NHS GGC Mental Health Service

Guideline for use of Intramuscular Medication for Acutely Disturbed Behaviour in Mental Health and Associated Services

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Guideline for use of Intramuscular Medication for Acutely Disturbed Behaviour in Mental Health and Associated Services.

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When reading this policy please consult the NHS Consent Policy when considering any aspect of consent

Revision/Amendment Information

Please record brief details of the changes made alongside the next version number. If the procedural document has been reviewed **without change**, this information will still need to be recorded although the version number will remain the same.

Version	Date	Brief Summary of Changes	Author(s)
		MHS Rapid Tranquillisation Guideline	
1.0		Guideline for use of Intramuscular Medication for Acutely Disturbed Behaviour in Mental Health and Associated Services	
2.0	Jan 2018	1. Page 3, section 1, 5th bullet point amended to make reference to the haloperidol contra-indication. 2. Page 4, section 4, first paragraph the e.g. part is new 3. Page 4/5, section 6, under midazolam new link to guidance added. 4. Page 5, 'Benzodiazepine notes' new 2nd bullet point added. 5. Page 5, section 7, 1st sentence new maximum cumulative haloperidol dose added. 6. Page 5, section 7, new text box added explaining the haloperidol contra-indication. 7. Page 6, new link added to olanzapine protocol. 8. Page 6, Risk Associated with Antipsychotics section, 1st bullet point amended with regards to haloperidol. 9. Page 7, Monitoring every 15 minutes section, 5th bullet point new. 10. Page 9, item 14 added to the bibliography. 11. Page 10, audit criteria, new item added regarding haloperidol	
2.1	24/10/2018	Addition of information and link to GGC Consent policy	C Sellar
2.2	04/2021	1. Midazolam added as the benzodiazepine of choice 2. Appendix 2 added- Pharmacokinetic properties of IM medication	S Burke

1. Introduction

Emergency Intramuscular Sedation (rapid tranquillisation) in this guideline refers to the use of medication by the intramuscular route when the oral route is not possible or appropriate and urgent treatment with medication is needed.

Treatment with intramuscular medication should be seen as the culmination of an approach that incorporates individualised care planning, anticipatory care, de-escalation and oral treatment; as such it is anticipated that the majority of patients will not require it.

When considering the use of intramuscular medication the following factors must be taken into account:

- The service user's preferences or advance statements and decisions
- Pre-existing physical health problems or pregnancy
- Consider intoxication including intoxication with a novel psychoactive substance. If intoxication with a novel psychoactive substance is suspected, contact a consultant psychiatrist for advice and consider transfer to an ED department.
- Previous response to these medications, including adverse effects
- Potential for interactions with other medications especially in the case of haloperidol where the use in combination with drugs known to cause QTc prolongation is a contra-indication. (see section 4)
- The total daily dose of medications prescribed and administered.

2. Scope

The guideline is applicable to all Mental Health and Learning Disability settings across NHSGGC.

This guideline supersedes all pre-existing rapid tranquillisation guidelines.

This guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgment should be exercised on the applicability of any guideline, influenced by individual 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, after discussion with the patient or carer, 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.

3. Prerequisites to Intramuscular Medicine Use

Each patient will have an individualised as required treatment plan incorporating the use of de-escalation techniques and as required or discretionary oral medication as appropriate for the patient (See Appendix I: Best practice points for the prescribing & administration of as required psychotropic drugs). The plan should cover the choice of IM medication where necessary.

Where necessary, completion of relevant MHA documentation i.e. a T3/T4 form may be required in the event that intramuscular medication is administered (see Advice Notes, Medical Treatment under part 16 of the Mental Health (Care and Treatment) (Scotland) Act 2003; Mental Welfare Commission for Scotland). It should be noted that treatment under the Adults with Incapacity (Scotland) Act 2000 does not authorise the use of restraint and therefore the use of IM medication for management of acutely disturbed behaviour. If IM administration is required the appropriate MHA documentation should be completed.

