Rapid Tranquillisation (RT) Policy

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Executive Lead: Executive Director – Quality & Medical Leadership
Lead Author: Head of Medicines Management
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Target Audience:
This Policy must be understood by staff working in:
- Teams/units/wards in HPFT where healthcare professionals are involved in the management of acute behavioural disturbance including rapid tranquillisation (RT)
P1 - Version Control History:
Below notes the current and previous Version details- full history is in Part 3

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<th>Author</th>
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P2 - Relevant Standards:

a) CQC Regulation 12: Safe care and treatment
- where equipment or medicines are supplied by the service provider, ensuring that there are sufficient quantities of these to ensure the safety of service users and to meet their needs
- the proper and safe management of medicines

b) Equality and RESPECT: The Trust operates a policy of fairness and RESPECT in relation to the treatment and care of service users and carers; and support for staff.

P3 - The 2012 Policy Management System and the Policy Format:
The PMS requires all Policy documents to follow the relevant Template.

- **Policy Template** is the essential format for most Policies. It contains all that staff need to know to carry out their duties in the area covered by the Policy.

- **Operational Policies Template** provides the format to describe our services, how they work and who can access them.

- **Care Pathways Template** is at the moment in draft and only for the use of the Pathways Team as they are adapting the design on a working basis.

- **Guidance Template** is a sub-section of the Policy to guide Staff and provide specific details of a particular area. An over-arching Policy can contain several Guidance’s which will need to go back to the Approval Group annually.

Symbols used in Policies:

**RULE** = internally agreed, that this is a rule & must be done the way described

**STANDARD** = a national standard which we must comply with, so must be followed

Managers must bring all relevant policies to the attention of their staff, where possible, viewing and discussing the contents so that the team is aware of what they need to do.

Individual staff/students/learners are responsible for implementing the requirements appropriate to their role, through reading the Policy and demonstrating to their manager that they understand the key points.

All Trust Policies will change to these formats as Policies are reviewed every 3 years, or when national Policy or legislation or other change prompts a review. All expired & superseded documents are retained & archived and are accessible through the Compliance and Risk Facilitator Policies@hpft.nhs.uk

All current Policies can be found on the Trust Policy Website via the Green Button or http://trustspace/InformationCentre/TrustPolicies/default.aspx
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1. SUMMARY
This document provides guidance for the management of acute behavioural disturbance, including rapid tranquillisation (RT) i.e. the use of IM psychotropic medication for both informal service users and those detained under the Mental Health Act (MHA) 1983 as amended 2007.

2. PURPOSE
This document provides all staff involved in the prescribing, administration and monitoring of service users receiving RT with background information that will allow them to make appropriate clinical decisions. Each decision must be based on the characteristics of an individual service user and situation.


3. DEFINITIONS

Advance decision - A written statement made by a person aged 18 or over that is legally binding and conveys a person's decision to refuse specific treatments and interventions in the future.

Advance statement - A written statement that conveys a person's preferences, wishes, beliefs and values about their future treatment and care. An advance statement is not legally binding.

Breakaway techniques - A set of physical skills to help separate or break away from an aggressor in a safe manner; they do not involve the use of restraint.

De-escalation - The use of techniques (including verbal and non-verbal communication skills) aimed at defusing anger and averting aggression. Prn oral medication can be used as part of a de-escalation strategy, but prn oral medication used alone is not de-escalation.

Incident - Any event that involves the use of a restrictive intervention – restraint, RT or seclusion (but not observation) – to manage violence or aggression.

Medicines Healthcare Products Regulatory Agency (MHRA) - A government agency responsible for ensuring that medicines and medical devices work and are acceptably safe.

PRN, prn - pro re nata = when required. It must be explained by further information, e.g. route of administration, frequency, minimum dosage interval, maximum daily dose and reason for use.

Psychiatric emergency - The service user’s condition is such that it presents a severe risk to themselves or others, e.g. suicidal or violent, and requires immediate intervention to lessen that risk.

QT - Refers to the measure of the time between the start of the Q wave and the end of the T wave in the heart's electrical cycle.

Rapid tranquillisation (RT) – represents the use of medication by the parenteral route
(usually intramuscular or, exceptionally, intravenous) if oral medication is not possible or appropriate and urgent sedation with medication is needed.

**Violence and aggression** - A range of behaviours or actions that can result in harm, hurt or injury to another person, regardless of whether the violence or aggression is physically or verbally expressed, physical harm is sustained, or the intention is clear.

**RULE**

4. **DUTIES AND RESPONSIBILITIES**

As a Foundation Trust currently operating within a structure of Information Governance, the Board and Chief Executive have the responsibility to ensure effective risk management of service users, provide appropriate training to their staff and provide a suitable infrastructure to establish and continue support for these activities, including recording and monitoring procedures.

The Executive Director of Quality & Medical Leadership as lead for medicines optimisation is directly accountable to the Trust Board.

The Trust Drug and Therapeutics Committee is responsible for ensuring that the guidance meets current good practice.

The Quality and Risk Management Committee has responsibility to ensure the guidance meets national and legal standards and the monitoring of key objectives.

It is the responsibility of the Trust organisational management group to ensure guidance distribution, implementation and compliance throughout the organisation.

Lead Clinicians/Team Managers must ensure that members of their teams involved with the management of acute behavioural disturbance including RT understand their responsibilities within this document. Individual health care professionals have a duty to implement the requirements of this document within their area of responsibility and professional code of conduct. This duty extends to the supervision of support staff when duties are delegated.

For responsibilities of individuals and staff groups please see Appendix 1
5. INTRODUCTION

- Acute behavioural disturbance can occur in the context of psychiatric illness, physical illness, substance abuse or personality disorder.

- There are a variety of approaches for managing acute behavioural disturbance which should be considered in the first instance. These include for example de-escalation, distraction techniques, move to a quiet area, negotiation, reviewing observation level, consideration of location, physical intervention and prn oral medication. All of these strategies should be considered in each case.

- The severity of the disturbed behaviour and associated risk to the service user or to other people and the apparent imminence of that risk, often determine the strategies that are employed in a particular situation. Where the risk is assessed as both severe and imminent, RT may be employed.

- RT involves the use of medication given via the parenteral route. It is a restrictive intervention and must only be used if de-escalation and other preventative strategies including prn oral medication have failed and there is potential for harm to the service user or other people if no action is taken. Continue to use de-escalation throughout a restrictive intervention.

- RT should be used as a risk management strategy and its aim is not to treat any underlying illness or disorder. The aims of RT are three-fold:
  - To reduce suffering for the service user: psychological or physical (through self-harm or accidents)
  - To reduce risk of harm to others by maintaining a safe environment
  - To do no harm (by prescribing safe regimes and monitoring physical health)

  The goal is not to induce sleep or unconsciousness, but to sedate the service user whilst enabling them to still be able to participate in further assessment and treatment.

- Particular caution is necessary if combining RT with physical intervention and seclusion. The indications and risks of RT must be understood by the staff involved. (Refer to section 13)

- RT is not a recognised clinical procedure in the British National Formulary (BNF) and has a limited evidence base. Expert clinical opinion may be used to support prescribing outside the limits set by the BNF or Summary of product Characteristics (SmPC). (Refer also to the ‘Consensus Statement on High-Dose Antipsychotic Medication’ Royal College of Psychiatrists May 2006).

- Clinicians need to ensure that service users are not inadvertently given high doses and/or combinations of antipsychotics, which can potentially be very dangerous. This could occur accidentally through the use of PRN medication, or stat dose medication, given in combination with regular medication.

- Despite the need for rapid and effective treatment, concomitant use of two or more antipsychotics (antipsychotic polypharmacy) should be avoided on the basis of risk associated with QT prolongation (common to almost all antipsychotics). This is a
particularly important consideration in RT where the service user’s physical state predisposes to cardiac arrhythmia.

- The national Prescribing Observatory for Mental Health (POMH-UK) in collaboration with the Royal College of Psychiatrists have produced audit-based Quality Improvement Programmes (QIP) on high dose antipsychotic prescribing and rapid tranquilisation.

6. SERVICE USER’S EXPERIENCE
- Staff must work in partnership with service users and carers and adopt approaches to care that respect service users’ independence, choice and human rights.

- In on-going assessment, the context of using RT needs to be understood, as RT use has the potential to affect the therapeutic relationship. Therefore, the reasons for using RT must be explained to the service user and their family/carer(s) (as appropriate) at the earliest opportunity.

- Effective communication is important during the management of acute behavioural disturbance, especially where there are specific language and sensory communication requirements. The information provided should meet the individual’s communication needs, e.g. people with physical, sensory or learning disabilities or people who do not speak or read English. The Trust guidance on Communicating with Service Users from Diverse Communities provides guidance on communication needs and the procedure on accessing the interpreting service.

- Involve service users in all decisions about their care and treatment and develop care and risk management plans jointly with them. If a service user is unable or unwilling to participate, offer them the opportunity to review and revise the plans as soon as they are capable and willing and, if they agree, involve their carer(s).

- Service users should be offered the opportunity to discuss their experiences and to write an account of this. The narrative should be included in the electronic patient record (EPR), thereby supporting the underlying principles of recovery and inform advance decisions or advance statements.

7. ADVANCE DECISIONS / ADVANCE STATEMENTS

- Service users identified to be at risk of disturbed or violent behaviour should be given the opportunity to have their refusals of treatment or wishes recorded in the form of an advance decision or advance statement. This should fit within the context of their overall care and should clearly state what intervention(s) they would refuse should they lack capacity in the future. This document should be subject to periodic review. (Revised Mental Health Act Code of Practice, 2015).

- Where there is an advance decision documented in the service user’s care plan for a refusal of medication in the event of acute illness, this should be adhered to if deemed to be valid and applicable. Any concerns around the validity and applicability of an advance decision should be addressed to the Directorate Manager (Mental Health Legislation).

- Information about a person’s wishes and feelings regarding treatment, particularly any written statements must be taken in to consideration by decision makers when they are making best interest decisions on behalf of a person who lacks capacity. Advance
statements of wishes are not legally binding on the Trust and, although they should be taken in to account, a person cannot demand a particular treatment that is not deemed to be clinically appropriate.

8. ASSESSMENT OF THE CAUSE OF DISTURBED BEHAVIOUR

- The manifestation of violence and aggression depends on a combination of intrinsic factors, such as personality characteristics and intense mental distress, and extrinsic factors, such as the attitudes and behaviours of surrounding staff and service users, the physical setting and any restrictions that limit the service user's freedom. The impact of violence and aggression is significant and diverse, adversely affecting the health and safety of the service user, other service users in the vicinity, carers and staff.

