



Interim guidance: Care of residents in long term care homes during the COVID-19 pandemic

Last updated: July 17, 2020.

Table of contents

- [Preamble](#)
- [1.0 Background](#)
- [2.0 Long term care home staff, resident, and family/caregiver preparedness](#)
 - [2.1 Infection prevention and control](#)
 - [2.2 Resident information: baseline health and medications](#)
 - [2.3 Goals of care and advance care planning](#)
 - [2.4 Roles, responsibilities, and human resources planning](#)
 - [2.5 Establishing networks and acquiring and maintaining supplies](#)
 - [2.6 Communication](#)
- [3.0 Assessment](#)
 - [3.1 Detecting signs and symptoms](#)
 - [3.2 Investigations](#)
 - [3.3 Severity assessment](#)
- [4.0 Active medical management](#)
 - [4.1 Supplemental oxygen](#)
 - [4.2 Hydration and nutrition](#)
 - [4.3 Specific treatment](#)
 - [4.4 Other management](#)
 - [4.5 Medication review](#)
 - [4.6 Potential co/super-infection](#)
 - [4.7 Thromboembolism](#)
 - [4.8 Influenza](#)
- [5.0 Palliative care](#)
 - [5.1 Palliative symptom management at end-of-life](#)
 - [5.2 Mental and emotional needs at end-of-life](#)
 - [5.3 Spiritual care](#)
- [6.0 Mental health disorders, delirium and responsive behaviours](#)
 - [6.1 Delirium](#)
 - [6.2 Responsive behaviours](#)
- [7.0 Psychosocial aspects of care](#)
 - [7.1 Resident and family/caregiver support](#)
 - [7.2 LTCH staff support](#)
- [8.0 Acknowledgments](#)
- [9.0 Appendix](#)

- [Example emergency medication* list for long term care homes during the COVID-19 pandemic](#)
- [Resources list](#)
- [10.0 References](#)

Preamble

This document provides care guidance specific to the COVID-19 pandemic in Canadian homes/facilities where older adults require continuous supervised care, including professional health services, personal care and other services such as meals, laundry and housekeeping. These facilities may have different names, including but not limited to care homes/facilities, continuing care homes/facilities, personal care homes/facilities, nursing homes/facilities, centres d'hébergement et de soins de longue durée (CHSLDs), or other long term care homes/facilities, all hereafter referred to as LTCHs. Some of the content may be adapted to other settings as appropriate (i.e. retirement homes).

This guidance provides employed and contracted LTCH staff including physicians (most often family physicians, medical specialist consultants), nurse practitioners, registered nurses, licensed or registered practical nurses, clinical pharmacists, and health care aides/assistants, continuing care/personal care attendants/assistants, resident attendants/care workers, and personal support workers (all hereafter referred to as support workers), and others who provide care for residents in LTCHs, with interim advice on important aspects of care for all LTCH residents during the COVID-19 pandemic, and on the timely and safe supportive management of residents with suspected or confirmed COVID-19. The guidance in this document is also important for medical and nursing administrators/directors and their associates who can play a pivotal role in building infrastructure and collaborating with LTCH care providers to implement recommended measures.

Recommendations for LTCH staff, resident and family/caregiver preparedness, resident assessment, active medical management, palliative care, mental health disorders, delirium and responsive behaviours, and psychosocial aspects of care are included.

Important guidance related to infection prevention and control (IPC) is not detailed here; however, IPC measures to prevent and control transmission of COVID-19 will impact many aspects of resident care in LTCHs. More detailed national guidance on [Infection Prevention and Control for COVID-19 in LTCHs](#) has been published.

This guidance is not meant to replace clinical judgment or specialist consultation, but rather to provide a framework to strengthen care for LTCH residents and staff. It has been informed by currently available scientific evidence and expert opinion, and is subject to change as new information becomes available. All national guidance should be considered in conjunction with relevant provincial, territorial and local legislation, regulations, and policies.

1.0 Background

In December 2019, a cluster of cases of pneumonia of unknown origin was reported from Wuhan, Hubei Province in China. These cases were caused by infection with a novel coronavirus that causes a disease now referred to as COVID-19. A pandemic was declared by the World Health Organization on March 11, 2020. For current information on the pandemic, please refer to the Public Health Agency of Canada [Coronavirus Disease \(COVID-19\): Outbreak Update](#) and to local, provincial or territorial public health authorities.

COVID-19 is spread from an infected person through respiratory droplets generated through cough or sneezing, close personal contact such as touching or shaking hands, or touching something with the virus on it and then touching one's mouth, nose or eyes before washing one's hands. COVID-19 can also be spread through the air during aerosol-generating medical procedures (AGMPs).

COVID-19 may be transmitted from asymptomatic, pre-symptomatic, and minimally symptomatic infected staff or residents. (1, 2, 3, 4, 5, 6) LTCH residents are vulnerable to infection with COVID-19 due to significant personal care needs that often require frequent close interaction and touch, behavioural factors and limitations associated with cognitive impairment (e.g., wandering and difficulties practicing physical distancing and hand hygiene), shared common spaces and toileting facilities, exposure to staff and visitors, and transit between healthcare facilities. (7, 8)

Older adults with COVID-19 may have atypical or subtle symptoms. (9, 10, 11, 12, 13, 14, 15, 16, 17) While most people with COVID-19 develop mild or uncomplicated disease, older adults and those with pre-existing medical conditions (risk factors present in most residents of LTCHs) are at higher risk for more severe disease when infected with COVID-19. (7, 13, 14, 18, 19, 20, 21, 22, 23) Older adults have high mortality; (13, 19, 22, 24) as of June 23, 2020, the case fatality rate among reported cases of COVID-19 for different age groups in Canada was: <1% aged <60, 6% aged 60-69, 20% aged 70-79, and 34% aged ≥ 80 years. (15) Eighty-two percent of Canadian deaths attributed to COVID-19 have been linked to LTCHs. (13)

As of June 23, 2020, there are no vaccines or evidence-based therapies in widespread use to prevent or treat COVID-19 in Canada. Evidence is rapidly evolving and there are several clinical trials underway, (25, 26, 27, 28) therefore information on management of COVID-19 infection may change over time. Supportive care for those with more than mild or moderate disease involves provision of supplemental oxygen and hydration. (14, 23, 29, 30) For people who become severely or critically ill, hospitalization and intensive care unit admission with mechanical ventilation may be required to support life. (14, 29, 30, 31) However, mortality is high even with these interventions, with a strong age gradient and potential for significant morbidity and suffering in older adults. (13, 19, 21, 22, 32, 33, 34, 35, 36)

There is extensive published guidance on IPC aspects of care of LTCH residents, but less on other important aspects of care in this population. (37) LTCHs are not uniformly well-prepared to care for increased numbers of sick residents and staff. Delirium and responsive behaviours may be precipitated by COVID-19, or worsen with reduced or new staff or new routines in the context of measures to prevent and control outbreaks of COVID-19. Stress and anxiety associated with fear of infection, isolation and visitor restrictions, and family and caregiver burden may cause significant psychosocial stress.

This document provides guidance on LTCH staff, resident and family/caregiver preparedness, resident assessment, active medical management, palliative care, mental health disorders, delirium and responsive behaviours, and psychosocial aspects of care in the context of the COVID-19 pandemic.

2.0 Long term care home staff, resident, and family/caregiver preparedness

LTCH staff, residents, and their families or other caregivers can make changes and prepare for care of residents in the context of the COVID-19 pandemic. These measures apply to all LTCH residents, and are not specific to those with suspected or confirmed COVID-19.

2.1 Infection prevention and control

There are many important IPC measures that LTCH staff, residents, and family/caregivers should be familiar with in order to prevent and control the transmission of COVID-19 in LTCHs.

This document is not intended to provide comprehensive IPC guidance. Separate [national IPC for COVID-19 interim guidance for LTCHs](#) has been published, and includes guidance on LTCH and staff IPC preparedness, screening, visitors, resident care, Routine and Additional Precautions, resident placement and accommodation, resident activity, outbreak management, handling of resident care equipment, and environmental cleaning and disinfection.

- Outbreak management protocols should be in place with the following considerations
 - LTCHs should refer to local and jurisdictional authorities for specific definitions, and directives on case reporting and outbreak management
 - A single confirmed case of COVID-19 in a resident or staff member is justification to apply outbreak measures to a unit or LTCH (with detailed consideration for potential transmission routes between units, e.g., staff cross-coverage or shared communal spaces)
 - When an outbreak occurs, an emergency operations team should be set up for the affected home, and should involve the LTCH administrators/directors, local and regional public health and administration, IPC support, and other external guidance and support where needed on resident and staff testing, personal protective equipment (PPE) acquisition, personnel/staffing, and communications
 - Once a case has been identified in a LTCH resident or staff member
 - Contacts (to be defined according to local and jurisdictional public health and IPC guidance) of a confirmed case should be isolated and tested
 - Consideration should be given to testing all residents and staff in the LTCH on recognition and serially^(3, 38)
 - Where feasible, and most importantly where single rooms are unavailable, confirmed positive residents should be cohorted separately from both suspected and negative residents, with exclusive staffing across services e.g., housekeeping, food services, support workers/health care aides and professional staff^(3, 14, 39)
- It is imperative that staff and visitors in LTCHs receive education, training, and monitoring for compliance with IPC measures, including hand hygiene and practice with putting on and taking off appropriate PPE, and that there are policies in place for PPE supply procurement and use, with regional support⁽⁸⁾
 - LTCHs should refer to local and jurisdictional public health guidance with regard to definitions of visitors who will be permitted to enter LTCHs, and this will need to balance meeting the physical, psychological, emotional and spiritual needs of residents with risk of introduction and transmission of COVID-19, and may vary over time dependent on local COVID-19 epidemiology
 - Essential visitors may include those providing:
 - Compassionate care, including critical illness, palliative care, end-of-life care and Medical Assistance in Dying
 - Assistance where required with personal care, nutrition and hydration, mobility, behavioural management, and decision making
 - Assistance where required for persons with hearing, visual, speech, cognitive, intellectual or memory impairments, or with translation
 - Assistance for persons with disabilities as needed

2.2 Resident information: baseline health and medications

Information and documentation on resident baseline physical and mental health and medications should be reviewed to ensure it is up to date for each resident.

