Eat, Sleep, Console Approach: Effectiveness, Outcomes, and Future Considerations

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EDUCATION GAPS

Clinicians caring for newborns with neonatal opioid withdrawal syndrome (NOWS) should be aware of the components of the eat, sleep, console (ESC) approach to treatment. Clinicians should also be aware of the published outcomes associated with use of this method compared with other traditional methods of NOWS management. Recently, fentanyl exposure represents a significant proportion of neonates with NOWS and may require alternative strategies to adequately address symptoms and functioning. Additional studies and future considerations are addressed to highlight current gaps in the literature.

OBJECTIVES *After completing this article, readers should be able to:*

1. Define the ESC method in the management of NOWS, including the application of nonpharmacologic care and medication management.
2. Recognize the outcomes associated with the application of the ESC method vs other traditional methods of NOWS management.
3. Identify fentanyl exposure as a specific subset of NOWS findings that may require adaptations of the ESC method.

ABSTRACT

The introduction of the eat, sleep, console (ESC) approach in 2017 represented a significant change in the approach to clinical care of neonates with neonatal opioid withdrawal syndrome (NOWS). The ESC approach uses 3 components of infant functioning to drive decision-making instead of scoring systems based on individual withdrawal symptoms. These

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nonpharmacologic interventions are first-line strategies that are maximized before the potential introduction of opioid therapy, and caregiver presence at the neonatal bedside is emphasized to ensure success of this approach. Since the introduction of the ESC method, several studies have examined its effectiveness and outcomes compared with prior traditional methods of NOWS management. By understanding the components of ESC management and the outcomes of neonates treated by this approach, clinicians can promote evidence-based best practices to optimize the care of neonates experiencing NOWS.

INTRODUCTION

In the United States from 2010 to 2017, rates of opioid use disorder (OUD) among birthing individuals increased from 3.5 to 8.2 per 1000 birth hospitalizations.[1] Similarly, the population of infants with prenatal opioid exposure (IPOEs) increased from 3.3 to 7.3 per 1000 hospital births during the same time period, with nearly 30 000 infants affected annually.[1] From 2017 to 2020, pregnancy-associated overdose-related deaths in the United States increased by 81%, from 6.56 to 11.85 per 100 000, with large increases in deaths due to fentanyl and other opioid synthetics.[2] With the rapid increase in perinatal OUD rates and subsequent increase in rates of neonatal opioid withdrawal syndrome (NOWS), the clinical care of IPOEs has changed dramatically in the last decade. Terminology has also changed significantly in recent years with neonatal abstinence syndrome (NAS) being replaced by NOWS, the preferred diagnostic term for postnatal opioid withdrawal in neonates.

Traditionally, NOWS was assessed using the Finnegan neonatal abstinence scoring system (FNASS) and the modified Finnegan assessment tool.[3] However, the variability and lack of reliability of the FNASS tool has been well documented.[4] In the context of the rapid increase in infants affected by NOWS, the eat, sleep, console (ESC) approach of assessment and treatment was developed by Yale clinicians in 2017.[5] The ESC assessment tool differs from prior methods of NOWS assessment in that ESC uses 3 newborn activities to assess the function of infants who are at risk for and/or experiencing opioid withdrawal symptoms as opposed to calculating scores related to each individual symptom of withdrawal. The ESC approach also uses nonpharmacologic care as the first-line treatment of NOWS. After Grossman et al[5] published the first ESC quality improvement initiative in 2017, individual hospital teams and statewide perinatal quality collaboratives adopted this method and published their efforts.[6,7] Nearly all initiatives demonstrated similar findings related to improvements in birth hospitalization, including shorter length of stay (LOS) and decreases in the percentage of IPOEs requiring postnatal opioid therapy. Finally, in 2023, the first multisite cluster-randomized controlled trial from 26 hospitals in the United States was published, comparing the use of the traditional FNASS tool with the ESC approach.[8] Nearly identical results to the large quality improvement initiatives were reported by this randomized trial, demonstrating a shorter LOS and a decreased proportion of infants who received opioid treatment.[8] Additional investigation of longer-term developmental outcomes with the adoption of the ESC approach are ongoing.

