Pharmacological Management of Behavioural Disturbance in the Acute Psychiatric Setting

Guideline Responsibilities and Authorisation

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Target Audience	Psychiatric doctors working with tāngata whaiora admitted under the Mental Health and Addictions inpatient service, and nursing staff involved in medication management and monitoring.
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Guideline Review History

Version	Updated by	Date Updated	Summary of Changes

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1 Overview

1.1 Purpose

This guideline outlines the recommended pharmacological management of behavioural disturbance in the acute psychiatric setting in Te Whatu Ora Waikato for tāngata whaiora aged 18 – 65 years.

1.2 Scope

This guideline is relevant for Te Whatu Waikato Ora Mental Health and Addictions Service health professionals who are caring for tāngata whaiora admitted under the Mental Health and Addictions inpatient service. This guideline does not cover non-pharmacological methods of managing behavioural disturbance.

1.3 Tāngata whaiora / client group

Tāngata whaiora receiving treatment under the Mental Health (Compulsory Assessment and Treatment) Act 1992, who meet criteria for pharmacological management of a behavioural disturbance.

Rapid tranquilisation must only be administered to tāngata whaiora who are subject to the provisions of the Mental Health (Compulsory Assessment and Treatment) Act 1992 for the purpose of acute behavioural disturbance management.

1.4 Exceptions / contraindications

In the process of rapid tranquilisation medications that a tāngata whaiora has had a previous reaction to should be avoided.

See section 2.5 of this guideline for precautions in administration.

For any tāngata whaiora with delirium follow the Te Whatu Ora Waikato Prevention, Diagnosis and Management of Delirium in Older People guideline (1106). For management of acute alcohol withdrawal, see the Te Whatu Ora Waikato Alcohol Withdrawal guideline (2672).

This guideline does not apply to children and adolescents, or to older adults and guidance must be sought from the specialty psychiatrist for these services. In addition guidance should be sought from consultation liaison psychiatry or a perinatal psychiatrist for treating tāngata whaiora who are pregnant or have underlying medical conditions of note.

1.5 Definitions and acronyms

Acute behavioural disturbance	Behaviour that puts the tāngata whaiora, or others at immediate risk of serious harm. Includes threatening or aggressive behaviour, extreme distress, and serious self-harm which could cause major injury or death. (New South Wales Guideline for the management of patients with acute severe behavioural disturbance in emergency departments)
Aggression	Verbal or motor activity that is hostile, injurious, or destructive in nature.

Agitation	A temporary extreme form of arousal that is associated with increased/excessive verbal and motor activity that breaks therapeutic alliance, and is in need of a prompt and immediate intervention.
Levels of observation	Levels of observation are defined in section 1.6 of the "Levels of Observation across all Mental Health and Addiction Inpatient Services' procedure. The levels of observation refer to the intensity and frequency of nurse monitoring, and are based on the mental status of tāngata whaiora, in addition to their risk to themselves and others. The level "Significant Risk Observations" indicates irregular intervals of up to 10 minutes between monitoring. The level "High Risk Observations" is specified as within eye sight and arms reach to be able to respond. The level "Extreme High Risk Observation" is specified as same room and within arm's reach at all times.
Rapid Tranquilisation	The use of the parenteral route to achieve a state of calmness, thereby reducing the risk to self/others while maintaining the ability of the tāngata whaiora to respond to communication. Sedation may also be considered an appropriate interim strategy.
Violence	Physical aggression by people against each other, or towards inanimate objects.

ABD	Acute Behavioural Disturbance
CNS	Central Nervous System
ECG	Electrocardiogram
ECT	Electro-convulsive-therapy
EWS	Early warning score (standardised early warning system to support clinical judgement and best practice)
IM	Intramuscular (medication route)
IMI	Intramuscular Injection
NMS	Neuroleptic malignant syndrome
PRN	As required
QTc	Corrected QT Interval on ECG

2 Clinical management

2.1 Competency required

Health practitioners in roles that require provision of pharmacological management of acute behavioural disturbance must be trained and working within their scope of practice. They must participate in a process of training and competency assessment, including as a minimum, basic life support.

Health practitioners who administer sedation must be compliant with the Te Whatu Ora Waikato Medicines Management policy (0138), and

- Have access to a resuscitation trolley as per the requirements of the Te Whatu Ora Waikato Resuscitation policy (1970).
- Be aware of: their jurisdictional requirements to report morbidity and mortality related to pharmacological management of acute behavioural disturbance.

Health practitioners who administer sedation must be compliant with the Te Whatu Ora Waikato Informed Consent policy (1969) and the Mental Health and Addictions Advance Directives procedure (2181).

These requirements are particularly important when there has been inadvertent deep sedation with an adverse outcome.

Training is available and highly recommended for ward staff on Safe Practice and Effective Communication, Sensory Modulation, and Trauma Informed care.