- This should include information on:
 - Baseline vital sign parameters
 - Baseline cognitive status
 - Presence of chronic mental health disorders
 - Baseline behaviours
 - Medical comorbidities
 - Functional status (e.g., activities of daily living self-performance)
- In most jurisdictions, the Resident Assessment Instrument - Minimum Data Set (MDS) is used on admission and quarterly to assess resident care needs and build resident care plans, and some of the above information may be obtained using MDS outcome scales) ([40](#))
- Resident care plans should be reviewed in the context of any updates to a resident's physical and mental health and functional status including
 - Consideration of how resident social, health and medical needs are being met and how these may be affected by IPC measures put in place to prevent COVID-19 from entering LTCHs, and in the event of outbreaks or staff shortages
 - Consideration of which residents may be at higher risk of more severe outcomes due to COVID-19 (e.g., older age, medical comorbidities)
 - Identification of those with more advanced dementia and/or responsive behaviours that may need special attention in the context of IPC care plans to protect them, other residents, and staff from infection with COVID-19
- LTCHs should clearly document and keep up to date the names and contact information of Substitute Decision Makers (SDMs)
- Medications of all residents should be reviewed with the goal of maintaining resident health and well-being by reducing use of unnecessary medications
- Medication administration times should be consolidated and bundled with other care tasks as much as can safely be done, as these changes may increase the time that staff have available for other care activities and conserve PPE supplies
- Attending physicians or nurse practitioners should consider a stepwise approach to prioritizing medication change recommendations:
 1. Changes that are essential for IPC (e.g., transition nebulizers to hand-held inhalers when feasible)
 2. Changes that are generally low risk, and can be done immediately, if appropriate for individual residents (e.g., deprescribe medications that do not provide benefit, that can be stopped abruptly and do not require monitoring after discontinuation)
 3. Changes that are generally low risk but may take more time to implement, requiring individual evaluation, communication with care team and resident, and monitoring (e.g., discontinue short-acting insulin correctional scale, switch to only long-acting insulin, reduce frequency of blood glucose monitoring)
- Vaccination status (e.g., pneumococcal, influenza, herpes zoster) should be reviewed, and after obtaining consent, vaccines updated in accordance with national and provincial/territorial recommendations ([41](#), [42](#), [43](#))
- Additional resources can be found in the Appendix

2.3 Goals of care and advance care planning

Goals of care and any advance care planning needs to be reviewed and updated for all residents. ([8](#))

- This should include preferences on
 - Receiving care in the home if ill
 - With active medical management for potentially reversible conditions, including a discussion of care available in the LTCH, for example supplemental oxygen and parenteral hydration
 - With active symptom management focused exclusively on comfort-based care
 - Transfer to an acute care facility for consideration of hospital admission, intensive care unit admission, or mechanical ventilation
 - Cardiopulmonary resuscitation
- The above discussions should take into account the resident's understanding of any underlying illnesses and COVID-19, their values, and previously expressed and current wishes
- Discussion and documentation of advance directives should be consistent with provincial or territorial laws
- Residents and their SDM(s) should be provided with information about COVID-19, potential outcomes with infection, including potential benefits and risks/morbidity associated with acute care hospitalization
- Older adults, both generally and among patients who are hospitalized or admitted to ICUs, are more likely to have severe outcomes (e.g., ICU admission or death) than younger adults^(13, 19, 21, 22, 32, 33, 34, 35, 36)
- Additional resources can be found in the Appendix

2.4 Roles, responsibilities, and human resources planning

- The role of the medical and nursing administrators/directors and their associates, and the chain of accountability should be clear to all staff in the LTCH
- Any situations under which alternate persons may act in the position of medical or nursing administrators/directors should be confirmed and documented
- Responsibility for development of care protocols; obtaining and maintaining medications, medical equipment, and PPE; IPC education, training and implementation of measures; and outbreak management should be assigned
- Responsibility for the clinical care of residents, e.g., a physician, nurse practitioner, paramedic or nurse-led outreach teams, and their availability and mechanisms for contacting them under usual and exceptional circumstances should be determined
- LTCHs should work with regional support to develop a workforce emergency plan to provide coverage for minimum staffing needs in the event of an outbreak and staff illness that reduces staffing levels
- Access to physicians or nurse practitioners should be arranged by virtual care where feasible and acceptable for meeting patient care needs, but also to provide timely onsite assessments when required (e.g., situations that require in-person assessment, and medical staff contingency planning for when there are no staff to facilitate a virtual care visit or inadequate care providers in the home)
- Family physicians or nurse practitioners should have remote access to electronic medical records to enable access to information and for documentation
- LTCHs should ensure nurses undergo education and training to enable them to collect nasopharyngeal swab samples, administer and titrate supplemental oxygen, administer subcutaneous medications, initiate and manage parenteral hydration (e.g. hypodermoclysis), and provide palliative and end-of-life care under the guidance of attending physicians or nurse practitioners
- Consideration can also be given to education and training to build capacity for use of continuous ambulatory drug delivery (CADD) systems

2.5 Establishing networks and acquiring and maintaining supplies

LTCHs should establish:

- Collaborations and links should be established with the following as early as possible (with assessment of anticipated needs, and inquiry about how service agreements, policies, procedures, and access may change over time in the context of the COVID-19 pandemic)
 - Local emergency departments: to provide virtual support and information regarding resident transfers, e.g., centralized triage services
 - Paramedics or other community services: for consideration of assistance with care, e.g., intravenous (IV) or subcutaneous (Subcut.) line insertion if these can be managed in the home and in-home capacity with starts is not yet established
 - Geriatric emergency nurses, paramedic or nurse-led outreach teams where available
 - Specialist contacts (e.g., palliative care, geriatric medicine, geriatric psychiatry, general internal medicine expertise)
 - Networks for IPC support
 - Consultant pharmacists who can work collaboratively with LTCH physicians or nurse practitioners to implement medication conservation strategies to reduce wastage and to track supply and utilization of alternative options when there are medication shortages
 - Local laboratories to facilitate rapid bloodwork
 - Diagnostic imaging providers
 - Medical oxygen suppliers
 - Funeral homes
- Mechanisms for acquisition and monitoring of needed supplies (with local, regional or provincial/territorial support where needed), including key contacts
 - Adequate PPE to allow staff and visitors to safely meet resident care needs^(8 18)
 - Medications: routine (including baseline treatment of known resident medical conditions and ward stock) and emergency medications, including comfort medications that may be needed in greater supply for residents with COVID-19
 - See Appendix for an example emergency medication list, though the decision to carry specific medications as emergency stock should be based on a site-specific emergency medication policy (kept up to date in the context of the COVID-19 pandemic), safety and needs assessment
 - Equipment to deliver and monitor oxygen (e.g., delivery systems; disposable, single-use nasal cannulae; pulse oximeters) and medications or fluids, including SC cannulae and delivery equipment (e.g., infusion pumps or spring-loaded syringes)^(18)
 - Technology to assist in identifying residents who are on the move, e.g. door sensors
 - Communication devices (e.g., tablets, telephones, internet access, baby monitors) to support residents with their virtual care needs and to stay connected with loved ones
 - Resident and staff vaccines (e.g., influenza, pneumococcal)

2.6 Communication

LTCHs should have policies and procedures in place for ongoing communication with attending physicians or nurse practitioners, staff, residents, and their families, caregivers, and SDMs on COVID-19 updates in the community and/or the home.

- This should include information on numbers of affected residents and staff, hospitalizations and deaths, and how this may affect staff workload and practices, resident care, visitor restrictions, and risk of infection

- LTCHs should provide staff, residents, and their families, caregivers, and SDMs with information related to COVID-19 (e.g. information about the virus, prevention and management of illness)
- Additional resources can be found in the Appendix

3.0 Assessment

3.1 Detecting signs and symptoms

Residents of LTCHs should undergo regular and thorough assessment for signs and symptoms of COVID-19.

- The frequency of assessment may vary by region and over time based on local COVID-19 epidemiology, but in areas with ongoing community transmission, assessment should occur at least daily
- Signs or symptoms of COVID-19 may include:
 - Fever (temperature 37.8°C or greater; some resources suggest that repeated oral temperatures >37.2°C or rectal temperatures >37.5°C or an increase in temperature of >1.1°C over baseline represent fever in older adults),^(17 , 44 , 45)
OR
 - Any new or worsening respiratory symptoms (cough, shortness of breath, hypoxia, runny nose or sneezing, nasal congestion, hoarse voice, sore throat or difficulty swallowing),
OR
 - Other new and unexplained symptoms including but not limited to chills, muscle aches, chest pain, diarrhea, headache, dizziness, loss of appetite, fatigue/malaise, lethargy, changes in cognition, increased frequency of falls, delirium, loss of smell or taste
- IPC Note: if checking temperature, thermometers should be dedicated to the resident and if not possible, appropriately cleaned and disinfected using a hospital grade disinfectant for the appropriate contact time prior to use on another resident - refer to facility and jurisdictional IPC guidance for acceptable methods of cleaning and disinfection of specific items (for residents already diagnosed with COVID-19, repeated temperature measurements should only be performed if the results are likely to change management)
- Older adults may be more likely to present with atypical symptoms, e.g. delirium^(2 , 7 , 9 , 10 , 11 , 12 , 13 , 14 , 15 , 16 , 17)
- In residents with cognitive impairment who may not be able to describe COVID-19 symptoms, signs of infection may include refusing food and drink or an abrupt change in mental status, functional status, or behaviour^(9 , 10 , 14)
- Results of recent and serial resident assessments should be recorded and easily retrieved, for comparison purposes, in order to facilitate identification of changes in resident status ^(46)
- LTCHs should consider use of decision-support tools, such as the [INTERACT Stop and Watch Early Warning Tool](#), created to help care providers quickly identify acute changes in condition,^(47) or others created to assess LTCH residents with suspected or confirmed COVID-19^(48)
- One complicating factor in assessment is that uninfected residents who are subject to strict isolation precautions may also exhibit signs of delirium, functional decline, dehydration, or mood or behavioural symptoms due to a reduction in social engagement and/or fear

