Continuous Palliative Sedation Therapy (CPST) Guidelines

(A protocol is attached as Appendix for providing CPST in the COVID-19 pandemic)

Last Revised: 29 March 2020
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Largely Adopted, with minor adaptations, from the Waterloo Wellington Palliative Sedation Protocol developed by Waterloo Wellington Interdisciplinary HPC Education Committee PST Task Force

Adaptations made by a Working Group Convened by the Division of Palliative Care, Department of Family Medicine, McMaster University to address an urgent need for guidelines on palliative sedation therapy in the Hamilton Region for settings of care that do not currently have guidelines in place.

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Purpose

This protocol is meant as an aid to clinical practice to clarify the process for CPST for clinicians involved in its implementation. The aim is to ensure effective, safe, timely and appropriate use of CPST if needed specifically during a pandemic.

A working group of the Division of Palliative Care, Department of Family Medicine, McMaster University, and colleagues from other departments and organizations reviewed the Waterloo Wellington Palliative Care Guidelines and used the body of their work primarily and made adaptions. The group represents hospital and community settings.

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Defining Continuous Palliative Sedation Therapy

Continuous Palliative Sedation Therapy (CPST) is a specialized medical intervention leading to the intentional induction and continuous maintenance of a reduced level of consciousness to relieve **refractory symptom(s)** that have not responded to other treatments during the last hours to days of life for patients whose goal of care is comfort.

CPST is a relatively uncommon procedure. Rates of CPST vary in the literature because of factors such as varying definitions and settings of care. In community settings, including home and hospice care, rates of less than 5% are often reported. Rates may be higher in palliative care units where they care for patients with very complex symptoms.

- **CPST is not** a therapeutic option in response to a patient's request to avoid potential future symptoms associated with the dying process[1], nor is CPST appropriate to enact based upon family perception of **refractory symptoms**[2] when in fact it is the family that is suffering.
- **CPST does not include** unintended sedation as a side-effect of treatment or the temporary use of sedation where the causes of the symptom are reversible and attempts to treat the cause are being made, such as sedation secondary to the management of delirium with sedating medications[3].
- **CPST is not a form of, or substitute for, Medical Assistance in Death (MAID)**[4]. MAID is the legal medical administration of lethal medications available to persons who meet specific eligibility criteria. The intent of MAID is to cause death to relieve suffering. The intent of CPST is to relieve **refractory symptom(s)** and not hasten death. In fact, patients who receive CPST have been shown to survive longer with fewer symptoms than those who did not receive CPST[5].

Proportional Sedation

Although CPST may be associated with a deep level of sedation, some patients may find relief of their intractable symptom(s) at a light or moderate level of sedation. The aim is to use the lowest dose of medication that achieves this goal. In some patients, symptom(s) relief may be achieved at a light level of sedation with small doses of medication. In others, comfort can only be achieved at a deeper level of sedation with higher doses of medication. Titration of the dose to achieve the goal is therefore essential.

[1] Collège des médecins du Québec, 2016; McCammon, 2015.
[2] Cherny, 2014; Fraser Health, 2011.
[3] Collège des médecins du Québec, 2016; Fraser Health, 2011.
[4] Foley, 2015; van Diejck, 2015.
[5] Beller, 2015.

Indications for Use of CPST

The presence of a refractory symptom(s) is a necessary indication for the use of CPST. **A symptom is considered refractory if** it cannot be adequately controlled without the intentional use of sedation (i.e. there is not appropriate treatment that would be effective within an acceptable time frame or with an acceptable risk benefit ratio to the patient).

It is important not to label difficult symptoms as refractory because of a lack of skill or knowledge on the part of the health care provider(s), or because of an unwillingness to request a consultation. A patient being considered for CPST should be reviewed by a specialist-level palliative care service when possible. Consultation or referral is necessary to ensure that all possible options have been explored.

Common indications for CPST include refractory dyspnea, delirium, seizures, and pain. *[During a pandemic physical symptoms are the most common and appropriate reason to use CPST.]*

In general, psychological, social, spiritual and existential distress are each considered more controversial indications for the use of CPST. Due to significant variance in presentation, complexity and definition of psychological, social and spiritual symptoms, team members with expertise in these domains, including palliative care specialists, spiritual care providers, ethicists and mental health professionals should also assess and manage patients experiencing distress in these domains.

