Dental Council
An Comhairle Fiaclóireachta

Code of Practice Regarding:

Dental Conscious Sedation

Promoting transparency and enhancing public confidence in the dental profession

May 2023

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Contents

Introduction

This document provides an informative and overarching guide to the dental team for dental conscious sedation in Ireland. The content is informed by recent reports on sedation from the Intercollegiate Advisory Committee for Sedation in Dentistry (IACSD)[1], the Academy of Medical Royal Colleges (AoMRC)[2], and the Scottish Dental Clinical Effectiveness Programmes (SDCEP).[3]

This guidance is issued under Section 66 of the Dentists Act 1985 which requires the Dental Council to guide the dental profession on ethical conduct and behaviour. The Dental Council's primary role is to protect the public. As a dentist, you are required to become familiar with this code of practice. We also advise you to use the external resources signposted throughout this code. When reading the external resources, it is your responsibility to be aware of differences in laws, regulations, and ethical guidance and governance between the UK and Ireland.

If you do not comply with this guidance, it may result in Fitness to Practise proceedings being taken against you under the Dentists Act 1985.

1

Definition

The effective management of anxiety and pain is an essential part of your work in delivering dental care. Behavioural support, the use of local anaesthesia, general anaesthesia and methods of conscious sedation are all central components of care for patients who are anxious about receiving dental treatment. You should use the simplest and safest technique that is likely to be effective, based on robust patient assessment and clinical need. This is line with the principle of minimum intervention.

Procedural sedation

'Procedural sedation' encompasses a wide range of sedation techniques performed in many different medical settings with different sedation protocols. Procedural sedation and analgesia are generally considered to include the stages of conscious (minimal to moderate) sedation and deep sedation in the continuum of anaesthesia, wherein levels of sedation are progressive. The continuum ranges from the fully conscious state to the unconscious state when all protective reflexes have been lost.

Conscious sedation for dentistry in Ireland

'Conscious sedation' in dentistry lies somewhere within the area of minimal to moderate sedation. In a dental practice, sedation to the point where the patient becomes unresponsive (deep sedation or general anaesthesia) is not acceptable. If you intend to produce a given level of sedation, you should be able to rescue patients whose level of sedation becomes deeper than intended. General anaesthetics should only be administered by a medical anaesthetist in a hospital setting.

Clinical practice guidelines for the monitoring and safe practice of sedation vary by specialty and institution. This document relates specifically to conscious sedation for dentistry in Ireland.

Definition of conscious sedation as it applies to dentistry:

> *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 loss of consciousness unlikely.*

It is vitally important that the level of sedation must be such that the patient remains conscious and is able to both understand and respond to verbal commands – either the verbal commands on their own, or accompanied by a light tactile stimulus. For individuals who use alternative or augmentative communication methods when they are fully conscious, the usual method of communication must be maintained when they are under sedation.

How to achieve conscious sedation

There are several techniques you can use to achieve conscious sedation in line with the above definition. It can involve the use of one or more drugs administered by way of different routes provided that there is an adequate margin of safety.

A single drug administered intravenously, and inhalation sedation form the mainstay of conscious sedation techniques in dentistry. As stated above, sedation beyond this level of consciousness must be considered to be general anaesthesia, and is, therefore, outside the scope of dentistry.

2 Education and training

Where conscious sedation is used, you may sedate a patient and carry out the dental procedure, provided that you have successfully completed a relevant training programme. A relevant training programme is one that:

- equips you to meet the requirements of this code,
- covers how to administer conscious sedation,
- is externally quality assured, and
- incorporates supervised clinical experience.

All staff involved in the treatment of patients under conscious sedation, whatever the method of delivery, must have received training – in particular training to monitor and manage emergencies – and have demonstrated an acceptable level of competence by means of a robust assessment process.

Programmes which are solely didactic and/or skills-based are suitable for experienced dentists and dental nurses but do not constitute sufficient training for novice sedation practitioners working without supervision. Courses for novice sedation practitioners must include mentored and supervised live clinical practice as well as didactic / skills-based training.