3.2 Investigations

- All residents with suspected COVID-19 infection should be immediately placed under Droplet and Contact Precautions, and tested for COVID-19 as per local, provincial or territorial guidance
 - IPC Note: Droplet and Contact Precautions includes wearing gloves, a long-sleeved cuffed gown (covering front of body from neck to mid-thigh), mask, and face or eye protection upon entering the resident's room or when within 2 metres of the resident, and all staff and visitors should be educated, trained and monitored to ensure that they correctly put on and take off PPE
- Other investigations that based on clinical circumstances and provider judgement may or may not be helpful to rule out alternative or additional diagnoses, and to guide further management decisions where consistent with resident goals of care and wishes, include a complete blood count with differential, electrolytes, creatinine, liver enzymes, lactate, blood cultures, chest x-ray, leg Doppler ultrasound
 - If investigations require transfer to another facility, potential for investigations to change management and benefit resident care should be considered in the context of potential transmission of infection between residents and individuals at the receiving facility
 - If investigations are deemed necessary, information on the COVID-19 status of the resident should be communicated to receiving facilities or incoming providers as well as transport staff (49, 50)

3.3 Severity assessment

- Residents suspected or confirmed to have COVID-19 should be assessed for the following:
 - Respiratory rate (is the resident tachypneic?)
 - Oxygen saturation (does the resident have low oxygen saturation, SpO₂?)
 - Signs of dehydration (does the resident have low jugular venous pressure, low blood pressure, dry mucous membranes, skin tenting, decreased urine output, signs consistent with dehydration on bloodwork if obtained?)
 - Mental status (is the resident drowsy, delirious or obtunded?)
 - Skin (does the resident appear cyanotic, or show signs of reduced peripheral perfusion?)
- Based on initial assessment, attempt should be made to determine severity of illness
 - Asymptomatic disease (e.g., diagnosed through contact tracing, or asymptomatic screening prevalence surveys) (3, 29, 51)
 - Mild illness
 - Residents with some signs or symptoms of COVID-19 but without shortness of breath or dyspnea or abnormal imaging (14, 29, 30, 52)
 - Moderate illness
 - Residents with evidence of lower respiratory tract disease by clinical assessment or imaging, with SpO₂ of ≥ 90% on room air (14, 29, 30, 52)
 - Severe illness
 - Residents with an SpO₂ <90% on room air, respiratory rate >30 breaths/minute, or lung infiltrates >50% on imaging (14, 29, 30, 52, 53, 54)
 - Critical illness
 - Residents who have respiratory failure, septic shock and/or multiple organ dysfunction (i.e., are sick enough to require ventilatory and/or circulatory support for shock - interventions that cannot take place in LTCHs) (14, 29, 30, 52, 54)
- The above categories of severity are adapted from differing definitions in other guidance and publications, and while they may be helpful in guiding initial discussions and management, it is important to recognize that these are artificial categories on a spectrum of illness presentation

- Note: most COVID-19 severity definitions focus on respiratory symptoms, but LTCH staff should be aware that frail older adults may deteriorate with decreased oral intake, dehydration, hypotension, or delirium
- It is important to monitor residents who are asymptomatic or have mild disease, as they may develop symptoms or progress to more severe disease days later, while others may remain asymptomatic or minimally symptomatic throughout infection^(14, 24, 51, 55, 56, 57)
- It is important to inform residents and their SDMs of their illness severity, and ensure that goals of care are understood and wishes are clearly documented

4.0 Active medical management

Active medical management of residents suspected or confirmed to have COVID-19 can often be provided in the LTCH. There may be variation in the staffing skills and complement required to implement some of the following measures, but homes should work toward building capacity to provide care to residents who wish to receive active medical management while remaining in place within their LTCH. **Interventions must be consistent with resident goals of care, expressed wishes and advance care plans, and informed consent obtained.**

The care that can be provided may be challenged during outbreaks due to staff shortages, and homes should receive regional support to maintain quality and safe care. If the frequency or intensity of required care is greater than the capacity that can be provided in the LTCH, particularly when there are staffing shortages, consideration should be given to whether transfer to another facility is consistent with the resident's goals of care and can be safely arranged.

For those who wish to remain in place for active medical management and are not responding to management or are worsening, care should focus on alleviating pain and other distressing symptoms, and after discussion and consent from the resident or their SDM, transition should be made to comfort and end-of-life care (see Palliative Care section). Consider use of a decision pathway, for example: [BC Centre for Disease Control, COVID-19 in LTC Residents](#).

4.1 Supplemental oxygen

- Low flow supplemental medical oxygen can be delivered at 1-6L/minute via nasal prongs to maintain an SpO₂ of >90% (administration of low flow oxygen is not considered to be an AGMP)
- Upright supported positioning may help to improve oxygenation and reduce shortness of breath where tolerated^(14)

4.2 Hydration and nutrition

- Residents who appear dehydrated should be provided with prompt fluid replacement enterally where possible; deterioration may occur from dehydration even in the absence of respiratory signs
- Where enteral hydration is not possible, a trial of hypodermoclysis (30-50 ml/hr) should be initiated, while residents are monitored for improvement (flow rate will need to be converted from ml/hr to drops per minute according to tubing specifications)
- For residents who are able to safely tolerate enteral nutrition but have poor intake, a dietician should be engaged

4.3 Specific treatment

- As of June 23, 2020, there are no evidence-based therapies in widespread use for treatment of COVID-19 in Canada, and none that have been studied in LTCHs
- Preliminary reports present evidence that remdesivir reduces time to recovery in hospitalized patients with COVID-19 requiring supplemental oxygen, and that dexamethasone reduces mortality in hospitalized patients with COVID-19 requiring supplemental oxygen or mechanical ventilation, though with unclear benefit versus harm in patients not requiring oxygen (58, 59)
- Evidence is rapidly evolving and there are several clinical trials of candidate therapeutics underway;(25, 26, 27, 28) therefore, information on management of COVID-19 may change over time
- Investigational treatment should only be offered in approved clinical trials(14, 23, 50, 60)

4.4 Other management

- Residents with suspected or confirmed COVID-19 may need other medications to alleviate symptoms including fever or pain (e.g., acetaminophen 650 mg PO or PR prn)
- For patients with underlying asthma or chronic obstructive pulmonary disease (COPD) who experience wheeze or signs of airway inflammation, bronchodilator therapy should be initiated
 - Metered dose inhalers with a spacer should be used over nebulizers to reduce potential to generate aerosols
- If oral, IV and/or inhaled steroids are indicated for non-COVID-19 reasons (e.g., asthma or COPD exacerbation, or stress dosing in someone on chronic steroids or with known adrenal insufficiency), they should not be avoided(14, 29, 61, 62, 63, 64, 65, 66, 67)

4.5 Medication review

- A review of current medications should be performed for any acutely ill resident
 - Review and monitor for any drug interactions
 - Discontinue non-essential medications
 - Ensure any necessary prn medications are ordered
 - Determine which chronic therapies should be held temporarily (e.g., antihypertensive medications in the context of relative hypotension or psychotropic drugs in the context of lethargy or hypoactive delirium)
 - Note: if medications considered non-essential or potentially harmful in the context of acute illness are discontinued, it should be flagged to revisit the potential risks and benefits when a resident is clinically improved
 - Metered dose inhalers with a spacer should be used over nebulizers to reduce potential to generate aerosols
- Similar to what should be standard practice when admitting any resident to a LTCH, medication reconciliation should be performed for readmitted residents to reduce the risk for medication discrepancy-related adverse events (68, 69)

4.6 Potential co/super-infection

There is no consensus on what circumstances should prompt initiation of antibiotics for possible bacterial infection in people who are suspected or confirmed to have COVID-19. The true rate of bacterial co-infection with COVID-19 is unknown, and there is minimal data on the LTCH population at this time.

One review suggested that the rate of bacterial co-infection in nine studies of patients with COVID-19 may be 8% (62/806), (range 2-17%),^(20) though another study suggested that this rate may be higher in older adults.^(21) Important limitations to these studies include variation in the rate and methods of diagnostic sampling, lack of information on clinical parameters used to determine the relevance of detected organisms, timing of sampling relative to initiation of antimicrobials, other risk factors (e.g., invasive devices) and the setting for co-infection (e.g., ICU), and potential publication bias.

- When prescribing antibiotics in this context, consideration should be given to illness severity and antibiotic risks including QT prolongation, antibiotic-associated diarrhea, *Clostridioides difficile* infection, allergic reactions, and propagation of antimicrobial resistance^(14, 72)
- *Antibiotics should not be prescribed routinely* in LTCH residents with suspected or confirmed COVID-19, particularly in cases of mild illness^(14)
- Empiric antibiotic treatment should be considered for LTCH residents with suspected or confirmed COVID-19, when there is clinical suspicion for bacterial infection^(14)
- Remarks:
 - Severity of COVID-19 may worsen up to several days after onset of symptoms due to virus-related hyperinflammation, but this timing is similar to the timing of deterioration seen with bacterial super-infection
 - Bloodwork and imaging may be limited in LTCHs, and airway sampling to diagnose pneumonia is unlikely to occur
 - Many laboratory (e.g., neutrophilia or C-reactive protein) and imaging findings (e.g., lung consolidation) are not specific to bacterial infection
- Empiric antibiotic choice should be based on the suspected clinical diagnosis (e.g., bacterial pneumonia, urinary tract infection, sepsis), and local guidelines (e.g., for community-acquired pneumonia) and antibiotic susceptibility data (where available)^(14, 29)
 - Empiric antimicrobial therapy should be re-evaluated frequently and de-escalated where possible based on clinical judgment and new information^(14, 29, 73)
 - If antimicrobials are continued, this should be for the shortest recommended duration (for most indications, 5-7 days)^(72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82)

4.7 Thromboembolism

Patients with COVID-19 are at risk for coagulopathy and this appears to be correlated with disease severity.^(14, 83)

- LTCH providers should be aware to monitor residents for signs or symptoms of stroke, deep venous thrombosis, pulmonary embolism or acute coronary syndrome, and manage according to resident goals of care, expressed wishes and advance care plans^(14)
- Mechanical or medical venous thromboembolism prophylaxis can be considered on a case-by-case basis for residents receiving active medical management, with consideration of disease severity, risks, benefits, goals of care, expressed wishes and advance care plans

4.8 Influenza

When there is local influenza circulation, residents who develop influenza-like illness, pneumonia, or non-specific respiratory-illness, and are at high risk for influenza complications, should be tested and treated as soon as possible with a neuraminidase inhibitor (oseltamivir, inhaled zanamivir, or intravenous peramivir) until results of testing are known^(14, 23, 84, 85)

5.0 Palliative care

Palliative care is an approach that aims to reduce suffering and improve quality of life for people who are living with life-limiting illness. ^(86) It may occur alongside life-prolonging interventions and involves active interventions to ensure impeccable symptom management for those who will recover as well as for those who will need end-of-life care. Palliative care should be person-centred and family-centred.

