DSH PSYCHOTROPIC MEDICATION Operational Procedures

PRN AND STAT GUIDELINES:

NOTE: Directive statements and procedures in this chapter are informational and advisory in nature.

I. General Guidelines:

A. The least possible number of psychotropic medications should be employed.

B. Whenever possible, psychotropic PRN or STAT medications should be an extension of routine psychotropic medications

1. Example: If the individual is routinely receiving 2 mg of lorazepam at night for sleep and a benzodiazepine is desired for control of psychomotor agitation with threatening or violent behavior, then the preferred choice would be PRN or STAT lorazepam, rather than addition of a second benzodiazepine.

C. Usually, only 1 PRN or STAT medication should be used for a single indication.

1. This may not be true in all cases:

a. Some research groups promote combined haloperidol and lorazepam for treating acute psychomotor agitation due to delirium or psychosis.

b. Acute addition of a benzodiazepine may reduce the total antipsychotic dose needed to control psychomotor agitation.

D. Write PRN medication orders for specific, identifiable target symptoms or behaviors.

E. Make PRN orders as flexible as possible, but set a limit on the maximum medication to be received in 24 hours

1. Example: Haloperidol 5 mg PO or 2.5 mg IM Q 2 hours PRN psychomotor agitation associated with threats of physical harm or attempts to inflict physical harm, not to exceed 15 mg per 24 hours.

2. Do not write PRN orders with QD, BID or TID as this would mean that the PRN medication could only be given at defined times (e.g., 0800 and 2000 hours for BID).

F. If an individual requires frequent or ongoing PRN or STAT doses, then reevaluate the adequacy of routine medication treatment and adjust or

change as required. [NOTE: Please see the relevant PRN or STAT trigger monitoring policy.]

II. Guidelines by medication group: [See table at end of each medication group.]

A. Anticholinergics:

1. Indications: Anticholinergic medications are most commonly used to counter acute dystonia or parkinsonian symptoms induced by neuroleptic antipsychotics.

2. Anticholinergics are less effective for treatment of akathisia and may worsen tardive dyskinesia, excepting rabbit syndrome which is actually a tardive dystonic tremor.

3. Although some have used anticholinergics to reduce excess salivation due to clozapine; caution is required due to the substantial anticholinergic load imposed by clozapine itself [NOTE: The anticholinergic effect of clozapine 50mg is approximately equivalent to benztropine 1 mg.]

   a. A safer choice may be use of ipratropium nasal spray or 1% atropine drops sublingually, as this approach essentially avoids systemic anticholinergic exposure. [Please see the Clozapine Protocol, section VII.]

   b. Cases not responsive to topical anticholinergic medications should be considered for treatment with botulinum toxin injections of the parotid and submandibular salivary glands.

4. Anticholinergic medications also may be indicated PRN or STAT for treatment of cholinergic rebound following abrupt discontinuation of another medication.

   a. Examples: tertiary tricyclic antidepressant or low-potency neuroleptic.

   b. A typical schedule for cholinergic rebound would be benztropine 2 mg BID for 2-3 days, then 1 mg BID for 2-3 days, and then 0.5 mg BID for 2-3 days.

   c. However, a tapered routine dosage schedule of the routine medication is superior in most cases.

5. Common side effects include dry eyes, dry mouth with increased risk of dental caries, tachycardia, decreased GI motility, urinary retention, decreased sweating, and decreased immediate and recent recall.

6. Toxic risks include anticholinergic delirium, crisis worsening of closed-angle glaucoma, ileus, bowel obstruction, urinary blockade with atony, and heat stroke.

7. Anticholinergic abuse potential is high in forensic populations.

Table of Commonly Used Anticholinergic Agents

MEDICATION	DOSE	FREQUENCY	ROUTES	DAILY MAX
Benztropine	1 – 2 mg	1 – 12 hrs	PO/IM/IV*	6 mg
Trihexyphenidyl**	2 – 5 mg	1 – 12 hrs	PO	15 mg

*IV administration is usually reserved for life-threatening dystonic reactions (i.e., dystonias involving the larynx or diaphragm). Cardiac and blood pressure monitoring should be used if IV anticholinergic medication is given due to risk of tachyarrhythmias.

