



CLINICAL GUIDELINE

**Narcotic Dependence:
Treatment of Iatrogenically Acquired Narcotic Dependence**

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

This document should be read in conjunction with this [DISCLAIMER](#)

Background

Prolonged administration of opioids and/or benzodiazepines may induce drug tolerance and physiological dependency. Abrupt discontinuation or (too rapid) weaning of these drugs may result in iatrogenically acquired withdrawal syndrome (IWS). Infants prescribed opioids via continuous infusion for as little as 5 days can develop opioid tolerance or dependence. Cumulative dose and duration of administration of opioids are highly predictive in the occurrence of such complications and therefore rational prescribing and weaning is recommended.

Withdrawal Assessment

Signs of withdrawal may not be immediate and may take up to 48 hours to manifest. Narcotic withdrawal can be objectively assessed using the NAS observation chart and should be used in conjunction with this protocol. Refer to [Neonatal Abstinence Syndrome \(NAS\)](#) guideline, Pharmacological Treatment.

Initiate NAS chart assessments in all neonates perceived at risk e.g. received intravenous opioid for 5 days or more, or in neonates exhibiting potential symptoms following weaning or cessation. Score every 4 hours if scores < 8, score every 2 hours if scores > 8. Severe symptoms (total score > 8 on 3 consecutive occasions or > 12 on two occasions) should be reported to the medical staff for further management.

Management of Iatrogenic NAS

Category 1: Narcotics Administered for Less than 5 Days

Reduce rate as clinically indicated and tolerated (i.e. reduce infusion rate by half every 4-6 hours). Initiate NAS observation chart **only** if withdrawal symptoms are observed. Score every 4 hours and initiate treatment as indicated by scores.

Category 2: Narcotics Administered for 5 to 14 Days

Reduce rate by 20% every 24 hours. Initiate withdrawal observation chart for all infants in this category. Score every 4 hours and initiate treatment if indicated by the scores. Monitor for signs of withdrawal for at least 48 hours post cessation of medication.

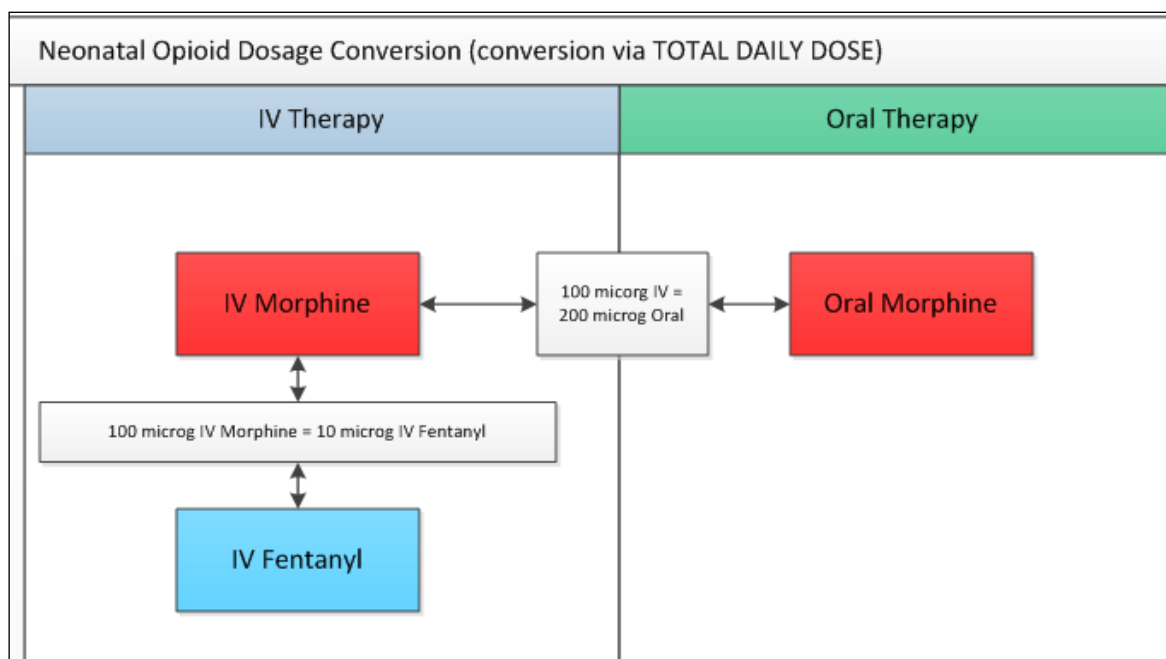
If withdrawal symptoms are identified (score > 8 for 3 scores) reduce the rate of weaning to 10% per 24-48 hours. If symptoms persist with scores >8 revert to previous prescribed dose and delay weaning for 24 hours and reassess rate and frequency of weaning to be undertaken.

