PHASE 1

- **Start assessment with the Eat Sleep Console (ESC) tool within 3-4 hours of life OR upon arrival to Newborn Nursery.**
- **Obtain ESC score every 3-4 hours.**
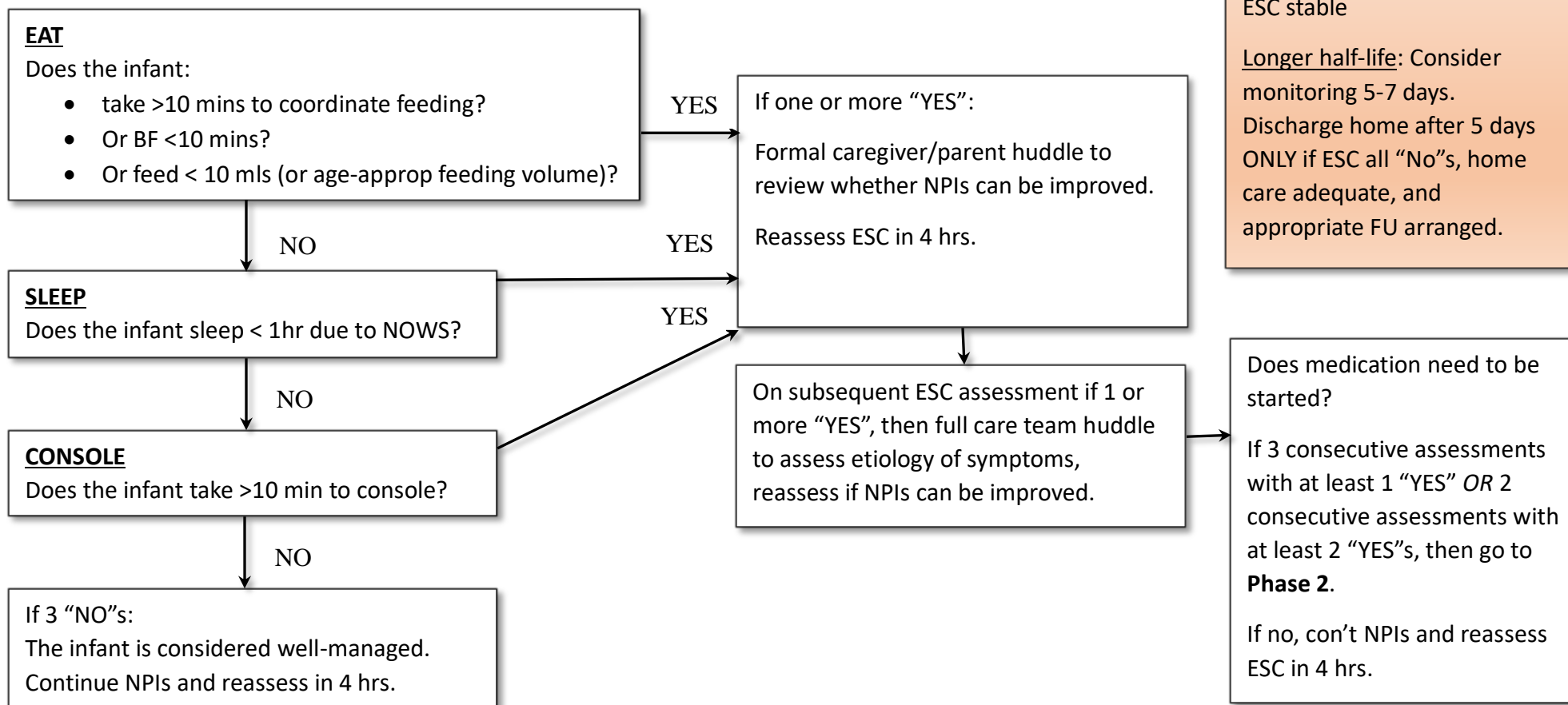- **Optimize Non-Pharmacological Interventions (NPIs)**

Non-Pharmacological Interventions (NPI)	
Rooming-in	Quiet low-light environment
Parent/caregiver presence	Gentle rhythmic movement
Skin-to-skin/holding by caregiver	Additional help/support in room
Swaddling	Limiting # of visitors
Optimize feeding per infant cues	Clustering care
Non-nutritive suckling	Safe sleep/fall prevention
Parent/caregiver self-care & rest	

