Name of Policy: Use of Entonox Inhalation Analgesia in Children, Young People and Adults

Effective From: 11/11/2011

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Review Date 01/06/2013
Sponsor Medical Director
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Withdrawn Date

This policy supersedes all previous issues.
# Version Control

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<td>Sr Gill Rhind, Acute Pain Clinical Nurse Specialist</td>
<td>Medicines Governance Committee</td>
<td>29/06/2011</td>
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1. Introduction

Entonox® is a pre-prepared gaseous mixture of 50% Oxygen and 50% Nitrous Oxide (N₂O), which may be supplied in blue cylinders with blue and white quarters on the neck. Nitrous oxide is a rapidly acting inhalation agent which is tasteless and colourless. Entonox® has a rapid onset and offset and is a powerful analgesic which is safe and simple to use. It is commonly known as and may be familiar to patients as “laughing gas” or “gas and air”.

The apparatus has a “demand valve”, that allows the Entonox® gas to flow when the patient exerts a negative pressure through inhalation. The patient either holds a tight fitting mask to their face or applies the necessary suction via a mouthpiece. This demand system makes overdose virtually impossible, because once the patient’s conscious level reduces, the mask or mouthpiece will no longer be retained in position, causing room air to be inhaled.

2. Policy Scope

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and/or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Entonox® is designed for self-administration by the conscious patient

2.1 Patients covered

This policy covers patients with pain as a result of injury or illness and those undergoing short painful procedures where analgesia is required. Patients will be assessed as to the suitability of Entonox® as analgesic of choice (see indications and contraindications). Patient must be able to understand and comply with administration of Entonox® and be able to self administer. Assessment of suitability for use on children must be assessed by a practitioner competent to assess children as the level of understanding and ability to self administer will vary depending on age and physical condition, and mental ability.

The policy is only appropriate for the identified areas where Entonox® is used for the management of procedural and investigational pain or following injury or trauma in the Accident and Emergency department. Entonox® is also extensively used in Maternity.

Clinical policy for the use in following specific areas only:-
- Accident and Emergency Department
- Maternity Department
- Critical Care Department
- Endoscopy Unit
- All Adult Wards throughout Queen Elizabeth Hospital
- Paediatrics
3. **Aim of Policy**

The main purpose of the policy is to apply best practice to all areas identified in the policy, where there are patients who would benefit from Entonox® as a form of analgesia within the setting of Gateshead Health NHS Foundation Trust.

This policy aims to ensure appropriate use of Entonox® after assessment of the patient and their analgesia requirements and to ensure that all patients, including children and families/carers, receive information and explanation on the use of Entonox®.

In addition, it is to provide a framework for assessing competence in the administration of Entonox® and for gaining competence to use patient group direction for Entonox®.

4. **Duties (Roles and responsibilities)**

4.1 **Trust Responsibility**

The trust is responsible for delivering ‘best practice’ policies to ensure patient safety throughout their hospital stay.

4.2 **Medical staff’s Roles and Responsibilities**

It is the responsibility of the medical staff who initiated the treatment, using Entonox® as analgesia, to ensure that consent has been given by the patient, and the patient is able to appropriately use the device.

It is the responsibility of the medical staff to ensure that all documentation is correctly completed.

It is the overall responsibility of the medical staff who initiated the treatment to resolve any problems that may occur.

4.3 **Ward / Departmental Managers / Matron**

(RM30 Policy for the Procurement, Management and use of Medical Devices)

It is the responsibility of the ward managers to ensure that their ward staff have been appropriately trained in the use of Entonox®.

4.4 **Nursing Staff / Midwives**

It is the responsibility of the nursing staff/midwives caring for patients using Entonox® to be adequately trained to care for a patient during and after its use, and be able to correctly assess pain levels.
4.5 Role of the Acute Pain Service / CCOT

The Acute Pain Service will audit usage of Entonox® in targeted areas to improve the quality of the service.

The Acute Pain Service will:

1. Provide advice regarding appropriate patient selection and usage of Entonox®.
2. Deal with any problems that may arise.
3. Facilitate training for the use of Entonox® for healthcare professionals.
4. Monitor associated equipment and disposables for areas that do not routinely stock these items.

