Rapid Tranquilisation and the Management of Violent and Aggressive Paediatric Patients

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If so please identify here which document/s
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Rapid Tranquilisation and the Management of Violent and Aggressive Paediatric Patients

INDICATIONS
Rapid tranquilisation should only take place in clinical areas where resuscitation facilities and equipment is immediately available with appropriately trained staff.

Establish a close working relationship with patients at the earliest opportunity and sensitively monitor changes in their mood or composure that may lead to aggression or violence.

1. Identify Trigger
2. Attempt De-escalation/Calming Techniques
   - Response
   - Accepted
   - Allow patient to calm down in a quiet room with regular observation. Repeat doses if required as per guideline
3. Offer oral medication
4. Administer Rapid Tranquilisation
   - Response
   - Place sedated patient in recovery position and monitor their heart rate, respiratory rate and blood pressure
5. Repeat step 4

The decision to medicate a patient should always be made by a Consultant Paediatrician and referral should then be made to a senior member of the psychiatry team.

RAPID TRANQUILLISATION (RT) FOR PAEDIATRICS UNDER 12 YEARS OLD
Appendix 1

RAPID TRANQUILLISATION (RT) FOR ADOLESCENTS AGED 12-18
Appendix 2
Appendix 1: Rapid Tranquilisation (RT) for Paediatrics under 12 years old

PRIOR TO RAPID TRANQUILISATION

STEP 1 – Identify Triggers

- Keep the patient safe and choose the appropriate pathway;
- Consider physical causes and conditions (acute infection, akathisia, alcohol/illicit substance intoxication, physical co-morbidities);
- Review medicines given in the last 24 hours. If greater than BNF max contact senior doctor

STEP 2 – De-escalation and Calming Techniques

- If a patient becomes agitated or angry, a single member of staff should take the primary role in communicating with them and:
  - Assess situation for safety
  - Negotiate with patient to resolve situation in a non-confrontational manner
  - Use emotional regulation and self-management techniques to control verbal/non-verbal expression of anxiety/frustration
  - Use a designated area/room to reduce emotional arousal/agitation

STEP 3 – Offer Oral/Buccal Medication

Consider the following as first line options:
- Lorazepam 0.5-1mg PO
- Promethazine hydrochloride 5-10mg PO (max 25mg/day)
- Buccal Midazolam
  - 5-10 years 7.5mg PO
  - 10-12 years 10mg PO
- Consider an antipsychotic if NOT already taking a regular oral or depot antipsychotic:
  - 1st choice: Risperidone 0.5-1mg PO
  - 2nd choice: Olanzapine 2.5-5mg PO

STEP 3 – Consider Rapid Tranquilisation where 2 doses of oral treatment have failed or sooner if patient is placing themselves or others at risk

- Intramuscular (IM) treatment
  - Lorazepam 0.5mg-1mg IM (or by slow IV injection)
    - Ensure flumazenil available for benzodiazepine induced respiratory depression
  - Promethazine hydrochloride 6.25-12.5mg IM (or by slow IV injection)
    - Useful option in benzodiazepine–tolerant patients
  - Olanzapine 2.5-5mg IM (IV use unlicensed)
    - Olanzapine and lorazepam administration should be separated by 2 hours
    - Consider prochlorperazine oral/IM (EPSEs more common in adolescents)
    - Give 5mg initially (MAX 10mg/24 hours)

DETERIORATION

If no response arrange urgent team review. Maintain communication with psychiatry team.

The decision to medicate a patient should always be made by a Consultant Paediatrician and referral should then be made to a senior member of the psychiatry team.

START CHECKLIST

- Start Physical Health Monitoring and at 1 hour review mental state
- Repeat IM (or IV where appropriate) dose after 30 – 60 minutes if no response.
Appendix 2: Rapid Tranquilisation (RT) for adolescent aged 12 - 18

PRIOR TO RAPID TRANQUILISATION

**STEP 1 – Identify Triggers**
- Keep the patient safe and choose the appropriate pathway;
- Consider physical causes and conditions (acute infection, akathisia, alcohol/illicit substance intoxication, physical co-morbidities);
- Review medicines given in the last 24 hours. If greater than BNF max contact senior doctor.

