Home NG Feeding Educational Module

2026

Connecticut Children's

Learning Objectives

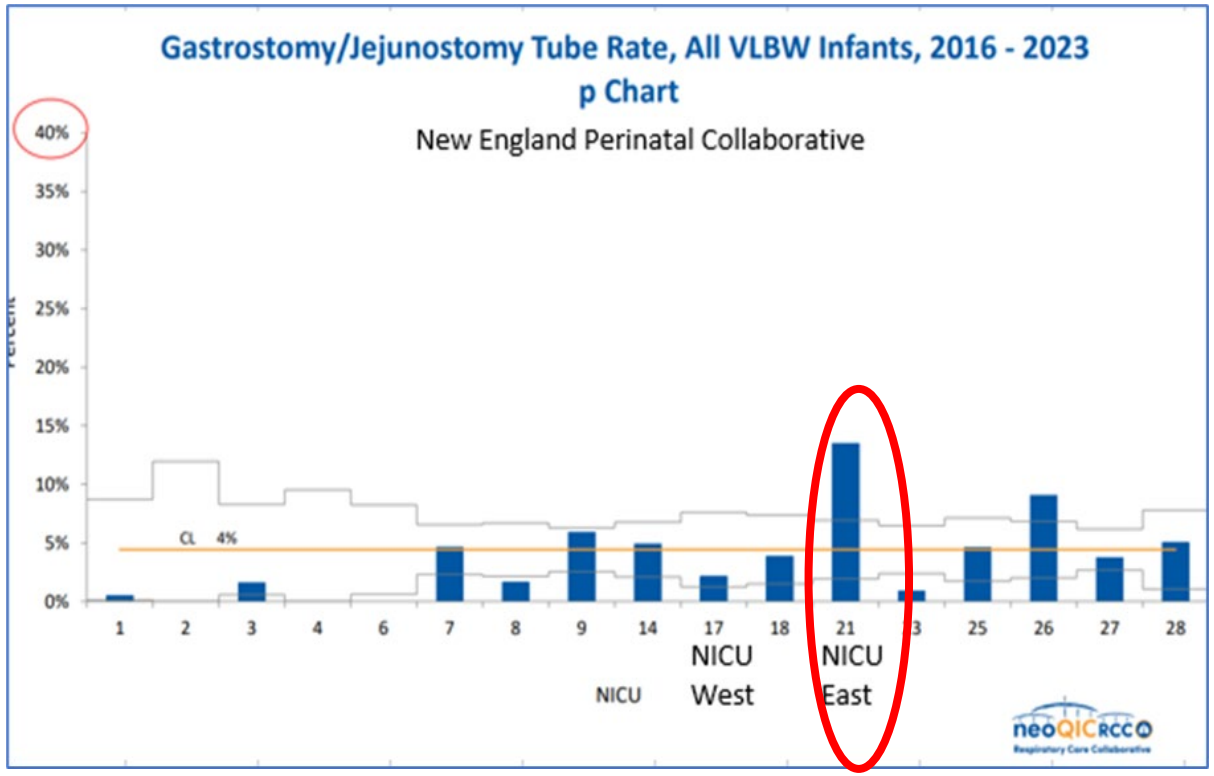
This module will review the current state of gastrostomy tube placement and the transition to nasogastric tubes (NGT) being placed prior to discharge.

<u>Objectives:</u>

- Review current state of feeding premature infants with feeding difficulties since initiation of pathway
- Introduce revised criteria for NGT placement for discharge home
- Review required discharge education for NGT
- Introduce replacement of NG tube parent education

Background: Infant Gastrostomy Tube Rates

Prior to the initiation of the pathway in March 2025, Hartford NICU Gastrostomy tube placement rates were higher than regional peers.



Opportunity for Improvement in Care for Infants with Delayed Oral Feeding Skills

- **Current Challenge**: Infants with slow progression to full oral feeding
- **Opportunity**: Standardize and improve care by discharging select infants with NG tubes for home use
- **Goal**: Enhance continuity of care and support home feeding management

NG tube vs. G tube

Since implementation of the “Discharge home with NG tube” Pathway, 16 infants were safely discharged home with an NG tube and overall G tube rates have decreased.

Group	Pre-pathway	Post-pathway	Total
NG tube	43	16	59
G tube	84	14	98

Infants with NG Tubes vs G tubes

- On average, NG-fed babies went to the ED 2.1 times after discharge to have their NG tubes replaced. (median 1.5, range 0-8)
- Infants discharged with NG tubes had significantly shorter hospital stays (NG tube: 59 days vs GT: 98 days)
- 73% of NG-fed infants graduated to full PO intake at home by median of 50 days (range 3-426).
- There was no significant difference in NG and G-tube post-discharge weight velocity at 1, 2, or 3 months.

