# Northern Virginia Emergency Medical Services Council

**Medical PI Committee Meeting** **Via Zoom**
**Wednesday, July 10, 2024** **9:00 am**

**Those present were:**

| Name | User Email |
|---|---|
| Alfred Pacifico | alfred.pacifico@loudoun.gov |
| Andrew Sanders | asanders@pwcgov.org |
| Beth Adams | beth.adams@fairfaxcounty.gov |
| Brian Orndoff | brian.orndoff@fairfaxva.gov |
| Craig French | craig.french@inova.org |
| Daniel Schroeder | dschroeder@childrensnational.org |
| Emily Dorosz | edorosz@childrensnational.org |
| Kate Kramer | kkramer@arlingtonva.us |
| Laura Vandegrift | laura@vaems.org |
| Michelle Ludeman | michelle@vaems.org |
| Ramiro Gálvez | ramiro.galvez@alexandriava.gov |
| Steve Kling | steven.kling@inova.org |
| Tracy Lane | tracy.lane@loudoun.gov |
| Yonnia Waggoner | ywaggoner@childrensnational.org |

## *FACILITATORS*

- Craig French, Inova Health System EMS Liaison
- Kate Kramer, PA-C, Arlington County Fire Department

## *CALL TO ORDER*

Kate Kramer called the meeting to order at 9:05 am.

## *APPROVAL OF MINUTES*

- Approval of minutes from the January 10, 2024, meeting
  - Steve Kling made a motion to approve the minutes
  - Al Pacifico seconded the motion
    - ***The motion was unanimously approved***

## *CHILDREN WITH SPECIAL HEALTHCARE NEEDS/TECHNOLOGY ASSISTED PRESENTATION*

- ***Children's National Medical Center Transport Team – Katie Kreider and Danny Schroeder***

  A copy of the presentation is at the end of the minutes.
  - Discussion
    - Beth Adams asked if there was a discussion about DNRs in this population
      - Most should have a form with what interventions the parents want to have done in those circumstances. Depending on their medical history, they may have a form on what type of assistance they need.

- Kate Kramer asked what about kids not at home with parents? Will the school nurses know?
    - School nurses should have information about the patient and may have a caregiver with them depending on their condition. Nurses should have PMH, meds, and forms for the child's complex medical needs. Early consultation also with peds specialists to determine what to do with them. Call the hospital/specialist to know what course of action to take.
    - Al Pacifico stated that In Loudoun County, parents often show up at the firehouse with a piece of paper of what needs to be done, and they send up the chain and get approved.
        - Beth Adams stated that Fairfax does the same as Loudoun. Also, when they contact the firehouse, use the ASAP information form so they have it on file.
    - Arlington set up RAPID SOS patient profiles, which are attached to the phone number, not a location, but if the patient's conditions/meds change, they are out of date. She prefers a care plan profile, but she is the only person who updates that.
        - What if they don't come to the firehouse? Upon discharge, do you recommend they reach out to the medical director of the FD or the dispatch center to make them aware? Emily Dorosz – they are directed to go to their local firehouse to give their information, but this is a good idea to work on directing them to a more appropriate person like the medical director. Smart 911 and other options seemed good, but these don't work as well and don't get updated as often as things change. Direct communication ahead of time would be helpful. Have you had issues with EMS showing up, calling because pt is on hospice, then resuscitating because of another family member, or they can't find the form? They typically resuscitate, which creates complications when someone is in that situation. Try to call the hospital med control, and get someone on the line to discuss before performing interventions.
        - Beth Adams advised that Fairfax County uses Location of Interest, but that's only one location, and some of these kids, despite significant illness, are often pretty mobile.
        - Kate Kramer advised that RAPID SOS is based on the phone number, but again, that means the person has to have the phone associated with the account.

***TOPICS FOR UPCOMING MEETINGS IN 2024***

- Sharing information on behavioral emergency protocols
    - Will pull some article and information
    - Everyone to bring protocols to share
- Is anyone using the distal femoral IO approach vs. proximal IO specifically in cardiac arrest? New and emerging idea.

***UPCOMING MEETING DATES:***

***October 9, 2024***

***The meeting was adjourned at 10:06 am.***

CERTIFICATION OF THE REGIONAL MEDICAL PI COMMITTEE MEETING

Northern Virginia EMS Council, Inc
PO Box 648
Gainesville, VA 20156

I, Laura Vandegrift, Interim Executive Director of the Northern Virginia EMS Council, certify that the above minutes are a true and correct transcript of the meeting minutes of the Medical PI Committee held on July 10, 2024. The minutes were officially approved on October 9, 2024.