When IM sedation is administered, a doctor should be informed and available to attend the patient within 30 minutes if required[1,2].

Consider the potential for inadvertent high-dose antipsychotic therapy when prescribing IM antipsychotics.

When prescribing medication for use intramuscularly, write the initial prescription as a once-only dose, do not repeat it until the effect of the initial dose has been reviewed.

4. Choice of Intramuscular Medication

Recommended Treatment Choices, *NICE Guidance (NG10 2015)*
Midazolam (or lorazepam, if used locally)
or
Haloperidol +/- promethazine
NB: NICE and SIGN recommend combining haloperidol and promethazine (not in the same syringe), however current practice in Scotland is to use haloperidol alone.

Alternative Medication Options
The following medicines are alternative options not recommended by NICE for the purpose of emergency IM treatment in acutely disturbed patients but may be considered where the use of haloperidol is inappropriate e.g. where a patient is already prescribed a regular medication known to prolong the QTc interval.

- Aripiprazole
- Olanzapine

Promethazine may be a useful option in a benzodiazepine-tolerant patient or where there is concern over the use of an antipsychotic medication.

Appendix 2 gives a summary of the pharmacokinetic properties of IM medication.

Intramuscular Medication Doses in Adults

5. Benzodiazepines

Have flumazenil IV available in case of benzodiazepine-induced respiratory depression.

1st choice: Midazolam 5mg-7.5mg
Maximum cumulative dose over 24 hours: 15mg

¼- ½ adult dose- In elderly (>60), physically ill or debilitated patients, individuals with renal, hepatic or cardiac function or chronic respiratory insufficiency.

Monitoring for excessive sedation, respiratory depression, hypotension for at least 4 hours after last dose.

Midazolam 10mg/2ml ampoules should be used for this indication, as it is a controlled drug (CD), it must be ordered in the ward CD order book, stored in CD cupboard and receipt/administration recorded in the CD register.

Midazolam is considered 1st choice due to significant increase in the cost of lorazepam injection.
2nd Choice: Lorazepam 2mg
Maximum cumulative dose (oral and/or IM) over 24 hours: 8mg.

Note: This dose exceeds the recommended BNF maximum licensed dose for the treatment of anxiety (4mg)

Risks associated with benzodiazepines

- Respiratory depression or arrest.
- Loss of consciousness.

Benzodiazepine are useful if:

- There is insufficient information to guide the choice of medication, or the patient has not taken antipsychotic medication before
- The patient is already on a regular antipsychotic and the use of haloperidol is contraindicated.
- There is evidence of cardiovascular disease, including a prolonged QT interval, or no electrocardiogram has been carried out, use an intramuscular benzodiazepine
- If olanzapine IM administered, wait one hour before administering an IM benzodiazepine

6. Antipsychotics

Haloperidol 5mg

Have procyclidine IM available to treat acute dystonias (including oculogyric crises).

Maximum cumulative dose over 24 hours: 20mg IM/Oral. It is anticipated that most patients will not require more than 15mg cumulatively per day.

Where a patient is benzodiazepine tolerant or prescribed regular benzodiazepines, consider the use of haloperidol +/- promethazine first.

Do not give haloperidol to patients whose cardiac status is not known

The SPC recommends a pre-treatment ECG. If a pre-treatment ECG is not possible, there must be careful consideration given to the appropriateness of haloperidol as a treatment choice.

The contra-indications and maximum daily doses of haloperidol have changed. The use of haloperidol is contra-indicated in combination with drugs that prolong the QTc interval (https://www.crediblemeds.org/).

