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BRITISH ASSOCIATION OF ORAL SURGEONS

British Society of Paediatric Dentistry

Hospital dentistry: sedation pathway delivery guide

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GIRFT is part of an aligned set of programmes within NHS England

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Introduction

The GIRFT workstream for Hospital Dentistry involved visiting 136 trusts and looking at variation in the delivery of Oral Surgery services as well as three other dental specialties (Restorative Dentistry, Paediatric Dentistry and Orthodontics). It gave the opportunity to interrogate data on care setting and in so doing explore whether conscious sedation as a mode of anxiety and pain management and as an alternative to general anaesthesia was routinely used. The recording of type of anaesthesia is not mandated for HES but a questionnaire sent to all trusts enquired on the availability within the trust either directly or via the Community Dental Service and the questionnaire responses have been validated for this paper. The variation in availability of sedation services appears to be unwarranted and reflects commissioning decisions although it does need to be made clear that this does not include possible services available in primary care.

This paper highlights the main issues around the delivery of conscious sedation and I am most grateful to the working group for their time and expertise and to the GIRFT Academy. We hope that it will be of use to stakeholders in deciding whether to provide such a service.

Liz Jones OBE

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We welcome this pathway guide which demonstrates the benefits of offering a dental sedation service and sets out the steps to providing such a service. Sedation services can reduce reliance on general anaesthetic, improving patient safety and experience and freeing up operating capacity for other general anaesthetic cases. This guidance is timely, given the focus on elective recovery in the NHS, and we hope that it will be the starting point for conversations between dental sedationist and anaesthetist colleagues seeking to improve patient care and choice.

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1 Scope

The purpose of this document is to encourage and improve access to the provision of conscious sedation services in secondary care dental services where they are not currently offered.

The document is intended only for secondary care providers without conscious sedation services, the majority of which will be Oral Surgery and Oral and Maxillofacial units. It is also intended to be of interest to regional NHS commissioners, Managed Clinical Networks and education providers.

The document however, is not directed at established primary or secondary care conscious sedation providers, nor is it classified as national guidance. As such, it should be read alongside existing conscious sedation guidance documents, including:

- The Intercollegiate Advisory Committee for Sedation in Dentistry (IACSD) Standards for Conscious Sedation in the Provision of Dental Care, 2020;
- The Scottish Dental Clinical Effectiveness Programme (SDCEP) Conscious Sedation in Dentistry Clinical Guidance, 2017;
- The Academy of Medical Royal Colleges Safe sedation practice for healthcare procedures, updated 2021;
- NHS England Service standards for Conscious Sedation in a primary care setting, 2017.

2 Key messages

1	All secondary care services providing dentistry should aim to have access to a conscious sedation service in order to reduce reliance on general anaesthetic and improve patient care and choice (for those patients eligible for treatment in secondary care).
2	Referral pathways should be set up accordingly to allow for adequate triage of patients that may need access to conscious sedation and utilise the Index of Sedation Need (IOSN) tool, where appropriate.
3	Public health services, national and regional commissioners and education providers should assess the sedation need and level of services provided and develop a plan to improve training and access to conscious sedation services within hospital dentistry.

Key terms used in this guide

Conscious sedation: 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.

Standard (conscious sedation) techniques: Where provision of conscious sedation is delivered by dental teams, the below are the 'standard techniques':

- For a child (under 12 years old), young person (12-16 years old) or adult (age 16 or above), inhalation sedation (IHS) with nitrous oxide/oxygen
- For a young person or adult, midazolam by any route, including intravenous (IVS), oral or transmucosal sedation

Operator-led sedation: Where a dental professional assumes the dual responsibility of sedating the patient as well as providing dental treatment. In this case there will be a second appropriately trained dental professional (most often a dental nurse) who will assist and/or carry out clinical monitoring.

Dedicated sedationist: Where a dental or medical professional will deliver the sedation and a separate dental professional will carry out the dental treatment.

Indicator of Sedation Need (IOSN) tool: The Indicator of Sedation Need (IOSN) is a tool that can help identify, assess and deliver appropriate sedation to patients. An IOSN score of over 7 (out of 15) indicates a high sedation need. This tool is a practical aid in identifying sedation need in anxious adult patients. However, it may be of limited use in paediatric patients and in patients requiring special care.

IOSN is composed of three main elements:

- Modified dental anxiety scale (MDAS)
- Medical and behavioural indicators
- Dental treatment complexity

3 The benefits of offering conscious sedation

Pain and anxiety control are fundamental aspects of patient-centred healthcare. Within dental care, this is of paramount importance, due to the diversity in the nature and invasiveness of the procedures together with patients' medical conditions, anxiety levels and dental needs.

It is estimated that 12% of the population have high levels of dental anxiety, while others may need procedures that are particularly extensive or invasive, so there will always be a cohort of patients requiring additional techniques to local anaesthetic to enable them to accept dental treatment. These alternative techniques can include both conscious sedation and general anaesthetic. When looking at Oral Surgery procedures, it has been shown that over 70% of referrals to the intermediate minor oral surgery service in the North West had a high or very high sedation need according to the Index of Sedation Need tool (see page 14). This highlights that without access to conscious sedation services, patients on these referral pathways may inevitably be listed to receive a general anaesthetic for a potentially simple procedure.

The most commonly used conscious sedation techniques in dentistry in the UK, titrated intravenous midazolam or titrated nitrous oxide and oxygen, have an excellent safety record.