Knowledge and clinical skills must be maintained and it is the responsibility of individual team members to undertake relevant Continuing Professional Development (CPD) at appropriate intervals relevant to the sedation techniques practised. Members of the dental healthcare team who are not frequently practising a sedation technique must either retrain or discontinue its use.

3 Location of treatment – requirements

Equipment and facilities appropriate to the method of sedation must be in place.

The following conditions must be met:

- Unimpeded access to the dental surgery for emergency services.
- Treatment and recovery areas large enough for emergency access.
- Operating chairs and trolleys capable of being placed in the head-down tilt position.
- Emergency drugs and equipment readily available, including those specifically required for the sedation technique being used.
- Appropriate gas scavenging (collection and removal of excess gases) available where inhalation sedation is provided

You must use purpose-designed machines when administering inhalation sedation for dentistry. You must also make sure that these machines are maintained according to manufacturers' guidance, and they are serviced regularly. Keep records of servicing. You must use an inhalation sedation machine that cannot deliver less than 30% oxygen.

4 Patient age

You must follow the guidelines for acceptable sedation techniques for the different age groups of patients.

Patient Age		
Over 16 years	12 – 16 years	Under 12 years
Any sedation technique described in the up to date IACSD Standards for conscious sedation.[1]	Inhalation sedation using nitrous oxide and oxygen, intravenous, oral or intranasal midazolam.	Inhalation sedation using nitrous oxide and oxygen. (See Annex 1 – Sedation and children)

The titration (adjusting the dosage) of the drug to the patient's response is of significant importance at the extreme ends of the age range, as children and older people are more sensitive to the effects of sedative drugs. It is important, therefore, to reduce the titrated dose appropriately for younger and elderly patients. It is recommended that you specifically consider if it is appropriate for an elderly patient to be treated in a primary care setting.

The IACSD Standards Appendix 1 offers detailed age-related guidance on the appropriate levels of specialism required of the dentist treating children and adults.[1]

5 Preparation for sedation

5.1 Consent

You must get valid written consent for dental care provided under conscious sedation. To be valid, you must get a patient's consent before you administer sedative drugs, ordinarily at the pre-sedation assessment appointment. *(See **Dental Council Code of practice with regarding Professional Behaviour and Ethical Conduct**.)*

You should also make sure that patients get information at an appropriate time (not at the last moment) when there is an opportunity for them to be able to ask questions, and understand the choices and risks before making a decision to sedate. You must make sure that the risks and benefits of sedation are clearly explained to your patient.

Alternatives to sedation (typically, referral for general anaesthesia or local anaesthesia with behavioural techniques, or alternative treatment) should also be clearly explained. All treatment plans should be agreed with the patient, or the person with parental responsibility for children. A documented assent process should be completed for people who lack capacity to consent themselves.

5.2 Pre-sedation assessment

Patient assessment should ideally take place at a separate visit. Ordinarily, only ASA grade I and ASA grade II patients (from the American Society of Anaesthesiologists - see Annex 2 for grade definitions) should receive sedation in a primary dental care setting. While many ASA grade III patients will need to be referred to secondary care, some may be treated in primary care, depending on the available facilities, knowledge, skills and experience, and on the current stability of the patient's medical condition.[3] The patient's ASA classification must be recorded in the patient's record.

5.3 Pre-sedation instructions

Make sure your verbal and written pre-sedation instructions includes information about an appropriate escort, fasting, and so on, and should be tailored to the particular sedation technique.[1] The IACSD Report

Standards for Conscious Sedation in the Provision of Dental Care provides useful examples of information for patients, parents and carers that may be adapted for local use.[1]

5.4 Fasting

Most patients undergoing conscious dental sedation do not need to fast and should have a light meal up to two hours before they are sedated. The issue of fasting for 4 - 6 hours relates to having an empty stomach to avoid vomiting aspiration (inhaling vomit into the lungs), which is essential in deep sedation or general anaesthesia, where protective reflex mechanisms are lost. You should assess each individual patient in relation to fasting, and be prepared to document and justify the choice.[1]

5.5 Oral premedication

Oral premedication will not achieve a target level of conscious sedation. It involves administering a small dose of an oral anxiolytic (a tranquiliser) to help the anxious patient to sleep on the night before an appointment, or relieve anxiety on the day of the appointment.