**STEP 2 – De-escalation and Calming Techniques**
- If a patient becomes agitated or angry, a single member of staff should take the primary role in communicating with them and:
  - Assess situation for safety
  - Negotiate with patient to resolve situation in a non-confrontational manner
  - Use emotional regulation and self-management techniques to control verbal/non-verbal expression of anxiety/frustration
  - Use a designated area/room to reduce emotional arousal/agitation

**STEP 3 – Offer Oral/Buccal Medication**
Consider the following as first line options:
- Lorazepam 0.5-2mg PO
- Promethazine 10-25mg PO (max 50mg/day)
- Buccal Midazolam 10mg PO

Consider an antipsychotic if NOT already taking a regular oral or depot antipsychotic
- 1st choice: Risperidone 1-2mg PO
- 2nd choice: Olanzapine 5-10mg PO

**DETERIORATION**
If no response arrange urgent team review. Maintain communication with psychiatry team.

**START CHECKLIST**

**STEP 3 – Consider Rapid Tranquilisation where 2 doses of oral treatment have failed or sooner if patient is placing themselves or others at risk**

- **Lorazepam 0.5mg-2mg IM (or by slow IV injection)**
  - [Dose is 0.5mg-1mg if less than 30kg]
  - [Maximum 4mg/24 hours ]

- Ensure flumazenil available for benzodiazepine induced respiratory depression

  - **Partial response**
    - Consider Repeating IM Lorazepam
  - **No response**
    - Consider Olanzapine or Haloperidol (Avoid if known cardiac problems, ECG abnormalities or on other medication known to interact or cause QT prolongation)

- **Olanzapine 2.5 – 5mg IM (IV use unlicensed)**
  - Do not give with IM Lorazepam – wait 2 hours after lorazepam before giving

  - Consider procyclidine oral/IM (EPSEs more common in adolescents) – Give 10mg initially (MAX 20mg/24hours)

- **Haloperidol 1-5mg IM (NOT for IV)**
  - MAX 5mg/24hours

  - Consider combining with promethazine IM 10-25mg (max 100mg/24hours) to improve tolerability to haloperidol or procyclidine oral/IM

*EPSE = extra pyramidal side effects*
1 Introduction

Violence and aggression refers to “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.”

“Rapid tranquillisation in this guideline refers to 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” (NICE NG10).

The aim of rapid tranquillisation is to achieve a state of calm sufficient to minimise the risk posed to patients or others. The patient should be able to respond to communication throughout the period of rapid tranquillisation. Rapid tranquillisation should only be considered appropriate where a patient presents a risk to themselves or others and de-escalation (including the use of ‘when required’ medication where appropriate) and any other appropriate non restrictive techniques have failed, or the situation cannot be appropriately managed in any other way.

There can be any number of medical reasons for aggressive behaviour and any reversible causes should be investigated and managed appropriately before commencing rapid tranquillisation.

The use of rapid tranquillisation is a high risk practice which has to be well managed in order to avoid unnecessary harm. The risks associated with rapid tranquillisation have been identified as

- Over-sedation causing loss of consciousness
- Over-sedation causing loss of alertness
- Loss of airway
- Cardiovascular collapse (problems with arrhythmias, hypotension, sudden death)
- Respiratory depression (Be Aware acute dystonias may compromise respiratory rate)
- Interaction with medication (prescribed or illicit including alcohol)
- Damage to the therapeutic relationship
- Underlying coincidental physical disorders

Rapid tranquillisation should only take place in clinical areas where resuscitation facilities and equipment is immediately available with appropriately trained staff.
1.2 **Scope**
This guideline applies to all paediatric patients in the region but not to neonates on neonatal units.

1.3 **Purpose**
The purpose of this guideline is to provide a standardised approach for rapid tranquilisation and the management of violent and aggressive paediatric patients.

1.4 **Definitions**
*Rapid tranquilisation in this guideline refers to 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*” (NICE NG10).