Conscious sedation, combined with effective local anaesthesia, offers an alternative to general anaesthesia for many patients and means that in many cases treatment would be possible in primary care. Despite the safety, efficacy and cost-benefits of using conscious sedation techniques, there are still indications for general anaesthesia for some dental/surgical procedures and certain patient groups.

Benefits of conscious sedation	Description	Evidence
Safety & Efficacy	Conscious sedation delivered appropriately by dental professionals has been shown to be a safe and effective method to provide dental treatment to anxious patients.	Minor complications in 3% of cases and successful completion of treatment in 95-98%. Wilson et al Primary Dental Care October 2011
Cost	The provision of operator-led conscious sedation has been estimated to deliver a cost saving to providers of 32-35% in comparison to the provision of general anaesthetic.	NICE National Clinical Guideline Centre 2010. Sedation in children and young people. Appendix E-H - costing report.
Patient and clinician experience in adults and children	Conscious sedation has been highlighted to have a high success rate, and there is evidence of a high level of both patient and operator satisfaction. The use of inhalation sedation in children has been highlighted to provide the ideal opportunity to reinforce oral health messages, and can actively reduce dental anxiety in comparison with the use of a dental GA. This has the long-term effect of promoting patient welfare and reducing reliance on sedation. Particular benefits for children include removing the need for fasting, minimising the extremes of disruptive behaviour, more easily regulated depth of sedation, quicker recovery and ability to return the child to a normal state to allow safe discharge	97% of patients happy with level of sedation and 99.4% happy to have treatment under sedation again. Operators found that the level of patient cooperation and ease of operation to be excellent in 91% of cases. McCrea, British Dental Journal 2015. Children and their parents who select IHS as opposed to GA to assist in extractions demonstrate less psychological distress. L.M.Arch et al, International Journal of Paediatric Dentistry 2001.
Freeing up operating theatre capacity for complex general anaesthetic cases	The provision of conscious sedation for dental procedures can be delivered safely in an outpatient setting, with either operator-led sedation or with a dedicated sedationist. This can be utilised to help reduce general anaesthetic procedures and hence free up capacity, facilities and staff for more complex general anaesthetic procedures. The training and retention of dental nurses to assist with conscious sedation will allow for a dedicated sedation team within secondary care departments, freeing up operating theatre staff.	See case studies starting on page 9.

4 Implementing sedation services

There is significant unwarranted variation in sedation services provision between different regions. Some of this is due to historic practice and it will need a coordinated approach at regional level to overcome the issues.

Providers will need to:

- Identify a champion for sedation and ensure that they work collaboratively to agree policies and implementation.
- Work with regional colleagues to develop appropriate training in line with national guidance.
- Ensure teams have the necessary workforce and facilities to be able to provide the service as per the appendices

