

Intranasal Fentanyl for procedural pain



Comfort Kids Program 2016

Melbourne Children's

Excellence in clinical care, research and education



Murdoch Children's Research Institute



IN fentanyl

- What
- Why
- How
- Resources



What

- Analgesic opioid
- Rapid onset of effect 2-5 minutes
- Duration of effect 30-60 minutes
- If **opioid or sedation agent** administered **within 2 hours**,
assess UMSS & undertake consultation

Why

- Intranasal more effective than oral route
 - Enhanced absorption and avoidance of 1st pass effects
 - Theoretically direct nasal to CNS delivery allows lower dosing with less delivery to non-targeted organs
- Rapid onset
- Titrated
- Short acting

Indications

- Age > 6 months (corrected age)
- Minor painful procedures of short duration
- Limited IV access
- Potent & rapid onset of analgesia required
- Single procedural analgesic agent
- Adjunct to N2O (undertake risk assessment)

Indications

- Paediatric minor painful injuries or procedures:
 - Orthopaedic trauma not requiring an IV (or prior to IV)
 - Pain control is needed but oral medication is too slow
 - Burn dressing changes
 - Re-packing wounds such as abscesses
 - IM shot for pain control (IN works as well or better with faster onset and no pain on delivery)

Contraindications

- < 6months (corrected age)
- UMSS ≥ 2
- Bilateral occluded nasal passage
- Epistaxis

Dosing RCH CPG



Intranasal Fentanyl				
Analgesic opioid				
If opioid or sedation agent administered within 2 hours, assess UMSS & undertake consultation				
Indications		Contraindications		
Age > 6 months (corrected age) Minor painful procedures of short duration Limited IV access Potent & rapid onset of analgesia required Single procedural analgesic agent Adjunct to N ₂ O (undertake risk assessment)		< 6months (corrected age) UMSS ≥2 Bilateral occluded nasal passage Epistaxis		
Onset of action		Duration of effect		
Rapid onset of effect (2-5 minutes)		30-60 minutes		
Initial Dose		Second dose (if UMSS <2 may administer after 10 minutes)		
1.5 micrograms/kg		0.75 - 1.5 micrograms/kg		
Dosing schedule per the Intranasal Fentanyl CPG with the addition of >6months (7kg) infant dosing				
<ul style="list-style-type: none"> Use 100micrograms/2ml strength fentanyl solution for intravenous use Volumes have been rounded to the nearest 0.05mL 				
Weight estimate(kg)	Initial dose (1.5micrograms/kg)	Volume Initial dose (mL)	Top-up dose (0.75 - 1.5 micrograms/kg)	Volume Top up dose (mL)
7	10 mcg	0.2 mL	5mcg (limited)	0.1mL
10	15 mcg	0.3 mL	7.5 - 15 mcg	0.15 - 0.3 mL
12	18 mcg	0.35 mL	9 - 18 mcg	0.2 - 0.35 mL
14	20 mcg	0.4 mL	10 - 20 mcg	0.2 - 0.4 mL
16	24 mcg	0.5 mL	12 - 24 mcg	0.25 - 0.5 mL
18	27 mcg	0.55 mL	13.5 - 27 mcg	0.25 - 0.55 mL
20 - 24	30 mcg	0.6 mL	15 - 30 mcg	0.3 - 0.6 mL
25 - 29	37.5 mcg	0.75 mL	18.75 - 37.5 mcg	0.35 - 0.75 mL
30 - 34	45 mcg	0.9 mL	22.5 - 45 mcg	0.45 - 0.9 mL
35 - 39	52.5 mcg	1.05 mL	26.5 - 52.5 mcg	0.5 - 1.05 mL
40 - 44	60 mcg	1.2 mL	30 - 60 mcg	0.6 - 1.2 mL
45 - 49	67.5 mcg	1.35 mL	33.7- 67.5 mcg	0.65 - 1.35 mL
> 50	75 mcg	1.5 mL	37.5 - 75 mcg	0.75 - 1.5 mL

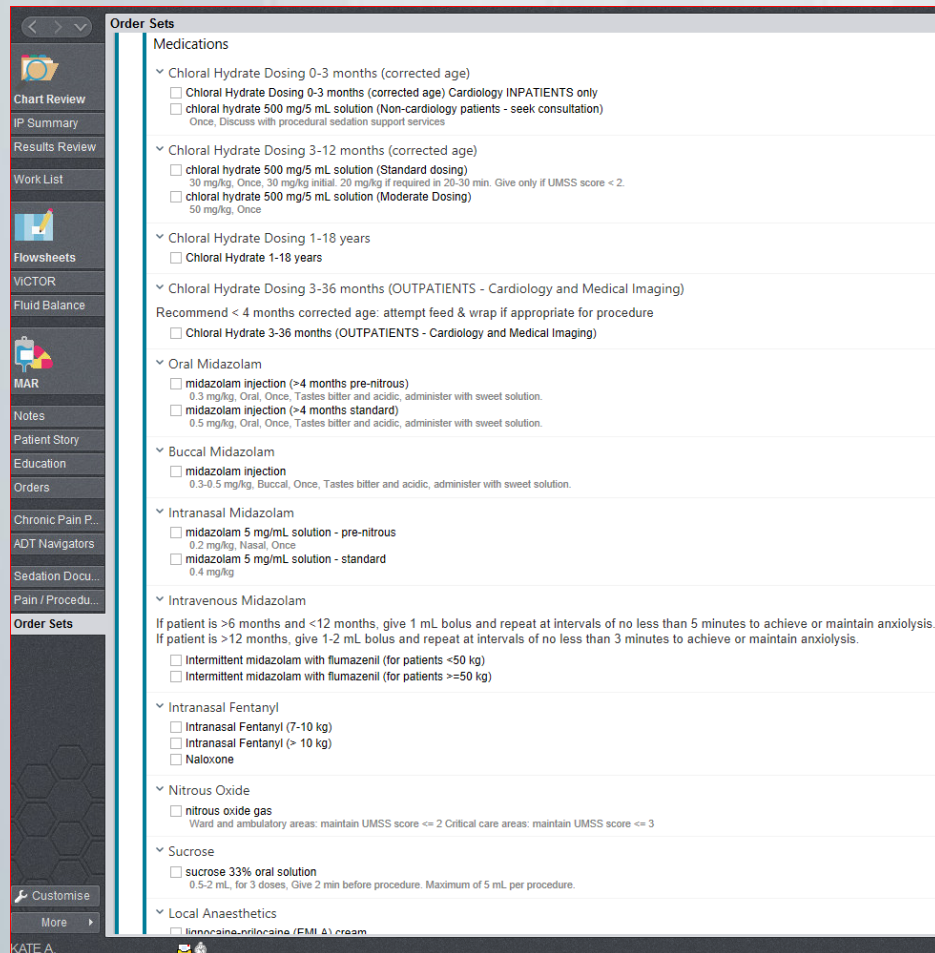
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IN Fentanyl order