- Consider physical causes e.g. an acute confusional state, intoxication, head injury, epilepsy, infection or metabolic disturbance. The possibility of hypoglycaemia must be considered as it requires urgent treatment. Consideration must also be given to any concurrent medication, including potential interactions.

- Attempt to understand the situation that led up to the disturbed behaviour. For further guidance refer to the Trust Non-Physical & Physical Assaults (Violence & Aggression) Policy.

- Occasionally violence may not be the result of a disturbed mental state and in this instance calling the police may be the most appropriate action.

9. DE-ESCALATION AND PREVENTION OF VIOLENCE AND AGGRESSION

9.1 Initial safety
- First step is to ensure safety of the service user, staff and others on the ward/unit. This may involve:
  - Making sure a safe number of staff members are available
  - Considering service user’s preferences
  - Considering previous successful intervention
  - Removing the service user to a low stimulus environment
  - Physical interventions
  - Considering past history of adverse reactions to medication
  - Ensuring availability and accessibility of resuscitation equipment
  - Ensuring availability of flumazenil

9.2 De-escalation
- De-escalation techniques (e.g. talking, distraction, time away or use of a low stimulus environment) must always be used prior to using a restrictive intervention (Refer to Trust Non-Physical & Physical Assaults (Violence & Aggression) Policy). Even if this may not prevent the need for RT, it may help preserve the therapeutic relationship and improve safety.

Staff should:
- Maintain an adequate distance
- Ensure the environment is conducive to calmness (e.g. low stimulation levels, presence of other service users)
- Move the service user to a safe place or seclude
- Explain interventions and be calm and self-assured
- Use non-threatening, non-verbal communication
- Converse and try to develop a therapeutic relationship with the service user throughout
- Check for any Advance Statements (including crisis plan) or Advance Decisions to Refuse Treatment

- Consider offering service users with a history of violence or aggression psychological help to develop greater self-control and techniques for self-soothing.

### 9.3 Individualised pharmacological strategy

- A multidisciplinary team that includes a psychiatrist and a specialist pharmacist (where available) should develop and document an individualised pharmacological strategy for using routine and prn medication to calm, relax, tranquillise or sedate service users who are at risk of violence and aggression, as soon as possible after admission to an inpatient psychiatric unit.

- The multidisciplinary team should review the pharmacological strategy and the use of medication at least once a week and more frequently if events are escalating and restrictive interventions are being planned or used. The reviews should be recorded and include:
  - clarification of target symptoms
  - the likely timescale for response to medication
  - the total daily dose of medication, prescribed and administered, including prn medication
  - the number of and reason for any missed doses
  - therapeutic response
  - the emergence of unwanted effects
  - If RT is being used, a senior doctor should review all medication at least once a day

- When prescribing prn (pro re nata, when required) oral medication as part of a strategy to de-escalate or prevent situations that may lead to violence and aggression:
  - Prn medication can be used as part of a de-escalation strategy, but prn medication used alone is not de-escalation
  - Prn medication should not be prescribed routinely or automatically on admission
  - Tailor prn medication to individual need and discuss with the service user if possible
  - Ensure there is clarity about the rationale and circumstances in which prn medication may be used and that these are included in the care plan. The indication should be specified on the prescription chart
  - Ensure the maximum daily dose is specified and does not inadvertently exceed the maximum daily dose stated in the BNF when combined with the person's regular dose, any stat dose and their RT dose
  - Only exceed the BNF maximum daily dose (including prn dose, the regular dose, any stat dose and RT dose) if this is planned to achieve an agreed therapeutic goal, documented, and carried out under the direction of a senior doctor
  - Ensure the time interval between prn doses is specified
  - The multidisciplinary team should review prn medication at each MDT review, or sooner if clinically indicated. If prn medication is to be continued, the rationale for its continuation should be included in the review. If prn medication has not been used since the last review, consider stopping it, following a MDT discussion
  - Physical observations must be monitored in accordance with recommendations from the MDT. This must be documented in the electronic patient record (EPR)
  - The prn side of the prescription chart has a section (amber) for prescribing oral
medication as part of de-escalation. Under ‘Additional instructions’ it states: Complete physical monitoring as per MDT decision. This, together with the route of administration i.e. oral, is pre-printed.

10. CAUTIONS IN THE USE OF RT & CIRCUMSTANCES FOR SPECIAL CARE STANDARD

The service user should be assessed considering the following factors:

- Concurrent treatment including prescribed medicines, those bought over-the-counter and herbal products.

- The presence of congenital prolonged QTc syndromes. The concurrent prescription or use of other medication that may lengthen QTc interval both directly and indirectly. (Refer to Appendix 9 – Psychotropic-related QT prolongation).

- Co-existing medical illnesses e.g. epilepsy, cardiac and respiratory conditions.

- The presence of certain disorders affecting metabolism such as hypo- and hyperthermia, stress, extreme emotions and extreme physical exertion.

- Alcohol or illicit drug use. Due to serious risk to life, service users who are heavily sedated or using illicit drugs or alcohol should be observed more closely.

- Physical health and vital signs if possible – alertness, airway, oxygen saturation, pulse, colour and temperature.

- For older adults use smaller doses of medication. Refer to Appendix 6 - Algorithm for the use of Rapid Tranquillisation (RT) (IM only) in Older Adults (65+ years).

- Many people with learning disabilities are especially sensitive to the side-effects of psychotropics. It is good practice to start at lower doses and increase more slowly than is usual in general psychiatric practice.

- Pregnancy – a risk-benefit analysis must be undertaken in cases where service users are pregnant, as there is insufficient evidence on the safety of RT in pregnancy. (Refer to Appendix 10 - Drug Choice in Pregnancy). For further advice refer to the Trust Guidelines for the Care and Management of Pregnant Service Users.

- Almost all serious adverse events occur to service users undergoing physical restraint. The restraining period is one of particular risk and should be kept to a minimum. For guidance refer to the Trust Non-Physical & Physical Assaults (Violence & Aggression) Policy.
11. MEDICINES USED FOR RT

- Staff should take into account any Advance Statements (including the service user’s crisis plan) that express preferences for treatment. Advance Decisions to refuse treatment must also be considered but may be overridden if the service user is detained under the Mental Health Act. (See Advance Statements and Advance Decisions – Making your wishes known form and guidance for further information; available on the Trust intranet via following link: Advance Statements and Advance Decisions – making your wishes known (Alternatively obtain a copy from MHA Office Staff)

- Always be clear about mental health act status prior to treatment.

- If treating a service user who lacks capacity against their will, it would be under the provisions of the Mental Capacity Act 2005. The medical records should contain a clear Assessment of Capacity Form for that particular treatment. A Best Interest Decision Form should also be completed to demonstrate that the treatment is being provided in the service user’s best interests as they lack capacity to make the decision.

- The Trust Policy on Consent to Examination and Treatment and the guidance of the Mental Health Act Code of Practice 2015 and the Mental Capacity Act 2005 should be followed. Any departure from this guidance must be clearly recorded and justified as being in the service user’s best interest.

- If medication is to be given without the consent of the service user; remember to check that medication is covered by MHA ‘consent to treatment’ provisions and is authorised under a Form T3; if it is not, the Responsible Clinician should complete a Section 62 to certify that the treatment is of urgent necessity. If unsure, consult your local Mental Health Act Office.

- Before administering any medication intramuscularly (IM), staff should inform the service user what medication needs to be given and why and offer them the opportunity to take the medication orally.

- If administering IM medication, please refer to the Trust Injections Procedure (Procedure for Administering Injections). This provides detailed guidance on how to safely administer injections, including site, technique and equipment required.

- This guideline assumes that prescribers will use a medicine’s Summary of Product Characteristics (SmPC) and/or BNF to inform decisions made for individual service users. The most recent NICE guideline NG10: Violence and aggression: short-term management in mental health, health and community settings recommends some medicines for indications for which they do not have a UK marketing authorisation at the date of consultation. If there is good evidence to support that use, the prescriber should follow relevant professional guidance, taking full responsibility for their decision. The service user (or those with authority to give consent on their behalf) should provide informed consent, which should be documented. See the General Medical Council's prescribing guidance: Prescribing Unlicensed Medicines for further information.

- It is sometimes necessary to knowingly exceed BNF limits and knowingly use drugs outside of their marketing authorisation (off-label) for the purpose of RT. The rationale
for this must be recorded in the care plan and monitoring of the service user’s condition must be accordingly specified.

- The need for medication should be re-assessed on a regular basis within the agreed and on-going treatment plan.

- If medication is given, it is important to allow time for the drug to work before giving further doses by either oral or intramuscular means.

- Seek advice from the Consultant Psychiatrist at any stage if there is any doubt about current care / treatment plan / risk strategy.

- To support intervention, the Agitation-Calmness Evaluation Scale (ACES) should be used to generate and develop a score over time, in order to monitor effectiveness of treatment. (Refer to Appendix 3).

- When prescribing medication for use in RT, write the medication in the RT (red) section on the prn side of the prescription chart. Under ‘Additional instructions’ it states: Complete RT Monitoring Sheet & RT Checklist. This together with the route of administration i.e. IM is pre-printed.

- This section should be read in conjunction with Appendix 4 – Pharmacokinetics of medicines used for Rapid Tranquillisation (in adults).

11.1 RT in Adult patients (18-65 years old) – refer to Appendix 6

- When deciding which medication to use, take in to account:
  - The service user’s preferences or Advance Statements and Advance Decisions
  - Pre-existing physical health problems, vital signs (including postural BP) and pregnancy
  - Possible intoxication
  - Previous response to these medications, including adverse effects
  - Potential for interactions with other medications
  - Polypharmacy within a class of medication should be avoided
  - Total daily dose of medications prescribed and administered; to include regular, any stat doses and prn. Ensure service users are not inadvertently given high doses of antipsychotics, which could potentially be very dangerous. This could occur accidentally through the use of PRN medication given in combination with regular medication.
  - Whether or not the service user has received an antipsychotic before
  - Consider any oral antipsychotic(s) taken within the last 24 hours or depot antipsychotic injections given in the past 6 weeks
  - The plasma concentration of an antipsychotic is not only affected by the total dose, but also the route of administration and its rate of elimination. Elimination depends on a number of factors including drug interactions and the age of the service user. Absorption from intramuscular (IM) administration can happen far more rapidly when a service user is agitated, excited or physically overactive.

- There may be instances where a prescriber makes a clinical decision to use an antipsychotic first-line as opposed to the recommended lorazepam or promethazine, based on individual circumstances.

