

# Acute behavioural disturbance management (including acute sedation) in Queensland Health Authorised Mental Health Services (children and adolescents)

## 1. Purpose

This Guideline describes the best practice processes for a systematic and safe approach to the administration of acute sedation when de-escalation of acute behavioural disturbance has not been successful.

In circumstances where an individual's needs dictate a variation from this Guideline, discussion with a consultant psychiatrist or emergency physician is indicated and the clinical reasoning behind such a decision must be fully documented.

## 2. Scope

This Guideline provides information for all Queensland Health employees (permanent, temporary and casual) and all organisations and individuals acting as its agents (including Visiting Medical Officers and other partners, contractors, consultants and volunteers) working within Authorised Mental Health Services (AMHS).

## 3. Related documents

### Authorising Policy and Standard/s:

Queensland Health policies and guidelines are available by searching the Policies and Standards section of [www.health.qld.gov.au](http://www.health.qld.gov.au).

- *Mental Health Act 2016* (Qld)
- Chief Psychiatrist Policy, Clinical need for medication 2017
- Chief Psychiatrist Policy, Notification to Chief Psychiatrist of Critical Incidents and Non-Compliance with the Act 2017
- *Health (Drugs and Poisons) Regulation 1996*
- National Standards for Mental Health Services 2010
- National Safety and Quality Health Service Standards 2012, standards 4 and 9

### Procedures, Guidelines and Protocols:

- Guideline for acute behavioural disturbance management (including acute sedation) in Queensland Health Authorised Mental Health Services (adults)
- Guideline for management of patients with acute severe behavioural disturbance in emergency departments 2016
- Chief Psychiatrist Practice Guidelines, Notifications to Chief Psychiatrist of Critical Incidents and Non-compliance with the *Mental Health Act 2016*

## Forms and templates:

- National Inpatient Medication Chart
- Children's Early Warning Tool (CEWT)

## 4. Guideline for acute pharmacological management of behavioural disturbance (children and adolescents)

### 4.1 Indications

Acute sedation may be the only clinically appropriate treatment option in situations when children/adolescents with mental health problems are extremely agitated, threatening violence, are actually violent and/or are a danger to themselves or others. Acute sedation should only occur after attempts to manage the behavioural disturbance with de-escalation techniques and oral medication have proven unsuccessful.

An assessment of likely contributing factors to the behaviour will assist decision making on how to proceed. These may include medical illness (e.g. causing pain or delirium), psychiatric illness, situational factors, and personality issues.

The aims of the management of the acute behavioural psychiatric emergency are to:

- calm the child/adolescent and thereby manage extreme agitation, aggression and potential violent behaviour that put the individual or those around them at risk of physical harm
- reduce psychological suffering
- reduce physical distress
- maintain a safe environment for the child/adolescent and others
- prescribe safe regimens e.g. to calm (rather than to sedate to unconsciousness)
- monitor physical health
- do no harm.

### 4.2 Consent/medico-legal considerations

The use of acute sedation does not preclude the child/adolescent from providing consent to treatment where they are able to do so. Accordingly, wherever possible, the opportunity to consent to treatment should be offered. Children under the age of 16 can be competent to provide informed consent without parental permission or knowledge under certain circumstances ('Gillick' competence<sup>1</sup>). The ideal arrangement is to obtain the consent of both the parent/guardian and the adolescent. Children under the age of 16 should not be sedated without the consent of the parent(s)/guardian and before conferring with a consultant psychiatrist, except in emergency circumstances.

If the child/adolescent lacks capacity to provide or withhold consent to treatment, and consent cannot be obtained from a parent/guardian, involuntary treatment under the *Mental Health Act 2016* (MHA) may be possible under the following, if the criteria within the legislation are met:

- Treatment Authority
- Treatment Support Order
- Forensic Order (Mental Health Court)
- Recommendation for Assessment, where treatment is for the purposes of safe transfer to, within, or between AMHS

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<sup>1</sup> In his judgment in *Gillick v West Norfolk and Wisbech Area Health Authority and another* [1986] 1 AC 112 (HL), Lord Scarman stated: 'As a matter of Law the parental right to determine whether or not their minor child below the age of sixteen will have medical treatment terminates if and when the child achieves sufficient understanding and intelligence to understand fully what is proposed.'

