



Interim Guidance on Ketamine Administration to Adult Patients

Background: Ketamine has recently been added to Michigan EMS protocols for use in adult and pediatric patients. Applicable ketamine-related protocols include 1) Pain Management, 2) Patient Sedation, 3) Excited Delirium, and 4) Patient Restraint. Ketamine is additionally addressed in the Medication Section of the Protocols. Recently, an additional MI-MEDIC card was developed for ketamine and other new medications that were not covered in the most current version of MI-MEDIC. While primarily intended for pediatric patients, this additional card includes information on Adult (black color) patients as well as Pediatrics. While we believe the Pediatric dosing for ketamine in the MI-MEDIC addendum card is clear, there have been questions regarding Adult dosing. Additionally, there have been questions regarding intranasal ketamine in the Patient Sedation Protocol. This document is intended to provide clarifying guidance for the dosing of ketamine to adult patients and is consistent with State Protocols.

Pain Management with Ketamine for Adult Patients and MI-MEDIC:

- Disregard the recommended dilution as described in the Black section of the card for ketamine (both IV/IO and IN).
- For IV/IO ketamine, dilute as described in the Green section of the MI-MEDIC card.
 - Dilute 1 mL ketamine with 9 mL Normal Saline (=10 mg/mL)
 - Administer 1 to 2.5 mL (10-25 mg) IV/IO (0.2 mg/kg, max of 25 mg)
 - 50 kg patient = 1 mL of diluted ketamine
 - 75 kg patient = 1.5 mL of diluted ketamine
 - 100 kg patient = 2 mL of diluted ketamine
 - 125 kg patient = 2.5 mL of diluted ketamine (maximum dose)
 - May repeat after 10 minutes x1
- For IN ketamine, DO NOT DILUTE
 - Undiluted ketamine (=100 mg/mL)
 - Must draw up an additional 0.1 mL to account for the dead space in the atomizer
 - Administer 0.25 to 0.5 mL undiluted ketamine IN (0.5 mg/kg)
 - 50 kg patient = draw up 0.35 mL to deliver 0.25 mL of undiluted ketamine
 - 100 kg patient = draw up 0.6 mL to deliver 0.5 mL of undiluted ketamine
 - May repeat after 10 minutes x1



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Patient Sedation with Ketamine for Adult Patients and MI-MEDIC:

- Follow instructions on Black section of the MI-MEDIC card
 - Ketamine IV/IO/IN (100 mg/1 mL) administer 0.5 -2 mL IV/IO/IN (1-2 mg/kg)
 - *Note IN ketamine for sedation is not recommended due to volume*
 - Ketamine IM (100 mg/1 mL) 2-4 mL IM (4 mg/kg)

Patient Restraint and Excited Delirium with Ketamine for Adult Patients

- Ketamine IM (100 mg/1 mL) 2-4 mL IM (4 mg/kg)
 - *Note IN ketamine is not recommended for these indications due to volume*