Revised Inclusion Criteria

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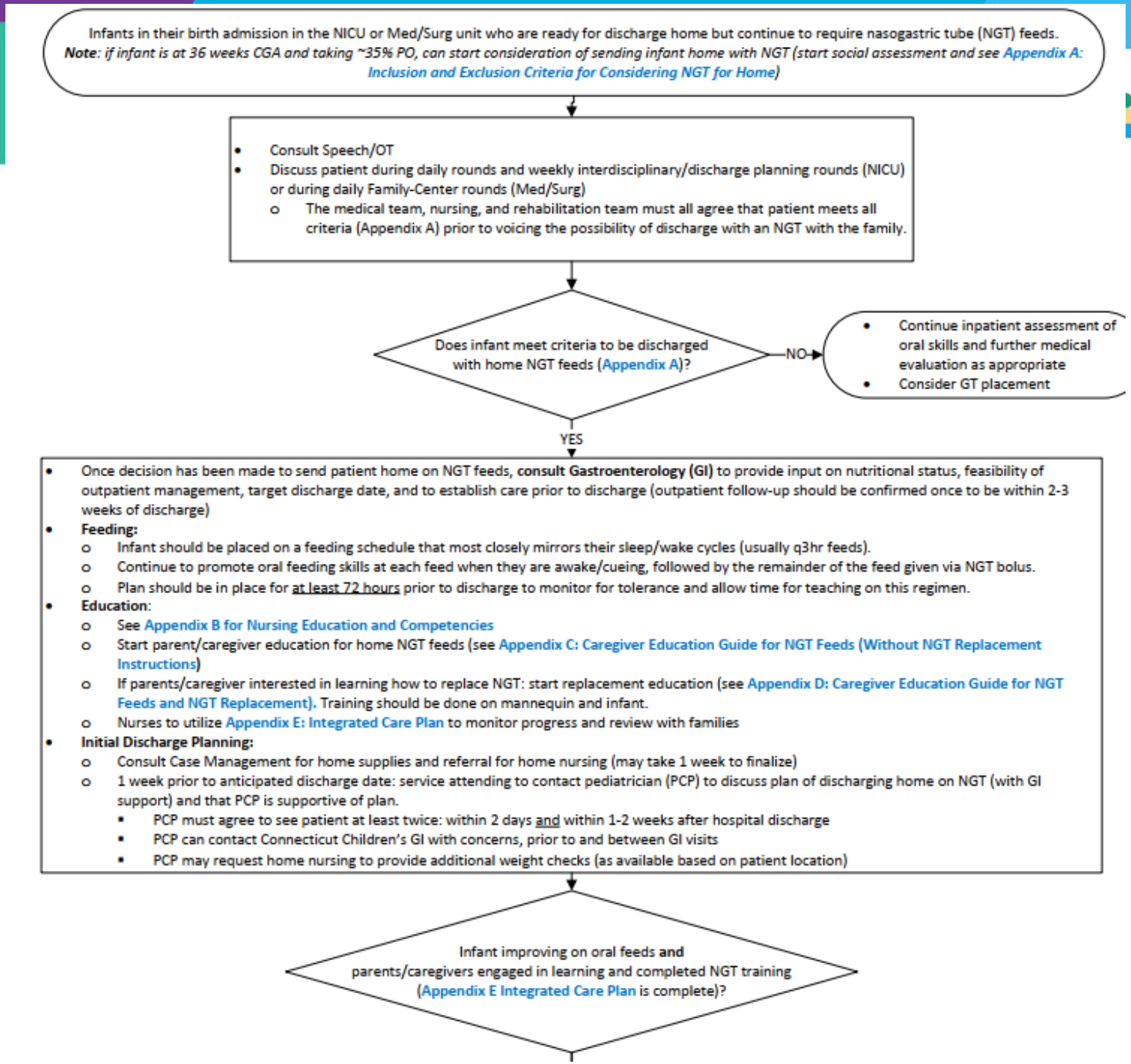
Criteria for Discharging Neonates with NG Tube for Home Feeding

Criteria	Details
Gestational Age & Weight	At least 37 weeks post menstrual age (PMA), at least 2 weeks postnatal, and weigh >2kg within their birth admission who require hospitalization only due to the inability to take all feeds by mouth
Oral Feeding Progress	Making progress in oral feeding as determined by medical provider & SLP team
Time to Full PO Feeds	Anticipated time to full oral feeds < 6 months
Feeding Volume	Able t (ensures ED visit is not required over
Special Circumstances for Lower Volume	- P ose NGT feeding for home over gas - Pre-op and Post-op cardiac surgery patients - Infants with volume restrictions; for example, infants with aspiration (micro or silent) per modified barium swallow who are expected to have steady short-term improvements and liberalizing of their volumes
Other Discharge Criteria	Meets apnea/bradycardia/desaturation, temperature regulation, and other relevant criteria
Parental Readiness	The team must have confidence that the family is reliable and competent to succeed with NGT teaching in the hospital, to manage NGT placement and feedings at home, and to carry through on discharge requirements/follow-up visits related to NGT feedings

Must meet all inclusion criteria

NGT Algorithm

Pathway can be found on the Internet with additional resources.



Exclusion Criteria for Discharging Neonates with NG Tube for Home Feeding

Criteria	Details
Inclusion Criteria	Any Infant who doesn't meet ALL of the above criteria
Airway Compromise Concerns	Significant tachypnea, desaturations, or other airway issues during oral feeds despite appropriate interventions (positioning, nipple type, feeding volume caps, etc.)
Supplemental Oxygen Requirement	Requiring supplemental oxygen at home
Continuous Feeding Needs	Needing 24-hour continuous feeds
Family Engagement	Family not engaged in learning or demonstrating ability to manage NG tube feeding at home

Steps for Discharge Planning: NG Tube Feeding at Home

Step	Details
GI Team Consult	Initiate transition from inpatient to outpatient nutrition care. More details on following slide
Feeding Team Setup for Outpatient	Feeding therapy referrals to Birth to Three, SLP and/or OT will be placed and of discharge.
Neonatal Neurodevelopmer Follow up Clinic	harge
Clearance from Sub-Specia Teams	e.g., cardiology, SLP)
Supply Delivery & Verification	family proper handling and
VNA Scheduling	Schedule Visiting Nurse Association (VNA) visit, if available
Parent Training	Complete parent training (at least two caregivers)
Parent Education	Educate parents on risks/benefits of NG tube vs G tube for home feeding
Social Work Consult	Complete social work consultation as needed
Sign-Out to Pediatrician	Sign-out to pediatrician completed and appointment scheduled within 2 days of discharge

Be sure to verify that all steps have been completed before discharge of a patient!

