

CAMHS Rapid Tranquillisation Guidelines

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Mental Health and LD	
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Version	Date	Comments / changes
Version 8.0 and 9.0	Dec 2020/ Jan 2021	Format changes Expansion of QTc section: reference to RISQ-PATH study and Credible meds Update of QT psychotropic and non-psychotropic section Addition of short section on neuroleptic malignant syndrome
7.0	September 2020	Removal of treatment flow chart NICE guidance incorporated Removal of oral columns from medication tables Medication table updated to reflect child/adolescent license Reference to adult doses in medication table Expansion of consultant, medical and pharmacist responsibilities section Initial assessment: new section Re-written non- pharmacological interventions Restrictive interventions: new section Re-written pharmacological interventions Training section updated: NICE Statements added to highlight unlicensed status of medications Reference to BAP NAPICU guidance
6.0	November 2017	Amended to include reference to seclusion under: Guidelines Consultant duties Medical team Nursing staff Pharmacological treatment
4.0-5.1	January 2017	Content page Prescriber section expanded to- Consultant and Medical team Section expanded for children/ adolescents detained under the mental health act Section included in 'general notes' to consider any physical illness/ neurocognitive effects when choosing medication Updated Physical Health Monitoring Forms: COAST: 5-12 year old PEWS: 13-18 year old
3.0	October 2014	Zuclopenthixol acetate moved to 'Medicines Not Recommended for RT'. Midazolam included for IM RT use. Risperidone included for PO RT use. Maximum IM dose of Haloperidol amended. Appendix 1 flowchart reviewed. Updated RT monitoring chart included.
2.1	August 2011	Medications reviewed IM haloperidol dose changed

2.0	January 2008	<p>Changed to include RT for <12years Title changed</p> <p>Altered doses for RT to include <12years</p> <p>Medications reviewed Monitoring reviewed</p> <p>Richmond Agitation Sedation Scale added Restraint policy mentioned</p> <p>QT prolongation causing medications included Training, & audit included</p> <p>Consent issues highlighted</p>
1.0	Sept 2005	<p>Repeated references to the fact that the guidelines are for 12-18 year olds throughout the document.</p> <p>Include the use of the Mental Health Act, particularly in the case of 16-18 year olds.</p> <p>If oxygen sats fall below 90%, remedial action should state, "seek urgent medical review". Approved by Medicines Committee Sept 2005</p>

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Guidelines for the Management of Acutely Disturbed Children & Adolescents (Aged 6 - 17 years)

1.0 Aims

The aim of rapid tranquillisation (RT) is:

- To quickly and safely calm a patient who is severely agitated and/ or physically aggressive
- To quickly reduce the risk of imminent and serious physical aggression to self and/or others, rather than treat the underlying psychiatric condition.
- To not induce sleep or unconsciousness. The child/adolescent should be sedated but still able to participate in further assessment and treatment.
- To avoid un-necessary and prolonged physical restraint which can potentially be physically harmful to the patient and staff involved in the restraint.

Rapid tranquillisation (RT) is a management strategy and is not the primary treatment. If administered: It should be considered once de-escalation, psychological and behavioural strategies have been tried, but produce limited benefit.

There should be consideration regarding the level of risk of harm to self and/ or others including patients and staff if RT is not given.

- There should be a clear clinical need.
- Check if an advance directive is in place. Advance directives should be taken into account when making decisions on which interventions to use.
- The intervention selected must be reasonable and proportionate to the level of risk.
- Check the suitability of using RT medication alongside regular and 'as required' medication already prescribed.
- Check the total % antipsychotic medication prescribed prior to prescribing and administering RT medication. If the total % of all antipsychotics prescribed (regular, PRN and RT) exceed 100%, the High Dose Antipsychotic Policy must be implemented.

These guidelines are intended for:

- Children & adolescents anywhere within the East London NHS Foundation Trust.
- Children & adolescents from 6 to 17 years of age.
- This policy *must* be read in conjunction with the policy on the use of Physical Holding Skills.
- If applicable, refer to the Trust High Dose Antipsychotic Medication policy.
- If applicable, refer to the Trust Seclusion policy.

2.0 Duties

2.1 Operational duties

Consultant:

- Overall responsibility of using RT medication lies with the consultant.
- Overall responsibility of ensuring review and monitoring of RT medication lies with the consultant.
- Ensure appropriate debrief is provided for staff, young person and families.
- Ensure the treatment plan and/ or the rationale to use RT is clearly documented in the clinical notes and communicated to the appropriate teams/ professionals.
- Overall responsibility for assessment, decision and to prescribe RT for a young person in seclusion lies with the consultant (please refer to Seclusion policy for detailed information).
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Medical team:

- Ensure the medication is prescribed specifically and clearly for RT.
- Prescribing the right drug, right dose, right route, and frequency and maximum specified for a 24 hour period.
- Reviewing the prescription daily and/ or at the most once weekly.
- Ensuring patients are monitored for potential side effects from medicines administered.
- Medical review of patient post RT medication, including the RT physical health monitoring chart.
- Where a young person is in seclusion, complete medication review as per monitoring standards provided in the Trust Seclusion policy.
- Ensure there is clear documentation for the rationale to use RT in the patient notes, as well as documentation of post RT reviews.
- Follow up and/ or action any concerns highlighted from the post RT review and/ or RT physical health monitoring chart.