In this review, we summarize the recent literature related to the ESC approach, addressing benefits and limitations of this care model. Notably concerning are recent anecdotal reports of ESC "failure" in infants who are prenatally exposed to fentanyl with clinical experiences of more severe and earlier opioid withdrawal and difficulty "capturing" the withdrawal symptoms in impacted infants. To this end, we include experiential, albeit limited, data with an overview of local and regional guidelines related to care for infants with prenatal fentanyl exposure, highlighting the importance of adaptation of existing guidelines to the changing landscape of perinatal substance use.

ESC

The ESC approach was developed in response to prior traditional approaches that used scoring methods to calculate the presence of withdrawal symptoms but lacked assessment of how those symptoms impacted an infant's functioning. Additionally, traditional scoring methods of NOWS required disturbance of an infant for assessment, likely contributing to worsened symptoms and scores that then lead to escalation of care management. The ESC approach determines that an infant's withdrawal is well treated based on the infant's ability to meet important functional milestones. For term infants, the milestones are defined as eating at least 1 oz per feeding or breastfeeding well (latching deeply and sustaining active suckling), sleeping undisturbed for at least 1 hour, and consoling within 10 minutes of crying, despite the presence of additional concurrent withdrawal symptoms.[5,9] For preterm infants, the sleep and console definitions

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remain the same as term infants, but, due to feeding immaturity, the age-expected feeding patterns should be used as baseline. When an opioid-exposed preterm infant's feeding ability is worse than expected for gestational age, this may be attributed to NOWS. Assessment of the infant is performed every 3 to 4 hours at the time of other routine care, such as after feeding or with vital signs.

The ESC approach integrates the principle that nonpharmacologic management is the first-line treatment.[5,9,10] The approach includes maintenance of a low-stimulation environment that is dark and quiet; swaddling of the infant to reduce autostimulation; early response to infant signals and cues; provision of comforting techniques such as rocking, swaying or pacifier use; and on-demand feeding with sufficient nutrition.[10] It is important to note that, if able, the birthing parent and/or caregivers are encouraged to take the central role in the care of their newborn. They are empowered to continuously engage in the ESC approach, including rooming-in, feeding their infant on demand, and responding to their infant crying.[5] Of note, rooming-in has been demonstrated to improve patient outcomes for infants with NOWS.[11] Additionally, breast or chest feeding is encouraged when desired by the birthing parent and in the absence of any medical contraindications because breastfeeding has been associated with a decrease in the severity and duration of NOWS symptoms.[11,12]

The ESC approach allows for rapid examination and intervention as needed. When an infant's ability to eat, sleep, and/or console is assessed as not meeting the minimum criteria previously outlined due to withdrawal, the first-line intervention by the medical team is to maximize nonpharmacologic supportive strategies (also previously outlined).[9] If, despite maximized supportive interventions, an infant is still unable to eat, sleep, or console appropriately due to withdrawal, escalation to medication treatment may be indicated.[9] This escalation may require transfer of the infant from a newborn nursery care setting to a neonatal intensive care unit (NICU) or pediatric inpatient unit, depending on the health care facility.

The first-line pharmacologic agent used in the ESC approach is morphine at a dosage of 0.05 mg/kg, administered every 3 hours as needed. The "as-needed" approach is in contrast to prior approaches that initiated medication with a "round-the-clock" schedule every 3 to 4 hours and/or initiated long-acting medication for acute symptoms. Because symptoms of withdrawal and impaired infant functioning are variable throughout the day, morphine dosing as needed was proposed to provide opportunities for repeated assessments and decreased use of medication in the treatment of NOWS.[5] Infants are reassessed approximately 3 hours after receipt of a morphine dose to determine if additional medication doses are required.

Of note, the optimal pharmacologic agent for as-needed, or pro re nata (PRN), treatment of NOWS symptoms has not been well established, but the rationale for use of morphine PRN rather than longer acting opioids in the Grossman et al studies[5,9] has been described previously. A 2022 Massachusetts study by Morrison et al[13] demonstrated no significant differences in NOWS hospitalization outcomes assessed (including mean LOS, transition to scheduled dosing, and mean number of PRN doses) between methadone and morphine PRN use. In settings before wide implementation of the ESC approach, Sutter et al[14] found no differences in LOS or length of treatment between methadone- and morphine-treated patients with NOWS, but methadone-treated patients received up to 3 times the opioid amounts based on morphine equivalents and required more transfers to the NICU for oversedation. Davis et al[15] found better short-term outcomes, including a shorter LOS and a reduction in the length of medication treatment, using methadone compared with morphine for infants who had NOWS; however, these infants were assessed and treated using the FNASS tool.