*Laura Vandegrift* 10/9/2024

Laura Vandegrift Date

# Children with Special Health Care Needs

# “High Tech Kids”

Daniel Schroeder, RN, BSN, CCRN

Children’s National Hospital

Critcal Care Transport Team

# OBJECTIVES:

- Increased knowledge of special health care needs and technology in the home
- Increased comfort and confidence in working with special health care situations
- Increased awareness of Family Centered Care

# Epidemiology of Children with Special Health Care Needs

- Premature birth
- Chronic illness
- Injury and disability
- Technology in the home

# Responses to Chronic Illness & Disability

- Chronological age vs. Developmental age
- Impact of illness, disability, and frequent health care visits
- Beyond the “Golden Hour” - Lifetime of days, weeks, & years

# Family Centered Care Special Health Care Needs

- Parents are their child's first and most important Case Manager
- Young Adults become Case Managers
- Extended family members as trained care providers
- Role of siblings

# Assessment of Infants and Children with Disabilities

- ABC's
- Brief Pediatric History - SAMPLE
  - Immunizations
  - Perinatal history
- Vital signs - "normal values"
- Weight estimate - records
- Mode of communication

# Adaptations to SAMPLE history

**S** Signs & symptoms “what is different for this child”

**A** Allergies and sensitivities to foods, medications, environment and equipment

**M** Medications - dose, route, and frequency

**P** Past Medical History - hospitalizations? surgeries? pre-natal history for age < 1 yr? primary hospital?

**L** Last intake - oral, NG or OG, GT or JT, solids vs liquids

**E** Events prior to emergency- what is an emergency for this child ? what treatments were given? DNR?

# Emergency Information Form

## Emergency Information Form for Children With Special Needs

American College of Emergency Physicians* | American Academy of Pediatrics

| Date form completed By Whom | Revised | Initials |
|---|---|---|
| | Revised | Initials |

Last name:

| **Name:** | Birth date: | Nickname: |
|---|---|---|
| Home Address: | Home/Work Phone: | |
| Parent/Guardian: | Emergency Contact Names & Relationship: | |
| Signature/Consent*: | | |
| Primary Language: | Phone Number(s): | |
| **Physicians:** | | |
| Primary care physician: | Emergency Phone: | |
| | Fax: | |
| Current Specialty physician: Specialty: | Emergency Phone: | |
| | Fax: | |
| Current Specialty physician: Specialty: | Emergency Phone: | |
| | Fax: | |
| Anticipated Primary ED: | Pharmacy: | |
| Anticipated Tertiary Care Center: | | |

**Diagnoses/Past Procedures/Physical Exam:**

1.

2.

3.

4.

Synopsis:

Baseline physical findings:

Baseline vital signs:

Baseline neurological status:

*Consent for release of this form to health care providers

Last name:

**Diagnoses/Past Procedures/Physical Exam continued:**

| Medications: | Significant baseline ancillary findings (lab, x-ray, ECG): |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | Prostheses/Appliances/Advanced Technology Devices: |
| 5. | |
| 6. | |

**Management Data:**

| **Allergies: Medications/Foods to be avoided** | **and why:** |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| **Procedures to be avoided** | **and why:** |
| 1. | |
| 2. | |
| 3. | |

**Immunizations**

| **Dates** | | | | | | **Dates** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DPT | | | | | | Hep B | | | | | |
| OPV | | | | | | Varicella | | | | | |
| MMR | | | | | | TB status | | | | | |
| HIB | | | | | | Other | | | | | |

Antibiotic prophylaxis: Indication: Medication and dose:

**Common Presenting Problems/Findings With Specific Suggested Managements**

| Problem | Suggested Diagnostic Studies | Treatment Considerations |
|---|---|---|
| | | |
| | | |
| | | |

**Comments on child, family, or other specific medical issues:**

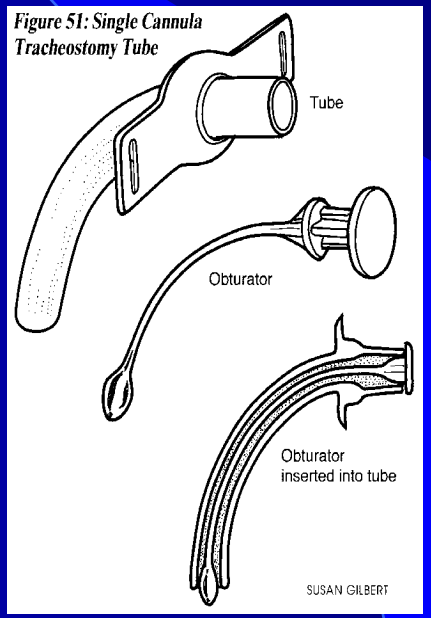
**Physician/Provider Signature:** **Print Name:**