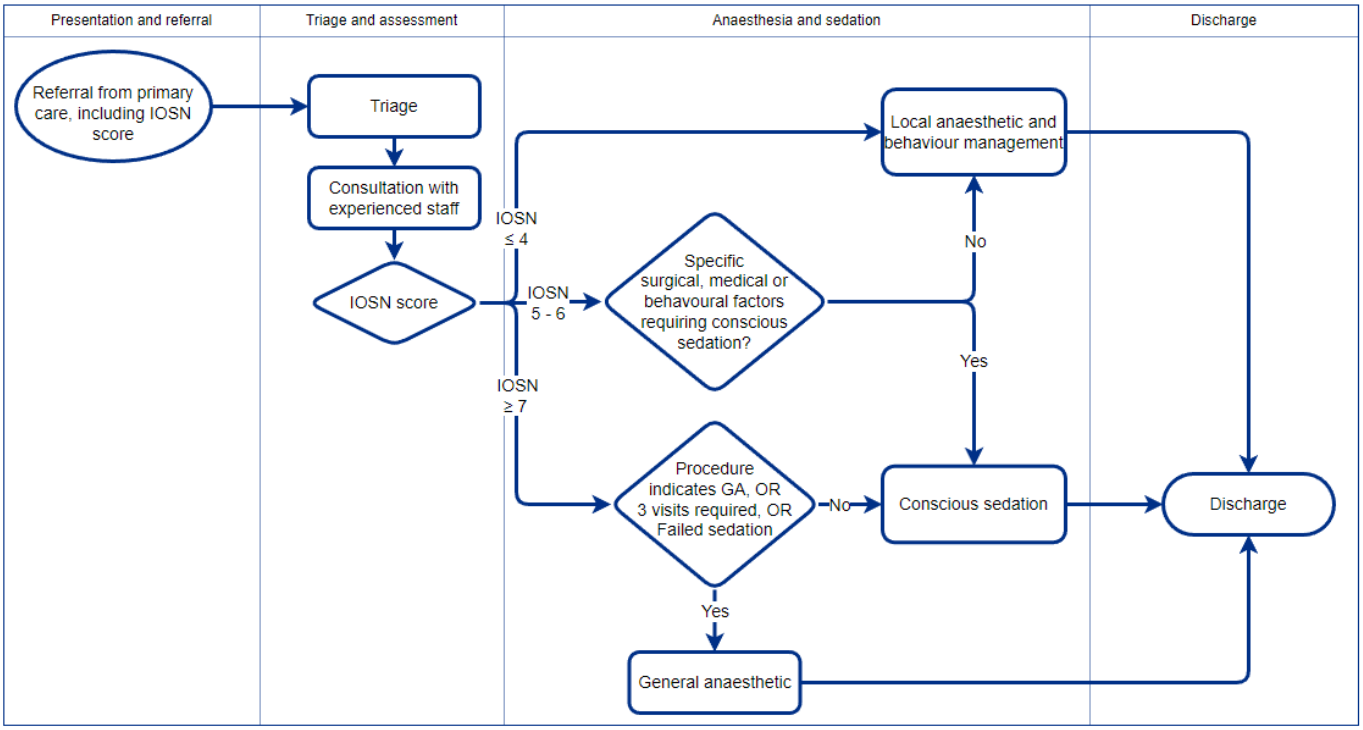
4.1 Example pathways

These are example best practice pathways from existing regions providing conscious sedation. These pathways cover adults and children with high levels of dental anxiety and patients requiring special care dentistry.

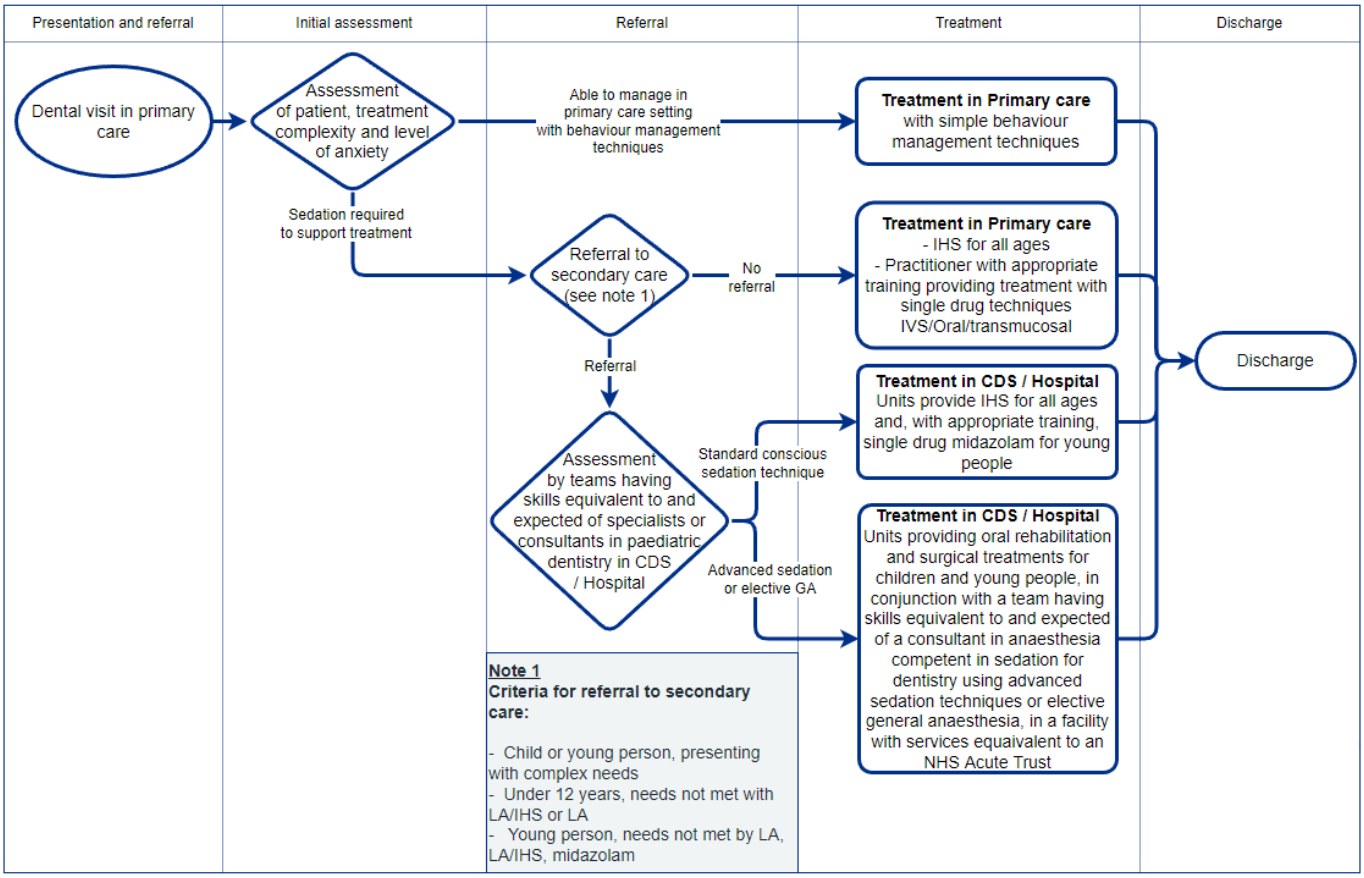
Abbreviations used in pathway diagrams:

ASA	American Society of Anaesthesiologists medical co-morbidities classification
CDS	Community Dental Service
IHS	Inhalational sedation
IV / IVS	Intravenous sedation
IOSN	Indicator of Sedation Need
SCD	Special Care Dentistry