IP Procedural Sedation Order set



Order Sets

Medications

- Chloral Hydrate Dosing 0-3 months (corrected age)
 - Chloral Hydrate Dosing 0-3 months (corrected age) Cardiology INPATIENTS only
 - chloral hydrate 500 mg/5 mL solution (Non-cardiology patients - seek consultation)
Once, Discuss with procedural sedation support services
- Chloral Hydrate Dosing 3-12 months (corrected age)
 - chloral hydrate 500 mg/5 mL solution (Standard dosing)
30 mg/kg, Once, 30 mg/kg initial, 20 mg/kg if required in 20-30 min. Give only if UMSS score < 2.
 - chloral hydrate 500 mg/5 mL solution (Moderate Dosing)
50 mg/kg, Once
- Chloral Hydrate Dosing 1-18 years
 - Chloral Hydrate 1-18 years
- Chloral Hydrate Dosing 3-36 months (OUTPATIENTS - Cardiology and Medical Imaging)
 - Recommend < 4 months corrected age: attempt feed & wrap if appropriate for procedure
 - Chloral Hydrate 3-36 months (OUTPATIENTS - Cardiology and Medical Imaging)
- Oral Midazolam
 - midazolam injection (>4 months pre-nitrous)
0.3 mg/kg, Oral, Once, Tastes bitter and acidic, administer with sweet solution.
 - midazolam injection (>4 months standard)
0.5 mg/kg, Oral, Once, Tastes bitter and acidic, administer with sweet solution.
- Buccal Midazolam
 - midazolam injection
0.3-0.5 mg/kg, Buccal, Once, Tastes bitter and acidic, administer with sweet solution.
- Intranasal Midazolam
 - midazolam 5 mg/mL solution - pre-nitrous
0.2 mg/kg, Nasal, Once
 - midazolam 5 mg/mL solution - standard
0.4 mg/kg
- Intravenous Midazolam
 - If patient is >6 months and <12 months, give 1 mL bolus and repeat at intervals of no less than 5 minutes to achieve or maintain anxiolysis. If patient is >12 months, give 1-2 mL bolus and repeat at intervals of no less than 3 minutes to achieve or maintain anxiolysis.
 - Intermittent midazolam with flumazenil (for patients <50 kg)
 - Intermittent midazolam with flumazenil (for patients >=50 kg)
- Intranasal Fentanyl
 - Intranasal Fentanyl (7-10 kg)
 - Intranasal Fentanyl (> 10 kg)
 - Naloxone
- Nitrous Oxide
 - nitrous oxide gas
Ward and ambulatory areas: maintain UMSS score <= 2 Critical care areas: maintain UMSS score <= 3
- Sucrose
 - sucrose 33% oral solution
0.5-2 mL, for 3 doses, Give 2 min before procedure. Maximum of 5 mL per procedure.
- Local Anaesthetics
 - lidocaine, articaine (EMI & cream)