Nursing staff are accountable for:

- The safe administration of medicines, according to the 10Rs (see the Trust [Medicines Policy](#)).
- The selection and administration of the right medicine at the right dose and the right route, as prescribed for the purpose of RT.
- Record on the prescription chart to indicate administration of the medicine.
- Documentation of administration in the patient case notes and completion of an incident report form.
- Completion of post rapid tranquillisation monitoring, including monitoring for potential side effects.
- Where a young person is in seclusion, complete post RT monitoring as per this guideline and any additional physical health monitoring as stipulated in the Seclusion policy.
- Contact the Doctor if any concerns following RT medication and/ or post RT monitoring.
- Ensure appropriate debrief is provided for staff, young person and families.

Pharmacists:

- Advice on appropriate medication, taking into consideration the patient's presentation, current medication and as per the RT policy.
- Ensure safe use of RT medication.
- Clinically review all medication to ensure RT medication is suitable for use.
- In case of antipsychotic RT medication, if total antipsychotic therapy (regular, PRN and RT) is over 100% BNF maximum, ensure High Dose Monitoring is in place (refer to HDAT policy for further guidance).
- Ensure the prescription for medicines for rapid tranquillisation are the right dose, right medicine and right route.
- Ensuring appropriate prescribing of medicines.
- Ensuring appropriate subsequent monitoring of potential side effects of medicines administered.
- Ensuring RT medication is reviewed daily and/ or at the most once weekly.
- Document clearly in the patient notes any recommendations/ interventions with regards to RT medication and/ or monitoring.

2.2 Strategic duties

Responsibilities lie with the Chief Pharmacist, Medical Director and Director for Nursing. As well as the inpatient Associate clinical director and service manager for inpatient child and adolescent services.

3.0 Principle of restrictive intervention

If a child/adolescent is acutely disturbed, then the patients' responsible clinician should be called to attend immediately. It is vital the responsible clinician obtains as much history as possible from the patient and the multidisciplinary team before medication is given. In reaching a decision to use rapid tranquillisation, the responsible clinician, nursing staff/ and or clinical pharmacist should be involved.

The responsible clinician should undertake a risk assessment of the situation, considering the risks to the child/adolescent, other patients and staff.

Before drugs are administered for rapid tranquillisation, it is very important to exclude non-psychiatric causes such as organic disease, psychological disturbance e.g. anger and anxiety, intoxication or withdrawal states.

Children/adolescents should only be treated with the following medicines after completing a comprehensive risk assessment and when it has been established that the risk of not doing so is greater than the risk of acute pharmacological treatment.

4.0 Consent

At the point of any admission, the appropriate or relevant local consent form should be completed by the child/adolescent and/or parent(s)/carer(s).

In all cases the child/adolescent must be informed that RT medication may potentially be given if deemed clinically appropriate. The young person must be given the opportunity at any stage to accept medication voluntarily.

In children/adolescents who are not competent to make a clinical decision about medication, where possible parent(s)/carer(s) should be informed of the situation and consent sought for such treatment. It is good practice to inform both the child/adolescent and their parents/carers.

Where possible, parents and/or carers have the right to stay with the child/adolescent before, during and after rapid tranquillisation takes place. If the parent or carer is adversely affecting the safety and/or the efficacy of the situation, parents may be asked to leave for the benefit of the child/adolescent – this must be a clinical decision.

Children and/ or adolescents detained under the mental health act (section 2/ section 3) can be administered RT medication. However, it is important to ensure a current competency/ capacity assessment is in place. Where a treatment order form is in place (T2/T3) ensure the RT medication and/ or category of medication is listed on the T2/T3 form. In the event it is not, the responsible clinician must complete a Form 62 (urgent treatment form) prior to administration of RT medication.

5.0 Documentation and feedback

The reason for prescribing any medication for the acutely disturbed child/adolescent should be documented on the medication chart, in the medical notes, as well as the working diagnosis.

Any medication administered and the patient's response should be recorded.

Following administration of RT medication as part of the restraint, staff involved should have a de-brief to reflect on the incident.

The young person involved should also be offered the opportunity to have a de-brief of events leading up to the incident, including the incident itself. Staff should provide the young person with an explanation of why certain measures were taken i.e. physical holding and use of RT medication.

The young person should be provided with support and reassurance and given the chance to talk about their experiences of the RT medication and restraint. The young person can describe their experiences, either in writing or verbally, this should be recorded in their notes.

If a family member and/ or carer were present during the restraint and the administration of RT medication, staff should provide the family member/ carer with the opportunity to debrief and reflect on the incident with staff support.

If family member and/ or carer was not present. Ward staff should inform the family of the restraint and RT medication as soon as possible to do so. This conversation should include a discussion of the rationale for restraint and RT medication.

An incident form must be completed. Appropriate entries into the young person's case notes must be completed with

regards to the events leading up to the incident, the incident itself and documentation of any restraint and use of RT medication. The case note entry should include any feedback/ reflection from the young person and if applicable family member and/ or carer.

6.0 Non-pharmacological interventions

Assess and treat any underlying mental health problems in line with relevant NICE guidelines, including those on antisocial behaviour and conduct disorders in children and young people, attention deficit hyperactivity disorder, psychosis and schizophrenia in children and young people, autism diagnosis in children and young people and autism.

Identify any history of aggression or aggression trigger factors, including experience of abuse or trauma and previous response to management of violence or aggression.

Identify cognitive, language, communication and cultural factors that may increase the risk of violence or aggression in a child or young person.

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

Offer support and age-appropriate interventions (including parent training programmes) in line with the NICE guideline on antisocial behaviour and conduct disorders in children and young people to parents of children and young people whose behaviour is violent or aggressive.

Staff should be trained in how to assess and manage potential and actual violence using de-escalation techniques, restraint, seclusion and rapid tranquilisation. Staff should also be trained to use and maintain the techniques and equipment required to undertake cardiopulmonary resuscitation.

