

Compass Connections with Child Health BC

2022 Provincial Least Restraint Guideline: Part 2. Chemical Restraint Use

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Housekeeping

- Attendees are automatically muted and cameras are turned off
- Please submit questions for the speakers through the “Q&A” function and vote for the questions you want answered
- Please submit technical questions through the “Chat” function
- The webinar will be recorded and made available at compassbc.ca
- Specialist learners may apply for MOC Section 2 self-learning credits and family physician learners can apply for Mainpro+ self-learning at their respective colleges.

Disclosures

- Dr. Russel has a private consulting business
- Dr. Dean Elbe has no disclosures or conflicts of interest to declare
- Dr. Laura Beresford has no disclosures or conflicts of interest to declare
- Yasmin Tuff has no disclosures or conflicts of interest to declare

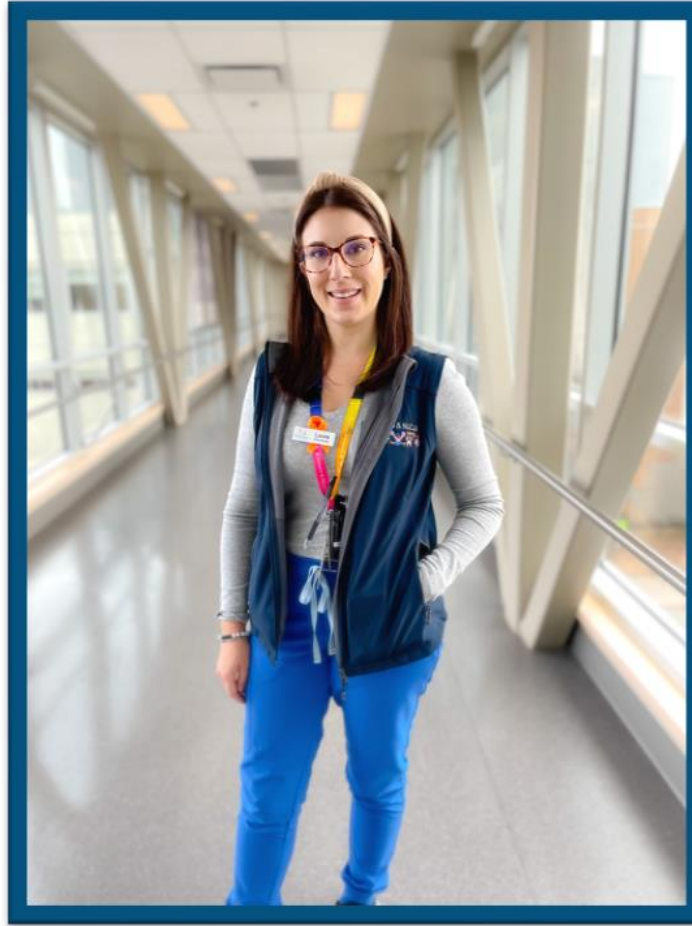
Speaker Introduction



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Clinical Pharmacy Specialist, Child and
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Speaker Introduction



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Child Health BC



Part 2 of a 3-part series

Join us **July 19th** 12-1pm for

PART 3: “Guidelines for Management & Resources to support CY with neurodevelopmental disabilities in the ER”

Register at Compassbc.ca

Objectives

- Provide an overview of the Least Restraint Guideline
- Review a Least Restraint approach to using chemical restraint
- Associated risks of using chemical restraint
- Share available tools and resources