Adults



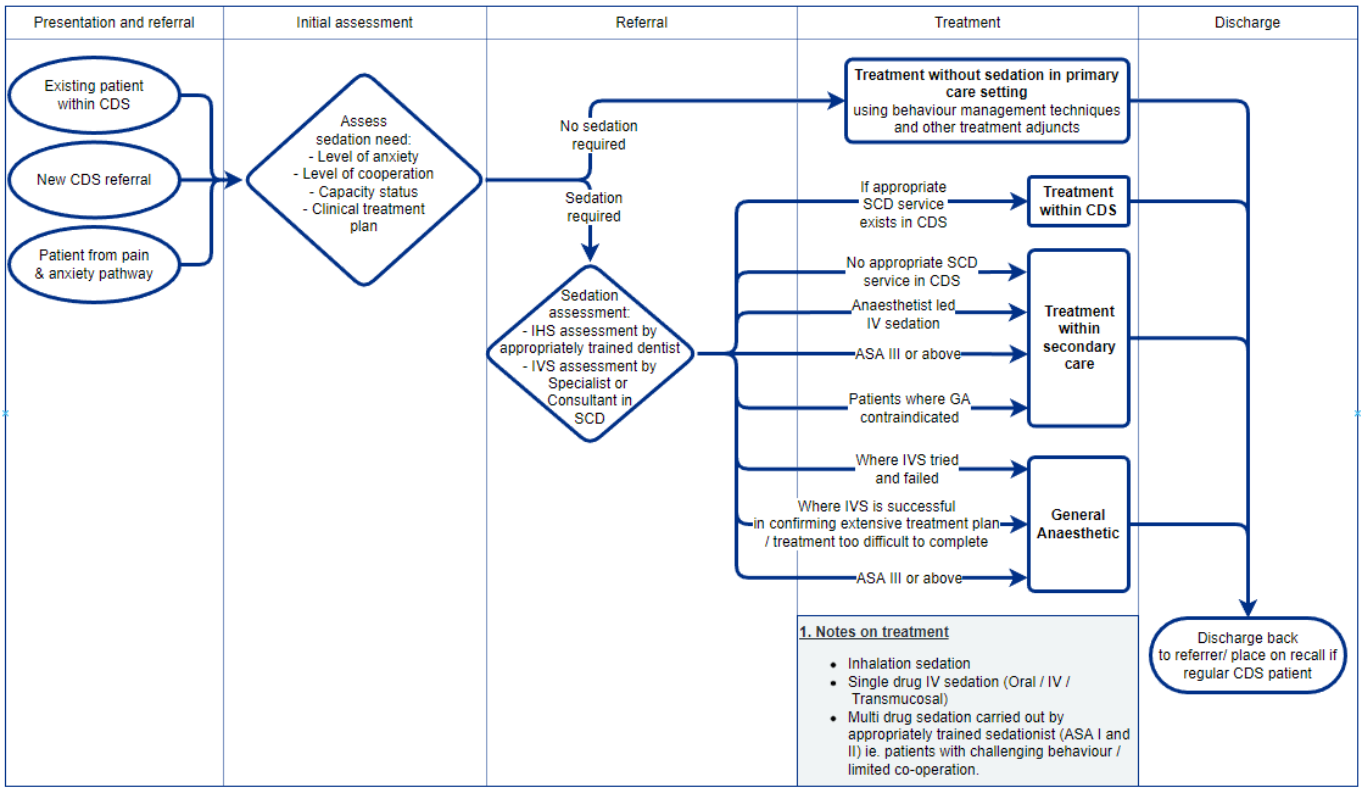
Children



Click to see detail on IOSN scores >

(page 14)

Patients requiring special care



4.2 Next steps

What does this mean for clinicians?

- ☑ Understand your own service and how you would like it to be configured
- ☑ Engage with local Managed Clinical Networks (MCNs) to standardise ways of working, for example referral criteria
- ☑ Develop pathways to support all modalities of care and to reduce reliance on general anaesthetic
- ☑ Ensure all Medical Directors / Chief Medical Officers, Clinical Leads and/or Anaesthetic / Sedation Leads have had sight of this guide
- ☑ Liaise and discuss with the anaesthetic teams regarding implementation of a sedation service
- ☑ Liaise and discuss with HEE regarding training needs within the region and consider setting up peer review networks in conscious sedation as per the NHS Commissioning Guidelines in Conscious Sedation

What does this mean for operational teams?

- ☑ Appoint a 'champion' for safe dental sedation services
- ☑ Interrogate/ investigate GA waiting lists
- ☑ Consider collecting data from theatre lists or new patient clinics on how many cases could potentially be completed under sedation rather than general anaesthetic
- ☑ Ensure processes are in place for coding anaesthetic type for all procedures, in line with the specific sedation and anaesthetic codes being introduced from April 2023
- ☑ Assess current staff levels and their training in conscious sedation. Where new staff need training in conscious sedation techniques, assess whether clinical mentoring is available within the hospital trust or may need to be obtained via an agreement with a neighbouring trust. (See page 15)
- ☑ Assess current outpatient/treatment room settings for suitability to provide conscious sedation and assess current level of equipment. Example protocols for conscious sedation in a hospital setting can be found here.
- ☑ Where no conscious sedation is currently provided within a trust, develop a business case to implement a new conscious sedation service

What does it mean for commissioners?

- ☑ Understand access across the region and carry out a regional needs assessment
- ☑ Explore barriers/ reluctance to establish dental conscious sedation services
- ☑ Collaborate with education providers (including HEE), and MCNs to support organisations in offering a conscious sedation service
- ☑ Commissioners should work with hospital trusts already offering conscious sedation services, to become accredited mentors via the Sedation Training Advisory Committee (STAC), and support newly established services.