2 **Recommendation**
Children with challenging behaviour may be a danger to themselves, to other children in the hospital and to medical staff. Their difficult behaviour may be due to a variety of causes such as organic disease, psychosocial problems or alcohol / drug abuse. Acutely disturbed behaviour may arise in the course of almost any medical disorder or its treatment.

Establish a close working relationship with patients at the earliest opportunity and sensitively monitor changes in their mood or composure that may lead to aggression or violence.

- recognise the early signs of agitation, irritation, anger and aggression
- understand the likely causes of aggression or violence, both generally and for each patient (sometimes it might be because they are not allowed to go out for a cigarette)
- use techniques for distraction and calming, and ways to encourage relaxation
- recognise the importance of personal space
- respond to a patients’ anger in an appropriate, measured and reasonable way and
- avoid provocation
- offer the child or young person the opportunity to move away from the situation in which the violence or aggression is occurring, for example to a quiet room or area/parental presence
- aim to build emotional bridges and maintain a therapeutic relationship

Take into account the child or young person's level of physical, intellectual, emotional and psychological maturity. The Mental Capacity Act 2005 applies to young people aged 16 and over. Collaborate with those who have parental responsibility when managing violence and aggression in children and young people. Use safeguarding procedures to ensure the child or young person's safety.
2.1 De-Escalation Techniques
If a patient becomes agitated or angry, a single staff member should take the primary role in communicating with them. That staff member should assess the situation for safety, seek clarification with the patient and negotiate to resolve the situation in a non-confrontational manner.

Use emotional regulation and self-management techniques to control verbal and non-verbal expressions of anxiety or frustration (for example, body posture and eye contact) when carrying out de-escalation.

Use a designated area or room to reduce emotional arousal or agitation and support the patient to become calm.

2.2 Offer Oral/Buccal Options
Oral/buccal medication should be considered first line where de-escalation techniques have been unsuccessful in managing the patient and considered prior to using rapid tranquillisation (parenteral therapy).

**Patients 12 years and under**
Consider the following as first-line options:
- Lorazepam 0.5-1mg PO
- Promethazine 5-10mg PO (max 25mg/day)
- Buccal midazolam
  - 5-10 years = 7.5mg
  - 10-12 years = 10mg

Consider an antipsychotic if NOT already taking a regular oral or depot antipsychotics
- 1st choice: **Risperidone** 0.5-1mg PO
- 2nd choice: **Olanzapine** 2.5-5mg PO
2.3 Rapid Tranquillisation

Rapid tranquillisation should always be viewed as an option of last resort and only considered after any reversible causes have been appropriately treated and de-escalation techniques have been attempted or have been deemed to be inappropriate. **The decision to medicate a patient should always be made by a Consultant Paediatrician and referral should then be made to a senior member of the psychiatry team.**

For any patient initiated on rapid tranquillisation a RT checklist should be started (see appendix).

### Patients 12-18 years

Consider the following as first line options:
- **Lorazepam** 0.5-2mg PO
- **Promethazine** 10-25mg PO (max 50mg/day)
- **Buccal Midazolam** 10mg

Consider an antipsychotic if NOT already taking a regular oral or depot antipsychotics
- 1st choice: **Risperidone** 1-2mg PO
- 2nd choice: **Olanzapine** 5-10mg PO

### Patients 12 years and under

Preferred IM treatment is with one of the following:
- **Lorazepam** 0.5mg-1mg IM (or by slow IV injection)
  
  Ensure flumazenil available for benzodiazepine induced respiratory depression

- **Promethazine** 6.25-12.5mg IM (or by slow IV injection)
  
  Useful option in benzodiazepine–tolerant patients

- **Olanzapine** 2.5-5mg IM (IV use is unlicensed)
  
  Olanzapine and lorazepam administration should be separated by 2 hours
  
  Consider prescribing with procyclidine oral/IM to reduce the risk of EPSEs, these are more common in adolescents: 5mg initially (MAX 10mg/24hours)

For patients that show partial or no response a second dose may be administered after 30-60minutes, **olanzapine however should not be given within 2 hours of lorazepam.**
Cautions and Contraindications to Rapid Tranquillisation

