Ontario Science Advisory Table Drugs and Biologics Clinical Practice Guidelines Working Group, Ontario Science Advisory Table Congregate Care Working Group and LTC+

Therapeutic Management of Residents of Long-term Care Homes with COVID-19

Pharmacologic and non-pharmacologic COVID-19 therapeutic recommendations which incorporates implementation and logistic considerations for long-term care (LTC) home residents.

Risk of Disease Progression

- Higher risk residents are those who have a ≥3% risk of hospitalization if they develop COVID-19. Standard risk residents are those who have a <3% risk of hospitalization
- Despite high rates of COVID-19 vaccination, there continues to be COVID-19-associated morbidity and mortality in LTC home residents due to advanced age, multiple comorbidities and frailty
- Racialized people, particularly those who are Indigenous and Black, may be at increased risk of disease progression due to disparate rates of comorbidities, increased barriers to vaccination, and other social determinants associated with worse health. They should be considered priority populations for access to COVID-19 drugs and therapeutics
- COVID-19 therapeutic management advanced planning should consider goals of care, obtaining needed bloodwork, medication reviews for drug-drug interactions and consent where applicable

AGE (Years)	NUMBER OF VACCINE DOSES				RISK FACTORS
	0 doses	1 dose	2 doses	3 or more doses	
40 to 49	**High risk** if ≥1 risk factors	**Standard risk**	**Standard risk**	**Standard risk**	• Obesity (BMI ≥30 kg/m²) • Diabetes • Heart disease, hypertension, congestive heart failure • Chronic respiratory disease, including cystic fibrosis • Cerebral palsy • Intellectual disability • Sickle cell disease • Moderate or severe kidney disease (eGFR <60 mL/min) • Moderate or severe liver disease (e.g., Child Pugh Class B or C cirrhosis)
50 to 69	**High risk**[2]	**High risk** ≥3 risk factors	**Standard risk**	**Standard risk**	
≥70	**High risk**	**High risk** if ≥1 risk factors	**High risk** if ≥1 risk factors[2]	**High risk** ≥3 risk factors	
Severely immunocompromised[1] **individuals of any age**	**High risk:** Therapeutics should always be recommended for immunocompromised individuals not expected to mount an adequate immune response to COVID-19 vaccination or SARS-CoV-2 infection due to their underlying immune status, regardless of age or vaccine status.[1]				

1. Examples of immunocompromised or immunosuppressed individuals include receipt of treatment for solid tumors and hematologic malignancies (including individuals with lymphoid malignancies who are being monitored without active treatment), receipt of solid-organ transplant and taking immunosuppressive therapy, receipt of chimeric antigen receptor (CAR)-T-cell or hematopoietic stem cell transplant (within 2 years of transplantation or taking immunosuppression therapy), moderate or severe primary immunodeficiency (e.g., DiGeorge syndrome, Wiskott-Aldrich syndrome, common variable immunodeficiency, Good's syndrome, hyper IgE syndrome), advanced or untreated HIV infection, active treatment with high-dose corticosteroids (i.e., ≥20 mg prednisone or equivalent per day when administered for ≥2 weeks), alkylating agents, antimetabolites, transplant-related immunosuppressive drugs, cancer chemotherapeutic agents classified as severely immunosuppressive, tumor-necrosis factor (TNF) blockers, and other biologic agents that are immunosuppressive or immunomodulatory.
2. Acceptable hospitalization risk of individuals at younger end of age band is at least 1-2%.

SEVERITY OF ILLNESS	RECOMMENDATIONS
Mild COVID-19 Disease Residents who do not require new or additional supplemental oxygen from their baseline status	▶**Pharmacological therapy is recommended for mildly-symptomatic residents at higher risk of disease progression and should be considered for nirmatrelvir/ritonavir (Paxlovid) or remdesivir. The choice of drug depends on availability, contraindications, ease of administration and goals of care.** ● Nirmatrelvir/ Ritonavir (Paxlovid) **is recommended** at a dose of 300 mg nirmatrelvir and 100 mg ritonavir given together PO BID x 5 days. Dose-adjust to 150/100mg PO BID x 5 days if eGFR 30-59 mL/min. Not recommended if eGFR <30 mL/min. *(Order Creatinine prior to administration if no recent results available (< 30 days). If results available within 30 days, can start therapy and order a repeat Creatinine as soon as possible).* • Indicated for mild COVID-19 throughout (not requiring new or increased oxygen) meeting eligibility criteria within **5 days** of symptom onset • Lack of efficacy and side effect data in the LTC population • High potential for drug-drug interactions due to ritonavir; requires a pharmacist review for drug-drug interactions prior to prescribing • Cannot be crushed, limiting administration in some LTC residents • Consider whether goals of care are in line with life-prolonging treatment of acute medical conditions ● Remdesivir **is recommended** at a dose of 200 mg IV on day 1, then 100 mg IV per day on days 2-3. Contraindicated in residents with renal dysfunction (eGFR <30 mL/min), ALT>5x upper limit of normal. *(Order Creatinine and ALT prior to administration if no recent results available (< 30 days). If results available within 30 days, can start therapy and order a repeat Creatinine and ALT as soon as possible).* • Indicated for mild COVID-19 throughout (not requiring new or increased oxygen) meeting eligibility criteria within **7 days** of symptom onset • Need for IV access, and daily infusion x 3 make the logistics of administering remdesivir challenging for some LTC homes unless performed by an external provider • Consider whether goals of care are in line with life-prolonging treatment of acute medical conditions ▶**Pharmacological therapy for mildly symptomatic residents in LTC, regardless of risk** ▲ Budesonide **may be considered** at a dose of 800 mcg inhaled BID for 14 days. • Evidence of reduction in duration of symptoms (very low certainty evidence) • Low risk of harm • Can be considered in addition to other COVID-19 therapies when residents have bothersome respiratory symptoms • May be a class effect; other inhaled steroids that can be administered via an aerochamber (e.g., ciclesonide) rather than a turbuhaler may also be considered

