

Clinical Resources: COVID-19

KEY MESSAGES

- Caring for the resident with COVID-19 is most appropriate in a familiar setting. Our Long-term Care staff know the care needs, wishes and priorities of the residents and their families well.
- The COVID-19 [Patient/Resident Inter-Facility Transfers](#) memo provides guidelines and an algorithm to aid clinicians to manage care of residents with COVID-19. It acknowledges that while there may be exceptions, on site supportive measures will ensure we are providing excellent supportive care as well as minimizing transfers to Acute Care. See **Appendix A** for the algorithm.
- Advance care planning must be addressed to ensure resident-centered decision making.

WHAT CAN WE DO

When a resident is steadily deteriorating with COVID-19 they may be approaching the end of life. Our first responsibility is to ensure their wishes and goals of care have been determined and communicated.

With deterioration, we know the main symptoms causing distress with COVID-19 infection are pain, fever, dehydration, cough, hypoxia and dyspnea.

There are resources to assist you to:

- Relieve Pain
- Relieve Cough
- Provide respiratory support
- Relief of Dyspnea, Respiratory Congestion
- Provide fluid replacement/supplementation

RESOURCES

The Palliative Care and Palliative Approach in Long-term Care program contain the foundational resources necessary to provide a supportive, resident-centered care.

IH Staff: [Palliative Care](#) and [Palliative Approach in Long-term Care](#); Contracted Partners: [Palliative Care](#)

Ensure wishes and goals of care are known and communicated with the team:

The Most Responsible Practitioner (MRP) may need to have a virtual **serious illness conversation** to determine the comfort/treatment pathway with the resident/substitute decision maker. The [BC Center for Palliative Care](#) has provided a link to Ariadne Labs' [Serious Illness Care Program COVID-19 Response Toolkit](#), including a Serious Illness Conversation Guide specific to COVID-19. From there, the **MOST** may need to be updated.

The comfort/treatment plan will provide onsite supportive measures. A resident will be sent to Acute Care only as determined by the Facility Medical Director and the Medical Health Officer.

Relief of Pain:

The BC Centre for Palliative Care provides the online, interactive [Symptom Management Guidelines](#), with a tab specifically for Pain.

In addition to standard tools for use with adults, assessment of Pain in persons with dementia or other cognitive impairment may be determined with the [PAINAD](#) tool; also available on the [External Partner](#) site.

Relief of Cough:

COVID-19 typically presents initially with a dry cough. The cough may cause pain as well as disrupt sleep, eating and drinking.

The BC Centre for Palliative Care [Symptom Management Guidelines](#) has a tab for Cough.

Respiratory Support:

With pulse oximetry, we would like to see their SpO₂ breathing room air, at least 92% or in the case of persons with COPD 88%. If that cannot be achieved:

- Supplemental O₂ by nasal prongs can be administered up to 5 litres/minute.
- Face masks require a flow rate of 5-10 litres/minute although most Long-term Care homes cannot provide past 5-6 litres/minute.
- While it is within the scope of practice for RNs and RPNs to diagnosis the condition of hypoxia and administer oxygen therapy without first obtaining an order, LPNs require additional education and competency validation.
 - IH has developed the [Oxygen Therapy – Initiating Without an Order](#) guideline to meet this requirement. It also provides an excellent review resource for RNs and RPNs. For external partners, follow your organization's directives; refer to BCCNP [LPN Scope of Practice](#), and request a copy of the IH guideline (contact your Regional Knowledge Coordinator-LTC).

Dyspnea, Respiratory Congestion:

The [Symptom Management Guidelines](#) has tabs for Dyspnea and Respiratory Congestion.

An additional resource from Fraser Health and the BC Center for Palliative Care [Symptom Management for Adult Patients with COVID-19 Receiving End Of Life Supportive Care Outside of ICU](#), provides some medical/pharmacological guidance for the management of dyspnea, including opioids, some medications for anxiety and respiratory secretions.

Specific to the current crisis, McMaster University, Faculty of Medicine have published a protocol [Management of Dyspnea for Patients with COVID-19](#).

Assistance with Anxiety:

The [Symptom Management Guidelines](#) has a tab for Anxiety.

The Canadian Mental Health Association, BC Division has an extensive general resource on [Anxiety](#).

