Guideline for Intramuscular Medication for Acute Behavioural Disturbance in Mental Health & Learning Disability Inpatient Services

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Endorsing Body:	Mental Health & Learning Disability Drug & Therapeutics Committee
Governance or Assurance Committee	Mental Health & Learning Disability Clinical Governance Group
Implementation Date:	Nov 2022
Version Number:	2
Review Date:	Nov 2025

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Consultation and distribution

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Consultation Process/ Stakeholders	• Psychiatry • MHLD nursing • MHLD pharmacy
Distribution	• Dissemination to all MHLD, OAMH and CAMHS medical, nursing and pharmacy staff, wards and community teams • NHSL clinical guideline website and app • Medicines Matters and/or MHLD D&T newsletter

Change Record

Date	Author	Change	Version No.
Apr 2019	S Cochrane L Dewar L Templeton	New Guideline	1.0
Aug 2022	L Templeton	Primarily formatting changes. Minor changes to wording following consultation	2.0

Scope and Exclusion Criteria

This policy is intended to provide guidelines for the safe and appropriate use of Intramuscular (IM) psychotropic medication in the management of acute behavioural disturbance **within all mental health and learning disability inpatient settings in NHS Lanarkshire.**

These guidelines should not be used for the management of alcohol withdrawal, delirium, acute confusional states or behavioural disturbance in the context of a brain injury unless under specialist advice. If intoxication with psychoactive substances is suspected, consider transfer to A&E.

Clinical judgement should be exercised on the applicability of any guideline, influenced by patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty. If there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

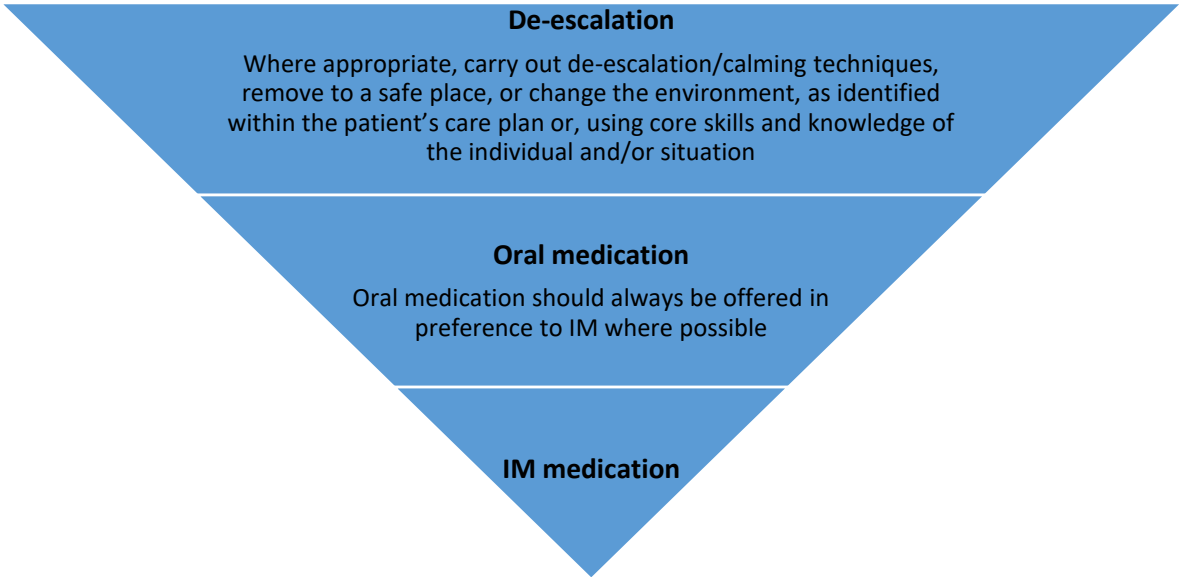
Introduction

Rapid tranquillisation is a pharmacological strategy used to manage acute behavioural disturbance. NICE have defined rapid tranquillisation as 'the use of medication by the parenteral route if oral medication is not possible or appropriate and urgent sedation with medication is needed.' In addition, NICE suggests that 'rapid tranquillisation…should only be considered once de-escalation and other strategies have failed to calm the patient.'[1] The aim of intramuscular (IM) medication in acute behavioural disturbance is to achieve a state of calm and reduce the risk of imminent and serious violence or harm to self or others. Treatment with IM medication, therefore, should be seen as the culmination of an approach that incorporates individualised care planning, anticipatory care, de-escalation and oral treatment and as such, the majority of individuals should not require it.