- If there is evidence of cardiovascular disease, including a prolonged QTc interval, or no electrocardiogram (ECG) has been carried out, avoid IM haloperidol combined with
IM promethazine and use IM lorazepam instead. If an ECG is not available, the prescriber should consider the risks and benefits of using this treatment and be able to justify their prescribing decision, as it may be considered an off-label use. An ECG should be carried out at the earliest opportunity.

- The SmPCs for both haloperidol injection and haloperidol oral state that a baseline ECG is recommended prior to treatment in all patients. Service users commonly require treatment with haloperidol for immediate relief of critically disturbed behaviour or emotions. Although an ECG is recommended prior to treatment, the patient’s condition, for which the haloperidol treatment is required, may of itself not allow an accurate ECG recording to be obtained. The Trust concurs with its clinicians that the competing requirements of maximal behavioural safety and maximal cardiac safety are, at times, substantially irreconcilable. Under such circumstances the treating clinician will make a judgement whether the patient’s interests are best served by administering haloperidol within its licensed terms even though an ECG is not available. The large and demonstrable beneficial effect of haloperidol on behavioural and emotional disturbance and the small and poorly quantified risk of cardiac abnormality may be taken into account. It is recognised that instances will arise where the service user’s needs are best served by the urgent administration of haloperidol even in the absence of a pre-treatment ECG. This recognition does not however reduce the force of whatever other authoritative statements apply to the use of haloperidol outside critical care situations. Refer to Appendix 9 Psychotropic-related QT Prolongation.

- During therapy, the need for ECG monitoring (e.g. dose escalation) should be assessed on an individual basis. Whilst on therapy, the dose should be reduced if QTc is prolonged and haloperidol should be discontinued if the QTc exceeds 500ms.

- There is insufficient UK evidence regarding the safety of IM midazolam alone or in combination with IM haloperidol in rapid tranquillisation to recommend its routine use.

11.2 RT in older adults (> 65 years old) - refer to Appendix 7
The use of RT in older service users is infrequent and only used in an extreme emergency. Consultant psychiatrist must be consulted prior to prescribing any IM medication for RT for older adults. All other options, including non-pharmacological and oral medication such as lorazepam or promethazine and/or antipsychotics (haloperidol, risperidone, olanzapine) should have been exhausted prior to prescribing IM medication for RT. In addition to information written above regarding RT of adult patients, it is important to consider that older adults may:

- Require smaller doses of medication
- Have altered levels of metabolism and may be more frail
- Have pre-existing general medical illnesses and be taking several medications (check medical history is up to date)
- Be more likely to develop extrapyramidal side effects and other adverse effects e.g. both antipsychotics and benzodiazepines may affect mobility and increase the risk of falls
- If suffering from dementia, be more likely to develop increased cognitive impairment with high doses of medication
- Be naïve to antipsychotics and/or benzodiazepines.
Dementia
People with dementia or a history of cerebrovascular events should only be prescribed antipsychotics for the management of agitation, violence and aggression after careful consideration, and only where the person is severely distressed or there is an imminent risk of harm to others, and where lorazepam alone is insufficient or inappropriate. In these situations the decision to prescribe antipsychotics and the rationale should be documented in the notes. Of the different symptoms that constitute behavioural and psychological symptoms in dementia, only physical aggression has been shown to respond to medication. NICE states that once certain conditions have been met, “People with Alzheimer’s disease, vascular dementia, mixed dementias or DLB with severe non-cognitive symptoms (psychosis and/or agitated behaviour causing significant distress) may be offered treatment with an antipsychotic drug”.

11.3 Intravenous (IV) medication (not in the RT algorithms)
- IV administration of benzodiazepines or haloperidol should NOT normally be carried out except in very exceptional circumstances i.e. a VERY hostile and disturbed service user.

- The decision to use IV medication should NOT be made by junior medical staff in isolation and can only be used in consultation with the Consultant Psychiatrist (on-call Consultant Psychiatrist if out-of-hours). Medication for RT can only be prescribed by a doctor.

- Reasons for using the IV route must be clearly specified and recorded in the EPR.

- The IV route of administration can lead to high concentrations of drug in the heart muscles and should always be avoided in older service users.

- Be aware of any past history of respiratory depression, acute dystonia or cardiovascular compromise.

- Nursing staff working within the Trust are not trained to administer IV medication and hence administration must be carried out by an appropriately trained doctor.

- If immediate tranquillisation is essential then IV administration may be required. If it is used, medical and nursing staff must be appropriately trained to recognise and manage symptoms of respiratory depression, acute dystonia and cardiovascular compromise e.g. arrhythmias, significant changes in blood pressure and cardiovascular collapse.

- If IV medication is used, the service user must be managed on continuous observation for a minimum of three hours following RT or longer if considered necessary. The service user must not be left unattended; emergency response equipment must be immediately available and staff must be trained in immediate life support (ILS).
11.4 Medications not recommended for RT

- IM or oral chlorpromazine
- IM diazepam
- IM depot antipsychotics

Zuclopenthixol acetate (Acuphase)

- Zuclopenthixol acetate is NOT recommended (by HPFT or NICE Guidelines 2015) for use in RT, due to both its delayed onset of action and long duration of action.

- It may be considered in the management plan for service users with a psychotic or manic illness who fail to respond to repeated RT, or in those who have a history of a successful response to the drug.

- It should be prescribed in the ‘Once Only’ section of the prescription chart. Care must be taken not to confuse zuclopenthixol acetate with zuclopenthixol decanoate, as the latter is a long-acting depot preparation.

- It must not be administered to those without any previous exposure to antipsychotic medication.

- It may have a role in the ongoing management of risk of violence once tranquillisation has been satisfactorily achieved, in order to minimise the likelihood of repeated injections. It is important to consider the pharmacokinetics of other drugs when prescribing zuclopenthixol acetate. For example, caution is necessary in a service user who has recently received a dose of depot antipsychotic which has not yet reached peak levels.

- It should only be given after calming has been achieved and/or in those situations when it is likely that repeated doses of intramuscular antipsychotics would be necessary.

- It should never be used in those who are struggling, who are sensitive to extrapyramidal side-effects (EPSE), those with cardiac disease, hepatic or renal impairment and in pregnancy.

- It should be used with caution in older adults. It must be avoided in those who are frail, or have a diagnosis of dementia and its use confined to individuals who are clearly functional, physically fit, with a chronological age greater than 65 years.

- The BNF and manufacturer’s SmPC must be consulted regarding the use of zuclopenthixol acetate (Acuphase).

- The onset of sedation with zuclopenthixol acetate starts at 1 to 4 hours, peaks at 8 to 36 hours and is mainly complete by 48 to 72 hours. A second dose should not be given within 24 hours of the first dose. Do not exceed 4 injections of zuclopenthixol acetate. Assess/monitor every 4 hours post administration of zuclopenthixol acetate.

- The usual effective dose used in acute adult psychiatry is 100mg. 25mg is an appropriate starting dose in older adults, service users with a low body weight and in those who are dehydrated. 50 mg is an appropriate starting dose in younger adults with little previous experience of antipsychotic treatment. The maximum dose is 400mg in 2 weeks.

- If in doubt contact a senior member of medical staff for further advice.
12. RISKS ASSOCIATED WITH RT

STANDARD

There are specific risks associated with the different classes of medications used in RT. When combinations are used, risks may be compounded. See table below:

<table>
<thead>
<tr>
<th>Medication used for RT</th>
<th>Serious side effects/risks of RT</th>
<th>Symptoms/Signs</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antipsychotics</td>
<td>Acute dystonia (including oculogyric crisis)</td>
<td>Severe painful muscular stiffness</td>
<td>Procyclidine 5-10 mg IM. Repeat after 10 mins if needed</td>
</tr>
<tr>
<td>Benzodiazepines Sedative agents</td>
<td>Reduced respiratory rate or arrest</td>
<td>Reduced respiratory rate (&lt;10/min) or oxygen saturation (&lt;90%) Respiratory arrest Loss of consciousness</td>
<td>Give oxygen, raise legs, ensure patient not facing down Call advanced emergency care If benzodiazepine-induced give flumazenil IV (refer to Appendix 8) If other sedative-induced, transfer to medical bed and ventilate mechanically</td>
</tr>
<tr>
<td>Benzodiazepines combined with antipsychotics</td>
<td>Irregular or slow pulse</td>
<td>Arrhythmias or pulse below 50/min</td>
<td>Refer to specialist medical care immediately</td>
</tr>
<tr>
<td>Antipsychotics or combination of antipsychotics &amp; benzodiazepines</td>
<td>Fall in blood pressure</td>
<td>Orthostatic drop &gt;30 mmHg or diastolic &lt;50 mmHg</td>
<td>Have patient lie flat, tilt bed towards head, raise legs, monitor closely</td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>Neuroleptic malignant syndrome</td>
<td>Increased temperature, fluctuating blood pressure, muscular rigidity, confusion/altered consciousness</td>
<td>Withhold antipsychotics (risk of arrhythmias and renal failure) Check creatine-kinase urgently Liaise with medical team immediately</td>
</tr>
<tr>
<td>Any medication used for RT or combinations</td>
<td>Excessive sedation</td>
<td>Sedation</td>
<td>Monitor closely</td>
</tr>
</tbody>
</table>

- Paradoxical agitation may result from antipsychotic or benzodiazepine treatment.
- All units where RT may be carried out MUST stock IV flumazenil. Team Leaders must ensure that the equipment necessary for administering this medication is also available on the unit.
- Please note that HPFT nurses are not approved to administer IV medication and such medication must therefore be administered by a doctor.

13. RT DURING SECLUSION

RULE

- If RT is needed while a service user is secluded, undertake it with caution.
- Be aware of and prepared to address any complications associated with RT.
- The service user should be monitored by ‘within eyesight’ continuous observation by a suitably trained individual. Refer to the Trust Safe and Supportive Observation Policy.
- Undertake a risk assessment and consider ending seclusion when RT has taken effect.
14. PHYSIOLOGICAL / SAFE AND SUPPORTIVE OBSERVATION

**RULE**
Staff should ensure that the minimum standards of physiological / safe and supportive observation are maintained as described in Appendix 2 and are part of a comprehensive approach to the management of risks associated with responding to disturbed / aggressive behaviour, involving medication and physical interventions.

15. PHYSICAL MONITORING

**RULE**
Physical monitoring should be carried out following the schedule below and recorded. Where it is difficult to undertake this monitoring due to service user unwillingness, a more subjective assessment is required. (Refer to Appendix 2).