Order set

- IN Fentanyl

Adjuncts

- Topical LA's (Emla, AnGEL)
- Sucrose

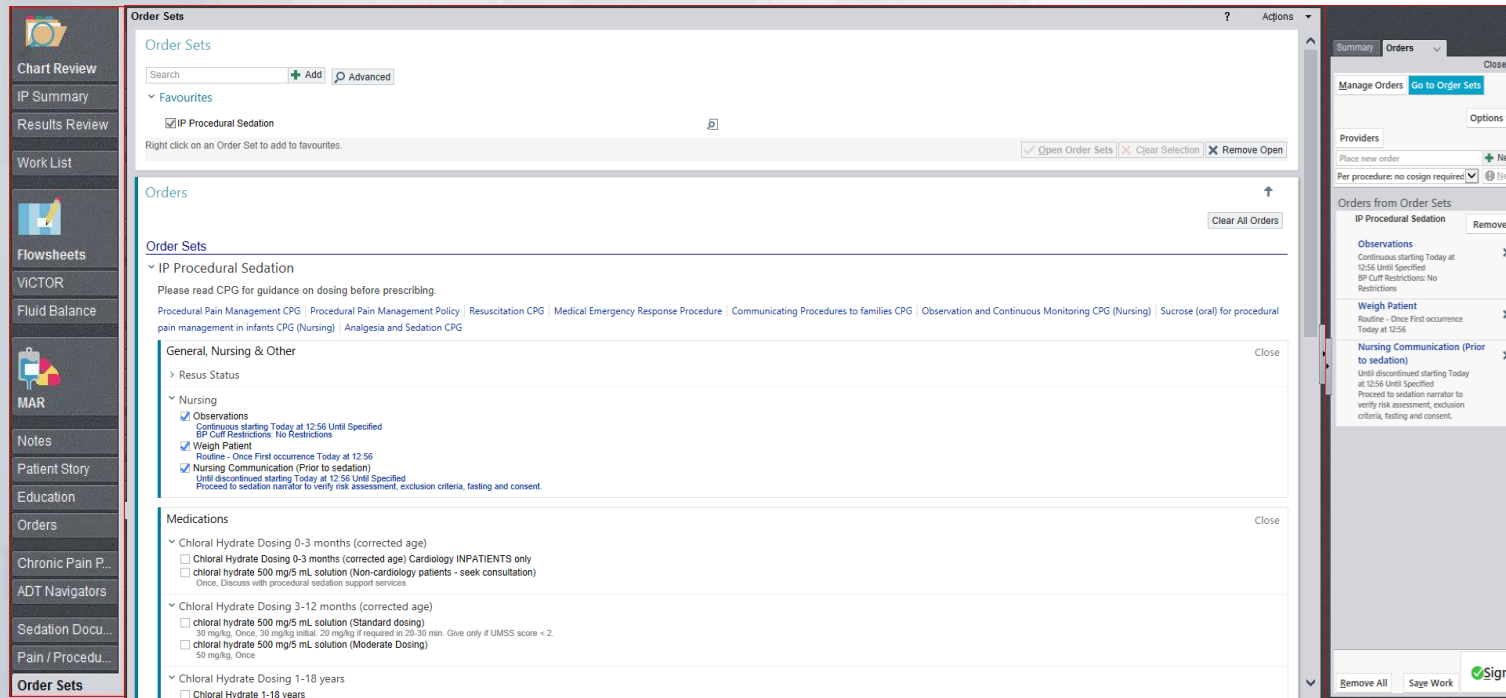
Procedural Support

- List of agents
- EPT Referral
- Links to PSWA Procedure & CPG's

Activates Nursing order

- Sedation Narrator
- Observations & Weight

IP Procedural Sedation order set



Order Sets

Search + Add

▼ Favourites

IP Procedural Sedation

Right click on an Order Set to add to favourites.

Open Order Sets Clear Selection Remove Open

Clear All Orders

Order Sets

▼ IP Procedural Sedation

Please read CPG for guidance on dosing before prescribing.

Procedural Pain Management CPG | Procedural Pain Management Policy | Resuscitation CPG | Medical Emergency Response Procedure | Communicating Procedures to families CPG | Observation and Continuous Monitoring CPG (Nursing) | Sucrose (oral) for procedural pain management in infants CPG (Nursing) | Analgesia and Sedation CPG

General, Nursing & Other Close

▼ Resus Status

▼ Nursing

Observations
Continuous starting Today at 12:56 Until Specified
IP Cuff Restrictions: No Restrictions

Weigh Patient
Routine - Once First occurrence Today at 12:56

Nursing Communication (Prior to sedation)
Until discontinued starting Today at 12:56 Until Specified
Proceed to sedation narrative to verify risk assessment, exclusion criteria, fasting and consent.

Medications Close

▼ Chloral Hydrate Dosing 0-3 months (corrected age)

Chloral Hydrate Dosing 0-3 months (corrected age) Cardiology INPATIENTS only

chloral hydrate 500 mg/5 mL solution (Non-cardiology patients - seek consultation)
Once. Discuss with procedural sedation support services

▼ Chloral Hydrate Dosing 3-12 months (corrected age)

chloral hydrate 500 mg/5 mL solution (Standard dosing)
30 mg/kg, Once, 30 mg/kg initial, 20 mg/kg if required in 20-30 min. Give only if UMSS score < 2.

chloral hydrate 500 mg/5 mL solution (Moderate Dosing)
50 mg/kg, Once

▼ Chloral Hydrate Dosing 1-18 years

Chloral Hydrate 1-18 years

Summary Orders Close X

Manage Orders Go to Order Sets

Options ▼

Providers

Place new order + New

Per procedure: no cosign required Next

Orders from Order Sets

IP Procedural Sedation Remove

Observations
Continuous starting Today at 12:56 Until Specified
IP Cuff Restrictions: No Restrictions X

Weigh Patient
Routine - Once First occurrence Today at 12:56 X

Nursing Communication (Prior to sedation)
Until discontinued starting Today at 12:56 Until Specified
Proceed to sedation narrative to verify risk assessment, exclusion criteria, fasting and consent. X


Remove All Sage Work Sign

- Order Sets = Select from L panel
- Go to order sets = Select from R panel
- Search order sets = IP Procedural Sedation
- Favourites = R click to add
- Open Order sets = centre panel
- Select Medication & Sign

Documentation= Sedation Narrator



Record of Sedation now SN EMR Checklists

Locate in **More** – click  to add to side bar - **Open & Resize**
Accept Sedation Documentation **Start**
Don't file END until summary complete
Start & End Bookend the Sedation Narrator

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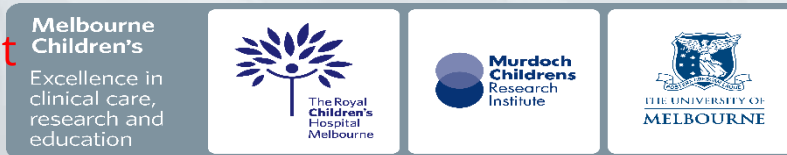
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Sedation Narrator



Views Event Log, Patient Summary and Orders
Event Log = Checklists & Observations
View Orders = IP Procedural Sedation Order Set
Patient Summary = IP Summary