OUTCOMES AND EXPERIENCE WITH ESC

Use of the ESC approach has revolutionized the management of NOWS. Numerous benefits have been observed across multiple health institutions. A recent meta-analysis by Chu et al[16] demonstrated that the ESC approach is more effective than the FNASS tool in improving the assessment and management of NOWS. Improvements demonstrated in the literature include a reduction in newborns receiving medication treatment, reduction in the duration of opioid receipt for those newborns, reduced LOS during the birth hospitalization, and improved parent and staff satisfaction.[5,6,8,9,13,17–22] Additionally, decreases in LOS, medication use, and improvements in safe breastfeeding for IPOEs may translate to improved health care costs.[23–26] Studies frequently cite cost assessments based on publications by Patrick et al[27,28] for an estimated average daily cost of neonatal withdrawal at $3337.50 per day, but this cost analysis was limited due to representation of infants treated in the NICU without mention of colocation of care or rooming-in by the parent during the 2000 to 2009 period. However, if unnecessary medication use for NOWS is decreased, cost decreases could be inferred by reducing NICU transfers for medication management and reducing the total cost of hospitalization with reduced inpatient days. Dodds et al[21] demonstrated a decrease in average variable cost per hospital stay by 48%

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at a nonacademic children's hospital with implementation of the ESC approach.

Medication Use

A primary outcome measure for the 2018 Grossman et al[9] study was the proportion of newborns initiated on medication treatment with the ESC assessment tool compared with prior traditional scoring methods. Medication use decreased for patients who had NOWS with application of the ESC approach across multiple studies,[6,13,15,16,21,29] including the Grossman et al[5] study that demonstrated a decrease from 96% to 28% among methadone-exposed newborns requiring medication treatment. Additionally, a reduction in all patients who had NOWS treated with morphine was demonstrated, from 46% to 27%.[9] The Colorado and Massachusetts Perinatal Quality Collaboratives implemented the ESC approach at the state-level across several birthing facilities and demonstrated similar decreases in medication use.[6,13]

Importantly, the first large multicenter cluster-randomized controlled trial reported by Young et al[8] demonstrated a reduction in patients with NOWS requiring medication with the ESC approach across a large cohort. This cohort received newborn care in 26 academic and community hospitals from geographically diverse regions with gestational age of 36 weeks and greater. The sites were then randomized for timing to transition to the ESC approach of NOWS management, providing both pre- and post-ESC implementation data for comparison. Data were collected during the periods when traditional methods of NOWS management were in place (baseline or control), and, subsequently, staff were trained on the ESC approach with institutional adoption of ESC (intervention). The analyzed patient cohort included over 1000 newborns with NOWS. Study participants equally represented both male and female infants impacted by NOWS. The overall cohort did have a higher representation of non-Hispanic Black and Hispanic infants with NOWS compared with nationally reported data. While the primary outcome of the study assessed the time from birth until medical readiness for discharge, a key secondary outcome was the receipt of pharmacologic treatment. The findings revealed a 62.5% difference in medication use between those in the non-ESC-treatment group (52%) and the ESC-treated group (19.5%).[8,19]

Some published studies have not demonstrated improvements in medication-treated infants with NOWS via the ESC approach compared with prior usual methods. A study by Amin et al[30] revealed a decrease in pharmacotherapy use that was not statistically significant compared with estimates of pharmacotherapy needs using FNASS-predicted cutoffs. This study also noted that 41% of the assessed time periods with the ESC approach had no parental or caregiver presence and that decreased parental presence was associated with pharmacologic treatment compared with those infants who only received supportive, nonpharmacologic care.[30] This highlights the importance of caregiver presence and the success of the ESC approach.

A recent study published by Singh et al[7] evaluated short-term outcomes for over 2000 opioid-exposed newborns (OENs) born at greater than 37 weeks' gestation who were assessed by the ESC approach or the FNASS tool at multiple institutions. While improvements occurred in all short-term outcomes assessed over time, these improvements were independent of the assessment tool used for care of the OENs. The study found no differences in outcomes among the assessment methods for the percent of OENs that received pharmacotherapy or the length of treatment (ie, the total number of days a neonate received pharmacotherapy). Nonpharmacologic interventions during the hospitalization, such as rooming-in, skin-to-skin, and use of the birthing person's breast milk were associated with a lower risk of receiving pharmacotherapy.[7]