Rapid tranquillisation should always be considered as a restrictive intervention and not routinely prescribed, as treatment is associated with risks. Careful consideration should be given to any pre-existing co-morbidities and current therapy (i.e. those already taking anti-psychotics or other medication known to have similar side effects). The following is a summary of key risks associated with treatment:

2.4.1: Antipsychotics (e.g. olanzapine, haloperidol, risperidone)

The main risks/side effects associated with anti-psychotic use include:

- **Loss of consciousness/Excessive sedation**
- **Cardiovascular toxicity** i.e. tachycardia, arrhythmias, hypotension, QT prolongation and rarely sudden death. Antipsychotics should therefore be avoided in patients with known cardiac problems or ECG abnormalities. The risk is greater with haloperidol.
- **Extrapyramidal Side Effects (EPSEs)** i.e. tremor, rigidity, dystonias (abnormal face and body movements), akathisia (restlessness) and tardive dyskinesia. These occur more commonly with the older “typical” antipsychotics including haloperidol, but can still occur with atypicals (olanzapine, risperidone), particularly in adolescence. Prevention/management is with an anti-muscarinic (procyclidine IM/oral) which can be given simultaneously.
- **Neuroleptic Malignant Syndrome** characterised by temperature dysregulation, fluctuating blood pressure, altered consciousness, autonomic dysfunction (pallor, sweating, urinary incontinence) and raised creatinine kinase. This is a medical emergency and requires urgent referral.
2.4.2: Benzodiazepines (e.g. lorazepam, midazolam)
The main risks/side effects associated with benzodiazepines include:
- **Loss of consciousness/Excessive sedation**
- **Respiratory depression** all areas where patients are receiving benzodiazepines should stock flumazenil
- **Paradoxical increase in aggression** risk is increased in children/adolescence.

2.4.3: Antihistamines (e.g. promethazine)
The main risks/side effects associated with anti-histamines include:
- **Excessive sedation**
- **Enhanced anti-muscarinic effects**
- **Cardiovascular toxicity** i.e. hypotension, arrhythmias.

2.5 Monitoring Requirements

2.5.1 What to Record
- Temperature
- Blood pressure
- Pulse
- Respiratory rate
- Level of consciousness (alert, vocalise, pain, unresponsive)
- Oxygen saturation
- Fluid balance – to ensure adequate hydration
2.5.2 When to Record
Monitoring should be carried out:
- Baseline on admission/prior to RT
- Every 15 minutes for the first hour
- Hourly until there are no concerns

2.5.3 What to do if unable to monitor
Where it is not possible to monitor patients this must be documented in the patients notes. Record anything that you can monitor through observation i.e. alertness/awake, pallor, respiratory rate etc. If the patient appears asleep then wake to assess level of consciousness.

3. Post Incident Review
- Any incident requiring rapid tranquillisation (or physical intervention) must be contemporaneously recorded. All appropriate staff should be trained to ensure that they are aware of how to correctly record any incident using the appropriate documentation.

- A post incident review should take place as soon as possible and at least within 72 hours of an incident ending. Wherever possible a person not directly involved in the incident should lead the review which should address:
  - What happened during the incident
  - Any trigger factors
  - Each person’s role in the incident
  - Their feeling at the time of the incident, at the review and how they may feel in the near future
  - What can be done to address their concern?

Patients should be given the opportunity to document their own account of the intervention. This should be filed in their medical notes.

4 Implementation
This guideline will be displayed on the PIER network website, accessible to all paediatricians working within the Wessex region

5 Process for Monitoring Effectiveness
Audit results will be circulated and presented at the multidisciplinary audit meetings. Any areas of non compliance or gaps in assurance that arise from the monitoring of this guideline will result in an action plan detailing recommendations and proposals to address areas of non compliance and/or embed learning. Monitoring of these plans will be coordinated by managers of this guideline. The resulting actions will be reviewed or followed up at the subsequent multidisciplinary audit meeting(s).
6 References

- Southern Health Policy and Guidance: Rapid Tranquilisation: Policy and Guidance for use in Mentally Ill Patients Displaying Acutely Disturbed or Violent Behaviour
- South London and Maudsley Prescribing Guidelines, David Taylor, 12th edition

Simon Birch (Consultant Paediatrician) and Nicola Hill (Pharmacist) manage this guideline.