Transition from Inpatient to Outpatient Care for NGT Feeding

Background	GI Team manages outpatient care, including feeding plan adjustments and NGT management (replacement, troubleshooting, etc.)
Discharge Planning	GI Consult **must** be completed prior to discharge - **Dedicated Enteral Feeding Clinic:** Developing a clinic for NG/G tube patients, with resources (RN, RD, GI provider) - **Patient-Specific Plan:** Instructions on handling a dislodged NG tube - **Individualized Plan**: Varies based on geography, available resources, transportation, and medical needs
Outpatient Appointment Schedule	- First Month: Up to weekly appointments, based on child's needs - Next 2 Months: Up to twice monthly appointments - Ongoing: Monthly appointments until NGT is no longer needed or frequency is reduced
Post-Discharge Care Considerations	- GI Follow-Up: Continuous care to address feeding issues and NGT management - Flexible Scheduling: Adjust based on child's condition and progress

Metrics for Discharge and Follow-Up Outcomes

- Percentage of patients with pathway order set
- Percentage of patients with G-tube placed prior to discharge
- Percentage of patients with G-tube placed within 3 months and within 6 months of discharge
- Percentage of patients discharged home on NG tube feeds
- Percentage of patients with GI consult prior to discharge
- Percentage of patients with GI follow-up clinic appointment within 2 weeks of discharge
- Percentage of patients with VNA established prior to discharge
- Percentage of patients with failure to thrive diagnosis by 3 months post discharge and by 6 months post discharge
- ED visits within 3 months and within 6 months of discharge (all cause)
- Readmissions within 3 months and within 6 months of discharge (all cause)
- ALOS
- Number of patients discharged home on G-tube and NG tube stratified by unit

Resources Shared with Families for Education

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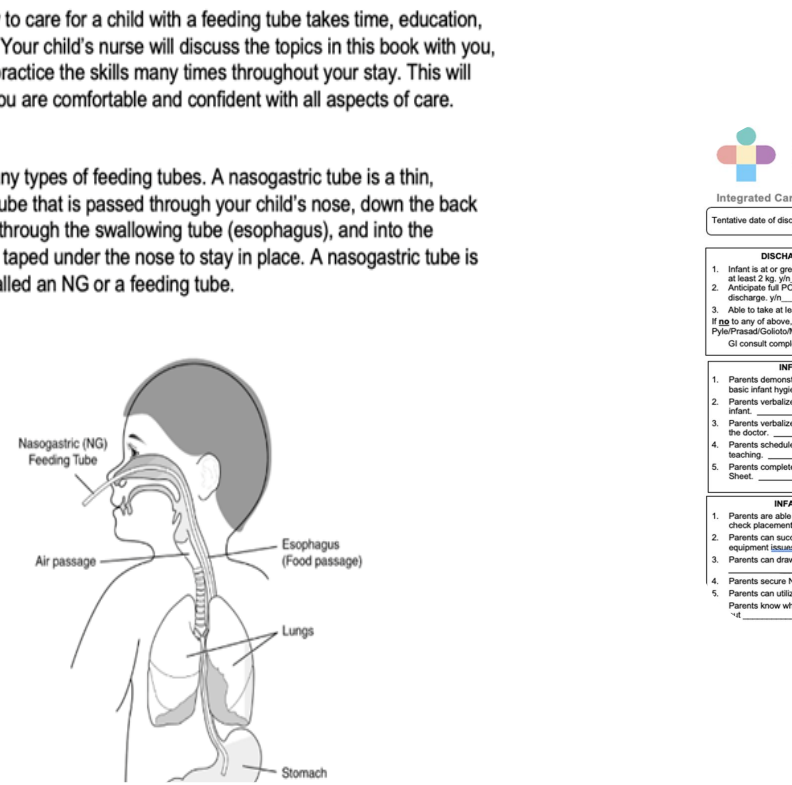
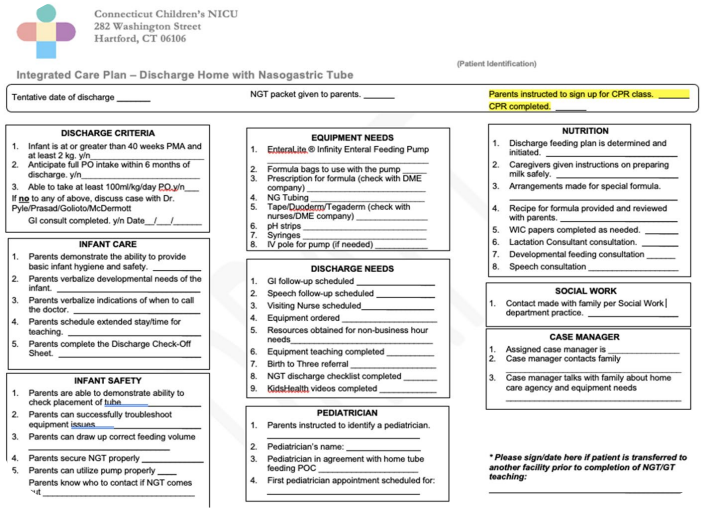


FEEDING TUBES

Learning how to care for a child with a feeding tube takes time, education, and practice. Your child's nurse will discuss the topics in this book with you, and you will practice the skills many times throughout your stay. This will ensure that you are comfortable and confident with all aspects of care.

There are many types of feeding tubes. A nasogastric tube is a thin, flexible, soft tube that is passed through your child's nose, down the back of the throat, through the swallowing tube (esophagus), and into the stomach. It is taped under the nose to stay in place. A nasogastric tube is sometimes called an NG or a feeding tube.

Educational Packet (Appendix D or E)



Connecticut Children's NICU
282 Washington Street
Hartford, CT 06106

(Patient Identification)

Integrated Care Plan – Discharge Home with Nasogastric Tube

Tentative date of discharge _____ | NGT packet given to parents. _____ | Parents instructed to sign up for CPR class. _____ CPR completed. _____

DISCHARGE CRITERIA
1. Infant is at or greater than 40 weeks PMA and at least 2 kg. y/n
2. Anticipate full PO intake within 6 months of discharge. y/n
3. Able to take at least 100ml/kg/day PO y/n

If no to any of above, discuss case with Dr. Pyle/Prasad/Golioto/McDermott
GI consult completed. y/n Date__/__/__

INFANT CARE
1. Parents demonstrate the ability to provide basic infant hygiene and safety.
2. Parents verbalize developmental needs of the infant.
3. Parents verbalize indications of when to call the doctor.
4. Parents schedule extended stay/time for teaching.
5. Parents complete the Discharge Check-Off Sheet.