<table>
<thead>
<tr>
<th>Physical parameters</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alertness using ACES</td>
<td>Monitor at least every hour until there are no further concerns about physical health status</td>
</tr>
<tr>
<td>Respiratory rate</td>
<td>Monitor every 15 minutes if BNF maximum dose has been exceeded or service user:</td>
</tr>
<tr>
<td>Pulse</td>
<td>• is asleep or sedated</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>• has taken illicit drugs or alcohol</td>
</tr>
<tr>
<td>Oxygen Saturation Sp02</td>
<td>• has a pre-existing physical health problem</td>
</tr>
<tr>
<td>Temperature</td>
<td>• has experienced any harm as a result of any restrictive intervention</td>
</tr>
<tr>
<td>Hydration</td>
<td>Monitor continuously if the patient was tasered and/or received CS gas by the police.</td>
</tr>
</tbody>
</table>

In older adults monitor for risk of falls and deterioration in mobility
Ensure fluid intake is maintained. Fluid intake and output should be monitored

- Ideally, for any inpatient there should be baseline monitoring values within 72 hours of admission – refer to HPFT Physical Health Care Policy against which one can judge any post-RT abnormal observations.

- An ECG and haematological monitoring should be performed at the earliest opportunity where parenteral antipsychotics are used. Hypokalaemia, stress and agitation place the patient at risk of cardiac arrhythmia. ECG monitoring is formally recommended for all patients who receive haloperidol (refer to page 12).

- If ACES score is 8/9 or there are any signs of physical deterioration, implement initial emergency care, call for advanced emergency care (999 Ambulance/2222 Crash Team) and inform the on-call doctor. Members of staff must know the procedure for accessing emergency assistance.

- If medication is used for RT, the resuscitation equipment (refer to Trust Resuscitation Policy), emergency medication, including IV flumazenil and equipment for carrying out monitoring of the physical parameters must be available.

- If current BNF maximum doses are exceeded, it is particularly important that frequent and intensive monitoring of a service user is undertaken. This must be specified and recorded in the relevant EPR. Pay particular attention to regular checks of airway, respiratory effort, changes in level of consciousness, pulse, blood pressure, temperature and hydration.
16. DOCUMENTATION / RECORDING

RULE
The professional in-charge must ensure that a comprehensive account of the incident is made in the service user’s EPR. This should include:

- Antecedents/events leading up to the incident
- De-escalation techniques used
- Legal basis for use of RT (e.g. capacity to consent, consented or not, advance statements/crisis plans, advance decisions to refuse treatment, MHA status etc.)
- Drugs and doses administered (including if above BNF or NICE recommended doses)
- Reasons for the use of alternative medication (if necessary)
- Physiological observations and time of monitoring
- Response of the service user
- All physical care interventions (e.g. food/fluids offered and intake, toilet/washing etc.)

Following the incident the professional in-charge should also ensure that:

- Staff have completed a Rapid Tranquillisation (RT) Monitoring Sheet (Appendix 12) for all individuals who are administered medication for RT. This form must be scanned into the relevant EPR.
- Each time RT is carried out staff must complete the RT Checklist (Appendix 11) and scan this into the relevant EPR.
- The risk assessment and care plan are reviewed within 24 hours following RT
- If the service user is transferred to another unit a full history must be available to the receiving team
- An incident report (Datix) is completed (drop down box will highlight monitoring). Details of the Datix report and RT Checklist must be forwarded to the Team Leader and Consultant Psychiatrist

17. SERVICE USER DE-BRIEF

RULE
- After the treatment of an acute behavioural disturbance the service user should be de-briefed, this should be documented in the relevant EPR, including refusal of support. The service user should be offered the opportunity to write an account in their notes, including refusal of support.

- Forums will be made available for the service user involved, and their relatives/carers (if appropriate) to discuss the incident with staff. Such a discussion can provide the service user with an opportunity to consider factors that led to the incident and to learn from the incident. Service users should be advised of their right to talk about the incident with an independent mental health advocate, family member or another representative. An interpreter will be used if necessary.

- Other service users, who were not directly involved in the incident, but who may have witnessed the incident, should also be able to discuss this with staff.

- As an outcome of the above, the support plan should be updated
18. STAFF POST- INCIDENT REVIEW (DE-BRIEF)

- All staff involved in the incident will be offered the opportunity to participate in a post-incident review (de-brief). The key function of this process is to improve future practice, by reviewing what has happened - this may focus both on what has worked well, and what has not worked well.

- Post-incident reviews (de-briefs) can have both educational and operational objectives. De-briefing is a sort of “defusing” and it aids the processing of a traumatic event with the aim of reducing psychological damage and enabling staff to be able to return to normal work duties as quickly as possible. In this therapeutic approach, emphasis is placed on the importance of the narrative to reconstruct what happened. This cognitive reconstruction of events is performed in groups so that there is a shared meaning.

- A post-incident review would ideally take place immediately after an incident involving RT with all staff involved (before the staff responding from other wards return back to their ward). Any suitably experienced member of staff can act as the facilitator. The starting point should be to ask:
  
  ➢ Is everyone ok? Does anyone need medical attention?
  ➢ What happened?
  ➢ Did any factors lead to the use of physical intervention / seclusion / RT being necessary? (Antecedents / triggers / behaviour)
  ➢ What did we do well?
  ➢ What could have been done better?
  ➢ On reflection, given the situation again, how might the team respond differently?
  ➢ What reporting and documentation needs to be done, who is going to do what? For example: incident reporting / updating risk management plan and care plan / informing relevant individuals
  ➢ Consider when might be an appropriate time and who might be the best person to approach the service user and offer de-brief. This may not be immediately following the incident but must always be offered and recorded in the relevant EPR.
<table>
<thead>
<tr>
<th>Course</th>
<th>For</th>
<th>Renewal Period</th>
<th>Delivery Mode</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate Life Support (Incorporates Resuscitation Training and Rapid Tranquillisation Training)</td>
<td>Registered nurses working in inpatient settings</td>
<td>Annually</td>
<td>Taught course (1 day)</td>
<td>For taught courses, contact the Learning &amp; Development Team: <a href="mailto:Learning@hpft.nhs.uk">Learning@hpft.nhs.uk</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>You can check for future dates here and request a specific date</td>
</tr>
<tr>
<td>Basic Life Support (Incorporates Resuscitation Training)</td>
<td>Medical Staff and Community Support Workers</td>
<td>Every 3 years</td>
<td>Taught course (half day)</td>
<td>For taught courses, contact the Learning &amp; Development Team: <a href="mailto:Learning@hpft.nhs.uk">Learning@hpft.nhs.uk</a></td>
</tr>
<tr>
<td></td>
<td>Support Workers in In-patient Units</td>
<td>Annually</td>
<td>Taught course (half day)</td>
<td>You can check for future dates here and request a specific date</td>
</tr>
<tr>
<td>First Aid &amp; Resuscitation</td>
<td>Tertiary Learning Disabilities Staff only</td>
<td>Annually</td>
<td>Taught course (1 day)</td>
<td>For taught courses, contact the Learning &amp; Development Team: <a href="mailto:Learning@hpft.nhs.uk">Learning@hpft.nhs.uk</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>You can check for future dates here and request a specific date</td>
</tr>
<tr>
<td>Management of Aggression / RT</td>
<td>Doctors</td>
<td>Bi-annually</td>
<td>Taught (30 mins) as part of induction</td>
<td>Local academic leads</td>
</tr>
<tr>
<td>Management of Aggression / RT</td>
<td>Doctors</td>
<td>Bi-annually</td>
<td>Taught (1 hour) as part of weekly teaching sessions</td>
<td>Local academic leads</td>
</tr>
<tr>
<td>Management of Acute Behavioural Disturbance including RT</td>
<td>All staff involved with restrictive interventions</td>
<td>Annually</td>
<td>Taught course (half day)</td>
<td>Contact Chief Pharmacy Technician – Pharmacy <a href="mailto:andrew.smith@hpft.nhs.uk">andrew.smith@hpft.nhs.uk</a></td>
</tr>
</tbody>
</table>

- Training for medical staff will be addressed via medical induction and CPD.
- Lead clinicians/ward/team leaders are responsible via supervision that their staff attend the relevant training and updates. Records of training attended must be kept.
- Individual members of staff are responsible for attending the required training at the required intervals.
- The training schedule applies to the indicated staff groups whether temporary or permanent.
Associated Training

- Clinical Risk Assessment and Management
- Revised MHA Code of Practice 2015
- Mental Capacity Act 2005
- Equality and Diversity
- Cultural Competence

For further information refer to the appropriate procedural document.

20. EMBEDDING A CULTURE OF EQUALITY & RESPECT
The Trust promotes fairness and RESPECT in relation to the treatment, care & support of service users, carers and staff.

RESPECT means ensuring that the particular needs of ‘protected groups’ are upheld at all times and individually assessed on entry to the service. This includes the needs of people based on their age, disability, ethnicity, gender, gender reassignment status, relationship status, religion or belief, sexual orientation and in some instances, pregnancy and maternity.

Working in this way builds a culture where service users can flourish and be fully involved in their care and where staff and carers receive appropriate support. Where discrimination, inappropriate behaviour or some other barrier occurs, the Trust expects the full cooperation of staff in addressing and recording these issues through appropriate Trust processes.

**RULE:** Access to and provision of services must therefore take full account of needs relating to all protected groups listed above and care and support for service users, carers and staff should be planned that takes into account individual needs. Where staff need further information regarding these groups, they should speak to their manager or a member of the Trust Inclusion & Engagement team.

Where service users and carers experience barriers to accessing services, the Trust is required to take appropriate remedial action.

The following table reflects – specifically for this policy – how the design of the service and processes involved has given consideration to all protected groups so ensuring equality and dignity for everyone.

<p>| Service user, carer and/or staff access needs (including disability) | Effective communication is essential during RT, especially where there are specific language and sensory communication requirements. The information provided should meet the individual’s communication needs e.g. people with physical, sensory or learning disabilities or people who do not read or speak English. Staff may need to access the interpreting service. |
| Involvement | Reasons for using RT must be explained to the service user at the earliest opportunity. Service users should be encouraged to discuss their experiences and given the opportunity to write an account of this. This narrative should be included in the EPR, thereby supporting the underlying principles of recovery. |
| Relationships &amp; Sexual Orientation | All service users must be given the same consideration and appropriate advice/treatment by staff in terms of RT, which must be independent of their circumstances. |
| Culture &amp; Ethnicity | All service users must be given the same consideration and appropriate advice/treatment by staff in terms of RT, which must be independent of their circumstances. |</p>
<table>
<thead>
<tr>
<th><strong>Spirituality</strong></th>
<th>All service users must be given the same consideration and appropriate advice/treatment by staff in terms of RT, which must be independent of their circumstances.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>Please refer to section 10. Cautions in the use of RT and circumstances for special care; Appendix 5 Algorithm for use of RT in Adults (18-65 years); Appendix 6 Algorithm for use of RT in Older Adults (65years+)</td>
</tr>
<tr>
<td><strong>Gender &amp; Gender Reassignment</strong></td>
<td>All service users must be given the same consideration and appropriate advice/treatment by staff in terms of RT, which must be independent of their circumstances.</td>
</tr>
<tr>
<td><strong>Advancing equality of opportunity</strong></td>
<td>All service users must be given the same consideration and appropriate advice/treatment by staff in terms of RT, which must be independent of their circumstances.</td>
</tr>
</tbody>
</table>

**Promoting and considering individual wellbeing**

Under the Care Act 2014, Section 1, the Trust has a duty to promote wellbeing when carrying out any of their care and support functions in respect of a person. Wellbeing is a broad concept and is described as relating to the following areas in particular:

- Personal dignity (including treatment of the individual with respect);
- Physical and mental health and emotional wellbeing;
- Protection from abuse and neglect;
- Control by the individual over day to day life including over the care and support provided and the way in which it is provided;
- Participation in work, training, education, or recreation;
- Social and economic wellbeing;
- Domestic, family and personal;
- Suitability of living accommodation;
- The individual’s contribution to society.