LOS

Infants with NOWS who are cared for using the ESC assessment tool have consistently demonstrated shorter birth hospitalization stays compared with those treated with traditional scoring systems.[9] Prior to the ESC approach, infants who required pharmacologic treatment for NAS had an average LOS of 23 days, as reported by Patrick et al[27] based on data from 2009 to 2012. The Grossman et al[5,9] studies in 2017 and 2018 demonstrated a reduction in the adjusted LOS from an estimated 22.5 days to 5.9 days using the ESC approach. Subsequent studies have demonstrated similar reductions in LOS with the ESC method.[6,8,19–22,29,31] These studies include the Colorado and Massachusetts Collaboratives and the Young et al[8] multicenter trial in which LOS was reduced to 8.2 days in the ESC group compared with 14.9 days in the non-ESC group.[32,33] Some studies have demonstrated improvement in health care costs, with 1 study demonstrating a 48% reduction in average variable cost per patient.[21] Among infants with NOWS requiring opioid therapy, the subgroup analysis by Devlin et al[34] from the 2023 Young et al[8] study cohort demonstrated a decrease in LOS by 6.2 days for infants cared for with the ESC method compared with those treated by the "usual" pre-ESC approach.

It is important to note that a few studies have demonstrated no reduction in LOS or pharmacotherapy initiation rates compared with prior traditional methods of assessment, but the outcomes studied were not worse. These

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studies tend to be of smaller cohort size, at single institutions, and/or with limited geographic variability.[22,30] Similar to the medication section, the study by Amin et al[30] did not demonstrate improvements in LOS via the ESC approach compared with prior traditional methods of treatment and may have again be limited by a lack of parental presence at the bedside. Additionally, the recent Singh et al[7] study did not find an association between use of the ESC approach and a decrease in LOS.

Parent and Staff Satisfaction

Data are generally lacking on the impact of the ESC approach on parent and staff satisfaction. To date, only 1 study has assessed parent satisfaction with the ESC tool.[17] Eighteen parents in this study, who represented 15 newborns, were supportive of the fewer newborn interventions with the ESC approach, including less medication intervention, and felt more empowered to lead their newborn's care.[17] Additionally, to date, only 1 study has been published assessing staff satisfaction with the ESC approach. In 2022, a publication by Barker et al[18] surveyed nursing perceptions of the ESC approach, revealing 80% of nurses who had experience caring for infants both with Finnegan-scoring protocols and subsequent ESC implementation felt their therapeutic relationship with parents was the same or improved with use of the ESC approach. Eighty-five percent of nurses reported being overall "pleased" with the care they provided using the ESC approach. At the time of this publication, outpatient providers' perspectives on newborns treated via the ESC approach during the birth hospitalization have not been published. More studies are needed to evaluate the impact of the ESC approach on parent and provider/staff perceptions and experiences.

Parent satisfaction with the ESC approach may be optimized by initiating discussions for NOWS management and ESC procedures in the prenatal period, when possible. To be effective, minimizing barriers to seeking consistent prenatal care must be addressed. Prenatal consultations with the pediatric provider team for the newborn may ease the transition to care during and beyond the birth hospitalization. Early identification of support systems for the pregnant person prenatally, during the birth hospitalization, and postnatally can help potentially strengthen the care of the newborn treated via the ESC approach. Communication across health care systems, including communication among prenatal, birth hospitalization, and postnatal care teams for both the pregnant person and newborn, can improve care transitions of care for the dyad. Plans of safe care represent opportunities to condense prenatal, birth hospital, and postnatal care plans for the dyad to outpatient care teams.

ADVERSE OUTCOMES

In general, adverse outcomes with use of the ESC approach are uncommon. Studies by Grossman et al[5,9] have demonstrated no patient transfers to the intensive care unit after ESC treatment of NOWS in their pediatric unit. No patients had seizures when treated via the ESC approach, and no readmissions occurred within 30 days of discharge for the traditionally-treated or ESC-treated patient groups.[5,9]

Additional adverse outcomes studied include those assessed by Young et al,[8] which included urgent care or emergency department visits, readmissions, nonaccidental trauma, and death through 3 months of age. This study demonstrated similar adverse outcomes rates via infant safety composite analysis between ESC-treated and non-ESC-treated patients with NOWS.[8,19] In contrast, 1 quality improvement publication by Haaland et al[22] did demonstrate an increase in weight loss among neonates who did not require morphine while cared for with the ESC approach compared with neonates who did not require morphine treatment via the FNASS tool.