5 Case studies

The following case studies illustrate 5 units which have successfully developed a hospital sedation pathway. These case studies cover different types of hospital, including district general hospitals, dental hospitals and specialist hospitals, as well as the pathways for adults, children and Special Care Dentistry.

5.1 Pinderfields Hospital, Mid Yorkshire Hospitals NHS Trust

Pinderfields Hospital is a district general hospital, part of Mid-Yorkshire Hospitals NHS Trust (MYHT), covering a population of approximately 540,000 people. The Oral and Maxillofacial Surgery (OMFS) team provide operator-led conscious sedation services for approximately 150 OMFS and oral surgery procedures per year and maintain sustainability of service through continual staff training and development.

The West Yorkshire Managed Clinical Network triage all oral surgery referrals sent within the region, using the FDS electronic referral management system. All referrals for general anaesthetic and conscious sedation require a modified dental anxiety score, alongside other key information to calculate an IOSN score.

Once a referral is received by MYHT, it is electronically triaged by clinicians as per the example adult pathway on page 6. Any oral surgery procedure referred for general anaesthetic or conscious sedation is placed on the ‘Anxious Patient’ pathway. This allows patients to be assessed based upon their level of anxiety, underlying medical conditions and complexity of treatment.

This results in a reduction in unnecessary general anaesthetic procedures for simple exodontia, reserving both general anaesthetic and conscious sedation for those who need it. For appropriately selected adult patients, treatment with local anaesthetic and behaviour management techniques remains the first line treatment option. Where there is limited access to general anaesthesia, conscious sedation has allowed some complex oral surgery procedures to be carried out safely and successfully.

Audits in conscious sedation have highlighted an overall patient satisfaction score of 97.5% and success of treatment in 100% of cases over a recent time period.

MYHT staff have worked together with Health Education England Yorkshire and Humber to create a regional training package in inhalation sedation. This has included providing new starter training courses, training resources and assessment materials alongside collaborating with services regionally to obtain accreditation with the Sedation Training Accreditation Committee. In this way, almost every community dental service in the region has the ability to train their own staff members in inhalation sedation in a quality assured manner, in keeping with the latest guidelines.

In addition, the team have commissioned life support courses and simulation training in sedation emergencies, so that conscious sedation providers across the region can practise and maintain vital skills in emergency management as a team. This model has the potential to be used across England to reduce barriers to training and to maintain knowledge and skills in conscious sedation.

5.2 Chesterfield Royal Hospital NHS Foundation Trust

A dental sedation service has been functioning at Chesterfield Royal Hospital for over 30 years where minor oral surgery procedures are routinely undertaken. There have been few changes to the service over this time other than those necessary to align with changes in guidelines and standards.

The service is provided by two Specialty Dentists who are experienced in the delivery of dental sedation using midazolam given intravenously. The service is supported by an experienced team of nurses who have undergone formal training in dental sedation. Most of these nurses have worked in the department for many years and without retention of these nurses the service would be unsustainable.

Having IV sedation as an alternative to GA offers a service that is cost effective and more streamlined for the delivery of surgical care. Although many procedures are still carried out under local anaesthetic, sedation is a valuable alternative where patient anxiety is an issue with routine procedures or where a more complex procedure is required but not warranting GA.

There is no direct request option for referring practitioners for this service. However, there is often a suggestion of requiring GA or sedation in the referral. Each case is assessed at the first patient consultation where there is a discussion with the patient over appropriate options which include local anaesthetic, IV sedation or GA.

Where more than two sedation sessions are anticipated to complete the treatment, a GA may be considered on both economic grounds and to avoid multiple visits. There are no firm criteria employed other than those that are based on medical suitability.

The dental sedation service at Chesterfield benefits from the strong support of the anaesthetics team, including providing advice and guidance where needed. There is a recently established multidisciplinary team within the hospital that is led by the anaesthetists to support safe sedation throughout the hospital and work to generate standard operating procedures and protocols. This includes representatives from OMFS, Cardiology, Gastroenterology, Emergency Department and Respiratory medicine. This multidisciplinary team has proven to be valuable in providing information and support.

Dental Core Trainees (DCTs) are encouraged to become involved with the delivery of treatment under IV sedation and it is usually the case that the DCTs complete mentorship throughout the year. This has proven to be an attractive component of the training offered at the service when recruiting DCTs.

5.3 Paediatric dental services at Birmingham Community Healthcare NHS Foundation Trust

Paediatric dental services within Birmingham Community Healthcare NHS Foundation Trust provide care to anxious patients across the community and hospital setting. Referrals are received into the service and triaged by senior clinicians.

Teenage patients referred as “dentally anxious” or “phobic” may be triaged for new patient assessment by inhalation sedation trained dentists or, if requested by the referring dentist, for IV sedation (IVS) assessment. All new patients are assessed, with medical, dental and social histories taken, alongside a full dental examination. Options for treatment and anxiety control are discussed, from behavioural techniques through inhalation sedation, Cognitive Behaviour Therapy and General Anaesthetic, with the additional option of IVS for 12-15 year-olds.

IVS assessment is undertaken by an IVS trained paediatric dentist, usually within the community setting. Patients are accepted for IVS assessment when less invasive methods of anxiety control have proved insufficient or unacceptable, where there is urgency for treatment (and CBT is therefore not realistic), or if patient is unable to engage with CBT, aiming to minimise the use of GA where possible.

