



## Short title: Sedation

### 1. Purpose

- a). To optimise patient care in the management of [procedural sedation](#).
- b). To identify the competencies that [sedationists](#) should possess.

### 2. Scope

This [guideline](#) document is intended to apply to all sedationists managing minimal or moderate procedural sedation in all patients, including children, irrespective of the medications used and their route of administration.

This document is not intended to apply to deep sedation, which can rapidly and unpredictably progress to general anaesthesia<sup>1</sup>. Guidance on circumstances where brief transient periods of deep procedural sedation may be required, such as for certain cardiological or endoscopic procedures is beyond the scope of this guideline<sup>2</sup>.

By excluding deep sedation from the scope of PG09(G) it can readily be applied to all sedationists who have the requisite skills and competencies for their targeted levels of sedation without requiring the necessary advanced skills associated with deep sedation. Each stakeholder can then independently assume responsibility for guidance on deep sedation applicable to their discipline. This may be particularly relevant to critical care disciplines including intensive care and emergency medicine as well as to some specific medical specialties.

This guideline is not intended to apply to life-threatening or other time-critical emergent situations, in which case all risks, including that of sedation are carefully weighed in the context of the requirements of the time-critical emergency.

This document is not intended to apply to local anaesthesia or major regional anaesthesia, nor to analgesia when administered without targeting sedation or when not associated with any procedure.

This document is not intended to apply to non-procedural sedation such as for the care of patients with acute behavioural disturbance, which is the subject of the Australian and New Zealand College of Anaesthetists (ANZCA) [professional document PG63\(A\) Guideline for safe care of patients sedated in healthcare facilities for acute behavioural disturbance](#).

### 3. Definitions

#### Sedation levels

**Minimal:** A drug-induced state, during which patients respond purposefully to verbal commands or light tactile stimulation.

**Moderate:** A drug-induced state of depressed consciousness during which patients retain the ability to respond purposefully to verbal commands and tactile stimulation.

**Deep:** A drug-induced state of depressed consciousness during which patients are not easily roused and may respond only to noxious stimulation.

<sup>1</sup> Anaesthesia for children is guided by ANZCA [PG29\(A\) Guideline for the provision of anaesthesia care to children](#)

<sup>2</sup> Cardiologists seeking advice on managing these specific circumstances should refer to CSANZ Position statement on sedation for cardiovascular procedures

## 4. Background

Whilst anaesthetists are acknowledged as specialists with the necessary skills to be sedationists, sedation is widely administered in a range of settings from a diverse group of disciplines and with differing training and skills. The ability for sedationists to provide safe procedural sedation is essential in order to preserve patient access to treatment.

In accordance with the stated purpose of this guideline, it is not intended to be prescriptive, nor to serve as a manual on sedation, whether detailed or otherwise, nor to engage in the pros and cons of any specific techniques. In recognition of the diverse settings, individual needs, and variability in sedation techniques, this guideline is not intended to direct or preference any techniques nor to instruct on how to administer sedation, but rather guide sedationists in optimising patient care. Any references within this guideline, to models of care or techniques, should not be viewed as constituting support for any model of care or technique. Instead, their inclusion is for the purpose of identifying risks and offering risk mitigation strategies.

## 5. Principles

**5.1 The aim of procedural sedation** is to facilitate patient comfort during the performance of their procedure, without resorting to [general anaesthesia](#). In order to achieve this aim, a range of sedation depths may be required during any one procedure, with a continuum from [minimal sedation](#) through to [deep sedation](#), which may inadvertently progress to general anaesthesia.

### 5.2 Risks of sedation:

#### 5.2.1 General risks:

- The therapeutic window of hypnotic agents used for sedation and anaesthesia is such that inadvertent and unanticipated rapid progression from sedation to general anaesthesia may occur. Transition from complete consciousness through the various levels of sedation to general anaesthesia is a continuum and not a set of discrete, well-defined stages. Loss of consciousness with its attendant risk of loss of protective airway reflexes may occur rapidly and unexpectedly. Consequently, it is essential that when such agents are administered the sedationist is present and irrespective of any task delegation, retains sole responsibility for maintaining and managing sedation, including monitoring the depth of sedation, physiological variables, and the patient's condition.

This underpins the need for management and rescue plans to be prepared prior to commencement of sedation, should deeper than intended levels of sedation occur, or airway, respiratory or cardiovascular interventions become necessary.

It is essential that sedationists, [assisting practitioners, and assistants](#) maintain all the requisite competencies applicable to the risks of targeted levels of sedation and remain attentive to their patients throughout the duration of sedation. The frequency of monitoring and confirmation of predetermined acceptable vital signs will be determined by their patient's pre-existing comorbidities, current conscious state, duration since administration of last dose of sedative, and pharmacokinetic properties of the medications used.

- Potentiation of effects leading to unanticipated deeper levels of sedation and prolongation of duration increases as the number of medications with sedative properties administered increases. This may arise in the context of escalation of sedation where the anticipated targeted level of sedation proves inadequate. The risk associated with prolongation of duration of action has implications on recovery and discharge, especially in the paediatric cohort who are known to traverse undetected into deeper planes when not stimulated.
- The risks of sedation are greater in patients with comorbidities. ASA 3-4 patients are at far greater risk than ASA 1 or 2. In addition, frailty in the elderly is a further risk both physiologically and for cognitive impacts. These considerations should be taken into account when planning sedation. Anaesthesia consultation may be warranted for these patients.

#### 5.2.2 Specific risks

- Obstructive sleep apnoea. These patients are at significantly higher risk of increased sensitivity to sedatives, and adverse events from associated unpredicted difficult airway. Consequently, these patients should be referred for medical assessment or considered

for anaesthesia assessment to determine suitability for sedation in the proposed sedating environment and context.

- Inadequacy of targeted level of sedation. Given that targeting immobility and its intended duration brings about its own risks of unintended deep sedation it is essential to ascertain that any procedure is achievable at the anticipated depth of sedation. Where there is a level of uncertainty proceduralists should be prepared to refer for general anaesthesia or sedation in any healthcare facility staffed and equipped with age-appropriate practitioner competencies and physical resources.
- Children are at increased risk from sedation and caution should be exercised when contemplating even minimal sedation. Similar to the adult population, for children, there are conditions where the risk of adverse events related to sedation are disproportionately greater than the patient's ASA physical status (ASA-PS) indicate. Therefore, a patient may be ASA-PS 1 or 2, but also be at significantly increased risk for a sedation related adverse event.

These conditions include:

- Obstructive sleep apnoea (OSA), sleep disordered breathing (SDB) related to adeno-tonsillar hypertrophy
- Anatomically difficult airways
- Obesity, which is associated with OSA and sleep disordered breathing
- Prematurity and former-prematurity ("ex-prem") is risk factor associated with significantly increased risk of sedation related adverse events from infancy through to young adulthood.
- Age:
  - Children less than 12 months are at greater risk for sedation related adverse events.
  - Children less than 6 years are not only at higher risk for sedation related adverse events than an older cohort, but because they are less mature, and less co-operative, this group is also more at risk of deeper than intended sedation.