Staff must be trained in how to assess and manage potential and actual violence, using de-escalation techniques, restraint, change of environment and IM medication for acute behavioural disturbance. Details of the clinical situation and all interventions must be recorded in the patient's medical notes.

General Points to consider

The least restrictive option for management of acute behavioural disturbance should be considered in all cases;



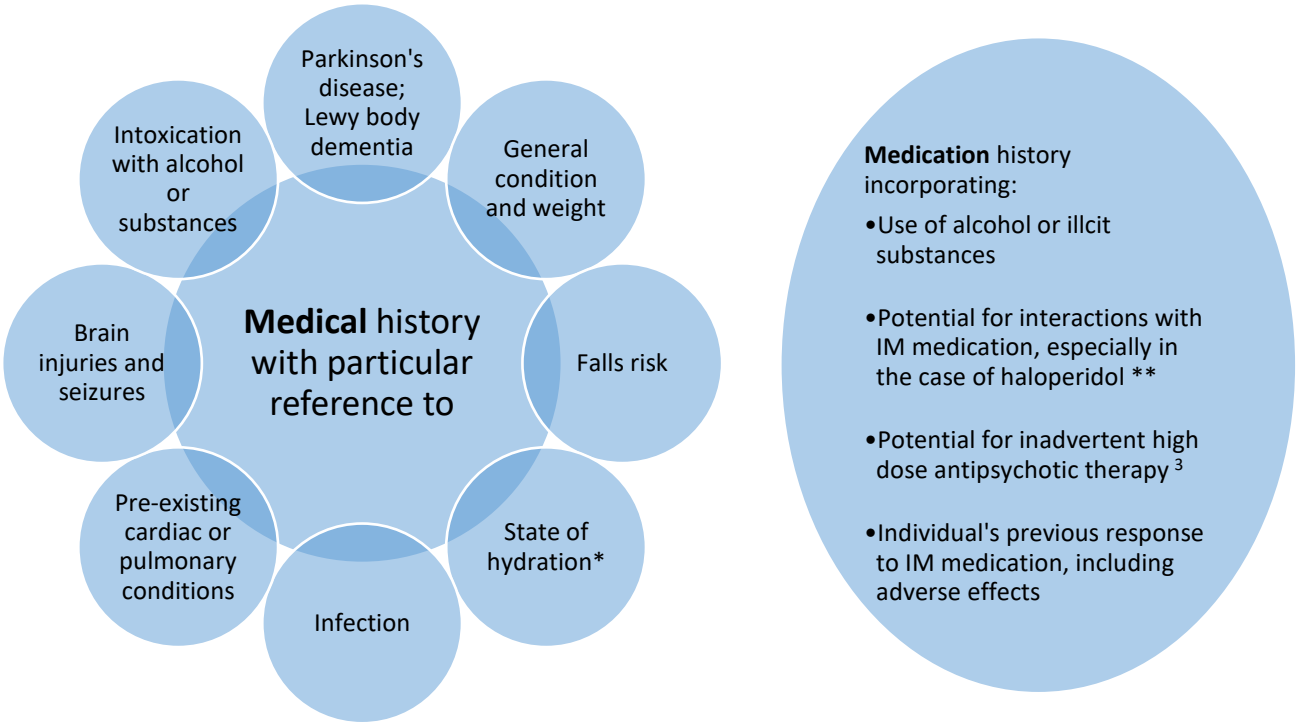
Patient specific treatment- Individualise treatment plan

All patients who require IM medication for acute behavioural disturbance should be assessed and have an **individualised treatment plan** which will incorporate de-escalation techniques, oral medication and IM medication options. Use of a patient specific treatment plan should form best practice.[1]
Prescribing the initial dose of IM sedation as a single dose will ensure that any subsequent treatment options can be individualised by the MDT, taking account of both response and any emergent adverse effects of the initial treatment choice. When administering IM medication, consider the most clinically appropriate site for the individual patient. The least restrictive IM option will often be the deltoid.

Factors to consider/ assessment prior to IM medication[1]