INFANT SAFETY
1. Parents are able to demonstrate ability to check placement of tube.
2. Parents can successfully troubleshoot equipment issues.
3. Parents can draw up correct feeding volume
4. Parents secure NGT properly
5. Parents can utilize pump properly
   Parents know who to contact if NGT comes

EQUIPMENT NEEDS
1. EnteralLite® Infinity Enteral Feeding Pump
2. Formula bags to use with the pump
3. Prescription for formula (check with DME company)
4. NG Tubing
5. Tape/Duoderm/Tegaderm (check with nurses/DME company)
6. pH strips
7. Syringes
8. IV pole for pump (if needed)

DISCHARGE NEEDS
1. GI follow-up scheduled
2. Speech follow-up scheduled
3. Visiting Nurse scheduled
4. Equipment ordered
5. Resources obtained for non-business hour needs
6. Equipment teaching completed
7. Birth to Three referral
8. NGT discharge checklist completed
9. KidsHealth videos completed

PEDIATRICIAN
1. Parents instructed to identify a pediatrician.
2. Pediatrician's name:
3. Pediatrician in agreement with home tube feeding POC
4. First pediatrician appointment scheduled for:

NUTRITION
1. Discharge feeding plan is determined and initiated.
2. Caregivers given instructions on preparing milk safely.
3. Arrangements made for special formula.
4. Recipe for formula provided and reviewed with parents.
5. WIC papers completed as needed.
6. Lactation Consultant consultation.
7. Developmental feeding consultation
8. Speech consultation

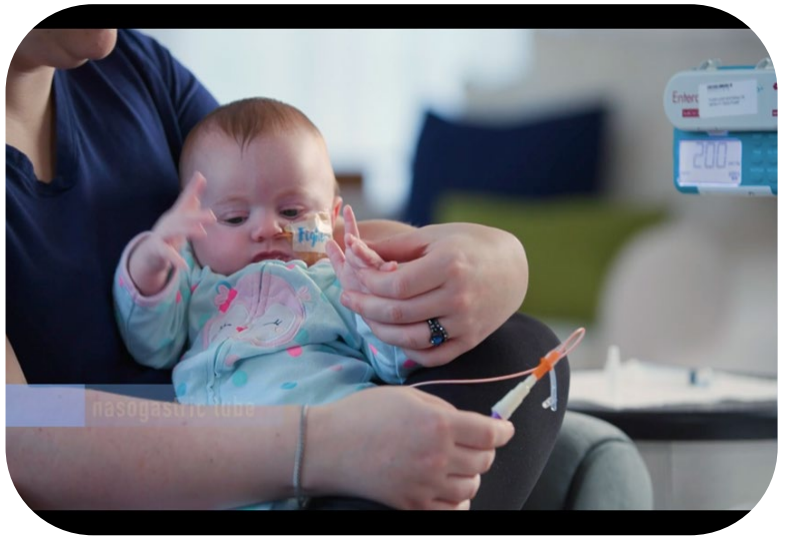
SOCIAL WORK
1. Contact made with family per Social Work department practice.

CASE MANAGER
1. Assigned case manager is
2. Case manager contacts family
3. Case manager talks with family about home care agency and equipment needs

** Please sign/date here if patient is transferred to another facility prior to completion of NGT/GT teaching:*

Integrated Care Plan for Discharge

Spanish Translations are available.
If you need additional languages translated, please contact writtentranslation@connecticutchildrens.org for assistance



Kids Health Videos On Get-Well Network

-Getting an NG Tube
-Handling problems with your child's NG tube
-Using your child's NG tube

Parent Education on Replacement of NG tube

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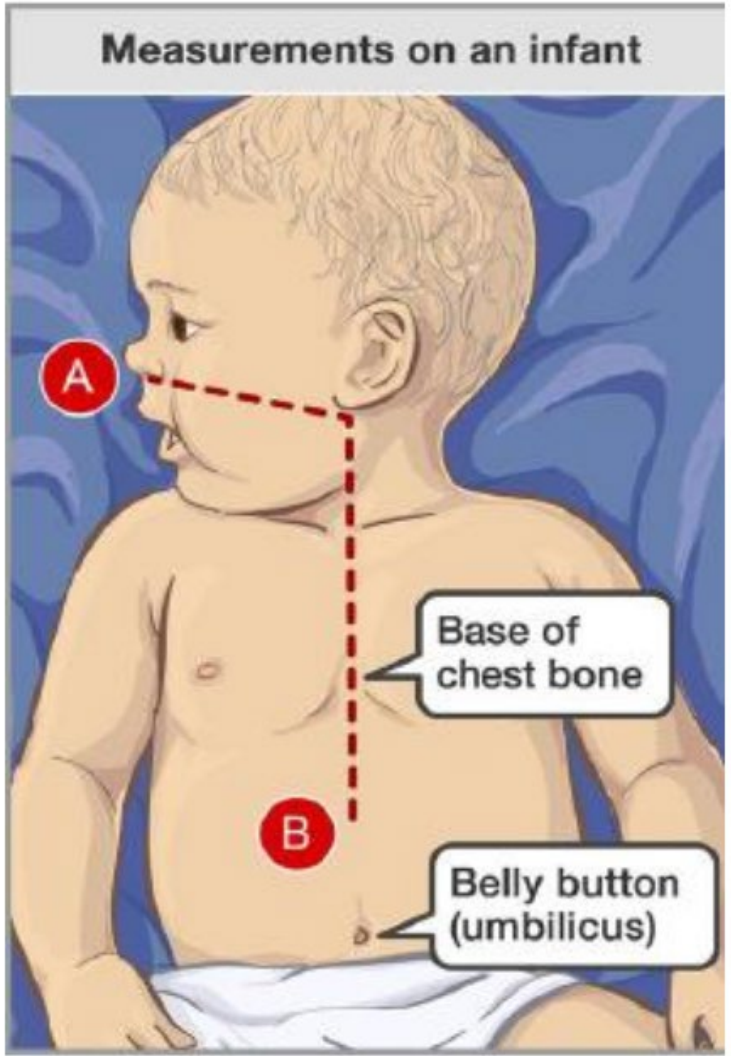
Replacement of NG Tube by Parents