Unplanned escalation of sedation is a risk when sedating children. It is essential to ascertain whether the intended procedure is achievable at the targeted depth of sedation. Reactive administration of additional sedation may lead to inadvertent deep sedation and a situation outside the competencies of practitioners and the capability of the facility to manage. Younger children, and those who have severe phobia's, behavioural challenges, suffered previous medical trauma or have neurodevelopmental conditions such as autism spectrum disorder or attention deficit hyperactivity disorder (ADHD) are at risk of unplanned escalation of sedation.

When the initial sedation plan is inadequate, it is important to pause and consider alternative strategies and avoid routine or reactive escalation of sedation. This may include deferring and formulating a different comfort, distraction, or sedation strategy, or referring to a facility with a higher paediatric capability, or referral for deep sedation or general anaesthesia (*ANZCA PG29*). Consultation with a specialist paediatrician or anaesthetist for an opinion may be advisable.

- Pregnancy. When sedating pregnant women special attention should be paid during third trimester to avoid aortocaval compression by positioning them in left lateral tilt. Also, the risks of regurgitation and aspiration are higher in this cohort of patients, regardless of fasting status.

## **6. Competencies**

The safe procedural sedation competencies described in Appendix IV and summarised in Table 1 below, are designed to be attained by all sedationists managing sedation. It is highly recommended that they be incorporated into any college training curriculum or institution's training and education program where trainees are required to demonstrate competence in the provision of safe procedural sedation. They have been developed collaboratively by representatives from a range of medical, nursing, and dental colleges and societies.

It is expected that sedationists will incorporate activities relevant to procedural sedation into their continuing professional development programs, in order to maintain skills and competence. Such competence includes cultural safety and responding to the specific needs of indigenous people.

**Table 1** Summary of recommended competencies and skills applicable to sedationists managing procedural sedation (refer section 8 below and Appendix IV):

APPENDIX IV Competency Number	Minimal <sup>3</sup> ASA 1	Minimal <sup>4</sup> and Moderate ASA 2	ASA 3 <sup>5</sup> and ASA 4
1 Goals of sedation			
2 Assessment	Basic 9.1.1	Detailed 9.1.2 and 9.1.3	Detailed 9.1.2 and 9.1.3
Patient selection	9.2.1	9.2.1	9.2.1
Paediatric Patient selection (refer to section 9.2 below)	9.2.2	9.2.2	9.2.2
3 Risk stratification			
4 Match needs to targeted level of sedation			
5 Communication and consent			
6 Risk assessment of facility including equipment and staff			
7 Preparation for sedation			
8 Pharmacology of medications administered			
9 Monitors to be available and used as per guideline recommendations	(HR) (O <sub>2</sub> )	O <sub>2</sub> , HR, BP, (capnography available) Respiratory rate and pattern of breathing in children	O <sub>2</sub> , HR, BP, capnography, ECG
10 Recognise and manage deterioration	Airway opening e.g. Jaw thrust	Airway opening e.g. Jaw thrust	Airway opening e.g. Jaw thrust
Airway management		Bag mask ventilation Supraglottic device	Bag mask ventilation Supraglottic device
11 Handover			
12 PACU and recovery			
13 Discharge			

 = Recommended     = Not applicable

Assistant Practitioner competencies are listed [here](#)

<sup>3</sup> Single dose of oral anxiolytic or nitrous oxide oxygen or methoxyflurane as sole agent for sedation

<sup>4</sup> Achieved with either multiple doses or multiple agents or intravenous administration

<sup>5</sup> Refer to background paper for further details regarding ASA 3 stable and unstable

## 7. Staffing and responsibilities

[The minimum number of staff](#) required to be present will be determined by the intended level of sedation.

When using inhaled nitrous oxide or methoxyflurane in combination with other agents such as opioid analgesics, transition may occur unpredictably from minimal to moderate sedation. In these situations, engaging an assistant trained to monitor the patient and administer medication to maintain minimal sedation as directed by the sedationist is advisable. Under these circumstances, limits for acceptable vital signs should be confirmed and any digression beyond these limits reported to the sedationist. This offers the ability for sedationists to also be the proceduralist. However, the assisting practitioner should be able to provide the necessary airway support skills.

In the case of intentional moderate sedation, there is a risk of sedation rapidly and unintentionally progressing to general anaesthesia, especially with intravenous administration of multiple medications with sedative effects.

The availability of a third person is recommended for all cases of adult and paediatric sedation where the intended level of sedation exceeds minimal. Recognising the diverse settings and contexts of procedural sedation, all staff present, should clarify their roles and responsibilities with each other prior to commencement of the session.

**Children** undergoing minimal sedation using nitrous oxide/oxygen or methoxyflurane or a single dose of an oral anxiolytic may occasionally become distressed, and the additional assistance of a third person may be required. Whilst it may be helpful to have a third person available, the need for this under minimal sedation should be considered in the context of the sedating environment, and child and family needs. Particularly anxious children undergoing minimal sedation because of anxiety can become overwhelmed with the presence of strangers. Conversely, some parents may become emotional and require support. Such issues should be considered when making decisions regarding staffing for [paediatric](#) sedation in any given setting.

7.1 The staff present for all sedation techniques, excluding those targeting minimal sedation, will normally consist of the following:

- The proceduralist
- An additional practitioner who may be either:
  - the sedationist, or
  - the assisting practitioner tasked with administering sedation medications and monitoring the patient under the direction of the proceduralist, and who possesses the designated competencies. In this case, the proceduralist is the one fulfilling both roles as sedationist and proceduralist.
- At least one additional staff member to provide assistance to both as required.
- All staff present, should be clear on their roles and responsibilities prior to commencement of the session.

7.2 An assistant to the sedationist is required to be exclusively available at induction of, and emergence from sedation, and as required during the procedure.

7.3 Sedationists require sufficient training to:

7.3.1 Fulfil the knowledge and skills outlined in Appendix IV Competencies.

7.3.2 Monitor levels of consciousness and cardiorespiratory status.

7.3.3 Detect and manage any complications arising from sedation.

7.3.4 Communicate effectively with proceduralists

7.4 It is essential that a practitioner with the required airway and life support skills is immediately available for all procedural sedation. This will be basic life support (BLS) for minimal sedation and age-appropriate advanced life support (ALS) for moderate sedation for children and adults (see competencies section). This can be the proceduralist only if they are able to immediately stop the procedure to perform rescue manoeuvres as required, otherwise another practitioner with those skills is required to be immediately available.

- 7.5 Practitioners singularly performing the dual role of sedationist and [proceduralist](#) may prescribe or direct administration of medications, and delegate monitoring and immediate rescue from any complications of sedation to the assisting practitioner. In these circumstances, both the sedationist and assisting practitioner should have the applicable competencies identified in Appendix IV to respond effectively. However, the sedationist/proceduralist retains responsibility for managing sedation, including intervention if required and complications if they occur.

The primary duty of assisting practitioners is to monitor and record the level of consciousness and cardiorespiratory status and be immediately available to manage complications should the need arise. In circumstances where the facility capability supports sedation with anaesthetic agents, a separate sedationist with age-appropriate skills, competencies and experience is essential.

If loss of consciousness, airway obstruction, hypoxaemia, or cardiorespiratory insufficiency occur at any time, all available staff are required to devote their attention to treating and monitoring their patient until recovery, or until such time as another medical or dental practitioner becomes available to take responsibility for the patient's care.