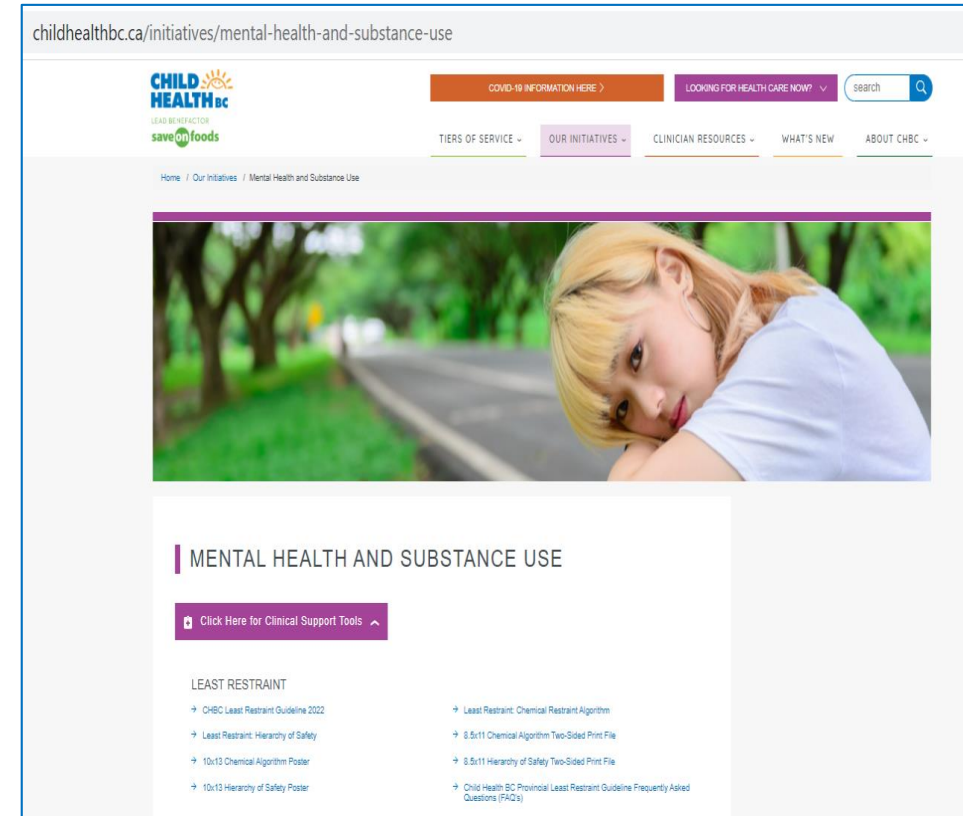
Overview

“This is an area of care that causes some of the most employee distress/injuries and contributes hugely to burnout in our ED. We really need better support for managing pediatric patients who pose high safety risks to themselves and others.”



Background

- Request from the Health Authorities to expand the scope of the existing provincial guideline (2018) to include inpatient settings
- Guided consensus meetings with a provincial working group that included representatives from all Health Authorities, including First Nations Health Authority and youth & family with lived experience
- Guideline endorsed provincially April 2022



Posted on the Child Health BC site www.childhealthbc.ca

Key Updates

The Provincial Least Restraint Guideline was updated in 2022. Updates include:

- Expanded scope to include all settings (ED and inpatient) where children and youth with mental health concerns are cared for
- **Expanded the guidance regarding chemical restraint to include:**
 - ✓ **pharmacological management**
 - ✓ **overview of medications including dosing recommendations, adverse effects and contraindications**
- Significant input from youth and families with lived experience and a stronger focus on diversity, inclusion and the indigenous lens

A survey was conducted across BC Health Authorities in Summer 2021 with 142 responses (staff & providers working in Emergency Departments and Inpatient Units).

85% of respondents indicated that emergency restraint was utilized in their setting for children and youth experiencing mental health concerns.

- **84% indicated that chemical restraint was utilized**
- 74% indicated that physical restraint was utilized
- 66% indicated that seclusion was utilized