Intervention should take the form of using the appropriate psychological, behavioural and pharmacological strategies as per the patient's care-plan. If this fails, seclusion may be considered (therefore this document should be read in conjunction with the Trust's seclusion policy).

Other non-pharmacological interventions should, where possible, also be explored, for example increasing the level of observations of the patient, increasing the level of staffing, engaging in a low stimulus environment and/ or activities, considering changing the child/adolescent's setting, this may include transfer to a Psychiatric ICU.

7.0 Pharmacological interventions/ treatments

Based on the current NICE guidance below it is important to highlight that the decision to prescribe and/use RT ultimately lies with the responsible consultant.

NICE guidelines (NG10) recommend using intramuscular lorazepam for rapid tranquilisation in a child or young person and adjust the dose according to their age and weight⁽¹⁵⁾.

If there is only a partial response to intramuscular lorazepam, check the dose again according to the child or young person's age and weight and consider a further dose.

Monitor physical health and emotional impact continuously when undertaking rapid tranquilisation in a child or young person.

Given the current NICE guidance there is no treatment algorithm included with this guidance. There is currently limited evidence providing a clear direction and/ or stepped approach to the use of medication for the purpose of RT.

To ensure best practice is followed when considering medication:

In all cases the minimum effective dose of medication should be used. BNF maximum doses should only be exceeded in extreme circumstances and under the advice and direction of the Consultant Child & Adolescent Psychiatrist (Please refer to the Trust High Dose Monitoring policy for further guidance).

Oral medication should be offered before parenteral (usually intramuscular) treatment is administered.

If oral medication is repetitively refused, the decision to medicate a patient via the IM route must be taken as part of a multi-disciplinary decision, involving nursing, medical, clinical pharmacist and/ or other key professionals involved in the care of the young person.

Nursing and medical staff involved in physically restraining the patient must be proficient in “Control & Restraint” techniques and should have immunisation against hepatitis B.

Polypharmacy within a class of medication (e.g. antipsychotics) should, where at all possible, should be avoided.

Consideration should be given to any co-existing medical illnesses, physical conditions, neurodevelopmental/ cognitive impairments, as these may have impact on the choice of medication and potential side effects.

Consideration should be given to any regularly prescribed medication *as these may impact on dose requirements and potential side effects*, for example:

- Oral antipsychotics:
- Consider total dose for regular and “prn”
- Include depot antipsychotics
- Oral benzodiazepines (avoid if possible)
- Consider benzodiazepines already prescribed for regular administration (additional PRN doses may have little effect)
- Substance misuse or alcohol intoxication

Consideration should be given to past experiences with medication as this may influence medication choices.

Medication for rapid tranquillisation should not be administered if the appropriate monitoring equipment is not available.

Where possible, ensure a baseline ECG has been obtained for the young person. Review of ECG should be essential prior to IM administration.

Where IM medication is given without the young person having a baseline ECG, the rationale should be clearly documented in the clinical notes.

Young people with a diagnosed learning disability are more susceptible to the effects of medication; a ‘start low, go slow’ approach should be adopted.

Young people with emotional dysregulation difficulties should not routinely be prescribed antipsychotics.

Sensory profiling and non-pharmacological methods of managing acutely disturbed behavior should form the basis of the care plan.

8.0 Advance Directives

Where a child/adolescent’s preference in medication (to be used in the event of an acute episode of illness) is documented in their care plans, this preference should be adhered to if clinically appropriate. The nursing team should ensure the advance directive is available to view in the patient’s case notes. The clinical team should be aware of the individual’s advance directive, and a record should be included in the care-plan.

9.0 Drugs used in Rapid Tranquillisation

The table below provides an overview of the medication available for use as rapid tranquillisation to assist in the decision making process.

The information for the medication is condensed from the Summary Of Product Characteristics (SPC), BNF (current online version 2020) and the Joint BAP NAPICU Consensus Guidance (2018).

If required, for comprehensive direction, please refer to the above sources and seek advice from the CAMHS clinical pharmacist/ pharmacy service.

Short Acting IM Antipsychotics

Drug	Formulation	Dose (adults)	Pharmacokinetics	Major side effects/Risks	Notes
Haloperidol	5mg/ml solution for injection	5mg IM Can be repeated hourly if needed Majority adults 15mg/24hrs sufficient Oral children/adolescents: max 5mg/24hrs	Peak concentration = 20-30 minutes t _{1/2} 21 hours	EPSE Hypotension NMS Increased QTC, Arrhythmias Seizures Sudden death	IM not licensed for use in children/adolescents Note risk of acute dystonias and ensure that an appropriate antimuscarinic is prescribed. If oral haloperidol used, consider administering oral procyclidine 1.25mg (<14years) to 2.5mg (>14years) If IM haloperidol is used, consider administering IM procyclidine 2.5mg-5mg to reduce risk of EPSE, especially in: Those with a propensity to extrapyramidal side effects Unknown patients Antipsychotic naïve patients Caution if using a typical antipsychotic (e.g. haloperidol) in an unknown or antipsychotic naïve child/adolescent, as extrapyramidal symptoms (EPS) may be even more frequent and severe in children than adults. Consider using lorazepam alone or a low dose of haloperidol (0.5mg-2mg). Not recommended for IV use because of the risk of arrhythmias. NB: ECG Essential