See Trust Policy for the Production of Drug Therapy Guidelines
Approved by: Formulary & Medicines Group Date: November 2017
Review date: November 2019
Appendix A

Paediatric Regional Guideline Consultation Documentation:

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<tr>
<td>Chichester</td>
<td>Katy Walker</td>
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<td>Dorchester</td>
<td>William Verling</td>
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<td>Poole</td>
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<td>Nicola Hill</td>
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<td></td>
<td>Amanda Freeman</td>
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<td>Southampton</td>
<td>Julie Waine</td>
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<td>Solent NHS Trust</td>
<td>Ravi Thyagarajan</td>
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*this person agrees they have read the guidelines, consulted with relevant colleagues and members of MDT, managers and patients, young people & their families as appropriate. Any queries raised during consultation and review process should be documented with responses and any changes made to guideline.
### Appendix 1 - Rapid Tranquillisation (RT)
for Paediatrics under 12 years old

<table>
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<th>Definition: Use of medication by the parenteral route, if oral medication is not possible or appropriate and urgent sedation with medication is needed. This is a restrictive intervention.</th>
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### Prior to Rapid Tranquillisation

#### Identify Trigger
Keep the patient safe and choose the appropriate pathway;
- Consider physical causes and conditions (acute infection, akathisia, alcohol/illicit substance intoxication, physical co-morbidities)
- Review medicines given in the last 24 hours. If greater than BNF max contact senior doctor.

#### De-escalation and Calming Techniques
If a patient becomes agitated or angry, a single member of staff should take the primary role in communicating with them and:
- Assess situation for safety
- Negotiate with patient to resolve situation in a non-confrontational manner
- Use emotional regulation and self-management techniques to control verbal/non-verbal expression of anxiety/frustration
- Use a designated area/room to reduce emotional arousal/agitation

### Offer Oral/Buccal Medication
Consider the following as first line options:
- Lorazepam 0.5-1mg PO
- Promethazine 5-10mg PO (max 25mg/day)
- Buccal Midazolam
  - 5-10 years 7.5mg
  - 10-12 years 10mg
Consider an antipsychotic if NOT already taking a regular oral or depot anti-psychotic
- 1st choice: Risperidone 0.5-1mg
- 2nd choice: Olanzapine 2.5-5mg

### Consider Rapid Tranquillisation where 2 doses of oral treatment have failed or sooner if patient is placing themselves or others at risk

#### Rapid Tranquillisation - Start RT Checklist

- **Intramuscular (IM) treatment**
  - Lorazepam 0.5mg-1mg IM (or by slow IV injection)
  - Promethazine 6.25-12.5mg IM (or by slow IV injection)
  - Olanzapine 2.5-5mg IM (IV use is unlicensed)
  - Ensure flumazenil available for benzodiazepine induced respiratory depression
  - Useful option in benzodiazepine–tolerant patients
  - Olanzapine and lorazepam administration should be separated by 2 hours

#### Start Physical Health Monitoring and at 1 hour review mental state. Review by Expert Colleague

- Partial/No response
  - If this does not work after 30-60minutes try a further IM dose
  - Lorazepam 0.5mg-1mg IM (or IV)
  - Promethazine 6.25-12.5mg IM (or IV)
  - Olanzapine 2.5-5mg IM
  - Olanzapine and lorazepam administration should be separated by 2 hours

#### Full response

- Continue Physical Health Monitoring and at 1 hour review mental state

**If no response arrange urgent team review. Maintain communication with psychiatry**
### Definition: Use of medication by the parenteral route, if oral medication is not possible or appropriate and urgent sedation with medication is needed. This is a restrictive intervention.

### Prior to Rapid Tranquilisation

#### Identify Trigger
Keep the patient safe and choose the appropriate pathway:
- Consider physical causes and conditions (acute infection, akathisia, alcohol/illicit substance intoxication, withdrawal, physical co-morbidities)
- Review medicines given in the last 24 hours. If greater than BNF max contact senior doctor.