The Acute Pain Service will liaise with other members of the multidisciplinary team within the hospital.

5. Definitions

Entonox® is an inhaled agent that provides effective analgesia that can be self-administered. It is a mixture of two gases: 50% nitrous oxide (N₂O) and 50% oxygen (O₂).

It is particularly suitable for acute pain associated with injury, trauma, and therapeutic and investigative procedures. It has been extensively used in obstetric practice, being first described by Tunstall (1961) and in the ambulance service (Baskett 1970).

Nitrous oxide is a colourless, sweet smelling gas with powerful analgesic properties. It is rapidly transferred with onset within seconds and full analgesia within one to two minutes. It is rapidly eliminated from the blood via the lungs once inhalation ceases.

6. Main Body of the policy

6.1 Advantages

It is quick acting and can be self-administered by the patient. Its offset is rapid once administration stops (Trojan et. al. 1997). It is therefore an ideal agent for short term use and can be used alone or in conjunction with other analgesics.

The use of a demand valve controlled by the patient helps prevent overdosage of nitrous oxide, if the patient becomes drowsy the mask or mouthpiece drops away from the face and the flow of gas ceases. Whilst the Entonox® is being administered the practitioner can maintain verbal contact with the patient. Though some patients may become drowsy it allows a high degree of co-operation throughout the procedure.
Entonox® has advantages over opioids in the relief of pain for short periods – it has fewer side effects and may be more rapidly administered by appropriately trained staff.

6.2 Indications

- Entonox® should only be used to provide short term analgesia for the duration of the procedure being undertaken
- Entonox® use must not preclude definitive pain management for ongoing pain related to a procedure or painful condition
- Entonox® may be safely used during painful procedures in addition to other techniques (e.g. local / topical anaesthesia, opiate analgesia)
- Extreme anxiety / needle phobia

The uses are varied and many and may include the following:

**General**
- Traumatic injuries
- Labour pain
- Simple manipulations or reduction of fractures
- Application and removal of traction
- Cleaning pin sites
- Wound dressing
- Repair of lacerations
- Sickle pain
- Renal colic
- Short outpatient procedures such as laryngoscopy

**Paediatrics**
- Lumbar puncture
- Accessing indwelling central venous catheter devices
- Venepuncture / cannulation when severe anxiety or phobia is likely
- Dressing changes

6.3 Contra-indications

Any patient unable to use the self-administration system

- Lack of comprehension due to age, infirmity or mental ability

The nitrous oxide constituent of Entonox® passes into all gas-containing spaces in the body faster than nitrogen passes out. This can cause expansion of the gas space, compressing surrounding structures. Therefore Entonox® is not suitable to be used in patients with:

- Pneumothorax
- Bowel Obstruction, if there is abdominal distension
- Air Embolism
- Decompression sickness or following a recent underwater dive
- Middle ear infections
- Following air encephalography
- Severe bullous emphysema
Entonox® will cause sedation that may effect neurological observation of the patient. Therefore should not be used on patients following:

- Head injury

Drowsiness and aspiration would be a hazard if the patient vomited so should not be used in following

- Alcohol or Drug intoxication

The patient may not be able to hold the mask tightly to the face or use the mouthpiece adequately; caution must be taken in patients following:

- Maxillo-facial injuries

The patient may be unable to use the equipment properly and increased sedation may be hazardous so should not be used in:

- Heavily sedated patients

6.4 Prescription

Entonox® is a ‘prescription only medicine’ and as such must be prescribed on the patients Medicines Kardex. Exceptions to this are maternity, A&E and endoscopy. Midwives admitted to part 10 of the NMC register assume competency to prescribe and administer Entonox®. Within the areas of A&E and endoscopy, Entonox® may be administered under the direction of a PGD by trained and competent registered nurses.

6.5 Side effects

General
Dry mouth, disorientation, dizziness, euphoria, loss of inhibition, feeling floaty, blurring vision, tingling sensation to lips, fingers and nose (harmless and will stop when inhalation of Entonox® is discontinued) and less commonly, nausea and vomiting, excessive sedation.