Ethical tension and concerns may arise for a variety of reasons at any point surrounding the use of CPST. Ethical decision-making frameworks can be utilized by the team to guide their consideration and planning for PST[6]

Criteria for Continuous Palliative Sedation Therapy

Each of the following criteria needs to be met prior to initiating CPST:

- Informed consent for No Cardio-Pulmonary Resuscitation (No CPR) or Allow Natural Death (AND) comfort focused care has been obtained
- The patient's life expectancy is hours to about 2 weeks
- The patient is experiencing one or more refractory symptom(s) for which optimised usual treatments have failed and alternative effective treatment options are either not available or would not provide symptom relief, without unacceptable morbidity or within an acceptable time frame
- Informed consent for CPST has been obtained from the patient or substitute decision maker(s) if the patient lacks capacity to made decisions on their own.
- Input has been obtained from a palliative care clinician or team.

[6] Latimer, 1991.

Process

The way to promote safe and ethical implementation of CPST is through comprehensive interprofessional assessment and collaborative decision-making. The essential steps in the decision making, planning and delivery process, for CPST, includes a thorough patient assessment, a review of the goals of care, establishment of informed consent, and development of the CPST care plan. Detailed documentation to support all steps is essential. These include:

- Ensuring criteria are met and the rationale for considering and/or initiating CPST is documented in the patient chart. Obtaining input from a palliative care service if available.
- Reviewing medications to determine which medications are essential to continue (e.g. pain medication) and which can be discontinued (e.g. oral medications that are no longer needed).
- Determining and documenting the target level of sedation
- Ensuring monitoring is in place; method (e.g. RASS-Pal) and frequency.
- Discussing details regarding artificial hydration and/or nutrition at end of life as the ability to swallow is impaired as part of the natural dying process, by sedation or both. Document these discussions.

Once the criteria have been met, and a decision has been made to initiate CPST, the team should work collaboratively to develop a comprehensive care plan. Ongoing communication amongst team members is critical. It is important to gain an understanding of patients' wishes, e.g. spiritual or religious rites, saying goodbyes, etc. Document any ongoing questions and concerns from the family/ team and how they were resolved.

The comprehensive care plan should include:

- Confirmation of Most Responsible Provider supporting 24/7 access to the CPST plan
- Initiation date and time of CPST
- Name and dose(s) of medication(s) to be administered for CPST
- Confirmation of the target goals of sedation (light, moderate versus deep- depending on the clinical situation) using Richmond Agitation Sedation Scale (RASS-PAL) (See Appendix)
- Titration plan
- Equipment & supply orders
- Hydration/ nutrition plan
- Bladder/ bowel management (consider a Foley Catheter if needed for patient comfort)
- Skin care and routine positioning

OTHER CONSIDERATIONS

Medications

The medication regimen required to control symptoms prior to initiating CPST should be continued. Oral medications should be changed to a non-oral route (e.g. IV or Subcut), depending on the patient's level of consciousness and ability to take and absorb oral medications. Other medications should be reviewed and discontinued if not essential to the patient's comfort.

Hydration and Nutrition

Gradual cessation of fluid and food intake is normal and expected when patients are approaching end-of-life. The majority of patients will have minimal to no oral intake by the time Continuous Palliative Sedation Therapy (CPST) is considered as they are at the end-of-life. If the patient is still able to take oral fluids and/or food, and the patient and/or family express a desire to continue taking fluids and/or food by mouth, then light or intermittent sedation may be considered as an alternative to deep continuous palliative sedation if it is possible to achieve symptom control with this level of sedation. Generally, however, artificial nutrition and hydration are considered burdensome and offer minimal benefits in patients who are very end-of-life. They should therefore not be routinely offered to patients undergoing CPST.

Medications

The patient's care location (home, residential hospice, hospital, retirement home, long-term care home etc.), and the availability of medication administration routes, i.e. intravenous access, primarily guide the CPST medication(s) used. The goal is to identify the lowest possible dose of medication and lightest level of sedation that achieves comfort. In some cases, comfort may be achieved with light to moderate sedation while others will require deeper levels of sedation. The doses required to achieve these various levels of sedation may vary considerably between individuals.