In addition, the *Criminal Code Act 1899* removes criminal liability for medical treatment performed or provided in good faith, with reasonable care, and for the benefit of the child/adolescent.

Staff must ensure that documentation is accurate, comprehensive and contemporaneous in the progress notes, observation chart and medication charts.

### 4.3 Principles for acute sedation

- Acute sedation must be used only when clinically indicated and must not be used as a form of punishment, for convenience, or as a substitute for other more appropriate treatment options.
- Great care must be taken when considering acute sedation for children or adolescents, the frail, or medically compromised where toxicity is more common.
- Prior to administration, be clear on the goal of medication use i.e. to calm or fully sedate.
- All staff involved in acute sedation must be trained in resuscitation.
- Acute sedation must be carried out in a clinical area that has ready access to emergency response equipment. Ensure appropriate sized resuscitation equipment is available for children and adolescents.
- Acute sedation must involve a medical review as soon as practicable. Acute sedation without medical review should only be used where circumstances require such action in order to prevent harm that may be caused by the conduct of that person if not acutely sedated.
- Prior to the initiation of parenteral sedation, children/adolescents will be given every opportunity to take oral sedation.
- If parenteral treatment is necessary the intramuscular route (IM) is preferred.
- Repeated smaller doses of oral or IM medication to achieve the desired sedation endpoint are preferred to the use of a single larger dosing because it allows tolerance to be assessed.
- Be aware of the total medication load in the previous 24 hour period including PRN medication.
- Frequent administration of 'as needed' (PRN) medication for more than 24 hours may indicate an inadequate regimen of regular medication, necessitating a review by the treating team.
- The total dose of medication prescribed in acute sedation for an acutely disturbed child/adolescent must be reviewed regularly by a consultant psychiatrist at least every 24 hours and Pharmacist if possible.
- Frequent PRN IM injections of antipsychotic medication—especially when used over extended periods of time—increases the risk of neuroleptic malignant syndrome.
- Acute sedation shall be clearly and accurately recorded, providing details of medication administered, route, clinical indication, monitoring, response, adverse incidents and reviews.
- All efforts must be made to maintain the individual's privacy, dignity and confidentiality.
- Prior to administration, parents/carers should be supported to leave the area, as witnessing the sedation may be a distressing experience for them.
- Children/adolescents, and where applicable parents, should be given an opportunity in the post sedation phase to discuss the reasons for, and circumstances of, the sedation episode.
- Children and adolescents should not be discharged from hospital until they are in an alert and mobile state.
- Due to the potential for delayed side effects, if discharged from hospital, parents/carers should be given written documentation of medications, doses given, side effects and warnings.
- An operational debrief should be conducted for staff involved in the management of an aggressive incident.
- Regular local review of incidents should occur to identify common issues and quality improvement opportunities.

- Incidents must be reported to the Chief Psychiatrist as per the requirements of the Chief Psychiatrist Policy and Practice Guidelines, Notifications to Chief Psychiatrist of Critical Incidents and Non-compliance with the *Mental Health Act 2016*.

#### 4.4 Precautions

Refer also to section 4.8 Adverse reactions.