- If the medical team deems it appropriate, caregivers can be taught to replace NG tube in infant.
- 2 caregivers must learn how to replace the NG tube
  - Each caregiver must first place in mannequin
  - Each caregiver must place NG tube in infant TWO times
  - Please refer to **Appendix A**: Inclusion and Exclusion Criteria for additional details



Replacement of NG Tube by Parents

If parents are taught how to replace NG tube if displaced, then additional education is provided to parents, Appendix E (English/Spanish)

Inserting or Replacing an NG Tube (feeding tube)

Supplies:

You will need:

- Feeding tube: Size _____Fr Length _____ cms
- Water-soluble lubricant
- Transparent dressing (Tegaderm)
- Scissors
- Syringe
- pH paper
- Skin barrier (Duoderm)
- Tape
- Black Marking Pen

NG Tube Insertion Checklist

☐ **Wash Hands**
- Wash your hands with soap and water before starting.

☐ **Gather Supplies**
- Have all supplies ready and pre-cut the tape.

☐ **Measure the Tube**
- Place the end of the tube at the tip of your child's nose and measure to the earlobe (A).
- From that point, measure down to the halfway point between the bottom of the breastbone and the belly button (B).
- Make a mark on the tube at this point with a marker.

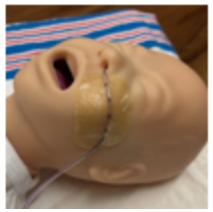
☐ **Prepare the Tube**
- Dip the end of the tube in lubricant or water to make it slippery.

☐ **Position the Baby**
- Lay the baby on their back and swaddle to keep arms down.
- Let the baby suck on a pacifier to help calm them.

☐ **Insert the Tube**
- Gently insert the tube into the nose, aiming slightly downward until you reach the mark.
- If the tube does not go in easily, remove it, reposition the baby, and try again.

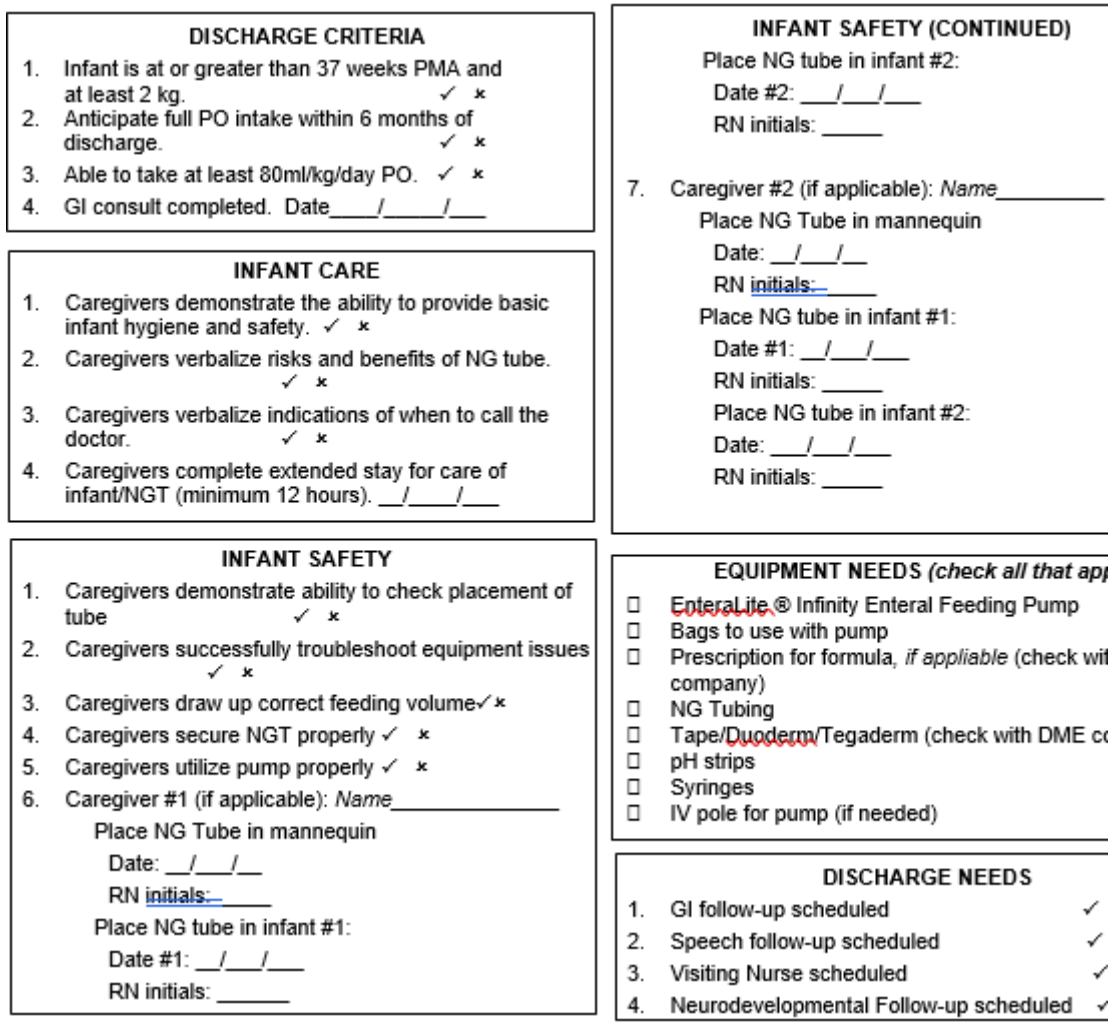
☐ **Check Placement**
- Remove the stylet if there is one.
- Use a syringe to get some stomach fluid and check the pH.