When an existing medication is being administered continuously, via the parenteral route, it is preferable to administer the sedative drugs via a separate site. This avoids an undesirable increase in the existing medication when the doses of sedatives are increased and avoids potential drug incompatibilities when mixed together.

The most common medications used for CPST are midazolam, methotrimeprazine (Nozinan™), and phenobarbital). Choices depend on the clinical circumstances, the experience of the physician, drug availability, institutional policy and location.

Midazolam by a continuous subcutaneous or intravenous infusion is generally the medication of choice for CPST. Its short half-life and potency allows it to be more easily titrated than other benzodiazepines. It also possesses anxiolytic, anticonvulsant and muscle relaxant properties. In very rare cases, benzodiazepines such as midazolam may have a paradoxical excitatory effect. Continuous subcutaneous infusion (CSCI) permits responsive titration.

Methotrimeprazine, a sedating antipsychotic is preferred by some as the first-line agent of choice, turning to midazolam if it is not effective. It can be administered parenterally and has properties which may be helpful in cases where CPST is used for refractory terminal delirium. It should be used with caution in patients with seizures as it reduces the seizure threshold.

Barbiturates (e.g. phenobarbital) and drugs such as Propofol are also more rarely used for CPST, and are usually deemed 2nd and even 3rd line agents for CPST (used when optimal doses of methotrimeprazine and midazolam have failed).

Opioids are NOT TO BE USED for CPST. They are ineffective for this purpose and associated with a higher risk of neurotoxicity if titrated rapidly. However, it is essential to continue to provide opioid therapy for symptom management if a patient is already on them.

FIRST LINE

Option 1: Midazolam by continuous infusion.

- Administer a loading dose of midazolam: 2.5mg or 5mg subcut/IV stat.
- Then start a continuous infusion of midazolam at 0.5-1mg/hour subcut/IV by infusion pump.
    - Titrate up (or down) every 30 to 60 minutes if needed until the goal is achieved. The

usual dose required to achieve CPST is between 1-5mg/hr

- Initial titration may need to be rapid, depending on the clinical situation; i.e. the dose adjusted by 1mg/hour every 30 minutes until the patient is comfortable.

- If crises occur, may give a bolus dose of midazolam 2.5-5 mg subcut/IV q 30 minutes PRN.
- Over time (usually days) the dose may need to be titrated up (in increments of 0.5mg to 1mg/hr) as some patients may begin to develop tolerance.
- If doses of greater than 10mg/hr are required, reassess and consider adding methotrimeprazine or phenobarbital

Option 2: Methotrimeprazine (Nozinan™)

- Administer a stat dose of methotrimeprazine 12.5mg or 25mg subcut (start at 12.5mg or even consider 6.25 mg in very frail elderly individuals)
- Follow up with methotrimeprazine 12.5-25mg subcut q8hrs. Add a PRN order as well of 12.5-25mg subcut q1hr PRN (contact the MD if three or more PRNs are needed in a 24 hr period. Maximum of 100mg in 24 hours,
- The dose may be increased to a maximum of 25mg subcut q6 hrs to achieve the target level of sedation.
    - If higher doses are required, consider switching to midazolam (option 1 or 3).

Option 3: Midazolam PRN

Consider this option as a short term solution if midazolam is preferred but a pump is not available for continuous infusion.

- Administer midazolam: 2.5mg to 5mg subcut/IV stat and then q30-60 min PRN.
- May require a standing q4h dose based on amount needed for initial sedation
- This is usually a temporary solution (12 to 24 hours) as midazolam has a short half-life and a short duration of action.

Option 4: Lorazepam subcut or IV

- Start with STAT dose of 0.5-1mg subcut/IV (or 1mg to 4mg sublingual)
- Then titrate with 0.5mg to 2mg subcut/IV q 2 hrs PRN until desired level of sedation achieved.
- Then provide maintenance dose: Usual maintenance dose is 1mg to 4mg subcut/IV q 2-4 hrs (or 1mg to 8mg sublingual).

SECOND LINE

In the case of failure or suboptimal effects of a first-line option, **add** phenobarbital to midazolam or methotrimeprazine.

