NHS
Sussex Partnership
NHS Foundation Trust

Pre-hospital and acute hospital settings

Jules Haste

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Four main pieces of guidance/resources

Violence and Aggression

Short-term management in mental health, health and community settings

Updated edition

NICE Guideline NG10

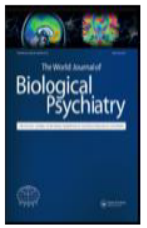
National Collaborating Centre for Mental Health

commissioned by the

National Institute for Health and Care Excellence

published by

The British Psychological Society and
The Royal College of Psychiatrists



The World Journal of Biological Psychiatry

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Assessment and management of agitation in psychiatry: Expert consensus

Marina Garriga, Isabella Pacchiarotti, Siegfried Kasper, Scott L. Zeller, Michael H. Allen, Gustavo Vázquez, Leonardo Baldaçara, Luis San, R. Hamish McAllister-Williams, Konstantinos N. Fountoulakis, Philippe Courtet, Dieter Naber, Esther W. Chan, Andrea Fagiolini, Hans Jürgen Möller, Heinz Grunze, Pierre Michel Llorca, Richard L. Jaffe, Lakshmi N. Yatham, Diego Hidalgo-Mazzei, Marc Passamar, Thomas Messer, Miquel Bernardo & Eduard Vieta

BAP NAPICU Guidelines

Joint BAP NAPICU evidence-based consensus guidelines for the clinical management of acute disturbance: De-escalation and rapid tranquillisation

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Abstract

The British Association for Psychopharmacology and the National Association of Psychiatric Intensive Care and Low Secure Units developed this joint evidence-based consensus guideline for the clinical management of acute disturbance. It includes recommendations for clinical practice and an algorithm to guide treatment by healthcare professionals with various options outlined according to their route of administration and category of evidence. Fundamental overarching principles are included and highlight the importance of treating the underlying disorder. There is a focus on three key interventions: de-escalation, pharmacological interventions pre-rapid tranquillisation and rapid tranquillisation (intramuscular and intravenous). Most of the evidence reviewed relates to emergency psychiatric care or acute psychiatric adult inpatient care, although we also sought evidence relevant to other common clinical settings including the general acute hospital and forensic psychiatry. We conclude that the variety of options available for the management of acute disturbance goes beyond the standard choices of lorazepam, haloperidol and promethazine and includes

The Royal College of Emergency Medicine

Best Practice Guideline

Acute Behavioural Disturbance in Emergency Departments

Royal College of Emergency Medicine

February 2022

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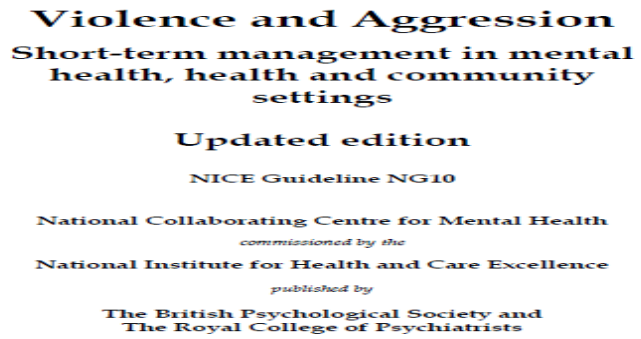
MANAGING VIOLENCE AND AGGRESSION (NICE, 2015)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- Section 8.5 in emergency departments
- Section 8.6 in community and primary care setting
  - Includes ambulance service
- For guidance on manual restraint and rapid tranquillisation same recommendations as for mental health settings.
  - Lorazepam
  - Haloperidol and promethazine

NICE does not give a recommendation on the use of ketamine

Intoxication, in particular alcohol consumption, is believed by staff to be one of the most significant contributors to violence and aggression in A&E departments

