



Pallium Canada

MANAGING POTENTIAL PALLIATIVE CARE MEDICATION SHORTAGES DURING THE COVID-19 PANDEMIC: A Guide provided by Pallium Canada

This Guide has been informed by work done over the last few weeks by Pallium Canada and its community across Canada. This included the development of LEAP Online COVID modules (developed by Dr. Jose Pereira, Dr. Amit Arya and Dr. James Downar) and several national webinars with several hundred participants from across the country. The three webinars which provided input on this included 1) Medication Challenges; 2) Symptom Management; and 3) Dyspnea Management.

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Key points

- **Shortages** of certain medications should be **anticipated**.
- **Be pro-active**.
- With respect to medication availability and shortages, there is **considerable variation across jurisdictions** (within and across provinces and territories) **and settings of care**. Within the same jurisdiction (e.g. health region), there may be variations between facilities and settings of care (e.g. hospital, community, long-term care). Some settings in several jurisdictions are already reporting shortages.
- It is important to **prepare for these by monitoring the situation closely** in the setting and jurisdictions one works in, being pro-active to reduce shortages (including reducing wastage), and becoming acquainted with alternative medication options in case a medication is not available.
- There may also be **shortages in equipment such as infusion pumps**. Be prepared to use intermittent subcutaneous injections.
- Everything could be potentially run short depending on how long the COVID-19 pandemic lasts.
- Clinical experience is demonstrating that patients with COVID-19 disease can deteriorate very rapidly and that higher-than-normal doses may be required to control symptoms in some situations.

Strategies to manage drug shortages

- **Regularly touch base with the pharmacist(s)** and pharmacy(ies) serving your setting and region. Help the pharmacist plan what medications need to be ordered.

- **Explore all possible supply chains (working with a pharmacist).**
- **Develop a surveillance network** within your jurisdiction and setting of care (clinician colleagues providing direct care for COVID-19 patients, pharmacists, regional programs, etc) and touch base periodically. Report any medication shortages being experienced or anticipated.
- **Select medications based upon the setting in which they will be used.** For example, propofol or dexmedetomidine can be used for palliative sedation and sedation in the ICU, thereby sparing midazolam for use in other settings.
- **Apply Symptom Management kits judiciously.** In some jurisdictions, generic symptom management kits (also called palliative kits or symptom response kits) are placed in the home (2 or 3 days' worth) in anticipation of a possible crisis (e.g., severe pain, agitation, or if the patient is unable to swallow). Medications in these kits can include opioids, methotrimeprazine, haloperidol, or midazolam. The kits also often include supplies such as subcutaneous needles and urinary catheters. The kits allow management of a crisis without having to transfer the patient to an emergency department or hospital. However, regulations generally require that medications in these kits only be prescribed to an individual patient. Any unused medication cannot be re-directed to another patient or brought back into the pool of medications. This leads to considerable wastage. There is also a risk of inappropriate diversion of unused medications such as opioids. These kits therefore represent a double-edged sword. The goal is therefore to be able to deploy symptom kits and supplies while reducing wastage. This can be done with a "just-in-time, tailored-to-the-patient" approach. This requires a system and processes in place that:
 - a. Provide just-in-time, 24/7 rapid response (delivered to the home within 2 to 3 hours when needed)
 - Requires a clear and easy-to-use prescribing and processing procedures in place that are safe, efficient and responsive (easy to prescribe for the clinician, rapidly processed by 24/7 pharmacy services who also provide supplies, and rapid processing by regional services or authorities that need to triage and approve the requests.
 - b. Medications and supplies are tailored to the specific needs of an individual patient
 - These should not be generic kits with a generic list of medications. While there can be a checklist to aid the prescriber, the medications should only be those being required at that time by that patient.
 - Kits should be limited in quantity. Twenty-four to thirty-six hours worth of medications can be enough to tide a patient over until a clinician can assess and prescribe more.