Aripiprazole	Aripiprazole 7.5 mg/mL solution for injection Each mL contains 7.5 mg of aripiprazole. Each vial contains 9.75 mg aripiprazole	Adults= 5.25 mg to 15 mg as a single injection. A lower dose of 5.25 mg (0.7 mL) may be given, on the basis of individual clinical status Oral child/adolescent: Depending on indication: 10-30mg/24hrs	Median time to peak concentration = 1- 3 hour $t_{1/2}$ = 75 hours	The most commonly reported adverse reactions in placebo-controlled trials were nausea, dizziness and somnolence each occurring in more than 3 % of patients treated with aripiprazole solution for injection.	IM not licensed for use in children/adolescents The recommended initial dose for Aripiprazole solution for injection is 9.75 mg (1.3 mL), administered as a single intramuscular injection. A second injection may be administered 2 hours after the first injection, on the basis of individual clinical status and no more than three injections should be given in any 24-hour period. The maximum daily dose of aripiprazole is 30 mg
Olanzapine	10mg powder in ampoule Requires reconstitution for administration	5-10mg BNF max 20mg/24 hrs Oral max in children/adolescents: 20mg/24hrs	Peak concentration = 15-45 minutes $t_{1/2}$ 30 hours	Hypotension Bradycardia Syncope Sedation QT prolongation Dyslipidaemia	IM not licensed for use in children/adolescents Maximum 3 injections daily for 3 days. Maximum daily combined oral and parenteral route = 20mg/24hrs One/ more of the following factors may result in slower metabolism- female gender, elderly, for non-smoker consider lower initial dose and more gradual dose increase. Less likely to cause EPSE than haloperidol. IM administration results in initial maximum plasma concentration 5x higher than same dose given orally. Benzodiazepines should not be given within 1 hour of IM olanzapine

General notes related to short acting antipsychotics:

- When using anticholinergics attention should be paid to the total anticholinergic effect of all medicines being used. In particular, caution should be taken if using promethazine concurrently with procyclidine due to the increased anticholinergic effects.
- **RISKS:** Loss of consciousness, cardiovascular and respiratory complications and collapse (i.e. QT prolongation), seizures, akathisia, dystonia, dyskinesia, neuroleptic malignant syndrome, excessive sedation.

Benzodiazepines

Drug	Formulation	Dose	Pharmacokinetic	Major side effects	Notes
Lorazepam	Ativan 4mg/ml injection (stored in fridge) Requires mixing with sterile water. Always check the product leaflet to determine lorazepam: water ratio	Indications child/ adolescent Premedication 12-17 years: 1-4mg status epilepticus/febrile convulsions/ convulsions caused by poisoning 12-17 years: 4mg	Peak 60-90 mins t½ 12-16 hours	Loss of consciousness respiratory depression or arrest, cardiovascular collapse, disinhibition	Oral and IM not licensed for use in children/adolescents <i>NB: NEVER mix haloperidol and lorazepam in the same syringe</i> Requires mixing with sterile water before administration. Always check the product leaflet to determine lorazepam: water ratio Administration can be repeated after 30 minutes if necessary Oral lorazepam 1mg = oral diazepam 10mg. Lower doses of lorazepam, 0.5 – 1mg should be administered and repeated if necessary. The maximum oral dose of lorazepam is 4mg a day in adults, at times doses higher than this may be required, in such circumstances advice should be sought from senior medical staff. A wide therapeutic index & respiratory depression is readily reversed with the specific antagonist flumazenil Benzodiazepines should not be given within 1 hour of IM olanzapine Disinhibition is more likely to occur in those with organic brain disease, including learning disabilities, under 18s and perhaps those with impulse control problems <i>NB: Oral lorazepam 1mg = oral diazepam 10mg</i> Avoid <i>benzodiazepines</i> in children/adolescents who are physically unwell, delirious or who have significant respiratory impairment. Use benzodiazepines in preference to antipsychotics in patients with cardiac disease, as these are safer, but beware of accumulation.

Flumazenil

Flumazenil should be given if respiratory rate drops below 10/min due to the sedative effects of benzodiazepines. Repeated doses may be required as it is short acting, see table of monitoring and management of side effects to RT. Flumazenil is best avoided in patients with epilepsy – start mechanical ventilation instead.

Antihistamines

Drug	Formulations	Dose	Pharmacokinetics	Major side effects/sks	Notes
Promethazine	25mg/ml solution for injection	Oral child/adolescent Sedation: 10-17 years: 25-50mg	Onset 1-2 hours t _{1/2} 7-15 hours	Prolonged sedation, Seizures, Cardio-respiratory depression, Painful Injection, Additional anti-cholinergic effects	Not licensed for use in children. Limited evidence for efficacy. May be considered as an alternative sedative agent in those who are antipsychotic naïve, who have been administered the maximum dose of medication or who are benzodiazepine tolerant. Should be used with advice from SpR or Consultant.

10.0 Medicines not recommended for Rapid Tranquillisation

Please note: The medication summarised below are not licensed for the management of aggression/ violence in children and adolescents.

10.1 IM or PO chlorpromazine

Local irritant if given IM.

Risk of cardiovascular complications.

Causes hypotensive effects, especially at RT doses.

Erratically absorbed.

Effect on QTc intervals suggests it is unsuitable.

10.2 IM diazepam

The IM use of diazepam injection can lead to a rise in serum creatinine phosphokinase activity, with a maximum level occurring between 12 and 24 hours after injection. This fact should be taken into account in the differential diagnosis of myocardial infarction.

The absorption from IM injection of diazepam may be variable, particularly for the gluteal muscles. This route of administration should only be used if IV administration is not possible.

Diazepam Injection BP contains propylene glycol. There have been rare reports of propylene glycol toxicity (e.g. increased anion gap, metabolic acidosis, hyperosmolality, renal impairment) with the potential for organ system failure and circulatory shock, in patients treated with continuous infusions of diazepam.