Category 3: Narcotics Administered for Greater than 14 Days

Consider a prescribed slower rate of wean due to increased risk of adverse effect. e.g. reduction by 10% every 24-48 hours. Initiate NAS observation chart as specified above and remain alert for potential symptoms to be assessed and treated without delay and weaning protocol revised.

Therapeutic Agents

Intravenous fentanyl and morphine are the most frequently used analgesic agents in the NICU that underlie opiate IWS. Equivalent opioid calculators may be used for dose conversion between formulations and preparations, however are to be used with caution of significant interpatient variability in bioavailability and metabolism of agents. A recommended approach is to calculate the total dose received in 24 hours prior to conversion to another agent or route of delivery.



e.g. A 24hour total dose of IV morphine equals 1mg, oral morphine equivalent will be 2mg. (daily oral dose is twice the daily IV dose)

IV fentanyl continuous infusion at 1microgram/kg/hr in a 3kg patient
= 24microgram/kg/day= 72micrograms in 24 hours.

1 microgram of fentanyl is equivalent to 10 micrograms of IV morphine
Equivalent IV morphine 24 hour dose = 720micrograms of IV morphine
Convert to oral morphine (Oral dose is twice the dose of IV morphine)
= 1440micrograms of oral morphine in 24 hours
= 240micrograms PO q6hourly.

Clonidine

Clonidine is a centrally acting α_2 -adrenergic receptor agonist that inhibits sympathetic activity, and may significantly reduce the symptoms of opiate withdrawal with minimal adverse effects when used either as adjunctive therapy or monotherapy. Clonidine has been shown to reduce the overall duration of pharmacotherapy in NAS treatment. Clonidine may be administered via intravenous infusion or orally and the dosage is in micrograms per kg, refer to Neonatal Medication Protocol: [Clonidine](#).

Related CAHS internal policies, procedures and guidelines

[Neonatal Abstinence Syndrome \(NAS\)](#)


References and related external legislation, policies, and guidelines

1. ANAND KJS. ET AL. (2010). Tolerance and withdrawal from prolonged opioid use in critically ill children. *Pediatrics*. 125(5), 1208-25.
2. Galinkin J, Lee Koh J, Committee on Drugs, Section on Anaesthesiology and Pain Medicine. Recognition and Management of Iatrogenically Induced Opioid Dependence and Withdrawal in Children. *Pediatrics* 2014, 133 (1) 152-155; DOI: 10.1542/peds.2013-3398
3. Lewis T, Erfe BL, Ezell T, Gauda E. Pharmacoepidemiology of opiate use in the neonatal ICU: Increasing cumulative doses and iatrogenic opiate withdrawal. *J Opioid Manag*. 2015 Jul-Aug;11(4):305-12. doi: 10.5055/jom.2015.0279
4. <https://www.sickkids.ca/clinical-practice-guidelines/clinical-practice-guidelines/export/CLINH303/Main%20Document.pdf> Prevention and Treatment of Opioid and Benzodiazepine Withdrawal. Accessed 3/08/2017.
5. http://www.slhd.nsw.gov.au/RPA/neonatal%5Ccontent/pdf/Medications_Neomed/Morphine_ORAL_NeonMedv1.0_Full_20170529.pdf. Accessed 29/09/2017.
6. Hunseler C, Balling G, Rohlig C,. Continuous infusion of clonidine in ventilated newborns and infants: a randomized controlled trial. *Pediatr Crit Care Med*. 2014;15:511-522. doi:10.1097/PCC.0000000000000151
7. Streetz VN., Gildon BL., Thompson DF. Role of Clonidine in Neonatal Abstinence Syndrome A Systematic Review *Annals of Pharmacotherapy* 2016: 50 (4): 301-310
<https://doi.org/10.1177/1060028015626438>

Harris, J., Ramelet, A.-S., van Dijk, M., Pokorna, P., Wielenga, J., Tume, L., Ista, E. (2016). Clinical recommendations for pain, sedation, withdrawal and delirium assessment in critically ill infants and children: an ESPNIC position statement for healthcare professionals. *Intensive Care Medicine*, 42, 972–986. <http://doi.org/10.1007/s00134-016-4344-1>

Narcotic Dependence:
Treatment of Iatrogenically Acquired Narcotic Dependence

This document can be made available in alternative formats on request for a person with a disability.

File Path:			
Document Owner:	Neonatology		
Reviewer / Team:	Neonatal Coordinating Group		
Date First Issued:	August 2006	Last Reviewed:	15 th August 2017
Amendment Dates:		Next Review Date:	15 th August 2020
Approved by:	Neonatal Coordinating Group	Date:	15 th August 2017
Endorsed by:	Neonatal Coordinating Group	Date:	15 th August 2017
Standards Applicable:	NSQHS Standards: 		
Printed or personally saved electronic copies of this document are considered uncontrolled			