It is important that LTCHs try to meet the physical, mental, emotional, and spiritual needs of ALL residents with palliative care needs, regardless of whether they have COVID-19. LTCHs should also be able to provide quality comfort and end-of-life care for residents with more severe or progressive COVID-19 for whom transfer for more advanced care in an acute care setting is not appropriate or consistent with previously expressed and current wishes.

The care that can be provided may be challenged during outbreaks due to staff shortages, and homes should receive regional support to maintain quality and safe care. If the frequency or intensity of required care is greater than the capacity that can be provided in the LTCH, particularly when there are staffing shortages, consideration should be given to whether transfer to another facility is consistent with the resident's goals of care and can be safely arranged.

All LTCHs should review their plans for meeting the palliative care needs of residents within their facility as part of the COVID-19 response. ^(& 18, 37, 87) LTCH staff with palliative care experience should be identified. ^(18, 87) In the context of the COVID-19 pandemic, it should be anticipated that the need for end-of-life care will increase (particularly in the context of outbreaks) and may become more complex. ^(& 18, 87) LTCHs should ensure that they have access to specialized palliative care services for advice in managing complex cases, including assistance with the development of guidelines for symptom management and support, and education/training of non-specialists for their use. ^(& 87) In many jurisdictions, palliative care networks may be available to assist with finding palliative care expertise for a given LTCH.

5.1 Palliative symptom management at end-of-life

Palliative symptom management for COVID-19 includes active interventions to make someone more comfortable, ideally in familiar surroundings, and may involve addressing a variety of potential issues such as pain control, breathlessness, nausea, delirium or agitation.

Symptom management guidance typically relies on frequent reassessment every few hours initially to allow for careful dose titration. In some LTCHs, particularly those experiencing an outbreak, high frequency of reassessment may not be feasible. In this context, consider a reasonable starting dose and interval based on age, degree of distress, comorbidities, previous medication use, and renal clearance.

If staff have the training and expertise, many comfort medications can be administered by the subcutaneous route, and efforts should be made to improve staff competence in the use of subcutaneous medications. A subcutaneous line can be inserted to allow for repeated access. Multiple lines can be used with each one being used for a different medication, or a single line can be used for multiple medications as long as it is flushed with an appropriate volume of saline after each injection and the site is able to tolerate this volume. Use of continuous subcutaneous infusion systems may be considered if experienced administrators are present. If staff are unable to administer subcutaneous medication, then administration via a buccal or sublingual (SL) route can be considered.

Examples of medications that may be used to treat symptoms in residents who appear to be nearing end-of-life are shown in **Table 1**. If frequent administrations are needed, the most responsible physician or nurse practitioner should be contacted for further guidance and consideration of standing rather than solely as needed dosing. If a resident who has chosen to be cared for in the home without transfer to hospital experiences severe respiratory distress refractory to the usual medications for symptom management (**Table 1**), this is a palliative care emergency. If continuous palliative sedation therapy (CPST) is needed for refractory symptoms in the imminently dying patient, then consultation with a palliative care specialist is recommended.^(18, 88) This should be done in accordance with approved CPST guidelines (example guidelines can be found under the Canadian Society of Palliative Care Physicians [Statement on Continuous Palliative Sedation Therapy](#)).^(88) Consultation with a palliative care specialist could be conducted remotely (e.g. by telephone or videoconferencing) if in-person consultation is not available. ^(88) **Informed consent for CPST must be obtained from the resident or SDM.** ^(88)

Additional resources can be found in the Appendix. Provinces and territories may have palliative care networks or societies with additional guidance.

Table 1. Medications^D that may be used for symptom management in residents of long term care homes (LTCHs) who appear to be nearing end-of-life due to COVID-19

Symptom	Medication	Dose/Route	Frequency	Notes
Fever	Acetaminophen	Acetaminophen 650 mg PO/PR	q4h prn	1) Max 4,000 mg/day; in older adults with hepatic impairment or history of alcohol abuse, suggested max is 3,000 mg/day, though consider potential benefit versus risk in a resident near end-of-life
Pain	Acetaminophen	Acetaminophen 650 mg PO/PR	q4h prn	1) Note as above for acetaminophen
	Hydromorphone OR Morphine	Hydromorphone typical starting dose: 0.5 - 1 mg PO OR 0.2 - 0.4 mg Subcut. Morphine typical starting dose: 2.5 - 5 mg PO OR 1 - 2 mg Subcut.	q2h prn q2h prn	1) Convert to standing q4h (use q6h for frail or older adults) and prn after 1-2 days when dose-response and frequency of use are known 2) Higher doses may be needed in a resident with history of chronic opioid use; may consider increasing chronic dose by 25-50% 3) Provision of a range of dosing will help care providers titrate up or down as needed 4) Doses will need to be adjusted if converting from PO to Subcut. - conversion varies between 2:1 and 3:1 (e.g. hydromorphone 2 mg PO may convert to hydromorphone 0.5-1 mg Subcut.)

^D The above table is a guide and not a substitute for clinical judgment. When prescribing any new medication, resident comorbidities and need for dose adjustment, current medications, potential drug interactions, adverse effects, known drug allergies should be reviewed. If using prn or more than one PRN as a first step, consider shortness of breath and/or frequency typical starting morphine
PO = per os (oral), PR = per rectum, Subcut = subcutaneous, SL = sublingual

Symptom	Medication	Dose/route	Frequency	Notes
		OR 0.2 - 0.4 mg Morphine typical starting dose: 2.5 - 5 mg PO OR 1 - 2 mg Subcut.	q2h prn	2) With COVID-19, shortness of breath can change quickly and may require rapid dose titration until symptoms are managed
Anxiety	Lorazepam	Lorazepam 0.5 - 1 mg PO OR Subcut. OR SL	q2h prn	
Nausea	Haloperidol	Haloperidol 0.5 - 1 mg Subcut.	q4h prn	
	OR			
	Methotrimeprazine	Methotrimeprazine 6.25 - 25 mg PO OR Subcut.	q4h prn	
Nausea	OR			
	Olanzapine	Olanzapine 2.5 - 5 mg PO OR 5 mg oral disintegrating tablet (ODT)	Daily +/- one additional 2.5 - 5 mg PO OR 5 mg ODT dose q24h prn	
Hyperactive delirium or agitation	Methotrimeprazine	Methotrimeprazine 6.25 - 25 mg PO OR Subcut.	q4h prn	1) If the resident is agitated or restless at the end-of-life, orders should be written for scheduled and prn dosing 2) If PO or Subcut. routes are not an option for medication delivery, SL lorazepam or olanzapine Orally Disintegrating Tablets may be considered
	OR			
Secretions in an imminently dying comatose patient	Haloperidol	Haloperidol 0.5 - 2 mg Subcut.	q2h prn	1) It is important to proactively educate LTCH staff, families and caregivers that upper respiratory secretions are often expected and may be a normal part of the dying process 2) Evidence suggests medications used for secretions may be of limited benefit
	OR			
	Scopolamine	Scopolamine 0.4 mg Subcut.	q4h prn	
	OR			
Secretions in an imminently dying comatose patient	Glycopyrrolate	Glycopyrrolate 0.4 mg Subcut.	q4h prn	
	OR			
Secretions in an imminently dying comatose patient	Atropine 1% (ophthalmic drops)	Scopolamine transdermal	q72h	
		Glycopyrrolate 0.4 mg Subcut.	q4h prn	

^D The above table is a guide and not a substitute for clinical judgment. When prescribing any new medication, resident comorbidities and need for dose adjustment, current medications, potential drug interactions, adverse events, and known drug allergies should be reviewed. If using 4 or more PRNs in 24 hrs, re-evaluate and consider titrating up dose and/or frequency drops SL
PO = per os (oral), PR = per rectum, Subcut. = subcutaneous, SL = sublingual

3) In an outbreak situation, it may not be appropriate to use staff time to administer medication routinely for secretions, but consideration should be given to alleviate family/caregiver distress (the transdermal

Symptom	Medication	Dose/Route	Frequency	Notes
				Notes may be preferable if available) 4) For more severe secretions, consider glycopyrrolate or atropine

^D The above table is a guide and not a substitute for clinical judgment. When prescribing any new medication, resident comorbidities and need for dose adjustment, current medications, potential drug interactions, adverse events, and known drug allergies should be reviewed. If using 4 or more PRNs in 24 hrs, re-evaluate and consider titrating up dose and/or frequency.

PO = per os (oral), PR = per rectum, Subcut. = subcutaneous, SL = sublingual

5.2 Mental and emotional needs at end-of-life

LTCHs may need to help dying residents and families/caregivers cope with mental or emotional distress.

- Allied health should be engaged to provide emotional support to residents, and grief and bereavement support or resources for family and caregivers^(18)
- Isolation and visitor restrictions may limit the ability of families, caregivers and friends to fulfill mental and emotional needs of residents at the end-of-life and exacerbate residents' feelings of distress (see Psychosocial Aspects of Care section)
- Family and caregivers should be permitted to provide support to residents at end-of-life and careful consideration should be given to limiting numbers and contact with others in the home, while ensuring humane and dignified end-of-life care
 - Where this is not possible, consider enabling a resident's family to see them or say goodbye from a distance (e.g., from a window)
 - Additional support can be provided by enabling video calling with family or caregivers who are unable to be with the resident due to visitor or long distance travel restrictions^(18)
 - Additional resources can be found in the Appendix

5.3 Spiritual care

Persons nearing end-of-life should have access to spiritual support and a representative of their faith community (e.g., chaplain, rabbi, or other religious leader or spiritual care provider) if desired.

- For some persons, spiritual needs at the end-of-life may be as important as physical needs

6.0 Mental health disorders, delirium and responsive behaviours

Chronic mental health disorders are common in residents of LTCHs. Approximately 10-20% have depression, schizophrenia, or bipolar disorder. ^(89, 90)

- The clinician responsible for the resident's mental health care and other supports should be notified when a significant change in the mental status of a resident with a known chronic mental health disorder is recognized

Delirium is common with COVID-19, and may be the first sign of illness.^(14, 91) Hypoactive, hyperactive and mixed delirium are all possible, with hypoactive delirium more common and easy to miss. Hypoactive delirium related to COVID-19 can present as lethargy, refusal to participate in care, and refusal to eat and drink.