Central nervous system toxicity, including seizures, as well as unresponsiveness, tachypnoea, tachycardia and diaphoresis have also been associated with propylene glycol toxicity. Symptoms may be more likely to develop in patients with renal or hepatic impairment and in paediatric patients (SPC)

10.3 Zuclopenthixol acetate (Clopixol Acuphase™)

Zuclopenthixol acetate is an intramuscular injection which is indicated for the initial treatment of acute psychoses including mania and exacerbation of chronic psychoses, particularly where a duration of effect of 2-3 days is desirable.

The usual dosage is 50-150 mg (1-3 ml), repeated if necessary after 2 or 3 days. Some patients may need an additional injection between 1 and 2 days after the first injection (SPC).

Clopixol-Acuphase is not intended for long-term use and duration of treatment should not be more than two weeks. The maximum accumulated dosage should not exceed 400 mg and the number of injections should not exceed four

(SPC).

- It is not an appropriate drug for use in RT as the onset of action does not occur for at least 2 hours.
- It may be considered as part of a medium term strategy if:
- The responsible clinician has made a reviewed and deemed it is clinically appropriate.
- A patient does not adequately respond to other short acting IM antipsychotics and it is anticipated that they will require further doses of IM antipsychotics.
- Where a patient has shown limited response to frequent oral and IM antipsychotic medication
- To reduce the risk to the patient and/ others from frequent use of RT medication and physical restraints
- It should never be used in those who are neuroleptic naive, who are struggling, who are sensitive to EPSE, those with cardiac disease, hepatic or renal impairment or in pregnancy.

11.0 Medicines which may prolong the QT interval

The impact on QTc is categorized according to the Bazett’s correction formula (Maudsley 13ED). ‘No effect’ refers to those medication where QTc prolongation has not been reported at therapeutic doses or in overdose. ‘Low effect’ medication are those where QTc prolongation has been reported following an overdose or where only small average increases have been observed (<10ms) at clinical doses/ ‘Moderate effect’ medication refer to those medication which have been noted to increase QTc by approximately >10ms at clinical doses or where ECG monitoring is recommended. ‘High effect’ psychotropics are those where QTc prologation has been observed at >20ms at usual clinical doses.

For further information, the clinician can refer to the RISQ-PATH study which provides a scoring system of QT prolongation (to above normal ranges) in any patient. The RISQ-PATH method uses the CredibleMeds system which can be accessed online by healthcare professionals.

11.1 Psychotropics

The QT prolongation effect is dose dependent therefore any antipsychotic used above recommended doses should be considered as an increased risk.

No effect	Low effect	Moderate effect	High effect	Unknown effect
Brexpiprazole	Aripiprazole	Amisulpride	Any IV antipsychotic	Pipotiazine
Cariprazine	Asenapine	Chlorpromazine	Pimozide	Trifluoperazine
Lurasidone	Clozapine	Haloperidol	Sertindole	Zuclopentixol
	Flupentixol	lloperidone	Any drug/ combination of drugs used in doses exceeding recommended maximum	
	Fluphenazine	Levomepromazine		
	Loxapine	Melperone		
	Perphenazine	Quetipaine		
	Prochlorperazine	Ziprasidone		
	Olanzapine	Tricyclic antidepressant		

	Paliperidone	Methadone		
	Risperidone	Bupernorphine		
	Sulpiride			

11. 2 Non-Psychotropics associated with QT prolongation

Drug class	Drug
Antibiotics	Erythromycin
	Clarithromycin
	Ampicillin
	Co-trimoxazole
	Pentamidine
	Some quinolones affect QTc- see manufacturer's information
Antimalarials	Chloroquine
	Mefloquine
	Quinine
Antiarrhythmics	Qunidine
	Disopyramide
	Procainamide
	Sotalol
	Amiodarone
	Bretylum
Others	Amantadine
	Cyclosporin
	Diphenhydramine
	Hydroxyzine
	Methadone
	Nicardipine
	Tamoxifen

12.0 Monitoring and management of side effects

Before prescribing for RT, the prescriber should:

Scrutinise the child/adolescent's notes with regard to his/her general medical history and consider the possibility of a physical examination.

Check for recent ECG, U&Es and urine drug screen results, a previous history of severe extrapyramidal effects, previous response to rapid tranquillisation or other methods of managing imminent violence.

Review current prescribed medication and recently administered medication, taking note of administrations of prn medications.

During rapid tranquillisation:

Every effort must be made to obtain (prior to the administration of medications) **baseline** measurements of:

Temperature

Blood pressure

Pulse rate

Respiratory rate

Level of consciousness

Neuroleptic Malignant Syndrome (NMS)

Although, monitoring of NMS is not part of the core post RT monitoring. It is recommended where high doses and/ or frequent IM psychotropic medication is given to monitor for NMS in children/ adolescents.