Precaution	Action
Medical illness	Avoid tranquilisation where behavioural disturbance is likely secondary to a serious medical condition for which there is a specific emergency treatment, e.g. hypoglycaemic crisis or hypoxia due to acute asthma
Medically compromised, markedly intoxicated, dehydrated, or those who have never received antipsychotic medication (neuroleptic naïve)	Reduced doses may be required, seek paediatric advice
Pregnant	Discuss with on-call Consultant Psychiatrist
Significant respiratory impairment	Avoid benzodiazepines
Cardiac disease	Benzodiazepines to be used in preference to antipsychotics as are safer but beware of accumulation
Intellectual impairment or acquired brain injury	Can be very sensitive to pharmacological sedation and high drug doses should be avoided
Delirium	Should not be treated with benzodiazepines—sedative/alcohol withdrawal delirium is an exception Low dose Risperidone preferable; 0.02–0.04 mg/kg/day orally only
Substance withdrawal (including alcohol)	Longer acting diazepam is preferred
Swallowing problems	Heavy sedation (especially with antipsychotics) or delirium is associated with increased risk of aspiration Prescribing for rapid tranquilisation should proceed with caution for children/adolescents with pre-existing dysphagia
History of neuroleptic malignant syndrome	Seek paediatric advice
Concomitant administration of IM olanzapine and parenteral benzodiazepines	<b>Avoid</b> due to risks of extreme hypotension, bradycardia and respiratory depression

#### 4.5 Prior to acute sedation

A medical assessment should be performed on admission and again, where possible, prior to acute sedation. The assessment should ideally involve:

- physical observations
- brief neurological examination
- blood results (urea, electrolytes, creatinine, FBC, TFT, and glucose)
- ECG (useful for establishing baseline QT interval which may be prolonged by neuroleptics)
- pulse oximetry

- signs of dehydration should be noted and must be managed accordingly (dehydration is associated with an increased risk of neuroleptic malignant syndrome).

If a medical assessment is not able to be conducted, the reasons are to be documented in the clinical file and a notation made regarding general observations of physical state.

**Note:** There are a number of clinical considerations to take into account including underlying medical/neurological conditions, development delay or the potential for pregnancy. If any of these are suspected, advice must be sought from the relevant specialists to determine medication selection and dose.

## 4.6 Processes for sedation

### Step 1: non medication measures—de-escalation

D—don't threaten to withdraw privileges, seclude or medicate

E—ensure safety of those in the environment

E—escapes, don't corner the person or get cornered

S—stance, adopt protective stance

C—calm, non-threatening manner

A—allow for ventilation of anger and distress

L—leave the area and person if secure and safe to do so

A—assistance, ensure enough suitably skilled staff are available

T—time out, offer time out in quiet room / lounge

I—invite to sit and verbalise concerns

O—options, offer options, e.g. large motor exercise, music, beverage

N—never turn your back.

### Step 2: medication—oral (preferred medication option)

#### Principles

- Aim to calm with light sedation.
- Oral diazepam has a long half-life with a risk of accumulation. Lorazepam is preferred.
- There is little data regarding doses for lorazepam and olanzapine; doses outlined are a guide only.
- Clinical monitoring of vital observations and contacting a consultant psychiatrist is recommended if higher doses are considered. Emergence of side effects may occur at lower medication doses than for adults. Prior to administration of additional PRN, calculate the total daily dose of all oral medications given in the previous 24 hours.
- If acute admission via emergency department (ED), check whether any medication was administered en route to the ED, or in the ED.
- If two doses are given without effect, nursing staff to report promptly to relevant medical staff member who will seek consultant psychiatrist advice.
- Avoid polypharmacy (no more than two antipsychotic agents within a 24 hour period).
- Medical officer (and pharmacist where available) to review oral medication every 24 hours.
- The development of delirium is possible and the underlying medical cause needs to be treated first.
- Any developmental delays (even minor delays) increase the risk of airway problems. Enquire about possible congenital liver or cardiac disease and obtain paediatric advice regarding medication and dose.

- Ensure accurate documentation of medication given and response to it, including rationale for change.

### Process

- Individual doses may be given 60 minutes apart until maximum dosage reached.
- Contact consultant psychiatrist if a higher than recommended dose is considered.
- Therapeutic choice points:
  - First line medication is the preferred option. If a subtherapeutic response is obtained after the first dose, titrate with second dose at the lower end of interval time and dose.
  - If a nil or minimal response is obtained after the first dose, consider moving to second line medication.