Phenobarbital

- Add phenobarbital to the midazolam or methotrimeprazine that the patient is already receiving. Administer phenobarbital 60mg, 90mg or 120mg subcut/IV stat (depending on the severity of the situation)
- Then start phenobarbital 60mg subcut BID.
    - May increase phenobarbital to 120mg subcut TID until goal reached. However, the half-life of phenobarbital is very long (about 50 to 120hrs). This makes it difficult to titrate rapidly and several days need to pass (to achieve steady state) before the full impact of a specific dosing regimen can be adequately assessed.

THIRD LINE

Propofol, a powerful anesthetic agent, may be considered if 1st and 2nd line options have failed. This should be considered only as a last resort and special close monitoring of patients is required, limiting its use to acute hospital settings.

Monitoring

Frequency of patient monitoring and parameters to be monitored are influenced by the setting, circumstances and availability of clinical staff. Some parameters should be monitored routinely, while others are on a case-by-case basis. Parameters being assessed may also change over time.

Parameters that should be assessed using a valid tool include:

1. Level of sedation
    - The level of sedation should be monitored regularly to ensure comfort and the appropriate level of sedation, and to help titrate the dose (up or down). The Richmond Agitation Sedation Scale-modified for the palliative care setting (RASS-PAL)[7] instrument is recommended (See Appendix). This tool is very similar, with similar levels, as the RASS, which is often used in critical care settings
2. Level of comfort or discomfort
    - Assess the degree to which the patient is able to report comfort or discomfort. If unable, the clinician must assess what they perceive the patient's level of comfort or discomfort to be. Nursing staff and family members must also be asked for their impressions.
3. Airway patency and air entry (if sedation is not being done for irreversible airway obstruction)

[7] Bush, Grassau, Yarmo, Zhang, Zinkie, Pereira, 2014.

- This is to avoid airway obstruction because of poor patient positioning or vomiting. Reposition the patient and pull the jaw forward if there appears to be airway obstruction.

4. Parameters that may be monitored on a case-by-case basis include but are not restricted to: respiratory rate, oxygen saturation and bladder fullness (in patients who are not catheterized)
    - It is important to note that changes in respiratory rates and patterns, as well as reductions in oxygen saturation are normal end-of-life changes and will occur whether or not the patient is receiving PST. To titrate PST according to these parameters would therefore be inappropriate when death is imminent.

Any parameters that are assessed should be documented in the patient chart.

Frequency of CPST monitoring (recommend using RASS-PALL)

<table>
<tr><th></th><th>ACUTE CARE SETTINGS</th><th colspan="2">HOME, RESIDENTIAL OR LONG-TERM CARE SETTINGS</th></tr>
<tr><th>Medications</th><th>Midazolam, Methotrimeprazine and/or Phenobarbital*</th><th>Midazolam</th><th>Methotrimeprazine and/or Phenobarbital*</th></tr>
<tr><td>Initiating PST</td><td>Monitor every 30 minutes until the goal of PST is achieved. During this time dose titrations may be required.</td><td>Initial titration will require nursing support.
Monitor every 30 minutes until the goal of PST is achieved. During this time dose titrations may be required.</td><td>Monitor every hour until the goal of PST is achieved.</td></tr>
<tr><td>Maintaining PST</td><td>Monitor q 4hrs.</td><td>Monitor q 8 -12 hrs.</td><td>Monitor q 8 -12 hrs.*</td></tr>
<tr><td rowspan="2">Any dose adjustments made or additional bolus/PRN doses given</td><td rowspan="2">Restart monitoring q30min as above until the target symptom is controlled and then q4hrs thereafter.</td><td rowspan="2">Restart monitoring q30min as above until the target symptom is controlled and then q8hrs thereafter.</td><td>Restart monitoring q l hr as above until the target symptom is controlled and then q8hrs thereafter.</td></tr>
<tr><td>* If these medications are used in conjunction with midazolam, then monitor as per midazolam monitoring guidelines</td></tr>
</table>

*Nursing support may be through 24/7 telephone access rather than direct monitoring.

MONITORING DURING A PANDEMIC

During a pandemic, shortage of health care workers may occur. Therefore, monitoring recommendations may need to be adjusted accordingly, with monitoring having to occur less often in some cases.