A number of the risk factors associated with NMS apply to the child/ adolescent population on an inpatient ward:

- High potency FGAs
- Recent/ rapid dose increases
- Rapid dose reduction
- Abrupt withdrawal of anticholinergic agents
- Antipsychotic polypharmacy
- Psychosis
- Organic
- Brain disease
- Psychomotor agitation
- Mental/ cognitive disability
- Male gender
- Younger age
- Agitation and dehydration

NMS is an acute disorder of thermoregulation neuromotor control. Symptoms usually associated with NMS are:

Muscular rigidity, hyperthermia, altered conscience and autonomic dysfunction

Fever, diaphoresis, confusion, fluctuating blood pressure

Elevated CK, leucocytes, altered liver function tests

Treatment

- Within and inpatient MH ward setting the following is recommended:
- Withdraw all antipsychotic medication
- Monitor physical health observations- if NMS is picked up during RT monitoring to continue RT monitor until young person is seen by a Dr
- Urgent medical and consultant review
- ECG and bloods
- Possible admission to the acute ward
- Rehydration- ensure adequate food and fluid intake

See below for table of monitoring and management of side effects to RT

Measure	Drugs	Frequency	Problem	Action if problem
Respiratory Rate	Lorazepam Diazepam	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hours. If patient is unconscious monitor every 5 mins.	Reduced respiratory rate < 10/min	Give flumazenil but only if benzodiazepine-induced Guidelines for the use of flumazenil: <i>Initially:</i> 200mcg IV over 15 seconds – if required level of consciousness not achieved after 60 seconds then: <i>Subsequent does:</i> 100mcg over 10 seconds, repeated after 60 seconds if necessary. <i>Maximum dose:</i> 1mg in 24 hours (one initial dose and eight subsequent doses) Monitor respiration until rate returns to baseline. If induced by other agent patient will require mechanical ventilation – arrange transfer to ITU immediately
Oxygen saturation	Lorazepam Diazepam	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hrs If patient unconscious, monitor continuously	Should not fall below 90% (normal sats 95-100%)	Seek urgent medical review NB: A pulse oximeter is required for monitoring oxygen saturation
Blood pressure	Lorazepam Diazepam Haloperidol Olanzapine Risperidone	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hrs	Orthostatic or diastolic < 50mm Hg	Lie patient flat, raise legs if possible. Monitor closely Seek medical advice
Pulse	Haloperidol Olanzapine Risperidone	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hrs	Irregular or slow (<50/min) pulse	Refer to specialist care immediately. ECG essential.
Temperature	Haloperidol Olanzapine Risperidone	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hrs	Increased temp > 38°C	Withhold antipsychotics – risk of NMS and perhaps arrhythmias: monitor closely cool patient check CPK, BP, FBC, U&Es, MSU Refer to medical team if continued signs of NMS sweating, hypertension or fluctuating BP, tachycardia, muscular rigidity, confusion, agitation, altered consciousness.
Observe for acute dystonias, Inc. oculogyric crisis	Haloperidol Olanzapine Risperidone	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hrs	Severe, painful muscle stiffness	Procyclidine can be given at same time as haloperidol for prophylaxis of EPSE (see doses above)

Hydration	Lorazepam Diazepam Haloperidol Olanzapine Risperidone	Every 15 mins (unless stated otherwise) for first hour, then every 30mins for next 4 hrs	Signs of dehydration	Rehydrate Fluid and electrolyte balance should monitored if clinically indicated Monitor using fluid chart if appropriate
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See Appendix 2 and 3 for physical monitoring charts to be completed

13.0 Monitoring of Efficacy

In the interest of individualizing treatments for rapid tranquillisation in individual patients, the Richmond Agitation Sedation Scale tool (appendix 3) should be used to monitor state of arousal *before, during* and *after* giving medication for rapid tranquillisation.

14.0 Ethnic Origin

There is conflicting evidence as to whether the patient's ethnic origin gives rise to any differences in response to antipsychotic medication; each case should be dealt with on an individual basis.

NICE recommendations (staff training) (NG10)

Child and adolescent mental health services (CAMHS) should ensure that staff are trained in the management of violence and aggression using a training programme designed specifically for staff working with children and young people. Training programmes should include the use of psychosocial methods to avoid or minimise restrictive interventions whenever possible. Staff who might undertake restrictive interventions should be trained:

in the use of these interventions in these age groups
to adapt the manual restraint techniques for adults in recommendations adjusting them according to the child or young person's height, weight and physical strength
in the use of resuscitation equipment in children and young people.

CAMHS should have a clear and consistently enforced policy about managing antisocial behaviour and ensure that staff are trained in psychosocial and behavioural techniques for managing the behaviour.

CAMHS staff should be familiar with the Children Act 1989 and 2004 and the Mental Health Act 1983, as well as the Mental Capacity Act 2005 and the Human Rights Act 1998. They should also be aware of the United Nations Convention on the Rights of the Child.

15.0 Training

As a result of medication incidents analysed by the trust medicines safety group and audit results relating to the use of high-dose antipsychotics, the expectation of the trust is;
For all medical staff (nurses, doctors and pharmacists) working on in-patient wards for Children and Adolescents and Accident and Emergency Departments to be trained at induction and then every 3 years.

For all non-medical staff that handle medicines (Occupational Therapists, Social Workers, Support workers, Social Therapists, and Psychologists) working on in-patient Children and Adolescent wards and Accident and Emergency Departments to have an awareness around rapid tranquillisation on induction.

Training around the use of medicines for rapid tranquillisation and subsequent monitoring of side effects and desired effects will occur during induction of all new medical staff. This will be during the regular "Medicines Safety" slot.

All new staff will also have to work through and pass the e-learning programme on "Safe Administration of Medicines" before administering medicines. This training programme is based on the 10Rs of administration of

medicines and will be linked to the Medicines Policy. Staff members will be asked to read and understand the Medicines Policy.

Local training is delivered by pharmacy staff as and when it is needed.

16.0 Monitoring of Rapid Tranquillisation Guidelines

Audit

Audit is done in a variety of ways including local POM UK audits for high dose and combination antipsychotics.

The mandatory administration audit tool includes data collection on whether 'PRN' medication and/or medication and monitoring has been completed for Rapid Tranquillisation (Please refer to the PRN Psychotropic Guidelines for further information).

The mandatory prescribing audit tool collects information on high dose antipsychotic prescribing and whether monitoring has been completed in relation to high dose prescribing.