## 8. Facilities and equipment

Procedural sedation should be performed only in locations that are of adequate size, with staff and equipment to deal with any cardiopulmonary emergency. This includes easy access to location by ambulance services should the need arise. Adequate facilities and equipment to suit the age and condition of patients need to be ensured so that, if required, basic life support may be maintained until more specialised help, equipment and medications become available. Some of the recommendations in this section may be moderated in instances where minimal sedation is achieved by the sole use of a single dose of orally administered anxiolytic or nitrous oxide/oxygen or methoxyflurane. In all other cases, facilities and equipment should include:

- 8.1 Adequate room to perform resuscitation.
- 8.2 Adequate lighting for observation and monitoring, including alternative means in the event of a power failure.
- 8.3 Operating tables, trolleys or (dental) chairs that can be tilted head down readily are preferable but not mandatory.
- 8.4 Suction and associated suction attachments and suction catheters, suitable for intra-oral and intranasal clearance of secretions, including alternative means in the event of a power failure.
- 8.5 Adequate supply of oxygen and suitable devices for its administration to spontaneously breathing patients.
- 8.6 A means of inflating the lungs with oxygen, for example, a self-inflating bag and mask, together with ready access to a range of equipment for advanced airway management such as face masks, oropharyngeal airways, laryngeal mask airways, laryngoscopes, endotracheal tubes.

When planning airway management equipment for children, consideration should be given to including a means of delivering positive end-expiratory pressure (PEEP), or continuous positive airway pressure (CPAP). For example, a T-piece circuit. Similarly, for obese adults or those with respiratory disease consideration should be given to including a means of delivering CPAP.

- 8.7 Medications for cardiopulmonary resuscitation and for reversal of benzodiazepines and opioids (See Appendix II) as well as a range of intravenous equipment and fluids.

In facilities providing sedation services to children there should be a paediatric compendium or paediatric emergency drug protocol to facilitate accurate dosing based on weight or size. This may take the form of a specific drug dosing book or a Broselow Tape.

- 8.8 A pulse oximeter.
- 8.9 A sphygmomanometer or other device for measuring blood pressure.
- 8.10 Ready access to an electrocardiograph (ECG) and a defibrillator.



- 8.11 A means of summoning emergency assistance.
- 8.12 Within the facility there should be access to devices for measuring expired carbon dioxide. Use of waveform capnography is strongly recommended, consistent with Table 1.
- 8.13 Adequate access throughout the facility to allow the patient to be transported easily and safely.
- 8.14 A written, and ideally, practised, escalation plan or clinical emergency response plan in the event of clinical deterioration.
- 8.15 Specialised equipment for inhalational sedation.

When inhalational agents such as nitrous oxide or methoxyflurane are being used to provide sedation risks of chronic exposure should be considered.

8.15.1 The following special requirements should be satisfied:

- Capacity for the administration of 100% oxygen.
- Where any piped gas system is in use, that it complies with relevant [standards](#) including servicing of such piped gas systems on a regular basis and at least annually.
- Non-recycling high-flow air conditioning or other accepted method for scavenging of expired gases within the room.

8.15.2 When nitrous oxide is used:

- Patient breathing circuits should be of lightweight construction, have a reservoir bag for inspired gases and have low resistance to normal gas flows.
- Rebreathing is to be prevented by use of either non-return valves or other mechanisms (such as a T-piece flow connection).
- Use of sufficient gas flow rates and inclusion of anti-hypoxic devices are necessary. To minimise the environmental impact of nitrous oxide, the use of “on-demand” rather than free-flow equipment is preferable.
- Low gas flow alarms are recommended, however, where they are not incorporated into the delivery device then:
  - An interlink style device (or the modern equivalent) that prevents the delivery of a hypoxic mix of gas (less than 21% oxygen) is essential.
  - An oxygen analyser, if not already present in the system, is advisable, or alternatively, confirmation that the system has been checked and certified for correct plumbing and again after any works on the pipeline system.

8.15.3 When methoxyflurane is used, the facility should have a guideline for the recognition and emergency management of malignant hyperthermia.

## 9. Patient preparation

### 9.1 Patient assessment:

All patients should be assessed and consulted as part of the normal management of procedural sedation. Whilst some of the specifics of this guideline may not be applicable in time-critical or life-threatening emergencies, pre-procedure assessment applicable to the circumstances should be performed. Where intervention is not time-critical then pre-procedural assessment and application of selection criteria should be performed. The nature of the procedure should be considered including its duration, likelihood of pain, the need for immobility and the need for different levels of alertness. These factors will dictate the aims of sedation in each case.

9.1.1 **Basic** assessment should include:

- Past medical, surgical, and sedation histories
- Anatomical, access or physical abnormalities that may impact on the ability to perform the proposed procedure at the level of intended sedation.
- Any history of known airway or anaesthesia difficulties,
- Obstructive sleep apnoea or complaints of excessive, loud snoring from family members or partner.
- Identifying patients with known chronic diseases such as cardiac, respiratory, severe gastro-oesophageal reflux, chronic aspiration, neuromuscular or metabolic and rare syndromes.
- Recording weight and height



- History of laryngospasm or presence of URTI
- History of prematurity
- Age less than six years (risk of unplanned escalation of sedation).
- Behavioural challenges, history of procedural distress and ability to co-operate
- Neurodevelopmental conditions such as autism spectrum disorder and ADHD
- Ability to complete any proposed procedure at the targeted level of minimal or moderate sedation
- Identifying the need to avoid aortocaval compression when sedating pregnant women.
- Allergies

**9.1.2** In addition to the above, for minimal sedation using multiple sedative medications or parenteral routes, basic assessment should include:

- Fasting guided by nature of the procedure and depth of intended sedation. Fasting times in children should be guided by ANZCA *PG07(A) Guideline on pre-anaesthesia consultation and patient preparation, Appendix 1 – Fasting guideline*<sup>6</sup>, items ii and iii.
- Medications including regular opioids, regular benzodiazepines, and other non-prescription drugs including alcohol, recreational drugs and tobacco.
- Anxiety disorders
- Other medical co-morbidities or psychiatric illness. Patients who have medical co-morbidities such as cardiac diseases, respiratory diseases, epilepsy, vascular disease, or diabetes; or patients with psychiatric disorders should be evaluated by a medical practitioner before embarking on sedation.
- ASA classification and documentation

**9.1.3** For moderate sedation, a **detailed** comprehensive medical-sedation assessment should be performed, which in addition to 9.1.1 and 9.1.2 above includes:

- Potential for difficult airway issues including
  - History of difficult airway<sup>7</sup>
  - Dental – presence of dentures or loose teeth
  - Obesity
  - Difficulty swallowing in cases where gastroscopy or transoesophageal echocardiography will be performed
- Ascertaining exercise tolerance or functional status to gain an understanding of their functional reserve
- Fasting status
- Physical examination applicable to medical status, proposed procedure, and risks associated with sedation.
- Examination of the airway including range of neck movement, range of mouth opening; respiratory and cardiovascular system; and other systems as indicated by the history, including that relevant to the current problem.
- Recording of baseline vital signs including, for all paediatric patients, their weight and if applicable, their height.

**9.1.4 Paediatric considerations**

The history should be targeted at identifying children at higher risk of sedation complications. It is important to identify children at higher risk of laryngospasm, which may arise in the presence of recent or intercurrent URTI; or children at risk of airway obstruction associated with excessive sedation in the case of obstructive sleep apnoea or sleep disordered breathing; and syndromes associated with airway difficulties.