Length of monitoring and DC

Continue ESC for 5 days based on drug half-life and symptoms

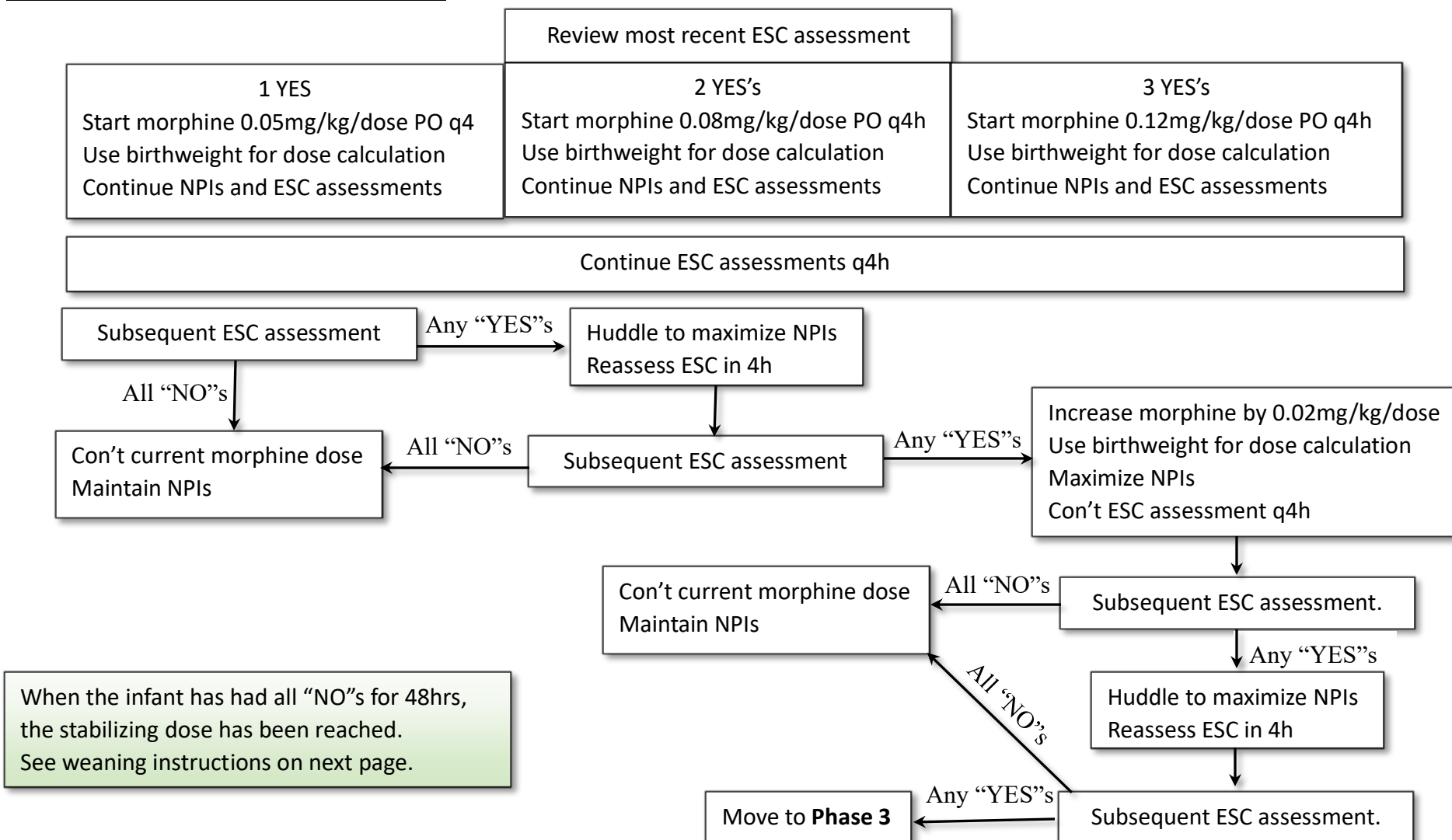Shorter half-life: Discharge after 5 days of monitoring if ESC stable

Longer half-life: Consider monitoring 5-7 days. Discharge home after 5 days ONLY if ESC all "No"s, home care adequate, and appropriate FU arranged.

EAT
Does the infant:
- take >10 mins to coordinate feeding?
- Or BF <10 mins?
- Or feed < 10 mls (or age-approp feeding volume)?