OPPORTUNITIES FOR IMPROVEMENT

Several areas for improvement continue to exist when applying the ESC approach. Evaluation of how social determinants of health impact the successful implementation of ESC remains unclear.[19] This includes addressing the barriers that pregnant patients face to seeking prenatal care, initiating safe breast or chest feeding, and maintaining parental presence at the bedside for infants with NOWS to optimize the use of the ESC approach. Parent-identified areas for improvement continue to include adequate prenatal counseling about the ESC approach, breastfeeding support, and communication of expectations for NOWS while in the hospital and after discharge.[17] Health care systems must address barriers to rooming-in to optimize the benefits of the ESC approach.[30] Studies on long-term outcomes of NOWS, including neurodevelopmental and behavioral outcomes, are scarce in general and are needed to inform best practices including the application of the ESC approach and outcomes.[19]

FENTANYL EXPOSURE: A UNIQUE SUBSET?

Fentanyl, a synthetic opioid, can cause significant withdrawal symptoms in infants who are exposed in utero. Fentanyl is 50 to 100 times more potent than morphine, has a short half-life of 3 to 8 hours, and is often a component of polysubstance exposure with nonopioid substances that can contribute to the severity of withdrawal symptoms.[35] Fentanyl is also lipophilic, rapidly crosses the blood-brain barrier, and has a protracted renal clearance in adult patients with OUD compared

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with the typical 2- to 4-day clearance of other short-acting opioids, averaging 2 weeks or more for clearance (and ≤4 weeks or more for people with daily use).[36] These characteristics pose challenges to early, effective medical treatment of withdrawal in infants affected by fentanyl.

Since 2020, the rate of overdose deaths from fentanyl misuse in adults in Colorado has increased by 60%, similar to trends across the United States.[35,37] As such, the number of birthing individuals with fentanyl use has also increased.[2] In our local clinical experiences and confirmed by communication with other local neonatal clinicians, we have observed withdrawal symptoms in fentanyl-exposed newborns as similar to withdrawal from other opioids including fever, tachypnea, excessive crying, irritability, hypertonia, inability to feed, emesis, and/or the need for gavage feedings and/or intravenous fluids. However, we have observed an earlier onset of withdrawal symptoms sometimes within the first 12 hours after birth depending on the pattern of use and timing of in-utero exposure by the pregnant person. In cases of severe withdrawal symptoms from fentanyl exposure, challenges of treatment include ineffective nonpharmacologic care, early need for medication treatment, and difficulty determining appropriate doses for pharmacologic intervention despite application of the ESC approach. Parental or caregiver presence at the bedside for provision of supportive care remains crucial to the care of fentanyl-exposed newborns.

In response to these challenges and a growing number of infants with NOWS who have fentanyl exposure, medication algorithms have been adapted at some local health care institutions to liberalize use of short-acting agents (morphine) and scheduled long-acting agents (methadone) early in the hospital course when severe withdrawal symptoms are present. In 1 of our units, this has been observed to achieve shorter time to symptom capture and stabilization of withdrawal symptoms and functioning. Local data collection in 1 of our units is currently underway. There are currently no studies addressing adaptations in care needed to effectively treat severe NOWS due to in-utero fentanyl exposure. Of note, methadone is often the preferred medication for adult individuals receiving treatment during pregnancy for OUD involving fentanyl because studies have consistently shown that methadone has higher treatment retention rates and an easier initiation than buprenorphine.[38–40] It is unclear if the effective use of methadone for fentanyl-exposed infants with NOWS in our local population is related to the benefits experienced by adults with fentanyl use who receive methadone as part of medications for OUD.

In our experience, infants with NOWS due to in-utero fentanyl exposure often need intensive hands-on nursing care, requiring continuous attempts at nonpharmacologic care until multiple doses of short-acting opioids take effect. More studies are needed to assess the best care and treatment regimens for infants with fentanyl withdrawal and to establish an effective bundle of care approach for this particular population of patients with NOWS.

CONCLUSION

Because perinatal OUD remains a threat to the health and well-being of infants, pregnant people, and families, innovative interventions that are family-centered and inclusive must continue to develop. The ESC approach was one of the first major advancements in the hospital-based care of IPOEs in the recent era that welcomed caregivers to the bedside and emphasized the important role that parents have as first-line treatment of NOWS. While the adoption of ESC across many states has led to favorable short-term outcomes related to health care use, far more work is needed to better integrate birth hospital efforts with those that occur in communities in the prenatal and postpartum periods. Moreover, infant outcomes must be assessed within the larger context of the pregnant person and family health and well-being.