Physical limitation	•A baseline physical examination should be carried out prior to prescribing IM medication for acute behavioural disturbance including U&Es, pulse, blood pressure, temperature, respiratory rate and ECG where possible (the SPC for haloperidol recommends a baseline ECG prior to treatment) as well as a full medical and medication history.
Delirium	•Delirium must be excluded. Refer to appropriate guidelines for the treatment of delirium.[2]
Communication difficulties	•Patients with communication difficulties or cognitive impairment •Exclude non-psychiatric causes of distress or presentation e.g. pain or seizure activity.
Frailty; under 18; LD	•Lower doses of medication should be used in older adults, those with co-morbid conditions, individuals of low body weight, patients under 18 years of age and adults with a learning disability (unless it has been established that standard doses are necessary and it is in accordance with the patient's individualised treatment plan).
Pregnancy / lactation	•If the patient is pregnant or is breastfeeding, seek specialist advice and liaise with the patient's pre-natal team regarding the treatment given.
Brain injuries	•The use of psychotropic medication to manage behavioural disturbance after a brain injury can worsen agitation and cognition and impair recovery from Post Traumatic Amnesia. Seek specialist advice from the NHSL Community Brain Injury Team when managing individuals with an acute brain injury.
Previous response	•Any previous response to treatment or patient preference/advance statement that addresses medication use should be taken into consideration prior to prescribing IM medication for acute behavioural disturbance where practical and appropriate.
Safety	•Few mental health and learning disability inpatient wards have 24 hour medical cover or nursing staff trained to administer intravenous (IV) medication. Consideration to the most appropriate intervention must be given due to the potential for decreased medical access in many inpatient MH settings due to risks associated with use of IM medication
Legislation	•The patient's legal status must be reviewed when IM medication is considered.

Physical examination



*stress/ extreme physical exertion may increase risk of electrolyte disturbance

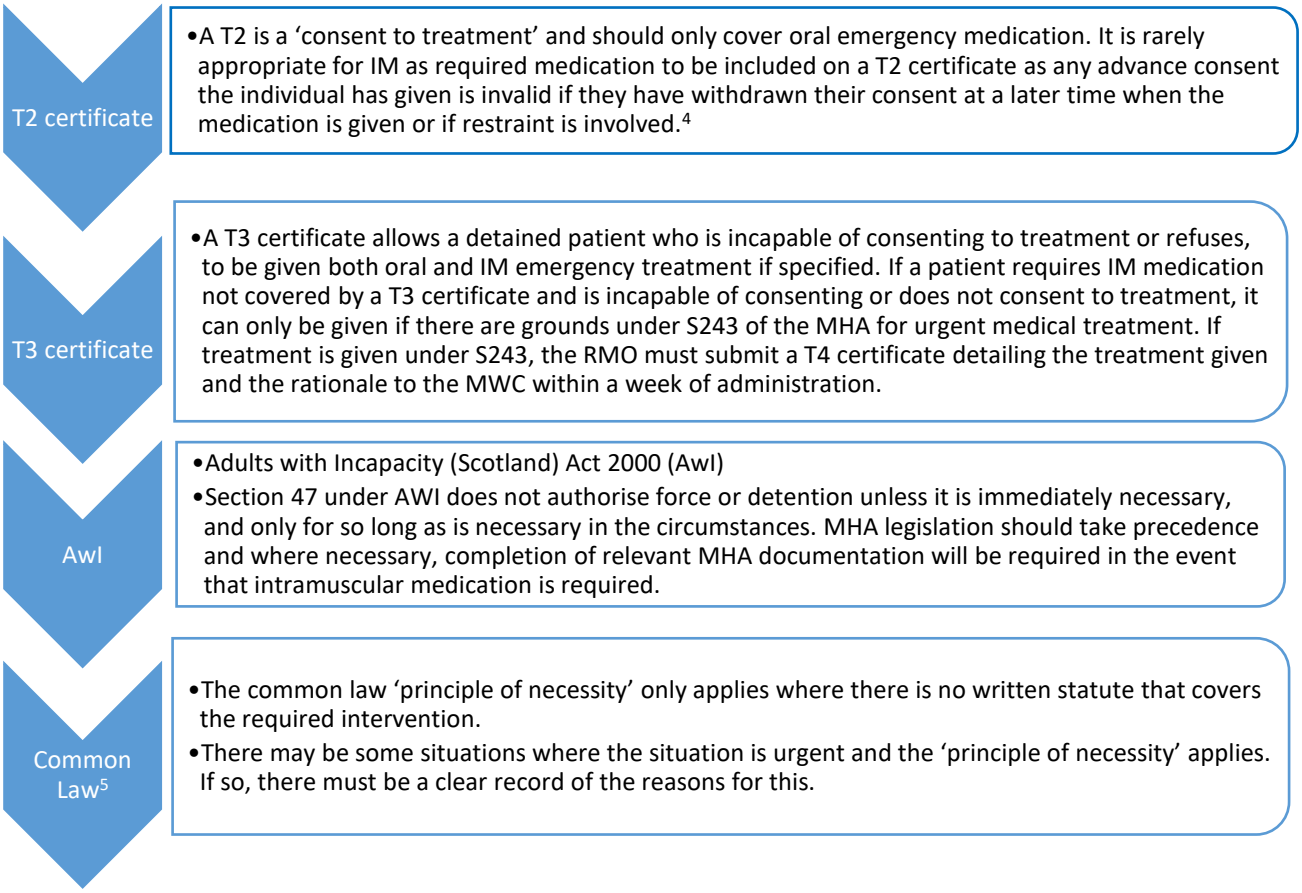
If a physical examination or any aspect of a physical examination is not possible, the reasons for this should be documented in the patient's medical notes.