5.6 Complex treatment

You should consider the complexity and expected duration of the dental treatment when deciding if a separate clinician should be responsible for the delivery of conscious sedation.

6 Clinical sedation techniques

Safe sedation demands knowledge of each drug's time of onset, peak effect and duration of action. In principle, titrating (controlling the dose) a drug or drugs to optimal effect is critical to safely achieving a recognised sedation endpoint. In turn, this avoids unintentional over-sedation or general anaesthesia.

Midazolam with an indwelling cannula currently is the main intravenous sedation (IV) used, and nitrous oxide with oxygen is the mainstay for inhalation sedation (IS). There are a number of other suitable drugs used in various other techniques.[1]

Propofol possesses a narrow therapeutic index and reduced margins of safety, increasing the likelihood of adverse events and it is, therefore, not suitable for use in a primary dental care setting.[2]

7 Monitoring

Most sedative and anaesthetic agents can cause hypoxia by suppressing respiratory drive and causing airway obstruction. Hypoxaemia has the potential to cause serious complications if not carefully monitored and controlled. Peripheral pulse oximetry is a simple non-invasive method of monitoring the percentage of haemoglobin which is saturated with oxygen. You may wish to consider capnography when supplemental oxygen is being administered.

For inhalation sedation with nitrous oxide and oxygen, clinical monitoring will usually suffice. As a minimum for all other techniques, monitoring should include both:

- pulse oximetry, and
- non-invasive blood pressure monitoring pre-operatively,

at appropriate intervals during and after[1] the procedure.

Monitoring clinical signs includes checking:

- the level of consciousness (depth of sedation),
- airway patency,
- respiration (rate and depth),
- skin colour,
- capillary refill,
- pulse rate, rhythm and volume as appropriate to the clinical situation,
- Patient responsiveness,
- sedation response

A second appropriately trained person must be present to monitor the patient, assist in an emergency and act as a chaperone.

8 Complications

The team delivering sedation must be able to recognise adverse events and manage them appropriately and safely. Practitioners intending to produce a given level of sedation should be able to rescue patients whose level of sedation becomes deeper than intended. Appropriate antagonists for use as rescue drugs must always be available whenever a patient is undergoing conscious sedation – for example, flumazenil for benzodiazepine sedation.

A life-support training course, to include airway management, appropriate to the age group being sedated must be completed and regularly renewed by the sedation team. All of the dental team should familiarise themselves with the ***Dental Council Code of Practice regarding the Management of Medical Emergencies within the Practise of Dentistry.***

9 Recovery and discharge

A trained member of the dental team must supervise patients during their recovery from sedation and until the patient can be discharged. A patient can only be discharged by:

- the sedating clinician, or
- a suitably trained delegated person.

A patient must be discharged into the care of a responsible adult who is with them. Before discharge, the patient and their adult escort should receive, and confirm they have received, verbal and written post-sedation instructions, and post-dental treatment instructions appropriate to the patient's procedure. It is an essential requirement that patients have an adult escort for sedation using anything other than inhalation sedation with nitrous oxide/oxygen in adults.

10 Records and documentation

You should make sure that patient evaluation, consent, data from monitoring during and after sedation, and readiness for discharge are documented (Annex 3). Providing treatment using conscious sedation techniques should be part of an ongoing audit procedure.

11 Acknowledgements

We wish to thank everyone who has participated in the development of this Code of Practice. In particular, we want to acknowledge the work of the Sedation and Anaesthesia Sub-Committee. Also, we wish to thank those who took up the Council's invitation to contribute to this Code and all members of the Dental Council who took part in advancing this amended Code of Practice.