#### De-escalation and Calming Techniques
If a patient becomes agitated or angry, a single member of staff should take the primary role in communicating with them and:
- Assess situation for safety
- Negotiate with patient to resolve situation in a non-confrontational manner
- Use emotional regulation and self-management techniques to control verbal/non-verbal expression of anxiety/frustration
- Use a designated area/room to reduce emotional arousal/agitation

### Offer Oral/Buccal Medication
Consider the following as first line options:
- Lorazepam 0.5-2mg PO
- Promethazine 10-25mg PO (max 50mg/day)
- Buccal Midazolam 10mg

Consider an antipsychotic if NOT already taking a regular oral or depot anti-psychotic
- 1st choice: Risperidone 1-2mg
- 2nd choice: Olanzapine 5-10mg

### Rapid Tranquilisation - Start RT Checklist

#### Consider IM Lorazepam (Unlicensed use) (or by slow IV injection)
0.5mg-2mg (max 4mg/24 hours). If less than 30kg – 0.5mg-1mg.

#### Start Physical Health Monitoring and at 1 hour review mental state. Review by Expert Colleague

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<th>Full response</th>
<th>Partial response</th>
<th>No response</th>
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<tbody>
<tr>
<td>Consider Repeating IM (or IV) Lorazepam 0.5mg-2mg (max 4mg/24 hours). If less than 30kg – 0.5mg-1mg</td>
<td>Consider Olanzapine or Haloperidol Avoid if known cardiac problems, ECG abnormalities or on other medication known to interact or cause QT prolongation</td>
<td></td>
</tr>
<tr>
<td>Olanzapine 2.5 – 5mg IM (IV use is unlicensed) Do not give with IM Lorazepam – wait 2 hours after lorazepam before giving Consider procyclidine oral/IM (EPSEs more common in adolescents)</td>
<td>Haloperidol 1-5mg IM (NOT for IV use) Consider combining with promethazine IM 10-25mg (max 100mg/24hours) to improve tolerability to haloperidol or procyclidine oral/IM</td>
<td></td>
</tr>
</tbody>
</table>

#### Continue Physical Health Monitoring and at 1 hour review mental state

<table>
<thead>
<tr>
<th>Partial or no response</th>
<th>Partial or no response</th>
</tr>
</thead>
<tbody>
<tr>
<td>If there is partial response consider a second dose of Olanzapine in 2 hours Max 20mg or 3 doses IM in 24 hours, whichever is reached first</td>
<td>If there is a partial response consider a second dose of Haloperidol in a minimum of 1 hour Haloperidol IM max 5mg in 24 hours</td>
</tr>
</tbody>
</table>

### If no response arrange urgent team review. Maintain communication with psychiatry
Physical Health Monitoring after RT

**What to Record:**
- Temperature (T), Blood Pressure (BP), Pulse (P), Respiratory Rate (RR)
- Level of consciousness (Alert, Vocalise, Pain, Unresponsive)
- Oxygen Saturation

**When to Record:**
- Baseline on admission/prior to RT and then every 15 minutes for the 1st hour, then at leastHourly until there are no concerns

**Fluid Balance**
- Use Fluid Monitoring Sheet to ensure adequate hydration. Do U&Es if clinically appropriate. Avoid fluid overload

**What to do if unable to monitor**
- Must document why you can’t monitor
- Record what you can monitor; awake, good colour, RR
- Keep the patient on close visual observations
- If appears asleep, wake to assess level of consciousness

Management of possible complications of RT which may require urgent medical attention

