



C. Line Guidance

- IR will place an extended-dwell catheter (EDC) at the same time they place the patient's NJ tube or do the G→J tube conversion
- Anesthesia will place a peripheral arterial line and a PIV

- If placement of an EDC is not possible:**
- IR will place a single-lumen PICC
 - Anesthesia will place a PIV

Dwell Time Goals:

- EDC: remove after second bronch (max dwell time is 29 days); VAT will do bedside changes, if needed
- Art Line: goal to remove at extubation; snorkeled patients: team to re-evaluate need for art line POD 3-7 on rounds
- PIV: remove at discharge
- PICC: goal to remove after second bronch

See Appendix A if conversion to central access becomes clinically indicated

D. Daily PICU/ORL Co-Rounds

- Attendees: ORL fellow(s), ORL inpatient PA(s), usual PICU attendees
- Optional Attendee: ORL SOW
- Standing time: 9:30am, Mon – Fri
- May need to flex exact time based on PICU census/needs and ENT schedule
- Fellows are responsible for communicating time changes:
 - PICU Fellow Team 1 (White): Volte x48851
 - PICU Fellow Team 2 (Red): Volte x48852
 - ORL Fellows: contact via service pager or personal cell phones

E. Daily Pre-Extubation Care Guidelines

For airway emergencies, activate RaDAR

Acid Suppression:

- PPI: daily via IV until feeding enterally (goal POD 2), then daily via J-tube
- H2 Blocker: BID via IV until feeding enterally (goal POD 2), then BID via J-tube
- Nissens: H2 blocker only, BID

Activity Restrictions: see Appendix B

Airway Clearance Therapy:

- Suctioning:
 - No inline suctioning
 - Use two person suction technique
 - Refer to airway escalation plan for depth and catheter size
- No CPT; bedside therapeutic flexible bronchoscopy, as needed

Antibiotics: standardized table coming soon (Appendix C)

Chest XR: daily while intubated & vented

Child Life: place consult if siblings need coping support

Diet: All patients to be fed post-pylorically (including those with Nissens)

Fever: practice blood culture stewardship; if ETT culture indicated, consider bedside flexible bronch.

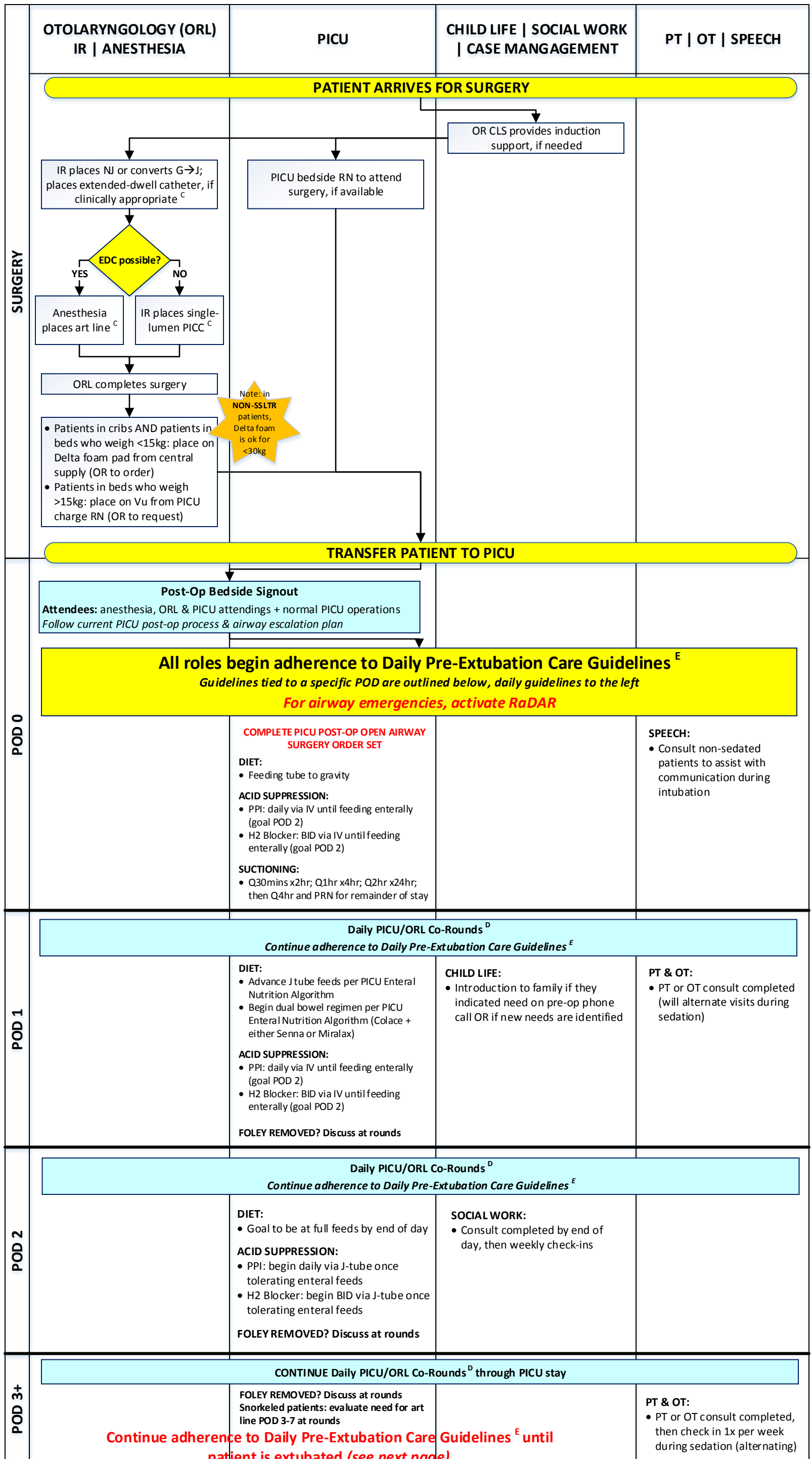
Occupational & Physical Therapy: after initial consults, PT and OT will alternate visits 1x per week during sedation