Sedation Narrator - Pre-Sedation



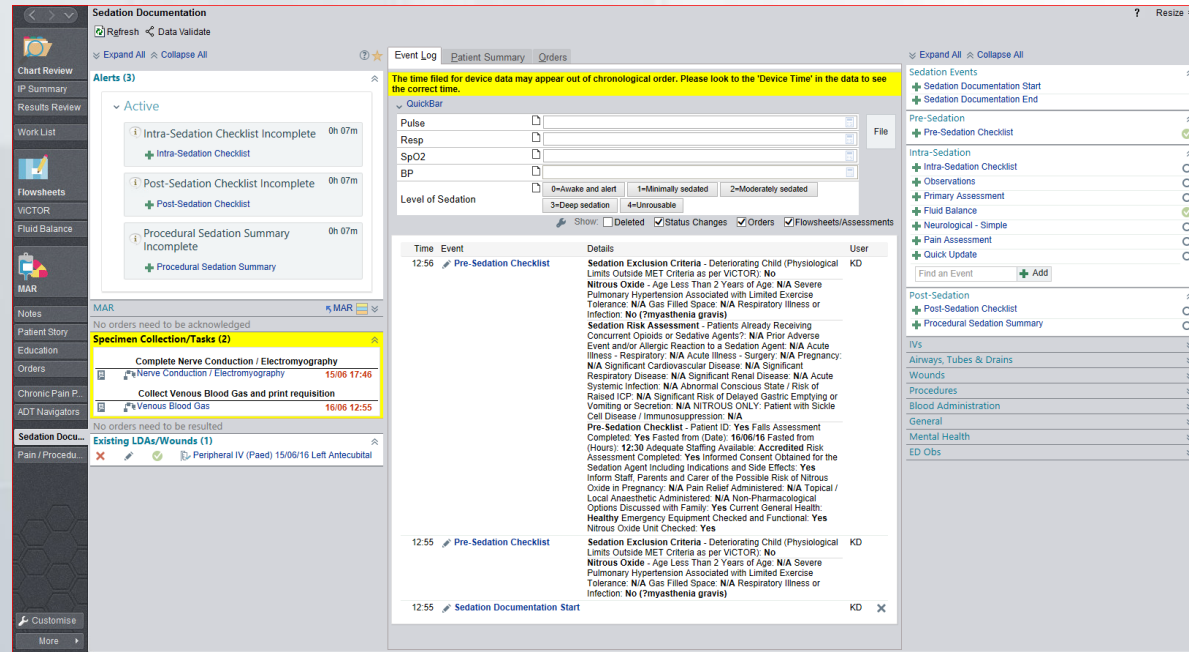
The screenshot displays the 'Sedation Documentation' software interface. On the left, the 'Alerts (4)' panel shows four active alerts: 'Pre-Sedation Checklist Incomplete', 'Intra-Sedation Checklist Incomplete', 'Post-Sedation Checklist Incomplete', and 'Procedural Sedation Summary Incomplete'. Below this is the 'Acknowledge Orders (2)' section with 'Speech Pathology Inpatient Referral' and 'Dietetics Inpatient Referral'. The 'Specimen Collection/Tasks (1)' section is highlighted in yellow, showing 'Complete Nerve Conduction / Electromyography' with a timestamp of '15/06 17:46'. The 'Existing LDAs/Wounds (1)' section shows 'Peripheral IV (Paed) 15/06/16 Left Antecubital'. The main panel displays the 'Pre-Sedation Checklist' for a procedure on 16/06/2016. It includes a 'Sedation Exclusion Criteria' section with checkboxes for 'Deteriorating Child', 'Age Less Than 2 Years of Age', 'Severe Pulmonary Hypertension', 'Gas Filled Space', and 'Respiratory Illness or Infection'. A 'Nitrous Oxide' section is also present. The right panel shows a list of 'Sedation Events' and 'Pre-Sedation' tasks like 'Pre-Sedation Checklist' and 'Observations'. A yellow banner at the top of the main panel reads: 'The time filed for device data may appear out of chronological order. Please look to the 'Device Time' in the data to see the correct time.'

Checklists appear in **Left** panel of SN as Active Alerts
Mandatory to complete **Pre-Sedation** Checklist **prior**
Show **Row Info** for PSWA Procedure **tips** for:
Exclusion Criteria, Risk Assessment, Consultation
Fasting, Staffing, Equipment, Consent & Preparation of Child

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Sedation Narrator Intra-Sedation Checklists




Intra-Sedation Checklist Time out/ Pt Identification & Continuous monitoring Observations/
UMSS captured in QuickBar & File
Document if UMSS 2 – 5 minutely & use Notes to add N20 % / commentsTalking

Sedation Narrator - Intra-Sedation



Document 5 minutely UMSS & Observations if UMSS > 1
Use Notes to make comments **UMSS 2** N2O @ 60% weaned to 40% or **Patient vomit FM02**

Don't forget to File your data

Use **Intra-Sedation**  **Buttons** for additional information. **Right panel**



Sedation Narrator Post-Sedation Checklists



EPICTESTASAP, Patient-One
Male, 2 y, 11/2/2014
MRN: CSN: 7000000, 39515048
Interp Req?: None, None
Contacts: None, None

Dept: Pain
Clinic/Practice Visit on 16/8/2016
Best Contact: None
Medicare No: None
Admitted?: No

Allergies: No Known Allergies
FYI: Test Patient
Resus: FULL
Weight: None

Care Team:
Infections: None
Isolations: None
ACP Form: No Form Docume...

My RCH Portal: Proxy enabled
GP Consent: No
PCEHR Consent: Yes

Sedation Documentation

Refresh

Expand All Collapse All

There are no active alerts

MAR

No orders need to be acknowledged
No collections or tasks to perform
No orders need to be resulted
There are no existing LDAs

Event Log Patient Summary Orders

The time filed for device data may appear out of chronological order. Please look to the 'Device Time' in the data to see the correct time.