There is no hierarchy and all should be considered of equal importance when considering an individual’s wellbeing. How an individual’s wellbeing is considered will depend on their individual circumstances including their needs, goals, wishes and personal choices and how these impact on their wellbeing.

In addition to the general principle of promoting wellbeing there are a number of other key principles and standards which the Trust must have regard to when carrying out activities or functions:

- The importance of beginning with the assumption that the individual is best placed to judge their wellbeing;
- The individual’s views, wishes, feelings and beliefs;
- The importance of preventing or delaying the development of needs for care and support and the importance of reducing needs that already exist;
- The need to ensure that decisions are made having regard to all the individual’s circumstances;
- The importance of the individual participating as fully as possible;
- The importance of achieving a balance between the individuals wellbeing and that of any carers or relatives who are involved with the individual;
- The need to protect people from abuse or neglect;
- The need to ensure that any restriction on the individuals rights or freedom of action that is involved in the exercise of the function is kept to the minimum necessary.
21. Process for monitoring compliance with this document - this section identifies how the organisation plans to monitor compliance with the process/system being described, presented in the table below:

<table>
<thead>
<tr>
<th>Action:</th>
<th>Lead</th>
<th>Method</th>
<th>Frequency</th>
<th>Report to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Making:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The organisation has approved documentation which describes the process for managing risks associated with RT</td>
<td>Head of Pharmacy</td>
<td>Review of policy</td>
<td>Policy checked annually</td>
<td>Drug &amp; Therapeutics Committee (DTC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DTC reports annually to Quality and Risk Management Committee</td>
</tr>
<tr>
<td>Policy Monitoring:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate compliance with monitoring of the minimum requirements for:</td>
<td>Head of Pharmacy</td>
<td>Audit:</td>
<td>Annually</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pharmacy Team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nursing Team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PACE Team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• prescribing guidelines for RT, being correct and directive</td>
<td>Deputy Director of Nursing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• administration of RT:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• baseline recording monitoring, with clear process of action required for observations, including timeframes, when patients have received RT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• post incident follow-up, reflected in support plans, within 72hrs of incident</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 22. VERSION CONTROL

**STANDARD**

<table>
<thead>
<tr>
<th>Version</th>
<th>Date of Issue</th>
<th>Author</th>
<th>Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>V3.1</td>
<td>May 2012</td>
<td>Head of Medicines Management</td>
<td>Superseded</td>
<td>Archived</td>
</tr>
<tr>
<td>V4</td>
<td>July 2012</td>
<td>Head of Medicines Management</td>
<td>Superseded</td>
<td>Archived</td>
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<tr>
<td>V5</td>
<td>4th November 2013</td>
<td>Head of Medicines Management</td>
<td>Superseded</td>
<td>Put into new Policy template</td>
</tr>
<tr>
<td>V5.1</td>
<td>2nd February 2015</td>
<td>Head of Medicines Management</td>
<td>Superseded</td>
<td>Approved at DTC 26/1/2015 – to incorporate changes to haloperidol BNF dose changes</td>
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<tr>
<td>V6</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; December 2016</td>
<td>Head of Medicines Management</td>
<td>Current</td>
<td>Approved at DTC 26/07/2016</td>
</tr>
</tbody>
</table>

### 23. ARCHIVING ARRANGEMENTS

**STANDARD:** All policy documents when no longer in use must be retained for a period of 10 years from the date the document is superseded as set out in the Trust Business and Corporate (Non-Health) Records Retention Schedule available on the Trust Intranet

A database of archived policies is kept as an electronic archive administered by the Compliance and Risk Facilitator. This archive is held on a central server and copies of these archived documents can be obtained from the Compliance and Risk Facilitator on request.

### 24. ASSOCIATED DOCUMENTS

**STANDARD**

- Clinical Risk Assessment & Management for Individual Service Users Policy
- Communicating with Service Users from Diverse Communities Policy
- Consensus Statement on High-Dose Antipsychotic Medication Royal College of Psychiatrists Report May 2006
- Consent to Examination, Care & Treatment including Electro-convulsive Therapy Policy
- Guidelines for the Care and Management of Pregnant Service Users
- Injections Procedure (Procedure for administering injections)
- MCA Advance Decisions to Refuse Treatment & Advance Statements Policy
- Medicines Policy
- Mental Capacity Act 2005
- Mental Health Act Code of Practice 2015
- Needlestick Injuries & Incidents involving Exposure to Blood & Body Fluids Policy
- Non-Physical & Physical Assaults (Violence & Aggression) Policy
- POMH-UK Prescribing High-Dose and Combination Antipsychotics 2012
Pregnant Service Users Care & Management Policy
Safe & Supportive Observation Policy
Single Equalities Scheme Policy

25. SUPPORTING REFERENCES

STANDARD
- Core interventions in the treatment and management of schizophrenia in primary and secondary care, Royal College of Psychiatrists Management of imminent violence: quick reference guide

Acknowledgements
- Norfolk and Suffolk NHS Foundation Trust Rapid Tranquillisation Policy 2015
- Central and North West London NHS Foundation Trust Guideline: Rapid Tranquillisation June 2015

26. COMMENTS AND FEEDBACK

STANDARD

<table>
<thead>
<tr>
<th>Chief Pharmacist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant Psychiatrists</td>
</tr>
<tr>
<td>Speciality Doctor PICU</td>
</tr>
<tr>
<td>Principal Clinical Pharmacists for Mental Health</td>
</tr>
<tr>
<td>Resuscitation Officer</td>
</tr>
<tr>
<td>Professional Lead – Prevention &amp; Management of Violence &amp; Aggression</td>
</tr>
<tr>
<td>Directorate Manager Mental Health Act</td>
</tr>
</tbody>
</table>
APPENDICES

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Appendix 2: Nursing Observations Pre and Post Rapid Tranquillisation

Appendix 3: Agitation-Calmness Evaluation Scale (ACES) with NEWS

Appendix 4: Pharmacokinetics of medicines used for rapid tranquillisation (in adults)

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## RESPONSIBILITIES

<table>
<thead>
<tr>
<th>Individual/staff groups</th>
<th>Responsibilities</th>
</tr>
</thead>
</table>
| **All clinical staff potentially involved in RT** | - Should familiarise themselves with this policy  
- Should be suitably trained and competent to carry out their professional duties and to assess and manage potential and actual violence using de-escalation techniques, restraint, seclusion and RT as appropriate.  
- If involved in physically restraining service users be proficient in “Physical Intervention” techniques and should have adequate immunisation against hepatitis B.  
- Should be trained to use and maintain the techniques and equipment required to undertake cardiopulmonary resuscitation.  
- Should ensure that following an emergency restraint and medication a short feedback session is held, and that the patient is debriefed. |
| **Consultants, senior and junior doctors** | - Assess the patient and take a drug history wherever possible, including allergies and adverse drug reactions.  
- Assess mental state and need for RT before prescribing.  
- Consider any advance directives before prescribing.  
- Establish a provisional diagnosis where appropriate to do so.  
- Follow the correct procedures in line with the patients status under the Mental Health Act 1983  
- Be aware of potential drug interactions and the consequences of exceeding BNF dose limits.  
- Complete all relevant documentation.  
- Consult the MDT before prescribing.  
- Ensure that the nurse in charge is fully aware of any decisions regarding medication.  
- With the nurse in charge, agree and advise of the frequency of review of patient’s arousal levels, response to RT and ongoing physical monitoring.  
- Document decisions within the clinical record.  
- Ensure medication for RT is prescribed in the red outlined boxes on the **PRN section of the prescription chart**  
- Ensure full review of the patient, including prescribed medication and monitoring, minimum every 24 hours. |
| **Team Leaders** | - Ensure that all relevant staff are aware of this policy and other policies and guidance which relate to this policy.  
- Ensure that adequate training is given to allow staff to safely implement the guidelines.  
- Ensure staff routinely complete RT Monitoring Sheet and RT Checklist after incidents of RT. (Monitor through spot checks or routine audits of practice).  
- Ensure staff routinely report incidents of RT appropriately via Datix  
- Inform senior management if the policy is not being followed appropriately. |
| **Nurse in charge of shift** | • Be fully aware of the contents of this policy and supporting policies and guidance before an incident arises.  
• Be aware of those clients most at risk of acute disturbance.  
• Assess risk and implement the policy when they feel it is appropriate.  
• Ensure that non-pharmacological methods are tried first.  
• Ensure that the incident is fully documented.  
• Ensure that the correct monitoring is done.  
• Continue to use de-escalation techniques throughout if appropriate.  
• Ensure appropriate handover to the subsequent shift nurse in charge and registered nurses on the shift.  
• Ensure appropriate information follows the patient to another unit/ward if it is necessary to move the patient during rapid tranquillisation or monitoring. |
| **Registered nurses** | • Support the nurse-in-charge as above.  
• Ensure they are up-to-date with the policy and associated documents. |
| **Unregistered staff** | • Be suitably trained and competent to assess and manage potential and actual violence using de-escalation techniques, restraint, and seclusion (where appropriate).  
• Ask nursing colleagues and doctors for advice when necessary  
• Must report any concerns around vital signs or changes in the patient’s condition after IM RT to a qualified nurse. |
| **Pharmacy staff** | • Provide medicines information and advice as required for both staff and patients.  
• Ensure medication used for RT in this policy is available to all units where treatment may be carried out.  
• Ensure that medication to treat emergencies which may occur with the use of RT is available to all units where treatment may be carried out.  
• In the event of a shortage of any medicine routinely used for RT, pharmacy will issue guidance regarding alternative medicines that may be used. |
Nursing Observations Pre and Post Rapid Tranquillisation

1. Nursing Observations

The purpose of an assessment: before, during and after the administration of IM medication for acute behavioural disturbance (ABD) is to help identify and report medical problems that affect a service user’s health. The use of RT during ABD will be based upon a correct and directive prescription of medication, using the last resort approach which is proportional, the least restrictive and in the person’s best interests.