Sedation: refer to PICU Protocol for guidance on dosing, titration & weaning

Social Work:

- Weekly check-ins after POD 2 consult
- Place consult in between visits, if needed

Urinary Catheter: daily rounding discussion until removed



Note: in NON-SSLTR patients, Delta foam is ok for <30kg



- ### F. Bronch Timing Goals
- Bronch #1 Goals:**
- Anterior Graft: POD 7
 - Posterior Graft: POD 10
 - A/P Graft: POD 10-14
- Bronch #2 Goals:**
- Complete 1 week after bronch #1
 - Anterior Graft: POD 14
 - Posterior Graft: POD 17
 - A/P Graft: POD 17-21
- Bronch #3 Goals:**
- Complete one week after bronch #2
 - Anterior Graft: POD 21
 - Posterior Graft: POD 24
 - A/P Graft: POD 24-28

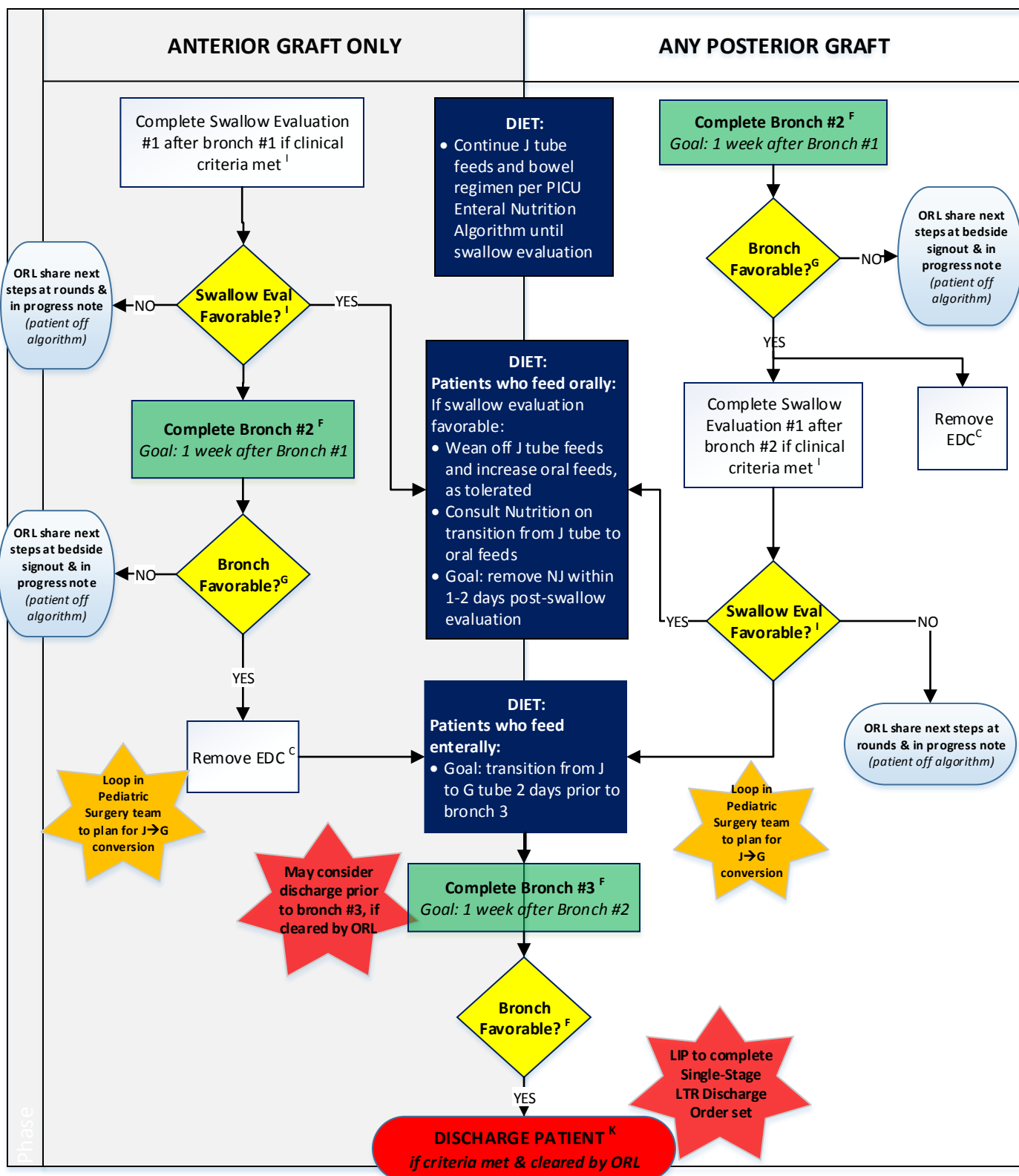
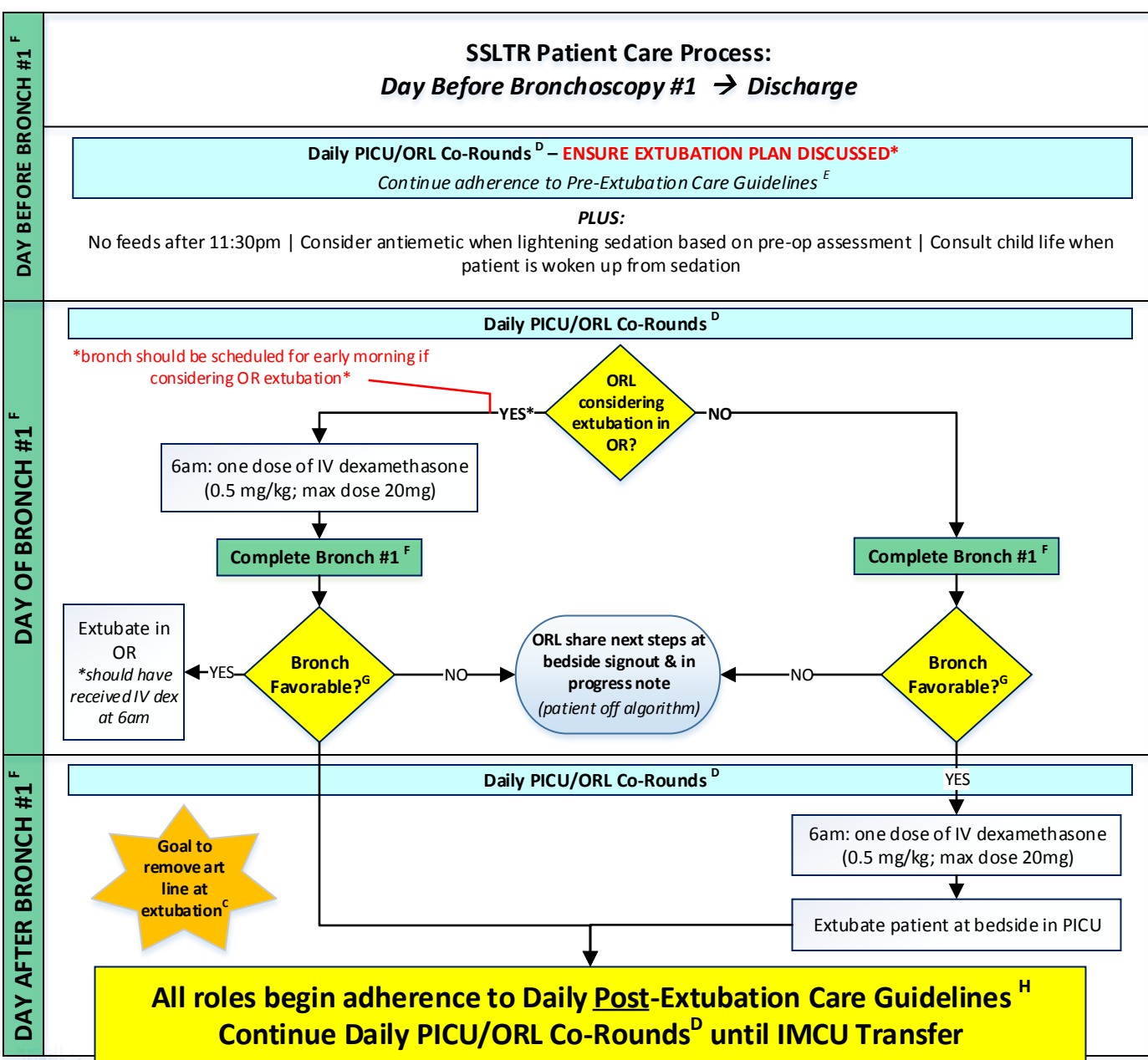
- ### G. Definition of "Favorable" Bronch
- No signs of:
- Infection, excessive granulation, graft dehiscence, graft migration, vocal cord paralysis

