

PICU/CTICU BENZODIAZEPINE WITHDRAWAL PREVENTION GUIDELINES Children's GOAL: Shorten patients' duration of benzodiazepine utilization while minimizing symptoms of withdrawal and over-sedation. Hospital 🕟 LOS ANGELES We Treat Kids Better INITIATE: **PATIENT READY FOR WEANING OF BENZODIAZEPINE?:** YES → * WAT Scores every 6 hours (as baseline) KEY: * Initiate and Post Bedside WORKSHEET **BZD**=benzodiazepine. ATC=around the clock. PRN=as needed dose **RISK STRATIFY FOR WITHDRAWAL:** Based upon # of days on continuous BDZ infusions **LOW RISK** MODERATE RISK: **HIGH RISK: VERY HIGH RISK:** ATC / **ATC/ Continuous BZD RISK LEVEL: ATC/ Continuous BZD ATC/ Continuous BZD** Continuous 5-7 days. 8-30 days. > 30 days. BZD < 5 days. **CONVERSION:** Start IV Lorazepam and Start IV Lorazepam and Start IV Lorazepam and Using **DOSING Scheduled** D/C infusion. D/C infusion. D/C infusion. **GUIDELINE TABLE BZD** for scheduled not necessary. (See Dosing Guideline Table) (See Dosing Guideline Table) (See Dosing Guideline Table) & PRN doses. Current **ASSESS FOR CONCERNED ABOUT WITHDRAWAL?** WAT > 4 & YES-(Unlikely if no wean of medications in previous 24 hours) >2 above WITHDRAWAL: baseline? -NO, WEAN NO **←** NO NO NO Decrease dose Decrease dose Decrease dose YĖS each day by 20% every other day by 20% every other day by 10% WEAN: >2 PRN Doses of original daily dose. of original daily dose. of original daily dose. In Last 24 hrs? **Duration of wean:** 5 days **Duration of wean: 10 days Duration of wean:** > 10 days YES-**HOLD WEAN HOLD WEAN: CONCERN FOR** If 3 or MORE PRN's in Last 24hrs – Hold Wean. NOTE: If WAT score is high, but PRN dose does not have a WITHDRAWAL: If 5 or MORE PRN's Last 24hrs – Consider returning sustained benefit (or makes symptoms worse), consider delirium &

continue wean.

to previous scheduled dose.

Withdrawal Minimization Dosing Guideline Table Opioids:

Current Infusion Dose	Recommended Scheduled Dosing		PRN Dosing
Fentanyl Drip	PO Methadone (preferred) (Max Dose: 10 mg)	IV Hydromorphone (if PO/NG not an option) (Max Dose 2 mg)	PRN IV Hydromorphone (Max Dose: 2 mg)
1 mcg/kg/hr	0.05 mg/kg/dose PO Q8H	0.01 mg/kg/dose IV Q4H	0.01 mg/kg/dose IV Q2-4H PRN
2 mcg/kg/hr	0.1 mg/kg/dose PO Q8H	0.02 mg/kg/dose IV Q4H	0.02 mg/kg/dose IV Q2-4H PRN
3 mcg/kg/hr	0.1 mg/kg/dose PO Q8H	0.02 mg/kg/dose IV Q4H	0.02 mg/kg/dose IV Q2-4H PRN
4 mcg/kg/hr	0.15 mg/kg/dose PO Q8H	0.03 mg/kg/dose IV Q4H	0.03 mg/kg/dose IV Q2-4H PRN
Hydromorphone Drip	PO Methadone (preferred) (Max Dose: 10 mg)	IV Hydromorphone (if PO/NG not an option) (Max dose 2 mg)	PRN IV Hydromorphone (Max dose 2 mg)
0.005 mg/kg/hr (=5mcg/kg/hr)	0.1 mg/kg/dose PO Q8H	0.02 mg/kg/dose IV Q4H	0.02 mg/kg/dose IV Q2-4H PRN
0.01 mg/kg/hr (=10 mcg/kg/hr)	0.1 mg/kg/dose PO Q8H	0.04 mg/kg/dose IV Q4H	0.04 mg/kg/dose IV Q2-4H PRN
0.015 mg/kg/hr (=15mcg/kg/hr)	0.1 mg/kg/dose PO Q8H	0.06 mg/kg/dose IV Q4H	0.06 mg/kg/dose IV Q2-4H PRN
0.02 mg/kg/hr (=20mcg/kg/hr)	0.15 mg/kg/dose PO Q8H	Use Methadone or Wean Infusion	0.08 mg/kg/dose IV Q2-4H PRN
0.025 mg/kg/hr (=25mcg/kg/hr)	0.15 mg/kg/dose PO Q8H	Use Methadone or Wean Infusion	0.08 mg/kg/dose IV Q2-4H PRN
0.03 mg/kg/hr (=30mcg/kg/hr)	0.15 mg/kg/dose PO Q8H	Use Methadone or Wean Infusion	0.08 mg/kg/dose IV Q2-4H PRN
Morphine Drip	PO Methadone (preferred) (Max Dose: 10 mg)	IV Hydromorphone (if PO/NG not an option) (Max Dose 2 mg)	PRN IV Hydromorphone (Max Dose: 2 mg)
0.1 mg/kg/hr	0.05 mg/kg/dose PO Q8H	0.01 mg/kg/dose IV Q4H	0.01 mg/kg/dose IV Q2-4H PRN
0.2 mg/kg/hr	0.1 mg/kg/dose PO Q8H	0.02 mg/kg/dose IV Q4H	0.02 mg/kg/dose IV Q2-4H PRN
0.3 mg/kg/hr	0.1 mg/kg/dose PO Q8H	0.02 mg/kg/dose IV Q4H	0.02 mg/kg/dose IV Q2-4H PRN
0.4 mg/kg/hr	0.15 mg/kg/dose PO Q8H	0.03 mg/kg/dose IV Q4H	0.03 mg/kg/dose IV Q2-4H PRN

IV to PO Conversion: Hydromorphone IV: PO = 1:5; Methadone IV: PO = 1:0.7.

Withdrawal Minimization Dosing Guideline Table Benzodiazepines:

Current Infusion Dose	Recommended Scheduled Dosing	PRN Dosing	
Midazolam Drip	IV Lorazepam (Max Dose: 4 mg)	PRN IV Lorazepam (Max Dose: 4 mg)	
0.06 mg/kg/hour	0.05 mg/kg/dose IV/PO Q4H	0.025-0.05 mg/kg/dose IV Q2-4H PRN	
0.12 mg/kg/hour	0.1 mg/kg/dose IV/PO Q4H	0.05-0.1 mg/kg/dose IV Q2-4H PRN	
0.18 mg/kg/hour	0.15 mg/kg/dose IV/PO Q4H	0.1-0.15 mg/kg/dose IV Q2-4H PRN	
0.24 mg/kg/hour	0.25 mg/kg/dose IV/PO Q4H	0.15-0.25 mg/kg/dose IV Q2-4H PRN	

Lorazepam IV : PO = 1 : 1

Lorazepam Intermittent Dosing at Intervals Other Than Q4H Should be Converted to Q4H Equivalents (Calculator will do this automatically).