Quick-Bar

Pulse
Resp
SpO2
BP

Level of Sedation
0=Awake and alert 1=Minimally sedated 2=Moderately sedated
3=Deep sedation 4=Unrousable

Show: Deleted Status Changes Flowsheets/Assessments

Time	Event	Notes	KA
14:00	Post-Sedation Checklist	Post Sedation Checklist - Line of Sight Provided and Observation and Sedation Score Documented 5-Minutely: Yes Nitrous Oxide: 100% Oxygen Given for 3-5 Minutes at the End of the Procedure: N/A Nitrous Oxide: Patient Oxygen Saturation Re-Assessed in Baseline FIO2 (eg Room Air): N/A Patient Returned to Baseline Sedation Score (URSS) and Observations: Yes If Falls Score 3 or Greater, Complete a High Risk Management Plan: N/A Satisfactory Travel Arrangements and Supervision of Patient Confirmed: Yes	KA
13:59	QuickBar	Sedation QuickBar - Pulse: 88 Resp: 24 SpO2: 100 % Level of Sedation: Awake and alert	KA
13:58	Intra-Sedation Checklist	Intra Sedation - Time Out or Positive Patient Identification: Yes Continuous Pulse Oximetry Provided: Yes	KA
13:54	Pre-Sedation Checklist	Sedation Exclusion Criteria - Deteriorating Child (Physiological Limits Outside MET Criteria as per VICTOR): No Nitrous Oxide - Age Less Than 2 Years of Age: N/A Severe Pulmonary Hypertension Associated with Limited Exercise Tolerance: N/A Gas Filled Space: N/A Respiratory Illness or Infection: No IV Sedation - Midazolam Only - Age Less Than 6 Months (Corrected Age): N/A Ketamine or Propofol: N/A Oral Sedation - Significant Liver Disease / Liver Failure: N/A Sedation Risk Assessment - Patients Already Receiving Concurrent Opioids or Sedative Agents?: Yes Prior Adverse Event and/or Allergic Reaction to a Sedation Agent: N/A Acute Illness - Respiratory: N/A Acute Illness - Surgery: Yes Pregnancy: N/A Significant Cardiovascular Disease: N/A Significant Respiratory Disease: N/A Significant Renal Disease: N/A Acute Systemic Infection: N/A Significant Risk of Delayed Gastric Emptying or Vomiting or Secretion: N/A NITROUS ONLY: Patient with Sickle Cell Disease / Immunosuppression: N/A Pre-Sedation Checklist - Falls Assessment Completed: N/A Fasted from (Date), 10/08/16 Fasted from (Hours): 10:57 Adequate Staffing Available: Competent Risk Assessment Completed: Yes Informed Consent Obtained for the Sedation Agent Including Indications and Side Effects: Yes Inform Staff, Parents and Carer of the Possible Risk of Nitrous Oxide in Pregnancy: Yes Pain Relief Administered: Yes Topical / Local Anaesthetic Administered: Yes Non-Pharmacological Options Discussed with Family: Yes Current General Health: Healthy Emergency Equipment Checked and Functional: Yes Nitrous Oxide Unit Checked: Yes	KA
13:53	Sedation Documentation Start		KA

Expand All Collapse All

Sedation Events
+ Sedation Documentation Start
+ Sedation Documentation End

Pre-Sedation
+ Pre-Sedation Checklist

Intra-Sedation
+ Intra-Sedation Checklist
+ Observations
+ Primary Assessment
+ Fluid Balance
+ Neurological - Simple
+ Pain Assessment
+ Quick Update

Post-Sedation
+ Post-Sedation Checklist
+ Procedural Sedation Summary

IVs
Airways, Tubes and Drains
Wounds
Procedures
Blood Administration
General
Mental Health
ED Obs

Post-Sedation Checklist Line of sight provided / O2 given/ Return to Baseline
Is Patient Safe to Discharge/ Transfer ?

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Sedation Summary & Documentation END



EPICTESTASAP, Patient-One Dept: Pain Allergies: No Known Allergies Care Team: Infusions: None My RCH Portal: Proxy enabled
 Male, 2 y, 11/2/2014, Clinic/Practice Visit on 16/8/2016 FYI: Test Patient Resus: FULL Infections: None GP Consent: No
 MRN, CSN: 7000000, 39515048 Best Contact: None Isolations: None PCEHR Consent: Yes
 Interp Req?: None, None Medicare No: None Admitted?: No ACP Form: No Form Docume...

Sedation Documentation
 Refresh
 Expand All Collapse All
 There are no active alerts
 MAR 5 MAR
 No orders need to be acknowledged
 No collections or tasks to perform
 No orders need to be resultd
 There are no existing LDAs

The time filed for device data may appear out of chronological order. Please look to the 'Device Time' in the data to see the correct time.

QuickBar
 Pulse [] File
 Resp []
 SpO2 []
 BP []
 Level of Sedation 0=Awake and alert 1=Minimally sedated 2=Moderately sedated
 3=Deep sedation 4=Unrousable
 Show Deleted Status Changes Flowsheets/Assessments

Time	Event	Details	User
14:07	Sedation Documentation End		KA X
14:01	Procedural Sedation Summary	Procedural Sedation Summary - Procedure: Wound management Procedure Attempts: 1 Procedure Outcome: Successful Consultation for this Event: Comfort Kids Program (p7933) Sedation: Yes Analgesic: Yes Adjuncts: Yes Side Effects / Adverse Events: Yes Non Pharmacological Techniques Used: Yes Pharmacological Summary - Sedative Agent: Nitrous oxide; Other (Comment) (in fentanyl 1.5mcg/kg) Nitrous Oxide (%): 50 Analgesic Response to Nitrous Oxide: Excellent Deepest Level of Sedation: 1 Anxiolytic Response to Sedation Agent: Calm, cooperative Analgesic (Oral): Paracetamol Analgesic Response: Excellent Side Effects/Adverse Events - Gastrointestinal Side Effects: Nausea Non Pharmacological Techniques Used? - Preparation Carer or parental present; Educational Play Therapist present Coping Techniques Used: Positioning for comfort Positioning for Comfort: Hugging Procedural Support Teams Involved: Educational Play Therapy Procedural Support Team Member Name(s): Francis	KA
14:00	Post-Sedation Checklist	Post Sedation Checklist - Line of Sight Provided and Observation and Sedation Score Documented 5-Minutely: Yes Nitrous Oxide: 100% Oxygen Given for 3-5 Minutes at the End of the Procedure: N/A Nitrous Oxide: Patient Oxygen Saturation Re-Assessed in Baseline FIO2 (eg Room Air): N/A Patient Returned to Baseline Sedation Score (UMSS) and Observations: Yes If Falls Score 3 or Greater, Complete a High Risk Management Plan: N/A Satisfactory Travel Arrangements and Supervision of Patient Confirmed: Yes	KA
13:59	QuickBar	Sedation Quickbar - Pulse: 88 Resp: 24 SpO2: 100 % Level of Sedation: Awake and alert	KA
13:58	Intra-Sedation Checklist	Intra Sedation - Time Out or Positive Patient Identification: Yes Continuous Pulse Oximetry Provided: Yes	KA
13:54	Pre-Sedation Checklist	Sedation Exclusion Criteria - Deteriorating Child (Physiological Limits Outside MET Criteria as per VICTOR): No Nitrous Oxide - Age Less Than 2 Years of Age: N/A Severe Pulmonary Hypertension Associated with Limited Exercise Tolerance: N/A Gas Filled Space: N/A Respiratory Illness or Infection: No IV Sedation - Midazolam Only - Age Less Than 6 Months (Corrected Age): N/A Ketamine or Propofol: N/A Oral Sedation - Significant Liver Disease / Liver Failure: N/A Sedation Risk Assessment - Patients Already Receiving	KA