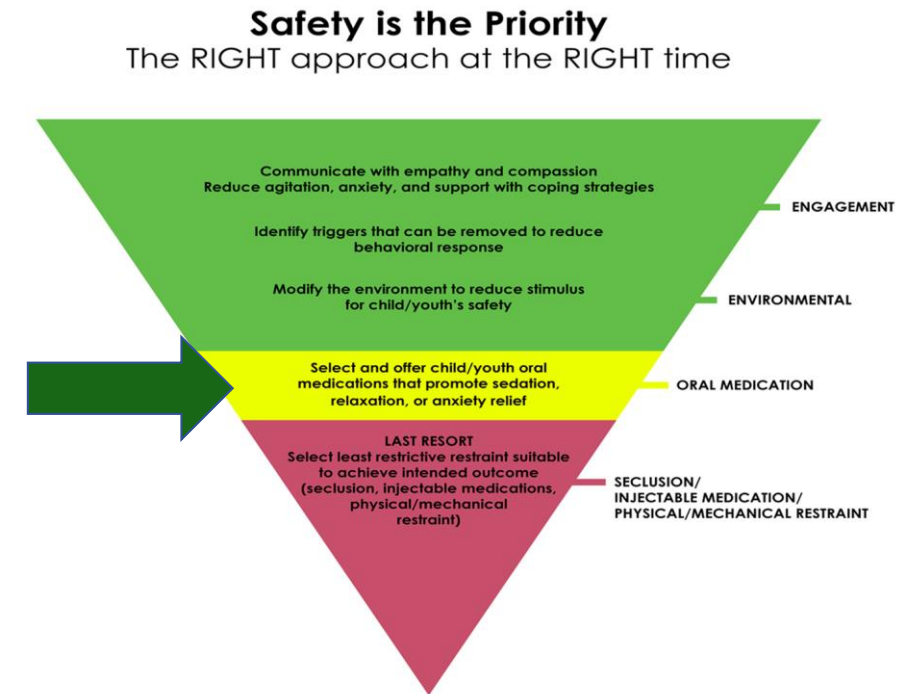
A Least Restraint Approach to Chemical Restraint

“It is very difficult to hold a child down and restrain them physically so that you can chemically restrain...it is traumatizing for the patient, staff and other patients on the unit and requires lots of time afterwards to check in and settle other patients on the unit.”



