


**RIVERSIDE UNIVERSITY HEALTH SYSTEM – Medical Center
Housewide**

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Title: Intranasal Medication Administration via Mucosal Atomization Device in the Adult & Pediatric Population	Effective Date: 6/11/2020	<input type="checkbox"/> RUHS – Behavioral Health <input type="checkbox"/> RUHS – Community Health Centers <input type="checkbox"/> RUHS – Hospital Based Clinics <input checked="" type="checkbox"/> RUHS – Medical Center <input type="checkbox"/> RUHS – Public Health <input type="checkbox"/> Departmental
Approved By: <div style="text-align: center;">  Jennifer Cruikshank CEO/ Hospital Director </div>	<input type="checkbox"/> Policy <input type="checkbox"/> Procedure <input checked="" type="checkbox"/> Guideline	

1. SCOPE

- 1.1 To provide guidelines for the safe and effective administration of intranasal (IN) medication via a mucosal atomization device to adult and pediatric patient population in RUHS Medical Center and Arlington Campus.

2. BACKGROUND

- 2.1 The intranasal route provides rapid delivery of emergency medications where other routes may be difficult or time-consuming, reduces administration time, needle anxiety, needle stick injuries, anxiety related to radiologic diagnostic studies, and increases patient satisfaction.
- 2.2 Medication delivered IN are rapidly absorbed through the capillary network and delivered to the systemic circulation.

3. DEFINITIONS

- 3.1 Intranasal (IN): Intranasal medication delivery offers an alternative method of drug delivery that avoids first pass metabolism by delivering a fine mist of the medication that is quickly and efficiently absorbed by the nasal mucosa.
- 3.2 Mucosal Atomizer Device (MAD): a device that attaches by Luer lock to a one-milliliter (mL) syringe to instill a mist of medication into the nasal cavity, improving absorption to the intranasal surface area.

4. GUIDELINES

- 4.1 The IN route may be utilized when intravenous route is not readily available, or is unnecessary
- 4.2 For a list of medications: See Appendix 1
- 4.3 Equipment needed and administration instructions: *Refer to Elsevier Clinical Skills: Medication Administration: Intranasal medication*
 - a. an additional 0.1 mL of overfill will be drawn up for the “dead-space” volume occupied by the MAD
- 4.4 Patient Monitoring: See Appendix 1

- a. Note: some patients will become moderately sedated despite the intended level of minimal sedation; should this occur, then the guidelines for moderate sedation apply.
- b. Nurses should be prepared to start an IV in the event of an emergency.

4.5 Considerations

- a. All intranasal medications require the appropriate use of the MAD for administration into the nostrils.
- b. Concentrated drug products are preferred to minimize administration volume
 - Administer half of the dose into each nostril.
 - < 10 years old, not to exceed 0.5 mL per nostril
 - ≥ 10 years old, not to exceed 1 mL per nostril
 - Doses requiring more than 1 mL require delivery in divided doses, allowing a few minutes for absorption between doses.
 - Consider alternative method of delivery (i.e. intravenous), if volume is too large
- c. Avoid blowing nose post administration

4.6 Contraindications to intranasal medication administration

- a. Abnormal neurological exam
- b. Developmental delay
- c. Allergy or sensitivity to the medication being administered
- d. Epistaxis
- e. Facial trauma
- f. Medical conditions that affect ciliary function (e.g. cystic fibrosis)
- g. Nasal obstruction (e.g. nasal polyps, significant facial trauma, septal abnormalities, excessive mucus or blood)
- h. Rhinitis
- i. Recent use of nasal vasoconstrictors (e.g. cocaine, oxymetazoline, phenylephrine)

5. REFERENCES

- 5.1 Clinical Practice Guideline: Intranasal medication administration (2017). Retrieved February 21, 2019, from <https://www.ena.org/docs/default-source/resource-library/practice-resources/CPG/intranasalmedcpg>
- 5.2 Elsevier Clinical Skills: Medication administration: intranasal medication (Sept. 2018). Retrieved February 21, 2019, from https://point-of-care.elsevierperformancemanager.com/skills/893/quick-sheet?skillId=CCP_161
- 5.3 Cote, C. J., & Wilson, S. (2019). Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures. PEDIATRICS, 143(6), 1-31. doi:10.1542/peds.2019-1000 originally published online May 28, 2019

6. ATTACHMENTS

6.1 Appendix 1 - Intranasal medication and dose administration.

Document History:

Prior Release Dates: N/A		Retire Date: N/A	
Document Owner: Emergency Department		Replaces Policy: N/A	
Date Reviewed	Reviewed By:	Revisions Made Y/N	Revision Description
11/12/19	PRC	Yes	Change from ED to Housewide at header Updated approved by section from Mesisca to Cruikshank 4.5.a – Add to consideration statement “when IV access is not readily available.” 4.6.c – Organize volume restrictions by age Update document history
12/2/19	P&T	Yes	Revisions to Scope to include Pediatrics and Arlington Campus. After P&T meeting determined to revise Appendix to accommodate changes to scope.
1/14/20	PRC	Yes	Title change to include using a MAD. Added RUHS to scope. Added intranasal to background instead of IN. Added Instruction to administration including dead space to 4.4. Add equal sign to age to 10 or greater to 4.6b. EPIC – for intranasal route, in order instructions add dead space 0.1mL. Appendix revisions. Change AR to ITF/ETS. Added naloxone to ITF/ETS, and correct typo Change blank boxes – add hyphen with double dashes. Added refer to Elsevier for administration instructions
2/3/20	P&T	No	
3/3/20	PAC	Yes	4.2 Replaced Medications: with” For a list of mediations” Removed 4.3 Verbiage added to 4.7g. Added 4.7i
4/9/20	MEC	No	

<p>Additional Administration Information: If using a mucosal atomization device (MAD), when drawing up the dose into the syringe, add <u>0.1 mL</u> additional medication to account for dead space* in the device. To maximize mucosal absorptive surface area, administer half of the dose into each nostril. RN to review Elsevier Clinical Skills: Medication Administration: Intranasal medication for administration instructions</p>	<p>NOTE: This reference serves as an abridged guideline for the administration of intranasal medications for pediatric and adult patients. Consult references for detailed information, including specific BOXED WARNING, dosing, compatibility, stability and other information. The potential for an adverse outcome may be increased if 2 or more sedating medications are administered.</p>
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Administer Using MAD

Drug	NICU	PICU	ED	Rad	ACCU	2500	PACU	LD	non-Tele	ITF/ETS	Concentration	Administration	Usual Dose [adult max]	Nursing Considerations
fentaNYL	---	nasal	nasal	---	---	---	---	---	---	---	50 mcg/mL	Briskly administer 1/2 the dose into each nostril	Usual: 1 mcg/kg [50 mcg] Redose: 0.5 mcg/kg Q5 min Max: 3 mcg/kg cumulative [50 mcg]	Onset: 5 min Duration: 60 min Monitoring respiratory depression, to include ETCO2 nasal irritation, headache
midazolam	---	nasal	nasal	nasal	---	---	---	---	---	nasal	5 mg/mL	Briskly administer 1/2 the dose into each nostril	Dose: 0.2 mg/kg 1-5 months: 0.2 mg/kg ≥ 6 months: 0.2-0.3 mg/kg Max: 0.5 mg/kg [10 mg]	Onset: 5-10 min Duration: 30-45 min Indications needle anxiety and stress related to radiological diagnostic studies seizures Monitoring respiratory depression, to include ETCO2 nasal irritation/burning, headache
naloxone	---	nasal	nasal	---	---	---	---	---	---	nasal	1 mg/mL	Briskly administer 1/2 the dose into each nostril	adolescents ≥ 13 years Usual: 2 mg Redose: 5 min if CNS/respiratory depression continues Max: [2 mg]	Onset: 1-5 min Duration: 30-45 min Monitoring include ETCO2 for reversal of opioid oversedation/overdose

Abbreviations: MAD: mucosal atomization device; Max: usual maximum dose; non-Tele: non-telemetry monitored patients (Medical/Surgical/OB/PEDS); Rad: radiology diagnostic services

Definitions: *Dead space is an approximate volume of fluid in the MAD device that cannot be expelled upon administration

References:

Lexicomp Online, Pediatric and Neonatal Lexi-Drugs Online, Hudson, Ohio: Wolters Kluwer Clinical Drug Information, Inc.; 2013; Last accessed December 16, 2019.
MAD Nasal™ Product Information Guide; Teleflex, Inc., USA. Available at: [http://Teleflex.com/MAD;\(02/2016](http://Teleflex.com/MAD;(02/2016)
Micromedex® 2.0, (electronic version). Truven Health Analytics, Greenwood Village, Colorado, USA. Available at: <http://www.micromedexsolutions.com/> (cited:10/2017).
Cote, C. J., & Wilson, S. (2019). Guidelines for Monitoring and Management of Pediatric Patients Before, During, and After Sedation for Diagnostic and Therapeutic Procedures. PEDIATRICS, 143(6), 1-31. doi:10.1542/peds.2019-1000