**Trihexyphenidyl is prohibited in most DSH facilities due to diversion and abuse risk.

B. Antihistamines:

1. Antihistamines are most commonly used as a PRN for their anticholinergic properties (see previous section) and sedating properties.

   [NOTE: A minority of persons become activated, irritable, or psychomotorically agitated when given antihistamines. Although sedating, antihistamines tend to produce fragmented sleep.]

2. Common side effects are similar to those of the anticholinergics. The exception is **hydroxyzine**, which has essentially no affinity for muscarinic receptors (Ki >10,000 nM) and therefore no anticholinergic properties.

   Excessive sedation may occur in some patients.

3. Toxicity is rare; however, anosmia has been reported with chronic use.

4. There is a risk of inducing seizure with large bolus doses of diphenhydramine (e.g., diphenhydramine 100 mg IM)

Diphenhydramine abuse potential is high in forensic populations.

Table of Commonly Used Antihistamines

MEDICATION	DOSE	FREQUENCY	ROUTES	DAILY MAX
Diphenhydramine	25 – 50 mg	1 – 12 hrs	PO/IM	150 mg
Hydroxyzine	25 – 100 mg	1 – 12 hrs	PO/IM	200 mg

C. Neuroleptic antipsychotics:

1. Neuroleptic PRN or STAT use is most commonly indicated for control of acute psychomotor agitation associated with threat of physical harm.

   a. Use in high doses for acute reduction of positive psychotic symptoms does not enhance overall antipsychotic efficacy.

   b. Combining a neuroleptic with a benzodiazepine has been shown to reduce the dose of neuroleptic required to control psychomotor agitation in the short term.

   c. Long-term use of benzodiazepines should be avoided whenever possible.

2. Common PRN/STAT side effect risks include:

   a. High-potency neuroleptics can induce acute extra-pyramidal symptoms.

   b. Mid and low potency neuroleptics may induce excessive sedation, hypotension, and anti-cholinergic side effects. [Please see the section on anti-cholinergic medications.]

   c. Several neuroleptics (e.g., droperidol or haloperidol) may also dangerously increase QT interval, especially if given intravenously as a bolus.

3. Rare, yet dangerous risks for neuroleptics include seizure, neuroleptic malignant syndrome, hypotensive crisis, and sudden death.

4. When used IV, haloperidol appears to carry a reduced risk of inducing extra-pyramidal symptoms, though the mechanism for this reduced risk remains unknown.Doses of IV haloperidol have typically been in the 10 to 40 mg per day range. However, doses of up to 975 mg per 24 hours

have been given without incurring adverse cardiovascular or neuromuscular effects.

5. Conversely, cases of torsade de pointes have been reported with both intravenous droperidol and haloperidol, especially in individuals deficient in potassium or magnesium.

6. Daily maximum doses have not been established by controlled data for neuroleptic antipsychotics. However, the mid and low potency agents carry significantly greater risks of sedation, hypotension and anti-cholinergic toxicity. Thus, daily maximum doses should be conservatively estimated for these drugs.

   Note: Overall dose exposure to neuroleptics may be related to long-term risks of tardive dyskinesia.

7. Combined use with a sedative-hypnotic or alternate use of a sedative-hypnotic may reduce or eliminate the need for PRN or STAT neuroleptic medication.

8. Please consult other sections of these policies or your local pharmacy and therapeutics manual for recommended daily maximum doses for individual neuroleptic medications.

   [NOTE: Injectable and/or rapidly dissolving forms of aripiprazole, olanzapine, risperidone, and ziprasidone are widely used as PRN and STAT medications.]

9. Of these, rapidly dissolving olanzapine has a slow absorption (requiring 8 to 9 hours to reach peak plasma concentrations) making the oral ODT formulation inappropriate for PRN or STAT use.

Table of Neuroleptics by Potency Range

POTENCY	DOSE	FREQUENCY	ROUTES	DAILY MAX
High^	1 – 10 mg	0.5 – 6 hrs	PO/IM/IV*	**
Mid^^	4 – 25 mg	0.5 – 6 hrs	PO/IM	**
Low^^^	25 – 100 mg	0.5 – 6 hrs	PO/IM	**

^Common high-potency neuroleptics: haloperidol, fluphenazine, and rifluoperazine.