**NB IV administration by medical staff only**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Remedial Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irregular/Slow Pulse &lt;60/minute</td>
<td>Contact doctor. Consider urgent referral to physicians</td>
</tr>
<tr>
<td>Fall in Blood Pressure orthostatic or &lt;50mmHg diastolic</td>
<td>Contact doctor. Lie patient flat. Raise legs if possible. Monitor closely. May need physician referral</td>
</tr>
<tr>
<td>Acute Dystonia (inc. oculogyric crisis)</td>
<td>Give Procyclidine 5-10mg IM (or IV). Review antipsychotic medication</td>
</tr>
<tr>
<td>Reduced Respiratory Rate; &lt; 10/minute O₂ sats &lt;95</td>
<td>Phone 999 and contact doctor immediately. Give Flumazanil if benzodiazepine-induced and RR falls below 10/min</td>
</tr>
<tr>
<td></td>
<td><strong>Initial dose:</strong> 200mcg IV over 15 secs – if required level of consciousness not achieved after 60 seconds then:</td>
</tr>
<tr>
<td></td>
<td><strong>Subsequent dose:</strong> 100mcg over 10 seconds, repeated after 60 seconds if necessary</td>
</tr>
<tr>
<td></td>
<td><strong>Maximum dose:</strong> 1mg in 24 hours (one initial dose and eight subsequent doses)</td>
</tr>
<tr>
<td></td>
<td><strong>Monitor</strong> until RR returns to baseline level. Very rarely seizures may occur after flumazenil particularly after long term treatment with Benzodiazepine. If induced by other agent, patient will require mechanical ventilation – arrange transfer to ITU immediately</td>
</tr>
<tr>
<td>Increase in Temperature &gt;38°C</td>
<td>Consider Neureleptic Malignant Syndrome (see below)</td>
</tr>
</tbody>
</table>

**Pharmacokinetics**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Onset of action</th>
<th>Time to peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorazepam</td>
<td>IM 20-40 mins</td>
<td>1-3 hrs</td>
</tr>
<tr>
<td></td>
<td>Oral Rapid</td>
<td>2 hrs</td>
</tr>
<tr>
<td>Promethazine</td>
<td>IM 20 mins</td>
<td>2-3 hrs</td>
</tr>
<tr>
<td></td>
<td>Oral 15-30 mins</td>
<td>2-3 hrs</td>
</tr>
<tr>
<td>Midazolam</td>
<td>Buccal 15-30 mins</td>
<td>30 mins</td>
</tr>
<tr>
<td>Risperidone</td>
<td>Oral 1 hr</td>
<td>1 hr</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>IM 15-30 mins</td>
<td>15-45 mins</td>
</tr>
<tr>
<td></td>
<td>Oral 2-4 hours</td>
<td>4.7 hrs</td>
</tr>
</tbody>
</table>

**Neuroleptic Malignant Syndrome (NMS)**

- Fever, usually above 38°C, sometimes hyperpyrexia over 40°C
- Muscle rigidity
- Alteration in consciousness
- Autonomic disturbance – tachycardia, changes in BP, urinary incontinence
- Raised creatine kinase levels

**Risk Factors:**
1. Previous NMS or cerebral compromise
2. Catatonia, agitation, overactivity, dehydration
3. Rapid tranquillisation, IM therapy, high potency neuroleptics

**STOP ANTIPSYCHOTIC IMMEDIATELY**
Consult doctor, can be FATAL, may need ITU. Consider urgent referral

**Pregnancy**

After 20 weeks of pregnancy women should never be restrained face down

Pregnancy: ensure perinatal service involved in overall care in patients with psychosis and previous antipsychotic exposure

Haloperidol 1.5mg – 5mg po or 2 – 5 mg IM may be added to Lorazepam. Repeat as necessary. Same max doses apply.

After rapid tranquillisation consider medical review of pregnancy
# Rapid Tranquillisation (RT) with IM Injection – Monitoring Checklist for Patients Under 16 years of age

Refer to Rapid Tranquillisation and the Management of Violent Aggressive Paediatric Patients Guidelines

<table>
<thead>
<tr>
<th>Patients Name</th>
<th>Date of Birth</th>
<th>Hospital Number</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Ward</th>
<th>Consultant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pre RT Checklist. All checks must be completed.**

1. Check for intoxication with alcohol/illicit substances and/or acute infection  
2. Non drug approaches considered  
3. Medication in last 24 hours checked  
4. Oral medication offered before IM injection  
5. Does the time interval between doses follow Solent NHS Trust Rapid Tranquillisation Guidelines  
6. If this isn’t the first dose, has the prescribed interval between doses elapsed?  
7. Repeated RT doses – has junior doctor considered contacting a senior doctor?  
8. Verbal parental/carer consent obtained  
   Written parental consent obtained

Checklist completed by: ......................... (Trained Nurse)  Date: . . . . / . . . . / . . . .