Family and Team Support

Supporting the Family

Continuous Palliative Sedation Therapy can be a welcomed method to assure patient comfort but may be profoundly distressing to some patient's family members and/or friends. A few principles are useful when considering support for the patient's family and friends:

- Provide an opportunity for the patient, if possible, or their loved ones, to express what they may want or would find comforting during the time they are sedated.
- Ascertain the level of involvement that the family wants in the process.
- Family and friends should be allowed and encouraged to be with the patient when possible and safe ie in a pandemic situation.
- Family and friends often need repeated reassurance that all symptom treatment methods have been exhausted, and that sedation is for comfort and unlikely to shorten the patient's life.
- Family and friends should be kept informed. i.e. patient's condition, comfort level, anticipated changes, signs of imminent death, etc

The care team must provide supportive care to family members. This includes listening to concerns or watching for signs of grief, physical/psychological burdens, feelings of guilt. In addition, they should be offered advice on ways to be of help to the patient (e.g. by being with, talking to, touching the patient, providing mouth care, and managing the atmosphere of the patient's care etc.).

Supporting the Team

Open communication between nurses and physicians regarding their roles and responsibilities related to the provision of CPST combined with increased team work will improve the experience of the team.

Sharing the burden of decision-making during the procedure with other health care professionals may diminish the perception of undue responsibility falling to one team member.

Continuity of team work, good coordination and open communication between the various care providers are essential elements.

Situations in which a patient has undergone CPST may be distressing to some team members.

All participating team members need to understand the goals of care and rationale for CPST. Whenever possible this should be addressed at team meetings or case conferences, both before and after the event, to discuss professional and emotional issues. Distress can be mitigated by fostering a culture of sensitivity to the emotional burdens involved in care, participating in the deliberative processes leading up to a treatment decision, sharing information, and engaging in interprofessional discussions that offer the group or individual opportunities to express their feelings[8]. A more organized debriefing session for involved team members may be considered in special circumstances such as an especially challenging situation.

Most importantly, such support can impact or offset moral distress experienced by health care providers, and serves as an opportunity for increased team cohesion, overall team functioning, and learning opportunities for what was done well or what could have been done differently[9].

[8] Cherny, 2014.
[9] Fraser Health, 2011.

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Appendix A. Richmond Agitation Sedation Scale – Palliative Version (RASS-PAL)

Additional file 1: Figure S1- Richmond Agitation-Sedation Scale - Palliative version (RASS-PAL)

Score	Term	Description	
+4	Combative	Overtly combative, violent, immediate danger to staff (e.g. throwing items); +/- attempting to get out of bed or chair	
+3	Very agitated	Pulls or removes lines (e.g. IV/SQ/Oxygen tubing) or catheter(s); aggressive, +/- attempting to get out of bed or chair	
+2	Agitated	Frequent non-purposeful movement, +/- attempting to get out of bed or chair	
+1	Restless	Occasional non-purposeful movement, but movements not aggressive or vigorous	
0	Alert and calm		
-1	Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to *voice* **(10 seconds or longer)**	Verbal Stimulation
-2	Light sedation	Briefly awakens with eye contact to *voice* **(less than 10 seconds)**	
-3	Moderate sedation	Any movement (eye or body) or eye opening to *voice* **(but no eye contact)**	
-4	Deep sedation	No response to voice , but any movement (eye or body) or eye opening to *stimulation by light touch*	Gentle Physical Stimulation
-5	Not rousable	No response to *voice or stimulation by light touch*	

Bush, S., Grassau, P., Yarmo, M., Zhang, T., Zinkie, S., Pereira, J. (2014). The Richmond Agitation-Sedation Scale modified for palliative care inpatients (RASS-PAL): a pilot study exploring validity and feasibility in clinical practice. *BMC Palliative Care*, 13:17, p 1-9.