This just-in-time, tailored approach may not be possible in smaller communities or rural areas where 24/7 pharmacy and supplies access may not be available. It is also not

available in some regions of the country.

- **Become acquainted with treatment options for different symptoms.** Pharmacists and palliative care consultation services may provide suggestions.
- **Monitor the website** <https://www.drugshortagescanada.ca/>
- **Consider the prescriptions you write:**
 - Which medicines are absolutely needed? Keep it simple!
 - Always consider that one medication can help with more than one symptom (e.g., using haldol for a patient with delirium and nausea, instead of another drug for each symptom).
 - Prescribe amounts of medications judiciously if in the home/LTC setting (balance of right amount with least wastage risk).
 - Use the lowest effective dose possible.
 - Select the most appropriate formulation and vial size/concentration that will reduce wastage in a particularly patient or situation.
 - Small quantities but frequent refills (if in the home). Avoid ending up with lots of unused medications in a deceased patient's home. For opioids, provide larger quantities, but have smaller amounts dispensed at a time.
 - If an opioid is needed, consider using morphine as first-line (to save hydromorphone), except if significant renal impairment (in which case use hydromorphone); morphine remains a very useful and safe first-line opioid.

Medications at greatest risk of shortages (as reported across Canada by palliative care clinicians and pharmacists):

Medication	Route and formulation	Circumstances
Midazolam	<ul style="list-style-type: none">• IV/subcut	Severe Agitation Palliative sedation
Methotrimeprazine	<ul style="list-style-type: none">• PO• Subcut (IV not usually used)	Severe Agitation Palliative sedation
Phenobarbital	<ul style="list-style-type: none">• Subcut	Palliative sedation if midazolam runs short or lack of response to midazolam

Lorazepam	<ul style="list-style-type: none"> • PO: • IV/IM (NB: lorazepam should not be given Subcut unless diluted) • Sublingual: 	Anxiety Agitation Sedation
Haloperidol	<ul style="list-style-type: none"> • Subcut • PO 	Agitation and hallucinations Nausea
Glycopyrolate	<ul style="list-style-type: none"> • Subcut 	Severe upper airway secretions
Atropine drops	<ul style="list-style-type: none"> • Use buccal 	Severe upper airway secretions
Hydromorphone	<ul style="list-style-type: none"> • IV/SC 	Breathlessness Pain

GUIDELINES ON SYMPTOM MANAGEMENT

See the following links for symptom management protocols:

- **Pallium LEAP Palliative Care Online Modules and LEAP COVID Modules A and B (FREE):**
<https://www.pallium.ca/pallium-canadas-covid-19-response-resources/>
- **McMaster Dyspnea Protocol for COVID-19 disease.**
<https://fhs.mcmaster.ca/palliativecare/documents/McMasterDyspneaProtocolCOVIDHamilton31March2020.pdf>
- **McMaster Symptom Protocols for COVID-19 disease.**
<https://fhs.mcmaster.ca/palliativecare/documents/McMasterSymptomManagementProtocolsCOVID31March2020.pdf>
- **McMaster Palliative Sedation Protocol for COVID Pandemic**
<https://fhs.mcmaster.ca/palliativecare/documents/McMasterPalliativeSedationProtocolCOVID31March2020.pdf>
- **CAEP Protocols for patients imminently dying of COVID in Emergency Departments**
<https://caep.ca/wp-content/uploads/2020/03/EOL-in-COVID19-v5.pdf>
- **University of BC Division of Palliative Care and BC Centre for Palliative Care Guidelines**
<https://med-fom-fpit.sites.olt.ubc.ca/files/2020/03/End-of-Life-Symptom-Management-COVID-19.pdf>
- **Ontario Palliative Care Network Symptom Guidelines for COVID Disease**
<https://www.ontariopalliativecarenetwork.ca/sites/opcn/files/PlanningForPalliativeCareDuringTheCOVID19Pandemic.pdf>