### Indications: mild arousal, may be irritable, willing to talk and co-operative

Age range	First line (oral)	Second line (oral)
As a guide	<b>Lorazepam</b> Peak effect at 1–3 hours Doses based on weight, for lorazepam 0.05 mg/kg/day	<b>Olanzapine</b> as a wafer, if lorazepam regimen fails Doses based on weight, for olanzapine 0.1 mg/kg/day
very young child < 5 years	Contact paediatrician	Contact paediatrician
young child 5–8 years	0.25 mg, contact consultant psychiatrist first	Seek consultant psychiatrist advice
pre-adolescent	0.5 mg (max 2 mg in 24 hours)	5 mg (max 10 mg in 24 hours)
early adolescent	0.5 mg (max 2 mg in 24 hours)	5 mg (max 15 mg in 24 hours)
older adolescent	1 mg (max 4 mg in 24 hours)	5–10 mg (max 20 mg in 24 hours)

### Indications: moderate or severe arousal, highly agitated, abusive, unco-operative, threat or actual violence to self or others

Age range	First line (oral)	Second line (oral)
As a guide	<b>Lorazepam</b> orally stat Peak effect at 1–3 hours Individual doses may be given after 30–60 minutes if needed until maximum dosage reached Doses based on weight, for lorazepam 0.1 mg/kg/day	<b>Olanzapine</b> as a wafer, if lorazepam regimen fails. Individual doses may be given after 60 minutes if needed. Seek consultant psychiatrist advice if adequate response is not achieved Doses based on weight, for olanzapine 0.2 mg/kg/day
very young child <	Contact paediatrician	Contact paediatrician

**Indications: moderate or severe arousal, highly agitated, abusive, unco-operative, threat or actual violence to self or others**

Age range	First line (oral)	Second line (oral)
5 years		
young child 5–8 years	0.5 mg, contact consultant psychiatrist first	5 mg, contact consultant psychiatrist first
pre-adolescent	1 mg (max 4 mg in 24 hours)	5 mg (max 10 mg in 24 hours)
early adolescent	1 mg (if 4 mg not adequate, contact consultant psychiatrist. Max 6 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 15 mg in 24 hours)
older adolescent	1–2 mg (if 4 mg not adequate contact consultant psychiatrist. Max 8 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 20 mg in 24 hours)

