



This article by **Thushara Thayaparan**¹ focuses on the role of the dental team in the provision of dental treatment in children using inhalation sedation.

Introduction

The General Dental Council (GDC) *Standards* outline that a patient's dental pain and anxiety must be managed appropriately.¹ Dental anxiety can be quite common in children and can pose difficulty when children require any dental treatment.

Conscious sedation is a useful technique that can be used to effectively manage anxiety in children to allow for the provision of holistic, high quality dental treatment. Figure 1 shows the four options available for dental anxiety management, of which conscious sedation is one.²

Conscious sedation is 'a technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drugs and techniques used to provide conscious sedation for dental treatment should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. The level of sedation must be such that the patient remains conscious, retains protective reflexes, and is able to understand and to respond to verbal commands'.³

Commonly used conscious sedation techniques include:

- Inhalation sedation
- Intra-nasal sedation
- Oral sedation
- Intravenous sedation.

What is inhalation sedation?

Inhalation sedation (IHS) uses a titrated dose of nitrous oxide and oxygen through a nose piece. It is widely accepted as a safe and effective technique and is usually the

Inhalation sedation: The role of the dental team in the provision of dental treatment in children

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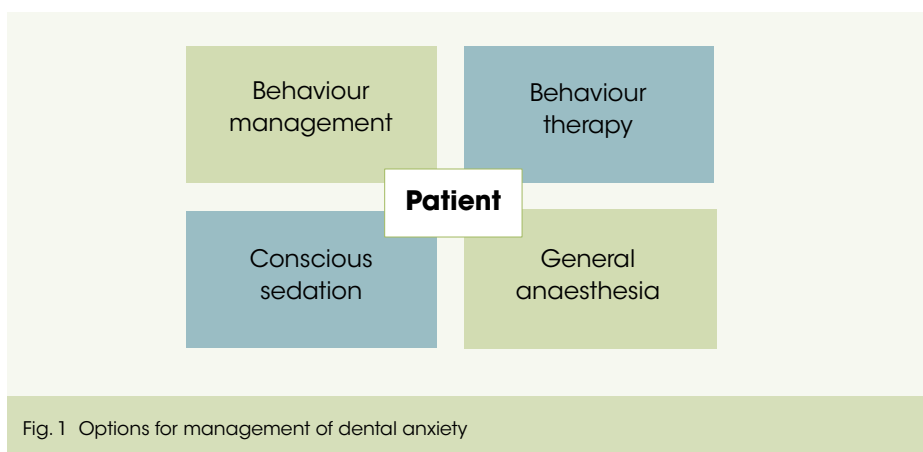


Fig. 1 Options for management of dental anxiety

‘The role of the dental nurse in the treatment of children under IHS is vital in assisting the sedationist throughout the entire procedure.’

first choice of conscious sedation technique in children.⁴ A Cochrane systematic review provides evidence supporting that nitrous oxide/oxygen sedation is more effective than a placebo and is safe for use in children.⁵

This type of sedation is ideal for children with mild to moderate anxiety as it allows for better co-operation and acceptance of dental treatment. Table 1 outlines the beneficial effects of IHS to both the child and the dentist.⁶

IHS is indicated in those who:

- Have mild-moderate anxiety
- Can understand and follow simple instructions
- Have a severe gag reflex
- Are special needs patients
- Have certain medical co-morbidities where dental stress could trigger exacerbation eg asthma, epilepsy, angina
- Are needle phobic
- Other sedation methods are contra-indicated – alternative to GA.^{6,7}

IHS should not be used in pre-cooperative children, who will not be able to listen to simple instructions. This is because IHS relies heavily on communicating with the patient to ensure that they are keeping their lips sealed and breathing well to have full effect. Other contra-indications for IHS include:

- Patients with upper airway issues eg cold, tonsillitis, nasal blockage or upper respiratory tract infections
- Patients who have sinusitis or had a recent

ear, nose or throat operation

- Patients undergoing chemotherapy with bleomycin or with porphyria
- Psychotic or drug addictions
- Patients with a nasal or facial deformity.^{6,7}

Consent

Prior to having any dental treatment under conscious sedation, valid and informed consent must be obtained from the parent or guardian.⁶ This consent, where appropriate, should also be discussed and obtained on the assessment visit, before the treatment day. A thorough and clear explanation of the proposed sedation technique and dental treatment should be explained to the patient and parent/guardian, along with the alternative methods available. Consent should be reaffirmed verbally with the patient and responsible adult at all stages of treatment. However, consent should never be obtained whilst a patient is sedated. If a treatment plan cannot be confirmed before the sedation visit, this should be discussed with the patient and parents/guardians with a clear explanation of all the possible treatment outcomes.^{1,2,8}

Furthermore, both the child and parent or guardian must be made aware of the pre- and post-operative advice both verbally and written. Once again this should be clear, understandable and comprehensive. All children under the age of 16 years will need a responsible adult escort for inhalation sedation – this should be checked and reconfirmed at the assessment visit.²

Some children aged under 16 can be deemed to be ‘Gillick competent’, therefore they will be able to provide their own consent for treatment without the need for any parental consent. However, it is always ideal to involve the parents/guardians in a child’s care and consent process.^{2,3}

The dental team

In the provision of inhalation sedation, the dental team usually comprises of the following team members:

- The referrer
- Sedationist
- Dental nurse
- Dental receptionist.