Sedation Events
 Sedation Documentation Start
 Sedation Documentation End
 Pre-Sedation
 Pre-Sedation Checklist
 Intra-Sedation
 Intra-Sedation Checklist
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 Primary Assessment
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 Procedural Sedation Summary
 IVs
 Airways, Tubes and Drains
 Wounds
 Procedures
 Blood Administration
 General
 Mental Health
 ED Obs

Procedural Sedation Summary – was this a Successful event or Not - AE's

Procedure attempts/ Sedation agent/ Analgesia (includes LA) / Adjuncts (sucrose/ lip smacker)

Non Pharmacological Procedural Support (EPT CF CKP & Coping strategy used)

FILE End Bookend the event & SN complete




IP Summary -Sedation Timeline

IP Summary

Time Range: [Select Time Range](#)

Report: Sedation Timeline

Time	Event	User
16:03:14	Sedation Documentation End Intranasal Fentanyl not required Burns dressing+bath successful with EPT support IPAD oxycodone 3.6mg and clonidine 20mcg + top up 15mcg (delay start due to not fasted for procedural sedation)	Kate Austin, Registered Nurse
16:03:13	Sedation Quickbar Sedation Quickbar - Level of Sedation: (sitting out of bed watching TV)	Kate Austin, Registered Nurse
16:02:54	Sedation Quickbar Sedation Quickbar - Level of Sedation: Awake and alert	Kate Austin, Registered Nurse
15:57:16	Summary of Procedural Sedation Procedural Sedation Summary - Procedure: Wound management ; Procedure Attempts: 1 ; Procedure Outcome: Successful ; Consultation for this Event: Comfort Kids Program (p7933) ; CPMS (p5773) : Comfort Kids Program Advice: In fentanyl available use procedural sedation order set ; CPMS Advice: clonidine dose range increase ; Analgesic: Yes ; Adjuncts: No ; Side Effects / Adverse Events: No ; Non Pharmacological Techniques Used: Yes Pharmacological Summary - Deepest Level of Sedation: 1 ; Anxiolytic Response to Sedation Agent: Calm, cooperative ; Analgesic (Oral): Oxycodone ; Clonidine , Oxycodone (mg) 3.6 ; Clonidine Oral (mcg) : 35 ; Analgesic Response: Excellent Non Pharmacological Techniques Used? - Preparation: Educational Play Therapist present ; Coping Techniques Used: Distraction / alternative focus; Positive self-talk; Non-medical talk ; Distraction Techniques Used: Utilised an iPad; Singing ; Procedural Support Teams Involved: Educational Play Therapy ; Procedural Support Team Member Name(s): Olivia larkins	Kate Austin, Registered Nurse
15:56:44	Post-Sedation Checklist Post Sedation Checklist - Line of Sight Provided and Observation and Sedation Score Documented 5-Minutely: Yes ; Nitrous Oxide: 100% Oxygen Given for 3-5 Minutes at the End of the Procedure: N/A ; Nitrous Oxide: Patient Oxygen Saturation Re-Assessed in Baseline FiO2 (eg Room Air): N/A ; Patient Returned to Baseline Sedation Score (UMSS) and Observations: Yes ; If Falls Score 3 or Greater, Complete a High Risk Management Plan: N/A	Kate Austin, Registered Nurse
15:38:20	Other Flowsheet Documentation Other flowsheet entries - Height: (55cm seated - hip to top of head) ; Weight: 19.3 kg ; Weight Method: Bare	Kathy Bicknell, Registered Nurse
15:38:20	Sedation Quickbar Sedation Quickbar - Level of Sedation: (watching ipad)	Kate Austin, Registered Nurse
15:37:16	Other Flowsheet Documentation Other flowsheet entries - Restart Observations Timer: Yes	Kate Austin, Registered Nurse
15:37:16	Sedation Quickbar Sedation Quickbar - Pulse: 86 ; Resp: 22 ; SpO2: 100 % ; Level of Sedation: Minimally sedated	Kate Austin, Registered Nurse
15:36:20	Sedation Quickbar Sedation Quickbar - Level of Sedation: Awake and alert	Alison Kendrick, Registered Nurse
15:17:15	Other Flowsheet Documentation Other flowsheet entries - Restart Observations Timer: Yes	Kate Austin, Registered Nurse
15:17:15	Sedation Quickbar Sedation Quickbar - Pulse: 90 ; Resp: 24 ; SpO2: 99 % ; Level of Sedation: Awake and alert	Kate Austin, Registered Nurse
15:10:37	Intra Sedation Intra Sedation - Time Out or Positive Patient Identification: Yes ; Continuous Pulse Oximetry Provided: Yes	Lisa Brennan, Registered Nurse
15:06:19	Pre Sedation Checklists Sedation Exclusion Criteria - Deteriorating Child (Physiological Limits Outside MET Criteria as per VICTOR): No Nitrous Oxide - Age Less Than 2 Years of Age: N/A ; Severe Pulmonary Hypertension Associated with Limited Exercise Tolerance: N/A ; Gas Filled Space: N/A ; Respiratory Illness or Infection: No IV Sedation - Midazolam Only - Age Less Than 6 Months (Corrected Age) : N/A ; Ketamine or Propofol : N/A Oral Sedation - Significant Liver Disease / Liver Failure : N/A Sedation Risk Assessment - Patients Already Receiving Concurrent Opioids or Sedative Agents?: 1 Yes (oxycodone and clonidine UMSS 0) ; Prior Adverse Event and/or Allergic Reaction to a Sedation Agent: N/A ; Acute Illness - Respiratory: N/A ; Acute Illness - Surgery: N/A ; Pregnancy: N/A ; Significant Cardiovascular Disease: N/A ; Significant Respiratory Disease: N/A ; Significant Renal Disease: N/A ; Acute Systemic Infection: N/A ; Abnormal Conscious State / Risk of Raised ICP: N/A ; Significant Risk of Delayed Gastric Emptying or Vomiting or Secretion: N/A ; NITROUS ONLY: Patient with Sickle Cell Disease / Immunosuppression: N/A Pre-Sedation Checklist - Patient ID: Yes ; Falls Assessment Completed: Yes ; Fasted from (Date): 05/07/16 ; Fasted from (Hours): 13:15 ; Adequate Staffing Available: Competent ; Risk Assessment Completed: Yes ; Informed Consent Obtained for the Sedation Agent Including Indications and Side Effects: Yes ; Inform Staff, Parents and Carer of the Possible Risk of Nitrous Oxide in Pregnancy: Yes ; Pain Relief Administered: Yes ; Topical / Local Anaesthetic Administered: N/A ; Non-Pharmacological Options Discussed with Family: Yes ; Current General Health: Healthy ; Emergency Equipment Checked and Functional: Yes ; Nitrous Oxide Unit Checked: N/A	Lisa Brennan, Registered Nurse
15:06:11	Sedation Documentation Start	Lisa Brennan, Registered Nurse
04:07 13:34 to 21:29	Sedation Sign-off:	User