Detailed assessment is carried out involving vital signs, height/weight/age percentile, airway risk, veins and importantly maturity, mental health status and social support for post-operative care. Disinhibition is always mentioned as a risk in this age group but is rare. Options for anxiety control are discussed in full with both patients and parents/carers, and pre- and post op instructions given as for adults. The responsibility of parents or carers to comply with post operative care is emphasised. Treatment is usually carried out in a community dental clinic.

While not suitable for every patient referred, IVS has proved a very useful tool to provide care for teenagers who have failed to cope with inhalation sedation, for teenagers requiring more challenging treatments such as difficult extractions, when used with topical anaesthetic cream and/or inhalation sedation for teenagers with needle phobia and for teenagers with autism and even, with careful preparation, oppositional defiant disorder (ODD).

5.4 Paediatric dentistry at the Royal National ENT and Eastman Dental Hospitals

The paediatric dentistry department at the Royal National ENT and Eastman Dental Hospitals, part of University College London Hospitals NHS Foundation Trust, offers a range of treatments to paediatric patients with or without conscious sedation (inhalation and/or intravenous sedation) and under general anaesthetic (GA). These modalities are offered to patients based on their level of anxiety, cooperation, volume or complexity of treatment.

A consultant in paediatric dentistry will carry out a telephone triage followed by a preassessment appointment for an examination and relevant investigations. Treatment options and modalities are discussed, written consent is gained, instructions are given and preassessment is performed by a trained dental nurse and a clinician using a proforma.

All clinicians and dental nurses performing sedation are trained in accordance with IACSD standards. Inhalation sedation sessions account for ~1200 cases yearly. The age range for inhalation sedation ranges from 4 to 16 years old. A recent service evaluation showed more than 80% success rate in delivering treatment under inhalation sedation.

Intravenous sedation (using midazolam) is delivered by 2 trained clinicians (a consultant and a specialty dentist). These sessions account for ~200 patients yearly. Inclusion criteria are patients equal to and over 12-years of age, with a BMI <30, ASA I or II, good venous access and a complexity of treatment deemed acceptable by the assessors. Type of treatment can involve anything from restorative to simple or surgical extractions/ exposure to soft or hard tissue surgery if deemed suitable and safe for the patient. The IV sedation (IVS) service was established in 2008 and a 10-year service evaluation proved its usefulness as an alternative to general anaesthetic and its benefit in reducing the GA waiting list by 10%. It was proven to be a successful modality (98%).

These modalities helped reduce the GA waiting list by more than 50% thus releasing capacity for patients requiring treatment under GA. The sedation service can continue to run independently of the general anaesthetic service when there is a lack of availability of theatres and staff reutilization or redeployment.

5.5 Sheffield Community and Special Care Dentistry Service

Sheffield Community and Special Care Dentistry Service has provided a crucial operator-led conscious sedation service for a number of years. This includes both inhalation sedation (IHS) and intravenous midazolam sedation (IVS). The service is delivered within a primary care setting. It forms an integral part of the service enabling dentists to provide necessary treatment to the most vulnerable patients within the local population in an appropriate, safe, and calm manner.

This service offering often avoids the need for a General Anaesthetic (GA). Not only is this cost effective, but for those patients who lack capacity it provides a less restrictive treatment modality option for them to accept dental treatment in comparison to a general anaesthetic. As well as being used as a way of delivering all required dental treatment, it may also be used as an opportunity to confirm a suspected dental problem, get a better idea of the amount of treatment, or to fix an acute problem, which may then justify the need for a GA.

The service has several dentists trained to provide inhalation sedation and two dentists (both Consultants in Special Care Dentistry) trained to deliver intravenous midazolam sedation as well as a number of trained sedation nurses, all in accordance with IACSD standards. In addition, Special Care Dentistry specialty trainees and dental core trainees are regularly involved in the delivery of IHS and IVS, as this forms part of their training pathways. The specialty trainees are expected to complete a number of both intravenous sedation assessments and cases (as both sedationist and operator) in order to be deemed competent in that area of training.

Conscious sedation is used within the service to provide treatment to a number of different types of patients. Patients may or may not lack the capacity to make the decision regarding their treatment and so often this forms part of a best interest decision in accordance with the Mental Capacity Act (2015). Intravenous sedation in particular is used to treat primarily those with learning disabilities who struggle to cooperate with dental treatment. The additional use of premedication or clinical holding as part of an agreed plan may be required on occasions. The service also treats those with movement disorders, dementia and mental health issues, as well as patients referred into the service on the ‘Pain and Anxiety pathway’.

Those seen within a primary care setting are ASA I and II, with those assessed as ASA III being seen and treated within the secondary care facility with the support of anaesthetic colleagues, either using sedation or a general anaesthetic. With often inconsistent access to GA, the conscious sedation service is crucial in ensuring Special Care patients can receive the treatment they require, preventing further increases to the GA waiting list.

Appendices

Appendix 1: Current provision of conscious sedation

There is a shortfall of provision of sedation services for dental treatment in the NHS and there is evidence of inconsistency in local commissioning between areas, leading to a ‘postcode lottery’ in sedation availability across the regions. Poor availability of conscious sedation, or inconsistency in the allocation of sedation service resource, is likely to be a driving factor in unnecessary use of general anaesthetic (GA).

The GIRFT national specialty report on hospital dentistry found that there were few instances of conscious sedation being commissioned from non-dental hospital trusts and large numbers of children having general anaesthetic in hospital.