Role of the referrer

Usually, general dental practitioners will first-hand see nervous children who may require dental treatment. However, due to their medical history or anxiety, they may not be able to treat these children without the use of conscious sedation. When there are such needs for the management of anxious patients or other needs that impact the ability to receive dental care, then a referral to a sedation or secondary care provider may be necessary in the patient’s best interest. Figure 2 shows the care pathway available for children who may require conscious sedation.²

Prior to any referral for a patient to have treatment under conscious sedation, the referring dentist should undertake a detailed history, examination and any relevant investigations. Following this, they must discuss the diagnosis and treatment options available for the child with the parent(s) or guardian, along with alternative options of pain and anxiety management eg, behavioural management techniques.

It is essential that when a patient is referred, clear and appropriate referrals must be completed – in line with the guidance outlined by the Dental Sedation Teachers Group (Table 2).⁹

Following the successful completion of a child’s dental treatment under conscious sedation, they may be discharged back to the child’s referring dentist for continuing and regular dental check-ups.

The role of the sedationist

The sedationist must be ‘trained, competent and indemnified’ to provide conscious sedation in the UK.^{9,10} They must undergo an accredited course and complete supervised training to provide dental treatment under conscious sedation independently.²

They can be a:

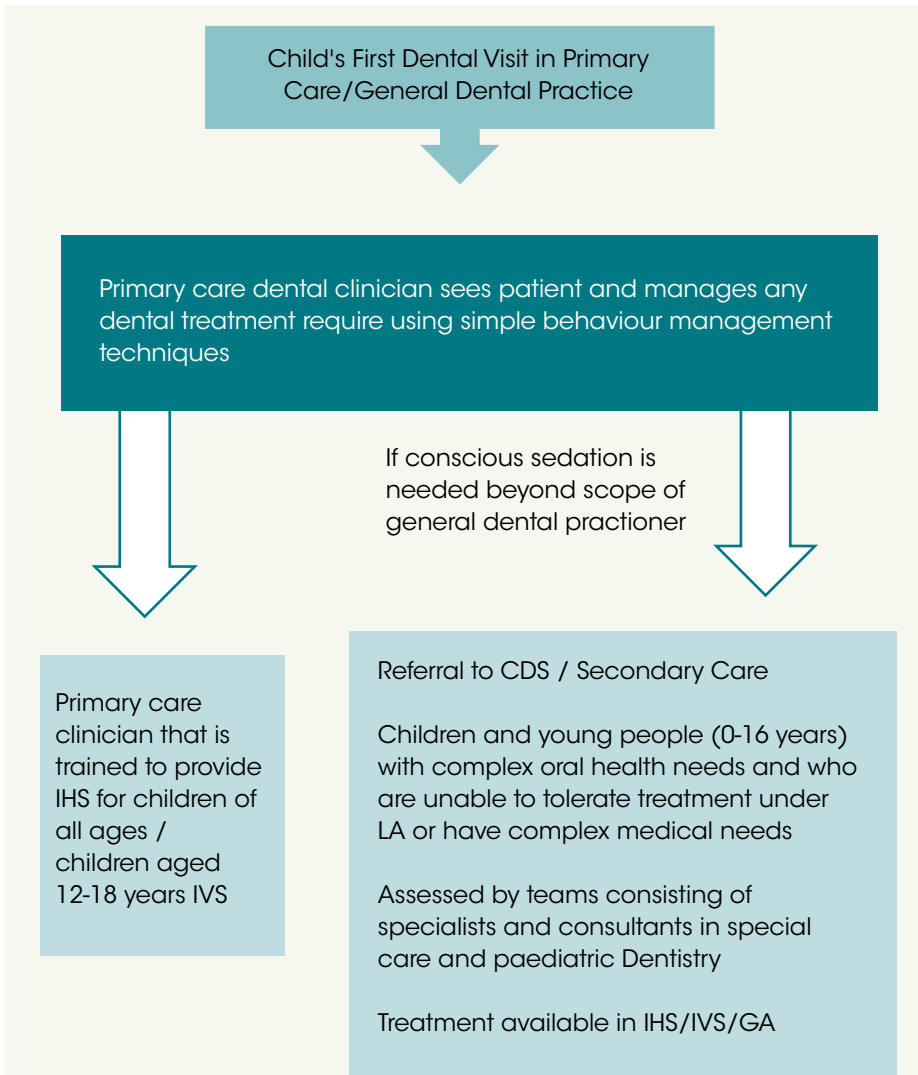


Fig. 2 Care pathway for children and young people. Abbreviations – LA: local anaesthetic; IHS: inhalation sedation; IVS: intravenous sedation; GA: general anaesthetic

‘In case any complications arise, all team members providing conscious sedation should be trained in immediate life support and be able manage medical emergencies.’