# Tracheostomy

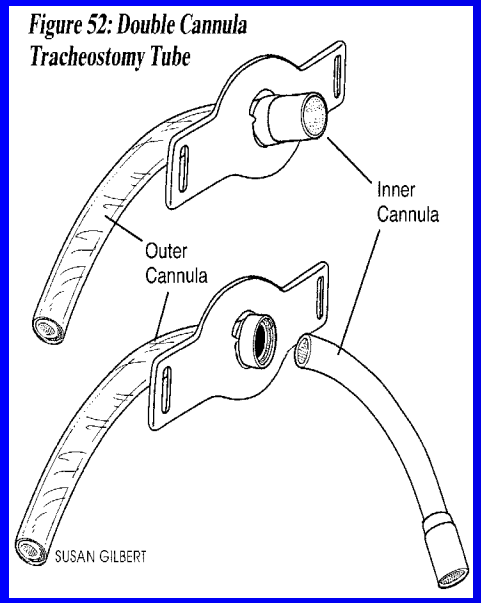
- Etiology
  - Tracheal stenosis
  - Tracheal malacia
  - Vocal cord paralysis
  - Inability to handle secretions
  - Mid-face abnormalities
  - High “SCI”

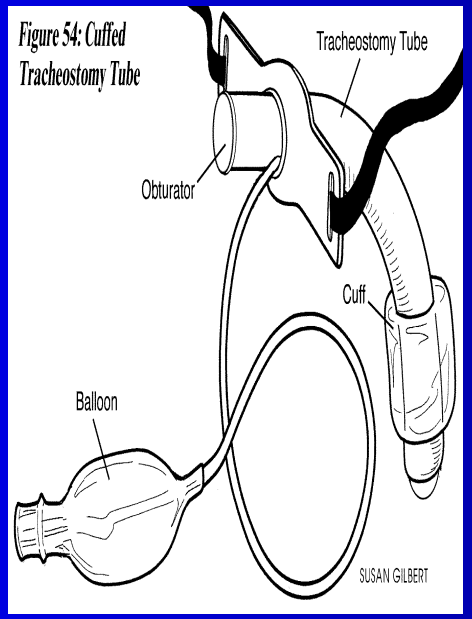
# Pediatric Tracheostomy Tubes

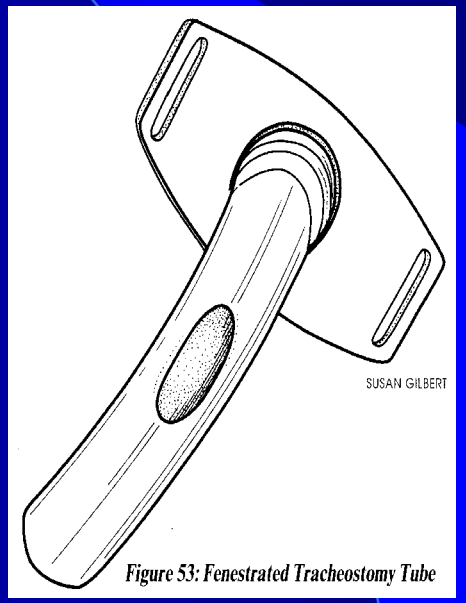
- Can be metal or plastic
- Come in all sizes
- Cuffed for > 8 yrs of age
- Pediatric or neonatal
  - Vary in length
  - No inner cannula



# Features of Tracheostomy Tubes



# Trach Emergencies: Obstruction

- Hyperoxygenate before suctioning
- SUCTION the tube to clear mucous
- SUCTION is limited to 5 - 10 seconds
- SUCTION must be done with the appropriate size suction catheter, 2x the size of the trach tube