ANNEX 1: Sedation and Children

Definition of the age of child is under 12 years (Resuscitation Council UK). A defined age definition has limitations when considering both physical (puberty) and mental maturity. The sedation team intending to provide conscious sedation to a child (under 12) should be familiar with the recommendations in the SDCEP guidelines for conscious sedation in children and young people (section 4).[3]

Definitions:

Neonate	Birth to 1 month
Infant	Birth to 1 year
Child	1 year – 12 years
Young person	over 12 and under 16 years old

ANNEX 2: American Society of Anaesthesiologists (ASA) Classification

ASA Physical Status Classification System (last approved by the ASA House of Delegates on October 15, 2014)

ASA Grade	Definition	Examples, including, but not limited to:
ASA I	A normal healthy patient	• Healthy, • non-smoking, • no or minimal alcohol use
ASA II	A patient with mild systemic disease	Mild diseases only without substantive functional limitations. Examples include: • current smoker, • social alcohol drinker, • pregnancy, • obesity (BMI between 30 and 40), • well-controlled DM/HTN, • mild lung disease
ASA III	A patient with severe systemic disease	Substantive functional limitations; One or more moderate to severe diseases. Examples include: • poorly controlled DM or HTN, • COPD, • morbid obesity (BMI equal to or greater than 40), • active hepatitis, • alcohol dependence or abuse, • implanted pacemaker, • moderate reduction of ejection fraction, • ESRD undergoing regularly scheduled dialysis, • premature infant PCA < 60 weeks, • history (greater than 3 months) of MI, CVA, TIA, or CAD/stents.

ASA Grade	Definition	Examples, including, but not limited to:
ASA IV	A patient with severe systemic disease that is a constant threat to life	Examples include: • recent (less than 3 months) MI, CVA, TIA, or CAD/stents, • ongoing cardiac ischemia or severe valve dysfunction, • severe reduction of ejection fraction, • sepsis, • DIC, • ARD or ESRD not undergoing regularly scheduled dialysis
ASA V	A moribund patient who is not expected to survive without the operation	Examples: • ruptured abdominal/thoracic aneurysm, • massive trauma, • intracranial bleed with mass effect, • ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction
ASA VI	A declared brain-dead patient whose organs are being removed for donor purposes	

ANNEX 3:
Record keeping and Practice Requirements

Record Keeping

Records should contain the following information and documents:

- A drugs and equipment checklist
- A fully completed medical history and current medication history, checked by the responsible clinician
- A previous dental history
- A previous conscious sedation/general anaesthetic history
- A pre-sedation assessment to include:
  - Written instructions provided pre- and post-operatively
  - Written consent for conscious sedation and dental treatment
  - ASA grading
- The name of an accompanying responsible adult where required
- The treatment procedure
  - Monitoring
  - Dose, route and times of administration of sedation agent
  - Dental treatment details
- Post-sedation assessment and time of discharge home
- The provision of treatment using conscious sedation techniques should be part of an ongoing audit procedure, and separate audit/checklist forms will be completed for each patient visit

Practice Requirements

The sample checklist at the link below provides a useful reference for assessing your patients' pathway through treatment provided under conscious sedation and your practice's equipment and facilities. You should consider using this checklist periodically to assist in assessing your practice's capacity to provide treatment under conscious sedation safely:

https://www.dstg.co.uk/index.php/documents/document/saad-safe-sedation-practice-scheme-2017

References

1. IACSD, Inter-collegiate Advisory Committee for Sedation in Dentistry, (2020). Standards for Conscious Sedation in the Provision of Dental Care (V1.1).
2. Academy of Medical Royal Colleges AoMR, (Oct 2013). Safe Sedation Practice for Healthcare Procedures. Standards and Guidance. Safe_Sedation_Practice_1213.pdf
3. NHS Education for Scotland. Conscious Sedation in Dentistry Dental Clinical Guidance 3rd Ed (SDCEP) 2017

*Department of Health DoH, (2003). Conscious Sedation in the Provision of Dental Care. London

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