This sets the clinical scenario for monitoring, review and escalation of concerns in a timely manner. The process of review will include a set of recorded baseline physiological observations.

Because of the nature of ABD, the level of presenting agitation (marked (1) moderate (2) mild (3)) can prevent on-going objective physiological observation. As a minimum, staff should always be aware of the consciousness level and make subjective assessments from a distance, for example within seclusion.

The attending doctor must state the physical monitoring required after RT.

During physical interventions (RESPECT / Prevention and Management of Violence and Aggression) observe Agitation-Calmness Evaluation Scale (ACES), respiratory rate and colour, looking for signs of cyanosis or distress. (Refer to the Trust Policy on the Management of Physical and Non-Physical Assaults and the Physical Health).

After RT, the following observations must be monitored and recorded: BP, pulse, respiration, temperature, oxygen saturation, hydration levels, where practical to do so and the ACES.

2. Implementing Nursing Observations

- Carry out continuous supportive observations until reviewed by the medical and nursing team
- Follow the physical monitoring schedule set out on page 17
- Maintain the dignity and privacy of the service user
- Use opportunities to establish rapport and empathy with the service user
- Monitor any signs / symptoms of physical health deterioration
- Ensure fluid intake and output is maintained.
- Ensure pressure areas are dry and clean and monitor risk in line with Trust Tissue Viability Policy
- Grade and record levels of consciousness. Use the ACES scale (Appendix 3)
- All monitoring activity must be recorded in the Electronic patient record (EPR) and RT Monitoring Sheet. RT Checklist must also be completed.
- If ACES score is 8/9 or there are any signs of physical deterioration, implement initial emergency care, call for advanced emergency care (999 Ambulance /2222 Crash Team) and inform the on-call doctor.
Agitation-Calmness Evaluation Scale (ACES) are defined as follows:

<table>
<thead>
<tr>
<th>Objective observations may be difficult</th>
<th>1  Marked Agitation:</th>
<th>High levels of physical activity, may demonstrate markedly increased levels of verbal expression, may be physically violent, cannot control signs of agitation if requested to do so, may require continuous nursing care/supervision and/or physical restraint.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2  Moderate Agitation:</td>
<td>Moderately increased levels of physical activity, demonstrates increased levels of verbal expression and may be verbally threatening, is not physically violent, can partly control signs of agitation if requested to do so, requires standard nursing care/supervision.</td>
</tr>
<tr>
<td></td>
<td>3  Mild Agitation:</td>
<td>Slightly increased levels of physical activity, may demonstrate slightly increased levels of verbal expression (e.g. may raise his or her voice volume), is not threatening or violent, can control signs of agitation if requested to do so, and requires standard nursing care/supervision.</td>
</tr>
<tr>
<td></td>
<td>4  Normal:</td>
<td>Normal levels of physical activity, normal levels of verbal expression, awake with eyes continuously open.</td>
</tr>
<tr>
<td></td>
<td>5  Mild Calmness:</td>
<td>Slightly reduced levels of verbal and physical activity, eyes continuously open, remains aware of and responsive to his or her environment</td>
</tr>
<tr>
<td></td>
<td>6  Moderate Calmness:</td>
<td>Moderately reduced levels of verbal and physical activity, eyes may be intermittently open, easily aroused or responsive to mild verbal (e.g. calling of name) or physical stimulation (e.g. a gently touch), remains awake when stimulus removed.</td>
</tr>
<tr>
<td></td>
<td>7  Marked Calmness:</td>
<td>Greatly reduced verbal or physical activity, sleeping lightly, aroused by mild to moderate verbal (e.g. calling of name) or physical stimulation (e.g. a touch).</td>
</tr>
<tr>
<td></td>
<td>8  Deep Sleep:</td>
<td>No verbal or physical activity, sleeping deeply, awakened only with great difficulty by vigorous verbal (e.g. loud repeated calling of name) and/or physical stimulation (e.g. vigorous, repeated shaking of service user’s shoulder), returns to sleep immediately when stimulus is removed.</td>
</tr>
<tr>
<td></td>
<td>9  Unrousable:</td>
<td>Sleeping deeply, cannot be aroused by either vigorous verbal or physical stimulation (e.g. vigorous, repeated shaking of service user’s shoulders).</td>
</tr>
</tbody>
</table>

AVPU* – Alert, Voice, Pain, Unresponsive
# Pharmacokinetics of Medicines Used for Rapid Tranquilisation (in adults)

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Route</th>
<th>Pharmacokinetics</th>
<th>Major Side Effects</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Lorazepam | Oral  | Onset: 20-30 mins Peak: 2 hours       | • Respiratory Depression                                            | • IM absorption is as slow as oral absorption, but is more rapid in an active patient.  
• The injection should be diluted 50:50 with water for injections prior to administration.  
• No accumulation with repeated doses or in impaired liver function.  
• Has wide therapeutic index.  
• Respiratory depression is readily reversed with the specific antagonist flumazenil.  
• Disinhibition is more likely to occur in those with organic brain disease, including learning disabilities, <18 and >65 years, & perhaps those with impulse control problems. |
|           | IM    | Onset: 15-30 mins Peak: 60-90 mins    | • Disinhibition                                                     |                                                                       |
| Haloperidol | Oral  | Onset: 1-2 hrs Peak: 2-6 hrs          | • EPS                                                               | • An antimuscarinic agent such as procyclidine should be prescribed and available (as there is a risk of acute dystonia)  
• The bioavailability of both formulations is different and this must be taken into account when considering the total dose per 24 hr period.  
• Not recommended for IV use because of the risk of arrhythmias. |
|           | IM    | Onset: 15-30 mins Peak: 20 mins       | • Hypotension                                                      |                                                                       |
|           |       |                                       | • Increased QTc or arrhythmias                                     |                                                                       |
|           |       |                                       | • Seizures                                                         |                                                                       |
|           |       |                                       | • Sudden death                                                     |                                                                       |
| Promethazine | IM | Onset: 30-60 mins Peak: 1-2 hrs       |                                                                      | Slower onset of action than lorazepam or haloperidol  
A suitable alternative for patients tolerant or developing major side effects to benzodiazepines |
| Olanzapine | Oral  | Onset: ≈2 hrs Peak: 5-8 hrs           | • Hypotension                                                      | • Not licensed for use in dementia-related psychosis/ behavioural disturbances.  
• Not licensed for use in children/ adolescents.  
• Less likely to cause EPS than haloperidol.  
• I.M. administration results in initial maximum plasma concentration 5 times higher than same dose given orally. |
|           | IM    | Onset: 15-30 mins Peak: 15-45 mins    | • Bradycardia                                                      |                                                                       |
|           |       |                                       | • Syncope                                                          |                                                                       |
| Aripiprazole | IM | Onset: 30-45 mins Peak: 1-3 hrs       | • Akathisia                                                        | • Not sedating  
• May be given concurrently with parenteral benzodiazepines  
• Less likely to cause EPS than haloperidol  
• Not licensed for use in dementia-related psychosis/ behavioural disturbances  
• Not licensed for use in children/ adolescents. |
|           |       |                                       | • Tachycardia                                                     |                                                                       |
|           |       |                                       | • Orthostatic hypotension and increased diastolic blood pressure  |                                                                       |
**ALGORITHM FOR USE OF RAPID TRANQUILLISATION (RT) (IM ONLY) IN ADULTS (18-65 YEARS)**

(This algorithm is for guidance only; please consult BNF/individual medicines SmPCs for full prescribing information)

**If RT is necessary following unsuccessful initial de-escalation approaches, including oral medication:**
- Discontinue potentially unhelpful medicines; simplify regime, including any therapeutic duplication
- Review physical health and drug status. If young, thin, frail or suffering cardiac/respiratory disease; seek advice from senior colleagues as lower doses may be required
- Note total psychotropic medicines taken in the last 24 hours – include any PRN doses
- If total dose > BNF maximum daily limits, contact the Responsible Clinician/consultant/on-call consultant

**Important considerations:**
- For people with learning disabilities; start with low doses & increase dose slowly (especially sensitive to the side-effects of psychotropics)
- Service user’s preferences or advance statements/decisions
- Pre-existing physical health problems/possible intoxication/pregnancy
- Previous response to RT, including adverse effects
- Potential for interactions with other medications
- Use IM lorazepam for antipsychotic naïve patients or if insufficient information
- Use IM promethazine if respiratory function is compromised or the patient is sensitive/tolerant to benzodiazepines
- A baseline ECG is recommended prior to treatment with haloperidol

**Medicines must never be mixed in the same syringe, give separately**
Max. daily doses specified below are for combined oral and parenteral doses

- IM lorazepam 1-2mg (max. 4mg/day) FIRST CHOICE (alternative: IM promethazine 25-50mg (max. 100mg/day) OR
- IM Haloperidol 2-5 mg (max. 12mg/day) plus IM promethazine 25-50mg (max. 100mg/day) OR
- IM olanzapine 5-10mg (max.20mg /day) OR
- IM aripiprazole 9.75mg (max 30mg /day)

**If given IM lorazepam OR IM promethazine**
- Consider a further dose after 60mins if partial response
- Consider IM haloperidol plus IM promethazine OR IM olanzapine OR IM aripiprazole if no response

**If given IM haloperidol plus IM promethazine OR IM olanzapine OR IM aripiprazole**
- Consider a further dose after 60 mins if partial response. For aripiprazole wait at least 2 hours
- Consider IM lorazepam alone if this has not already been used during this episode, if no response. If IM lorazepam has already been used, arrange an urgent team meeting to carry out a review and seek a second opinion if needed.

**Treatment failure with the above,**
SEEK ADVICE FROM CONSULTANT PSYCHIATRIST

Zuclopenthixol acetate (Acuphase) is not an appropriate medication for use in RT

**PHYSICAL MONITORING FOLLOWING RT**

- Alertness using (ACES) ACES scale
- Respiratory rate
- Pulse
- Blood Pressure
- Oxygen Saturation SpO2 Temperature
- Hydration

Monitor at least every hour until there are no further concerns about physical health status
Monitor every 15 minutes if BNF max. dose exceeded or service user:
  - is 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

Monitor continuously if the patient was tasered and/or received CS gas by the police.