Additional file 2: TableS2- Procedure for RASS-PAL Assessment

1. Observe patient for **20 seconds.**	
a. Patient is alert, restless, or agitated **for more than 10 seconds**	Score 0 to +4
NOTE: If patient is alert, restless, or agitated for less than 10 seconds and is otherwise drowsy, then score patient according to your assessment for the majority of the observation period	
2. If not alert, greet patient and call patient by name and *say* to open eyes and look at speaker.	
b. Patient awakens with sustained eye opening and eye contact **(10 seconds or longer).**	Score -1
c. Patient awakens with eye opening and eye contact, but not sustained **(less than 10 seconds).**	Score -2
d. Patient has any eye or body movement in response to voice but no eye contact.	Score -3
3. When no response to verbal stimulation, physically stimulate patient by light touch e.g. gently shake shoulder.	
e. Patient has any eye or body movement to gentle physical stimulation.	Score -4
f. Patient has no response to any stimulation.	Score -5

APPENDIX B: CONTINUOUS PALLIATIVE SEDATION THERAPY (CPST) PROTOCOL FOR COVID-19 PANDEMIC

This protocol is a supplement to the Hamilton Palliative Sedation Therapy Guidelines and has been specifically developed to address palliative sedation therapy for COVID-19 positive patients not ventilated with intractable dyspnea and symptoms. It reflects the reality of a potentially resource-challenged health system (e.g. medications, infusion pumps, staff). Please acquaint yourself with the main Guidelines as they provide important context.

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Definition

Continuous Palliative Sedation Therapy (PST) is the intentional induction and continuous maintenance of a reduced level of consciousness to relieve a patient's **refractory symptom(s)** during their last days of life. The aim is to use the lowest dose of medication and the lightest level of sedation that achieves patient comfort. In some patients, symptom(s) relief may be achieved at a light level of sedation with small doses of medication. In others, comfort can only be achieved at a deeper level of sedation with higher doses of medication. (proportionality) Titration of the dose may be required.

INDICATIONS

The presence of a refractory symptom(s) is a necessary indication for the use of CPST. **A symptom is considered refractory if** it cannot be adequately controlled without the intentional use of sedation (i.e. there is not appropriate treatment that would be effective within an acceptable time frame or with an acceptable risk benefit ratio to the patient).

Common indications for CPST include refractory dyspnea, delirium, seizures, and pain. Psychological, social, spiritual and existential distress are considered more controversial indications for the use of CPST (please see Guidelines document for more details).

CRITERIA

Each of the following criteria needs to be met prior to initiating CPST:

- The patient's life expectancy is days to about 2 weeks
- The patient is experiencing one or more refractory symptom(s) for which optimised usual treatments have failed and alternative effective treatment options are either not available within an acceptable time frame, or would not provide symptom relief without unacceptable morbidity/side effects
- Informed consent for no Cardio-Pulmonary Resuscitation (CPR) (or Allow Natural Death AND) has been obtained
- Informed consent for CPST has been obtained from the patient or substitute decision maker(s) if the patient lacks capacity to made decisions on their own.
- Input has been obtained from a palliative care clinician/team when possible.

PROCESS

CPST requires comprehensive interprofessional assessment and collaborative decision-making. The essential steps in the decision making, planning and delivery process, for CPST, includes a thorough patient assessment, a review of the goals of care, establishment of informed consent, and development of the CPST care plan. Detailed documentation to support all steps is essential.

- Ensure criteria are met and the rationale for considering and/or initiating CPST is documented.
- Review medications to determine which medications are essential to continue (e.g. pain medications- requires subcut or IV administration) and which can be discontinued (non-essential to comfort).
- Determine and document the target level of sedation
- Ensure monitoring is in place; parameters (e.g. comfort level), method (e.g. RASS, RASS-Pal) and frequency (usually q 30 min until patient comfortable, then q 1h for the next 4 to 6 hours, then QID). Document.
- Communicate with patient (if capacity retained), family and substitute decision makers.
- Document care plan
- Document rationale for any increases in doses.

MEDICATIONS **(The options recommended below are specific for the COVID-19 pandemic)**

The patient's care location (e.g. home, hospice, hospital, long-term care home), and the availability of medication routes and equipment (e.g. infusion pump), guide the selection of medication, dose and route. Several options are provided to account for potential drug and/or nursing/physician shortages that may occur during a pandemic. Start at lower doses suggested and titrate up if needed. The options are provided in order of preferred options, with option 1 being the preferred first line approach (drug availability, no need for infusion pumps which may be in short supply and less dosing and monitoring frequencies) and option 4 being added to options 1, 2 or 3 if these are ineffective.