☐ **Secure the Tube**
- Place the skin barrier (Duoderm) on the child's face. Any tape you use will go on top of this skin barrier.
- Tape the tube in place using a small piece of tape and a transparent dressing (Tegaderm).
- Make sure the tube is not too tight at the nose.
- If it puts pressure on the nostril or cheek, remove the tape, reposition the tube, and tape it again.



Replacement of NG Tube by Parents

- The integrated care plan should be completed with NG tube placement in mannequin and infant
  - Needs to be initialed by supervising RN **AND** scanned into the medical chart upon completion of care plan.



DISCHARGE CRITERIA

1. Infant is at or greater than 37 weeks PMA and at least 2 kg. ✓ ×
2. Anticipate full PO intake within 6 months of discharge. ✓ ×
3. Able to take at least 80ml/kg/day PO. ✓ ×
4. GI consult completed. Date____/_____/___

INFANT CARE

1. Caregivers demonstrate the ability to provide basic infant hygiene and safety. ✓ ×
2. Caregivers verbalize risks and benefits of NG tube. ✓ ×
3. Caregivers verbalize indications of when to call the doctor. ✓ ×
4. Caregivers complete extended stay for care of infant/NGT (minimum 12 hours). __/____/___

INFANT SAFETY

1. Caregivers demonstrate ability to check placement of tube ✓ ×
2. Caregivers successfully troubleshoot equipment issues ✓ ×
3. Caregivers draw up correct feeding volume ✓ ×
4. Caregivers secure NGT properly ✓ ×
5. Caregivers utilize pump properly ✓ ×
6. Caregiver #1 (if applicable): *Name*_____
   Place NG Tube in mannequin
   Date: __/___/__
   RN initials: _____
   Place NG tube in infant #1:
   Date #1: __/___/___
   RN initials: _____

INFANT SAFETY (CONTINUED)

Place NG tube in infant #2:
Date #2: ___/___/___
RN initials: _____

7. Caregiver #2 (if applicable): *Name*_____
   Place NG Tube in mannequin
   Date: __/___/__
   RN initials: _____
   Place NG tube in infant #1:
   Date #1: __/___/___
   RN initials: _____
   Place NG tube in infant #2:
   Date: ___/___/___
   RN initials: _____

EQUIPMENT NEEDS *(check all that ap*

- ☐ EnteraLite® Infinity Enteral Feeding Pump
- ☐ Bags to use with pump
- ☐ Prescription for formula, *if appliable* (check wit company)
- ☐ NG Tubing
- ☐ Tape/Duoderm/Tegaderm (check with DME c
- ☐ pH strips
- ☐ Syringes
- ☐ IV pole for pump (if needed)

DISCHARGE NEEDS

1. GI follow-up scheduled ✓
2. Speech follow-up scheduled ✓
3. Visiting Nurse scheduled ✓
4. Neurodevelopmental Follow-up scheduled ✓

Documentation in Epic & Nursing Teaching Points

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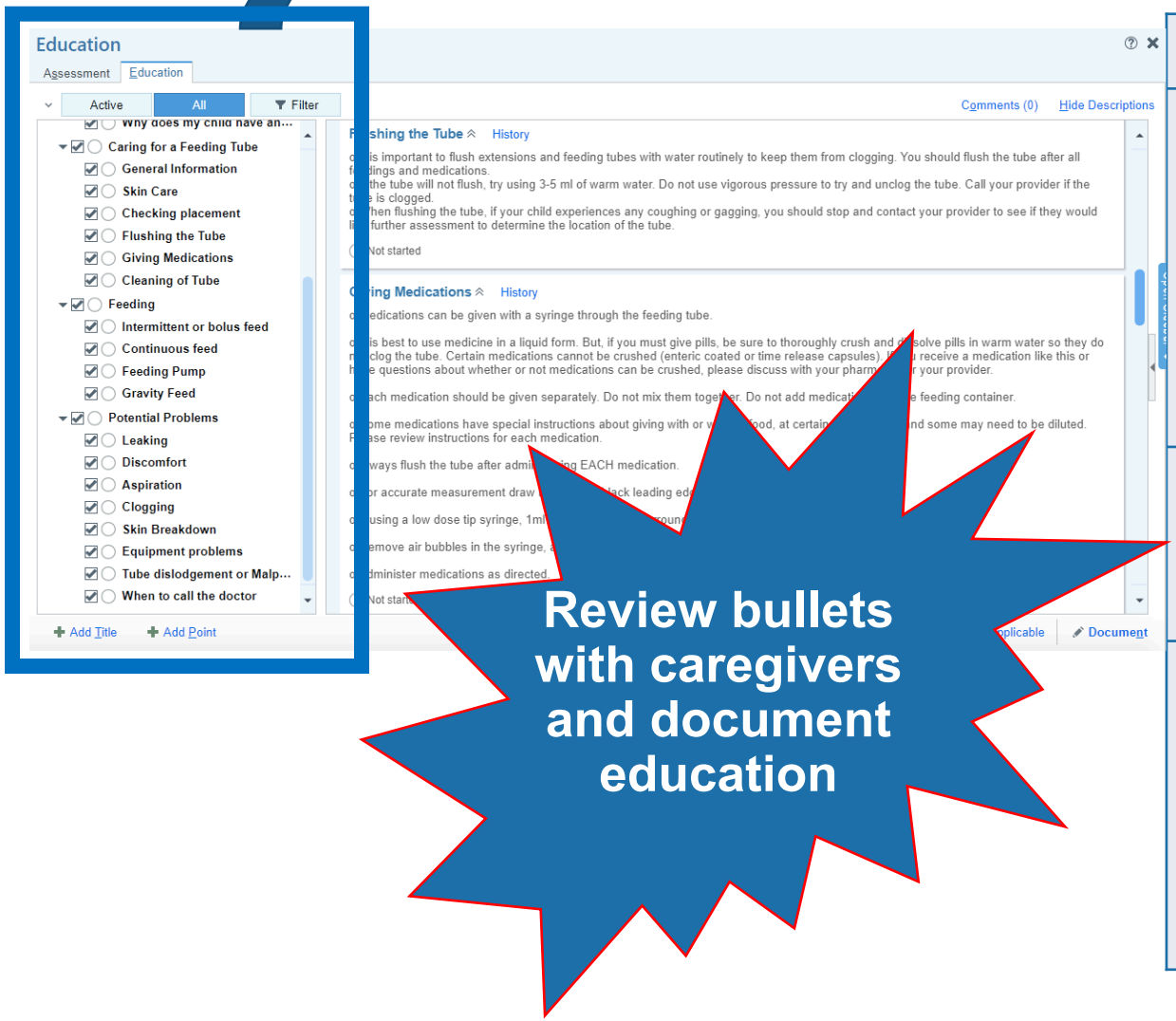
“Discharge Home with NG”
Epic Patient/Family Education