Go to [IP Summary](#) Left panel
[Sedation Timeline](#) review previous Sedation events
 Add to IP Summary toolbar using  Right top right

Administration



- Draw up appropriate dose for weight (CPG)
- plus 0.1ml extra to the first dose (dead space)
- Attach Mucosal Atomiser Device (MAD300) on to the end of the syringe
- Sit the child at approximately 45 degrees or with head to one side
- Directed MAD at 45 degrees to spray the turbinates
- Do not direct MAD horizontally along the nasal floor
- **Avoid dose running into pharynx & swallowed** (reduce bioavailability & efficacy)
- Insert the device loosely into the nostril
- Press the plunger quickly
- Doses are to be divided between nostrils (1/3 to 1/2 ml per nostril is ideal)
- If NGT. Can push up to 1 ml per nostril though some will run off (titrate)
- **Do NOT draw up 0.1ml extra for second dose when re-using the delivery device (MAD)**

Administration

Intranasal Fentanyl

Delivery via Mucosal Atomiser Device (MAD300) per the [Intranasal Fentanyl CPG](#)

Draw up appropriate dose for weight (see above table) **plus 0.1ml extra to the first dose** (to account for the dead space in the device)

Attach Mucosal Atomiser Device (MAD300) on to the end of the syringe

Sit the child at approximately 45 degrees or with head to one side

The MAD is directed at 45 degrees to spray the turbinates, rather than along the nasal floor

If directed horizontally the dose runs into pharynx & is swallowed (reducing bioavailability and efficacy)

Insert the device loosely into the nostril and press the plunger quickly

Dose are to be divided between nostrils

Note: Do NOT draw up 0.1ml extra for second dose when re-using the delivery device (MAD)



[Intranasal Fentanyl CPG](#)

[Intranasal Midazolam fact sheet](#)

Adverse effects

Respiratory depression

Hypotension

Nausea and vomiting- **increase risk of vomiting when combined with N₂O**

Chest wall rigidity (only reported with large IV doses)

Pruritus

Monitoring

HR, RR, SpO₂, UMMS **monitored continuously**

Reversal agent **Naloxone**

Naloxone bolus 0.1mg/kg IM or IV, maximum 2mg

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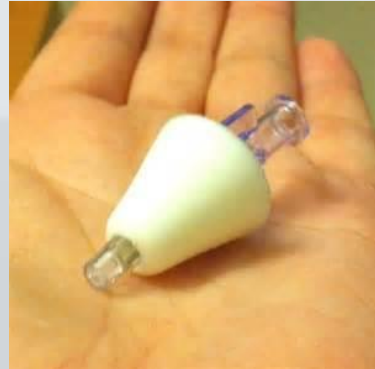
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Mucosal Administration Device



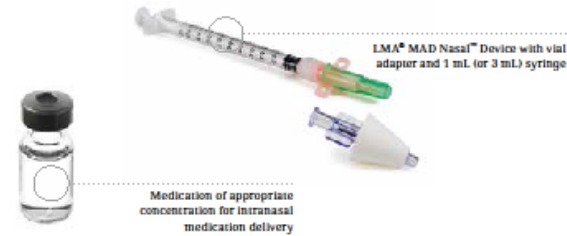
LMA MAD Nasal™: Features



Using the LMA® MAD Nasal™ Intranasal Mucosal Atomization Device



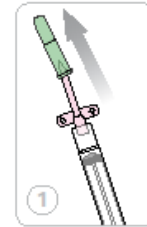
MATERIALS



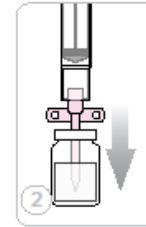
TIPS TO IMPROVE SUCCESS

- 1 Minimize volume, maximize concentration
 - 1/3 mL per nostril is ideal, 1 mL is maximum
 - Use the appropriately concentrated drug
- 2 Maximize total mucosal absorptive surface area
 - Atomize the drug (rather than drip it in) to cover broad surface area
 - Use BOTH nostrils to double the absorptive surface area
 - Aim slightly up and outwards to cover the turbinates and olfactory mucosa
- 3 Beware of abnormal mucosal characteristics
 - Mucous, blood and vasoconstrictors reduce absorption
 - Suction nostrils or consider alternate drug delivery method in these situations