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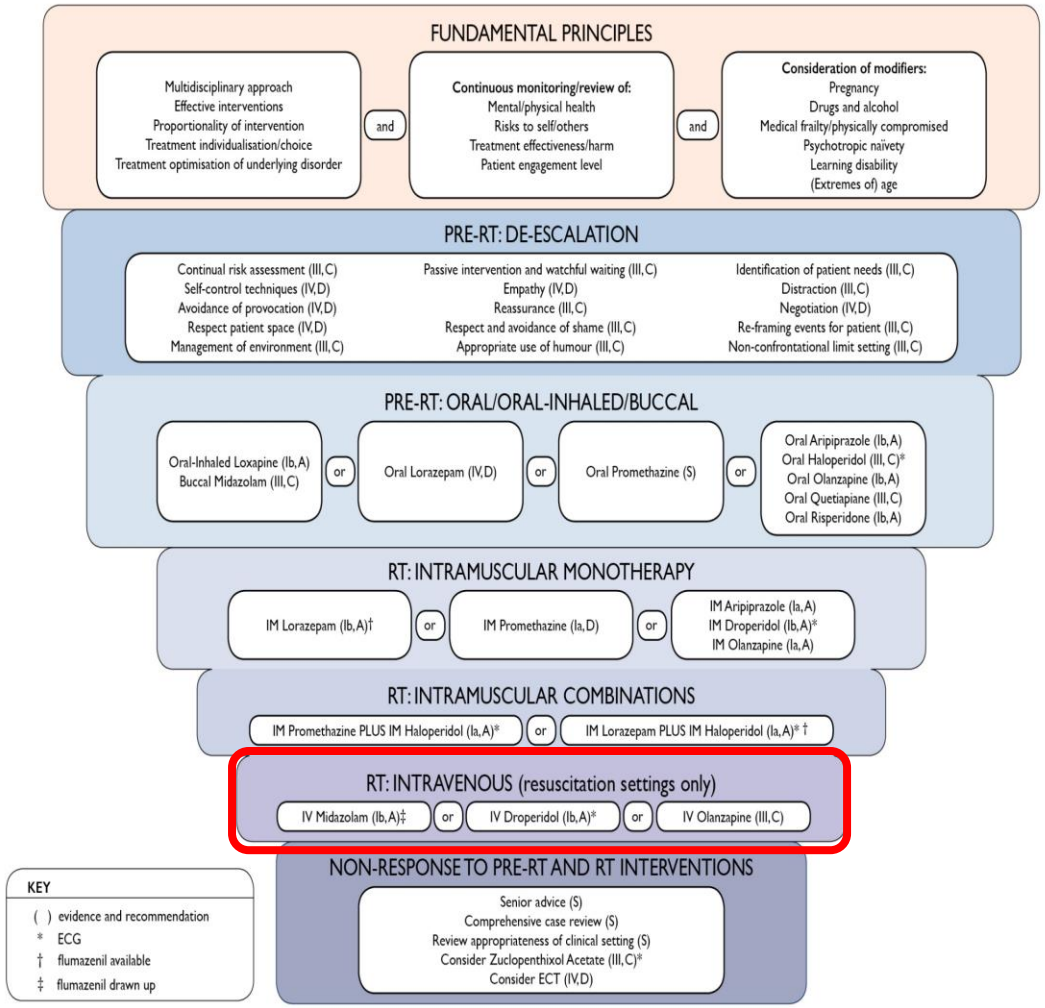
Rapid tranquillisation in the general hospital (BAP)

- The emergency department of a general hospital is a clinical environment that affords the safe administration of a **wider range** of interventions and formulations.
- With ready access to **resuscitation equipment and ventilation apparatus**, the risk versus benefit considerations can be different.
- **IV medications** can be used, but these should be considered in line with the evidence outlined above.
- The need for RT in the medical intensive care unit was outside the BAP guidance.
- Pre-hospital (ambulance service) was also outside the BAP guidance.



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The World Journal of Biological Psychiatry (2016)

- In the case of agitation secondary to alcohol withdrawal treatment with benzodiazepines should be preferred over treatment with antipsychotics.

- In the case of agitation associated with alcohol intoxication, treatment with antipsychotics should be preferred over treatment with benzodiazepines.

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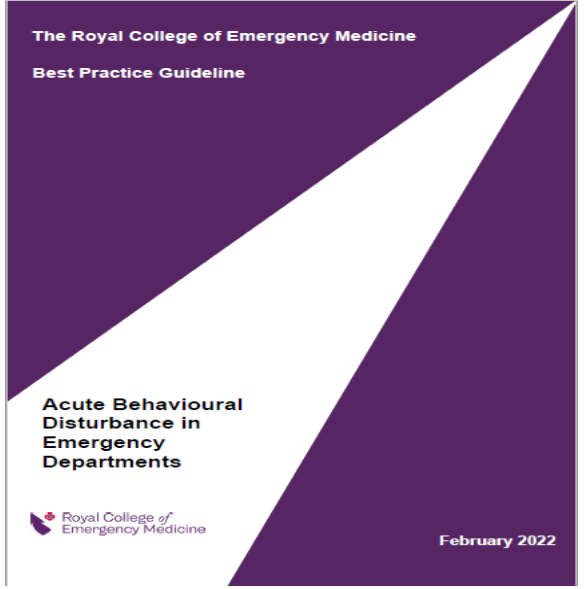
Royal College of Emergency Medicine (Feb 2022)



Appendix 2- Rapid Tranquillisation in Acute Behavioural Disturbance

Assessment by senior doctor:
- Patient lacks capacity.
- Patient represents a significant danger to him/herself or others.
- Patient requires emergency treatment / investigation.
- Patient is severely agitated.
- Doctor considers patient may have potentially life-threatening ABD.