- **The use of haloperidol is contraindicated** in combination with drugs that prolong the QTc interval and its use in such circumstance is off-label. Consequently, where possible such combinations should be avoided. **Other treatment options should be considered first line (refer to Table 1 page 9 & 10)**.
- In the event that clinical circumstances make the use of such combinations unavoidable and other options have been considered;
- Ensure the rationale for treatment with haloperidol is clearly documented and reflected in the patient's individualised treatment plan.
- Ensure modifiable risk factors for QTc prolongation are minimised e.g. electrolyte abnormalities (hypokalaemia, hypomagnesaemia, hypocalcaemia), discontinue other drugs known to prolong QTc if possible, extreme physical exertion.
- Consider populations that are at higher risk of QTc prolongation e.g. women, children, elderly, those with known cardiac disease, known substance misusers, extremes of weight.
- Consider increased monitoring e.g. U&Es, LFTs, ECG monitoring.

Legislation

The Mental Welfare Commission for Scotland (MWC) consider that prescribing 'as required' IM psychotropic medication for informal individuals is seldom good practice and a patient's legal status should be reviewed whenever IM medication is being considered.

Individuals subject to Mental Health (Care and Treatment) (Scotland) Act 2003 (MHA) detention for greater than 2 months will have T2 or T3 certificates in place.