Monitor for risk of falls and deterioration in mobility
Ensure fluid intake is maintained. Fluid intake and output should be monitored.
If RT is necessary following unsuccessful initial de-escalation approaches, including oral medication:
- Discontinue potentially unhelpful medicines; simplify regime, including any therapeutic duplication
- Review physical health and drug status. If thin, frail or suffering cardiac/respiratory disease seek advice from senior colleagues as lower doses may be required
- Note total psychotropic medicines taken in the last 24 hours – include any PRN doses
- If total dose > BNF maximum daily limits, contact the Responsible Clinician/consultant/on-call consultant

Important considerations:
- Potential for interactions with other medications
- Pre-existing physical health problems/possible intoxication
- Previous response to RT, including adverse effects
- DO NOT prescribe antipsychotics to patients with Dementia with Lewy Body or Parkinson’s Disease
- DO NOT use lorazepam for the management of delirium (use small doses of haloperidol)
- A baseline ECG is recommended prior to treatment with haloperidol
- If haloperidol is prescribed, co-prescribe prn IM procyclidine to reduce risk/treat dystonia or other extrapyramidal side-effects
- Use IM lorazepam for antipsychotic naïve patients, in those with narrow angle glaucoma, CVD, TIA, CVA, stroke, dementia, or if insufficient information
- Use IM promethazine if respiratory function is compromised or if the patient is sensitive/tolerant to benzodiazepines
- Service user’s preferences or advance statements/decisions
- For people with learning disabilities; start with low doses & increase dose slowly (especially sensitive to the side-effects of psychotropics)

Medicines must never be mixed in the same syringe, give separately
Max. daily doses specified below are for combined oral and parenteral doses

For patients WITH narrow angle glaucoma, CVD, TIA, CVA, stroke or dementia
- IM lorazepam 0.5 – 1mg (max. 2mg/24hrs)
  (alternative : IM promethazine 25mg (max. 50mg/day)
- If partial response, consider a further dose after 60mins and monitor patient
- If no response, consider IM haloperidol 1 - 2.5mg (max. 9mg / 24hrs)

For patients WITHOUT narrow angle glaucoma, CVD, TIA, CVA, stroke or dementia
- FIRST CHOICE: IM lorazepam 0.5 – 1mg (max. 2mg/24hrs)
  (alternative : IM promethazine 25mg (max. 50mg/24hrs)
- For lorazepam if > 2mg/day required only upon senior doctor approval
- OR haloperidol 1 – 2.5mg (max. 9mg/24hrs) +/- promethazine 25mg (max. 50mg/24hrs)
- If partial response, consider a further dose(s) after 60mins and monitor patient

Seek advice from consultant psychiatrist

Treatment failure with the above

Physical monitoring following RT
- Alertness using (ACES)
- ACES scale
- Respiratory rate
- Pulse
- Blood Pressure
- Oxygen Saturation SpO2
- Temperature
- Hydration
Monitor at least every hour until there are no further concerns about physical health status
Monitor every 15 minutes if BNF max. dose exceeded or service user:
  - is 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
Monitor continuously if the patient was tasered and/or received CS gas by the police.

Monitor for risk of falls and deterioration in mobility
Ensure fluid intake is maintained. Fluid intake and output should be monitored.
Guidelines for the use of Flumazenil

Flumazenil is used in an emergency to reverse the sedative effects of a benzodiazepine overdose. Flumazenil must be given via the IV route and hence only doctors can administer this medicine in HPFT. If the doctor does not feel confident in administering IV medicines for such an emergency, they should raise this with their supervisor and an appropriate plan put into place. Flumazenil should be in all Trust sites where injectable benzodiazepines (eg lorazepam) are stocked.

| INDICATION | If the respiratory rate falls below 10 respirations per minute, after the administration of benzodiazepines |
| CONTRA-INDICATIONS | Patients with epilepsy who have been receiving long-term benzodiazepines. Life threatening condition controlled by benzodiazepines e.g. raised intracranial pressure, status epilepticus. |
| CAUTION | Dose should be carefully titrated in hepatic impairment. |
| DOSE AND ROUTE OF ADMINISTRATION | In adults Initially 200 micrograms intravenously over 15 seconds. If required level of consciousness not achieved after 60 seconds, subsequent doses of 100mcgs over 10 seconds, at 60 second intervals. Maximum 1mg in 24 hours (one initial dose and eight subsequent doses) |
| TIME BEFORE DOSE CAN BE REPEATED | 60 seconds |
| SIDE EFFECTS | Patients may become agitated, anxious or fearful on awakening Seizures may occur in regular benzodiazepine users |
| MANAGEMENT OF SIDE EFFECTS | Usually subside |
| MONITORING | Respiratory rate Monitor continuously until respiratory rate returns to baseline level N.B. If respiratory rate does not return to normal or patient is not alert after initial doses given, then assume sedation due to other causes |

ALWAYS READ IN CONJUNCTION WITH THE CURRENT BNF DOSING GUIDANCE
HALOPERIDOL ADMINISTRATION – ORAL & INTRAMUSCULAR EQUIVALENT DOSES

The maximum recommended daily dose for each route of administration is different, because parenteral doses generally have a greater bioavailability than oral doses.

<table>
<thead>
<tr>
<th></th>
<th>APPROXIMATE EQUIVALENT DOSES (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Haloperidol</td>
<td>0.5  1  1.5  2.5  4.2  5  7.5  8.3  10  12.5  16.7</td>
</tr>
<tr>
<td>IM Haloperidol</td>
<td>0.3  0.6  0.9  1.5  2.5  3  4.5  5  6  7.5  10</td>
</tr>
</tbody>
</table>

For example:

Patient has been given 1 x 5mg haloperidol IM, followed 30 minutes later by 5mg orally, then 30 minutes later by another 5mg orally.

- Convert to all oral doses, i.e. 8.3mg + 5mg + 5mg = 18.3mg oral equivalent
- Or
- Convert to all IM doses, i.e. 5mg + 3mg + 3mg = 11mg IM equivalent

NOTE: Each route of administration should be prescribed as a separate entry on the prescription chart
Psychotropic-related QT Prolongation

Introduction
Many psychotropic drugs are associated with ECG changes and some are causally linked to serious ventricular arrhythmia and sudden cardiac death. Specifically, some antipsychotics block cardiac potassium channels and are linked to prolongation of the cardiac QT interval, a risk factor for the ventricular arrhythmia torsades de pointes, which is often fatal. Case-control studies have suggested that the use of most antipsychotics is associated with an increase in the rate of sudden cardiac death. This risk is probably due to the arrhythmogenic potential of antipsychotics. Overall risk is probably dose related; although the absolute risk is low, it is substantially higher than the risk of, for example, fatal agranulocytosis with clozapine. Tricyclic antidepressants are sodium channel antagonists which prolong QRS interval and QT interval, effects which are usually evident only following overdose.

ECG Monitoring
ECG monitoring is essential for all patients prescribed antipsychotics* (but detecting drug-induced changes in mental health settings is complicated by a number of factors;
- Psychiatrists may have limited expertise in ECG interpretation, for example, and still less expertise in manually measuring QT intervals. Even cardiologists show an inter-rater reliability in QT measurement of up to 20msec
- Self-reading, computerised ECG devices are available and to some extent compensate for some lack of expertise, but different models use different algorithms and different correction formulae
- ECG machines may not be as readily available in all clinical areas as they are in general medicine
- Time for ECG determination may not be available in many areas e.g. outpatients
- ECG determination may be difficult to perform in acutely disturbed, physically non-co-operative patients

*Measure QTc in all patients prescribed antipsychotics:
• on admission (recommended in the NICE Psychosis and schizophrenia in adults: prevention and management) Feb 2014
• at yearly check-up (if previous abnormality or additional risk factors) for all antipsychotics and 6 monthly for clozapine.

HPFT DTC Recommendation on Haloperidol and ECG Monitoring (Jan 2010)
The SPCs for both haloperidol injection and oral haloperidol state that a baseline ECG is recommended prior to treatment in all patients. Patients commonly require treatment with haloperidol for immediate relief of critically disturbed behaviour or emotions. Although an ECG is recommended prior to treatment, the patient’s condition, for which the haloperidol treatment is required, may of itself not allow an accurate ECG recording to be obtained. The Trust concurs with its clinicians that the competing requirements of maximal behavioural safety and maximal cardiac safety are, at times, substantially irreconcilable.

Under such circumstances the treating clinician will make a judgement whether the patient’s interests are best served by administering haloperidol within its licensed terms even though an ECG is not available. The large and demonstrable beneficial effect of haloperidol on behavioural and emotional disturbance and the small and poorly quantified risk of cardiac abnormality may be taken into account. It is...
recognised that instances will arise where the patient’s needs are best served by the urgent administration of haloperidol

even in the absence of a pre-treatment ECG. This recognition does not however reduce the force of whatever other authoritative statements apply to the use of haloperidol outside critical care situations.

**QTc Prolongation**
The cardiac QT interval (usually cited as QTc, i.e. QT corrected for heart rate) is a useful but imprecise indicator of risk of torsade de pointes and of increased cardiac mortality. Different correction factors and methods may give markedly different values.

The QT interval broadly reflects the duration of cardiac repolarisation. Lengthening of repolarisation duration induces heterogeneity of electrical phasing in different ventricular structures (dispersion) which in turn allows the emergence of early afterdepolarisations (EADs) which may provoke ventricular extrasystole and torsade de pointes.

There is some controversy over the exact association between QTc and risk of arrhythmia. Very limited evidence suggests that risk is exponentially related to the extent of prolongation beyond normal limits (440msec for men, 470msec for women), although there are well-known exceptions which appear to disprove this theory (some drugs prolong QT without increasing dispersion). Rather stronger evidence links QTc values over 500msec to a clearly increased risk of arrhythmia. QT intervals of >650 msec may be more likely than not to induce torsade. Despite some uncertainties, QTc determination remains an important measure in estimating risk of arrhythmia and sudden death.

QTc measurements and evaluation are complicated by:
- difficulty in determining the end of the T wave, particularly where U waves are present (this applies to both manual and self-reading ECG machines)
- normal physiological variation in QTc interval: QT varies with gender, time of day, food intake, alcohol intake, menstrual cycle, ECG lead, etc.
- variation in the extent of drug-induced prolongation of QTc because of changes in plasma levels. QTc prolongation is most prominent at peak drug plasma levels and least obvious at trough levels.

**Other ECG Changes**
Tricyclics and other antidepressants may prolong the QRS interval, particularly in overdose. Other reported antipsychotic-induced changes include atrial fibrillation, giant P-waves, T-wave changes and heart block.