^^Common mid-potency neuroleptics: perphenazine, loxapine, and thiothixene.

^^^Common low-potency neuroleptics: chlorpromazine.

*Only haloperidol (Haldol) has been used extensively by IV route.

D. Anxiolytic and sedative-hypnotic medications:

DSH PSYCHOTROPIC MEDICATION
Operational Procedures

1. Sedative-hypnotics are most commonly used to induce sleep or decrease psychomotor agitation.

   To a lesser extent, they may have efficacy for akathisia, tremor, and dyskinetic movements.

2. Common side effects include decreased attention, decreased memory consolidation, and ataxia.

   a. Used chronically, dependence and tolerance to sedative effects may develop.

   b. Tolerance and physical dependence are less likely with selective hypnotics prescribed within their recommended dose ranges.

   c. All drugs in this category except ramelteon (Rozerem), carry an abuse potential—particularly for patients with history of illicit drug abuse or dependence.

3. Rare complications include:

   a. Respiratory arrest if combined with clozapine during clozapine titration

   b. Respiratory suppression if combined with another suppressive agent

   c. Anterograde amnesia

   d. Withdrawal syndromes.

   e. The selective sedatives may cause a dissociative delirium if the individual remains active after taking the medication.

4. Titrating against objective target symptoms and frequent patient monitoring are vital to safe and effective treatment under such circumstances.

5. Gluteal absorption of diazepam may be erratic.

6. Lorazepam is the most rapidly absorbed benzodiazepine when given by intramuscular injection.

Table of Commonly Used Anxiolytics and Sedative-Hypnotics

MEDICATION	DOSE	FREQUENCY	ROUTES	DAILY MAX**
Alprazolam	0.25 – 2 mg	0.5 – 8 hrs	PO	10 mg
Chlordiazepoxide	10 –100 mg	1 – 24 hrs	PO/IV*	100 mg
Clonazepam	0.5 – 2 mg	4 – 24 hrs	PO	20 mg
Diazepam	2 – 10 mg	0.5 – 12 hrs	PO/IM/IV*	80 mg
Flurazepam	15 – 30 mg	12 – 24 hrs	PO	30 mg
Lorazepam***	0.5 – 2 mg	0.5 – 8 hrs	PO/IM	10 mg
Oxazepam***	15 – 30 mg	0.5 – 8 hrs	PO	120 mg
Eszopiclone	1 – 8 mg	24 hrs	PO	8 mg
Zolpidem	5 – 10 mg	24 hrs	PO	10 mg

*IV administration is typically reserved for termination of seizure activity or treatment of delirium tremens.

**In tolerant patients or in the setting of sedative-hypnotic withdrawal, daily doses of benzodiazepines substantially greater than those listed may be required.

***In patients known or suspected of suffering hepatic failure, lorazepam or oxazepam are the agents of choice in that they require only hepatic conjugation (phase II metabolism).

References:

Allen M, et al. 2001. The expert consensus guideline series: treatment of behavioral emergencies. Postgrad Med, Special Report, 1-88.
Allen M, et al. 2000. Managing the agitated psychotic patient: a reappraisal of the evidence. J Clin Psychiatry, 61, Suppl 14, 11-20.
Baker R, et al. 2003. Effectiveness of rapid escalation of up to 40 mg. of oral olanzapine. J Clin Psychopharmacology , 23, 342-348.
Carroll B, et al. 2001. Loading strategies in acute mania. CNS Spectrums, 6, 11, 919-922.
de Leon J. 2004. Atypical antipsychotic dosing: the effect of co-medication with anticonvulsants. Psychiatric Services, 55, 125-128.
ardi A, et al. 2006. Clonazepam in the treatment of psychiatric disorders: an update. Int Clin Psychopharmacol, 21, 3, 131-142.
Petit JR, et al. 2005. Management of the acutely violent patient. Psychiatr Clin North Am, 28, 3, 701-711.
Rossi J, et al. 2010. The violent or agitated patient. Emerg Med Clin North Am, 28,1,:235-256.