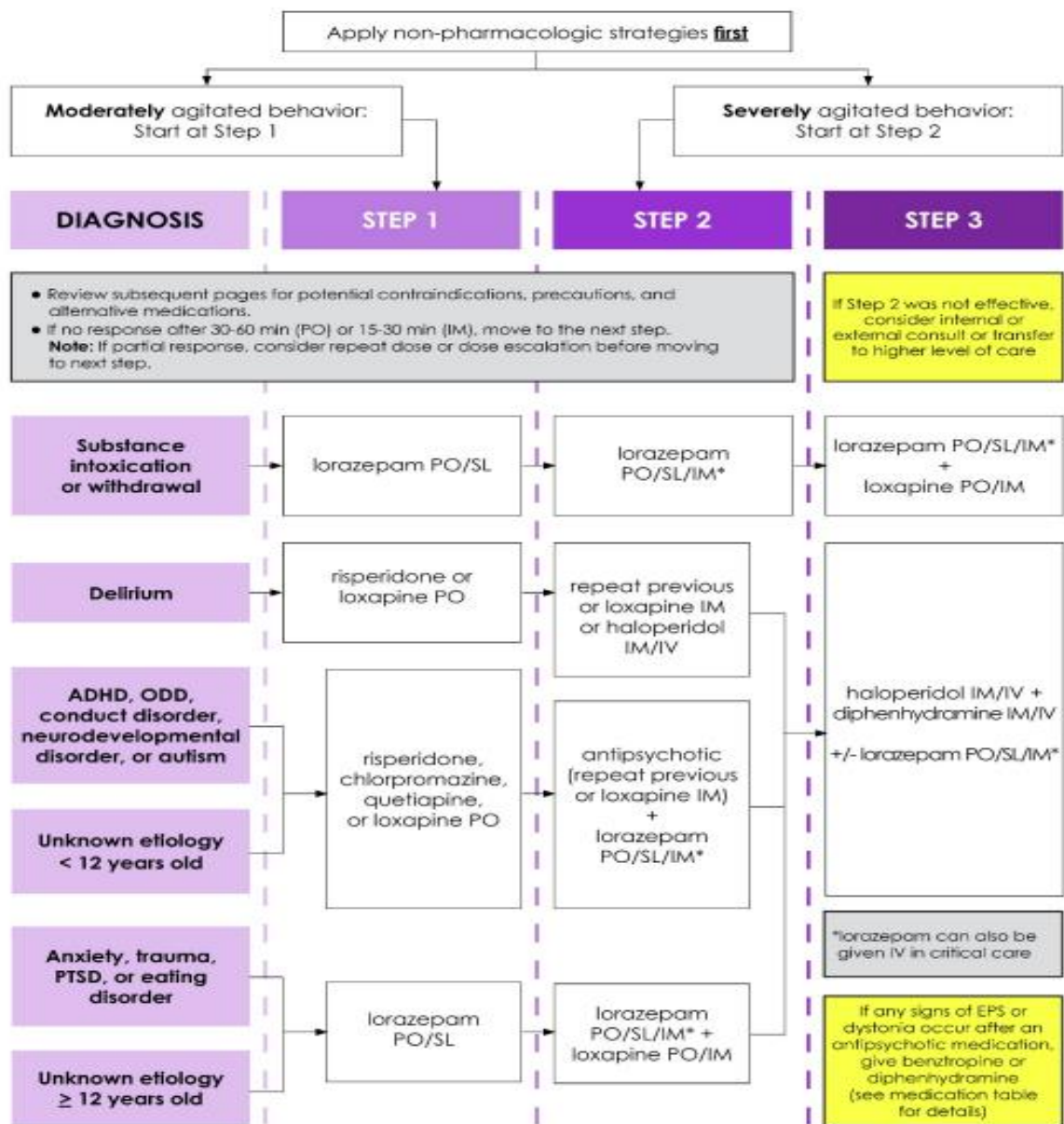
Moving Down the Hierarchy of Safety

- Engagement and de-escalation should always be attempted prior to initiating restraint, including offering prevention strategies appropriate for your setting.
- A collaborative plan with child/youth/family input is important to develop as soon as possible, before a crisis occurs.
- Identify options to support the child/youth to manage in your setting, e.g. distraction tools and reduced stimulus.
- **Oral medications may also be offered as the next step as appropriate.** Must have a physician order & should NOT be ordered as a PRN.



Overview of Chemical Restraint

Chemical Restraint



Medication Comparison

		Antipsychotics (2nd generation)			Antipsychotics (1st generation)			Non-antipsychotic agents			
		quetiapine	risperidone	olanzapine	loxapine	haloperidol	methotrimeprazine	chlorpromazine	lorazepam	clonidine	diphenhydramine
PATIENT FACTORS	↑ QTc interval?										
	Hypotensive/ ↑ falls risk?			 							
	Anticholinergic delirium?										
	Seizures/ ↑ seizure risk?										
	Eating Disorder?										
	Developmental disorder/autism										
	Opioid use/ respiratory depression?										
		quetiapine	risperidone	olanzapine	loxapine	haloperidol	methotrimeprazine	chlorpromazine	lorazepam	clonidine	diphenhydramine
DRUG FACTORS	Routes/Dosage Forms	PO (TABLET)	PO (TABLET, LIQUID)	PO (TABLET, ODT) IM ^{a,b}	PO (TABLET) IM	PO (TABLET) IM/IV	PO (TABLET) IM/IV	PO (TABLET)	PO/SL (TABLET) IM	PO (TABLET, LIQUID)	PO (TABLET, LIQUID) IM
	EPS risk	+	++	+	++	++++	+	+	↓EPS	n/a	↓EPS
	Sedation properties	+++	++	++	+	+	+++	+++	++ ^d	++	++ ^d
	Useful as a PRN to treat acute agitation			 							
	Time to onset of action	~30-60 min	~60-75 min	~15 min(IM) ~6 hr (PO/ ODT)	~30 min (all forms)	~15 min (IM) ~3-20min (IV) ~2 hr (PO)	~30 min (IM) ^c ~15 min (IV) ^c ~1 hr (PO)	~30-45 min	~20-30 min (all forms)	~30-60 min	~30-45 min (PO) ~15-30 min (IM)
	Duration of action	~4-6 hr	~12-24 hr	~2 hr (IM) ~12-24 hr (PO)	~12 hr	~4-12 hr	~2-4 hr	~4-6 hr	~6-8 hr	~3-4 hr	~4-6 hr



optimal choice



caution



less optimal choice

^a Peak serum level 5 times higher with IM form compared to PO

^b IM form **CONTRAINDICATED** within 1 hr of parenteral benzodiazepine

^c Peak serum level 2 times higher with IM/IV form compared to PO

^d Note: ↑ risk of paradoxical agitation

Abbreviations: EPS extrapyramidal symptoms; IM intramuscular; IV intravenous; ODT oral dissolving tablet; SL sublingual; PO oral