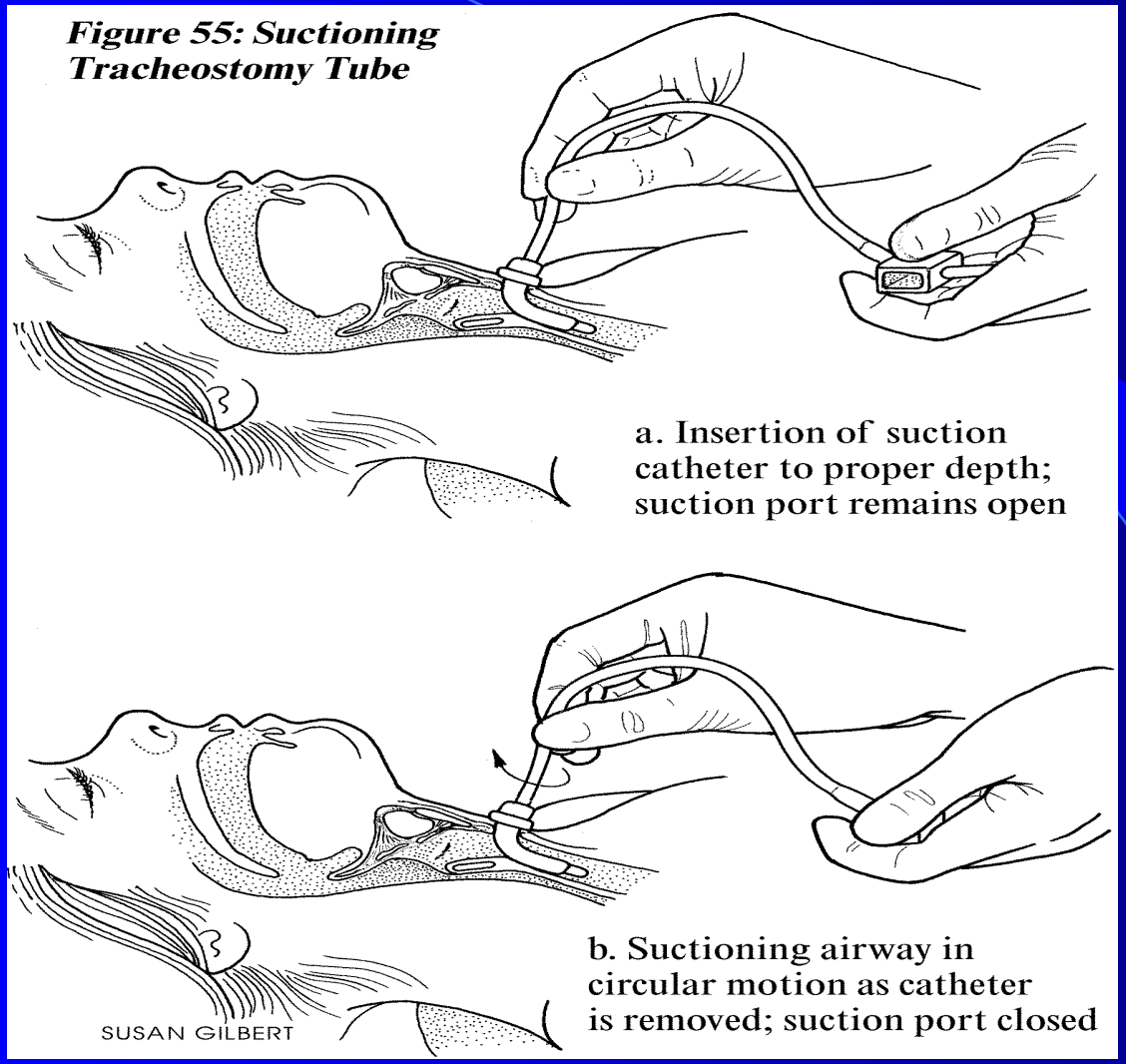
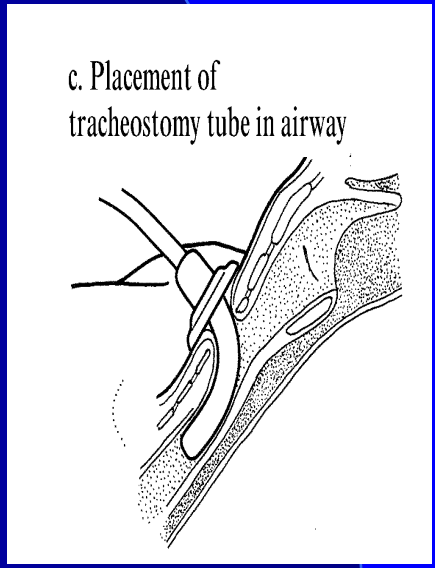


Figure 55: Suctioning
Tracheostomy Tube
a. Insertion of suction catheter to proper depth; suction port remains open
b. Suctioning airway in circular motion as catheter is removed; suction port closed
SUSAN GILBERT

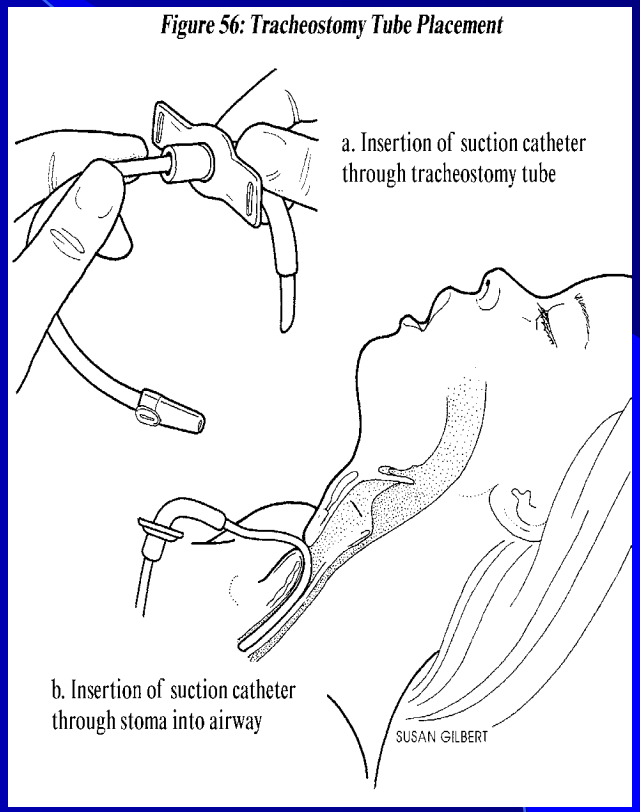
# Trach Emergencies: Decannulation

- Attempt to replace trach tube
  - Same size or half size smaller
- Provide BVM ventilation stoma or mouth and nose while applying occlusive pressure over stoma, if apneic



