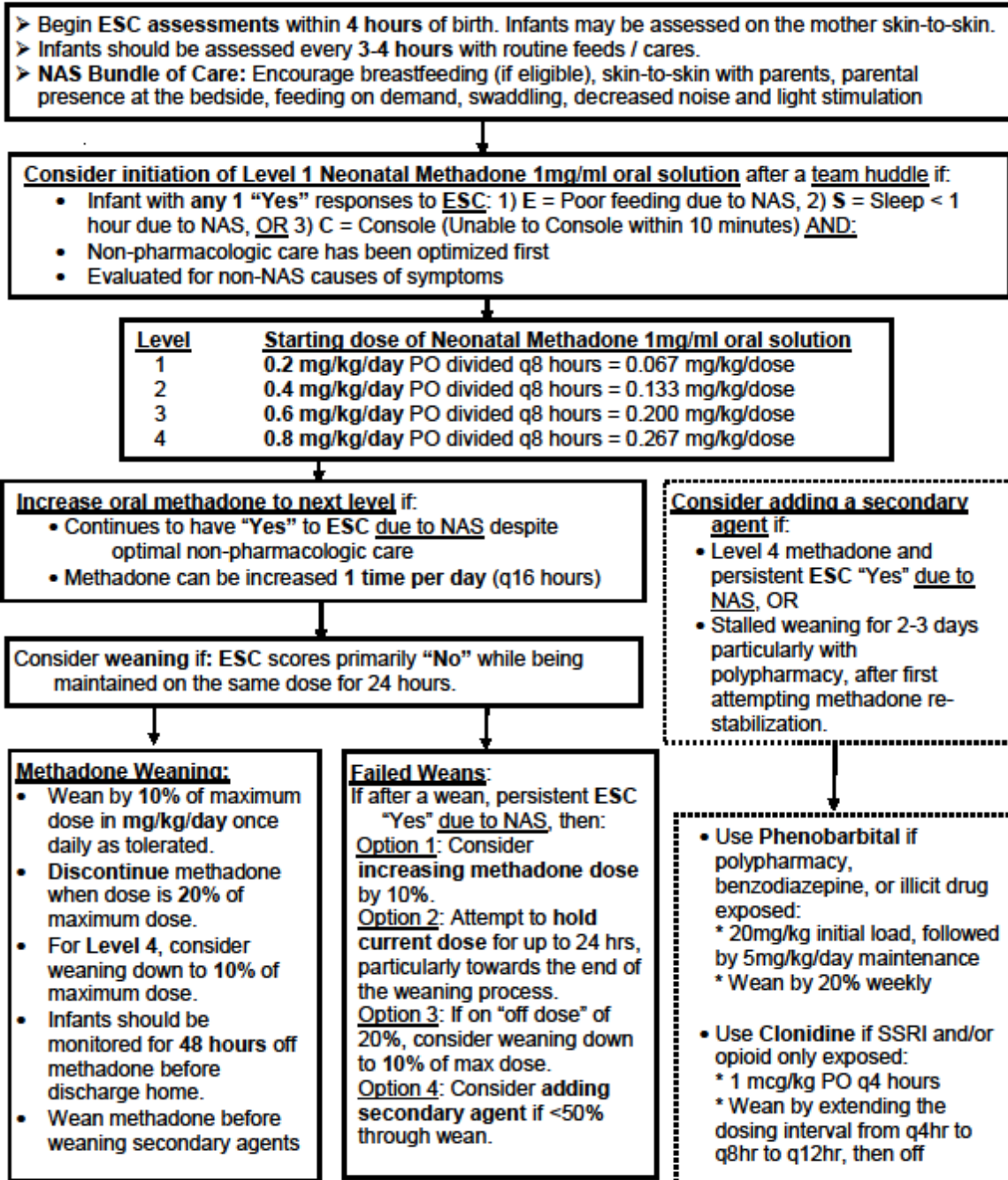


Appendix D

Sample ESC-based Pharmacologic Treatment Regimens



Boston Medical Center NAS Pharmacologic Treatment Algorithm



Children's Hospital at Dartmouth-Hitchcock NAS Management Algorithm

- Assess infant after feedings preferably while skin-to-skin or held swaddled by mother/caregiver.
- Review ESC behaviors, which have occurred since last assessment, using Newborn Care Diary with parents.
- **Optimal non-pharm care:** Breastfeeding (if no medical contraindication), rooming-in, parental presence, skin-to-skin, holding, swaddling, ad lib feeding (at least every 3 hours), quiet environment, limiting visitors.
- If "Yes" to any ESC item or "3s" for "Soothing Support Used to Console Infant" (i.e., difficulty responding to all caregiver soothing efforts *OR* does not soothe within 10 minutes), perform team huddle with mother/parent & RN to determine non-pharm interventions that can be optimized.
- If continues with "Yes" for any ESC item or "3s" for "Soothing Support" despite optimal non-pharm care, perform full team huddle with mother/parent, RN and Infant Provider.

Morphine Initiation: Consider initiating oral Morphine after full team huddle if:

- Continues with "Yes" to any ESC item or "3s" for "Soothing Support" *AND*
- Non-pharm care optimized to greatest extent *AND*
- Non-NAS causes excluded (e.g., cluster feeding, SSRI or nicotine withdrawal in first 24 hours)

Starting dose of Neonatal Morphine oral solution:

- 0.04 mg/kg/dose PO every 3 hours (use birthweight for dosing).

Morphine Escalation: Consider increase in morphine after full team huddle if:

- Continues with "Yes" to any ESC item or "3s" for "Soothing Support" *AND*
- Non-pharm care optimized to greatest extent *AND*
- Non-NAS causes excluded

To increase oral morphine dose:

- Give bolus dose of 0.02 mg/kg once and increase baseline dose by 0.02 mg/kg/dose (e.g., baseline dose = 0.04 mg/kg/dose; new dose = 0.06 mg/kg/dose). Recommended maximum dose = 0.12 mg/kg/dose every 3 hours.

Consider adding secondary agent (e.g., clonidine, phenobarbital) if "Yes" responses to ESC due to NAS *AND* non-pharm care optimized *AND*:

- morphine dose maximized *OR*
- unable to wean by day 7 of treatment *OR*
- concern for polysubstance withdrawal (particularly if benzodiazepine co-exposure)

Morphine Weaning: Consider weaning if primarily "No" responses for ESC while on same dose for 24 hours and non-pharm care optimized.

- Wean morphine maintenance dose by 10% of maximum dose.
- If initial wean tolerated, wean up to 20% of maintenance dose daily.
- Discontinue morphine when dose is less than or equal to:
 - a) 0.02 mg/kg/dose *OR*
 - b) dose no longer possible to measure for infant less than 2.5 kg
- Monitor for at least 24 hours off morphine before discharge home.

Failed Weaning: If after weaning or discontinuation of morphine, infant has persistent "Yes" responses to ESC due to NAS and non-pharm care optimized to greatest extent:

- a) Restart last effective (or discontinuation) dose of morphine and maintain dose for minimum of 24 hours *OR*
- Attempt to hold current dose for up to 24 hours, particularly towards end of weaning process or after morphine discontinuation.