Team Name: Pharmacy & Therapeutics Team Lead: Regional Director - Pharmacy Approved by: VP - Medical Services	Reference Number: CLI.6010.SG.005 Program Area: Pharmacy & Therapeutics Policy Section: General
Issue Date: September 28 2017 Review Date: Revision Date:	Subject: Intranasal Medication Administration by Mucosal Atomization Device

STANDARD GUIDELINE SUBJECT:
Intranasal Medication Administration by Mucosal Atomization Device

PURPOSE:
Intranasal drug delivery offers a non-invasive alternate route for medication administration. The mucosal atomization device delivers a fine mist of soluble medication particles to achieve efficient and effective drug levels.

A physician's order is required for the drug to be administered using the intranasal route.

Indications for use include symptom management, such as opiates for pain management, sedatives for terminal restlessness (agitation) and seizure management.

PROCEDURE:
1. Obtain a mucosal atomization device i.e. MAD100 and fill the syringe with the prescribed amount of medication.
2. Explain the procedure and expected outcome to the patient and family.
3. The ideal volume for intranasal administration is 0.2 to 0.3 mL and the maximum recommended volume per nostril is 1 mL. If dose is greater than 0.5 mL, apply it in two separate doses allowing 5 to 10 minutes apart for each dose. The spacing allows the former dose to absorb.
4. Fill the syringe with the prescribed amount of medication solution using the most concentrated form of the medication to achieve the effect desired.
5. Connect the atomizer to the syringe via the luer lock mechanism.
6. Inspect the nostril for significant amounts of blood or mucous discharge. If present, these will limit mucosal absorption.
7. Lean head back slightly or lay flat. Place the tip of the atomizer in the nostril.
8. Squirt half of the medication into each nostril.
9. The atomizer and syringe may be reused if an immediate subsequent dose is necessary only during the procedure at hand (same medication & same patient for 24 hours). The device is disposable and must be discarded after each single use or after 24 hours in multiple use scenarios, may not be stored and reused at a later date due to sanitation issues.

IMPORTANT POINTS TO CONSIDER:

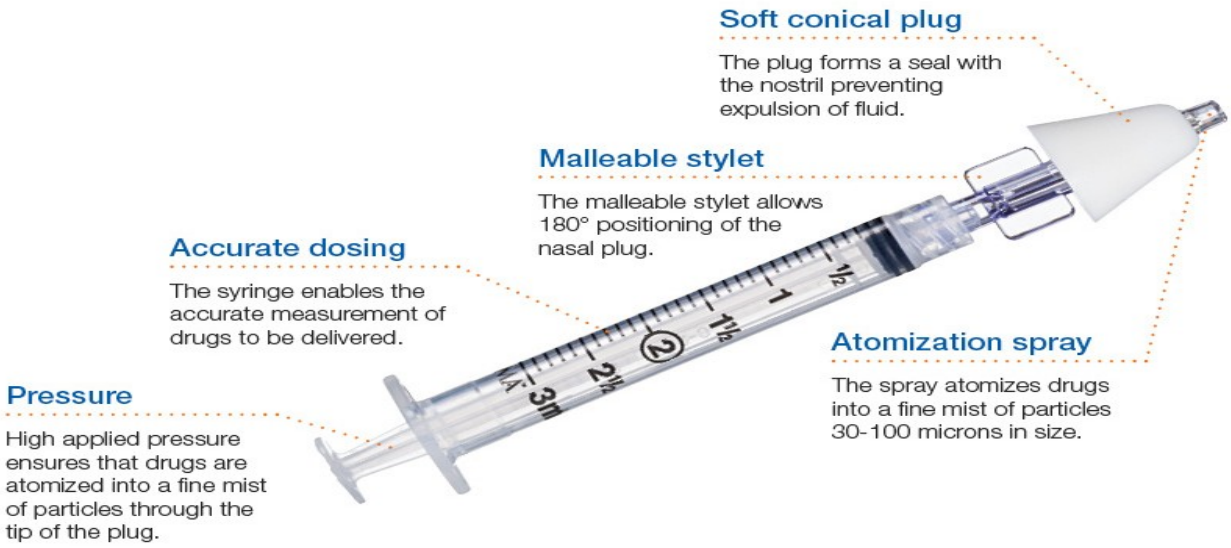
1. The atomizer has a dead space of 0.1 mL, so particularly for doses less than 0.9 mL, be sure to take the dead space into account by adding 0.1 mL to the final volume (i.e. volume of dose + 0.1 mL).
2. Physiological condition of the nasal passages needs to be assessed, as certain conditions will limit drug absorption (i.e. bloody nose, nasal congestion, mucus discharge, or destruction of the nasal mucosa).
3. Examples of medications administered via the atomizer include, but are not limited to:

CLASS	Drugs via atomizer
Opioids	FentaNYL/SUFentanyl
Antiemtics	Haloperidol
Sedative/Anxiolytic	Midazolam/LORazepam
Anticholinergic/Antispasmodic	Scopolamine
Antidote	Naloxone

4. The absorption rate and plasma concentration of atomization is comparable to intravenous administration (Knoester et al, 2002).

EQUIPMENT/SUPPLIES:

The vendor for this item is Teleflex and MAD100 is the product code number.



REFERENCES:

Holsti, M. Sill, B.L., Firth, S.D., Filloux, F. M., Joyce, S.M., & Furnival, R.A. (20007). Prehospital intranasal midazolam for the treatment of pediatric seizures. Pediatric Emergency Care, 23(3), 148-153.

Knoester, P.D., Jonker, D.M., Van Der Hoeven, R.T. et al (2002). Pharmacokinetics and pharmacodynamics of midazolam administered as a concentrated intranasal spray. A study in healthy volunteers. *British Journal of Clinical Pharmacology*, 53, 501-507.

Miller JL *et al.* (2008). Comparison of intranasal administration of haloperidol with intravenous and intramuscular administration: A pilot pharmacolkinetic study. *Pharmacotherapy*, 28(7), 875-882.

Putcha L. (1996). Bioavailability of intranasal scopolamine in normal subjects. *Journal of Pharmaceutical Sciences,* 85(8): 899-902.

Therapeutic Intranasal Delivery. Accessed May 3, 2010. http://intranasal.net/Treatmentprotocols/default.htm

Wolfe, T.R. & Macfarlane, T.C. (2006). Intranasal midazolam therapy for pediatric status epilepticus. *American Journal of Emergency Medicine*, 24, 343-346.