2.2 Facilities and Equipment

Ensure appropriate equipment is available for pharmacological management:

- Adequate room to perform resuscitation if necessary
- Sufficient lighting to aid with assessment of tāngata whaiora colour (such as cyanosis)
- Medication both in stock on the ward, and available through the pharmacy
- Equipment for IM administration of medication, and availability of water and cups for oral administration.
- Equipment for physical monitoring such as ECG machines (with sticky pads), stethoscopes, pen torches, reflex hammers, EWS observation chart, a neurological observation chart, sphygmomanometer (or other device for measuring blood pressure), pulse oximeter, and a device that measures time in seconds.
- Availability of a resuscitation trolley that includes a defibrillator (such as an AED), and reversal agents, and agents to treat allergic reactions in the case of serious adverse reactions to medication.

2.3 Principles

This guideline divides management of acute behavioural management into six levels as shown on the flow chart.

Non-pharmacological de-escalation must be the initial approach to managing acute behavioural disturbance. Verbal and environmental strategies may be utilised for de-escalation.

No guideline for managing acute behavioural disturbance is completely free from risk. Medication is used when de-escalation fails and must be used only when clinically indicated. It must never be used as a form of punishment for convenience, or as a substitute for other more appropriate treatments.

Aim to calm with light sedation. If two doses are given without effect, prompt the registrar to seek consultant psychiatrist advice. Avoid polypharmacy where possible (no more than two antipsychotic agents within a 24 hour period).

When intervening for acute behavioural disturbance, consider important factors such as known allergies/adverse reaction, previous response to medication, QTc, co-morbidities, current medications/substance use, and gross cognitive function (e.g. delirium, history of intellectual disability). Also consider important causes such as delirium, akathisia, intoxication, withdrawal, pregnancy, or other medical causes. It is also important to consider advanced directives, previous response to medication, adverse reactions, medication used over the past 24 hours and the past month, and the combination of PRN and regular medication.

Extra care must be taken when considering rapid tranquilisation in frail, medically compromised tāngata whaiora, and those with co-morbidities.

Repeated smaller doses of oral or IM medication to achieve the desired outcome are preferred to the use of a single larger dose because it reduces the risk of dose related adverse effects, and allows tolerance to be more accurately assessed. Frequent PRN IM injections of antipsychotic medication, particularly when used over extended periods of time, increase the risk of neuroleptic malignant syndrome.

Be aware of the total medication load in the previous 24 hours.

Example one: Lorazepam:

- If an initial dose of 1mg has been given, reassess after one hour and if the initial dose was insufficient, consider giving a further 1mg one hour post initial dose.

Example two: Olanzapine

- If an initial dose of 2.5mg has been given, reassess after one hour, and if initial dose was insufficient, consider giving a further 2.5mg one hour post initial dose.

Monitoring of tāngata whaiora with acute behavioural disturbance is vital at all stages of an intervention. Baseline physical observations are to be completed prior to administration and be documented on the Adult Vital Signs chart. Where this is not possible, the reasons must be clearly documented. Any concerns must be reported to the medical officer prior to administration. Monitoring must include a minimum of a nursing physical and mental health review every 10 minutes by a registered nurse for at least 60

minutes. See section 2.4.6 Level Six: Monitor and Review for further monitoring requirements

If the tāngata whaiora requires seclusion, monitoring of the individual must be "within eyesight" observation by a member of staff with competency.

Concise and accurate documentation of all medication administered, and the response to it, is required including rationale for changing medication.

Tāngata whaiora should be given an opportunity in the post-sedation phase to discuss the reasons for the administration of sedative or anti-psychotic medication and discuss the reasons for and circumstances of the episode.

Neuroleptic malignant syndrome (NMS) is an important and life threatening adverse event that can occur after the administration of antipsychotic medication. This syndrome is characterised by muscle rigidity, hyperthermia, altered consciousness, and autonomic instability (tachycardia, labile blood pressure, profuse sweating, and dyspnoea). The management of which should include immediate discontinuation of the antipsychotic drug, immediate transfer to a medical ward in the Waikato Hospital, and intensive monitoring and supportive care. ECT may be considered.

Some medications – for example benzodiazepine or promethazine - can be associated with paradoxical reactions such as agitation, disinhibition and violence. The incidence of paradoxical reactions in the general population is estimated to be ~1%. Learning disability, advanced age (over >65), age under 18 years, neurological disorders and impulse control problems are associated with an increased risk of paradoxical reactions.

2.4 Guideline

2.4.1 Level One: De-escalation

The first level is to not only use verbal de-escalation, and limit environmental stimuli, but recognise when there is an inadequate response to this with ongoing behavioural disturbance.