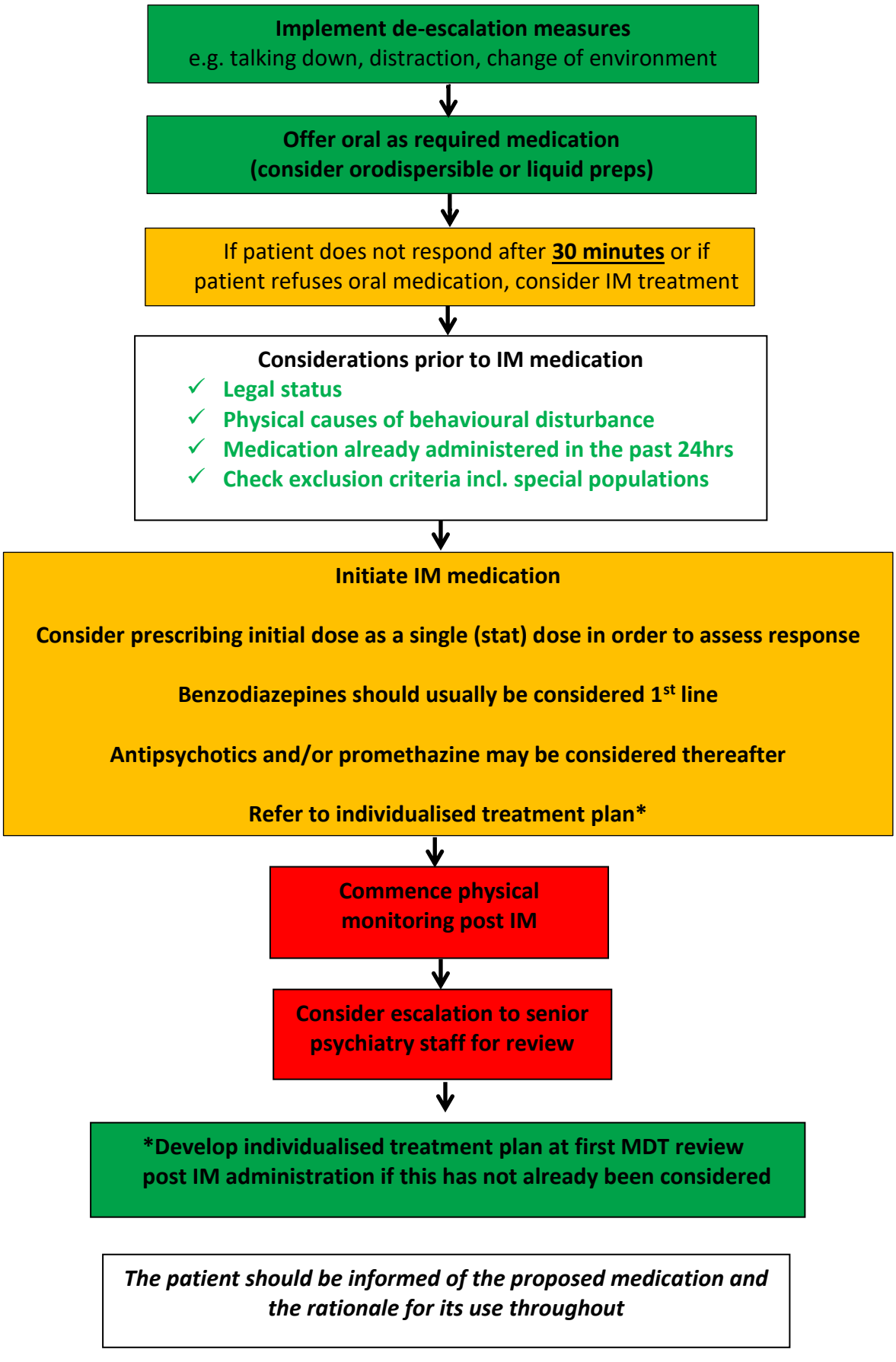


Emergency detention certificate (EDC)

An emergency detention certificate (EDC) can be granted by any fully registered and licensed medical practitioner, who must consult a mental health officer (MHO) unless it is not practicable to do so. If it is not practicable to consult or obtain consent from an MHO, the medical practitioner must explain the reasons on the EDC. The individual can then be given urgent medical treatment falling under the provisions of S243 of the MHA (the RMO should notify the MWC within 7 days on a T4 form). This affords the individual the protection that the treatment is authorised under the MHA, with the safeguards the Act affords.

The enforced administration of medication by injection in an informal patient should prompt a review of their status and may necessitate use of the MHA.

Pathway for IM medication for acute behavioural disturbance



The patient should be informed of the proposed medication and the rationale for its use throughout

Table 1: IM medication treatment options. For consideration within a patient's individualised treatment plan *(refer to BNF and individual SPCs for full prescribing information)*[6,7]	
Benzodiazepines	
Lorazepam	• Adults 1-2mg (max 4mg/24 hours). • Lower doses (0.5-1mg) should be considered in certain groups of patients; older adults, frail adults, in patients under 18 years of age and learning disability. • **A lower dose range (0.5- 1mg) should be used for benzodiazepine-naïve patients and adjusted if required according to response and following senior review.** Consider prescribing as a set dose rather than a dose range. • A higher maximum dose of 8mg/24 hours should only be considered following consultation with a senior psychiatrist.
Midazolam	• As an alternative to lorazepam • Adults - 5mg-7.5mg, repeated up to a maximum of 15mg/ 24hours • Lower doses should be considered in certain groups of patients; older adults, frail adults, in patients under 18 years of age and learning disability. • Use only when there are supply issues associated with lorazepam
Antipsychotics	
Aripiprazole	• Adults - 9.75mg • Older adults and patients under 18 years of age - 5.25mg-9.75mg • Repeated after a minimum of 2 hours up to a maximum of 30mg/ 24 hours • Max 3 injections in 24 hours
Haloperidol	• Adults 2.5-5mg IM (max Haloperidol 15-20mg/24 hours.) • In practice, dose should only exceed 15mg/24 hours in exceptional circumstances **Do not use IM haloperidol in the following situations;** • **In Lewy body dementia or where it cannot be excluded** • **In older adults (unless under specialist advice)** • **In frail adults (unless under specialist advice)** • **In learning disability (unless under specialist advice)** • **In patients under 18 years of age** • **If the patient is antipsychotic naïve** • **If the cardiac status is unknown (need baseline ECG prior to haloperidol)** • **If there is evidence of cardiovascular disease including prolonged QTc** • **In combination with other drugs that can prolong the QTc interval**
Olanzapine	• Adults - 5mg-10mg • Older adults - 2.5-5mg • Patients under 18 years of age - 2.5-10mg • Repeated after a minimum of 2 hours up to a maximum of 20mg/ 24 hours • Max 3 injections in 24 hours • Usual maximum treatment course is 3 consecutive days • Must not be administered with IM benzodiazepines • If the patient is considered to need IM benzodiazepine treatment, this should not be given until at least one hour after IM olanzapine administration • If the patient has received IM benzodiazepines, IM olanzapine should only be considered after careful evaluation of clinical status, and the patient should be closely monitored for excessive sedation and cardio-respiratory depression • IM olanzapine does not have a UK Marketing Authorisation (product licence)