Consequently, where possible such combinations should be avoided. The use of haloperidol in such a combination renders treatment unlicensed[14]. In the event that clinical circumstances make the use of such combinations unavoidable and all other options have been considered ensure the following actions are taken;

- Ensure the rationale for treatment is clearly documented and reflected in the patient's as required care plan.
- Obtain and document consent. If informed consent is not possible ensure a Designated Medical Practitioner (DMP) second opinion is obtained.
- Ensure modifiable risk factors for QTc prolongation are minimised e.g. electrolyte abnormalities (hypokalaemia, hypomagnesaemia, hypocalcaemia), extreme physical exertion, discontinue other drugs known to prolong QTc if possible
- 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

The implication of all of the above information is that the use of haloperidol in combination with any other antipsychotic should be avoided where possible

Olanzapine 10mg

Maximum cumulative dose (oral and/or IM combined): 20mg. No more than 3 injections should be given in 24 hours. Maximum treatment course is 3 days.

- Adults: 5 – 10mg by intramuscular injection. A repeat dose of 5 – 10mg may be given after a minimum of 2 hours
- Elderly: 2.5 – 5mg by intramuscular injection. A repeat dose of 2.5 – 5mg may be given after a minimum of 2 hours.
- Adolescents: 2.5 - 5mg by intramuscular injection (depending on age, weight, previous exposure to antipsychotic medication, and whether has underlying neurodevelopmental disorder/LD). A repeat dose of 2.5 - 5mg may be given after a minimum of 2 hours. Maximum daily dose is 10mg - 20 mg (again dependent on above parameters and including any oral olanzapine)

If olanzapine IM administered, wait one hour before administering an IM benzodiazepine.

If an IM benzodiazepine administered, the clinical status of the patient should be assessed and consultant advice obtained prior to IM olanzapine being administered.

Aripiprazole 9.75mg

Maximum cumulative dose (oral and/or IM combined): 30mg

Risks Associated With Antipsychotic Drugs

- Cardiovascular complications, QTc prolongation especially if haloperidol is used in combination with other drugs known to prolong QTc.
- Reduction in seizure threshold.
- Adverse side effects: subjective experience of restlessness (akathisia), acute rigidity (dystonia) and involuntary movements (dyskinesia).
- Altered consciousness.
- Neuroleptic malignant syndrome: Increased temperature, sweating, restlessness, altered consciousness or marked muscular rigidity should alert staff to the possibility of neuroleptic malignant syndrome (NMS). Such signs require cessation of all antipsychotic drugs, cooling of the patient and urgent medical assessment.

NOTE: Zuclopenthixol acetate (Clopixol Acuphase) is NOT recommended for immediate IM sedation. Further guidance on it use is available here.

7. Antihistamine

Promethazine 50mg
Maximum cumulative dose over 24 hours: 100mg (wait 1-2 hours between doses to assess response)

Note: May be a useful option in a benzodiazepine-tolerant patient or if there is concern over the use of an antipsychotic medication.

Risks Associated With Promethazine

- Promethazine is contraindicated in people with central nervous system depression and those who have taken monoamine oxidase inhibitors within the past 14 days.
- Cautions include respiratory conditions, coronary artery disease, epilepsy and hepatic

and renal insufficiency.

- Possibility of QTc prolongation (if administered via i/v)
- Reduction in seizure threshold

8. General guidance

- Use lower doses in other patient groups e.g. elderly or debilitated.
- Care must be taken in struggling patients to avoid inadvertent IV administration.

After an initial IM Administration:

- Nursing staff commence physical monitoring immediately after administration
- Repeat after 30-60 minutes if insufficient effect (**exception**: wait 1-2 hours after promethazine and 2 hours after olanzapine IM).
- Response to each dose should be documented in the patients' care record.
- Be aware of the total dose of medication administered over the last 24 hour period.

9. Monitoring Requirements

After the administration of intramuscular sedation, monitor side effects and the patient's pulse, blood pressure, respiratory rate, temperature, level of hydration and level of consciousness **at least every hour** until the patient is ambulatory and there are no further concerns about their physical health status. Where full monitoring is impractical, document clearly the reasons why and ensure a minimum observation of respiration and level of consciousness.