De-escalation measures undertaken if possible:
- De-escalation techniques / exclusion
- Oral medication – lorazepam 1-2mg (max 4mg per day).

Preparation to ensure RT as safe as possible:
- Senior Doctor with critical care experience.
- Drug drawn up and prepared correctly (Antidotes available if applicable).
- Oxygen and high flow reservoir mask on patient/immediately ready.
- Monitoring equipment (ECG, pulse oximeter, BP, $ETCO_2$).
- Equipment in case of complications (airways, suction, BMV).
- Short Safety Brief.
- Adequate number of personnel.

Choice of drug(s):

Either **Ketamine 4mg/kg IM** (or titrate to effect IV)
Or **Droperidol 5-10mg IM**

If these agents are unavailable, midazolam (5-10mg IM), lorazepam (4mg IM) or haloperidol (5mg IM +/- 2mg lorazepam IM) could be considered. Higher concentrations than typically stocked may be required for IM injection. Large volume injections may need to be administered at multiple sites.

Once sedative taken effect:
- Establish and secure intravenous access.
- Monitor in a high dependency area (Resus Room).
- Maintain sedation with **IV** bolus medication until definitive management plan arranged.
- Correct electrolyte / glucose / acid-base abnormalities, correct hyperthermia, look for evidence of DIC or rhabdomyolysis.
- Institute other emergency treatments and investigations as necessary.

Document clearly in the clinical notes:
- Indication(s) for RT & any attempts at de-escalation.
- Mental capacity assessment.
- Restraint, Collateral history, Features consistent with ABD, Police involvement.

NOTES

- In general, dosages described are for 'average' sized adults, the dosage may need to be varied according to body habits, age (reduce dose by half in the over 65yrs) and according to other medication which may have recently been taken.

- **Flumazenil** should be available as a precaution if using parenteral benzodiazepines. Initial dose 200mcg slowly.

Flumazenil can be hazardous, particularly in mixed overdoses involving tricyclic antidepressants or in benzodiazepine-dependent patients.

- **Maintenance of Sedation**

Diazepam
0.3mg/kg IV

Lorazepam
0.03mg/kg IV

Consider Chlorpromazine 25-50mg IV in addition to benzodiazepines for cases of **suspected serotonin toxicity** with severe psychosis or hyperthermia.

Choice of drug(s):

Either **Ketamine 4mg/kg IM** (or titrate to effect IV)
Or **Droperidol 5-10mg IM**

If these agents are unavailable, midazolam (5-10mg IM), lorazepam (4mg IM) or haloperidol (5mg IM +/- 2mg lorazepam IM) could be considered. Higher concentrations than typically stocked may be required for IM injection. Large volume injections may need to be administered at multiple sites.

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Ketamine IM/IV

- Unlicensed for acute disturbance
- Most evidence is for its procedural sedation and the management of pain.
  - Sedation rather than tranquillisation.
  - Short acting
- IM ketamine is effective but it is not recommended due to risk of respiratory depression (BAP)
- 1st Line for acute behavioural disturbance (RCEM), but resuscitation equipment must be available
- Shorter time to adequate sedation (RCEM).
- IV if IM not available (RCEM)

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Ketamine IM/IV

- Limited evidence of ketamine in 'pre-hospital' settings by paramedics and emergency medical staff.
  - Small amount of data but significant intubation was required (resus equipment)
  - One study gave midazolam to prevent the emergence of reactions with ketamine.

- Worsening tachycardia or hypertension. Consider benzodiazepines.

- Small retrospective review treated with IM ketamine found few major ADRs
  - mean systolic blood pressure increase of 17 ± 25 mmHg
  - increased heart rate of 8 ± 17 beats/min),
  - And 62.5% of patients required additional pharmacologic treatment for agitation.

- Intranasal administration of ketamine?
  - Safer and easier method of administration.

- **More research required**

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Droperidol IV/IM

- Reilly study (2000) led to the withdrawal of thioridazine and droperidol. Subsequent studies have not replicated these results. BAP recommends ECG prior to use.
- Unlicensed for acute disturbance
- Cochrane review of IM&IV droperidol showed it is effective and can be used as RT
- Droperidol appears to be associated with fewer adverse events than lorazepam or midazolam (RCEM)
  - Hypotension and respiratory desaturation with midazolam
  - Droperidol associated with dystonias
- It may be a less-suitable option if a patient is known to take antipsychotic medications, or if there is a suspicion of a presentation linked to antipsychotic use (e.g. anticholinergic syndrome or akathisia).
- '10/2' with lorazepam?