The Institute for Disaster Mental Health, State University of New York, developed a resource [COVID-19: Managing Stress in this Anxious Time](#) and explores the anxiety specific to this disaster experience.

Initiating Palliative Care Orders:

The MRP may consider initiating palliative care orders. The **Preprinted Orders** for [Adult Palliative Symptom Management](#), IH form # 829571 (Contracted Partners – see attached document) provides medical directives for Diet, Parenteral Therapy and Medications to address pain, fever, dyspnea, nausea, psychosis, bronchodilation, etc. This preprinted order set will be appropriate for most of the needs of the person with end stage COVID-19 as well.

Do not hesitate to consult the Palliative Clinical Nurse Specialists for guidance and support:

Elisabeth Antifeau	Elisabeth.antifeau@interiorhealth.ca	(250) 354-2883
Vicki Kennedy	Vicki.Kennedy@interiorhealth.ca	(250) 212-7807

Fluid Replacement/Supplementation:

In some cases, replacement of fluids lost with fever or diarrhea, or dehydration due to fatigue or nausea, will be ordered. As well, persons with opioid toxicity may require extra hydration to ameliorate the condition. If the resident cannot tolerate fluids orally, parenteral hydration is an option. However, venous access is a challenge with the general Long-term Care population. Additionally, if our number of persons requiring parenteral hydration exceeds our supply of infusion devices, the venous route would become a less likely option.

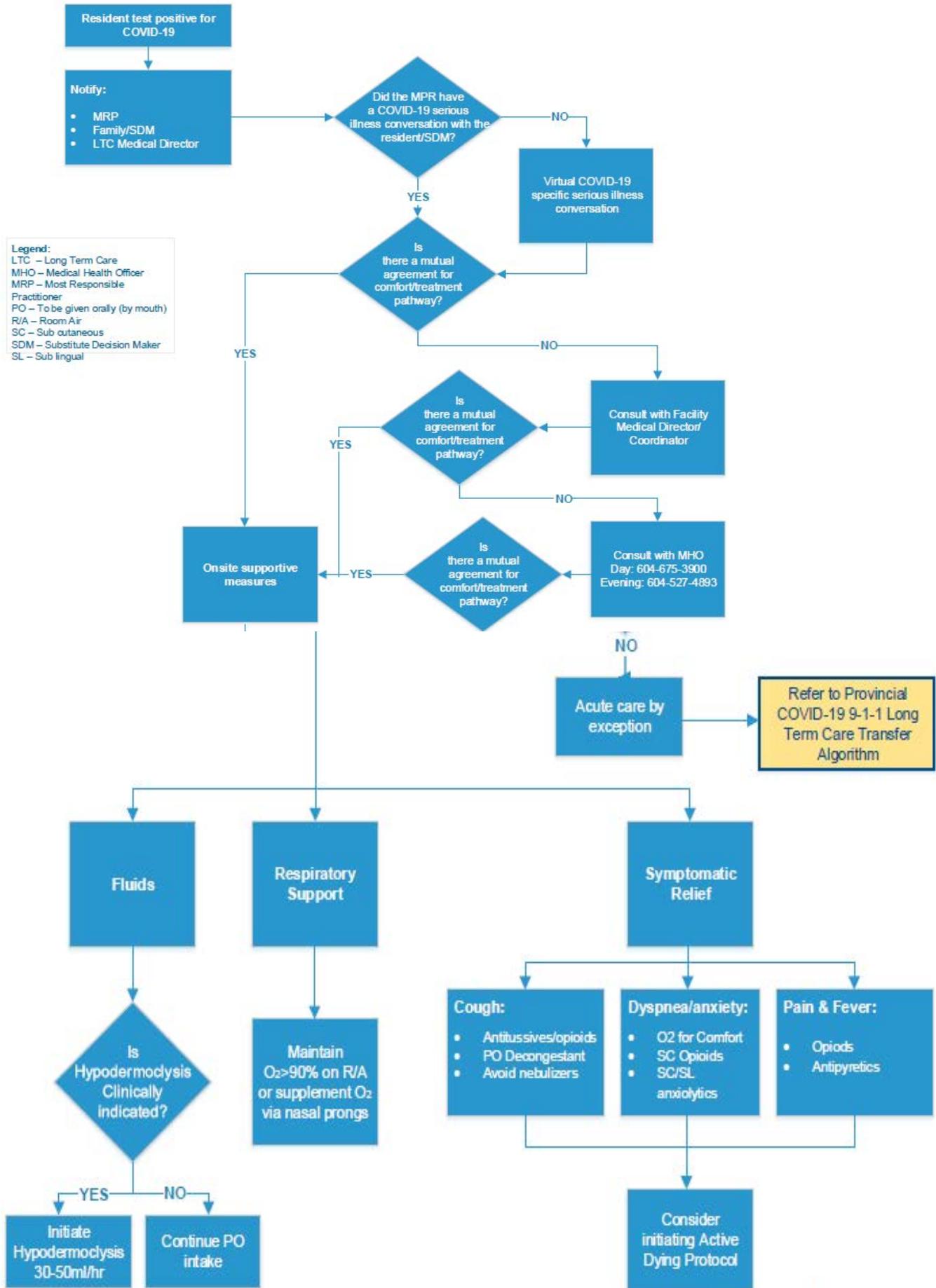
For these and other reasons, the preferred method for delivering additional hydration is by Hypodermoclysis. See **Appendix B**: this practice support will lead nurses through the knowledge and skills necessary to provide subcutaneous hydration support.