Monitor every 15 minutes:

- **If the BNF maximum dose has been exceeded OR**
- **The patient:**
    - Appears to be asleep or sedated
    - Has taken illicit drugs or alcohol
    - Has a pre-existing physical health problem
    - Has experienced any harm as a result of any restrictive intervention
    - Has been given haloperidol in combination with other drugs known to prolong QTc

10. Management of Problems Occurring During the use of Intramuscular Medication:

Problem	Remedial Measures:
Contact Duty Doctor	
Acute dystonias (including oculogyric crises)	**Give procyclidine 5-10mg IM**
Reduced respiratory rate <10 / minute or oxygen saturation <90%	**Give Oxygen.** Give **flumazenil** if benzodiazepine-induced ▪ Initially 200mcg IV over 15 seconds – if required level of consciousness not achieved after 60 seconds then: ▪ Subsequent dose: 100mcg over 10 seconds, repeated after 60 seconds if necessary. ▪ Maximum dose: 1mg in 24 hours (one initial dose and eight subsequent doses) Monitor respiration until rate returns to baseline level. If **induced by other agent** patient may require mechanical ventilation – **arrange transfer to ITU 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 (>140min)	Refer to specialist medical care immediately
Irregular pulse or bradycardia (<50 / min)	Refer to specialist medical care immediately
Orthostatic hypotension	Lie patient flat, raise legs if possible, monitor closely including blood pressure
Fall in blood pressure (systolic <90mmHg or diastolic <50mmHg)	Urgent medical assessment Lie patient flat, raise legs if possible
Increased temperature (>37.5^{0}C)	Urgent medical assessment Withhold antipsychotics due to potential risk of NMS and arrhythmias
Activate the local emergency protocol In Hospital Dial 2222 **Dial 999/appropriate local emergency number for learning disability in-patient units and Forensic Units**	

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10. Olanzapine IM (Short Acting Injection) Prescribing Guidance (NHSGGC)
11. Use of Intramuscular Midazolam for Acutely Disturbed Behaviour – PMG(MH) October 2017 (NHSGGC)
12. High Dose and Multiple Antipsychotic Prescribing Guideline (NHSGGC)
13. BNF No74 September 2017
14. Use of licensed medicines for unlicensed applications in psychiatric practice RCPsych December 2017

12. Audit Criteria: Guideline for use of Intramuscular Medication for Acutely Disturbed Behaviour in Mental Health and Associated Services

Criterion Statement	Standard	Exceptions
There is evidence of an individualized treatment plan incorporating the use of de- escalation techniques and 'PRN' oral medication within 7 days of admission.	100%	None
The rationale for initiating the use of intramuscular medication using this guideline is documented in the care record.	100%	None
If haloperidol is prescribed in combination with other drugs known to prolong QTc the rationale is fully documented.	100%	None
Drugs used for the use of intramuscular medication are used within the doses specified.	100%	Clinically appropriate to use lower/higher doses
There is a record of medication administered for the use of intramuscular medication.	100%	None
Doses or total daily dose outwith those advised in the guideline are recorded in the care record.	100%	None
All relevant physical monitoring during a period of the use of intramuscular medication is undertaken and documented.	100%	Patient refuses to allow physical monitoring to take place
The patient's experience of the use of intramuscular medication is recorded.	100%	Patient refuses to contribute
If no response to the first injection during a period of the use of intramuscular medication, decision to administer a second dose is documented.	100%	None

Appendix 1:

Best Practice Points for the Prescribing & Administration of as Required Psychotropic Drugs

Psychotropic drugs are frequently prescribed on an 'as required' basis when patients are admitted to mental health wards. They are intended to be available for nursing staff to administer at their discretion to patients as part of the management of acute psychiatric symptoms e.g. agitation, anxiety and distress. Local and national audits have identified on many occasions that these drugs are often prescribed without appropriate care, administered unnecessarily and the details surrounding their use is often inadequately documented. There is often lack of review leading to almost open ended prescriptions.

This document describes best practices points to support the best use of this valuable intervention.