Education Category	Educational Topic
Caring for a Feeding Tube	❑ What is an NG ❑ Why does my child have an NG Tube ❑ General Information ❑ Skin care/ breakdown ❑ Checking placement ❑ Flushing the tube ❑ Giving medications
Feeding	❑ Intermittent or bolus feeds ❑ Continuous feeds ❑ Feeding pump use ❑ Gravity feeds
Potential Problems	❑ Leaking ❑ Discomfort ❑ Aspiration ❑ Clogging ❑ Equipment problems ❑ Tube dislodgement or Malposition ❑ When to call the doctor

Checking the pH of a Nasogastric Tube

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Checking the pH – Nursing Education

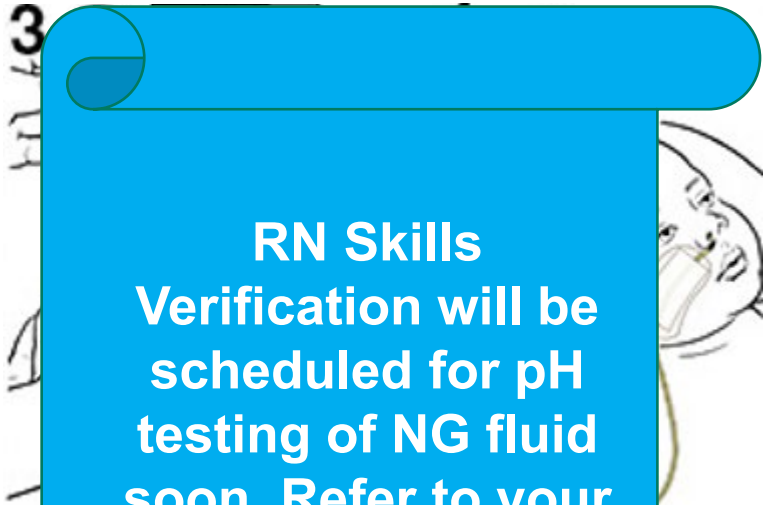
1

Gather supplies, including syringe and pH strips.

2

Wash your hands with soap and water

3



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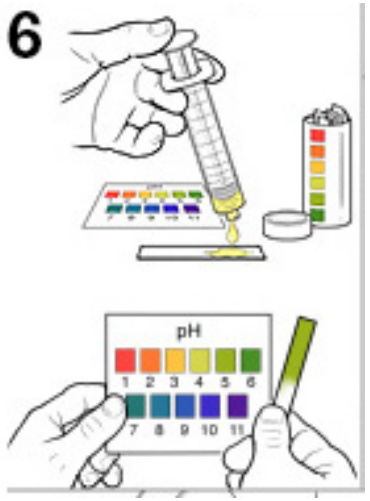
RN Skills Verification will be scheduled for pH testing of NG fluid soon. Refer to your Unit Based Educator for more information

5

Remove syringe from the feeding tube.

6



Check the pH of the fluid using the provided pH paper (should be < 6)*.

