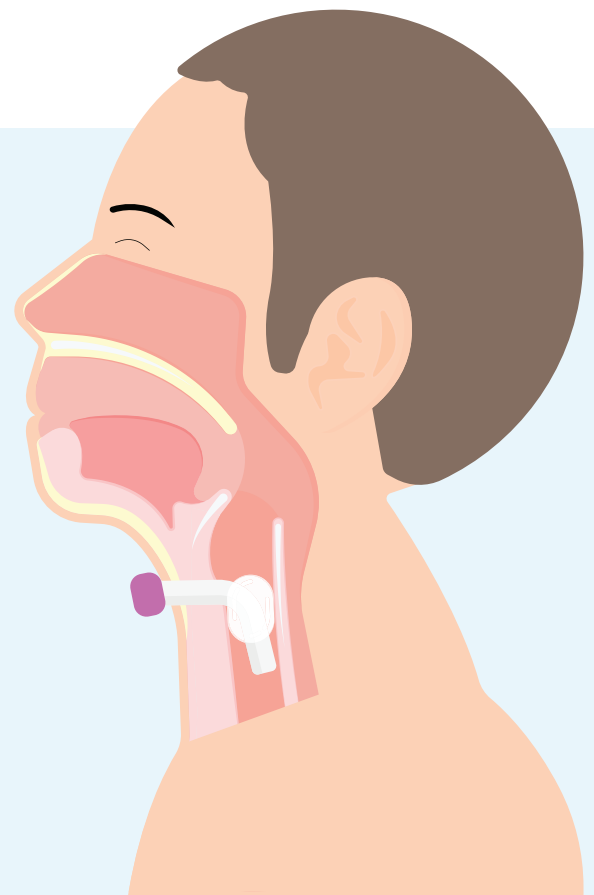
The Passey Muir Valve (PMV) is used to help the individual communicate by giving them the ability to use their vocal cords. The PMV is placed on the hub of the tracheostomy tube, and it redirects air through the vocal cords. **When the PMV is in use, the tracheostomy cuff must be deflated.**

### Issues with the PMV

When the individual's breathing pattern has changed, oxygen saturations have dropped or they are blue or dusky.

### How to act

- Remove the PMV
- Inflate the cuff on the tracheostomy tube
- Bag the individual using the bag valve mask until the respiratory problems have resolved



# Tracheostomy go-bag

- Pulse oximeter and spare probe
- Suction catheters
- Portable suction machine
- Saline ampules
- HME (Heat Moisture Exchanger)
- Spare trachs (one same size, one size smaller)
- Disconnect wedge
- Trach ties
- Ventilator (including power cords and batteries)
- Syringe
- Lubricant
- Dressing supplies
- Scissors
- Portable oxygen tanks with regulator and key
- Ambu bag/bag Valve mask
- Emergency contact numbers

## Day-to-day care

Follow these best practices in tracheostomy care.



**Clothing:** Avoid clothing that covers up the tracheostomy tube. Parts of the clothing might come off and go into the tracheostomy. Also, the clothing covering the tracheostomy tube might be too tight and block off the needed respiratory support.



**Playing:** The individual should continue to play and stay active but should avoid water activities that involve them being submerged as this can lead to water going into the tracheostomy tube and affect breathing. Also, contact sports should be avoided because this will increase the risk of the tracheostomy tube coming out.



**Bathing:** When bathing, avoid submerging the individual underwater to prevent water from entering the tracheostomy tube. Note: After bathing is a good time to perform tracheostomy care.



**Trach go-bag:** This bag contains everything needed in an emergency. The go-bag should always be within arm's reach of the individual when they are sleeping, traveling, playing, or at school.



### Basic life support (BLS)

Nexus Children's Hospital highly recommends caregivers attend BLS training and obtain a BLS card to provide emergency support, if needed, while waiting for emergency responders to arrive. We have provided organizations below that can help caregivers accomplish this.

- E-PIC Training Center, Inc.
- American Heart Association (CPR.Heart.org)

**Source and additional information to reference**

*Egan's Fundamentals of Respiratory Care* (11th Edition)  
by Robert Kacmarek, James Stoller, & Albert Heuer



## Care that goes beyond clinical

Nexus Health Systems is a safe and efficient discharge option for complex cases requiring medical and behavioral management.

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