# Tracheostomy Emergencies: Decannulation

- **ALS Interventions**
  - **Insert endotracheal tube (ETT) into trach stoma**
  - **Orally intubate the child, while maintaining occlusive pressure over the stoma**



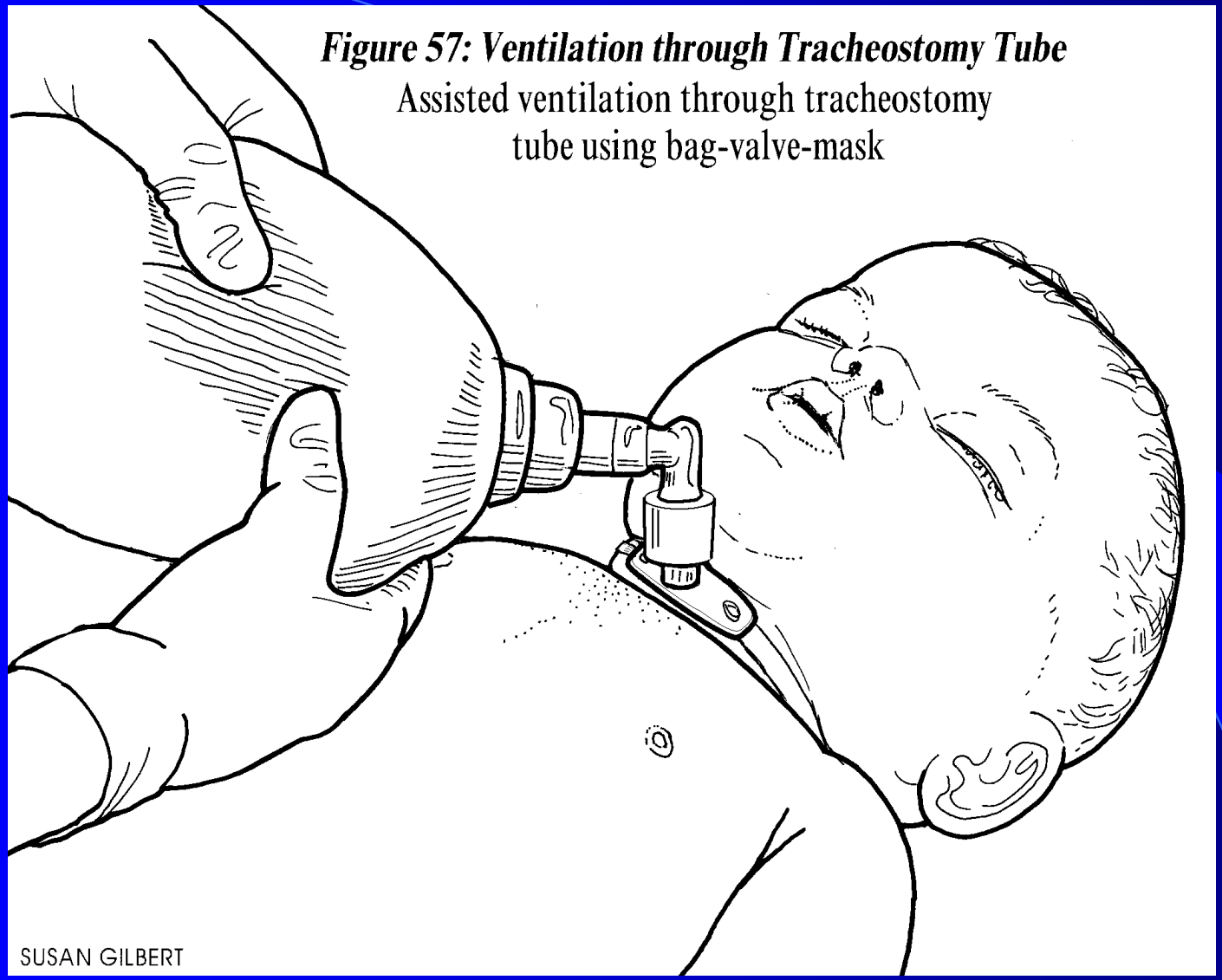


Figure 57: Ventilation through Tracheostomy Tube
Assisted ventilation through tracheostomy tube using bag-valve-mask
SUSAN GILBERT

# Management of Cyanotic Heart Disease

- Oxygen to target saturations
- Air embolism precautions
- Management of cardiogenic shock
- Management of pulmonary hypertension
- Initiation of $PGE_1$

# Congenital Heart Disease

- Considerations for cyanotic heart disease
  - Administer oxygen to maintain the child's baseline saturation
  - Bleeding precautions
  - Air embolism precautions
  - Support circulatory status
    - Fluid bolus 5-10 cc/kg
  - Maintain body temperature