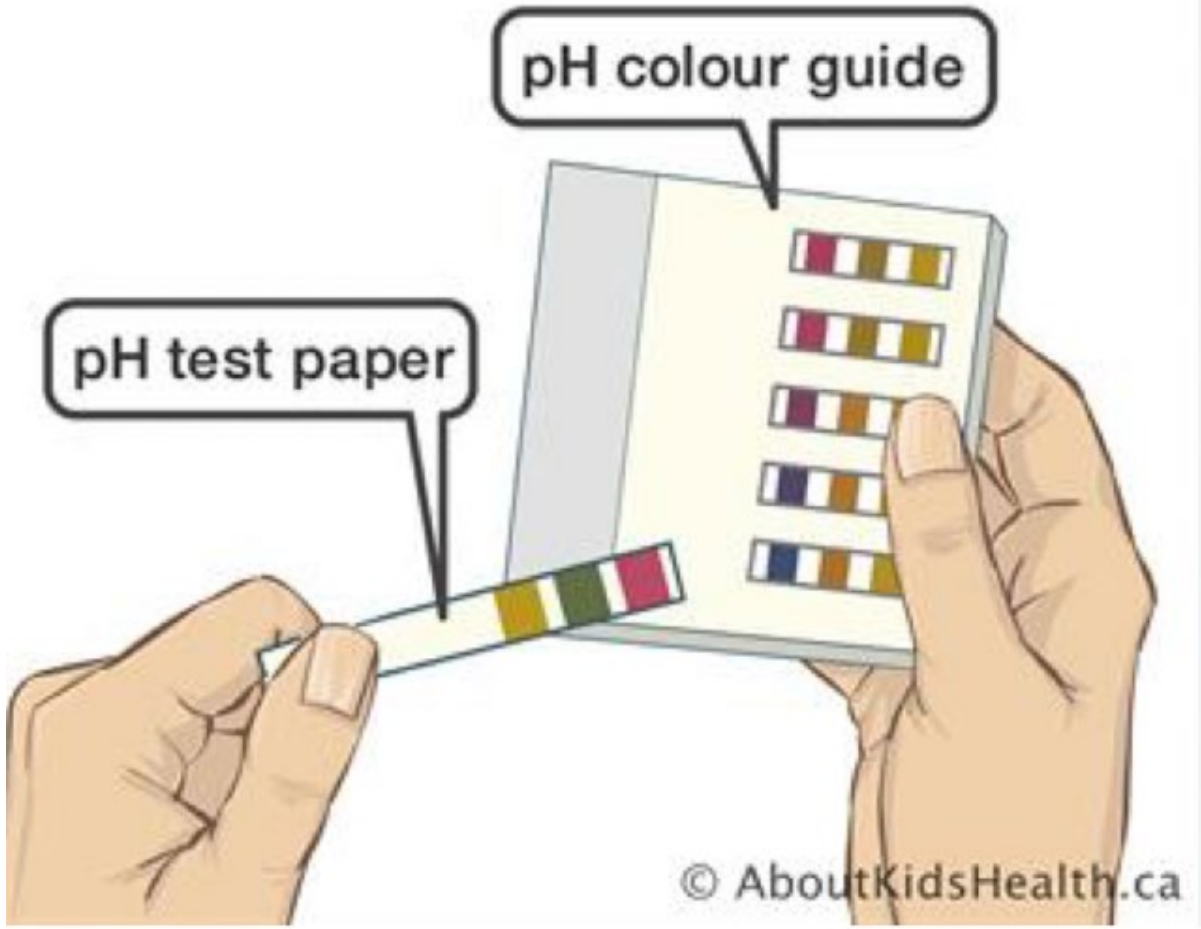
pH Test Strips found in Omni

*The pH strips vary based on home care companies. Families are advised to follow the instructions that the home care company provides.

Trouble Shooting pH Checks for Families

If pH above 6, **do not** use the tube and call your provider.

If your child is on continuous nighttime feedings, the pH value might not be accurate (the pH will be from the feeding) In this case, you can confirm that the aspirate is formula/breastmilk.



Decreasing Oral Feeds after Discharge

Some infants may decrease oral intake of breastmilk or formula after leaving the hospital

- **Action for Families:**
  - **Call the GI Clinic** or **Pediatrician** if oral intake decreases

Patient Experience

- "Even before our baby was born, we knew she would be in the hospital for a long time, we anticipated several months due to her diagnosis (CDH). We were so thrilled to have had the opportunity to go home around 1 1/2 months after her birth and surgery, to work on oral feedings in a comfortable, familiar environment while still knowing we could give her the feedings through the NG if she didn't finish them all. There were several times that we did need to drive back to the hospital to get the NG replaced and unfortunately we live over 50 minutes from the hospital so it would have been good for convenience and less exposure to the emergency room to have been taught to replace the tube ourselves.“ M.E.

Thank you to this Collaborative Workgroup!

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Name	Specialty/Area	Role
Kathleen Kellerman	Cardiology	Cardiology APRN
Carleen Leclaire	Case Management	NICU East Case Manager
Pam Wheelock	Case Management	NICU West Case Manager
Erica Colangelo	Clinical Nutrition	NICU East
Kate Haines	Clinical Nutrition	NICU East
Annmarie Spizzoucco	Clinical Nutrition	NICU East
Kate Vance	Clinical Nutrition	Gastroenterology
Bella Zeisler	**Gastroenterology**	**Medical Director for Gastroenterology**
Heidi Sweeney	Gastroenterology	Lead GI APRN with work in GI- G tube clinic
Jenny Bunick	Gastroenterology	GI Nurse
Nicole Lewie	Gastroenterology	GI nurse
Meghan Martin	Gastroenterology	GI Nurse
Maria Thierman	Gastroenterology	GI Nurse
Annmarie Golioto	NICU East	NICU East Medical Director
David Sink	NICU	Physician Quality & Safety Officer, NICU West Medical Director
Brett Citarella	NICU	Neonatologist, Medical Director at Danbury
Shabnam Lainwala	NICU and NICU Follow Up	Medical Director for NICU Follow up Clinic

Name	Specialty/Area	Role
Mariann Pappagallo	NICU West	Neonatologist at NICU West
Usha Prasad	NICU	Neonatologist
Alaina Pyle	NICU East	Neonatologist at NICU East and Danbury
Nazifa Rahman	NICU	NICU Fellow
Kristi Zuniga Aguilar	NICU East	NICU Practitioner
Courtney Conlan	NICU East	Assistant Nursing Manager
Lisa Dion	NICU West	Nurse Manager
Jeanne Silverwatch	NICU East	Nurse Manager
Laura Lissner	NICU East	NICU Educator
Lisa Stoecklin	NICU West	NICU Educator
Emily Milliken	Occupational Therapy	NICU West
Anand Sekaran	Pediatric Hospital Medicine (PHM)	Division Chief of PHM
Allyson McDermott	Pediatric Hospital Medicine	PHM Fellowship Director
Sara Burnham	Speech Therapy	Speech Language Pathologist
Kerri Byron	Speech Therapy	Speech Language Pathologist
Kamie Chapman	Speech Therapy	Speech Language Pathologist
Virginia Van Epps	Speech Therapy	Speech Language Pathologist
Katerina Dukleska	Surgery	Pediatric Surgeon

For questions, please contact Alaina Pyle, MD, Allyson McDermott, MD, or Usha Prasad, DO.

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