Table 1: IM medication treatment options. For consideration within a patient's individualised treatment plan *(refer to BNF and individual SPCs for full prescribing information)*[6,7]	
Antihistamines	
Promethazine	• Adults - 25-50mg, repeated after a minimum of 1-2 hours up to a maximum of 100mg/ 24 hours • Patients under 18 years of age - 10-25mg, repeated after a minimum of 1-2 hours up to a maximum of 50mg/ 24 hours • Anticholinergic - caution in older adults • May be useful in a benzodiazepine-tolerant individual. • May be useful if there are concerns regarding the use of antipsychotics e.g. in antipsychotic naïve patients. • Combination of haloperidol/promethazine is recommended by NICE and SIGN [1, 7] • Risk of EPSE may be minimised by combining promethazine with haloperidol [7,8]
Consider the pharmacokinetic properties of treatment options when considering frequency of repeat dosing	

Zuclopenthixol acetate (Clopixol Acuphase®) should not be prescribed where rapid sedation is required**. It is not quick acting, is a potentially hazardous preparation with little published evidence to support its use in psychiatric emergencies and has the potential to be used inappropriately. In practical terms, zuclopenthixol acetate should be reserved for a minority of patients who have a prior history of its use.** Refer to **Zuclopenthixol Acetate Injection Guidelines for Use**

Table 2: Pharmacokinetics of IM medication [6,, 10]

Medication	**Usual adult doses**	**Max dose/ 24 hours**	**Time to peak concentration (Tmax)**	**Elimination half-life (T1/2)**
Lorazepam	1-2mg	4mg *	60-90 mins	12-16 hours
Midazolam	5-7.5mg	15mg	30 mins	1.5-2.5 hours
Haloperidol	2.5-5mg	20mg**	20 mins	20 hours
Olanzapine	5-10mg	20mg	15-45 mins	30 hours
Aripiprazole	9.75mg	30mg	60 mins	75-146 hours
Promethazine	25-50mg	100mg	2-3 hours	5-14 hours
With the exception of aripiprazole, all medications listed in the above table are licensed to be administered in the deltoid, lateral thigh or gluteus (aripiprazole is licensed for deltoid and gluteus)				

***** BNF maximum of lorazepam is 4mg/ 24 hours - higher doses of up to 8mg/ 24 hours should only be considered following consultation with a senior psychiatrist

****** In practice, dose of haloperidol should only exceed 15mg/24 hours in exceptional circumstances

Table 3: Risks Associated with IM medication [6,7]	
Benzodiazepines e.g. lorazepam, midazolam	**Risks of treatment**
	Loss of consciousness, respiratory depression or arrest, paradoxical increase in aggression, cardiovascular collapse (in patients receiving clozapine and benzodiazepines)
	Cautions in use
	COPD and asthma IV flumazenil must be available in case of benzodiazepine-induced respiratory depression (Appendix 3)
Antipsychotics e.g. haloperidol. olanzapine, aripiprazole	**Risks of treatment**
	Altered consciousness, cardiovascular and respiratory complication and collapse (risk of sudden death), QTc prolongation, reduction in seizure threshold, akathisia, dystonia, dyskinesia, excessive sedation, Neuroleptic Malignant Syndrome (NMS)*
	Cautions in use
	Haloperidol use contraindicated in combination with other medicines known to prolong QTc interval IM procyclidine should be available to treat acute dystonia related to haloperidol Olanzapine IM should not be administered within an hour of IM benzodiazepine Previous NMS*
Antihistamines e.g. promethazine	**Risks of treatment**
	Excessive sedation, painful injection, anticholinergic effects, hypotension, arrhythmias
	Cautions in use
	Respiratory conditions, coronary artery disease, epilepsy, hepatic and renal insufficiency Contraindicated in CNS depression and those who have taken monoamine oxidase inhibitors within past 14 days

Refer to the current Summary of Product Characteristics (SPC) [6] or BNF[7] for the most up to date advice on cautions/ contraindications/ drug interactions.

***Neuroleptic Malignant Syndrome (NMS) is a medical emergency**

Patients presenting with increased temperature, sweating, restlessness, altered consciousness, marked muscular rigidity, tachycardia or changes in blood pressure should alert staff to the possibility of NMS. Such signs require cessation of all antipsychotic drugs, cooling of the patient and urgent medical assessment.
Neuroleptic malignant syndrome - Symptoms, diagnosis and treatment | BMJ Best Practice

Table 4: Monitoring post IM medication[9]

Post IM medication administration monitoring bundle should include:

- NEWS
- Fluid balance chart
- Visual post IM monitoring form where appropriate (only to be used if patient refuses physical observations or remains too disturbed to obtain physical observations) (Appendix 2)
- Post IM incident recording form (Appendix 3).