Addressing this variation will require both increasing the availability of sedation and also ensuring that the existing resources are allocated according to patient need, rather than demand and convenience. This can be achieved using tools such as the Indicator of Sedation Need (IOSN) set out on page 14, which can assist clinicians in deciding on whether IV sedation is indicated in adult patients.

The picture is confusing, not least because there was historically no mandated requirement for trusts to record the type of anaesthesia used for dental procedures. The type of anaesthesia used is a good proxy marker for the complexity of a procedure, and there is often no other marker in the data for complexity.

The GIRFT Clinical Coding team has worked with the Terminology and Classifications Delivery Service on this issue and new specific sedation / anaesthetic codes are being introduced from April 2023. Clinicians and service managers in trusts will need to ensure processes are put in place to capture and code data on sedation and anaesthetic type for procedures in hospital dentistry.

The hospital dentistry deep dives in 2018 were accompanied by a questionnaire regarding the availability of a sedation services at hospital trusts. The responses to this questionnaire, shown on the map below, were re-validated in May 2022. Ninety-four hospital trusts responded in total, with 49% offering sedation services; 48% not providing any sedation service and 3% not answering.

Figure 1 Map of sedation services in England based on questionnaire responses, May 2022

It should be noted that the GIRFT hospital dentistry report did not include the Community Dental Service and thus the level of conscious sedation and GA will be an underestimate.

Appendix 2: Indicator of Sedation Need

The Indicator of Sedation Need (IOSN) is a tool that allows services to identify and assess sedation need, and hence deliver appropriate sedation to patients. As part of this assessment, the level of anxiety is assessed alongside other important factors such as the patient's health, behaviour and dental treatment complexity.

Both the Oral Surgery and NHS primary care conscious sedation commissioning guides state that the IOSN tool should be utilised by referring practitioners and be part of any referral system to provide a valid and reliable system for assessing sedation need. The IOSN is designed to be a useful indicator in anxious adult patients. However, this tool may be of limited use in paediatric patients, nor patients requiring special care. Please see the designated Paediatric Dentistry and patients requiring special care pathways for more information regarding suitable triage of these patients.

The IOSN is composed of three main elements:

- Modified dental anxiety scale (MDAS)
- Medical and behavioural indicators
- Dental treatment complexity

An example of the IOSN tool can be found here.

The IOSN tool is scored up to a maximum of 12. A score of over 7 would indicate that a patient has a high need for sedation and a score of over 10 indicates a very high need for sedation. A score between 5 and 7 highlights a moderate sedation need, generally indicating that treatment under LA with or without behaviour management would be appropriate. However, there may be instances where a procedure such as a difficult surgical removal of an impacted tooth may be required in a moderately anxious patient, resulting in a IOSN of 6. In this type of case, the use of conscious sedation may make the procedure more acceptable to the patient.

A completed IOSN score, combined with a full clinical assessment can aid clinicians in making decisions with regards to the suitability for sedation-based treatment. There are occasions where other factors are taken into account when considering sedation, such as patient compliance over longer treatment sessions and patients with additional needs, where sedation may be safer than local anaesthetic. Hence clinicians should also be able to utilise their clinical judgment and be able to justify providing sedation in cases where the IOSN score may be lower than the threshold.

Appendix 3: Training, workforce and facilities

Training

Anecdotally, conscious sedation services have been difficult to set up within secondary care environments. This is in part due to the overlap of the role of the dental sedationist and their anaesthetic colleagues. A lack of understanding of the training and skill set of dental sedationists has historically caused difficulties advancing the hospital sedation service as it has required anaesthetic approval / alignment of hospital trust pre-assessment policies both of which differ between medical and dental sedation specialities.

In addition, with many hospital departments lacking individuals who could champion dental sedation, these differences, have hindered progress in advancing the number of trusts offering this vital service. These have often been compounded by insufficient clinical space, service implementation and staff training costs.

Availability and uptake of training for conscious sedation is also undoubtedly a significant barrier to increasing provision of sedation services.

National guidance from the Intercollegiate Advisory Committee for Sedation in Dentistry (IACSD) and Scottish Dental Clinical Effectiveness Programme (SDCEP) state that new starters must complete accredited training. This can be provided through a course approved by the Sedation Training Advisory Committee (STAC) or provided by a University, Health Education England and devolved equivalents, or the National Examining Board for Dental Nurses. Courses should be assessed, quality assured and incorporate supervised clinical practice.

There are a number of national courses currently available for training in conscious sedation, alongside over 100 STAC accredited courses nationwide. However, on a regional basis, access to theoretical training and more specifically clinical mentoring can be problematic due to cost, access and availability of STAC accredited mentors.

There is currently little infrastructure in place to allow for both theoretical and clinical aspects of training at a regional postgraduate level. In addition, where a provider wishes to start a new conscious sedation service, there are barriers to training new starters, unless an existing member is able to provide clinical supervision, or cooperation is possible with another service or trust.

An example of how access to conscious sedation training can be improved within a region is described in the Mid-Yorkshire Hospitals Trust Case Study. In this case, the team have worked with regional community dental services and Health Education England Yorkshire and Humber to improve access to new-starter training in inhalation sedation, allowing almost every community dental service to train their own staff to provide the service as required.