- ### H. Daily Post-Extubation Care Guidelines
- For airway emergencies, activate RaDAR**
- Acid Suppression:**
- PPI: continue daily 6 months post-op
 - H2 Blocker: BID enterally
 - Nissens: H2 blocker only, BID
- Activity Restrictions:** see Appendix B
- Antibiotics:** standardized table coming soon (Appendix C)
- Child Life:**
- Place consult if patient or siblings need coping support, or if parents have pain management questions
 - If not, use Coping & Comfort Plan, Caregiver Survey per usual
- Fever:** practice blood culture stewardship; if ETT culture indicated, consider bedside flexible bronch.
- Nebulized Medications:**
Alternate the two medications below to provide Q6 nebulizers:
- Medication 1: 20 drops of ciprofloxacin + 20 drops of dexamethasone + 1 ml of 0.9% saline Q12
 - Medication 2: 3 ml's of 0.9% saline Q12
 - Duration: from extubation until bronch #2
- Occupational Therapy:** 3-4x per week until moving well with family; then 2-3x per week
- Physical Therapy:**
- 4-5x per week until taking steps; then 2-3x per week
 - Consider use of Rifton chair for early sitting
- Sedation:** refer to PICU Protocol for guidance on weaning & monitor for withdrawal
- Social Work:** weekly check ins, consult in between visits, if needed

- ### I. Swallow Evaluation #1 Guidance
- Clinical Criteria: room air, SBS 0, favorable bronch, cleared by ORL
 - Anterior Graft: before bronch #2
 - Any Posterior Graft: after bronch #2
 - FEES for all patients besides those with cap grafts (a small anterior graft that doesn't split the cricoid; for these patients conduct a bedside swallow evaluation)
 - VFSS if FEES is not tolerated or inconclusive
 - If additional info needed, conduct bedside swallow evaluation by speech therapy
 - "Favorable" Definition: team was able to find a safe consistency to offer by mouth to support nutrition/hydration (patient may still rely on tube feedings in some cases)