Clinical Resources: COVID-19

Appendix A:

Clinical Decision Pathway COVID-19 in LTC Residents

This algorithm assumes Public Health Authorities are involved and are coordinating outbreak in facility, and is meant to aid clinicians to manage care of residents with COVID-19 LTC



Clinical Resources: COVID-19

Appendix B:

Hypodermoclysis: Continuous Subcutaneous Infusion for Hydration

Practice Support for all Long-term Care and Contracted Partner staff

Hypodermoclysis is specifically parenteral **hydration therapy** based on the ability of the innermost layer of skin (subcutaneous tissue) to absorb isotonic fluids. It is less invasive than a peripheral vascular device ("IV") and consequently does not run the risk of phlebitis, thrombosis, extravasation or emboli, and is considerably less painful.

It is a preferred method of providing fluids parenterally in dehydrated frail elders due to the challenge of initiating venous access and with vein fragility venous access, sites seldom last ("go interstitial"). As subcutaneous tissue absorbs relatively slowly, fluid overload is also less of a risk with hypodermoclysis.

As hypodermoclysis only supplies very low volumes of fluids only (not medications), administration by gravity manually is possible: an infusion pump is not required.

A review of how to calculate flow rate in drops per minute will be covered later in this document.

All nurses, RNs, RPNs and LPNs may initiate a subcutaneous line without a competency validation though additional education is recommended for LPNs; this document will provide that support.

Clinical Indication:

Assess suitability for hypodermoclysis:

- Is fluid replacement due to diminished thirst sensation or dehydration due to illness?
- Are they not able to consume adequate amounts orally?
- Is the fluid to be infused isotonic (normal saline, D5NS, Ringer's lactate)

For fluid replacement, even frail elders are able to absorb at a single site 30-50ml/hour (for a total of 720-1200 mls/24 hours). If additional fluid is required, a second site can be initiated.

Note: Addition of the enzyme hyaluronidase to the infusion solution to improve absorption has not been shown consistently in the literature to justify its use.

Hypodermoclysis is NOT appropriate if:

- Aggressive fluid replacement is required (greater than 3 litres/24 hours)
- Infusion fluids are hypertonic or hypotonic. Note: in D5W, the dextrose is absorbed quickly and thus the solution becomes hypotonic within subcutaneous tissue
- Infusion fluids will contain medication. If medication such as opioids are added to the solution run continuously, an infusion pump is required.