1st line

Option 1: Methotrimeprazine (Nozinan™)*

- Administer a stat dose of methotrimeprazine 25mg subcut STAT (12.5mg in frail, elderly patients).
- Then follow up with methotrimeprazine 12.5-25mg subcut q4hrs or q6hrs. Add a PRN order of midazolam 2.5mg or 5mg subcut or IV q30 min PRN (contact the MD if 4 or more PRNs are needed in a 24 hr period to re-evaluate and adjust).
- If above ineffective, consider Step 2.

Option 2: Lorazepam subcut or IV* (not usual option but in time of midazolam shortage, may be used)

- Start with STAT dose of 1-2mg subcut/IV (or 1mg to 4mg sublingual)
- Then titrate with 0.5mg to 2mg subcut/IV q 2 hrs PRN until desired level of sedation achieved.
- Then provide maintenance dose: Usual maintenance dose is 1mg to 4mg subcut/IV q 2-4 hrs (or 1mg to 8mg sublingual).

Option 3: Midazolam subcut intermittent injections*

- Administer midazolam 2.5mg or 5mg subcut or IV STAT.
- Then continue with midazolam 2.5mg or 5mg subcut or IV q4hrs. Add a PRN order of midazolam 1 – 5mg subcut or IV q30 min to q 60 min PRN.
- If ineffective, consider Step 3 (preferred) or Step 4 (if Step 3 not available).

Option 4: Midazolam by continuous infusion.**

- Administer a loading dose of midazolam: 2.5mg or 5mg subcut or IV stat.
- Then start a continuous infusion of midazolam at 0.5mg to 1mg/hour subcut or IV by infusion pump.
  - Titrate up (or down) every 30 to 60 minutes if needed until the required level of sedation is achieved. The usual dose required is between 1-5mg/hr. Higher doses may be required in select cases.
  - If titration required to achieve desired goal (comfort), increase the dose of midazolam in increments of 0.5mg or 1mg/hr. If crises occur, may give a bolus doses of midazolam 2.5mg or 5mg subcut or IV q 30 minutes PRN.
- If doses of greater than 8-10 mg/hr are required, reassess and consider adding methotrimeprazine or phenobarbital

2nd Line: Add to options 1, 2 or 3 if these are ineffective: Phenobarbital

- Add phenobarbital to methotrimeprazine or midazolam patient is already receiving. Administer 60mg, 90mg or 120mg subcut or IV stat (depending on the severity of the situation)
- Then start phenobarbital 60mg subcut BID. Long-half life though does not allow for rapid titration (only increase dose every day or 2, not sooner)

***These options may be the preferred options in the home setting, but depends on drug and nursing availability.**
****Midazolam may in in short supply, requires frequent administration if PRN only, and requires infusion pump availability if continuous infusion. Midazolam infusions take considerable pharmacy time to prepare (which may not be possible in a pandemic)**

In case medications for options 1 to 4 not available, consider directly to 2nd line, or one of the following (not usually used in normal non-pandemic circumstances):

- **Chlorpromazine PR**:
  - Injectable no longer available in Canada. 100mg tabs usually available. Would need to crush the tablets, place them in gelatin capsules (as commercial suppository not available) and administer rectally (PR).
  - Stat dose of 12.5 – 25mg PR
  - Then follow with maintenance dose of 12.5 – 50mg PR q4 – 6 hrs (starting at lower dose and titrating up to effect)
- Haloperidol:
  - Not necessarily sedating, hence not usually used. Risk of significant adverse effects. Higher doses increase risk for EPS
  - 1 – 2mg subcut q4 – 6 hrs (but higher dose may be required – ideally not to exceed 10mg/24 hrs)

DO NOT USE OPIOIDS FOR PALLIATIVE SEDATION: INEFFECTIVE AND HIGHER RISK OF NEUROTOXICITY IF TITRATED RAPIDLY

Richmond Agitation Sedation Scale – Palliative Version (RASS-PAL) for assessing and monitoring level of sedation (Bush S, et al. BMC Palliative Care 2014)