**Quantifying risks associated with psychotropic drugs**
Drugs are categorised by The Maudsley Guideline according to data available on their effects on the cardiac QTc interval (as reported; mostly using Bazett’s correction formula).
### Psychotropics – effect on QTc

<table>
<thead>
<tr>
<th>No effect</th>
<th>Low effect</th>
<th>Moderate effect</th>
<th>High effect</th>
<th>Unknown effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aripiprazole*</td>
<td>Asenapine</td>
<td>Amisulpiride</td>
<td>Any intravenous antipsychotics</td>
<td>Loxapine</td>
</tr>
<tr>
<td>Lurasidone</td>
<td>Clozapine</td>
<td>Chlorpromazine</td>
<td>Pimozide</td>
<td>Pipotiazine</td>
</tr>
<tr>
<td></td>
<td>Flupentixol</td>
<td>Haloperidol</td>
<td>Sertindole</td>
<td>Trifluoperazine</td>
</tr>
<tr>
<td></td>
<td>Fluphenazine</td>
<td>Levomepromazine</td>
<td>Any drug or combination of drugs used in doses exceeding recommended maximum</td>
<td>Zuclopenthixol</td>
</tr>
<tr>
<td></td>
<td>Perphenazine</td>
<td>Melperone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prochlorperazine</td>
<td>Quetiapine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Olanzapine</td>
<td>Ziprasidone</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paliperidone</td>
<td>Risperidone</td>
<td></td>
<td>Sulpiride</td>
</tr>
</tbody>
</table>

**Note:** The effect on QTc may not necessarily equate directly to risk of torsade de pointes or sudden death, although this is often assumed. Note also that categorisation is inevitably approximate given the problems associated with QTc measurement. Lastly, keep in mind that differences in the effects of different antipsychotics on the QT interval rarely reach statistical significance, even in meta-analyses.

### Other risk factors

#### Physiological/pathological risk factors for QTc prolongation and arrhythmia

<table>
<thead>
<tr>
<th>Cardiac</th>
<th>Metabolic</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long QT syndrome</td>
<td>Hypokalaemia*</td>
<td>Extreme physical exertion</td>
</tr>
<tr>
<td>Bradycardia</td>
<td>Hypomagnesaemia</td>
<td>Stress or shock</td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>Hypocalcaemia</td>
<td>Anorexia nervosa</td>
</tr>
<tr>
<td>Myocarditis</td>
<td></td>
<td>Extremes of age – children and elderly may be more susceptible to QT changes</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td></td>
<td>Female gender</td>
</tr>
<tr>
<td>Left ventricular hypertrophy</td>
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</table>

*Hypokalaemia-related QTc prolongation is more commonly observed in acute psychotic admissions. Also be aware that there are a number of physical and genetic factors which may not be discovered on routine examination but which probably predispose patients to arrhythmia.*
### Non-psychotropic drugs associated with QT prolongation

| Antibiotics | Erythromycin  
Clarithromycin  
Ampicillin  
Co-trimoxazole  
Pentamidine  
(Some 4 quinolones affect QTc – see manufacturers’ literature) |
|--------------|---------------------------------------------------------------|
| Antimalarials| Chloroquine  
Mefloquine  
Quinine |
| Antiarrhythmics | Quinidine  
Disopyramide  
Procainamide  
Sotalol  
Amiodarone  
Bretylium |
| Others | Amantadine  
Ciclosporin  
Diphenhydramine  
Hydroxyzine  
Methadone  
Nicardipine  
Tamoxifen |

Note: $\beta_2$ agonists and sympathomimetics may provoke torsade de pointes in patients with prolonged QTc.

**Metabolic inhibition**
The effect of drugs on the QTc interval is usually plasma level dependent. Drug interactions are therefore important especially when metabolic inhibition results in increased plasma levels of the drug affecting QTc. Commonly used metabolic inhibitors include fluvoxamine, fluoxetine, paroxetine and valproate.

**Other cardiovascular side-effects**
The risk of drug-induced arrhythmia and sudden cardiac death with psychotropics is an important consideration. With respect to cardiovascular disease, note that other risk factors such as smoking, obesity and impaired glucose tolerance present a much greater risk to patient morbidity and mortality than the uncertain outcome of QT changes.
Management of QT prolongation in patients receiving antipsychotic drugs

<table>
<thead>
<tr>
<th>QTc</th>
<th>Action</th>
<th>Refer to cardiologist</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTc less than 440ms (men) or less than 470 ms (women)</td>
<td>No action required unless abnormal T-wave morphology</td>
<td>consider if in doubt</td>
</tr>
<tr>
<td>QTc more than 440ms (men) or more than 470 ms (women) but less than 500ms</td>
<td>Consider reducing dose or switching to drug of lower effect. Repeat ECG.</td>
<td>consider</td>
</tr>
<tr>
<td>QTc more than 500ms</td>
<td>Repeat ECG. Stop suspected causative drug(s) and switch to a drug of lower effect;</td>
<td>immediately</td>
</tr>
<tr>
<td>Abnormal T-wave morphology</td>
<td>Review treatment. Consider reducing dose or switching to drug of lower effect.</td>
<td>immediately</td>
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</table>

Summary
In the absence of conclusive data, assume all antipsychotics are linked to sudden cardiac death.
Prescribe the lowest dose possible and avoid polypharmacy/metabolic interactions.
Perform ECG on admission and, if previous abnormality or additional risk factor, at yearly check-up.
Consider measuring QTc within a week of achieving a therapeutic dose of a moderate /high risk antipsychotic.
Drug Choice in Pregnancy

Clinicians should check with an up-to-date source of information before prescribing in pregnancy.

Obtain advice from a specialist perinatal Consultant Psychiatrist (currently Dr A. Roberts), local medicines information service or medicines information services listed on the front cover of the BNF or directly with manufacturers’ databases.

Specialist drugs in pregnancy advice can be obtained from the United Kingdom Teratology Service (UKTIS). Healthcare professionals can contact UKTIS by telephone on 0344 892 0909. The telephone service is available between 08.30 – 17.00 Monday – Friday (excluding bank holidays) for routine enquiries. Urgent enquiries are answered 24 hours per day, seven days per week.

Website for United Kingdom Teratology Service is www.uktis.org/

NICE Clinical Guideline “Antenatal and postnatal mental health: clinical management and service guideline” gives information about use of individual drugs in pregnancy https://www.nice.org.uk/guidance/cg192

The safety of psychotropics in pregnancy cannot be clearly established because robust, prospective trials are unethical. Individual decisions are dependent upon an imperfect retrospective database and an assessment of the risks and benefits associated with withdrawal or continuation of drug treatment. The service user's view of risks and benefits will have paramount importance. Possible effects on the unborn child should be discussed if possible with a mother who requires acute or maintenance treatment. Risks should be weighed up against possible benefits.

**General principles of prescribing in pregnancy**

Only treat when absolutely necessary (potential benefit outweighs potential harm), but remember that mentally ill women who are pregnant are very likely to require treatment

Ensure that the prospective parents are as fully involved as possible in all discussions

Always consider the risk of relapse when discontinuing psychotropics – relapse may ultimately be more harmful to the mother and child than continued, effective drug therapy

Try to avoid all drugs in the first trimester when major organs are being formed

Use an established drug at the lowest effective dose and avoid polypharmacy whenever possible

Be prepared to adjust doses as pregnancy progresses and drug handling is altered. Be aware of potential problems with individual drugs around the time of delivery

Ensure adequate foetal screening during pregnancy and monitor the neonate for withdrawal effects after birth

Document all decisions.
Rapid Tranquillisation (RT)

A pregnant woman requiring rapid tranquillisation should be treated according to the NICE clinical guidelines on the short-term management of disturbed/violent behaviour, schizophrenia and bipolar disorder (see the related NICE guidance in section 3.2 for details), except that:

- she should not be secluded after rapid tranquillisation
- restraint procedures should be adapted to avoid possible harm to the foetus
- when choosing an agent for rapid tranquillisation in a pregnant woman, an antipsychotic or a benzodiazepine with a short half-life should be considered; if an antipsychotic is used, it should be at the minimum effective dose because of neonatal extrapyramidal symptoms; if a benzodiazepine is used, the risks of floppy baby syndrome should be taken into account
- during the perinatal period, the woman’s care should be managed in close collaboration with a paediatrician and an anaesthetist.
Rapid Tranquilisation (RT) Checklist for Staff

PRE-RT

- Capacity/ MHA status noted and recorded
- Doctor involved
- Prescription chart review
- Medical History (including allergies & sensitivities) / Physical Health (including urine drug screen & ECG for antipsychotics). Review
- Advance decisions/statement

POST–RT

- EPR documentation
- Physical monitoring completed and documented (as per monitoring sheet)
- Prescription chart reviewed re: regular medication
- Team debrief
- Incident form completed via Datix
- Handover to clinical team (if out of hours)
- Update risk assessment
- Reassure service user / discuss how to manage further similar incidents
Rapid Tranquillisation (RT) Monitoring Sheet

It is important that the following monitoring is completed for all individuals who are administered medication for RT; this is because high stress levels, hyper-aroused physical state, restraint, agitation and hypokalaemia can all place the person at high risk of developing cardiac arrhythmias, in addition to other known adverse effects associated with prescribing medication indicated for RT.

<table>
<thead>
<tr>
<th>Service user name:</th>
<th>NHS no:</th>
<th>Ward/Unit:</th>
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**Trigger(s) & reason for use:**

<table>
<thead>
<tr>
<th>Nurse signature:</th>
<th>Print name:</th>
<th>Date:</th>
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<thead>
<tr>
<th>Time</th>
<th>Alertness (ACES)</th>
<th>Respiratory rate</th>
<th>Pulse</th>
<th>BP</th>
<th>Oxygen saturation</th>
<th>Temperature</th>
<th>Fluid offered (mls)</th>
<th>Fluid taken (mls)</th>
<th>Nurse initials</th>
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Record ‘X’ if unable to monitor
Seek urgent medical advice if any signs show deterioration

**Outcome of RT episode:**

<table>
<thead>
<tr>
<th>Signature:</th>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our Values</td>
<td>we are...</td>
<td>you feel...</td>
</tr>
<tr>
<td>------------</td>
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<td>-------------</td>
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<tr>
<td>Welcoming</td>
<td>✓ Valued as an individual</td>
<td></td>
</tr>
<tr>
<td>Kind</td>
<td>✓ Cared for</td>
<td></td>
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<tr>
<td>Positive</td>
<td>✓ Supported and included</td>
<td></td>
</tr>
<tr>
<td>Respectful</td>
<td>✓ Listened to and heard</td>
<td></td>
</tr>
<tr>
<td>Professional</td>
<td>✓ Safe and confident</td>
<td></td>
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</tbody>
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