- ### J. Floor Transfer Criteria
- Prior bronch favorable
 - SBS 0 to +1, off continuous infusions of sedation medications, WAT score less than 4
 - Arterial line removed
 - No longer on HFNC
 - No contraindications per floor admitting guidelines
- Upon transfer: Reassess need for bowel regimen, loop in Pediatric Surgery team to plan for J → G conversion**

- ### K. Discharge Criteria & Timing Goals
- Discharge Day Goals:**
- Anterior Graft: POD 22
 - Posterior Graft: POD 25
 - A/P Graft: POD 25
- Discharge Criteria:** prior bronch favorable, on room air, afebrile, tolerating feeds, no IV meds, WAT score less than 3, discharge supplies & medications ready, cleared by ORL





A. Care Conference Encounter

Documented in Epic by the aerodigestive clinic APN using a dot phrase within an encounter titled "Care Conference."

Information included in dot phrase:

- Relevant HPI
- Date of most recent MLB + post-operative diagnosis & findings
- Trach dependent? Yes or No
- Diet, including any recent history of feeding intolerance + anti-emetic recommendations
- Surgical plan
- Anticipated length of stay
- Awake during intubation? Yes or No
- Relevant social history, including family and sibling notes
- DME company
- Anticipated discharge needs

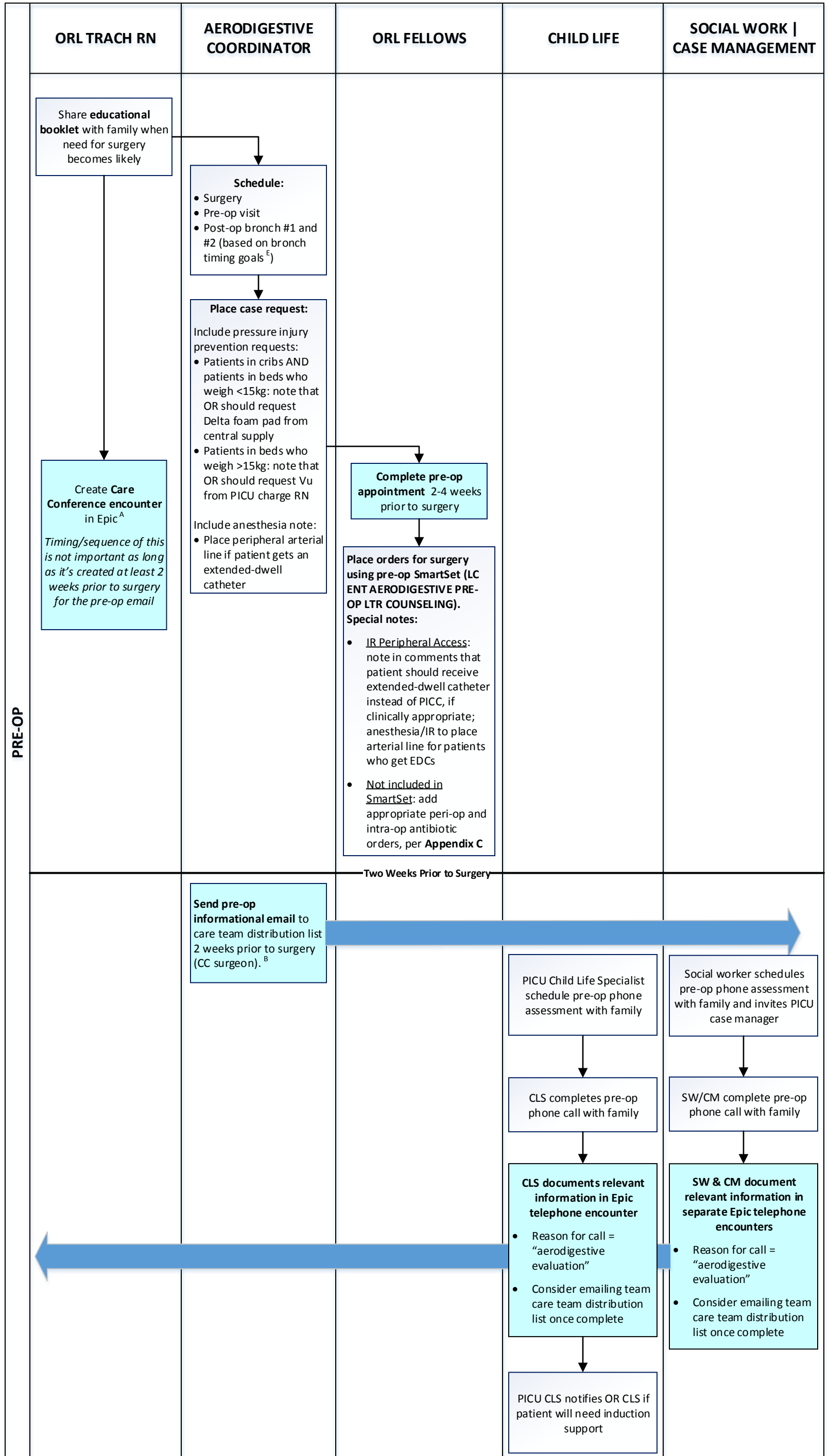
B. Pre-Op Email

Information included in email:

- Patient name
- Surgeon name
- Surgery date
- Note that "Pre-op patient information can also be found in Epic under an encounter titled "Care Conference.""
- Paste information from Care Conference note into body of email for reference

Care Team Distribution List:
Named "LTR Care Team" under the Lurie Outlook Global Address List

- Aerodigestive clinic APN
- Aerodigestive clinic RN
- ORL fellows
- ORL social worker
- PICU case manager
- PICU child life specialist
- PICU patient care operations managers
- PICU medical director
- PT/OT clinical assistant
- Speech-language pathology manager
- VAT manager





Appendix A: Conversion to Central Access

If central access becomes clinically indicated during a patient's stay (e.g., needs TPN, etc.):

- Not urgent: order placement of PICC line at next scheduled anesthetic
- Urgent or cannot wait until next anesthetic: PICU to place non-tunneled CVC at bedside or consult IR, if warranted
- If patient needs TPN before PICC line can be placed at next anesthetic, consult with clinical nutrition and pharmacy to determine whether TPN should be delivered peripherally or centrally via a non-tunneled CVC until a PICC is placed.