Table updated January 2022

Dr. Dean Elbe, PharmD, BCPP, Dr. Andrea Chapman, MD, FRCPC, Dr. Kelly Saran, MD, FRCPC, Joanna McKay, RN

Medications Overview

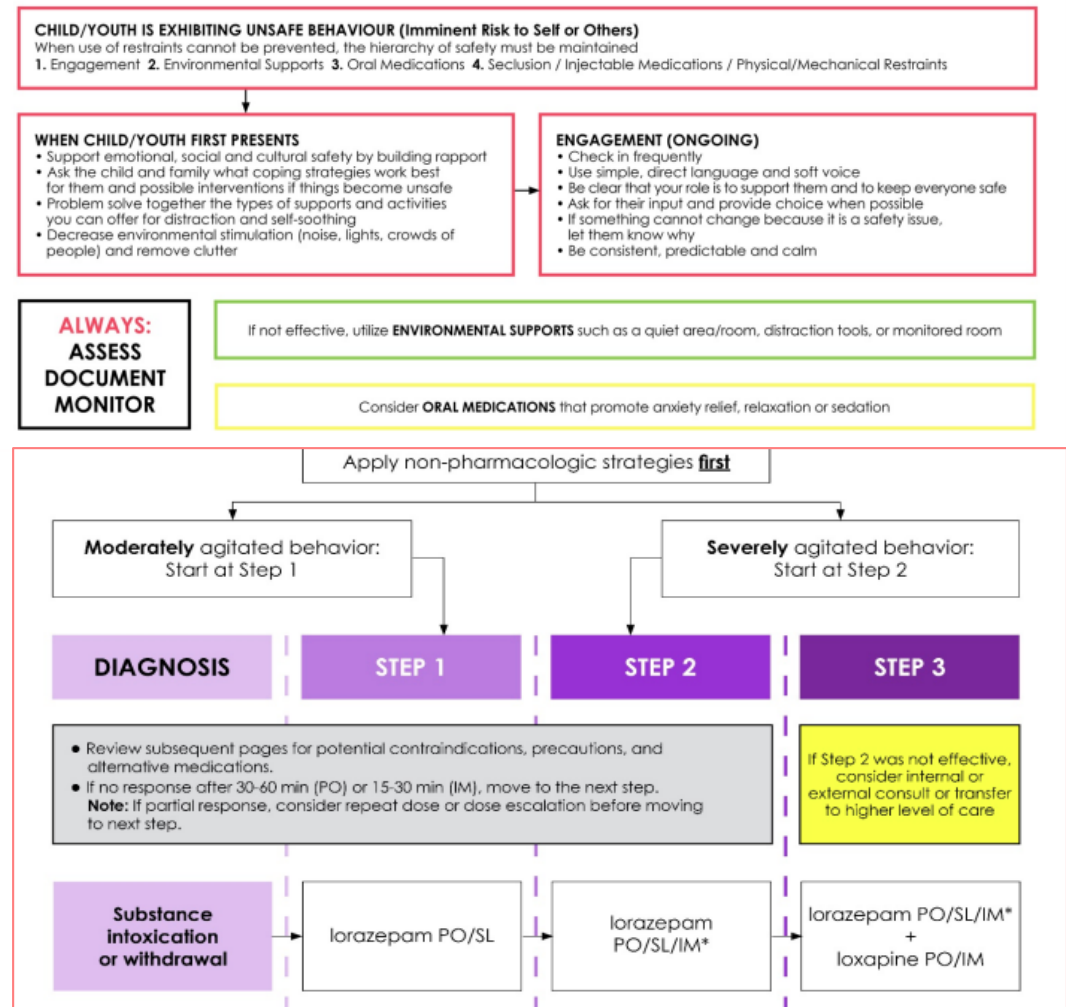
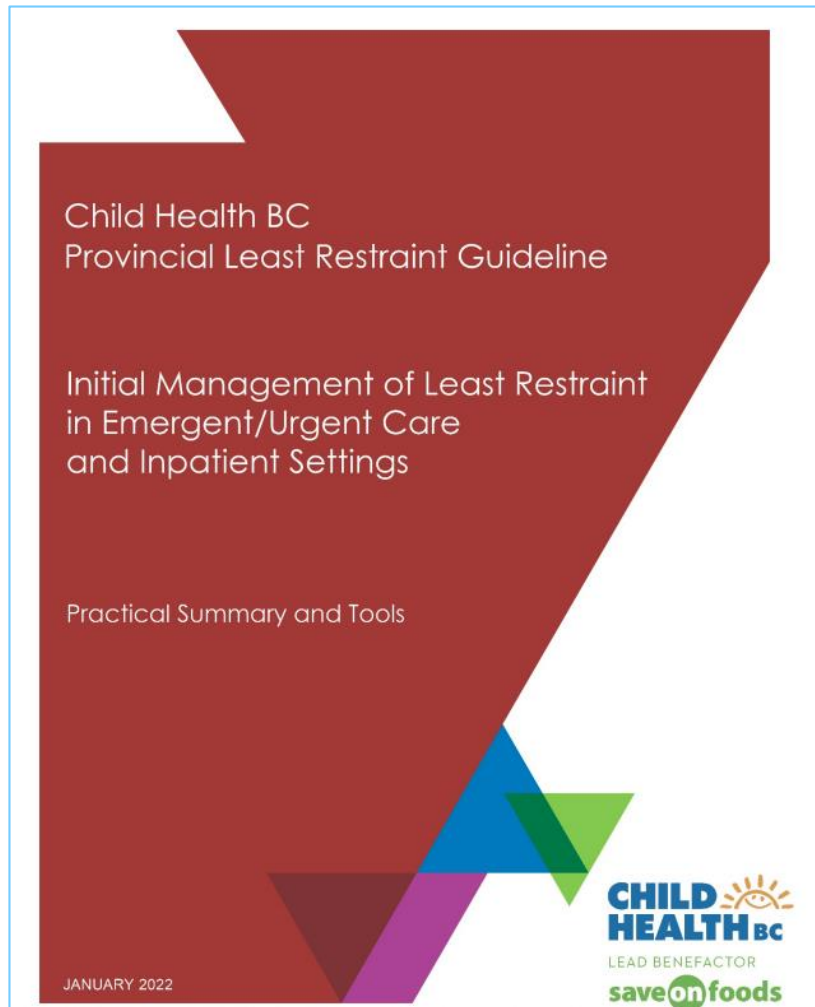
NAME	USUAL DOSE (FOR ACUTE EPISODE)	ACTION	ADVERSE EFFECTS	CONTRAINDICATIONS
Benztropine	EPS: 0.5-1 mg/dose PO/IM Max: 0.1 mg/kg/24h or 6 mg/24h Acute dystonia: 1-2 mg/dose IM/IV	Anticholinergic	Sedation, dry mouth, blurred vision, tachycardia, constipation, urinary retention.	Avoid: Age < 3 years (use diphenhydramine), anticholinergic delirium Caution: Ileus, narrow angle glaucoma
Chlorpromazine	0.5-1 mg/kg/dose PO (round to nearest 12.5 mg) Max: 50 mg/dose	FGA, low potency	Postural hypotension, tachycardia, QTc prolongation, lowered seizure threshold. Less risk of EPS vs. haloperidol, but more anticholinergic effects.	Avoid: Seizure disorders, anticholinergic delirium Caution: Cardiac conditions, other QTc prolonging medications
Clonidine	1 mcg/kg/dose PO Max: 50 mcg/dose	Alpha-2 agonist	Dizziness, hypotension, bradycardia.	Avoid: Hypotension, bradycardia Caution: Anticholinergic delirium
Diphenhydramine	1 mg/kg/dose PO/IM/IV (round to nearest 5 mg). Max: 50 mg/dose. Given with haloperidol to prevent dystonic reaction. Use IM/IV route for treating acute dystonia.	Anticholinergic, used to treat agitation or EPS/dystonia	Sedation, dry mouth, blurred vision, tachycardia, constipation, urinary retention. QTc prolongation in high doses. Paradoxical excitation can occur; more common in younger children and those with neurodevelopmental disorders.	Avoid: Anticholinergic delirium Caution: Ileus, narrow angle glaucoma