Children younger than 12 months are at particularly high risk of adverse events. Children younger than 6 years are significantly less mature and more likely to require deeper sedation than anticipated, and they are also at increased risk of adverse airway events.

Children with an ASA physical status of 3, are more likely to have an adverse event compared to ASA 1 patients. For this reason, in children with known chronic diseases such as cardiac, respiratory, severe gastro-oesophageal reflux, chronic aspiration, neuromuscular

<sup>6</sup> [https://www.anzca.edu.au/getattachment/897f5bf5-b665-4c99-a56f-e72678f19f7e/PG07\(A\)-Appendix-1-%E2%80%93-Fasting-guideline#page=](https://www.anzca.edu.au/getattachment/897f5bf5-b665-4c99-a56f-e72678f19f7e/PG07(A)-Appendix-1-%E2%80%93-Fasting-guideline#page=)

<sup>7</sup> Any documented airway alert documents should specifically be sought and viewed

or metabolic disease consideration should be given to referral for specialist anaesthesia opinion.

## **9.2 Patient selection:**

9.2.1 The following are relative contraindications or barriers to be considered and addressed prior to provision of intravenous sedation:

- Language barriers or other factors preventing effective communication with patients, parents or carers.
- Previous difficulty with sedation or anaesthesia
- Allergy to medications
- Poorly controlled medical conditions where treatment of these will optimise outcomes
- Old age or frailty
- The presence of obstructive sleep apnoea

9.2.2 Paediatric considerations

- In community settings and outside facilities offering paediatric specific service capabilities, procedural sedation is not routinely practiced for children under 3 years of age. However, some practitioners, dentists and dental specialists with experience and skills to maintain engagement, calmness and good communication may select individual patients from this cohort for sedation.
- However, in instances where young children and babies may require procedural sedation, it is advisable that they be assessed by a credentialled medical or dental practitioner with age-appropriate skills within their defined scope of clinical practice and managed in a setting that offers the skill-mix, competency, and experience to manage small children. Should the need arise to sedate children under 12 months of age outside of a specialist paediatric hospital or paediatric critical care environment, then specialist advice from paediatric anaesthesia, critical care, or retrieval services is recommended.

## **9.3 Informed consent**

9.3.1 Patients and their carers should be prepared for the procedure with information about their likely experience and expected degree of sedation. The importance of such discussions in the context of cultural safety and Indigenous issues cannot be sufficiently stressed. Informed consent for sedation and for the procedure should be obtained from the patient, or a person entitled to give consent on behalf of the patient, according to applicable legislation (see ANZCA professional document [PS26\(A\) Position statement on consent for anaesthesia or sedation](#) item 5.2).

9.3.2 When older adolescents are to undergo sedation, informed consent may be sought from patients who have the mental capacity to consent (“Gillick competent minors”). Mindful of variations in maturity, family arrangements and care relationships, minors providing consent should be encouraged to share decision-making with their parent/carer(s). Despite parental consent, it is strongly recommended that all teenagers and children, are given developmentally suitable information in relation to the benefit of their proposed procedure and of related sedation for the purpose of seeking their agreement. Relevant information for parents should include the purpose and likely outcome of the procedure, as well as the intended level of sedation and alternatives to sedation taking into consideration the sedating environment and capability of the healthcare facility, including staffing skill mix and availability.

9.3.3 Sedationists should ensure that processes are in place that confirm patients understand and adhere to pre-procedural preparation and fasting.

## **9.4 Management of fasting**

Patients should be fasted for the circumstances and targeted level of sedation.

Fasting may not be required for minimal sedation that is achieved by a single dose of oral anxiolytic or nitrous oxide or methoxyflurane as the single source of sedation. However, it may be desirable if the potential for vomiting is anticipated.

Minimal sedation achieved by intravenous administration of either opioid or propofol carries the risk of inadvertent deeper level of sedation than targeted or anticipated. This presents a risk of regurgitation in the presence of diminished protective laryngeal reflexes. In addition, opioids can be

emetic, further increasing the risk of vomiting. Therefore, for intravenous sedation of any level, patients should be fasted from solids for 6 hours but encouraged to drink clear fluids up to 2 hours prior to their procedure. For upper GI endoscopy this may need to be modified if anti-foaming solutions are required. Children may drink clear fluids (up to 3 ml /kg) up to 1 hour prior to their procedure.

These same fasting instructions apply to patients in whom moderate sedation is planned.

## **10. Technique and monitoring**

### **10.1 Technique**

The following considerations should be borne in mind when embarking on any sedation technique:

- 10.1.1 Reliable venous access is desirable; however, consideration may be given to proceeding without venous access for procedures under minimal sedation. Nonetheless, for deeper levels of sedation venous access is essential.
- 10.1.2 Where venous access is to be gained in children, it is preferable that it is performed by trained practitioners skilled in use of equipment suited to age and size. Such skills may include intra-osseous access where intravenous access proves difficult to obtain.
- 10.1.3 As most complications of sedation are cardiorespiratory, doses of sedative and analgesic medications should be kept to the minimum required for patient comfort, particularly for those patients at increased risk sedation-related complications.
- 10.1.4 When selecting agents, it is important to consider their duration of action to ensure that they are commensurate with the required duration of sedation. To avoid the potential for prolonged effects of sedation post-discharge, it is recommended that paediatric sedation is achieved using agents with rapid offset of action rather than long-acting agents.
- 10.1.5 Medications:
  - Sedationists administering agents parenterally, such as ketamine and propofol should be trained and competent in their use. This includes an understanding of the nature of these medications along with their actions, pharmacology, and dose range. Where propofol is infused intravenously, target controlled infusion pumps provide benefits, on the proviso that sedationists understand the different pharmacokinetic models available on the pumps and be familiar with them. Unintentional general anaesthesia may occur, particularly in patients who have either acute or chronic comorbidities or otherwise sensitive to the effects of those agents. An anaesthesia consultation is advisable if these concerns are present.
  - It is essential that when such agents are administered there is one healthcare practitioner present who is responsible solely for maintaining and monitoring the depth of sedation, physiological variables, and the patient's condition. The sedationist is required to maintain all the requisite competencies and be able to provide any necessary rescue interventions.
  - Sedationists should select the routes of administration of medications appropriate to the intended level of sedation as rates of absorption and onset of effects vary markedly.
  - Regardless of the route of administration, constant vigilance is required where combinations of medications are used, due to their synergistic interactions. Particular care is required when topical local anaesthetic of the larynx or pharynx is employed due to the associated loss of airway reflexes.
  - All sedative medications should be managed according to local jurisdictional regulations. In Australia, healthcare facilities and providers are required to follow NSQHS Standard 4: medication safety standard. Available from: <https://www.safetyandquality.gov.au/standards/nsqhs-standards/medication-safety-standard>. In New Zealand, doctors are required to comply with the Medicines Act, along with the Health Practitioners Competence Assurance Act (HPCAA) and the Health and Disability /commissioner (HDC) regulations.

### **10.2 Monitoring**

Routine monitoring of the depth of sedation, and changes in depth, is essential throughout the procedure. Purposeful response to verbal commands or tactile stimulation is an early and sensitive guide but needs to be distinguished from any reflex withdrawal from a painful stimulus. Loss of patient

response to stimulation or verbal commands heralds loss of airway reflexes, respiratory and/or cardiovascular depression are likely, and sedation should be adjusted accordingly. Monitoring of verbal response may be difficult in patients with intellectual disabilities or language difficulties, or with small children.