Responsive behaviour refers to actions, words or gestures (e.g. aggression) exhibited by a person with dementia, that are often in response to something negative or frustrating in their personal, social or physical environment. Responsive behaviours in LTCH residents with or without underlying cognitive impairment or mental health disorders may be more common during the COVID-19 pandemic. (92, 93, 94)

Changes (e.g., IPC measures and visitor restriction) implemented in LTCHs due to COVID-19 may precipitate or worsen delirium and responsive behaviours, and make it more difficult to address the care needs of people with delirium and responsive behaviours.

Responsive behaviours can also present a barrier to implementation of IPC measures, and it is important to plan and prepare for how to address the needs of residents with a history of these behaviours. (94, 95) LTCH clinicians should enlist the support of geriatricians and geriatric psychiatrists where possible when faced with challenging situations where non-pharmacologic measures have been unsuccessful.

6.1 Delirium

- It is important to consider COVID-19 as the potential cause of any new onset delirium in LTCHs, particularly if there are any other symptoms consistent with COVID-19, known exposure to COVID-19, or when there is no other clear cause for delirium
- To prevent development of delirium in LTCH residents
 - Frequently orient, mobilize (even within room if isolated), maintain hydration, and provide virtual connection to family, caregivers, or other familiar faces(94, 96, 97, 98)
 - Ensure that residents have access to their vision and hearing aids
 - Try to maintain usual hygiene and daily routines even when in isolation (while following best practices with regard to IPC measures to prevent transmission of COVID-19)
 - Provide cues as to day and night, such as opening the curtains for natural light if available or turning on the lights during the day
 - Conduct medication reviews to identify inappropriate polypharmacy and identify medications or recent medication changes that may contribute to delirium risk (99)
- To manage delirium
 - Try to identify and address the cause of delirium, and do not assume that it is related or solely due to COVID-19 (e.g., may be pain, constipation, hunger, other causes) (100)
 - Assess medications as modifiable risk factors(97)
 - Reduce or stop non-essential medications that are known to contribute to delirium
 - Substitute with less toxic alternatives
 - Appropriate supportive management of COVID-19 (i.e., oxygen therapy and hydration where indicated) is the primary treatment for delirium associated with COVID-19(14)
 - Continue to provide frequent orientation, ensure sensory aids are accessible, mobilize when well enough, virtually connect to familiar faces, and adhere wherever possible to usual daily routines
 - Use non-pharmacologic approaches for sleep and anxiety, including music or relaxation techniques where possible(97)
 - Reserve pharmacologic approaches for residents with severe agitation who risk interruption of essential treatment or serious harm to themselves or others, or those who have severe, distressing psychotic symptoms (e.g., hallucinations, delusions)(97, 98)
 - If medications are needed to manage symptoms of delirium, they should be prescribed by a clinician experienced and comfortable with assessment and treatment of delirium; they must always be in

combination with non-pharmacologic management, and the need for any medication should be re-evaluated frequently and discontinued as soon as possible^(98)

- Additional resources can be found in the Appendix

6.2 Responsive behaviours

- People with dementia may not understand the reason for the changes in their routine and environment, and they can express their anxiety and distress through responsive behaviours
- Some responsive behaviours present a significant risk to the individual or those around them, (e.g., aggressive behaviours towards staff or co-residents or, in the context of an outbreak, leaving their room when on isolation and contributing to the spread of COVID-19)^(101)
- Non-pharmacological strategies to address these behaviours involve thinking about what you know of the individual (e.g., their likes and dislikes, their capabilities), trying to understand the meaning of their behaviour, and developing strategies to meet their needs
- In residents whose behaviours are largely felt to be related to separation from family or other supports, consideration should be given to whether these visits could be classified as essential to prevent unnecessary use of pharmacological or other physical restrictive measures
- Wandering of a COVID-19 positive resident into proximity of healthy co-residents represents an urgent situation and should trigger consultation with mental health, public health, and infection control supports
- Where least restrictive measures have been unsuccessful, strategies to isolate wandering residents include the use of cohorting of COVID-19 positive residents, close monitoring using additional staff, and door alarms
- If needed, seek outside support for options for pharmacological or physical restraint, recognizing that these interventions come with risks, thus it is necessary to implement best practices around monitoring, documenting, and support for safety
- Additional resources can be found in the Appendix

7.0 Psychosocial aspects of care

Resident, family/caregiver, and staff need for psychosocial support will increase during the COVID-19 pandemic. This increase may be due to strain on care systems and changing access to health care resources, strained family care systems due to acute illness, financial worries due to drastic changes in the economy, introduction of new staff who are unfamiliar to residents, and death of residents or friends.^(8, 14, 93)

IPC measures necessary to prevent and control transmission of COVID-19 in LTCHs may cause distress for residents and families/caregivers related to restriction of visitors, cancellation of communal activities and excursions, and potential resident restrictions on returning to facilities if on voluntary leave during an outbreak.^(8, 14)

LTCH staff may suffer anxiety and concern for personal and family safety due to direct experience or media coverage of outbreaks, concerns about adequate supplies of PPE, financial concerns and worries about securing childcare in the context of the COVID-19 pandemic (e.g., school and daycare closures), and witnessing illness and death in residents.^(92) Staff shortages place strain on the ability of those remaining to deliver quality care and may adversely affect remaining staff members' psychological health.

LTCHs should anticipate the increased needs for support and be able to provide or refer residents, families, caregivers, and staff to appropriate supports or services. Mental health professionals, social workers, and LTCH directors and administrators with their staff should work collaboratively to support LTCH residents and other staff.

7.1 Resident and family/caregiver support

- Wherever feasible and while abiding by facility and jurisdictional public health guidance, social interaction and recreational activities should continue ^(*)
 - This may change over place and time dependent on local COVID-19 epidemiology
 - In the context of outbreaks or residents who are infected with COVID-19, social or recreational activities may need to be conducted one-on-one or virtually, and LTCHs should ideally offer smartphones or tablets and where possible provide free internet connections to residents during the COVID-19 pandemic^(18)
 - IPC Note: ideally any electronic devices should be dedicated to a single resident. It is imperative that any items shared between residents are cleaned and disinfected between uses for each resident - refer to facility and jurisdictional IPC guidance for acceptable methods of cleaning and disinfection of specific items
- Arrange for regular updates to a family representative
- Explore alternative ways to provide support to residents and families when in-person, direct contact is not possible (e.g., via telephone or video communication)
- Where visitation is limited, and physical distancing and other IPC measures can be adhered to, consideration can be given to permitting families to come to the window of a resident's room and show signs, sing, or otherwise communicate with them^(93)
- Families can be encouraged to send cards or letters, artwork from grandchildren and care packages, while taking care to ensure that no one within the sending household is ill^(93 , 102)
- Arrange for online viewing of religious services where desired^(93)
- Additional resources can be found in the Appendix

7.2 LTCH staff support

- The presence of engaged and knowledgeable LTCH senior medical and nursing administrators or directors and their associates who are known to the LTCH staff is important for staff morale
- Arrangements should be made with regional support to ensure sufficient staff within the LTCH to meet the basic daily needs of residents and the enhanced care and treatment required during an outbreak
- Human resources teams should give consideration to increasing full time positions for staff to avoid incentives to work in multiple facilities, which may leave these staff more vulnerable to socioeconomic pressures and at risk for transmitting COVID-19 between facilities^(8)
- There should be policies and procedures in place to arrange for rapid and respectful removal of deceased persons from common or shared spaces
- Additional resources can be found in the Appendix

8.0 Acknowledgments

This guidance document was prepared by : Dr. Cheryl Volling, Dr. Robert G. Stirling, Dr. Peter Uhthoff, Dr. Marina Salvadori, Dr. James Brooks, Dr. Michelle Acorn, Dr. Barry Clarke, Ms. Helen Eby, Dr. Russell Goldman, Dr. Andrea Iaboni, Dr. Ralph Jones, Dr. Fred J. Mather, Dr. Andrea Moser, Dr. Patrick Quail, Dr. Benoît Robert, Dr. Nathan Stall, Dr. Camilla Wong, Mr. Chris Fan-Lun, Ms. Yung-En Chung, Ms. Althea House and Dr. Marianna Ofner.

This guidance document has been endorsed by:

The Canadian Academy of Geriatric Psychiatry

The Canadian Coalition for Seniors' Mental Health

The Canadian Geriatrics Society

The Canadian Gerontological Nursing Association

The Canadian Nurses Association

The Canadian Society for Long Term Care Medicine

The Canadian Society of Palliative Care Physicians

The Canadian Support Workers Association

The Nurse Practitioner Association of Canada

This guidance document is supported by:

The College of Family Physicians of Canada

The authors gratefully acknowledge the additional review and/or contributions of : Dr. Amit Arya, Dr. Paul Bonnar, Dr. Anne Boyle, Dr. Nick Daneman, Dr. Sidney Feldman, Dr. Robert Fowler, Dr. Allan Grill, Dr. Leonie Herx, Dr. Andrew Morris, Dr. Shaqil Peermohamed, Dr. Richard Rusk, Dr. Samir Sinha, Dr. Rebecca G. Stovel, Dr. Anna Voeuk, and Dr. Roger Y.M Wong.