TABLE: MEDICATION OPTIONS FOR DIFFERENT SYMPTOMS

	MEDICATIONS AND OPTIONS (Those with an * are not usually considered first-line in situations of no shortages)	
	Medication	Dose and route
Agitated delirium	Mild to moderate	
	Haloperidol	<ul style="list-style-type: none"> • 2 mg PO q4h • 1-2 mg Subcut q4h PRN
	Methotrimeprazine	12.5-25mg PO/SC q4h PRN
	Olanzapine	PO- Oral dissolving tablet 5-10mg q12h PRN Subcut 5-10mg q12h PRN (using IM formulation)*
	Loxapine	5-10mg SC q4h PRN
	Quetiapine	25-50mg po q6h PRN
	Risperidone	0.5-1.0 PO q12h PRN
	Severe	
	Midazolam	1-2mg Subcut or IV q1h PRN
	Lorazepam	1-2mg PO/SL/IV q1h PRN
	Diazepam	5-10mg PO/IV q1h PRN
Palliative sedation	Methotrimeprazine	Subcut 12.5-50mg q4h (max 300mg/d)
	Midazolam	0.5-4mg/h subcut or IV infusion, can increase if tolerant- no maximum dose established
	Phenobarbital	Start with 60-120mg SC or IV x1 dose, then give 600-1600mg daily in divided doses (BID)
	Lorazepam*	0.5-4mg/h IV infusion
	Loxapine*	10-40mg SC q4h (max 200mg/d)
	Chlorpromazine*	12.5-50mg PR q4h (needs to be compounded)
	Dexmedetomidine	For ICU or ED use
	Propofol	For ICU use. Start at 1mg/kg/h IV infusion, can titrate from 0.5-4mg/kg/h as tolerated
	Scopolamine*	0.4mg q4h SC, can increase to 0.8mg q4h if needed
Anxiety	Clonazepam	0.5-2mg PO q8h PRN
	Lorazepam	0.5-2 mg PO/SL q2-4hrs PRN
Airway secretions	Scopolamine	0.4-0.6mg Subcut q4h PRN
	Glycopyrrolate	0.4mg Subcut q4h PRN
	Atropine 1% drops	3-6 drops SL/buccal q4h PRN
	Hyoscine butylbromide (Buscopan™)*	10-20mg SC q6h PRN

Pulmonary edema	Furosemide	10-40mg IV or Subcut
Cough	Mild to moderate	
	Dextromethorphan	10mg-20mg PO q 4-6 hrs PRN
	Hydrocodone	5mg PO q 4-6hrs PRN
	Normethadone	(15 drops po QHS or BID) GENERALLY NOT AVAILABLE
	Severe	
	Morphine	2.5 - 5 mg PO q4hrs (SC dose is ½ of oral dose). If already on opioid, titrate dose.
	Hydromorphone	0.5 - 1 mg PO Q4H (SC dose is ½ of oral dose) If already on opioid, titrate dose
Pain	Morphine (a very good first-line opioid)	See clinical guidelines
	Hydromorphone	See clinical guidelines
	Fentanyl subcut or IV (patches likely not useful)	Discuss with palliative care team
	Methadone (but only PO available)	Discuss with palliative care team. Also good buccal absorption of liquid form.
Nausea vomiting	Metoclopramide	5mg -10mg subcut q4hrs PRN (PO if not severe)
	Ondansetron	4mg - 8mg subcut/IV TID PRN (PO if not severe)
	Haloperidol	0.5mg - 1mg PO or subcut q4hrs* PRN (PO if not severe)*
	Methotrimeprazine	2.5 -5mg PO or subcut q8 hrs PRN
	Dimenhydrinate	25-50mg PO/SC/IV q4h
	Chlorpromazine	12.5-25mg PO q4h PRN
	Olanzapine*, quetiapine*, loxapine*	Small doses
Cortico-steroids	Dexamethasone	1-16mg PO/IV/SC daily, can divide q6h
	Solumedrol (Methylprednisolone)	5-80 mg IV daily, can divide q12h
	Prednisone	6-100mg PO daily, can divide q12h