Appendix B: Activity Restrictions

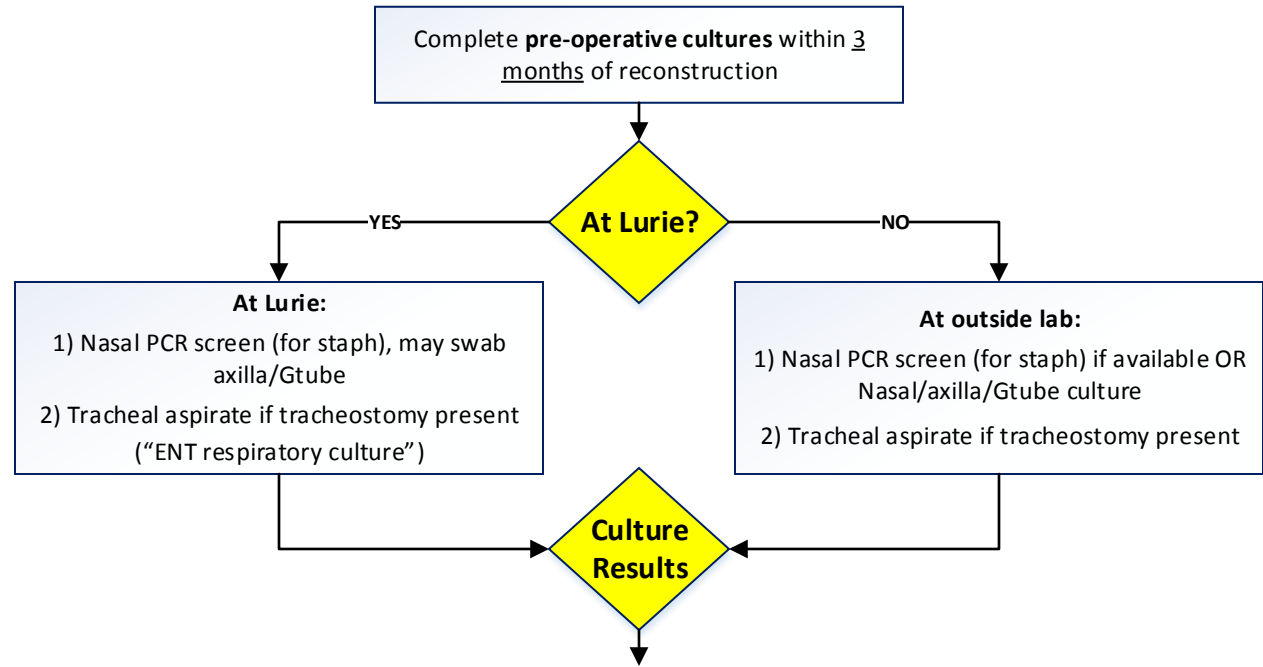
	Cervical ROM Restrictions	General Positioning	Sitting Up/Out of Bed?	Crawling/Prone Play?
Intubated & Sedated (+/- paralyzed)	<ul style="list-style-type: none"> • HOB elevated 30-45 degrees • Limit all degrees of neck ROM • Head to remain in midline 	<ul style="list-style-type: none"> • Bedrest • Maintain midline positioning, log roll Q2 hours • Caregiver PROM of LEs (UE if family appropriate and competent) • No UE ROM restrictions – use caution with delicate lines 	<ul style="list-style-type: none"> • No – must remain supine in bed 	<ul style="list-style-type: none"> • None until cleared by patient's surgeon
Nasotracheally intubated, off the ventilator and on HME; tube is solely serving as an airway stent ("Snorkeled")	<ul style="list-style-type: none"> • Goal: Minimize movement of endotracheal or nasotracheal tube • No cervical extension • No cervical rotation or ROM – head maintained in midline, especially during positional changes 	<ul style="list-style-type: none"> • Active ROM UE and LE ROM as tolerated • Encourage reaching • Begin to encourage positional changes 	<ul style="list-style-type: none"> • Activities as physiologically tolerated • Okay for activity ad lib (sitting, standing, ambulation) • Use Rifton chair 	<ul style="list-style-type: none"> • None until cleared by patient's surgeon
Extubated	<ul style="list-style-type: none"> • Discourage hyperextension of neck (patients will self-limit, but should not be encouraged) • Cervical rotation as tolerated 	<ul style="list-style-type: none"> • Continue to increase OOB activities • Avoid positions encouraging cervical hyperextension 	<ul style="list-style-type: none"> • Activities ad lib, but AVOID PRONE until cleared by surgeon • Main concern – avoiding anterior trauma to trachea while graft is healing • No contact sports for at least 3mo post-op & cleared by surgeon • Continue to encourage active lifestyle when discharged home 	<ul style="list-style-type: none"> • None until cleared by patient's surgeon



Appendix C: Antibiotic Guidance

Definition of terminology:

- **Pre-operative:** Prior to surgery date up until day of surgery
- **Peri-operative:** Dose given right before incision
- **Intra-operative:** Re-dosing after incision but before surgery completion
- **Post-operative:** After surgery completion