Vitamin B12
N₂O oxidizes cobalamin and thereby inactivates vitamin B12. Prolonged exposure to N₂O can cause a myeloneuropathy similar to subacute combined degeneration of the cord. Acute exposure may precipitate a similar clinical syndrome in patients with pre-existing sub-clinical vitamin B12 deficiency and depression of white cell formation may also occur.

Cardiovascular effects
N₂O may cause mild increases in pulmonary vascular resistance which may be significant in patients with pulmonary hypertension, particularly mitral stenosis.

Other
Addiction to N₂O has occasionally been reported and misuse is possible.
6.6 Cautions

- At high concentrations can cause sedation, unconsciousness and hypoxia
- The very young and the very old require additional care in the administration of Entonox® due to possible mask fitting difficulties or inability to understand instructions for use.
- It is recommended that the patient waits for 30 minutes before driving or operating heavy machinery following administration of Entonox®.
- COPD – the high level of oxygen (50%) in Entonox® may depress respiration in a small number of patients who have raised CO₂ levels.
- Administration of Entonox® more frequently than 4 or more days and for more than 6 hours should have blood taken for megaloblastic anaemia and leucopenia.

6.7 Storage and Use of the equipment

Practitioners check that the equipment is in good working order before use.

The following are checked:-
- The Bodock seal to see that it is present, complete, un-cracked or split.
- A suitable key to turn the cylinder on and off is attached to the equipment.
- That the regulator fits securely.
- Gas is blown through the system to check for leaks and ensure any grit is out of the system.
- The tubing between the patient and the equipment is clean and in date.
- The equipment is clean.
- There is a record of usage and changes of tubing.
- As Entonox® supports combustion cylinders must be turned off when not in use.
- Equipment needs to be well maintained and cleaned regularly. Cylinders are cleaned in between uses. Dust and debris should be removed using detergent and water or detergent wipes.
- Small Entonox® cylinders (E or smaller) should be stored on their sides. Large cylinders (F or larger) are stored upright or in their trolleys and it is impractical for them to be stored on their sides.

Entonox® cylinders must be stored in accordance with data sheet information from BOC

Entonox® is stored in white or blue cylinders with blue and white shoulders. It is supplied in cylinders at a pressure of 137 bar and must be stored above its pseudo-critical temperature of -6°C. Below this temperature the N₂O liquefies in a process called lamination. If this occurs a high concentration of O₂ will be delivered first with little analgesic effect, but as the cylinder empties the mixture will become progressively more potent and hypoxic as it approaches 100% N₂O. If a cylinder has been exposed to cold below -6°C it
should be warmed for 5 minutes in a 37°C water bath or for 2 hours in a room at 15°C. It should then be inverted three times before use.

When delivered via a pipeline at 4.1 bar the pseudo-critical temperature is less than -30°C.

- No lubrication may be used on the Entonox® system.
- The pin index system ensures that the regulator cannot be connected to the incorrect gas so no alterations may be made to the pin index system.
- If the regulator has been damaged and will not fit snugly the system cannot be used and Medical engineering department should be informed immediately.
- Entonox® cylinders must be stored under cover, kept dry and clean and not subjected to extremes of temperature.
- The mixture supports combustion and must be stored away from combustible materials in the gas store, and away from sources of heat in the clinical areas. Notices must prohibit smoking and naked flames.
- In the gas store it is kept separately from other gases. Full and empty cylinders are stored apart and stocks should be rotated and kept at between 6 and 10°C.
- Cylinders must not be repainted, have markings obscured or labels removed.
- Where cylinders are stored in clinical areas the above cautions should be adhered to.
- In addition used cylinders should be returned immediately to main stores.
- Numbers of cylinders stored should be kept to a minimum.
- Storage should be in a well ventilated room, which is clearly labeled saying the type of cylinder being stored.
- No combustible material should be stored with the cylinder. Large cylinders should be secured and small cylinders stored horizontal.