Haloperidol	0.025-0.075 mg/kg/dose PO/IM/IV Max: 5 mg/dose	FGA, high potency	High incidence of EPS and dystonic reactions in children and adolescents. IM route may have higher risk of dystonia, and IV route may have higher risk of QTc prolongation. Hypotension, lowered seizure threshold. Minimal anticholinergic effects.	Avoid: Cardiac conditions (particularly arrhythmias or prolonged QTc), other QTc prolonging medications Caution: Seizure disorders
Lorazepam	0.025-0.1 mg/kg/dose PO/SL/IM (round to nearest 0.25 mg) Max: 2 mg/dose (higher doses may be required for stimulant overdose or substance withdrawal; max single dose 4 mg)	Benzodiazepine	Confusion, mild cardiovascular suppression. Higher risk of respiratory depression when combined with opioids. Paradoxical excitation can occur; more common in younger children and neurodevelopmental disorders.	Avoid: Respiratory depression Caution: Patients taking opioids
Loxapine	0.1-0.2 mg/kg/dose PO/IM (round to nearest 2.5 mg) Max: 25 mg/dose	FGA, moderate potency	Moderate incidence of EPS and dystonic reactions, moderate anticholinergic effects.	Caution: Cardiac conditions, seizure disorders, other QT prolonging medications, anticholinergic delirium