All medicine incidents are reviewed by the trust Medicines Safety Group and systems errors identified.

Review

Prescribing of medication for RT should be reviewed regularly. Daily in cases of active use and at least once weekly in all other cases. All medication prescribed should be regularly reviewed by the consultant, medical team and the appropriate clinical pharmacist/ pharmacy service.

17.0 Incident Reporting

An incident form must be completed where rapid tranquillisation medication have been administered. This applies to all intramuscular medication, including Zuclopenthixol acetate (Acuphase)

The rate of incidents relating to rapid tranquilisation are monitored via the trust Medicines Safety Group. Learning is shared across the Trust through the Medicines Safety Newsletters and reports to the Clinical Risk Group and Medicines Committee.

18.0 Implementation

Dissemination

This guideline will be distributed electronically to all medical and nursing staff belonging to ELFT CAMHS directorate, and any other relevant clinical staff. The guideline will also be available on the Trust intranet.

19.0 Training

All relevant staff must have read these guidelines and had training on the guidelines at induction and a refresher every 2 years thereafter, and whenever the guidelines are next updated. All new clinical staff to the trust will have the training on induction.

Training and Education select all staff expected by the trust (as detailed above) to attend training at induction.

The attendance of staff at induction is monitored by the Training and Education Department. Those staff that do not attend are recalled at a later date. If absence is repeated, the manager is contacted by Training and Education and attendance is ensured at a later date.

The e-learning package around the "Safe Administration of Medicines" includes a management system for evidence. An electronic record of all staff that have completed the package is available to all managers. This package has been available from February 2009 onwards.

Records of attendance at training will be stored centrally.

Staff Group	Read Guidelines	Training Session
CAMHS SHO/ FY2/ FT1,2&3	M	M
In-patient CAMHS Consultants	M	M
Other CAMHS consultants	M	D
In-patient CAMHS nursing staff	M	M
Other CAMHS nursing staff	M	D
CAMHS Modern matrons, ward managers	M	M
Pharmacists	M	M

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ACKNOWLEDGEMENTS

The original guidelines were adapted from:

Maudsley Prescribing Guidelines- 12th Edition
 Central North West London Mental Health Trust
 Norfolk Mental Health Trust
 South West London and St George's Mental Health NHS Trust, Guidelines for Rapid Tranquillisation (for young people aged 6 – 17 years) DRAFT, Andrew Fuller, 2003. CHIPSIG Children's Special Interest Group
 Bradford District Care Trust

Appendix 1: Richmond Agitation Sedation Scale (RASS)

Score	Term	Description
+ 4	Combatative	Overtly combative, violent, immediate danger to staff
+ 3	Very Agitated	Pulls or removes tube(s) or catheter(s), aggressive
+ 2	Agitated	Frequent non-purposeful movement, fights ventilator
+ 1	Restless	Anxious but movements not aggressive vigorous
0	Alert and Calm	
- 1	Drowsy	Not fully alert, but has sustained awakening (eye opening/eye contact) to voice (<10 seconds)
- 2	Light Sedation	Briefly awakens with eye contact to voice (<10 seconds)
- 3	Moderate Sedation	Movement or eye opening to voice (but no eye contact)
- 4	Deep Sedation	No response to voice, but movement or eye opening to physical stimulation
- 5	Unarousable	No response to voice or physical stimulation

Procedure for RASS Assessment

Category		Score 0 to +4 (score 0 to +4)
1	Observe patient a. Patient is alert, restless, agitated	
2	If not alert, state patient's name and say to open eyes and look at speaker a. Patient awakens with sustained eye opening and eye contact b. Patient awakens with eye opening and eye contact, but not sustained c. Patient has any movement in response to voice but no eye contact	a. (score- 1) b. (score -2) c. (score -3)
3	When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum a. Patient has any movement to physical stimulation b. Patient has no response to any stimulation	a. (score- 4) b. (score- 5)

Appendix 2: SCHOOLAGE (5-12 years)

COAST: CHILDREN'S UNIT

CHILDREN'S OBSERVATION AND SEVERITY TOOL page 25

Patient details
Name
DOB
Hosp No



SOUTH COAST CHILDREN'S EARLY WARNING SCORE: CHILDREN'S UNIT													
Date													
Time													
Doctor/Nurse/Family Concern?													
Temperature (°C)	40												
	39												
	38												
	37												
	36												
	35												
	34												
Heart Rate (bpm)	220												
	210												
	200												
	190												
	180												
	170												
	160												
	150												
	140												
	130												
and Blood Pressure (mmHg)*	120												
	110												
	100												
	90												
	80												
	70												
	60												
	50												
	40												
	*nb BP does not score in COAST Scoring												
Heart Rate (number)													
Resp Rate (bpm) (over 1 minute)	70												
	60												
	50												
	40												
	30												
	20												
	10												
Resp Rate (number)													
Receiving O ₂ (L/min)													
O ₂ saturations (%)													
Resp. Mod/Severe Distress None/Mild													
Conscious Level	Normal												
Decreased													
GCS*													
Pain Score*													
TOTAL COAST SCORE													
Number of shaded boxes													
Observer's initials													
ACTIONS	0-1	Continue normal observations.											
	2	Nurse in Charge review. Hourly observations.											
	3	Nurse in Charge & Doctor to review patient. Half hourly observations.											
	4	Nurse in Charge & SpR to review patient. Consider informing Consultant.											
	5-6	Nurse in Charge & Senior Doctor to see immediately. airway compromise, call ITU Registrar immediately.											
NB: Scores ≥3 should be recorded overleaf													

*nb: BP, GCS and Pain Score values do not contribute to the overall COAST Score.