All sedated patients should be monitored. Where minimal sedation is achieved with a single dose of oral anxiolytic, or with nitrous oxide, or methoxyflurane alone, ensuring purposeful responses are maintained is essential, especially where monitoring of heart rate/application of pulse oximetry proves unobtainable. In all other cases the following monitoring should be followed.

- 10.2.1 Continuous monitoring of oxygen saturation with pulse oximetry that alarms when pre-set limits are transgressed is essential in all patients undergoing procedural sedation. When alarms are triggered signifying presence of hypoxaemia then staff should devote their whole attention to correcting this situation, which may include ceasing the procedure until the hypoxaemia is corrected.
- 10.2.2 Continuous waveform capnography is recommended for sedation where verbal contact is lost or difficult to monitor. Capnography is strongly advised for moderate sedation in both adults and children, and in ASA 3 or ASA 4 patients.
- 10.2.3 Regular monitoring of pulse rate, oxygen saturation and blood pressure throughout the procedure and recovery phase, using equipment suited to patient size, is essential. Regular observation of a child's breathing pattern and monitoring of respiratory rate is essential for children. For those patients in whom monitoring prior to commencement of sedation may not be practical, such as small children or patients with intellectual disabilities or cognitive impairment, regular monitoring should commence as soon as possible and continue throughout the episode of sedation and the early recovery phase of care.
- 10.2.4 According to the clinical status of the patient, other monitors such as ECG may be required (see ANZCA professional document [PG18\(A\) Guideline on monitoring during anaesthesia](#)).

## **11. Oxygenation and airway patency**

- 11.1 Airway patency is crucial to maintenance of oxygenation. Effective breathing requires an open airway, and airway patency may be impaired even in the presence of intact airway reflexes as witnessed in laryngospasm or alternatively, due to loss of pharyngeal muscle tone and consequent airway obstruction at deeper levels of sedation. Use of CPAP or PEEP, as indicated in 7.6 above, may be required.
- 11.2 Oxygen administration diminishes the risk of hypoxaemia and should be administered for as much of the procedure as possible. Apnoea or hypoventilation may occur during moderate and deep procedural sedation and lead to hypoxaemia in the absence of oxygen supplementation.

Although desirable, oxygen administration prior to commencement of sedation may not benefit all patients and may not be achievable in some patients such as small children or patients with intellectual disabilities.

- 11.3 Pulse oximetry enables tissue oxygenation to be monitored, which is essential in all patients during procedural sedation, with the possible exception noted in 10.2.3 above.

## **12. Documentation**

The clinical record should include the names of staff performing and participating in sedation, as well as documentation of the history, examination and investigation findings. A written record of the dosages of medications and the timing of their administration should be kept as a part of the record. Such entries should be made as near to the time of administration of the medications as possible. This record should also note the regular readings of monitored variables, including those during the recovery phase, and should contain other information as indicated in ANZCA professional document [PG06\(A\) Guideline on the anaesthesia record](#).

## **13. Recovery and discharge**

Sedationists have a duty of care to their patients in the context of administering sedative medications that result in impairment of judgement, and amnesia. Recovery from these should be taken into account when

considering discharge times. With the exception of nitrous oxide/oxygen as the sole agent, the following apply.

- 13.1 Unless sedationists themselves recover their patients following moderate sedation, recovery should take place under supervision of nurses who have had postanesthesia care training or critical care trained nurses in critical care areas. This should occur in a properly equipped and staffed area, which may be the area where the procedure was performed (see ANZCA professional document [PS04\(A\) Position statement on the post-anaesthesia care unit](#)). Following minimal sedation, patients may ambulate under supervision directly from the procedure room to a chair.
- 13.2 If the recovery area is not where the procedure occurred then availability of adequate and safe patient transfer facilities is essential.
- 13.3 It is essential that staffing is adequate, and facilities are available in the recovery area, for managing patients who have become unconscious or who have suffered complications during their procedure.
- 13.4 Discharge of patients should be authorised by the practitioner responsible for managing sedation, or another qualified practitioner working within their scope of practice. Patients should be escorted and discharged into the care of a responsible adult to whom written instructions should be given, including advice about eating and drinking, pain relief, and resumption of normal activities, as well as about making legally binding decisions, driving, or operating machinery. If despite reasonable efforts, a responsible adult is not available for discharge supervision, the practitioner responsible for managing sedation may exercise their judgement in deciding on post-sedation supervision and mode of transport (excluding driving or public transport) to their discharge destination. A carer at home may not be essential if the practitioner managing sedation, having administered only agents with rapid offset of action, assesses the patient to have made a good recovery after a brief or minimally invasive procedure with a low risk of adverse events.
- 13.5 Systems should be in place to enable safe transfer of patients to escalated medical care should the need arise.

#### **14. Training in procedural sedation for non-anaesthetist practitioners**

- 14.1 It is essential that sedationists undergo training with training providers capable of meeting the Safe Sedation Competencies contained in Appendix IV. This may be through training incorporated into stakeholder college curricula or through emerging and recognised external providers. Sedationists who have engaged in procedural sedation on a regular basis for at least 5 years, for whom training was not available in their curricula, should at least be able to demonstrate the competencies of Appendix IV applicable to their practice and setting.

Nurses assisting with procedural sedation in Australia are required by their colleges to be Registered Nurses, and to undertake a college or institutional training program that achieves the competencies in Appendix IV. In New Zealand, in addition to Registered Nurses assisting with procedural sedation, Enrolled Nurses (ENs) registered with their jurisdictional authority and working within their defined scope of clinical practice may also assume this role.

- 14.2 Training and clinical support of sedationists may be assisted by close cooperation with nominated anaesthetists, or for remote or rural practitioners, with anaesthetists in any major centre, particularly when intravenous or intramuscular sedation is practised. Such cooperation facilitates sedationist training in rescue skills including in-theatre hands-on opportunities, as well as availability of backup.
- 14.3 Regular certification in cardiopulmonary resuscitation relevant to the clinician's practice, as well as evidence of relevant continuing professional development, are requirements for credentialing and delineating defined clinical scopes of practice.

#### **15. Audit**

- 15.1 It is strongly recommended that sedationists undertake regular and effective audit of their sedation practice and comply with local jurisdictional requirements.
- 15.2 Any unit where sedation services are provided is expected to have an established system for audit of outcomes related to sedation and include these audited outcomes in quality assurance and peer review processes. Local audit results should inform ongoing training, education and support of all

team members involved in the care of patients who receive sedation. Healthcare institutions should ideally consider establishing a centralised oversight committee responsible for training, developing local policies, quality improvement, and auditing adverse outcomes.

- 15.3 Sedationists are required to be aware of their jurisdictional obligations to report morbidity and mortality related to sedation. These requirements are particularly important where an intended sedation episode has inadvertently resulted in general anaesthesia, with an adverse outcome.