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Midazolam IM/IV

- IM midazolam is rapid but not sustained due to short half life
  - Increase risk of subsequent sedation required
- Increase risk of oxygen desaturation or airway obstruction
  - 28% IM midazolam compared with 6% for those given IM droperidol and 7% for the combination of IM droperidol plus IM midazolam
- Midazolam is a controlled drug
- Risk of errors with high dose ampules (1mg/mL, 2mg/mL or 10mg/2mL)

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Consideration of anaesthesia and intubation

- Some patients should be considered for induction of anaesthesia and intubation.

- In this scenario, anaesthetic considerations are:
    - Ketamine induction to minimise haemodynamic instability on induction, as these patients are likely to be dehydrated, and are physiologically fragile. Be aware that the patient may have already received prior sedatives.

    - Avoid suxamethonium – hyperkalaemia is likely.

    - Avoid opioids – morphine may worsen hypotension through histamine release. Fentanyl is a particular concern if there is a possible serotonin syndrome as it produces an efflux of serotonin.

Substance misuse

- There is little specific evidence about management of acute disturbance requiring RT where substance use is implicated.

- Alcohol, synthetic cannabinoids, gammahydroxybutrate (GHB) and stimulants are most likely to be associated with acute disturbance.

- Drug screening tests do not test for all illicit substances especially NPS.
  - The Novel Psychoactive Treatment UK Network guidelines and website (http://neptune-clinical-guidance.co.uk/)
  - National Poisons Information Service https://www.toxbase.org/

- Gammahydroxybutrate (GHB) withdrawal with acute disturbance and is a potentially life-threatening condition that should therefore be considered as a medical emergency
  - Substantial doses of diazepam and/or admission to the medical intensive care unit with intubation
  - Addition of baclofen 10 mg TDS may reduce the need for large dose benzodiazepines

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Substance misuse

- Ideally allow a 'wash out' prior

- One TREC trial examined the impact of substance misuse and found that IM midazolam or IM haloperidol plus IM promethazine were both effective and 'reasonably safe'.
  - Risk of lowering seizure threshold
  - Impact on cardiovascular rhythm (especially with cocaine and haloperidol)

- Benzodiazepines are generally recommended, but caution with alcohol as increased risk of respiratory depression (especially with olanzapine IM + benzodiazepines).

- Olanzapine IM has shown to be favourable cf haloperidol IM.

- Methamphetamine-related acute agitation
  - midazolam-droperidol combination appears to provide more rapid sedation of patients than droperidol or olanzapine alone

- **MONITOR** = every 15mins – as per NICE and BAP.

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Alcohol withdrawal

- Management of alcohol withdrawal and its complications are covered in two NICE guidelines: CG100 (NICE, 2010) and CG115 (NICE, 2011).
- Benzodiazepines are generally preferred and for delirium tremens, parenteral lorazepam ~~or haloperidol~~ is recommended.
- Wernicke's encephalopathy and risk of thiamine deficiency should be considered and treated with parenteral thiamine

Intravenous

- Intravenous treatment should be avoided except in cases where there is no alternative. (WJBP)

- Rapid tranquilisation in this guideline refers to the use of medication by the parenteral route (usually intramuscular or, exceptionally, **intravenous**) (NICE, 2015)

(BAP, 2019)

- Due to the potential risk of respiratory depression and cardiac adverse effects, RT IV options must only be used in settings where resuscitation equipment and trained clinicians are available to manage medical emergencies.

- Flumazenil must be immediate available

- IV does not appear to offer an advantage over IM the median duration of acute disturbance was 21 mins for IM (range 5-78mins) and 30minutes for IV (range 5-135mins)

Intravenous (BAP, 2019)

- Both IV lorazepam and IV midazolam are effective.
- IV midazolam more rapidly sedating than IV droperidol, but more likely to result in treatment failure due to additional sedation required.
- IV droperidol is effective and a baseline ECG is advised before use due to the risk of QTc prolongation.
- IV olanzapine has evidence of effectiveness but caution is advised due to the risk of respiratory depression and the lack of a reversing agent.
- IV diazepam (Diazemuls ®) is not recommended due to lack of evidence for use in RT.
- IV haloperidol is not recommended due to a lack of evidence for its use in RT. Must have ECG prior to RT.

Pre-hospital

- Very little data
- Lorazepam needs to be stored in the fridge
- Consider IV infusions
- 'Run times' of the ambulance service
- More research required

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