6.8 Administration of Entonox® for a procedure

Assessment
1. Assess nature of injury or procedure required.
2. Assess patient; ensure no contraindications for use of Entonox®.
3. Assess patient’s level of understanding and ability to self administer Entonox®
4. Assess patient’s level of understanding of the treatment to be carried out
5. Assess patient’s need for any concurrent local / topical anaesthesia or analgesia.
6. If Entonox® is considered inappropriate for either the patient or the procedure, an alternative analgesia should be prescribed.

*In accordance with the Mental Capacity Act 2005
**Plan**
1. Once the decision has been made to use Entonox®, it should be prescribed and administered according to this policy.
2. Explain procedure and use of analgesia to patient / family / carers as appropriate.
3. Answer questions, provide reassurance.
4. Collect and check equipment, ensure a new mouthpiece and filter is used for each patient.
5. Give supplementary analgesia as prescribed;
   - Oral or rectal analgesia should be given prior to the procedure to allow for their full effect
   - The patient may continue to use their PCA if there is one in progress
   - A bolus of intravenous opioid may be given if a high degree of pain is expected.
6. At least two staff should be present when administering Entonox®, one to perform the procedure and one to monitor the patient.

**Administration**
1. Only trained staff should use Entonox® for the relief of pain
2. Ensure patients comfort and safety.
3. Demonstrate to patient use of equipment (do not inhale Entonox® yourself!)
4. Ensure patient understands what to do and what to expect before procedure commences.
5. Allow patient to practice using equipment.
6. Ensure the patient is monitored with a saturation monitor if there is a history of respiratory or cardiac problems.
7. Encourage patient to inhale and exhale Entonox® for 2 minutes before commencing procedure to ensure effectiveness.
   - If a mask is used they should hold it over their mouth and nose, maintaining an airtight seal, and breathe normally.
   - If a mouthpiece is used they should hold it between their teeth and breathe through their mouth only.
8. Encourage continued slow deep breathing throughout the procedure.
9. Observe patient during and after the procedure to monitor effects of Entonox® and assess when effects have worn off.
10. Dispose of mouth piece and filter in yellow bin.
11. Document patient’s name, hospital number or date of birth and the date in the log book provided.

**Evaluation**
1. Evaluate effectiveness of Entonox®.
2. Age appropriate pain scoring system.

### 6.9 Monitoring of the Patient on Entonox®

Once administration has commenced the patient should continue to use the Entonox® as required throughout the procedure and should be encouraged to breathe slowly and deeply to ensure effective analgesia with minimal side effects. If the patient hyperventilates they should be encouraged to exhale slowly.
Closely observe the patient throughout the procedure to determine:

- The intensity of pain suffered
- The presence of any side-effects
- Whether they are using the Entonox effectively

Oxygen saturation **must** be monitored throughout the procedure if there is a history of respiratory or cardiac problems.

If the use of Entonox® is unsatisfactory at any stage it may be necessary to stop the procedure until alternative analgesia and/or sedation has been prescribed and given.

If the patient experiences any Entonox® related side effects they should be reassured, and cease inhalation until the side effects wear off and the sensation of pain returns. For particularly painful procedures the inhalation should be recommenced before continuing.

**Entonox® related side effects include:**

- **Earache:** If the patient complains of earache the Entonox® should be stopped and alternative analgesia prescribed.
- **Dry Mouth:** A dry mouth is a common side effect. However, the patient should be encouraged to continue inhaling the Entonox®.
- **Dizziness or disorientation:** If the patient begins to feel dizzy or disorientated they may cease inhalation until the sensation wears off and the sensation of pain begins to return. The patient may choose to put up with these sensations and continue to inhale the Entonox® to achieve maximum pain relief.
- **Over sedation:** If the patient becomes drowsy the seal around the mask or mouthpiece is lost and they will no longer inhale the Entonox®. It is essential that only the patient hold the mouthpiece or mask.
- **Nausea:** If the patient complains of nausea they should be encouraged to cease inhalation if they want.
- **Less commonly the patient may vomit.** If so:
  - Remove the demand valve immediately
  - Reassure the patient and clear any obstruction to breathing
  - Clean & replace the face mask/mouthpiece
  - Clear vomit from the demand valve by vigorously shaking it using a flicking downward action
  - The patient then may recommence administration if they wish.
Technical Problems. If any of the following technical problems occur they should be reported to medical engineering immediately:

- Equipment not delivering gas
- Leak at joint between regulator and cylinder valve
- Demand valve leaks or does not shut cleanly
- Demand valve does not stop delivering gas after test button is released

After use ensure the patient is comfortable. Monitoring of the patient should continue for 30 minutes to ensure that the effects of the Entonox® have completely worn off. Patients should not walk unaided until any dizziness or disorientation has gone.