#### **Related ANZCA documents**

PS02(A) Position statement on credentialling and defining the scope of clinical practice in anaesthesia

PS04(A) Position statement on the post-anaesthesia care unit

PG06(A) Guideline on the anaesthesia record

PG07(A) Guideline on pre-anaesthesia consultation and patient preparation

PS08(A) Position statement on the assistant for the anaesthetist

PG15(POM) Guideline for the perioperative care of patients selected for day stay procedures

PG18(A) Guideline on monitoring during anaesthesia

PS26(A) Position statement on informed consent for anaesthesia or sedation

PG29(A) Guideline for the provision of anaesthesia care to children

PS55(A) Position statement on minimum facilities for safe administration of anaesthesia in operating suites and other anaesthetising locations



**APPENDIX I**

The American Society of Anesthesiologists classification of physical status:

- P 1            A normal healthy patient  
                  Healthy with good exercise tolerance – no organic or physiologic disturbances
- P 2            A patient with mild systemic disease  
                  Well-controlled disease of one body system with no functional limitations. Includes controlled hypertension or diabetes without systemic effects, mild obesity, pregnancy.
- P 3            A patient with severe systemic disease  
                  Controlled disease of more than one body system or one major system and with some functional limitation but no immediate danger of death. Includes stable angina, old infarct, controlled congestive cardiac failure, poorly controlled hypertension, chronic renal failure.
- P 4            A patient with severe systemic disease that is a constant threat to life  
                  Poorly controlled or end stage of at least one severe disease and possible risk of death. Includes unstable angina, hepatorenal failure, symptomatic congestive cardiac failure, symptomatic chronic obstructive lung disease.
- P 5            A moribund patient who is not expected to survive without the operation  
                  Not expected to survive more than 24 hours without surgery and imminent risk of death. Includes. Multiorgan failure, sepsis syndrome with haemodynamic instability, hypothermia, poorly controlled coagulopathy
- P 6            A declared brain-dead patient whose organs are being removed for donor purposes
- E              Patient requires emergency procedure

*Excerpted from American Society of Anesthesiologists Manual for Anesthesia Department Organization and Management 2007. A copy of the full text can be obtained from ASA, 520 N Northwest Highway, Park Ridge, Illinois 60068-2573.*

**APPENDIX II**

Emergency medications should include at least the following:

	<b>Sedation modes</b>			
	Opioids	Benzodiazepines	Ketamine	Propofol
<b>Medication</b>				
Epinephrine/adrenaline	√	√	√	√
Atropine	√	√	√	√
Naloxone	√			
Flumazenil		√		
Portable oxygen supply	√	√	√	√
Crystalloid solution	√	√	√	√

Hypoglycaemia:

- Dextrose
  - 50% for intravenous administration in adults
  - 10% for intravenous administration in children at a recommended dose of 2.5mL.Kg<sup>-1</sup>
- Oral glucose is a suitable alternative for children undergoing minimal sedation.

**APPENDIX III**

**Recommended personnel for procedural sedation** – refer Table 1 for description of requisite competencies and skills.

**Scenario 1: Minimal sedation** achieved solely using a single dose of oral anxiolytic or nitrous oxide/oxygen or methoxyflurane



- Proceduralist/sedationist with requisite competencies for minimal sedation
- Assistant
- For children a third person may be advisable
- ASA 1-2 patients

**Scenario 2: Minimal sedation** achieved using multiple doses or multiple agents or agents administered intravenously



or



- Proceduralist with requisite sedation competencies
- Assisting practitioner with requisite competencies
- Assistant to both
- ASA 1-2 and ASA 3

or

- Proceduralist
- Sedationist with requisite sedation competencies
- Assistant to both
- ASA 1-2 and ASA 3

**Scenario 3: Moderate sedation**



or



- Proceduralist with requisite sedation competencies
- Assisting practitioner with requisite competencies
- Assistant to both
- ASA 1-2\*

or

- Sedationist with requisite competencies and skills
- Proceduralist
- Assistant to assist both
- ASA 1-2 and ASA 3\*
- Anaesthetist may be the sedationist

\*It is acknowledged that some cardiology patients requiring procedural sedation are ASA 4

Proceduralist/Sedationist	Proceduralist	Sedationist	Assisting practitioner	Assistant (or PS08)	Anaesthetist

## Appendix IV

### Safe procedural sedation competencies

#### Introduction

For clarity and for the purposes of the development and use of curriculum competencies, this appendix is intended to ensure that:

- 1) Procedural sedation can be provided with optimum safety to patients of all ages, and by any routes of administration including use of intravenously administered medications.
- 2) All levels of sedation from minimal to deep as defined in Appendix V (Glossary) can be optimally managed.
- 3) Sedationists are familiar with jurisdictional regulations/requirements for facilities.

It is understood that sedation may be required for therapeutic or interventional purposes. The use of the terms “procedure” or “procedural” in this document encompasses diagnostic and interventional procedures.

The risks associated with procedural sedation are proportional to the depth of sedation. The major risks are airway management followed by patient comorbidities. Consequently, a graded approach to skills, staffing and technique may be appropriate. For example, basic life support skills suffice for minimal sedation achieved solely by a single oral dose of an anxiolytic or alternatively by the sole administration of nitrous oxide/oxygen or methoxyflurane. However, for intravenous sedation, or where multiple sedative agents are administered, or for deeper levels of sedation where the risks are greater the higher skills of advanced life support are necessary.

While the following competencies are intended to apply to all depths of procedural sedation, the guidance items for each competency below may reasonably be moderated for minimal sedation achieved by sole use of an orally administered anxiolytic or nitrous oxide/oxygen or methoxyflurane.

As a general principle, when sedating children, practitioners require competencies that include an understanding of normal child development; anatomical and physiological differences at different ages; knowledge of how children respond to anxiety, fear, and pain; and pharmacological effects of sedation within the proposed scope of practice. Practitioners should also have age-specific experience and technical skills to rescue physiological deterioration. In addition, they should have knowledge about the facility and environment in the context of sedation as well as its capability to support sedation for different age groups.

#### Incorporating the competencies into a curriculum

These competencies represent the **minimum** requirements for practitioners to be deemed competent to deliver safe procedural sedation. The competencies were developed to suit a wide range of professional groups and it is understood that individual colleges and other organisations may need to adapt the format of the competencies to match the format of their specific curriculum.

Non-bolded items provide essential guidance for the main competency statement in bold text, helping to articulate its intentions.

#### The competencies

***By the end of training, the trainee sedationist will be able to:***

##### **1. Describe the goals of sedation.**

This is particularly relevant for vulnerable groups including children who are not able to advocate for themselves, for the frail elderly, and people who are affected by communication limitations.

The goals of sedation include:

- Guarding patient safety and wellbeing
- Minimising discomfort and pain
- Controlling anxiety and minimising psychological trauma
- Modifying behaviour and or movement to facilitate successful completion of the procedure.