Patient details

Name

DOB

Hosp No



Instructions:

- The Paediatric COAST tool i) seeks to identify the abnormal physiological findings seen during serious childhood illnesses and ii) offers a method to interpret such physiological derangements with clearly defined actions, ensuring that suitably experienced staff are involved with the care of the sickest children.
- The COAST tool does **not** replace clinical experience and acumen and should **not** be relied upon for such purposes.
- 6 clinical parameters are assessed and recorded as part of the child's routine clinical observations, providing a COAST score between 0-6. (Higher COAST scores are seen in sicker children).
- Detailed Actions are described according to increasing COAST Score.
- Some children with complex medical needs e.g. cyanotic heart disease, may require modification to their trigger thresholds/action plan – this should follow discussion with senior colleagues.
- Any COAST score of **3 or above** should be recorded below with details of any subsequent action initiated.

Record details when COAST ≥ 3			Record time of review and plan		
Date	Time	COAST score	Time	Plan	Print name
e.g. 1/1/11	09:00	5	09:15	Seen immediately by Paed SpR	SN F Morton

- If at any time additional help is required, call for help - regardless of the COAST score!**
- Following a COAST assessment, senior help may be required.

The **SBAR** communication tool (**S**ituation, **B**ackground, **A**ssessment, **R**ecommendations) is a helpful mnemonic that can be used to describe a child's clinical condition to a colleague.

S	<p>Situation:</p> <p>I am (name), a nurse on ward (X). I am calling about (child X) I am calling because I am concerned that... (e.g. BP is low/high, pulse is XXX, temperature is XX, COAST Score is XX).</p>
B	<p>Background:</p> <p>Child (X) was admitted on (XX date) with (e.g. respiratory infection). They have had (X operation/procedure/investigation). Child (X)'s condition has changed in the last (XX mins). Their last set of observations were (XXX). The child's normal condition is... (e.g. alert/drowsy/confused, pain free).</p>
A	<p>Assessment:</p> <p>I think the problem is (XXX) and I have... (e.g. given O2 /analgesia, stopped the infusion), OR I am not sure what the problem is but child (X) is deteriorating, OR I don't know what's wrong but I am really worried.</p>
R	<p>Recommendation:</p> <p>I need you to... Come to see the child in the next (XX mins) AND Is there anything I need to do in the meantime? (e.g. stop the fluid/repeat observations).</p>



Appendix 3: PEWS Form

13-18 Years

Name
Date of Birth
NHS Number
Consultant
Ward Weight

Frequency of obs Every _____ _____ hourly	Date	30/11																		
	Time	18:00																		
	Initial	SNM																		

Doctor/Nurse/Family concern?	<input checked="" type="checkbox"/>																			
------------------------------	-------------------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

A

Respiratory Rate (Over 1 minute)	50																			
	40																			
	30																			
	20																			
	10																			
	0																			
Respiratory Rate (number)	35																			

B

Respiratory Distress	Severe/Mod	<input checked="" type="checkbox"/>																		
	Mild/None	<input type="checkbox"/>																		
O ₂ Saturation %	95																			
Receiving O ₂ l/min	2																			

C

Heart Rate & Blood Pressure	180																			
	170																			
	160																			
	150																			
	140																			
	130																			
	120																			
	110																			
	100																			
	90																			
	80																			
	70																			
	60																			
	50																			
	40																			
	30																			
Heart Rate (Number)	110																			

Conscious Level	Normal	<input type="checkbox"/>																		
	Decreased	<input checked="" type="checkbox"/>																		

Temperature °C	40																			
	39																			
	38																			
	37																			
	36																			
	35																			
Temperature (Number)	38																			

0-2	3-4	5-6	5																			
PTO For Action			Total PEWS = Number of entries of shaded boxes																	PTO For Action		



PEWS Form

13-18 Years

Name
Date of Birth
NHS Number
Consultant
Ward

page 28

PEWS Escalation Aid

S	<p>Situation: I am (name), a nurse on ward (X) I am calling about (child X) I am calling because I am concerned that... (e.g. BP is low/high, pulse is XXX temperature is XX, Early Warning Score is XX)</p>
B	<p>Background: Child (X) was admitted on (XX date) with (e.g. respiratory infection) They have had (X operation/procedure/investigation) Child (X)'s condition has changed in the last (XX mins) Their last set of obs were (XXX) The child's normal condition is... (e.g. alert/drowsy/confused, pain free)</p>
A	<p>Assessment: I think the problem is (XXX) and I have... (e.g. given O2 /analgesia, stopped the infusion) OR I am not sure what the problem is but child (X) is deteriorating OR I don't know what's wrong but I am really worried</p>
R	<p>Recommendation: I need you to... Come to see the child in the next (XX mins) AND Is there anything I need to do in the meantime? (e.g. stop the fluid/repeat the obs)</p>
<p>Download SBAR prompt cards and pads at www.institute.nhs.uk/SBAR</p>	

Remember: If you feel you need more help at any time, call for help – regardless of PEW Score

0 1	Continue monitoring
2	Nurse in charge MUST review
3	Nurse in charge & Doctor MUST review
4	Nurse in charge & Doctor MUST review & inform Consultant
5 6	Nurse in charge & Consultant MUST review

Record Call When PEWS 3 Or More				Record Time of Review, Who by & Plan		
Date	Time	PEWS	Print Name (nurse)	Time	Plan	Print Name
01/01/12	09:00	5	SN Morton	09:15	ED consultant called Anaesthetic review	Sister JACKS

Download documents to use or eedit at

www.institute.nhs.uk/PEWScharts