	ORSA/MRSA (or prior history)	Pseudomonas aeruginosa	ORSA/MRSA & Pseudomonas aeruginosa	Normal Flora/No Growth	Other Organisms
Pre-operative	Sulfamethoxazole-trimethoprim* 5mg/kg/dose (based on trimethoprim component) IV/oral q12h (max dose: 160 mg trimethoprim component/dose) for 72 hours and Intranasal mupirocin for 10 days	Ciprofloxacin: 3 drops down trach TID x 1 week. Change to new trach after 24 hours	Sulfamethoxazole-trimethoprim* 5mg/kg/dose (based on trimethoprim component) IV/oral q12h (max dose: 160 mg trimethoprim component/dose) for 72 hours and Intranasal mupirocin for 10 days and Ciprofloxacin: 3 drops down trach TID x 1 week. Change to new trach after 24 hours	None	Based on organism and sensitivities. Consider ID consultation (pager 97450)
Peri-op (single dose)	Vancomycin 15mg/kg/dose IV (max dose: 1gram) and Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV (max dose: 2g ampicillin/dose)	Piperacillin-tazobactam: Patients greater than 9 months and less than 40 kg: 100mg/kg (based on piperacillin component) (max dose: 3 grams of piperacillin component); Patients >40 kg: 100 mg/kg (based on piperacillin component) (max dose: 3 grams of piperacillin component)	Vancomycin 15mg/kg/dose IV (max dose: 1gram) or Clindamycin 10 mg/kg/dose X 1 and Ciprofloxacin 10mg/kg/dose (maximum dose: 400mg) <i>Clindamycin is an acceptable second line to vancomycin if ORSA/MRSA is susceptible</i>	Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) (max dose: 2g ampicillin/dose)	Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) (max dose: 2g ampicillin/dose)
Intra-operative	Vancomycin 15mg/kg/dose IV q6h (max dose: 1gram) and Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV q3h (max dose: 2g ampicillin/dose) <i>Beta-lactam allergy: Vancomycin plus levofloxacin</i>	Piperacillin-tazobactam: Patients greater than 9 months and less than 40 kg: 100mg/kg (based on piperacillin component) q3h (max dose: 3 grams of piperacillin component); Patients >40 kg: 80 mg/kg (based on piperacillin component) q3h (max dose 3 grams of piperacillin component)	Vancomycin 15mg/kg/dose IV (max dose: 1gram) or Clindamycin 10mg/kg IV q6h intra-operatively (max dose: 900 mg) and Ciprofloxacin 10mg/kg (maximum dose: 400mg) q8h intra-operatively <i>Clindamycin is an acceptable second line to vancomycin if ORSA/MRSA is susceptible</i>	Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV q3h (max dose: 2g ampicillin/dose)	Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV q3h (max dose: 2g ampicillin/dose)
Post-operative	Vancomycin 15mg/kg/dose IV q6h (max dose: 1gram) <i>Post-operative dosing frequency (based on normal creatinine clearance). Contact pharmacy to assist with dose adjustment and monitoring recommendations.</i> and Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV q6h (max dose: 2g ampicillin/dose) Duration: Until drains removed Then switch to sulfamethoxazole-trimethoprim* to complete 14 days of total antibiotic therapy: Sulfamethoxazole-trimethoprim* 5mg/kg/dose (based on trimethoprim component) IV/oral q12h (max dose: 160 mg trimethoprim component/dose) Duration: 14 days of total antibiotic therapy, including time on ampicillin-sulbactam	Piperacillin-tazobactam: Patients greater than 9 months and less than 40 kg: 100mg/kg (based on piperacillin component) q6h (max dose: 3 grams of piperacillin component); Patients >40 kg: 80 mg/kg (based on piperacillin component) q6h (max dose 3 grams of piperacillin component) or Ciprofloxacin 10mg/kg/dose IV q12h (maximum dose: 400mg) Duration: Continue piperacillin-tazobactam or ciprofloxacin IV until drains removed and complete 14 days of total antibiotic therapy with oral ciprofloxacin.	Sulfamethoxazole-trimethoprim* 5mg/kg/dose (based on trimethoprim component) IV/oral q12h (max dose: 160 mg trimethoprim component/dose) and Levofloxacin: ≥5 years old: 10mg/kg/dose IV daily < 5 years old: 10 mg/kg/dose IV q12h, Intravenous (unless MRSA is resistant to both antibiotics) <i>Avoid concurrent use of vancomycin and piperacillin-tazobactam due to potential nephrotoxicity. Please consult Infectious Diseases for recommendations if Pseudomonas is fluoroquinolone resistant. Contact clinical pharmacists to assist with dose adjustment for renal impairment.</i>	Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV q6h (max dose: 2g ampicillin/dose) Duration: Until drains removed	Ampicillin-sulbactam: 50 mg/kg/dose (based on ampicillin component) IV q6h (max dose: 2g ampicillin/dose) Duration: Until drains removed
Beta-lactam Allergy	Sulfamethoxazole-trimethoprim* (pre-operative), Vancomycin plus levofloxacin OR clindamycin therapy if MRSA susceptible until drains are removed, then sulfamethoxazole-trimethoprim (intra-operative to post-operative)	Ciprofloxacin (pre-operative to post-operative)	--	Clindamycin (peri-operative to post-operative)	Levofloxacin or consider ID consultation (perioperative to postoperative)

*Do not use sulfamethoxazole-trimethoprim in patients less than 2 months.



Evidence

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