9.0 Appendix

Example emergency medication* list for long term care homes during the COVID-19 pandemic

Antibiotics

This should be informed by local treatment guidelines and antibiotic susceptibility data (where available) and may include some or all of the following:

- Amoxicillin-clavulanic acid oral tablets
- Cephalexin oral tablets
- Levofloxacin oral tablets
- Nitrofurantoin oral tablets
- Trimethoprim-sulfamethoxazole oral tablets
- Ceftriaxone 1 g injectable (inj)

Antidotes

- Naloxone inj kit
- Epinephrine auto-injector
- Glucagon 1 mg/mL inj
- Dextrose oral tablets
- Diphenhydramine 50 mg/mL inj

Antipsychotics

- Haloperidol oral tablets and 5 mg/mL inj
- Methotrimeprazine oral tablets and 25 mg/mL inj
- Olanzapine oral disintegrating tablets
- Quetiapine oral tablets
- Risperidone oral tablets

Antipyretics

Acetaminophen oral tablets and rectal suppositories

Anti-seizure medications

Phenobarbital 120 mg/mL inj

Anxiolytics and sedatives

- Lorazepam oral tablets and 4 mg/mL inj
- Midazolam 5 mg/mL inj

Cardiovascular medications

- ASA chewable tabs
- Apixaban oral tablets
- Metoprolol oral tablets
- Nitroglycerin sublingual spray
- Warfarin oral tablets

Corticosteroids

- Prednisone tablets
- Dexamethasone 4 mg/mL inj

Diuretics

Furosemide oral tablets and 40 mg/mL inj

Insulin

Insulin, rapid acting 100 units/mL inj

Opioids

- Hydromorphone oral tablets, elixir 1mg/mL, and 2 mg/mL inj and 10mg/mL inj
- Morphine oral tablets, elixir 5mg/mL, and 2 mg/mL or 10 mg/mL or 15mg/mL inj

Respiratory medications

- Salbutamol metered dose inhaler
- Ipratropium metered dose inhaler

Secretion management

- Atropine 1% ophthalmic drops
- Glycopyrrolate 0.2 mg/mL inj
- Scopolamine hydrobromide 0.4 mg/mL inj

***Formulary elixir or injectable medication concentrations and some formulary restrictions may differ by jurisdiction. Caution should be exercised when stocking more than one concentration of an opioid, with clear labeling and separation to avoid errors in administration. Pharmacist consultation is advised.**

Resources list

Note: the following list of resources has been compiled with input from experts in long-term care, geriatric medicine, palliative care, and geriatric psychiatry. They do not constitute medical advice, and clinical judgment must be exercised when using any of the attached resources or tools. The Public Health Agency of Canada cannot verify the accuracy of all statements or recommendations provided in these resources.

Resources related to **resident information**

- **"Meet My Loved One" - A Tool to Help Bedside Care Team Deliver Person-Centered Compassionate Care During COVID-19**

Source: University of Alabama at Birmingham Center for Palliative and Supportive Care

Resources related to **goals of care and advance care planning**

- **Serious Illness Care Program: Reference Guide for Clinicians**

Source: British Columbia Divisions of Family Practice (original source Ariadne Labs: A Joint Center for Health Systems Innovation (www.ariadnelabs.org) and Dana-Farber Cancer Institute. Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, <http://creativecommons.org/licenses/by-nc-sa/4.0/>);

- **Serious Illness Conversation Guide** (for healthcare providers)

Source: BC Centre for Palliative Care (original source Ariadne Labs: A Joint Center for Health Systems Innovation (www.ariadnelabs.org) and Dana-Farber Cancer Institute. Licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, <http://creativecommons.org/licenses/by-nc-sa/4.0/>);

- **Approaches to Goals of Care Discussions: Resource for healthcare providers**

Source: Ontario Palliative Care Network

- **COVID-19 Resources** (as of June 14, 2020, includes Information sheets for patients, including residents of long term care homes and Substitute Decision Makers about COVID-19 and advance care planning)

Source: Speak Up Ontario

Resources related to **communication**

- **COVID-19 Fact Sheets** (as of June 14, 2020, includes fact sheets for the public about COVID-19 infection, its prevention, and management, published in 35 languages)

Source: COVID-19 Health Literacy Project

Resources related to **palliative care**

- **Symptom management for adult patients with COVID-19 receiving end-of-life supportive care outside of the ICU**

Source: BC Centre for Palliative Care

- **Gestion des symptômes respiratoires et de fin de vie chez les patients frêles âgés atteints de COVID-19** (available in French only) (adapté des lignes directrices du BC Centre for Palliative Care, avec autorisation) (French symptom management guide for respiratory and end-of-life symptoms in frail elderly patients with COVID-19)

Source: Regional Geriatric Program of Toronto

- **Management of Respiratory Distress and End-of-Life Care in COVID-19 Residents in Long Term Care Homes**

Source: Hospice Palliative Care Ontario/ Speak Up Ontario

- **Pallium Canada's COVID-19 Response Resources** (as of June 14, 2020 includes online modules and webinars available to health care professionals across Canada on COVID-19, including "Palliative Approach to Care in Long-Term Care during COVID-19")

Source: Pallium Canada

Resources related to **mental and emotional needs at end-of-life**

- **Virtual Visits Toolkit** : An organized method for setting up video calls between residents and their loved ones during the COVID-19 crisis (as of June 14, 2020, includes link to virtual toolkit and also links to tutorials on setting up Zoom, Skype and Facetime communications)

Sources: Ontario Association of Residents' Councils, Family Councils Ontario, and Tech Coaches Inc.

- Other resources:

o **Mygrief.ca: Because losing someone is hard** (as of June 14, 2020 includes information on grieving, coping with unexpected loss, managing emotions, and self-care)

Source: Canadian Virtual Hospice

Resources related to **delirium**

- **Considerations for preventing and managing delirium in older adults during the COVID-19 pandemic, across the care continuum**

Source: Regional Geriatric Program of Toronto

- **COVID-19 Resources: The Delirium Prevention Toolkit**

Source: Hospital Elder Life Program

- Stall N, Wong CL. **Hospital-acquired delirium in older adults**. CMAJ. 2014;186(1):E61.

Resources related to **responsive behaviours**

- **P.I.E.C.E.S™ Job Aids - A practical, effective approach to change and continuous improvement** (learning and development initiative that provides an approach to understanding and enhancing care for individuals with complex physical and cognitive/mental health needs and behavioural changes)

Source: P.I.E.C.E.S™ Learning and Development Model: Supporting Relationships for Changing Health and Health Care

- **Ethical guidance for people who work in long-term care: What is the right thing to do in a pandemic?** (includes consideration of why a resident may not stay isolated in their room and how you can help someone stay in isolation)

Source: The brainXchange

- **Guidance for supporting clients who wander and require physical isolation**

Source: Regional Geriatric Program of Toronto

- **Non-pharmacological Approaches to Support Individuals Living with Dementia Maintain Isolation Precautions**

Source: Behavioural Supports Ontario/Soutien en cas de troubles du comportement en Ontario

- **Use of Antipsychotics in Behavioural and Psychological Symptoms of Dementia (BPSD) Discussion Guide: Long-Term Care (LTC) 2nd Edition**

Source: Centre for Effective Practice

Resources related to **resident and family/caregiver support**

- **COVID-19 Caregiver Tip Sheets** (as of June 14, 2020, includes tip sheets on caregiver mental health, how technology can support caregivers, and connecting socially while keeping a distance)

Source: The Ontario Caregiver Organization

- **Mygrief.ca: Because losing someone is hard** (as of June 14, 2020 includes information on grieving, unexpected loss, managing emotions, and self-care)

Source: Canadian Virtual Hospice

Resources related to **staff support**

- **Grief and Bereavement Supports for Health Care Workers** (as of June 14, 2020 includes links to a Support Service Line, and online sessions on Emotional, Spiritual & Compassionate Care)

Source: Hospice Palliative Care Ontario

- **Mental Health and COVID-19: Resources for health care workers during COVID-19** (as of June 14, 2020 includes resources for health care worker mental health and self-care)

Source: CAMH

- **Pallium Canada's COVID-19 Response Resources** (as of June 14, 2020 includes online modules and webinars available to health care professional across Canada on COVID-19, including "Role of Grief and Bereavement in the Care of Health Care Providers and their Families during COVID-19" and "The Psychological Impact of COVID-19 on Health Care Providers")

Source: Pallium Canada

- **Supports for LTC Team Members during COVID-19** (English and French)

Source: Ontario Centres for Learning, Research & Innovation in Long-Term Care

- **Long-Term Care Staff: Honouring Grief and Increasing Resiliency** (workbook)

Source: Ontario Centres for Learning, Research & Innovation in Long-Term Care

- Provinces and territories should have resources that may help to build resilience in healthcare providers, including online counseling or support services, mindfulness programs, sleep hygiene guidance, bereavement supports, and information on occupational health and safety, and labour legal support

10.0 References

- 1 He X, Lau EHY, Wu P, Deng X, Wang J, Hao X, et al. Temporal dynamics in viral shedding and transmissibility of COVID-19. *Nat Med*. 2020.
- 2 Kimball A, Hatfield KM, Arons M, James A, Taylor J, Spicer K, et al. Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility - King County, Washington, March 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(13):377-81.
- 3 Dora A, Winnett A, Jatt LP, Davar K, Watanabe M, Sohn L, Kern HS, Graber CJ, Goetz MB. Universal and Serial Laboratory Testing for SARS-CoV-2 at a Long-Term Care Skilled Nursing Facility for Veterans - Los Angeles, California, 2020. *MMWR Morb Mortal Wkly Rep*. 2020.
- 4 Nishiura H, Kobayashi T, Suzuki A, Jung SM, Hayashi K, Kinoshita R, et al. Estimation of the asymptomatic ratio of novel coronavirus infections (COVID-19). *Int J Infect Dis*. 2020.
- 5 Wei WE LZ, Chiew CJ, Yong SE, Toh MP, Lee VJ. Presymptomatic Transmission of SARS-CoV-2 - Singapore, January 23 - March 16, 2020. *Morbidity and Mortality Weekly*. 2020.
- 6 Huff HV, Singh A. Asymptomatic transmission during the COVID-19 pandemic and implications for public health strategies. *Clin Infect Dis*. 2020.
- 7 D'Adamo H, Yoshikawa T, Ouslander JG. Coronavirus Disease 2019 in Geriatrics and Long-Term Care: The ABCDs of COVID-19. *J Am Geriatr Soc*. 2020;68(5):912-7
- 8 Strengthening the Health Systems Response to COVID-19 Technical guidance #6: Preventing and managing the COVID-19 pandemic across long-term care services in the WHO European Region (21 May 2020): World Health Organization; 2020 [Available from: http://www.euro.who.int/_data/assets/pdf_file/0004/443605/Tech-guidance-6-COVID19-eng.pdf?ua=1.
- 9 Norman DC. Clinical Features of Infection in Older Adults. *Clin Geriatr Med*. 2016;32(3):433-41.
- 10 Yoshikawa TT, Reyes BJ, Ouslander JG. Sepsis in Older Adults in Long-Term Care Facilities: Challenges in Diagnosis and Management. *J Am Geriatr Soc*. 2019;67(11):2234-9.
- 11 Jarrett PG, Rockwood K, Carver D, Stolee P, Cosway S. Illness presentation in elderly patients. *Arch Intern Med*. 1995;155(10):1060-4.
- 12 Talbot HK, Falsey AR. The diagnosis of viral respiratory disease in older adults. *Clin Infect Dis*. 2010;50(5):747-51.
- 13 Epidemiologic summary of COVID-19 in LTC residents and seniors. Public Health Agency of Canada - unpublished data; 2020.
- 14 Clinical Management of COVID-19: interim guidance: World Health Organization; 2020 [Available from: <https://www.who.int/publications-detail/clinical-management-of-covid-19>.
- 15 Tay HS, Harwood R. Atypical presentation of COVID-19 in a frail older person. *Age Ageing*. 2020.
- 16 Norman RE, Stall NM, Sinha SK. Typically Atypical: COVID-19 Presenting as a Fall in an Older Adult. *J Am Geriatr Soc*. 2020.