**Only proceed to step 3 if not accepting oral medication or step 2 is unsatisfactory**

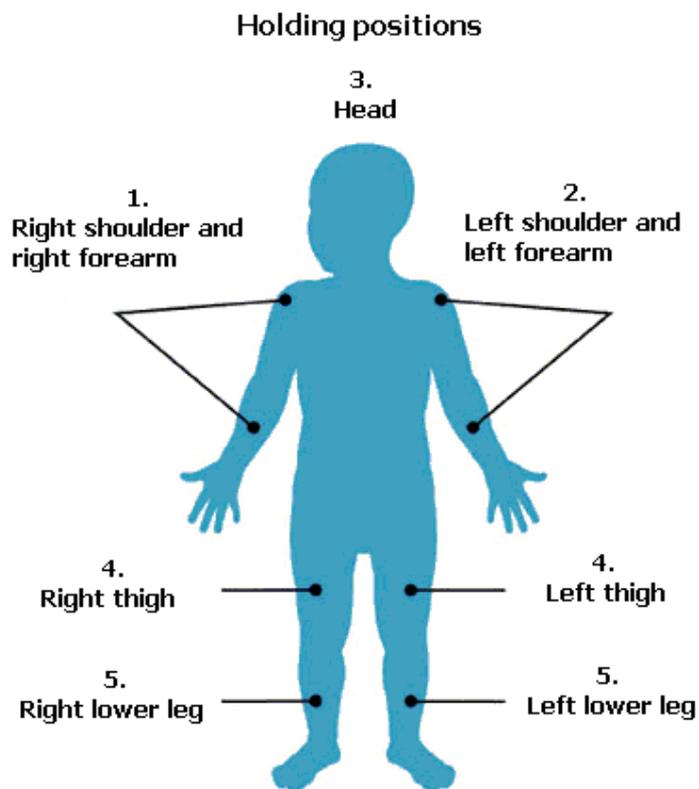
### Step 3: short acting IM medications

- Issues of consent must be addressed—refer to 4.2 Consent/medico-legal considerations.
- IM Droperidol and Midazolam are not recommended.
- **Warning: do not give lorazepam IM and olanzapine IM within 60 minutes of each other.**
- Ensure staff are available to safely hold the child/adolescent during administration (refer to holding positions diagram at Figure 1).
- Calculate total daily dose of all oral and IM medications given in the previous 24 hours before administering additional PRN.
- If two IM doses given without effect, nursing staff to report promptly to relevant medical staff member who may seek consultant psychiatrist advice.
- Medical Officer to review every 24 hours and change back to oral as soon as possible.
- Ensure concise, accurate documentation of all medication given and response, including rationale for changes.

Age range	First line (IM)	Second line (IM)
As a guide	<p><b>Lorazepam</b> peak effect at 1–3 hours. Individual doses may be given after 30–60 mins if needed until maximum dosage is reached.</p> <p>Doses based on weight, for lorazepam 0.1 mg/kg/day</p>	<p><b>Olanzapine</b> if lorazepam regimen inadequately sedates.</p> <p>A second dose may be given after 2 hours and a third dose 6 hours after the first injection until maximum dose is reached.</p> <p>If no effect, seek consultant psychiatrist advice.</p> <p>Doses based on weight, for olanzapine</p>

Age range	First line (IM)	Second line (IM)
		0.2 mg/kg/day
very young child < 5 years	Contact paediatrician	Contact paediatrician
young child 5–8 years	0.5mg, contact consultant psychiatrist first	5 mg, contact consultant psychiatrist first
pre-adolescent	1 mg (max 4 mg in 24 hours)	5 mg (max 10 mg in 24 hours)
early adolescent	1 mg (max 6 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 15 mg in 24 hours)
older adolescent	1–2 mg (max 8 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 20 mg in 24 hours)

Figure 1 illustration of the main five immobilisation points for supine restraint



## Step 4: intravenous route

**Indications: severe arousal, not accepting medication, where a rapid, predictable outcome is essential**

- Notify consultant psychiatrist.
- Not recommended unless extreme and exceptional circumstances and required to secure safety of child/adolescent and staff.
- Site of administration must be secure (refer to holding positions diagram at Figure 1).
- If initial dose fails to achieve cooperation or rousable drowsiness within 10 minutes administer second dose. Repeat as clinically indicated, not exceeding maximum dose.
- Seek consultant psychiatrist advice if no response after the second dose or a suboptimal response at maximum dose.
- Monitor airway, pulse, O<sub>2</sub> saturation (pulse oximetry), respiration rate, BP, patient colour, pupils, neurological status, limb power, and temperature.
- If unresponsive and/or changes occur in level of consciousness expected, a Glasgow Coma Scale (GCS) assessment may be required, and consideration given to making a Medical Emergency Team (MET) call.
- Escalate as per CEWT indicators.

**Note:** If the purpose of the acute sedation is to briefly anaesthetise, this must be done in consultation with an appropriately trained specialist e.g. anaesthetist or intensivist.

### IV diazepam recommendations

Age range	IV diazepam
As a guide	Administration must be at strict 10 minute intervals Doses based on weight, for diazepam 0.1 mg/kg/day
Very young child < 5 years	Contact paediatrician
< 12 years	2.5–5 mg (max 40 mg in 24 hours)
12 years and above	5–10 mg (max 60 mg in 24 hours)

## Step 5: management of prolonged/sustained disturbed behaviour

- Longer acting IM medications—consultant psychiatrist authorised only:
  - Information on the use of IM Zuclopenthixol Acetate (Clopixol Acuphase®) in children and adolescents is not available and therefore **not recommended** for use.