2.4.2 Level Two: Oral Monotherapy

Once non-pharmacological de-escalation has been attempted, consider oral monotherapy; if oral medication is refused, or does not provide an adequate response consider intramuscular therapy. If tāngata whaiora are on regular antipsychotics, consider utilising their regular medication, with due consideration of the maximum doses in 24 hours. Oral monotherapy can be subdivided into two categories; sedative and antipsychotic.

For sedative oral monotherapy, the recommendations are:

Sedative Medication	Dose	Maximum dose in 24 hours	Consider repeat dosing not before:
Lorazepam	1mg – 4mg	10mg	60 minutes
Promethazine	25mg – 50mg	100mg	60 minutes

Use lorazepam with caution in tāngata whaiora with respiratory depression, such as in the context of chronic obstructive pulmonary disease (COPD) or sleep apnoea.

Promethazine is contraindicated in tāngata whaiora who have taken monoamine oxidase inhibitors (MAOIs) within the last 14 days, with CNS depression of any cause, and jaundice induced by other phenothiazine derivatives.

For antipsychotic oral monotherapy, recommendations include:

Antipsychotic Medication	Dose	Maximum dose in 24 hours	Consider repeat dosing not before:
*Haloperidol**	2mg – 5mg	10mg	120 minutes
Olanzapine	5mg – 10mg	20mg	120 minutes
Quetiapine	25mg – 200mg	750mg	120 minutes
*Risperidone**	1mg – 2mg	4mg	120 minutes

*Please ensure PRN benzatropine or procyclidine are available for use with first generation anti-psychotics or risperidone. Benzatropine maximum dose in 24 hours is 6mg, procyclidine maximum dose in 24 hours is 60mg.

2.4.3 Level Three: Oral Combinations

If there is inadequate response to oral monotherapy consider oral combinations. These combinations include one of the above antipsychotic medications with one of the above sedative medications. Examples of combinations are:

- Lorazepam + olanzapine
- Promethazine + haloperidol

2.4.4 Level Four: Intramuscular Monotherapy

If oral monotherapy and combination therapy is refused or does not provide an adequate response, consider intramuscular monotherapy using the medications discussed above.

2.4.5 Level Five: Intramuscular Combinations

If there is inadequate response or a tāngata whaiora remains highly agitated, consider combining sedative and antipsychotic medication and administering simultaneously.

Combinations of Intramuscular treatment:

- Haloperidol 5mg – 10mg & promethazine 25mg - 50mg
- Haloperidol 5mg – 10mg & lorazepam 1mg – 2mg

Note: Olanzapine and lorazepam should not be administered simultaneously due to the risk of hypotension, bradycardia, bradypnoea, and/or oxygen desaturation. However if they are administered at least 60minutes apart the risk of these effects is significantly reduced.

2.4.6 Level Six: Monitor and review

Monitor physical observations and response to treatment. At all levels, ensure there is a minimum of one hour of 10/60 physical and mental health observations, that is observation every ten minutes for at least 60 minutes. Further monitoring beyond 1 hour should be considered if deemed clinically appropriate or in response to a change in clinical condition.

For all interventions at level 4 or above (intramuscular treatment), monitor physical observations after 60 minutes, and then every 4 hours for at least 12-24 hours.

Physical observations required include:

- Blood pressure
- Pulse
- Respiratory Rate
- Level of consciousness
- Temperature
- Hydration

Appropriate sedation monitoring and side-effect assessment should be performed regularly after administration based on the clinical condition of the tāngata whaiora and documented on the Adult Vital Signs chart.

If the tāngata whaiora is over-sedated or significantly unwell, the use of pulse oximetry to continuously measure oxygen saturation should be used.

Any deviations from monitoring parameters must be reported immediately to medical staff.

After administration of zuclopenthixol-acetate (Acuphase), monitor physical observations as above, noting the peak of sedation may take several hours after the dose is administered.

For inadequate response to level five of this guideline (intramuscular combinations), seek senior medical advice for a comprehensive case review. It is also appropriate to consider zuclopenthixol acetate (Acuphase). This medication requires consultant authorisation, and must be prescribed alongside benzatropine or procyclidine. Doses of zuclopenthixol acetate are as follows:

- Zuclopenthixol acetate 50mg – 150mg IM
- Dose can be repeated after 24 hours
- Total dose not to exceed 400mg or 4 injections within 14 days.
- All other antipsychotic and sedative medication should be stopped.

Another option to consider is ECT, however this should be considered with senior medical advice.

If the tāngata whaiora is unable to tolerate monitoring, document this clearly, and hold a low threshold for escalating medical concerns.