With the introduction of the 2017 NHS Commissioning Guide for Conscious Sedation in primary care and the 2015 NHS England Oral Surgery Commissioning Guide, there is a desire to improve access to conscious sedation services in primary care. However, there is no such commissioning guidance for secondary care services. Hence without adequate commissioning support, organisations will not be incentivised to start new services, or arrange training for their teams. Conversely, the 2018 NHS England Commissioning Standards for Paediatric Dentistry highlights that inhalation sedation (with nitrous oxide and oxygen) is an essential component of clinical care pathways, and adequate provision is therefore required to meet population need.

In order to improve access to training in conscious sedation, regions must have the necessary infrastructure in place. This includes:

- New starter courses (delivered by HEE, University or STAC accredited providers).

- Age-appropriate life support courses, meeting the requirement for sedation providers.
- Simulated training provision in the recognition and management of sedation related complications.
- Access to continuing professional development in conscious sedation to maintain knowledge and skills.
- Sedation peer review networks for clinicians providing conscious sedation, as per the commissioning standard for conscious sedation.

Conscious sedation is currently taught at a very limited level in the undergraduate dental curriculum, and the delivery of conscious sedation teaching is variable across undergraduate programmes. Current national guidelines also highlight that the training and practice of conscious sedation is a postgraduate activity.

Therefore, a collaborative approach will be needed to ensure that public health services, national and regional commissioners and education providers work together to assess the level of sedation need and the level of commissioned services. This will allow the development of a regional plan to provide training and improve access to conscious sedation services within hospital dentistry.

Workforce

Minimum staffing levels for a conscious sedation service within dentistry include the following:

- An appropriately trained dentist as operator-sedationist
    - In the case of inhalation sedation, this may also be an appropriately trained dental therapist.
- A second appropriately trained dental professional, this is usually a sedation trained dental nurse, assisting and monitoring the patient.

This minimum staffing level is ideal for inhalation sedation cases, due to the faster recovery of patients. However for IV sedation, the minimum staffing level above is less than ideal, restricting patient flow as patients would need to be recovered in the dental surgery, instead of a dedicated recovery area.

An ideal staffing level for IV sedation is highlighted as below:

- An appropriately trained dentist as operator-sedationist
    - In complicated cases, or where special care patients are involved, a dedicated sedationist may be preferable
- A second appropriately trained dental professional, this is usually a sedation trained dental nurse, monitoring the patient.
- An assisting dental nurse (there is no requirement for this dental professional to have sedation training).
- An appropriately trained dental nurse, providing monitoring in a dedicated recovery area.

Please note, the term ‘appropriately trained’ highlights that training meets IACSD 2020 standards.

Facilities

Any services wishing to implement a new conscious sedation service, should familiarise themselves with the latest conscious sedation guidelines (SDCEP and IACSD), the relevant commissioning guidance and also the Society for Advancement of Anaesthesia in Dentistry (SAAD) safe sedation practice scheme document (SAFE PRACTICE SCHEME 2019 - DRAFT (saad.org.uk). These highlight the facilities and equipment required to implement a safe conscious sedation service. This includes relevant waiting areas, access to emergency services, allocated private recovery area, monitoring equipment, policies and protocols, training records, logbooks, equipment to deliver sedation, drug storage and disposal facilities, emergency drugs & equipment and oxygen.

Appendix 4: Further information

Title	Author(s)	Overview
GIRFT national specialty report for hospital dentistry	Elizabeth Jones OBE	GIRFT programme national specialty report for hospital dentistry, published in February 2021. The report's findings included that there was no data on the type of sedation being used and that knowing more about the use of sedation would allow comparison between trusts, encouraging trusts with a higher than average rate of general anaesthesia to consider providing a sedation service for appropriate cases. The report also found that there were few instances of inhalational sedation being commissioned from trusts but large numbers of children have general anaesthetic in hospital. In areas where inhalation sedation was commissioned, there was variation in the criteria applied for access.
GIRFT national specialty report for oral and maxillofacial surgery	Maire Morton	GIRFT programme national specialty report for OMFS, published in November 2018. The report's findings included that the type of anaesthetic required for dentoalveolar work was not generally recorded and that there were local inequalities in the provision of dental sedation services.
Evaluation of conscious sedation training and provision within Yorkshire and Humber	Mohamed Imran Suida, J. Spencer.	This project evaluated NHS conscious sedation provision and training within Yorkshire and Humber, finding that this appeared to be inequitable with limited access to education and training and that where conscious sedation was not available, there was an increase in the use of general anaesthetic with associated costs and morbidity. This paper was used as the starting point for information in this pathway guide.
Commissioning Dental Services: Service standards for Conscious Sedation in a primary care setting	NHS England	NHS England has published service standards for conscious sedation in a primary care setting. These standards include the use of the Indicator of Sedation Need (IOSN) tool. While sedation services in secondary care are outside the scope of these standards, much of the content is relevant to secondary care.
Conscious Sedation In Dentistry, Dental Clinical Guidance	The Scottish Dental Clinical Effectiveness Programme (SDCEP), NHS Scotland	The SDCEP provides evidence-based guidance on priority topics for oral health care, including the move to safe provision of conscious sedation instead of a reliance on general anaesthesia, which should only be provided in response to clinical need. The third edition was published in June 2017 and reflects the developments of the IACSD Report.
The Report of the Intercollegiate Advisory Committee on Sedation in Dentistry (IACSD)	The Dental Faculties of the Royal Colleges; and the Royal College of Anaesthetists.	The IACSD Report creates the national standard for conscious sedation in dentistry and replaces the previous standards documents. The report was published April 2015 and updated March 2020.

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