LESSONS FOR THE CLINICIAN

- The ESC approach to management and treatment of NOWS assesses functioning of the neonate instead of individual withdrawal symptoms and emphasizes nonpharmacologic supportive strategies as first-line treatment of functional deficits.
- When pharmacotherapy is required for NOWS management due to functional deficits despite maximizing supportive strategies, morphine PRN is preferred over initiation of longer acting opioid therapies.
- As compared with traditional scoring methods such as the FNASS, the ESC approach has demonstrated decreased birth hospitalization LOS, decreased proportion of neonates with NOWS requiring medication therapy, and decreased duration of medication therapy when required, all of which can translate to decreased health care costs.
- Fentanyl now represents a proportion of opioid exposure among neonates with NOWS in some areas in the United States, and local experience with the effectiveness of the ESC approach reveals the potential need for more tailored approaches to effectively treat the severity of functional impairment and withdrawal symptoms for this particular population of patients with NOWS.
- More studies are needed to assess the long-term outcomes of neonates with NOWS treated with the ESC approach, parent and staff satisfaction, outpatient provider

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perceptions, and the effectiveness of the ESC approach as applied to primarily fentanyl-exposed newborns with NOWS.

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NEO QUIZ

1. The rate of opioid use disorders and prenatal opioid exposures have risen sharply over the past decade, resulting in increased rates of neonatal opioid withdrawal syndrome (NOWS). This increase in impacted neonates has led to significant changes in their clinical care to address the limitation of traditional monitoring and scoring systems such as the Finnegan neonatal abstinence scoring system and the modified Finnegan assessment tool. The eat, sleep, console (ESC) approach was developed with the goal to focus monitoring and interventions based on the functional impact of the withdrawal symptoms. When was the ESC approach developed?

   A. 2013.
   B. 2015.
   C. 2017.
   D. 2019.
   E. 2021.

2. The ESC approach evaluates whether impacted neonates can meet important functional milestones despite experienced withdrawal signs and symptoms. Which of the following statement regarding the ESC approach is CORRECT?

   A. For bottle feeding term infants, eating is defined as eating at least 10 mL per feeding.
   B. For breastfeeding term infants, eating is defined as breastfeeding well (latching deeply and sustaining active suckling) for at least 15 minutes.
   C. For preterm infants, eating is omitted in the assessment because preterm neonates cannot feed by mouth effectively.
   D. Sleeping is defined as sleeping undisturbed for at least 30 minutes in breastfed infants and 1 hour in bottle-fed infants.
   E. Console is defined as consoling within 10 minutes of crying.

3. Pharmacologic interventions may be needed when nonpharmacologic supportive strategies are maximized and the infant is unable to eat, sleep or console. While the optimal pharmacologic agent to treat severe NOWS has not been determined, morphine is typically the fist-line pharmacologic agent due to its favorable half-life that allows for treatment when needed. Which of the following statement regarding pharmacologic interventions for neonates with NOWS is CORRECT?

   A. The initial dosage of morphine is 0.05 mg/kg.
   B. Morphine can be given every 4 to 6 hours as needed.
   C. Infants should be reassessed 4 to 6 hours after a dose to determine if additional doses are needed.
   D. Morphine should be transitioned to a longer acting opioid such as methadone if scheduled doses are required.
   E. Infants receiving methadone are exposed to less opioid amounts overall, based on morphine equivalents.

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4. The ESC approach has been studied in multiple clinical settings including a large multicenter cluster-randomized clinical trial. The trial was conducted in 26 academic and community hospitals from diverse geographic regions and included 1000 infants born at 36 weeks gestational age or greater. What was the difference in medication use between infants treated using the ESC approach and those treated using traditional approaches?

   A. 35%.
   B. 41%.
   C. 55%.
   D. 62%.
   E. 74%.

5. Multiple studies have also demonstrated decreased length of stay (LOS) in the hospital for neonates with NOWS treated using the ESC approach. Prior to the ESC approach, infants with NOWS that required pharmacologic treatment had an average LOS of 23 days. What was the LOS in infants treated using the ESC approach in the initial study of ESC published by Grossman et al?

   A. 3 days.
   B. 6 days.
   C. 8 days.
   D. 10 days.
   E. 14 days.

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