Methotrimeprazine	Child: 0.125 mg/kg/dose PO Adolescent: 2.5-10 mg/dose PO Child & Adolescent: 0.06 mg/kg/dose IM/IV (round to nearest 2.5 mg)	FGA, low potency	Sedation, anticholinergic effects, postural hypotension. Less risk of EPS vs. haloperidol, but more anticholinergic effects.	Avoid: Hypotension, anticholinergic delirium Caution: Seizure disorders, cardiac conditions, other QTc prolonging medications
Olanzapine	2.5-10 mg/dose IM Max: 3 doses or 20 mg/24h, given 2-4 h apart (onset of PO route too slow for PRN use in acute agitation)	SGA	Postural hypotension (monitor before each IM dose), anticholinergic effects, lowered seizure threshold, akathisia. Minimal risk of QTc prolongation.	Do NOT combine IM route within 1 hour of parenteral benzodiazepine; reported cases of respiratory depression and death. Avoid: Hypotension, anticholinergic delirium Caution: Seizure disorders
Quetiapine	Child: 12.5-50 mg/dose PO Adolescent: 25-100 mg/dose PO	SGA	Sedation, dizziness, postural hypotension, tachycardia, QTc prolongation, anticholinergic effects, lowered seizure threshold. Lower risk of EPS than other agents.	Avoid: QTc prolongation, hypotension, anticholinergic delirium Caution: Cardiac conditions, other QTc prolonging medications, seizure disorders
Risperidone	Child: 0.125-0.5 mg/dose PO Adolescent: 0.25-1 mg/dose PO	SGA	Postural hypotension, EPS (in higher doses), lowered seizure threshold, akathisia. Minimal risk of anticholinergic effects.	Caution: Seizure disorders, cardiac conditions, CYP2D6 inhibitors (e.g. fluoxetine) – consider dose reduction with repeat/regular dosing of risperidone