**2. Conduct a thorough pre-sedation assessment, identifying clinical features, pre-existing conditions and current medications that predisposes patients to adverse sedation-related events.**

- Describe the rationale for assessment for sedation.
- Discuss the elements of pre-sedation assessment and the importance of each, including but not limited to:
  - Patient identification and age
  - Previous anaesthesia/sedation history
  - Allergies and drug sensitivities
  - Aspiration risk assessment, including expected fasting status and pre-sedation instructions
  - Airway assessment, including risk of airway obstruction during sedation
    - Specific attention should be paid to ascertaining the existence of any written airway alerts.
  - General health, including exercise tolerance, cardiorespiratory status and current medications
- Outline the 'red flags' in the assessment process (**and use assessment tools to identify those patients at risk**) including but not limited to:
  - Prior sedation or anaesthesia related adverse events/complications
  - Obstructive sleep apnoea
  - Morbid obesity
  - Patients with limited functional reserve
  - Frailty
  - Age

**2.1 Paediatric pre-sedation assessment:**

- Recall and describe normal childhood development
- Understand and describe the use of common non-pharmacological tools such as distraction or commonly used communication techniques suitable for children of different ages.
- Describe the anatomical and physiological changes as children grow from infancy to adolescence including usual range of acceptable vital signs at different ages.
- Describe how children respond to anxiety, fear and pain; and analyse how these impact on the pharmacological effects and dose requirements of sedation.
- Outline the 'red flags' for paediatric sedation:
  - Age – understand the age groups at higher risks associated with sedation
  - Obstructive sleep apnoea or sleep disordered breathing
  - Adeno-tonsillar hypertrophy
  - Upper respiratory tract infection (URTI)
  - Croup, including history of recent episode of croup
  - Lower-respiratory tract infection including bronchiolitis
  - Chronic disease: cardiac, respiratory, neuromuscular, metabolic, rare syndromes, severe gastro-oesophageal reflux.
  - Ex-prem - history of premature birth
  - Syndromes and congenital problems
  - Behavioural, neurodevelopmental (autism and ADHD)
  - Previous procedural trauma and anxiety

**3. Stratify patients according to risk.**

Patients at high risk of adverse sedation-related events should be referred to a specialist anaesthetist. See section 9 Patient Preparation above for details applicable to paediatric sedation.

**4. Determine the suitability of and requirements for the targeted level of sedation.**

This should take into account the complexity of the procedure, duration of immobility required, tolerance of the procedure for movement, and likely discomfort of the procedure.

Prolonged immobility for children unable to be satisfactorily positioned using minimal or moderate sedation, or any procedure with no tolerance for movement may be an indication for general anaesthesia.

**5. Clearly communicate the risks of procedural sedation to the patient or parent/carer to obtain valid informed consent and address patient expectations.**

See section 8 Patient Preparation above for details of consent as well as ANZCA *PS26(A) Position statement on informed consent for anaesthesia or sedation*.

Given the diversity of cultures within Australia and New Zealand and special considerations applicable to indigenous peoples, practitioners will demonstrate sensitivity and cultural competence when communicating with peoples from different cultures and backgrounds.

**6. Describe key safety features when conducting a risk assessment of the facility capability and proposed sedating environment.**

Sedationists should be able to:

- assess the suitability of any sedating environment, including capability of any healthcare facility as well as provision of adequate staff to assist and support safe sedation for the intended age group and intended level of sedation
- assess the suitability of the sedating environment to support unexpected emergent resuscitation and ambulance transport
- describe the similarities and differences for the different age groups

Sedationists intending to administer moderate sedation intravenously or intramuscularly to children under 3 years of age, are advised to consult with a paediatrician, paediatric experienced critical care specialist or anaesthetist. Where intended sedation levels for young children are beyond minimal, then ANZCA PG29(A) provides guidance on the competencies required to rescue deeper levels of sedation which may encroach on general anaesthesia for procedures demanding movement control.

**7. Prepare for an episode of procedural sedation ensuring that:**

- equipment for monitoring and for emergencies is available and functional in both the procedure and recovery areas<sup>8</sup>
- at least the minimum recommended number of staff<sup>9</sup> are present during the procedure and in the recovery area, all of whom have current age-appropriate basic life support skills
- at least one practitioner present is current in age-appropriate basic or advanced life support skills commensurate with the route and depth of sedation and can stop what they are doing immediately in the event of an emergency
- medications for sedation and for emergencies are immediately available
- all team members have a shared understanding of their responsibilities and the patient care plan, including escalation plans and emergency protocols.

**8. Administer sedation medications, titrating them to effect, taking into consideration the differing onset times, doses, peak effects and duration, to ensure completion of the entire procedure.**

- Discuss the pharmacology of medications used intravenously for procedural sedation and variations in response with age.
- Discuss the pharmacology of medications administered by different routes of administration including oral, inhalational, intra-nasal, and rectal.
- Analyse and recognise the importance of alternative routes of sedation for children
- Describe how the use of multiple medications administered by different routes may produce synergistic or antagonistic effects.
- Describe and recognise the levels of sedation and understand that depth of sedation is a continuum between minimal through to deep sedation and even to general anaesthesia.
- Describe the pharmacology of reversal /antagonist agents, and medications used for the management of medical emergencies, including indications, their duration of action and risks of use.

<sup>8</sup> Refer to sections 8, 9, 10 of the guideline above

<sup>9</sup> Refer to *Appendix III* above



**9. Continually<sup>10</sup> monitor patient comfort and record regular observations, according to local guidelines.**

- Understand the need to be continuously<sup>11</sup> present during the procedure and continually monitor the patient's status, to the exclusion of all other duties.

**10. Recognise age-applicable key features of patient deterioration, initiate management or rescue and call for help if required.**

Key factors include:

- Airway obstruction or abnormal breathing
- Hypoventilation or apnoea
- Aspiration
- Oxygen desaturation: clinical observation or by use of age-appropriate oximetry where indicated
- Changes to waveform capnography where it is indicated for use
- Changes in depth of sedation
- Heart rate and heart rhythm changes if conducting IV sedation or moderate sedation
- Blood pressure changes if conducting IV sedation or moderate sedation
- Allergic reactions and anaphylaxis
- Complaints of chest pain or shortness of breath

Initiation of management and rescue include:

- Basic Life support: Age-appropriate technical skills and recency of practice or requalification of basic airway opening manoeuvres, age-appropriate use of suction and age-appropriate CPR
- Advanced Life support: Age-appropriate technical skills:
  - Recency of practice or requalification of basic airway opening manoeuvres
  - Use of suction to clear the airway
  - Use of airway adjuncts such as sizing and insertion of oropharyngeal airways, Laryngeal mask airways
  - Effective Bag-valve mask positive pressure ventilation
- Age-appropriate management of anaphylaxis

**11. Ensure patients are safe to be transferred to a recovery area and complete a formal handover of care, along with documentation of the sedation and plan for ongoing care.**

Patients should be able to maintain a patent airway with no more than minimal support.

**12. Ensure continual observation and monitoring of patients in the recovery area until they meet pre-defined criteria for discharge.**

- Describe the criteria required for safe discharge of patients after procedural sedation.

**13. Ensure written discharge information is provided for all patients before they leave the facility with their carer, including instructions for steps to take in the event of an emergency.**

**Competencies applicable to Assisting practitioners administering sedation under the direction of proceduralists or sedationists include the following.**

***By the end of training, the trainee assisting practitioner will be able to:***

- Apply age-appropriate techniques of communication with children to alleviate anxiety and minimise the use of sedative medications.
- Discuss the use of age-appropriate non-pharmacological techniques of procedural management or conduct in order to minimise the use of sedative medications.
- Perform age appropriate BLS if assisting with ASA 1 and 2 patients, or ALS and airway management if assisting with ASA 3 or 4 patients. In addition, they will be able to assist in the management of anaphylaxis.

