CLINICAL PATHWAY:

Nasogastric Tube (NGT) Discharge Home

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Infants in their birth admission in the NICU or Med/Surg unit who are ready for discharge home but continue to require nasogastric tube (NGT) feeds.
***Note**: if infant is at 36 weeks CGA and taking ~35% PO, can start consideration of sending infant home with NGT (start social assessment and see **Appendix A: Inclusion and Exclusion Criteria for Considering NGT for Home**)*

- Consult Speech/OT
- Discuss patient during daily rounds and weekly interdisciplinary/discharge planning rounds (NICU) or during daily Family-Center rounds (Med/Surg)
  - The medical team, nursing, and rehabilitation team must all agree that patient meets all criteria (Appendix A) prior to voicing the possibility of discharge with an NGT with the family.

Does infant meet criteria to be discharged with home NGT feeds (**Appendix A**)?

NO →
- Continue inpatient assessment of oral skills and further medical evaluation as appropriate
- Consider GT placement

YES

- Once decision has been made to send patient home on NGT feeds, **consult Gastroenterology (GI)** to provide input on nutritional status, feasibility of outpatient management, target discharge date, and to establish care prior to discharge (outpatient follow-up should be confirmed once to be within 2-3 weeks of discharge)
- **Feeding:**
  - Infant should be placed on a feeding schedule that most closely mirrors their sleep/wake cycles (usually q3hr feeds).
  - Continue to promote oral feeding skills at each feed when they are awake/cueing, followed by the remainder of the feed given via NGT bolus.
  - Plan should be in place for <u>at least 72 hours</u> prior to discharge to monitor for tolerance and allow time for teaching on this regimen.
- **Education**:
  - See **Appendix B for Nursing Education and Competencies**
  - Start parent/caregiver education for home NGT feeds (see **Appendix D Caregiver Education Guide for NGT Feeds (Without NGT Replacement Instructions)**
  - If parents/caregiver interested in learning how to replace NGT: start replacement education (see **Appendix E: Caregiver Education Guide for NGT Feeds and NGT Replacement).** Training should be done on mannequin and infant.
  - Nurses to utilize **Appendix F: Integrated Care Plan** to monitor progress and review with families
- **Initial Discharge Planning:**
  - Consult Case Management for home supplies and referral for home nursing (may take 1 week to finalize)
  - 1 week prior to anticipated discharge date: service attending to contact pediatrician (PCP) to discuss plan of discharging home on NGT (with GI support) and that PCP is supportive of plan.
    - PCP must agree to see patient at least twice: within 2 days <u>and</u> within 1-2 weeks after hospital discharge
    - PCP can contact Connecticut Children's GI with concerns, prior to and between GI visits
    - PCP may request home nursing to provide additional weight checks (as available based on patient location)

Infant improving on oral feeds **and** parents/caregivers engaged in learning and completed NGT training (**Appendix E Integrated Care Plan** is complete)?

YES →
Prepare for discharge on home NGT feeds (see Appendix C Discharge Instructions and Directions)

NO →
Continual monitoring in the hospital until infant is appropriate for discharge

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Inclusion Criteria: ***must meet ALL of the following criteria***

- Infant should be 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 and who:
    - Demonstrate progression in oral feeding as determined by medical provider & speech language pathology (SLP) team
    - Demonstrate overall adequate growth on current enteral feeding regimen
    - Anticipated time to full oral feeds < 6 months
    - Able to take at least 80 mL/kg/day, or per clinical judgement [ensures nasogastric tube (NGT) does not require an Emergency Department visit overnight for replacement if parents unable to replace] and tolerant of bolus feedings
    - Meet all other standard discharge criteria (resolution of apnea/bradycardia/desaturation events, adequate thermoregulation, etc.)
    - **Special Circumstances** for discharging with lower PO feeding volume
        - Patients with life-limiting condition for whom parents choose NGT feeding for home over gastrostomy tube placement
        - 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
- The medical team, nursing, and rehabilitation team must agree based on **ALL** of the above criteria that an infant/family is an appropriate candidate for NGT feedings at home PRIOR to any team member voicing the possibility of discharge with an NGT to a family. It may be beneficial to have a family meeting with involved team members to discuss the expectations and risks and benefits of discharging home with an NGT.
    - The GI team should be consulted prior to discharge home. The GI team will provide input on nutritional status, feasibility of outpatient management, target discharge date, and to establish care prior to discharge. The GI team will contact Dr. Jonathan Salazar who will conduct weekly GI-NICU rounds on Tuesday.
- 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 (PCP/GI/NICU Follow up/rehab)
    - Consideration should be given as to how to support families with language differences, resource limitations and/or health literacy limitations (i.e., in person interpreters for inpatient education and outpatient visits, translated education materials, medical transportation, etc.)
- **Families must**:
    - Agree with NGT feeds as an alternative to gastrostomy tube placement **or** remain in the hospital to continue to work on oral feeding over a reasonable timeframe.
    - Understand and agree with the potential risks of NGT feeding at home (tube malposition, aspiration, strangulation by tubing if left hooked up to bolus NGT feed unsupervised, etc.)
    - Identify 2 caretakers who will be fully trained on NGT placement, confirmation of placement, and pump set-up/use.