If the patient has respiratory or cardiac problems they may benefit from O₂ therapy after receiving Entonox®. This ensures there is no post administration hypoxia.

Check the cylinder gauge for contents:

- If less than a ¼ full replace cylinder by contacting the porters
- If ½ full ensure that a new cylinder is available
- Turn off the cylinder and depressurise the system fully by operating the test button

To clean the equipment:

- Depressurise the system
- Clean the external surfaces of the demand valve with an alcohol-impregnated wipe.
- Dispose of any disposables i.e. face mask or mouthpiece according to hospital policy
- Clean and/or dispose of any other components as per manufacturers instructions
- Discard any filter used (unless it is to be used by that same patient later the same day).

Document details of Entonox® administration, its effectiveness and any side effects suffered by the patient, in the patients notes.

Entonox® cylinders should be kept in a secure environment attached to a wall or trolley and away from patients when not in use. If the Entonox® is used infrequently the cylinder should be checked weekly and its contents recorded.

6.10 Infection Control Issues

- Disposable lightweight tubing will be used.
- If the tubing has been used, it is changed weekly and recorded. If it is visibly contaminated it is changed immediately. In accordance with the manufacturers guidelines.
- A bacterial filter protects the tubing from internal contamination. The outside of the tubing that is held by the patient is socially cleaned in the same way as the rest of the equipment. Tubing should be cleaned
between patient use e.g. wiped with a detergent and water and dried thoroughly.

- Each individual patient will have their own mouthpiece and bacterial filter or facemask and filter.
- Administration devices, masks and mouthpieces are single patient use only.
- If a patient is known to be colonized or infected with an alert organism, or has an acute infection then the tubing remains with the patient. (See infection control policies: IC01: Control of infection; IC03: Standard Precautions for the Prevention & Control of Infection)

7. Health and Safety Issues

Entonox® is a mixture of two substances, therefore to ensure thorough mixing small cylinders (E or smaller) should be stored on their sides

Large cylinders (F or larger) are stored upright or in their trolleys and it is impractical for them to be stored on their sides.

To ensure mixing, the cylinder must be at 10\(^\circ\)C or more for 24 hours or if small above 10\(^\circ\)C for 2 hours and inverted three times. Large cylinders should be tilted from vertical to horizontal, several times to ensure thorough mixing once they have reached the required temperature. Care must be exercised when performing this to protect the back of the user. (See manual handling policy).

Care must be taken when lifting and carrying smaller cylinders. Larger cylinders are transported using trolleys. Care must be taken when moving cylinders on and off trolleys and between store and clinical area.

Entonox® is excreted unaltered via the patient’s breath so administration must take place in a well ventilated area** to prevent others inhaling the Entonox®.

** The evidence base for what constitutes a well ventilated area is sparse but literature and anecdotal evidence from practitioners experienced in the use of Entonox® suggest areas with air conditioning or open windows are adequate for occasional to regular use. Salvage equipment is recommended for prolonged and continuous use and individual clinical areas will need to assess potential use and ventilation requirements.

Entonox should be used in a well ventilated area to maintain the average occupational exposure level of the healthcare professional to less than 100ppm (parts per million) over an 8 hour period.


COSHH requirements must be adhered to i.e. an assessment of risk and implementation of methods to control the risk. The risk assessment should be carried out by the practitioner to ensure that ventilation is adequate and action should be taken to move the patient to a well ventilated area if necessary.

According to the MHRA Alert SN 2000(07) - Medical Gas Cylinders: Risk of Fire: There is a serious risk of fire if substances such as dirt, oil, grease or hand creams contaminate connections between medical devices and medical gas cylinders. This
applies to cylinders containing: oxygen, nitrous oxide, oxygen/nitrous oxide (Entonox), oxygen/carbon dioxide and oxygen/helium mixtures.