- 17 High KP, Bradley SF, Gravenstein S, Mehr DR, Quagliarello VJ, Richards C, et al. Clinical practice guideline for the evaluation of fever and infection in older adult residents of long-term care facilities: 2008 update by the Infectious Diseases Society of America. *Clin Infect Dis*. 2009;48(2):149-71.
- 18 Arya A, Buchman S, Gagnon B, Downar J. Pandemic palliative care: beyond ventilators and saving lives. *CMAJ*. 2020;192(15):E400-E4.
- 19 Onder G, Rezza G, Brusaferro S. Case-Fatality Rate and Characteristics of Patients Dying in Relation to COVID-19 in Italy. *JAMA*. 2020.
- 20 Nie X, Fan L, Mu G, Tan Q, Wang M, Xie Y, et al. Epidemiological characteristics and incubation period of 7,015 confirmed cases with Coronavirus Disease 2019 outside Hubei Province in China. *J Infect Dis*. 2020.
- 21 Richardson S, Hirsch JS, Narasimhan M, Crawford JM, McGinn T, Davidson KW, et al. Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized With COVID-19 in the New York City Area. *JAMA*. 2020.
- 22 Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72314 Cases From the Chinese Center for Disease Control and Prevention. *JAMA*. 2020.
- 23 Gandhi RT, Lynch JB, Del Rio C. Mild or Moderate Covid-19. *N Engl J Med*. 2020.
- 24 Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet*. 2020;395(10229):1054-62.
- 25 Vaccines and treatments for COVID-19: List of all COVID-19 clinical trials authorized by Health Canada: Health Canada; 2020 [Available from: <https://www.canada.ca/en/health-canada/services/drugs-health-products/covid19-clinical-trials/list-authorized-trials.html>.]
- 26 "Solidarity" clinical trial for COVID-19 treatments: World Health Organization; 2020 [Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov/solidarity-clinical-trial-for-covid-19-treatments>].
- 27 International Clinical Trials Registry Program (ICTRP): World Health Organization; 2020 [Available from: <https://www.who.int/ictrp/en/>].
- 28 "COVID-19" clinical studies search: ClinicalTrials.gov; 2020 [Available from: <https://clinicaltrials.gov/ct2/results?cond=COVID-19>].
- 29 COVID-19 Treatment Guidelines: National Institutes of Health; 2020 [Available from: <https://files.covid19treatmentguidelines.nih.gov/guidelines/covid19treatmentguidelines.pdf>].
- 30 Clinical management of patients with moderate to severe COVID-19 - Interim guidance: Public Health Agency of Canada; 2020 [Available from: <https://www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/clinical-management-covid-19.html>].
- 31 Berlin DA, Gulick RM, Martinez FJ. Severe Covid-19. *N Engl J Med*. 2020.

- 32 Du RH, Liang LR, Yang CQ, Wang W, Cao TZ, Li M, et al. Predictors of mortality for patients with COVID-19 pneumonia caused by SARS-CoV-2: a prospective cohort study. *Eur Respir J*. 2020;55(5).
- 33 Aggregated Observations from 6,479 Hospitalized COVID-19 Patients in the CarePort Network United States: CarePort; 2020 [Available from: <https://careporthealth.com/wp-content/uploads/2020/04/COVID-19-Mortality-Report.pdf>].
- 34 Docherty AB, Harrison EM, Green CA, Hardwick HE, Pius R, Norman L, et al. Features of 20 133 UK patients in hospital with covid-19 using the ISARIC WHO Clinical Characterisation Protocol: prospective observational cohort study. *BMJ*. 2020;369:m1985.
- 35 Grasselli G, Zangrillo A, Zanella A, Antonelli M, Cabrini L, Castelli A, et al. Baseline Characteristics and Outcomes of 1591 Patients Infected With SARS-CoV-2 Admitted to ICUs of the Lombardy Region, Italy. *JAMA*. 2020.
- 36 Bhatraju PK, Ghassemieh BJ, Nichols M, Kim R, Jerome KR, Nalla AK, et al. Covid-19 in Critically Ill Patients in the Seattle Region - Case Series. *N Engl J Med*. 2020;382(21):2012-22.
- 37 Joni G, Lara P, Unroe Kathleen T, Lieve VDB. International COVID-19 palliative care guidance for nursing homes leaves key themes unaddressed. *J Pain Symptom Manage*. 2020.
- 38 Performing Facility-wide SARS-CoV-2 Testing in Nursing Homes: Centers for Disease Control and Prevention; [Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-facility-wide-testing.html>].
- 39 Responding to Coronavirus (COVID-19) in Nursing Homes: Centers for Disease Control and Prevention; 2020 [Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/nursing-homes-responding.html>].
- 40 Long-Term Care facilities: interRAI; [Available from: <https://www.interrai.org/long-term-care-facilities.html>].
- 41 Update on the use of pneumococcal vaccines in adults 65 years of age and older - A Public Health Perspective: National Advisory Committee on Immunization - Public Health Agency of Canada; 2018
- 42 Zhao L, Young K, Gemmill I. Summary of the NACI Seasonal Influenza Vaccine Statement for 2019-2020. *Can Commun Dis Rep*. 2019;45(6):149-55. [Available from: <https://www.canada.ca/en/public-health/services/reports-publications/canada-communicable-disease-report-ccdr/monthly-issue/2019-45/issue-6-june-6-2019/article-1-naci-influenza-vaccine-statement-2019-2020.html>]
- 43 Updated Recommendations on the Use of Herpes Zoster Vaccines: An Advisory Committee Statement: National Advisory Committee on Immunization; 2018 [Available from: <https://www.canada.ca/en/services/health/publications/healthy-living/updated-recommendations-use-herpes-zoster-vaccines.html>].
- 44 Stone ND, Ashraf MS, Calder J, Crnich CJ, Crossley K, Drinka PJ, et al. Surveillance definitions of infections in long-term care facilities: revisiting the McGeer criteria. *Infect Control Hosp Epidemiol*. 2012;33(10):965-77.

- 45 Preparing for COVID-19 in Nursing Homes: Centers for Disease Control and Prevention; [Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/long-term-care.html>].
- 46 Improving Patient Safety in Long-Term Care Facilities: Agency for Healthcare Research and Quality; <https://www.ahrq.gov/patient-safety/settings/long-term-care/resource/facilities/ltc.html>
- 47 Ouslander JG, Bonner A, Herndon L, Shutes J. The Interventions to Reduce Acute Care Transfers (INTERACT) quality improvement program: an overview for medical directors and primary care clinicians in long term care. *J Am Med Dir Assoc*. 2014;15(3):162-70.
- 48 Stall NM, Farquharson C, Fan-Lun C, Wiesenfeld L, Loftus CA, Kain D, et al. A Hospital Partnership with a Nursing Home Experiencing a COVID-19 Outbreak: Description of a Multi-Phase Emergency Response in Toronto, Canada. *J Am Geriatr Soc*. 2020.
- 49 Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19: World Health Organization; 2020 [Available from: https://apps.who.int/iris/bitstream/handle/10665/331508/WHO-2019-nCoV-IPC_long_term_care-2020.1-eng.pdf].
- 50 COVID-19 Recommendations for Clinicians: Choosing Wisely Canada; 2020 [Available from: <https://choosingwiselycanada.org/covid-19/>].
- 51 Arons MM, Hatfield KM, Reddy SC, Kimball A, James A, Jacobs JR, et al. Presymptomatic SARS-CoV-2 Infections and Transmission in a Skilled Nursing Facility. *N Engl J Med*. 2020.
- 52 Report of the WHO-China joint Mission on Coronavirus Disease 2019 (COVID-19): World Health Organization; 2020 [Available from: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report>].
- 53 Ye Z, Rochweg B, Wang Y, Adhikari NK, Murthy S, Lamontagne F, et al. Treatment of patients with nonsevere and severe coronavirus disease 2019: an evidence-based guideline. *CMAJ*. 2020.
- 54 Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease: Centres for Disease Control and Prevention; 2020 [Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-guidance-management-patients.html>].
- 55 Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497-506.
- 56 Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. *JAMA*. 2020.
- 57 Yang X, Yu Y, Xu J, Shu H, Xia J, Liu H, et al. Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. *Lancet Respir Med*. 2020.
- 58 Beigel JH, Tomashek KM, Dodd LE, Mehta AK, Zingman BS, Kalil AC, et al. Remdesivir for the Treatment of Covid-19 - Preliminary Report. *N Engl J Med*. 2020.