PROCEDURE



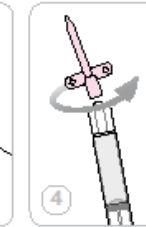
STEP 1: Remove and discard the green vial adapter cap.



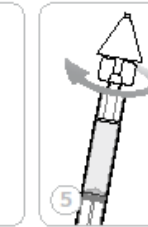
STEP 2: Pierce the medication vial with the syringe vial adapter.



STEP 3: Aspirate the proper volume of medication required to treat the patient (an extra 0.1 mL of medication should be drawn up to account for the dead space in the device).



STEP 4: Remove (twist off) the syringe from the vial adapter.



STEP 5: Attach the MAD Nasal™ Device to the syringe via the luer lock connector.



STEP 6: Using the free hand to hold the occiput of the head stable, place the tip of the MAD Nasal™ Device snugly against the nostril aiming slightly up and outward (toward the top of the ear).



STEP 7: Briskly compress the syringe plunger to deliver half of the medication into the nostril.



STEP 8: Move the device over to the opposite nostril and, repeating steps 6 and 7, administer the remaining medication into the nostril if indicated.

For use with drugs approved for intranasal delivery.

TO ORDER, CALL 1.866.246.6990 OR VISIT OUR WEBSITE WWW.LMANA.COM

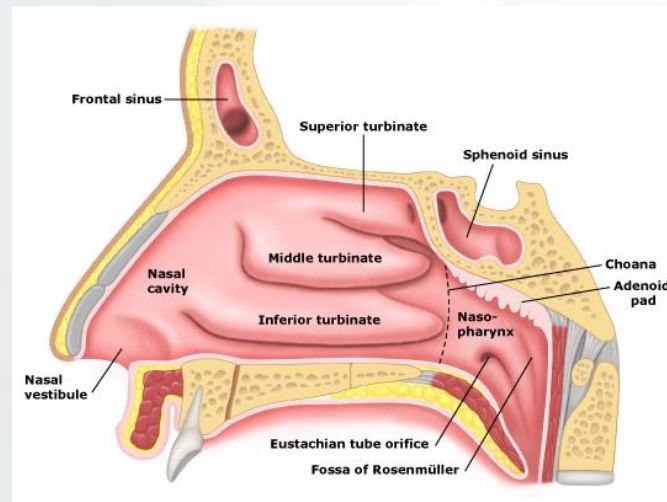
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A&P of the nose



- Nasal mucosal surface area (150-180cm²)
- High blood flow
- pH 5.5-6.5 maintains glycoproteins to which drugs attach
- Nasal drug absorption depends on
- Direct connection to CNS via the olfactory route



LMA | MAD Nasal[™]
MEDICAL DEVICE
CLASSIFIED DEVICE

IN fentanyl – child



Intranasal fentanyl delivery procedure

Intranasal fentanyl delivery Materials:

1. 1 ml or 3 ml syringe
2. Needle to draw up the fentanyl
3. Atomizer
4. Vial of fentanyl



Procedure:

1. Aspirate the proper volume/dose of fentanyl per the weight based dosing protocol of the study
2. Twist off/remove the syringe from the needle/needleless device
3. Attach the atomizer tip via Luer lock mechanism – it twists into place.
4. Using your free hand to hold the crown of the head stable, place the tip of the atomizer snugly against the nostril aiming slightly up and outward (towards the top of the ipsilateral ear).
5. Briskly compress the syringe plunger to deliver approximately half of the medication into the nostril.
6. Move the device over to the opposite nostril and briskly administer the remaining half of the medication into that nostril.
7. Consider using a pulse oximeter for 45-60 minutes following medication delivery due to the rare but possible risk of respiratory depression from an opiate.



Adverse Effects

- Respiratory depression
- Hypotension
- Nausea and vomiting- increase risk of vomiting when combined with N2O
- Chest wall rigidity (only reported with large IV doses)
- Pruritus

Monitoring & Reversal

- HR, RR, SpO₂, UMMS monitored continuously
- Naloxone bolus 0.1mg/kg IM or IV, maximum 2mg
- Naloxone is effective, intranasal if you need a reversal agent
- Remember extra volume into the syringe to account for the dead space that will remain.
- Don't use same MAD due "dead space"

Considerations

- NGT
- Bleeding
- Opioid effect IN fentanyl
 - Patient require additional analgesia, consider timing the procedure with the patient's baseline analgesia
- N20

IN fentanyl N2O

- The maximum percentage of N2O which can be delivered is 70%, with a minimum O2 30%
- **Additional opioid or sedation agents may have synergistic effect producing excess sedation**
- Assess before commencing N2O
 - If UMSS ≤ 1 N2O must be titrated to maintain UMSS ≤ 2
 - If UMSS is ≥ 2 do not administer N2O **seek consultation**

Recap

- Assessment
 - UMSS
 - Sedation narrator
 - Procedure
 - Pain
 - Dual agents
 - Consultation
- Dosing
 - CPG / Procedure
- Technique



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RCH R&R

- [Procedural Sedation- ward & ambulatory areas - at RCH](#)
- [Intranasal Fentanyl CPG](#)
- [Intranasal Midazolam fact sheet](#)
- [Prommer, , 2011](#)
- [Buck, 2013](#)