Parameter	**Frequency**
The following parameters should be monitored, documented and scored using the NEWS tool	After IM medication, ideally within 15 minutes, then every 15 minutes for one hour.
Respiration **Oxygen saturation** **Temperature** **Blood pressure** **Heart rate** **Level of alertness**	If the patient is asleep, over-sedated or significantly physically unwell, monitor every 15 minutes and continue monitoring until patient is ambulatory and there are no concerns regarding physical health status. Consider increased monitoring if the individual; • has taken illicit drugs or alcohol • has a pre-existing physical health problem • has experienced any harm as a result of any restrictive intervention[1] Only where patient refuses physical observations or remains too disturbed to obtain physical observations, the visual post IM monitoring form can be initiated (Appendix 2)
Record and score all observations on NEWS. Escalate if necessary according to NEWS actions and escalation recommendations.	
Fluid balance	Use monitoring sheet to ensure adequate hydration, avoid fluid overload. Obtain U&Es where clinically appropriate.
Observation status	Ensure the patient is observed **WITHIN EYE SIGHT** by trained staff.

A post-incident debrief involving patient and staff members involved should take place at the earliest opportunity following an episode of IM medication (appendix 3)

Table 5: Management of potential problems occurring during the use of IM medication	
Contact duty doctor as a matter of urgency	
Problem	**Remedial Measures:**
Acute dystonias **(including oculogyric crises)**	Give procyclidine 5-10mg IM, **repeat after 20 minutes if necessary**
Reduced respiratory rate **(<10 / minute** **or oxygen saturation <90%)**	Give oxygen, **ensure patient is not lying face down** Give flumazenil **if benzodiazepine-induced respiratory depression (Appendix 1)** **Monitor respiration until rate returns to baseline level.** **If** induced by other agent **patient may require mechanical ventilation –** arrange transfer for intensive medical treatment immediately.
Reduced respiratory rate **(<5 / minute)**	**Medical Emergency – institute emergency treatment, use a bag-mask or pocket mask to improve oxygenation and ventilation, whilst calling for expert help and arrange immediate transfer.**
Tachycardia **(>140 / min)**	**Consider ECG. Refer to specialist medical care immediately**
Irregular pulse or bradycardia **(<50 / min)**	**Consider ECG. Refer to specialist medical care immediately**
Orthostatic hypotension	**Lie patient flat, raise legs if possible, monitor closely including regular BP measurement**
Fall in blood pressure **(where systolic BP < 90mmHg** **or diastolic BP < 50mmHg)**	**Urgent medical assessment** **Lie patient flat, raise legs if possible, monitor closely including regular BP measurement**
Increased temperature **(>37.5^{0}C)**	**Urgent medical assessment** **Withhold antipsychotics due to potential risk of NMS and arrhythmias**
Activate the local emergency protocol	

References:

1. NICE guideline. Violence and aggression: short-term management in mental health, health and community settings (NG10).May 2015 www.nice.org.uk/guidance/ng10

2. NHS Lanarkshire Delirium Guidelines. Sep 2020. https://nhslguidelines.scot.nhs.uk/media/1822/delirium-guideline.pdf

3. NHS Lanarkshire High Dose Antipsychotic Treatment Guidelines. Oct 21 https://nhslguidelines.scot.nhs.uk/media/1844/high-dose-antipsychotic-treatment-version-2.pdf

4. Mental Welfare Commission for Scotland. Advice Notes. Medical Treatment under Part 16 of the Mental Health (Care and Treatment) (Scotland) Act 2003. March 2014

5. Mental Welfare Commission for Scotland. A report into the emergency detention of people who are already in hospital. Oct 2012

6. Electronic Medicines Compendium. Summary of Product Characteristics. www.medicines.org.uk accessed online 4/8/22

7. British National Formulary. https://www.medicinescomplete.com

8. Scottish Intercollegiate Guidelines Network (SIGN). Management of schizophrenia. (SIGN publication no. 131). March 2013 www.sign.ac.uk

9. Patel et al. Joint BAP NAPICU evidence-based consensus guidelines for the clinical management of acute disturbance: De-escalation and rapid tranquillisation. Journal of Psychopharmacology 2018;1-40

10. Martindale. The Complete Drug Reference. https://www.medicinescomplete.com Accessed 4/8/22

11. Taylor DM, Barnes TRE, Young AH. The Maudsley Prescribing Guidelines in Psychiatry. 14th edition Wiley Blackwell

Table 6: Audit Criteria-Guidelines for IM medication for Acute Behavioural Disturbance