EPS – Extrapyramidal symptoms; FGA – First generation antipsychotic; SGA – Second generation antipsychotic
version 1.4 Jan 2022 Created by Sarah Leung, BScPharm, ACPR2(Ped)

Case Scenarios and Questions

Tools and Resources

Tools and Resources



Regional & Provincial Contacts

CHBC Regional Coordinators

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Nicole Cave

Fraser Health

Nicole.Cave@fraserhealth.ca

Catherine Marshall

Vancouver Coastal

Catherine.marshall@phsa.ca

Erica Koopmans

Northern Health

Erica.Koopmans@phsa.ca

Trisha Thomson

Interior Health

Trisha.Thomson@interiorhealth.ca

Provincial Contacts

During Office Hours, or for complicated poly-pharmacy cases:

Compass, 1-855-702-7272

After Hours:

BCCH 604 875 2345 and ask for the psychiatrist on call 24 hours a day



Thank you!

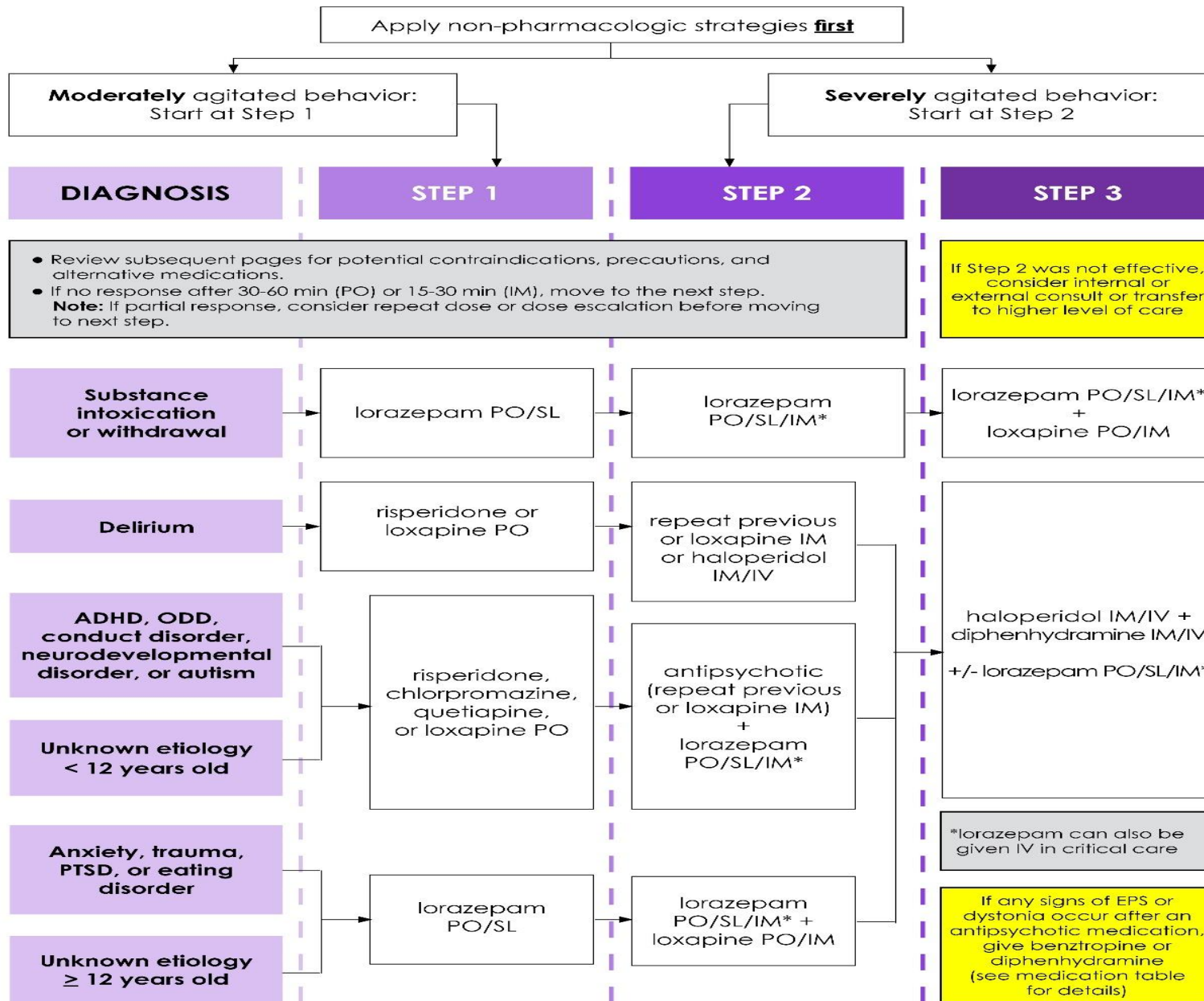
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(<https://www.childhealthbc.ca/news/chbcs-provincial-least-restraint-guideline-update>)







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	EPS risk	+	++	+	++	++++	+	+	↓EPS	n/a	↓EPS
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