# Long Term Vascular Access

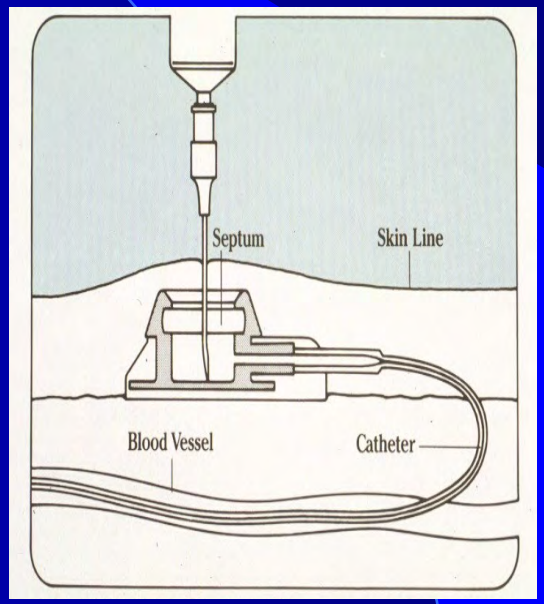
- **Etiology**
  - Chronic medical condition requiring frequent blood draws or IV medications
  - Long term IV antibiotics
  - Long term blood product transfusion
  - Chemotherapy
  - Total perienteral nutrition (TPN)

# Types of Long Term Vascular Access

- **Total Implantable Catheters**
  - Medication ports
- **Partially Implantable Devices**
  - Catheters such as Hickman, Broviac, and Groshong
- **Temporary Devices**
  - PICC and midlines

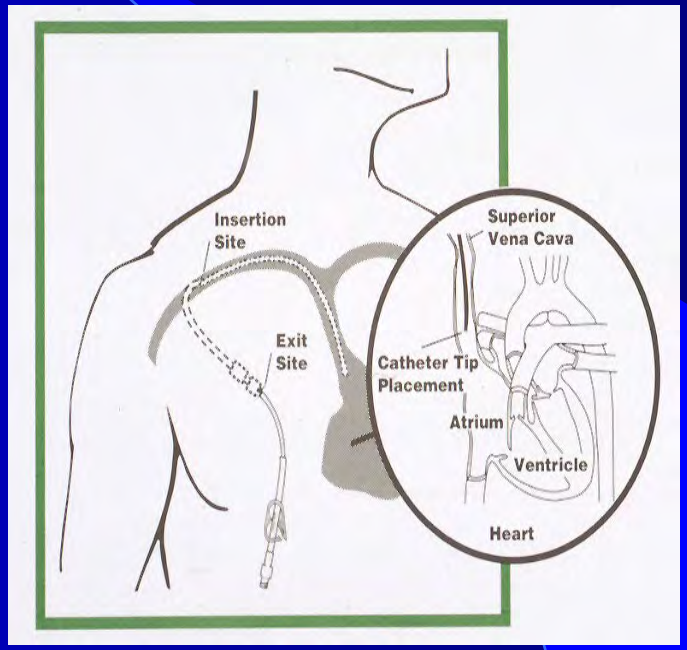
# Long Term Vascular Access

- **Medication ports**
  - Use a non-coring needle to access port if possible
  - Stabilize port when inserting needle
  - Use with caution if there is no blood return
  - Use 2x2s to support needle and cover with an occlusive dressing



# Long Term Vascular Access

- **Broviac, Hickman, Groshong catheters**
  - Must withdraw heparin flush prior to infusing
  - Secure connection to avoid air embolism
  - Occlusive dressing over insertion site
  - Groshong's have internal valve, no external clamps