Criterion Statement	Standard	Exceptions
De-escalation and oral medication have been tried without success.	100%	None
There is evidence of an individualised treatment plan incorporating the use of de-escalation techniques and as required oral medication completed after the first MDT review following admission.	100%	None
If haloperidol is prescribed in combination with other drugs known to prolong QTc the rationale is fully documented.	100%	None
Intramuscular medication(s) are prescribed within the doses specified.	100%	Clinically appropriate to use lower/higher doses
Doses or total daily dose out with those advised in the guideline are recorded in the patient's medical notes.	100%	None
All relevant post IM monitoring is completed and documented.	100%	Patient refuses to allow physical monitoring to take place. Visual monitoring form should be used.
The patient's experience of the use of intramuscular medication is recorded.	100%	Patient refuses to engage
Advice is sought from a senior clinician in the event of no response to a second IM administration.	100%	None

Appendix 1: Guidelines for use of flumazenil[6, 11]

Indication for use	**If respiratory rate falls below 10/minute after the administration of benzodiazepines**
Contraindications	Patients with epilepsy who have been receiving long-term benzodiazepines
Caution	Dose should be carefully titrated in hepatic impairment
Dose and route of administration	Initially; **200micrograms intravenously** over 15 seconds, if required level of consciousness not achieved after 60 seconds then; **subsequent dose of 100 micrograms** over 10 seconds **repeat at 60 second intervals** if necessary
Maximum dose	1mg in 24 hours (one initial dose and eight subsequent doses)
Side effects	Patients may become agitated, anxious or fearful on awakening. Seizures may occur in regular benzodiazepine users
Monitoring	Monitor respiration continuously until rate returns to baseline level. Flumazenil has a shorter half-life than most benzodiazepines, therefore respiratory function may recover then deteriorate again.

Notes:-

- **All wards using intramuscular benzodiazepines must hold a stock of IV flumazenil for use in emergency.**
- **If respiratory rate does not return to normal or patient is not alert after initial doses assume sedation due to some other cause**
- **Some mental health and learning disabilities wards have no 24 hour medical cover or nursing staff trained to administer IVs. In the event that a patient experiences respiratory depression after administration of IM benzodiazepines and no trained member of staff is available to administer flumazenil, a 999 call should be made and the patient transferred to A&E by ambulance.**

Appendix 2: Visual Post IM Monitoring Form

Name: CHI:	**<u>Only to be used if patient refuses physical observations or remains too disturbed to obtain physical observations</u>** Assess patient every 15 minutes ticking the boxes which best describe the patient and taking appropriate action based on colour. If there is still concern about physical health after an hour continue to monitor.
Date:	No action
Time IM medication administered:	Discuss with Nurse in Charge
Staff member completing form:	Medical Review

Respiratory Rate	15	30	45	60
<10				
10-20				
>20				
>30				

Breathing	15	30	45	60
No breathing difficulty				
Breathing difficulty (shallow, laboured, hyperventilation, apnoea)				
Cyanosis (blue/ purple/ dusky around lips or finger tips)				

Circulation	15	30	45	60
No concerns				
Pale/White/Clammy face, hands or feet				
Visual disturbance				
Lightheaded				
Syncopal Episode				

Temperature	15	30	45	60
No visual indicators				
Sweating				
Flushing				
Rigors				

Consciousness	15	30	45	60
Alert				
Responds to Voice/ Confused				
Responds to Pain				
Unresponsive				

Side Effects	15	30	45	60
No visual evidence				
Stiffness in arms or legs				
Vomiting				
Seizure				
Acute dystonic reaction				

Appendix 3: Post IM incident recording form

Patient name: ……CHI:…….. Date:……

State reason for administration of IM medication

Please complete all sections below and circle or tick where appropriate

De-escalation prior to use of IM	**Yes**	**If Yes, what de-escalation techniques were used?**		**Oral medication offered**	**Yes**	**Details:**
	No	**If No, why not?**			**No**	

IM Medication	**Dose**	**Time administered**		**Initiated by:**					
				Patient Request		**Nurse**		**Medical**	
Use of IM	**Proactive**		**DATIX number**			**Physical intervention?**		**Yes**	**No**
	Reactive					**Duration (mins)**			

Physical Observations (Please tick where appropriate)

Time after IM	Physical Observation	Visual Observation	Combination of Both
15 minutes			
30 minutes			
45 minutes			
60 minutes			
If no physical observations, please give reason:			

Patient review 1hr post IM (Please tick where appropriate)

Much Improved	Minimally Improved	No Change	Deterioration	Comments

Concerns/Recommendations:

Post incident debrief involving staff and patient should be completed at the earliest opportunity

Name and designation of staff member completing form:…….....