<sup>10</sup> "Continually" means "regularly and intermittently"

<sup>11</sup> "Continuously" means "in an uninterrupted way"

**Further reading:**

Academy of Medical Royal Colleges. Safe Sedation Practice for Healthcare Procedures: Standards and Guidance. Oct 2013. Available from:

[https://www.aomrc.org.uk/wp-content/uploads/2016/05/Safe\\_Sedation\\_Practice\\_1213.pdf](https://www.aomrc.org.uk/wp-content/uploads/2016/05/Safe_Sedation_Practice_1213.pdf)

Safer Care Victoria, NSW Agency for Clinical Innovation, and Clinical Excellence QLD. Communicating procedures to children. [Internet]. Updated June 2021. Available from:

[https://www.rch.org.au/clinicalguide/guideline\\_index/Communicating\\_procedures\\_to\\_children/](https://www.rch.org.au/clinicalguide/guideline_index/Communicating_procedures_to_children/)

## APPENDIX V

### Glossary:

**Anaesthetic agent:** Any medication that may be administered with the intention of producing a state of general anaesthesia (defined below).

**ANZCA professional documents:** A suite of documents whose development and review is governed by *CP24(G) Policy for the development and review of professional documents*.

The types of documents include:

**Policies:** Documents that formally state principle, plan and/or course of action that is prescriptive and mandatory. These documents are generally (although not exclusively) produced by the college for internal use but may also be accessed by external stakeholders.

**Position Statements:** Authoritative statements that describe where the college stands on a particular issue. This may include areas that lack clarity or where opinions vary. Position statements are not prescriptive.

**Guidelines:** Advice on a particular subject, ideally based on best practice recommendations and information, available evidence and/or expert consensus. Guidelines are not prescriptive. Note that, in contrast to policies, guidelines use “should” (advises) and avoid “must” (mandates).

**Standards:** Documents that define levels of quality or achievement against which activities or behaviours can be measured.

**Assistant:** Any Practitioner as defined below, or dental assistant or radiographers assisting their proceduralists or any assistant to the anaesthetist as defined in ANZCA [PS08\(A\)](#)<sup>12</sup>

**Assisting practitioner:** Any Registered nurse<sup>13</sup> with defined and annually certified competencies as outlined in Appendix IV, who under the direction of a sedationist is tasked with administering medications, patient observation and monitoring. Assisting practitioners should have annual certified basic resuscitation skills as a minimum.

**Cultural competence/safety:** An awareness of cultural diversity and the ability to function effectively and respectfully, when working with and treating people of different cultural backgrounds. Cultural competence means that a doctor has the attitudes, skills and knowledge needed to achieve this. (MCNZ definition)

**Document Development Group (DDG):** An ANZCA Council appointed group tasked with developing or reviewing ANZCA professional documents in accordance with CP24(G). The DDG reports to an oversight committee of ANZCA or directly to council where a committee acts as a DDG.

**General anaesthesia:** A drug-induced state of unconsciousness characterised by absence of purposeful response to any stimulus, loss of protective airway reflexes, depression of ventilation and disturbance of circulatory reflexes.

**Paediatric:** Relating to any person under the age of 18 as defined by jurisdictional authorities.

However, in recognition of the considerable physiological and mental disparity between children and adolescents as well as their responses to sedative medications and procedural interventions, when this document refers to paediatric, it specifically refers to children.

For the purposes of this document, children are considered as those 12 years of age or younger, while the 13 to 18 age group are considered adolescents.

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<sup>12</sup> Position statement on the assistant for the anaesthetist

<sup>13</sup> Enrolled nurses (EN) may undertake this role only if permitted to administer intravenous medications and are supervised by a Registered nurse

**Practitioner:** Any members of the medical, nursing, or allied health professions who are registered with their jurisdictional regulatory registration authority and working within their defined clinical scope of practice.

**Procedural sedation:** a state of drug-induced relief of anxiety or tolerance of uncomfortable diagnostic or interventional medical, dental, or surgical procedures.

Lack of memory of distressing events may be desired outcomes, but lack of response to painful stimulation is not assured. This is of particular relevance to paediatric patients in whom absence of movement may be difficult to achieve in the absence of deeper levels of sedation.

Sedation is a continuum, and wide interpatient variability exists. Further, the conduct of procedural sedation is a dynamic and rapidly changing process, requiring ongoing assessment and monitoring. It is essential that management and rescue plans be prepared prior to commencement of sedation, should deeper than intended levels of sedation occur, or airway, respiratory or cardiovascular interventions become necessary.

Children undergoing sedation are more prone to laryngospasm than adults demanding that sedationists caring for children understand the periods of risk and can manage laryngospasm.

**Proceduralist:** Any practitioner or dentist or dental specialist performing surgical, diagnostic, or dental procedures.

This practitioner may also perform the role of sedationist if they meet the requirements of sedationists, listed in the competencies of Appendix IV above. Where proceduralists assume both roles the presence of an additional assisting practitioner working strictly under their direction, is essential for the purpose of patient observation and monitoring, and administration of medications. The exception to this is minimal sedation that is achieved using either a single dose of oral anxiolytic or nitrous oxide/oxygen or methoxyflurane as the sole agent.

### **Sedation levels**

**Minimal:** A drug-induced state of anxiolysis, during which patients respond purposefully to verbal commands or light tactile stimulation.

Features of minimal sedation include maintenance of airway patency and reflexes, as well as ventilatory and cardiovascular function, although there may be some reduction in cognition and physical dexterity.

**Moderate:** A drug-induced state of depressed consciousness during which patients retain the ability to respond purposefully to verbal commands and tactile stimulation.

Features of moderate sedation include maintenance of airway patency and reflexes, as well as ventilation and cardiovascular function. However, minimal interventions to maintain airway patency, spontaneous ventilation or cardiovascular function may, be required. Moderate sedation offers a margin of safety that is wide enough to render loss of consciousness unlikely.

**Deep:** A drug-induced state of depressed consciousness during which patients are not easily roused and may respond only to noxious stimulation.

Features of deep sedation may be difficult to distinguish from general anaesthesia and include impaired ability to maintain an airway, inadequate spontaneous ventilation and/or impaired cardiovascular function. Deep sedation can readily and rapidly progress to general anaesthesia with onset of unconsciousness and inability to maintain an airway.

**Sedationist:** Any practitioner or dentist or dental specialist registered with their jurisdictional regulatory registration authority, responsible for the administration, management, and conduct of sedation working within their defined clinical scope of practice.

This practitioner is expected to have completed training relevant to sedation and have attained and maintained the competencies outlined in Appendix IV of this guideline.

*Professional documents of the Australian and New Zealand College of Anaesthetists (ANZCA) are intended to apply wherever anaesthesia is administered and perioperative medicine practised within Australia and New Zealand. It is the responsibility of each practitioner to have express regard to the particular circumstances of each case, and the application of these ANZCA documents in each case. It is recognised that there may be exceptional situations (for example, some emergencies) in which the interests of patients override the requirement for compliance with some or all of these ANZCA documents. Each document is prepared in the context of the entire body of the College's professional documents, and should be interpreted in this way.*

*ANZCA professional documents are reviewed from time to time, and it is the responsibility of each practitioner to ensure that he or she has obtained the current version which is available from the College website ([www.anzca.edu.au](http://www.anzca.edu.au)). The professional documents have been prepared having regard to the information available at the time of their preparation, and practitioners should therefore take into account any information that may have been published or has become available subsequently.*

*Whilst ANZCA endeavours to ensure that its professional documents are as current as possible at the time of their preparation, it takes no responsibility for matters arising from changed circumstances or information or material which may have become available subsequently.*

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