### 4.7 Monitoring/observation—post acute sedation

- Ensure observation and monitoring of mental state and sedation level following administration of oral, IM or IV medication.
- Following IM medication the child/adolescent must be under constant visual observation until it is clear that they are not over-sedated, can maintain a patent airway, and that it is safe to monitor intermittently.
- Physical observations may be difficult to perform on children/adolescents who are agitated or aggressive. Reasons for not performing observations must be documented and discussed with the relevant medical staff.

- All monitoring should be recorded on the age appropriate Children’s Early Warning Tool (CEWT).

The level of observations is determined by the level of sedation:

Arousal level	Level of monitoring
Awake	Observe level of alertness every 15 mins for first hour then half hourly for 8 hours
Easy to rouse	Vital observations* at 30 min intervals (only if child/adolescent cooperates)
Can’t stay awake	Vital observations at 10 min intervals
Difficult to rouse	Vital observations at 5 min intervals
Unresponsive	Call medical emergency

**\*Vital observations:** pulse, O<sub>2</sub> saturation (pulse oximetry), blood pressure, respiratory rate, airway, sedation scale, pupils, limb power, and blood glucose level (BGL).

- Temperature every 4 hours.
- Check for signs of dystonia or any deterioration.
- All observations must be recorded.
- Vital observations continue until the child/adolescent is alert and mobile.
- Due to the potential for delayed side effects, if discharged from hospital, parents/carers should be provided with written documentation of medications, doses given, side effects and warnings.

**Note:** If the child/adolescent is uncooperative, as a minimum observe and document the following: position and movements, respiration rate and physical signs of oxygenation, e.g. pallor, colour of extremities, normal regular breath sounds.

#### 4.8 Adverse reactions

##### Warnings

- Children/adolescents are at a higher risk for extra pyramidal side effects (EPSE).
- Respiratory depression can occur with lorazepam or other benzodiazepines, particularly in combination with antipsychotics.

Other potential adverse effects include:

- dystonic reactions and akathisia, particularly with high doses of antipsychotic agents
- hypotension secondary to benzodiazepine administration or antipsychotic use
- excessive sedation—risking aspiration and/or delirium
- hyperthermia / neuroleptic malignant syndrome
- paradoxical disinhibition (with benzodiazepines)
- prolonged QT, cardiac arrhythmia
- sudden cardiac death secondary to antipsychotic use (rare).

For further guidance refer to the relevant product information brochure.

##### For acute laryngospasm or EPSE

- Benztropine (Cogentin) 0.02 mg/kg/day given either orally, IM, or IV depending on severity.
- May be repeated after 15 minutes.

## For reversal of benzodiazepine induced respiratory depression

- Flumazenil—see guidelines for use below.

### Guidelines for Flumazenil use for reversal of benzodiazepine-induced respiratory depression

Indications:	If, after administration of lorazepam or diazepam, the respiratory rate falls below 12/min
Precautions:	Serious overdose of tricyclic antidepressants—can increase risk of seizures Where benzodiazepines are being used to control potentially life threatening conditions e.g. unstable intracranial pressure or status epilepticus Severe head injury—may precipitate convulsions Liver disease Known longstanding benzodiazepine users may experience symptoms of acute withdrawal and/or seizures
Dose:	IV Flumazenil 5 micrograms/kg/dose repeated every 1–2 minutes until the child/adolescent awakes (up to a maximum total dose of 40 micrograms/kg) If respiratory rate does not return to normal or the child/adolescent is not alert after initial doses administered, assess for other causes of sedation
Adverse effects:	Nausea, vomiting, palpitations, agitated, anxious or fearful on wakening. Seizures may occur if history of epilepsy, hepatic impairment or regular benzodiazepine use
Monitor:	Flumazenil has a short half-life (much shorter than diazepam and lorazepam) and respiratory function may recover and then deteriorate again Continue to monitor respiratory rate, oxygenation (via pulse oximetry), alertness and BP until respiratory rate returns to baseline level.