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        - Two caretakers must demonstrate proficiency in correctly measuring and inserting the NGT initially once each into a doll/mannequin and then 2 times each on the infant. Ideally, the NGT should not be replaced more than every other day and the tube should alternate nares. They must also confirm NGT placement and position via pH paper testing prior to each feed (to be taught by nurses who hold these competencies prior to discharge) as well as proficiency with operating the feeding pump (completed by the nurses prior to discharge).
    - Provide ALL care for the NGT and administer NGT feeds independently for one 12-hour shift per caretaker
    - Identify an emergency plan in case the NGT comes out at home (see **Appendix C Discharge Instructions and Directions**).
    - Agree with follow up appointments with Primary Care Provider (PCP), pediatric GI, NICU Neurodevelopmental clinic, and home nursing if available.
    - Agree with the recommendation for referral to pediatric surgery for gastrostomy tube placement if not progressing to all oral feeding after 4-6 months home on NGT feeding

Exclusion Criteria:

- Any infant who doesn't meet ALL of the above criteria
- Any infant who requires 24-hour continuous feeds
- Any infant who requires supplemental oxygen at home
- Any infant with significant tachypnea, desaturations or other airway issues during oral feedings despite appropriate interventions (positioning, nipple type, feeding volume caps, etc.)
- Family not engaged in learning or demonstrating ability to manage NGT feeding at home

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- Nurses will be trained in parent education on NGT feeding at home and will be responsible for the following:
  - Recommend sending infant home with 1-2 tubes from hospital; additional tubes will be given by DME as well
    - NICU East: Infant will be sent home with a yellow tube.
    - NICU West: Infant will be sent home with an orange tube.
    - Med/Surg floors: Infant will be sent home with a yellow tube.
    - Both tubes are good for 30 days. Parents should be advised that the tube may have a different color after replacement and these tubes are good for **8 weeks.**
  - Teaching NGT feed administration (bolus feeds, pump use, attention to infant during feed)
  - Teaching NGT replacement to parents, if applicable
  - Teaching pH paper testing when placing a new NGT AND prior to initiating every feed
  - Discussing risks of NGT feeds for home if caregivers are non-compliant with methods for NGT placement, pH paper confirmation, and supervised bolus feeding administration
  - Confirming caregiver competency for all of the above for at least 2 caregivers for each infant
  - The attending will verbally reinforce this teaching with families, emphasizing the risks of non-compliance with the methods for NGT placement, confirmation, and use
  - Utilizing the **Integrated Care Plan** to monitor progress, which will be reviewed with families on an ongoing basis

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Follow-Up Appointments and Resources:

- Infant must see Primary Care Provider (PCP) within 2 days after discharge.
- An appointment should be made with Pediatric GI prior to discharge (appointment made with assistance of the consulting GI team).
- Feeding therapy referrals to Birth to Three, SLP and/or OT will be placed and outpatient follow-up scheduled for within 2-4 weeks of discharge.
    - Confirm the need/type of outpatient rehabilitation referrals with the inpatient rehabilitation specialists, but any patient going home with NGT feeding should have outpatient rehab for feeding with OT or SLP in addition to B23.
- An appointment should be made with the Neonatal Neurodevelopmental Follow-up Clinic (4-6 months) after discharge.
- Care Coordination will order supplies needed for NGT feedings for home and the supplies/pump will be delivered to the bedside and/or home (can take 1 week to set this up so advance notice is needed).
- Inpatient Rehabilitation services or Care Coordination will set up B23 in addition to VNA for home to support families in this transition to home and ongoing support at home with NGT feeding.
- Lactation resources for breastfeeding parents will be provided by inpatient Lactation Consultants for any mother going home doing partial breastfeeding with NGT in place.
- The inpatient team and the GI teams will recommend pediatric surgery referral and gastrostomy tube placement if not progressing to all oral feeding after 3-6 months home on NGT feeding.

NGT Replacement plan:

- An emergency plan will be identified in case the NGT comes out at home and the plan will be shared with the PCP and the family as part of the discharge summary and AVS using the smartphrase .DISCHARGENGTINSTRUCTIONS.
- If NGT replacement training has NOT been completed:
    - Parents to call GI clinic if NGT becomes displaced and needs replacement.
    - Parents may try to call VNA, if applicable, for replacement
- If NGT replacement training HAS been completed:
    - Goal: parents/caregivers to attempt to replace NGT, and confirm placement with pH paper
    - If unable to replace NGT at home, to call GI clinic for guidance.
        - Depending on the time of day and/or amount of feeds infant is taking, GI may advise the family to bring the infant in for an outpatient GI office visit for NGT placement OR present to the Pediatric Emergency Department for NGT placement.

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