Score	Term	Description	
+4	Combative	Overtly combative, violent, immediate danger to staff (e.g. throwing items); +/- attempting to get out of bed or chair	
+3	Very agitated	Pulls or removes lines (e.g. IV/SQ/Oxygen tubing) or catheter(s); aggressive, +/- attempting to get out of bed or chair	
+2	Agitated	Frequent non-purposeful movement, +/- attempting to get out of bed or chair	
+1	Restless	Occasional non-purposeful movement, but movements not aggressive or vigorous	
0	Alert and calm		
-1	Drowsy	Not fully alert, but has sustained awakening (eye-opening/eye contact) to *voice* **(10 seconds or longer)**	Verbal Stimulation
-2	Light sedation	Briefly awakens with eye contact to *voice* **(less than 10 seconds)**	
-3	Moderate sedation	Any movement (eye or body) or eye opening to *voice* **(but no eye contact)**	
-4	Deep sedation	No response to voice , but any movement (eye or body) or eye opening to *stimulation by light touch*	Gentle Physical Stimulation
-5	Not rousable	No response to *voice or stimulation by light touch*	

Monitoring

Frequency of patient monitoring and parameters to be monitored are influenced by the setting, circumstances and availability of clinical staff. Some parameters should be monitored routinely, while others are on a case-by-case basis. Parameters being assessed may also change over time.
Parameters that should be assessed using a valid tool include:

- Level of sedation
- Level of comfort or discomfort

5. Airway patency and air entry (if sedation is not being done for irreversible airway obstruction)
6. Parameters that may be monitored on a case-by-case basis include but are not restricted to: respiratory rate, oxygen saturation and bladder fullness (in patients who are not catheterized)

Document

Frequency of CPST monitoring (recommend using RASS-PALL)

	ACUTE CARE SETTINGS	**HOME, RESIDENTIAL OR LONG-TERM CARE SETTINGS**	
Medications	**Midazolam, Methotrimeprazine and/or Phenobarbital***	**Midazolam**	**Methotrimeprazine and/or Phenobarbital***
Initiating PST	Monitor every 30 minutes until the goal of PST is achieved. During this time dose titrations may be required.	Initial titration will require nursing support. Monitor every 30 minutes until the goal of PST is achieved. During this time dose titrations may be required.	Monitor every hour until the goal of PST is achieved.
Maintaining PST	Monitor q 4hrs.	Monitor q 8 -12 hrs.	Monitor q 8 -12 hrs.*
Any dose adjustments made or additional bolus/PRN doses given	Restart monitoring q30min as above until the target symptom is controlled and then q4hrs thereafter.	Restart monitoring q30min as above until the target symptom is controlled and then q8hrs thereafter.	Restart monitoring q l hr as above until the target symptom is controlled and then q8hrs thereafter. * If these medications are used in conjunction with midazolam, then monitor as per midazolam monitoring guidelines

*Nursing support may be through 24/7 telephone access rather than direct monitoring.

MONITORING DURING A PANDEMIC

During a pandemic, shortage of health care workers may occur. Therefore, monitoring recommendations may need to be adjusted accordingly, with monitoring having to occur less often in some cases.

Suggested language for physicians providing support to a patient or family member who is denied intensive care due to resource scarcity

(Courtesy of Champlain Regional Palliative Care Program, Ontario)

Normally, when somebody develops critical illness, the medical team would offer them intensive care (a combination of medications and machines to support their vital organs), provided that the medical team felt that they had a reasonable chance of survival. However, because of the COVID outbreak, we are currently unable to offer intensive care to everyone who is critically ill. As a result, our hospital is working under triage guidelines, which means that we are only offering intensive care to those who are most likely to be able to survive and recover from their critical illness. You probably have heard about this in the news – all hospitals in the region are working under these guidelines.

I regret to inform you that we are unable to offer you intensive care treatments at this time, as a result of the triage guidelines. Because of your medical condition, the likelihood that you would survive even with intensive care is considered to be too low for us to offer intensive care. The team has made this decision based on the following information:_____.

I am deeply sorry about this situation. This is not the way we ordinarily make these decisions, and I can only imagine how you must feel right now. I want you to know that even though we cannot offer intensive care, we will do everything else that could conceivably give you a chance of recovering, including: _____.

And I promise you that, no matter what, we will also use medication to treat any discomfort, such as pain or shortness of breath. We know that when we treat discomfort appropriately, this is not harmful and may actually help improve your condition.