# Long Term Vascular Access

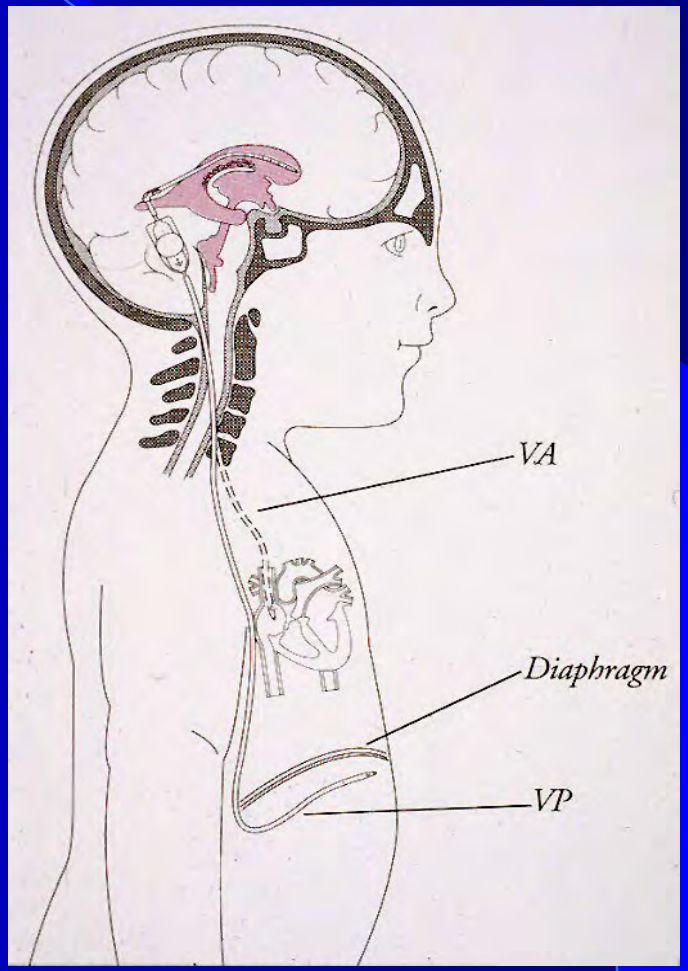
- PICC or midline (location of tip)
  - Must withdraw heparin flush prior to infusing if > than # 2 Fr
  - May not draw blood from # 2 Fr
  - Use 10 cc or larger syringe to avoid damaging the catheter
  - Catheter is not sutured in place and may become dislodged

# Vascular Access Complications

- Infection
- Bleeding
  - Apply direct pressure
- Dislodged
  - Apply occlusive dressing
- Air embolism (rare)
  - Position left side down
  - High flow oxygen

# Ventricular Shunts

- Special tubing that carries excess CSF from the ventricles of the brain
  - VP
  - VA



# Complications with CSF Shunts

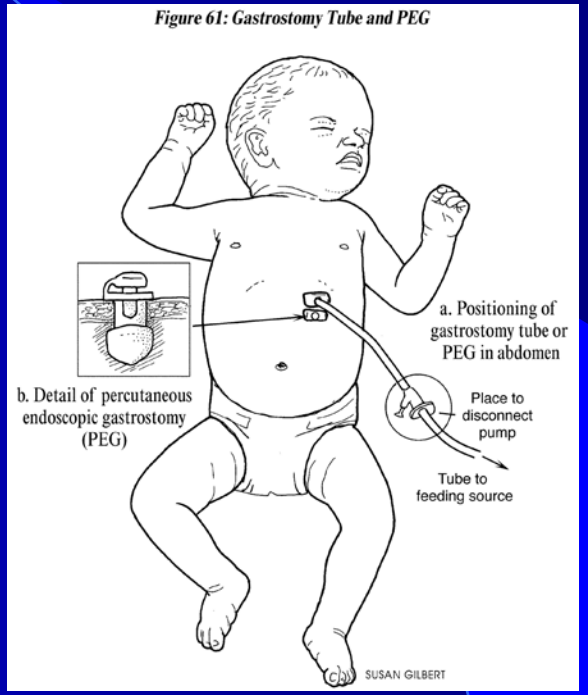
- Infection: fever
- Obstruction: increased ICP
- Disconnection
- Outgrow length

# Interventions

- Oxygen, airway management
- Age appropriate hyperventilation
- Elevate HOB 30 - 45 degrees
- Avoid excessive stimulation
- Parents may pump shunt
- Transport to appropriate facility

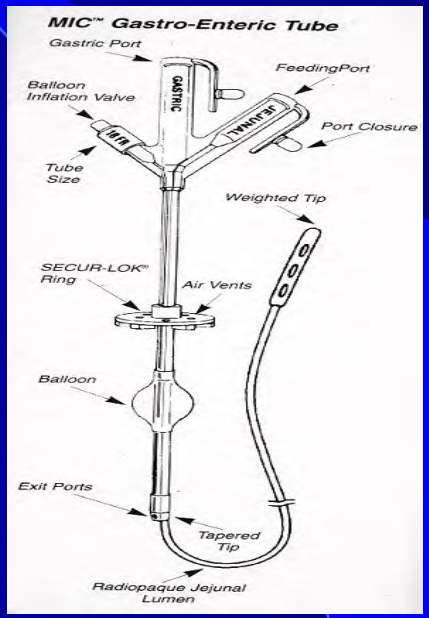
# Feeding Tubes

- NG/NDT tubes
- Gastrostomy buttons
- Gastrostomy tubes
- Jejunostomy tubes



# Emergency Management for Respiratory Distress

- AIRWAY and Breathing
- Open and withdraw any fluid or residual feeding
  - Adapter for gastrostomy button
  - Use #8-10 Fr suction catheter
- Position to prevent aspiration
- Circulatory access and glucose