NO

SLEEP
Does the infant sleep < 1hr due to NOWS?

NO

CONSOLE
Does the infant take >10 min to console?

NO

If 3 "NO"s:
The infant is considered well-managed.
Continue NPIs and reassess in 4 hrs.

YES

YES

YES

If one or more "YES":

Formal caregiver/parent huddle to review whether NPIs can be improved.

Reassess ESC in 4 hrs.

On subsequent ESC assessment if 1 or more "YES", then full care team huddle to assess etiology of symptoms, reassess if NPIs can be improved.

Does medication need to be started?

If 3 consecutive assessments with at least 1 "YES" OR 2 consecutive assessments with at least 2 "YES"s, then go to **Phase 2**.

If no, con't NPIs and reassess ESC in 4 hrs.

Neonatal Opioid Withdrawal Syndrome (NOWS) Algorithm

PHASE 2

Non-Pharmacological Interventions (NPI)		
Rooming-in	Non-nutritive suckling	Additional help/support in room
Parent/caregiver presence	Parent/caregiver self-care & rest	Limiting # of visitors
Skin-to-skin/holding by caregiver	Quiet low-light environment	Clustering care
Swaddling	Gentle rhythmic movement	Safe sleep/fall prevention
Optimize feeding per infant cues		

Review most recent ESC assessment

1 YES
Start morphine 0.05mg/kg/dose PO q4
Use birthweight for dose calculation
Continue NPIs and ESC assessments

2 YES's
Start morphine 0.08mg/kg/dose PO q4h
Use birthweight for dose calculation
Continue NPIs and ESC assessments

3 YES's
Start morphine 0.12mg/kg/dose PO q4h
Use birthweight for dose calculation
Continue NPIs and ESC assessments

Continue ESC assessments q4h

Subsequent ESC assessment

Any "YES"s → Huddle to maximize NPIs / Reassess ESC in 4h

All "NO"s ↓

Con't current morphine dose / Maintain NPIs

All "NO"s ← Subsequent ESC assessment → Any "YES"s

Increase morphine by 0.02mg/kg/dose
Use birthweight for dose calculation
Maximize NPIs
Con't ESC assessment q4h

Con't current morphine dose / Maintain NPIs ← All "NO"s — Subsequent ESC assessment.

Any "YES"s ↓

Huddle to maximize NPIs / Reassess ESC in 4h

All "NO"s

Any "YES"s

Move to **Phase 3** ← Subsequent ESC assessment.

When the infant has had all "NO"s for 48hrs, the stabilizing dose has been reached.
See weaning instructions on next page.

Neonatal Opioid Withdrawal Syndrome (NOWS) Algorithm

PHASE 3

Is the morphine dose maximized at 1.2mg/kg/day (0.2mg/kg/dose)?

Yes → Consider adjunct pharmacotherapy

No ↓

Increase morphine dose by 0.02mg/kg/dose
Use birthweight for dose calculation
Huddle to maximize NPIs
Reassess ESC in 4h

If infant continues to have "YES"s on ESC assessment despite maximized NPIs, consider increasing morphine by 0.02mg/kg/dose until max dose of 1.2mg/kg/day (0.2mg/kg/dose).

MORPHINE WEANING AFTER REACHING STABILIZING DOSE:

-Allow at least 24 hrs between weans
-All "NO"s x 12 hr → infant has recently adjusted, wean by 10% of stabilizing dose
-All "NO"s x 24 hrs → infant has adjusted very well, wean by 20% of stabilizing dose
-Discontinue morphine when dose </= 0.02mg/kg/dose (0.12-0.15 mg/kg/day).
-Observe off meds for ≥ 24 hrs prior to DC.

HOLD MORPHINE WEAN IF:
-Any "YES"s in previous 3 assessments
-If the next score has one "YES", increase morphine dose to the previous dose at which patient was stable and continue this dose until the scores are all "NO"s for 24-48 hrs prior to continuing wean.
- If the next score is all "NO"s continue at current morphine dose. If 1 or more "YES" then hold wean.
- Consider increasing to previous dose at which patient was stable if unable to wean for >24 hrs.
- If unable to wean for >48 hrs, increase to previous dose at which infant was stable.
- Resume wean when scores are all "NO" for 24-48 hrs.

**Use birthweight for all medication adjustments.