**See 1. Subcutaneous Medication Administration: Continuous or Intermittent in the Additional Skills Resources section*

Procedure:

Insertion of Saf-T-Intima™ SQ Infusion Set

1. Choose a site that has adequate fatty tissue, not likely to impede range of motion or be dislodged with care activities, and easily accessed for assessment. Most frequent sites chosen are the abdomen (at least 5cm from the umbilicus), upper chest/sub clavicular, or upper arm. Avoid any site where there may be pressure exerted
2. Attach tubing administration set to infusion solution bag, hang and prime tubing
3. Open Saf-T-Intima Infusion Set and remove white slide clamp as set will not be used for medication administration
4. Rotate white safety shield to loosen needle. Ensure needle is exposed and bevel side is facing up
5. Cleanse insertion site with chlorhexidine or alcohol swab. Allow to air dry
6. Grasp textured sides of wings and pinch together, bevel side facing up
7. Pinch skin gently and insert full length of the needle at a 30-45° angle
8. Lay wings flat on the skin surface and hold firmly but gently in place while pulling the white safety shield in a straight, continuous motion until the safety shield separates
9. Discard the needle in sharps container
10. Remove cap and attach primed tubing set to the port
11. Secure wings and catheter with sterile dressing

See video 2. **How to Insert Saf-T-Intima™ SQ Infusion Set in Additional Skills Resources section*

Infusion and Care:

- Recommended infusion rate for frail elders is 30-50 ml/hour. If a greater volume is required, a second site may be used.
- Inspect site periodically for leakage, swelling, pain, irritation or evidence of inadequate fluid absorption
- Tubing and site changes are recommended every 4 days. For persons nearing end of life, if site is dry and not showing signs of irritation or inflammation, a site and tubing change may be extended after consultation with the MRP.

For 3. **Manual Calculation of Drops per Minute, see Additional Skill Resources section*

Discontinuing/Removal:

- Turn off infusion
- Remove tape
- Applying very gentle pressure with a gauze pad over insertion site, remove catheter
- Tape pad over site. Reassess after 15 minutes

Documentation:

IH form # 821434 [Parenteral Therapy Assessment and Care](#), provides a record of the Type of Access Device, Location of Insertion Site, Assessment of site, Interventions, Solution used, Rate and Volume infused, as well as Additional Comments and reference to Health Record if more detail recorded there.

Additional Skill Resources:

1. Subcutaneous Medication Administration: Continuous or Intermittent.

The IH Parenteral Practices Manual provides guidance for:

- [Subcutaneous Continuous Infusion](#) procedure
- Link to Clinical Skills online [Medication Administration: Continuous and Intermittent Subcutaneous Infusion](#)
- A [Saf-T-Intima™ SC Indwelling Device: Instructions for Use](#) poster covering use for both continuous and intermittent medication administration

2. Video: [How to Insert Saf-T-Intima™ SQ Infusion Set](#) with video animation supplied by manufacturer, Benton Dickinson (BD).

Note in the video that they refer to a side port; IH supplies the single lumen system for continuous subcutaneous infusions, and not the y-connector device (those are reserved for medication administration added on to an infusion)

3. Manual Calculation of Drops per Minute

- Check the tubing set package for the drip rate (the number of drops in a ml). For example, the Baxter Continu-Flo sets are generally 10 drops/ml
 - Determine the flow rate: how many ml/hour are to be infused
- The formula to calculate drops per minute is:

$$(\text{Drip rate} \times \text{intended flow rate in mls}) \div 60$$

For example:

If the drip rate is 10 and the intended flow rate is 50 mls, then

$$(10 \times 50) \div 60 = 8.33 \text{ drops per minute}$$

If the drip rate is 10 and the intended flow rate is 30 mls, then

$$(10 \times 30) \div 60 = 5 \text{ drops per minute}$$



References:

- Benton Dickinson [How to Insert Saf-T-Intima™ SQ Infusion Set](#), BD Canada video. Accessed April 2020
- IH Parenteral Practices Manual, July 2018. [Appendix: Product Information and Directions for Use](#)
- IH Parenteral Practices Manual, July 2018. [SC continuous infusion procedure](#)
- ISMP Acute Care Medication Safety Alert, April 2020. [Planning for anticipated shortage of smart infusion pumps and dedicated administration sets](#), Volume 25 Issue 7
- Nursing 2014: [Hypodermoclysis with older adults](#), Smith, Linda S. December 2014 - Volume 44 - Issue 12 - p 66. Accessed online April 2020
- Government of Canada, endorsed by: Canadian Critical Care Society and Association of Medical Microbiology and Infectious Disease (AMMI) Canada [Clinical management of patients with moderate to severe COVID-19 - Interim guidance](#)