It is recommended that as a precaution, driving, use of machinery and signing of legal documents should be avoided for 12 hour post administration. Staff must ensure that they have discussed this with the patient.

To provide an audit trail in the case of possible cross contamination or substance misuse, each patient's name, hospital number or date of birth and the date of use must be recorded in the log book. On receipt of a new cylinder this must also be recorded in the log book. Managers in each area should ensure a log book is provided.

Entonox® prescription and administration should be documented appropriately by individual departments.

8. Training

Healthcare professionals are individually accountable for their practice, as part of their continuing professional development they have a responsibility to ensure they gain the knowledge and skills required for using medical devices safely (Policy RM45: Training Policy for Medical Devices).

Competencies required:
- All users of Entonox® require to have completed the trusts training on medical gases and subsequently need to demonstrate competency in the administration of Entonox®, its uses, contraindications and side effects prior to using agent unsupervised. (Appendix 1). The only exemption being Midwives admitted to part 10 of the NMC register who have gained assessment of competency as part of their initial registration.
- Staff need to attend a training program 3 yearly and undergo annual self assessment of their competencies in the administration of Entonox®,
- This guideline is to be used in conjunction with patient group direction for Entonox® or prescribed by a medical or non medical prescriber.
- Basic Life Support
- Training includes completing the E-Learning modules provided by BOC on Entonox®, at http://www.entonox.co.uk/en/discover_etonox/training-support/online-training/entonox_online_training.shtml. Once completed, the certificate must be printed in duplicate and one handed to the departmental manager. Further advice and training can be organized through the Acute Pain Clinical Nurse Specialist, Bleep 2624 or Medical Devises, Tel 3871

9. Equality and Diversity

The Trust is committed to ensuring that, as far as is reasonably practicable, the way we provide services to the public and the way we treat our staff reflects their individual needs and does not discriminate against individuals or groups on any grounds.
10. **Monitoring Compliance/effectiveness of the policy**

The Acute Pain Team will regularly audit current practice against this policy to make staff aware of the policy and to ensure the policy has been adhered to.

Audit findings and feedback to staff will provide relevant information to assist in the development of recommendations required for practice development and/or change.

DATIX reports will be monitored by the Acute Pain Clinical Nurse Specialist

11. **Consultation and review.**

Development and review of this policy involves the Acute Pain Clinical Nurse Specialist, Medical Devices, Consultant Anaesthetists, senior ward staff, senior Midwives, Pharmacy Staff, CCOT and senior Accident and Emergency staff.

12. **Implementation of policy**

This policy will be implemented and distributed in accordance with OP27: Policy for the development, management and authorisation of policies and procedures.

13. **References**


BOC Healthcare Medical Gas Data Sheet (MGDS) ENTONOXR 50% nitrous oxide, 50% oxygen medicinal gas mixture.


Gateshead Health NHS Trust: IC01: Control of infection

Gateshead Health NHS Trust: IC03: Standard Precautions for the Prevention & Control of Infection

Gateshead Health NHS Trust: Policy RM45: Training Policy for Medical Devices

Gateshead Health NHS Trust: RM30: Policy for the Procurement, Management and use of Medical Devices

Gateshead Health NHS Trust: OP27: Policy for the development, management and authorisation of policies and procedures.


MHRA Alert: SN 2000(07) - Medical Gas Cylinders: Risk of Fire


## MEDICAL DEVICES COMPETENCY TRAINING

### Administration of Entonox®

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<tr>
<th>Competency Statement</th>
<th>Evaluation Strategy</th>
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<tr>
<td>♦ Staff member will be able to</td>
<td>♦ Verbalise understanding</td>
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<td></td>
<td>♦ Satisfactory completion of criteria</td>
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### CRITERIA 1.