## 5. Definitions of terms used in the guidelines

Term	Definition / Explanation / Details
Acute sedation	In this Guideline refers to the emergency administration of psychotropic medications to a child/adolescent in an Authorised Mental Health Service in order to: <ul style="list-style-type: none"><li>• relieve distress</li><li>• bring severe behavioural disturbance under control to protect the person or other people from immediate or imminent risk to their safety</li><li>• facilitate comprehensive diagnostic assessment and management.</li></ul>

## 6. Approval and implementation

### Consultation

Queensland Psychotropic Medication Advisory Committee

Queensland Health Mental Health Alcohol and Other Drugs Clinical Clusters

### Approving Officer

Chief Psychiatrist, Mental Health Alcohol and Other Drugs Branch

### Policy Custodian

Director, Clinical Governance, Office of the Chief Psychiatrist, Mental Health Alcohol and Other Drugs Branch

**Approval date:** 24 December 2019

**Effective from:** 02 January 2020

**Next review:** July 2020

### Version Control

Version	Date	Prepared by	Comments
V1.0	6 July 2017	Office of the Chief Psychiatrist	First publication.
V2.0	19 December 2019	Office of the Chief Psychiatrist	Minor wording change in section 4.2 in alignment with the <i>Human Right Act 2019</i> (Qld)

**STEP 1 NON-MEDICATION MEASURES  
DE-ESCALATION**

- Don't threaten to withdraw privileges, seclude or medicate
- Ensure safety of those in the environment
- Escapes, don't corner the person or get cornered
- Stance, adopt protective stance
- Calm, non-threatening manner
- Allow for ventilation of anger and distress
- Leave the area and person if secure and safe to do so
- Assistance, ensure enough skilled staff available
- Time out, offer quiet room/lounge
- Invite to sit and verbalise concerns
- Options, e.g. large motor exercise, music, beverage
- Never turn your back

**ONLY proceed to STEP 2 if response to above measures unsatisfactory.**



**STEP 2 MEDICATION—ORAL**

Mild arousal, may be irritable, willing to talk and cooperative

Individual doses may be given after 60 minutes until max dosage reached

Age range	First line	Second line
As a guide	<b>Lorazepam</b> Peak effect at 1–3 hours Doses based on weight, for lorazepam 0.05 mg/kg/day	<b>Olanzapine</b> wafer if lorazepam regimen fails Doses based on weight, for olanzapine 0.1 mg/kg/day
very young child < 5 years	contact paediatrician	contact paediatrician
young child 5–8 years	0.25 mg, contact consultant psychiatrist first	seek consultant psychiatrist advice
pre-adolescent	0.5 mg (max 2 mg in 24 hours)	5 mg (max 10 mg in 24 hours)
early adolescent	0.5 mg (max 2 mg in 24 hours)	5 mg (max 15 mg in 24 hours)
older adolescent	1 mg (max 4 mg in 24 hours)	5–10 mg (max 20 mg in 24 hours)



**STEP 2 MEDICATION—ORAL**

Moderate to severe arousal, highly agitated, abusive, uncooperative, threat or violence to self or others

Age range	First line	Second line
As a guide	<b>Lorazepam</b> orally stat Peak effect at 1–3 hours. Individual doses may be given after 30–60 minutes. Doses based on weight, for lorazepam 0.1 mg/kg/day	<b>Olanzapine</b> wafer if lorazepam regimen fails. Individual doses may be given after 60 minutes. Doses based on weight, for olanzapine 0.2 mg/kg/day
very young child < 5 years	contact paediatrician	contact paediatrician
young child 5–8 years	0.5 mg, contact consultant psychiatrist first	5 mg, contact consultant psychiatrist first
pre-adolescent	1 mg (max 4 mg in 24 hours)	5 mg (max 10 mg in 24 hours)
early adolescent	1 mg (if 4 mg not adequate contact consultant psychiatrist. Max 6 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 15 mg in 24 hours)
older adolescent	1–2 mg (if 4 mg not adequate contact consultant psychiatrist. Max 8 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 20 mg in 24 hours)

**ONLY proceed to STEP 3 if NOT accepting oral medication or response to STEP 2 is unsatisfactory.**



**STEP 4 INTRAVENOUS ROUTE**

Severe arousal, not accepting medication, where a rapid, predictable outcome is essential

Notify consultant psychiatrist  
Administration must be at strict 10 min intervals  
Seek consultant psychiatrist advice if no response after the second dose or a suboptimal response at maximum dose.