Prescribing

1. Where possible as required psychotropic drugs must not be prescribed routinely on admission.
2. Ideally the need for acute as required medication must be individually assessed and if deemed appropriate once only doses should be prescribed initially. In areas with limited medical support especially out of hours it may be appropriate to prescribe as required psychotropic drugs on admission if there is a high likelihood the patient will require them.
3. If once only doses are used then the need for a routine as required prescription should be considered.
4. If routine as required psychotropic drugs are prescribed the individual dose, route of administration, frequency of administration and maximum dose to be given in any 24 hour period must be clearly expressed on the prescription sheet.
5. With the exception of clozapine, the patient's regular antipsychotic may be an appropriate choice for as required use.
6. Do not prescribe as required antipsychotics to antipsychotic naive patients. Prescribing benzodiazepines is preferable until the clinical situation becomes clear.
7. The indication should be expressed as clearly as possible, i.e. try and avoid simply stating 'agitation'.
8. An appropriate entry should be made in the medical notes detailing the reason for the prescription and providing a context for the indication expressed.
9. For patients detained under the terms of the Mental Health Act who are prescribed oral as required psychotropics, an appropriate entry may be required on any T2/T3 form. Intramuscular as required antipsychotics may only be included in a T3 treatment plan.
10. The need for an on-going as required psychotropic prescription should be reviewed frequently. If it has not been administered for more than 4 weeks discontinuation is recommended.
11. If haloperidol is to be prescribed consider the patient's cardiac status and if practical do an ECG to exclude prolonged QTc before prescribing. Avoid combination with other drugs known to prolong QTc.
12. If prescribing any antipsychotic as required be aware to the potential of inadvertent high dose in combination with any regular antipsychotic prescription.

13. For in-patients, the use of all as required psychotropics should be reviewed at each MDT and an individualised as required care plan developed.

Administration

14. Nurses should only administer as required psychotropic drugs for the prescribed indication and then only if non-pharmacological approaches have failed or are inappropriate.
15. If a patient is prescribed more than one as required psychotropic drug for the same indication, avoid administering combinations if possible and always allow sufficient time for one drug to take effect e.g. 30-60 minutes before administering a second drug.

Recording

16. All details pertaining to each administration should be recorded in the patient's case record i.e. the chronological account of care on the in-patient EMIS record. The details recorded must include:

    - Date & time given
    - Reason for administration
    - Details of non-pharmacological approaches attempted
    - Drug & dose given
    - Details of response including any side effects noted
    - For intramuscular doses, details of any physical health monitoring undertaken (pulse, blood pressure, respiration, level of consciousness).

A template within EMIS has been developed to support this. All use of as required psychotropic drugs should be recorded on this EMIS template.

17. Feedback on cumulative as required psychotropic use will be included in the discussion of each patient at each multi-disciplinary team meeting. This will facilitate appropriate review of the treatment plan.

Appendix 2-
Pharmacokinetic properties of IM medication

Medication	Usual adult doses	Max dose in 24 hours	Time to peak concentration (Tmax)	Elimination half-life (T1/2)	Licensed administration site
Midazolam	5-7.5mg	15mg	30 mins	1-5-2.5 hours	Deltoid, lateral thigh, gluteus
Lorazepam	1-2mg	4mg*	60-90 mins	12-16 hours	Deltoid, lateral thigh, gluteus
Haloperidol	2.5-5mg	15mg**	20 mins	20 hours	Deltoid, lateral thigh, gluteus
Olanzapine	5-10mg	20mg	15-45 mins	30 hours	Deltoid, lateral thigh, gluteus
Aripiprazole	9.75mg	30mg	60 mins	75-146 hours	Deltoid, gluteus
Promethazine	25-50mg	100mg	2-3 hours	5-14 hours	Deltoid, lateral thigh, gluteus

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

**** In the majority of patients, doses of up to 15 mg/day are sufficient. The maximum dose is 20 mg/day.**