2.5 Precautions

Precaution	Action
Adolescents under 16yo, or those with low body weights (e.g. less than 40kg).	May need smaller doses Contact the child and adolescent psychiatrist during working hours for further advice. ICAMHS Duty Clinician phone 021356431
Older adults (60 years and over)	May require lower doses (half or quarter) due to reduced organ function and or medical illness/frailty. For further advice, contact the mental health services for older person's consultant psychiatrist via the hospital operator during working hours.
Pregnant women	Use lowest possible dose for efficacy • Oral diazepam 5mg/dose up to a maximum of 15mg daily • IM Olanzapine 5mg/dose PRN up to maximum of 20mg If higher doses are required, contact the on-call consultant psychiatrist. For further advice during working hours, contact consultation liaison psychiatry, or a perinatal consultant.
Medical illness	Avoid tranquilisation where behavioural disturbance is likely secondary to a serious medical condition for which there is specific emergency treatment such as: • hypoglycaemic crisis or • hypoxia due to acute asthma
Respiratory Depression	Recommend increased frequency of EWS monitoring. Caution with administering medication that exacerbates

	respiratory depression. Consider dose reduction, or utilising alternative medication instead.
Intellectual impairment or acquired brain injury	Can be very sensitive to pharmacological sedation and high drug doses should be avoided. Consider dose reduction (half or quarter dose).
Substance withdrawal	Longer acting diazepam is preferred to shorter acting benzodiazepines. In the context of hepatic impairment, consider using a benzodiazepine that bypasses hepatic metabolism consider using a benzodiazepine with a short half-life. Thiamine should also be prescribed for alcohol withdrawal. See the Te Whatu Ora Waikato Guidelines for alcohol withdrawal (2672) for further information.
Obesity	The efficacy of antipsychotic and sedative medications on this guideline is not affected by weight, and thus elevated weight should have no impact on decision making.
Swallowing problems	Heavy sedation (especially with antipsychotics) or delirium is associated with increased risk of aspiration. In tāngata whaiora with dysphagia, prescribe cautiously.
Delirium	Unless the delirium is caused by alcohol, avoid benzodiazepine treatment.
History of neuroleptic malignant syndrome	Use sedative options by preference. If antipsychotic use is necessary, consider using quetiapine.
Markedly intoxicated, dehydrated, antipsychotic (neuroleptic) naïve, medically compromised.	Reduce to half the recommended dosage.
Concomitant administration of IM olanzapine and parental benzodiazepines.	Not to be administered within 1 hour of each other

2.6 Adverse Drug Reactions

Side-Effect	Medication Association	Management
Respiratory depression	Benzodiazepines, Olanzapine. Increased risk with tāngata whaiora who are prescribed medications which cause hypoventilation, such as opioids.	If caused by benzodiazepine, is reversible with flumazenil. Avoid flumazenil in comorbid seizure disorder. Consider intensive respiratory support.
Extrapyramidal reactions	Common with droperidol and haloperidol, less	Benzatropine 1-2mg IM Procyclidine 5-10mg IM

	common with olanzapine, risperidone, quetiapine.	
Neuroleptic malignant syndrome	Seen with antipsychotics	Stop all antipsychotics and commence supportive care
Paradoxical reactions	Benzodiazepines and promethazine have rarely been associated with in increased agitation and anxiety.	Caution in high risk groups, consider PO rather than IM use. Consider giving using an antipsychotic instead.

Report all significant ADRs to CARM: https://nzphvc.otago.ac.nz/

3 Audit

3.1 Documentation

For all tāngata whaiora requiring management of acute behavioural disturbance, assessment, monitoring, and interventions should all be recorded in the clinical notes.

3.2 Future Audits

Practitioners carrying out pharmacological management may be subject to audit of administration and compliance with local guidelines. These audited outcomes and any complications should inform ongoing training, education, and support of all team members involved in the care of tāngata whaiora who receive pharmacological management of acute behavioural disturbance.

Regular local review of incidents should occur to identify common issues and quality improvement opportunities.

4 Evidence base

4.1 Bibliography

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4.2 Associated Te Whatu Ora Waikato Documents

- Alcohol Withdrawal guideline (Ref. 2672)
- Prevention, Diagnosis and Management of Delirium in Older People guideline (Ref. 1106).
- Informed Consent policy (Ref. 1969)
- Medicines Management policy (Ref. 0138)
- Resuscitation policy (Ref. 1970)
- Mental Health and Addictions Advance Directives procedure (Ref. 2181)
- Mental Health and Addictions Levels of Observation across all Mental Health and Addiction Inpatient Services procedure (Ref. 5238)
- Mental Health and Addictions Use of Seclusion in Mental Health and Addiction Inpatient Setting procedure (Ref. 1860)
- Mental Health and Addictions Use of Personal Restraint across Mental Health and Addictions Inpatients Settings, inclusive of OPR1 procedure (Ref. 1865)

Appendix A

See diagram for pharmacological management of behavioural disturbance in the acute – psychiatric setting on page 15

Te Whatu Ora
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Guideline

Pharmacological Management of Behavioural Disturbance in the Acute Psychiatric Setting