Drug(s) administered

<table>
<thead>
<tr>
<th>Drug(s)</th>
<th>Dose(s)</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

Date:  Time:

**Physical health monitoring checklist**

Monitor – Temperature, pulse, blood pressure, respiratory rate, oxygen saturation and level of consciousness every 15 minutes for the first hour then hourly for 4 hours then, depending on clinical need every 4 hours for the next 12 hours.

If patient is asleep they should be woken, unless there is a good reason not to. This reason **MUST** be recorded in the patients notes.. As a minimum the respiratory rate and pulse should be recorded.

| 1. Most recent baseline observations recorded  | Y |
| 2. Date/times and observations in first hour (every 15 minutes) recorded  | Y |
| 3. Date/times and observations for next 4 hours (every hour) recorded  | Y |
| 4. Fluid chart started  | Y |

Completed by: ......................... Date: . . . . / . . . . / . . . .

**Physical health review at 5 hours**

| Clinical status reviewed  | Y |
| Physical health monitoring to continue  | Y / N |
| Date/times for further monitoring added to records  | Y N/A |

Checklist completed by: ......................... (Trained Nurse)  Date: . . . . / . . . . / . . . .

**Post RT Checklist**

| 1. Incident form completed  | Y |
| 2. Diary entry for doctor to review need for U&Es blood test at 24 hours post dose  | Y |
| 3. Incident added to next MDT template for review/plan  | Y |
| 4. Incident reviewed with patient within 72 hours and documented on System1  | Y/N |
   If no, please state reason: .................................................................

Checklist completed by: ......................... (Trained Nurse)  Date: . . . . / . . . . / . . . .
Rapid Tranquillisation (RT) with IM Injection – Monitoring Checklist for Patients 16-18 years of age

Refer to Rapid Tranquillisation and the Management of Violent Aggressive Paediatric Patients Guidelines

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</table>

**Pre RT Checklist.** All checks must be completed.

1. Check for intoxication with alcohol/illicit substances and/or acute infection Y
2. Non drug approaches considered Y
3. Medication in last 24 hours checked Y
4. Oral medication offered before IM injection Y
5. Does the time interval between doses follow Solent NHS Trust Rapid Tranquillisation Guidelines Y N/A
6. If this isn’t the first dose, has the prescribed interval between doses elapsed? Y N/A
7. Repeated RT doses – has junior doctor considered contacting a senior doctor? Y N/A
8. Patient does not have capacity to give consent to treatment and therefore treated in best interests Y / N

Checklist completed by: ........................................ (Trained Nurse) Date: .... / .... / ....

**Drug(s) administered**

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**Date:** Time:

**Physical health monitoring checklist**

Monitor – Temperature, pulse, blood pressure, respiratory rate, oxygen saturation and level of consciousness every 15 minutes for the first hour then hourly for 4 hours then, depending on clinical need every 4 hours for the next 12 hours.

If patient is asleep they should be woken, unless there is a good reason not to. This reason **MUST** be recorded in the patients notes. As a minimum the respiratory rate and pulse should be recorded.

1. Most recent baseline observations recorded Y
2. Date/times and observations in first hour (every 15 minutes) recorded Y
3. Date/times and observations for next 4 hours (every hour) recorded Y
4. Fluid chart started Y

Completed by: ........................................ Date: .... / .... / ....

**Physical health review at 5 hours**

<table>
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<tr>
<th>Clinical status reviewed</th>
<th>Physical health monitoring to continue Y / N</th>
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<td>Date/times for further monitoring added to records Y N/A</td>
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Checklist completed by: ........................................ (Trained Nurse) Date: .... / .... / ....

**Post RT Checklist**

1. Incident form completed Y
2. Diary entry for doctor to review need for U&Es blood test at 24 hours post dose Y
3. Incident added to next MDT template for review/plan Y
4. Incident reviewed with patient within 72 hours and documented on System1 Y/N

If no, please state reason: .................................................................

Checklist completed by: ........................................ (Trained Nurse) Date: .... / .... / ....