- 59 Horby P LW, Emberson J, Mafham M, Bell J, Linsell L, Staplin N, Brightling C, Ustianowski A, Elmahi E, Prudon B, Green C, Felton T, Chadwick D, Rege K, Fegan C, Chappell LC, Faust SN, Jaki T, Jeffery K, Montgomery A, Rowan K, Juszczak E, Bailie JK, Haynes R, Landry MJ, RECOVERY Collaborative Group. Effect of Dexamethasone in Hospitalized Patients with COVID-19: Preliminary Report. medRxiv preprint June 22, 2020 at <https://www.medrxiv.org/content/101101/2020062220137273v1>. 2020.
- 60 Kalil AC. Treating COVID-19-Off-Label Drug Use, Compassionate Use, and Randomized Clinical Trials During Pandemics. JAMA. 2020.
- 61 Halpin DMG, Singh D, Hadfield RM. Inhaled corticosteroids and COVID-19: a systematic review and clinical perspective. Eur Respir J. 2020;55(5).
- 62 Bhimraj A, Morgan RL, Shumaker AH, Lavergne V, Baden L, Cheng VC, et al. Infectious Diseases Society of America Guidelines on the Treatment and Management of Patients with COVID-19. Clin Infect Dis. 2020.
- 63 Liciskai C, Yang CL, Ducharme FM, Radhakrishnan D, Podgers D, Ramsey C, et al. Key highlights from the Canadian Thoracic Society's Position Statement on the Optimization of Asthma Management during the COVID-19 Pandemic. Chest. 2020.
- 64 Liciskai C YC, Ducharme FM, Radhakrishnan D, Podgers D, Ramsey C, Samanta T, Cote A, Mahdavian M, Loughheed D. Addressing therapeutic questions to help Canadian physicians optimize asthma management for their patients during the COVID-19 pandemic. Canadian Journal of Respiratory, Critical Care, and Sleep Medicine. 2020;4(2):73-6.
- 65 Bhutani M HP, Bourbeau J, Dechman G, Penz E, Aceron R, Beauchamp M, Wald J, Stickland M, Olsen S, Goodridge D. KEY HIGHLIGHTS of the Canadian Thoracic Society's Position Statement on the Optimization of Chronic Obstructive Pulmonary Disease Management during the COVID-19 Pandemic. Chest preprint. 2020.
- 66 Bhutani M HP, Bourbeau J, Dechman G, Penz E, Aceron R, Beauchamp M, Wald J, Stickland M, Olsen S, Goodridge D. Addressing therapeutic questions to help Canadian health care professionals optimize COPD management for their patients during the COVID-19 pandemic. Canadian Journal of Respiratory, Critical Care, and Sleep Medicine. 2020;4(2):77-80.
- 67 Patel M, Steinberg K, Suarez-Barcelo M, Saffel D, Foley R, Worz C. Chronic Obstructive Pulmonary Disease in Post-acute/Long-term Care Settings: Seizing Opportunities to Individualize Treatment and Device Selection. J Am Med Dir Assoc. 2017;18(6):553 e17- e22.
- 68 Boockvar KS, Carlson LaCorte H, Giambanco V, Fridman B, Siu A. Medication reconciliation for reducing drug-discrepancy adverse events. Am J Geriatr Pharmacother. 2006;4(3):236-43.
- 69 Boockvar K, Fishman E, Kyriacou CK, Monias A, Gavi S, Cortes T. Adverse events due to discontinuations in drug use and dose changes in patients transferred between acute and long-term care facilities. Arch Intern Med. 2004;164(5):545-50.
- 70 Rawson TM, Moore LSP, Zhu N, Ranganathan N, Skolimowska K, Gilchrist M, et al. Bacterial and fungal co-infection in individuals with coronavirus: A rapid review to support COVID-19 antimicrobial prescribing. Clin Infect Dis. 2020.

- 71 Wang L, He W, Yu X, Hu D, Bao M, Liu H, et al. Coronavirus disease 2019 in elderly patients: Characteristics and prognostic factors based on 4-week follow-up. *J Infect.* 2020;80(6):639-45.
- 72 Using Antibiotics Wisely: Choosing Wisely Canada; 2020 [Available from: <https://choosingwiselycanada.org/campaign/antibiotics/>].
- 73 Antimicrobial Stewardship Essentials in Long Term Care: Antimicrobial Stewardship as Quality Improvement: Public Health Ontario; 2018 [Available from: <https://www.publichealthontario.ca/-/media/documents/p/2018/primer-antimicrobial-stewardship-ltc.pdf?la=en>].
- 74 Evidence Brief: Duration of Antibiotic Treatment for Pneumonia in Long Term Care Residents: Public Health Ontario; [Available from: <https://www.publichealthontario.ca/-/media/documents/e/2018/eb-duration-antibiotics-ltc-pneumonia.pdf?la=en>].
- 75 Evidence Brief: Duration of Antibiotic Treatment for Uncomplicated Cellulitis in Long-Term Care Residents: Public Health Ontario; 2020 [Available from: <https://www.publichealthontario.ca/-/media/documents/E/2018/eb-duration-antibiotics-ltc-cellulitis.pdf?la=en>].
- 76 Havey TC, Fowler RA, Daneman N. Duration of antibiotic therapy for bacteremia: a systematic review and meta-analysis. *Crit Care.* 2011;15(6):R267.
- 77 Sandberg T, Skoog G, Hermansson AB, Kahlmeter G, Kuylenstierna N, Lannergard A, et al. Ciprofloxacin for 7 days versus 14 days in women with acute pyelonephritis: a randomised, open-label and double-blind, placebo-controlled, non-inferiority trial. *Lancet.* 2012;380(9840):484-90.
- 78 Hepburn MJ, Dooley DP, Skidmore PJ, Ellis MW, Starnes WF, Hasewinkle WC. Comparison of short-course (5 days) and standard (10 days) treatment for uncomplicated cellulitis. *Arch Intern Med.* 2004;164(15):1669-74.
- 79 Tellier G, Niederman MS, Nusrat R, Patel M, Lavin B. Clinical and bacteriological efficacy and safety of 5 and 7 day regimens of telithromycin once daily compared with a 10 day regimen of clarithromycin twice daily in patients with mild to moderate community-acquired pneumonia. *J Antimicrob Chemother.* 2004;54(2):515-23.
- 80 Yahav D, Franceschini E, Koppel F, Turjeman A, Babich T, Bitterman R, et al. Seven Versus 14 Days of Antibiotic Therapy for Uncomplicated Gram-negative Bacteremia: A Noninferiority Randomized Controlled Trial. *Clin Infect Dis.* 2019;69(7):1091-8.
- 81 File TM, Jr., Mandell LA, Tillotson G, Kostov K, Georgiev O. Gemifloxacin once daily for 5 days versus 7 days for the treatment of community-acquired pneumonia: a randomized, multicentre, double-blind study. *J Antimicrob Chemother.* 2007;60(1):112-20.
- 82 Dunbar LM, Wunderink RG, Habib MP, Smith LG, Tennenberg AM, Khashab MM, et al. High-dose, short-course levofloxacin for community-acquired pneumonia: a new treatment paradigm. *Clin Infect Dis.* 2003;37(6):752-60.
- 83 Lee SG, Fralick M, Sholzberg M. Coagulopathy associated with COVID-19. *CMAJ.* 2020.

- 84 Uyeki TM, Bernstein HH, Bradley JS, Englund JA, File TM, Fry AM, et al. Clinical Practice Guidelines by the Infectious Diseases Society of America: 2018 Update on Diagnosis, Treatment, Chemoprophylaxis, and Institutional Outbreak Management of Seasonal Influenza. *Clin Infect Dis*. 2019;68(6):e1-e47.
- 85 Aoki FY AU, Mubareka S, Papenburg J, Stiver HG, Evans G. Use of antiviral drugs for seasonal influenza: Foundational document for practitioners - Update 2019. *Journal of the Association of Medical Microbiology and Infectious Disease Canada*. 2019;4(2).
- 86 Framework on Palliative Care in Canada: Health Canada; 2020 [Available from: <https://www.canada.ca/content/dam/hc-sc/documents/services/health-care-system/reports-publications/palliative-care/framework-palliative-care-canada/framework-palliative-care-canada.pdf>.]
- 87 Etkind SN, Bone AE, Lovell N, Cripps RL, Harding R, Higginson IJ, et al. The Role and Response of Palliative Care and Hospice Services in Epidemics and Pandemics: A Rapid Review to Inform Practice During the COVID-19 Pandemic. *J Pain Symptom Manage*. 2020.
- 88 Dean MM, Cellarius V, Henry B, Oneschuk D, Librach Canadian Society Of Palliative Care Physicians Taskforce SL. Framework for continuous palliative sedation therapy in Canada. *J Palliat Med*. 2012;15(8):870-9.
- 89 Creighton AS, Davison TE, Kissane DW. The prevalence of anxiety among older adults in nursing homes and other residential aged care facilities: a systematic review. *Int J Geriatr Psychiatry*. 2016;31(6):555-66.
- 90 Seitz D PN, Conn D. Prevalence of psychiatric disorders among older adults in long-term care homes: a systematic review. *International Psychogeriatrics*. 2010;22(7):1025-39.
- 91 O'Hanlon S, Inouye SK. Delirium: a missing piece in the COVID-19 pandemic puzzle. *Age Ageing*. 2020.
- 92 Wang H, Li T, Barbarino P, Gauthier S, Brodaty H, Molinuevo JL, et al. Dementia care during COVID-19. *Lancet*. 2020;395(10231):1190-1.
- 93 Simard J VL. Loneliness and Isolation in Long-term Care and the COVID-19 pandemic. *Journal of the American Medical Directors Association*. 2020;preprint.
- 94 Considerations for Memory Care Units in Long-term Care Facilities: Centers for Disease Control and Prevention; 2020 [Available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/memory-care.html>].
- 95 Iaboni A, Cockburn A, Marcil M, Rodrigues K, Marshall C, Garcia MA, et al. Achieving Safe, Effective, and Compassionate Quarantine or Isolation of Older Adults With Dementia in Nursing Homes. *Am J Geriatr Psychiatry*. 2020.
- 96 Stall N, Wong CL. Hospital-acquired delirium in older adults. *CMAJ*. 2014;186(1):E61.
- 97 Inouye SK, Westendorp RG, Saczynski JS. Delirium in elderly people. *Lancet*. 2014;383(9920):911-22.
- 98 Marcantonio ER. Delirium in Hospitalized Older Adults. *N Engl J Med*. 2017;377(15):1456-66.
- 99 Woodhouse R, Burton JK, Rana N, Pang YL, Lister JE, Siddiqi N. Interventions for preventing delirium in older people in institutional long-term care. *Cochrane Database Syst Rev*. 2019;4:CD009537.

- 100 Stall N WC. Differential diagnosis of delirium (Appendix to Stall N, Wong CL. Hospital-acquired delirium in older adults. CMAJ. 2014;186(1):E61.): CMAJ; 2020 [Available from: <https://www.cmaj.ca/content/cmaj/suppl/2013/09/03/cmaj.130299.DC1/five-delerium-1-at.pdf>].
- 101 Iaboni A GA, Barned C, Rodrigues K, Kontos P, Chu C, Astell A, the Dementia Isolation Toolkit Team. Ethical guidance for people who work in long-term care: What is the right thing to do in a pandemic? 2020 [Available from: <https://brainxchange.ca/Public/Files/COVID-19/Ethical-Guidance-for-LTC-v1-4-23-20.aspx>].
- 102 COVID-19 Outbreak Guidance for Long-Term Care Homes (LTCH): Ministry of Health Ontario; 2020 [Available from: http://www.health.gov.on.ca/en/pro/programs/publichealth/coronavirus/docs/LTCH_outbreak_guidance.pc].

Date modified:

2020-07-17