Staff member will be aware of the correct procedures for ensuring:

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<tr>
<th>No.</th>
<th>CRITERIA 1.</th>
<th>Assessment Method</th>
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<td>Identify patient correctly</td>
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<td>Prepare all necessary equipment</td>
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<tr>
<td>3</td>
<td>Assess</td>
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</tr>
<tr>
<td></td>
<td>Nature of injury or procedure to be carried out</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Assess patient, ensure no contraindications present</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Assess level of understanding and ability to self administer</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Assess level of understanding of procedure to be carried out</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Assess need for any concurrent local, topical or systemic analgesia</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td>4</td>
<td>Plan</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Explain procedure and use of Entonox® as analgesia to patient/family/carers as appropriate</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Answer questions, provide reassurance</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Gain verbal consent (see RM22 Consent to Treatment policy)</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Gather equipment and ensure all complete and in working order</td>
<td>2 = Questions / Discussion</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>Administration</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Ensure patient comfort and safety</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Demonstrate to patient use of equipment</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Ensure patient understands what to do and what to expect before procedure commences</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Allow patient to practice using equipment</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Encourage patient to inhale and exhale Entonox® for 2 minutes before commencing procedure to ensure effectiveness</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Encourage continued deep breathing throughout procedure</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Observe patient during and after the procedure to monitor effects of Entonox® and assess when effects have worn off</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td>6</td>
<td>Correct disposal of all equipment</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Switch off equipment and dispose of single patient use components</td>
<td>1 = Observed</td>
<td>N</td>
</tr>
</tbody>
</table>
7 | **Evaluation**
Evaluate effectiveness of Entonox®
Age appropriate pain scoring system
EWS score

8 | **Patient reassured and comfortable**

9 | **Correct documentation of all relevant information**

**GUIDELINES**
- The response ‘not achieved’ for any of the competencies requires an explanation in the space provided below.
- The staff member must have received and ‘achieved’ rating in all steps of the procedure to be deemed competent.
- The staff member must not perform this skill unsupervised until they have been deemed competent in all steps of the procedure.

<table>
<thead>
<tr>
<th>No.</th>
<th>Comments (Continue on back if required)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

I __________________________ as the assessor confirm the above criteria have been achieved.

Signature __________________________ Date ____ / ____ / ____

I __________________________ as the trainee confirm I have achieved the above criteria. I further confirm that I have the skills and knowledge to confidently use the device unsupervised.

Signature __________________________ Date ____ / ____ / ____
### Assessment checklist when using Entonox in Clinical Practice (Non Obstetric Patients)

| Affix Patient Label or Patient ID………………………………………. | Date………………………………… |
| Surname………………………………….. | Ward………………………………….. |
| Forename………………………………… | Consultant…………………………… |
| Date of Birth…………………………… | Named Nurse……………………….. |

**SECTION 1**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Facial Injuries</td>
<td></td>
</tr>
<tr>
<td>Intoxicated</td>
<td></td>
</tr>
<tr>
<td>Heavy Sedation</td>
<td></td>
</tr>
<tr>
<td>Previous Laryngectomy</td>
<td></td>
</tr>
<tr>
<td>Pneumothorax, Lung surgery or chest drain</td>
<td></td>
</tr>
<tr>
<td>Severe Chronic Bronchitis</td>
<td></td>
</tr>
<tr>
<td>Gross Abdominal Distension or Bowel Obstruction</td>
<td></td>
</tr>
</tbody>
</table>

*Any YES answers in Section 1 and Entonox is not suitable for this patient at this time. All NO answers then continue*

**SECTION 2**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be aware of last meal (30 minute delay for inpatients)</td>
<td></td>
</tr>
<tr>
<td>Verbal instructions given to the patient</td>
<td></td>
</tr>
<tr>
<td>Verbal consent from the patient</td>
<td></td>
</tr>
<tr>
<td>Doctors prescription or signed PGD</td>
<td></td>
</tr>
<tr>
<td>Cylinder checked and in good working order</td>
<td></td>
</tr>
<tr>
<td>Staff trained to administer Entonox</td>
<td></td>
</tr>
<tr>
<td>Well ventilated area (windows open if nec)</td>
<td></td>
</tr>
</tbody>
</table>

*All answers YES in section 2 and you can now administer Entonox to the patient*

**SIGNED……………………………………. PRINT…………………………………….
(Assessment Nurse)**

Please inform Acute Pain Team on Bleep 2783 of patient name, id number and ward.