Age range	IV diazepam
As a guide	Doses based on weight, for diazepam 0.1 mg/kg/day
very young child < 5 years	contact paediatrician
< 12 years	2.5–5 mg (max 40 mg in 24 hours)
12 years and above	5–10 mg (max 60mg in 24 hours)

**Monitor:**

- Airway, pulse, O<sub>2</sub> saturation (pulse oximetry), respiration rate, BP, BGL, patient colour, pupils, neurological status, limb power, and temperature.
- If unresponsive and/or changes occur in level of consciousness expected, a GCS may be required, and consideration given to making a MET call.
- Escalate as per CEWT indicators.

**MONITORING/OBSERVATION**

Level of observations are determined by the level of sedation

awake	observe level of alertness every 15 minutes for first hour then half hourly for 8 hours
easy to rouse	vital observations* at 30 min intervals (only if child/adolescent cooperates)
can't stay awake	vital observations at 10 min intervals
difficult to rouse	vital observations at 5 min intervals
unresponsive	call medical emergency

\*Vital observations: pulse O<sub>2</sub> saturation (pulse oximetry), blood pressure, respiratory rate, sedation scale, pupils, limb power and BGL.

- If uncooperative, observe pulse oximetry and respiration rate as a minimum
- Temperature every 4 hours
- Check for signs of dystonia or any deterioration
- Vital observations continue until alert and mobile.

**Warnings:**

**Respiratory depression can occur with lorazepam or other benzodiazepines, particularly in combination with antipsychotics.** If respiratory rate falls below 12/min IV Flumazenil 5 micrograms/kg/dose repeated every 1–2 mins until child/adolescent awakes (max 40 micrograms/kg).

**Children and adolescents are at higher risk for EPSE.** For acute laryngospasm or EPSE: Benztropine (Cogentin) 0.02 mg/kg/day given either orally, IM, or IV depending on severity. May be repeated after 15 minutes.

**LONG ACTING IM MEDICATIONS**

Prolonged/sustained disturbed behaviour management

IM Zuclopentixol Acetate (Clopixol Acuphase®) not recommended for use.

**STEP 3 SHORT ACTING IM MEDICATIONS**

Do not give Lorazepam IM and Olanzapine IM within 60 minutes of each other

Age range	First line	Second line
As a guide	<b>Lorazepam</b> Peak effect at 1–3 hours. Individual doses given after 30–60 minutes if needed until maximum dosage reached. Doses based on weight, for lorazepam 0.1 mg/kg/day	<b>Olanzapine</b> if lorazepam regimen inadequately sedates. A 2 <sup>nd</sup> dose may be given after 2 hours and a 3 <sup>rd</sup> dose 6 hours after the first injection until maximum dosage is reached. If no effect, seek consultant psychiatrist Doses based on weight. Olanzapine 0.2 mg/kg/day
very young child < 5 years	contact paediatrician	contact paediatrician
young child 5–8 years	0.5 mg, contact consultant psychiatrist first	5 mg, contact consultant psychiatrist first
pre-adolescent	1 mg (max 4 mg in 24 hours)	5 mg (max 10 mg in 24 hours)
early adolescent	1 mg (max 6 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 15 mg in 24 hours)
older adolescent	1–2 mg (max 8 mg in 24 hours with consultant psychiatrist approval)	5–10 mg (max 20 mg in 24 hours)

Effective from June 2017  
Due for review June 2019