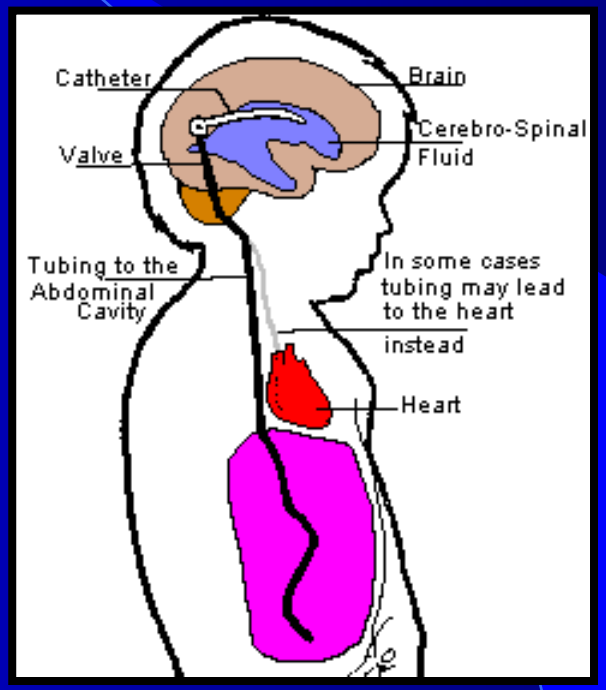


# Emergency Management
## for DISLODGED TUBE

- ABC's
- Discontinue feeding and clamp tube
- Insert suction catheter or foley catheter into stoma
- Consult specialist for further intervention

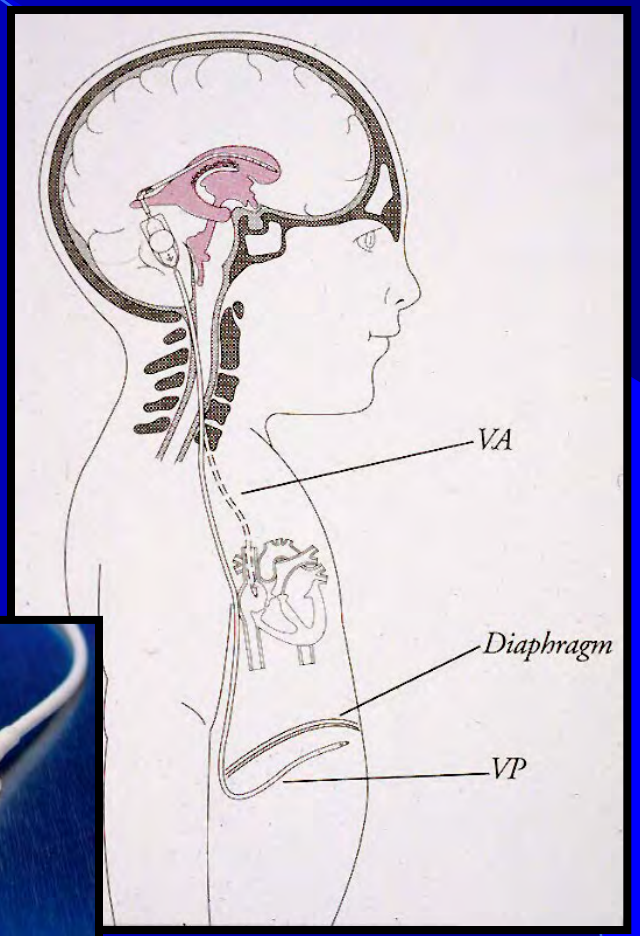
# CSF Shunts

- VP shunt
  - From ventricles of brain to peritoneal cavity
- VA shunt
  - From ventricles of brain into RA
  - Older children



# Shunt Complications

- Infection
- Disconnected
- Obstructed
- Outgrow shunt




# Clinical Presentation

- Assessment
  - Signs of increased ICP
  - Fever
  - Seizures
  - Vomiting
- Diagnostic criteria
  - Shunt series
  - Head CT
  - CSF culture

# Management

- Monitoring
  - AOV
  - Neuro status
  - Cardiac monitoring
- Interventions
  - Parent may pump shunt
  - IV antibiotics
  - Externalized shunt
  - Emergent shunt revision

# Preparing the Patient for Transport

- Airway/breathing management
- Secure lines and tubes
- Spine immobilization
- Maintenance IVF, recent glucose
- Maintain body temperature
- Preparation for resuscitation

# Airway/Breathing Management

- High flow oxygen, if appropriate
- Intubated patients
  - Confirmation of ETT placement
    - Exhaled carbon dioxide
    - CXR
  - Placement of gastric tube
  - Restraints

# Maintenance IVF

- Content of maintenance IVF
  - $D_5$1/2NS for < 2 years
  - $D_5$NS for > 2 years
  - NS for head injury
- Rate of maintenance IVF
  - 4 cc/kg for first 10 kilograms
  - 2 cc/kg for second 10 kilograms
  - 1 cc/kg for additional kilograms

# Summary

- Assess the CHILD and the equipment
- Establish A B C’s
- Suction and Oxygen
- Maintain body temperature
- Vascular access may be difficult
- Back up “Go Bag” systems
- Early consultation with specialists