- Dentist
- Dental hygienist or dental therapist – these individuals, with additional skills can provide dental treatment under IHS directly or under prescription from a dentist.¹⁰

Prior to sedating a child for dental treatment, a comprehensive assessment must be completed. This is to ensure that the appropriate treatment modalities and decisions

are made regarding the child’s care. A detailed history including medical, dental and social history should be taken and documented to ensure that the chosen conscious sedation technique is the most suitable for the child. Ideally, the assessment appointment should be completed before the treatment appointment, where the child and parent(s) or guardian(s) are given time to think about their options and provide consent.^{2,6}

The use of IHS does not negate the

need for good behaviour management and communication skills. The sedationist must therefore, especially with children, speak in a soft tone to further aid in relaxing the patient and allow for good co-operation. They may also want to tell stories or use words that like ‘magic dust’ to build a rapport with the child.

The sedationist must monitor the patient throughout the whole procedure and look out for signs of sedation – see Table 3. If the patient is thought to be over sedated, the sedationist must be able to manage this accordingly.

After completion of the required dental treatment, it is important that the patient has recovered safely prior to letting them go home. They must ensure that the child has a responsible adult escort – this should be assessed prior to the sedation visit. The decision to discharge the patient relies on the sedationist. All instructions regarding post-operative care for both after the sedation and dental treatment should be given to the child and responsible adult escort, verbally and in writing.^{2,6,7}

Once all the treatment with IHS has been completed, it is important that a referred patient is made aware of how they will now be discharged from the sedationist’s care back to the referring dentist. The referring dentist should also receive a letter outlining the treatment completed and what conscious sedation technique was used.⁹

Role of dental nurse

A dental nurse, in addition to the standard scope of practice, with additional training can assist a clinician in the treatment of patients under conscious sedation.¹⁰ The role of the dental nurse in the treatment of children under IHS is vital in assisting the sedationist throughout the entire procedure. It is important to remember that although IHS is being provided, the child will receive normal dental treatment. Therefore, all the relevant dental nursing skills should be applied to support the patient and sedationist in the provision of the treatment – for example, this will include following infection control protocols, preparation of the dental surgery and IHS equipment. Furthermore, the dental nurse can also aid in the monitoring of the patient whilst under sedation.

The dental nurse must always be present in the room with the sedated patient and dentist. It may be necessary to have another team member on hand to act as a runner to get further equipment. However, it would be ideal to avoid this, by preparing in advance to obtain all the equipment required for the procedure.

As mentioned before, communication is

Table 1 How inhalation sedation helps in the provision of dental care for both the child and dentist

CHILD	DENTIST
Helps to reduce as well as prevent future anxiety/fear associated with dentists and dental treatment	Allows for completion of dental treatment in the dental chair
Allows for better co-operation and more willingness to go ahead with dental treatment, potentially reducing the need for general anaesthesia	Able to build a rapport with child and reduce anxiety/fear in the long-term
Perception of pain may be reduced during dental treatment	Less stressful working environment

Table 2 Good practice of information to include in a referral for conscious sedation

Information to provide in a referral
Full and updated medical history, along with allergies and medications
Reason for and justification for why conscious sedation has been requested
What dental treatment is needed along with any radiographs available
Dental history – including what treatment has been completed

Table 3 Signs of sedation and over sedation using inhalation sedation

Signs of sedation	Signs of oversedation
Relaxed but alert	Mouth closure/muscle rigidity
Reduced fear/anxiety	Irritability
Reduced facial/body tension	Hallucinations
Slowed responses	Nausea
Better acceptance of dental treatment	Unresponsive or disorientation

key for inhalation sedation and the dental nurse plays an integral role in the constant reassurance and management of the patient.

Role of dental receptionist

The dental receptionist is probably the first dental team member the patient will see when they come into the clinic. Therefore, the receptionist plays a significant role in the treatment and care of a highly anxious patient. They can automatically make the dental experience for a child more comfortable by creating a friendly environment to be in, whilst they are waiting for the dentist. Furthermore, they can ensure that all medical history forms are updated as well as ensure that a suitable adult escort is with the child.

Training and CPD

All team members should be trained adequately to carry out treatment under sedation.¹⁰ A logbook outlining every sedation completed in the practice should be kept for both the team members’ portfolio as well as for audit purposes. In case any complications arise, all team members providing conscious sedation should be trained in immediate life support and be able manage medical emergencies. All members of the dental team undertaking conscious sedation techniques should undergo at least 12 hours of relevant verifiable continuing professional development every five years.²

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