CURRENTLY NOT RECOMMENDED*

There is insufficient evidence to support the use of the following therapies in the treatment of COVID-19 outside of clinical trials or where other indications would justify its use:

◆ Colchicine

◆ Interferon (with or without lopinavir-ritonavir and ribavirin)

◆ Vitamin D

** Applies to residents with any severity of illness*

▲ **Fluvoxamine may be considered** at a dose of 50 mg PO daily, titrated up to 100 mg **PO BID for 10-15 days**. *(If the drug is well tolerated, increase the dose to 100 mg PO BID on day 2. If the drug is less well tolerated, consider a dose of 50 mg PO BID on day 2, and increase the dose to 100 mg PO BID on day 3)*.

- Indicated for mild COVID-19 throughout (not requiring new or increased oxygen) within **7 days** of symptom onset and not receiving Paxlovid or remdesivir
- Evidence of benefit is not very strong. Not believed to be a class effect
- Side effect profile of high dose fluvoxamine and high potential for drug-drug interactions makes this treatment challenging for most LTC residents, recommend pharmacist review for drug-drug interactions prior to prescribing
- Limited clinical experience in LTC population
- Older adults may experience fluvoxamine concentrations that are 2- to 3-fold higher than younger adults
- **Risks in this population may outweigh the benefits**

◆ There is currently insufficient evidence to make a recommendation around aspirin or anticoagulation for mildly ill residents

■ The following therapies **are not recommended** for mildly ill residents: dexamethasone, tocilizumab, sarilumab and baricitinib

▶ **Supportive therapy**

Fluids

Consider fluid intake as LTC residents with COVID-19 are at risk of volume depletion. For those with decreased oral intake, encourage oral fluids or consider initiating hypodermoclysis as a temporary measure, as needed, through the acute illness.

(Hypodermoclysis up to a rate of approximately 50 cc/hour using an isotonic solution (e.g., normal saline)).

Moderate COVID-19 Disease

Patients newly requiring low-flow supplemental oxygen or having an increase in oxygen requirements if on chronic oxygen therapy

- Patients with moderate COVID-19 will need to have a clinical assessment and decision made around need for transfer to hospital
- The following therapies may be offered to residents in homes where moderate COVID-19 can be managed
- These therapies may also be offered to residents who do not wish to be transferred to acute care, in accordance with their goals of care

▶ **Pharmacologic therapy**

● **Dexamethasone is recommended** at a dose of 6 mg PO daily for 10 days (IM dexamethasone 10 mg per day or SC dexamethasone 6 mg per day may be alternative options for people with poor swallowing).

- Monitor closely for delirium (including hypoactive delirium); consider early discontinuation if harms outweigh the benefits for the resident after considering their goals of care
- Monitor blood glucose in all residents with diabetes
- No reason to withhold dexamethasone regardless of the administration of remdesivir

● **Remdesivir is recommended** at a dose of 200 mg IV on day 1, then 100 mg IV per day for 4 days. Contraindicated in patients with renal dysfunction (eGFR<30 mL/min) or ALT>5x upper limit of normal. *(Order Creatinine and ALT prior to administration if no recent results available (< 30 days). If results available within 30 days, can start therapy and order a repeat Creatinine and ALT as soon as possible).*

- Need for IV access, and daily infusion x5 make the logistics of administering remdesivir challenging for some LTC settings unless performed by an external provider
- Consider whether goals of care are in line with life-prolonging treatment of acute medical conditions

▲ **Anticoagulation** – therapeutic dose anticoagulation with low molecular weight heparin (LMWH) **may be considered**.

- Therapeutic dose anticoagulation with LMWH for residents not already anticoagulated who are felt to be at low risk of bleeding
- Residents on therapeutic doses of anticoagulation (regardless of type) for other pre-COVID-19 reasons should continue to take anticoagulation as previously prescribed
- If residents have a bleeding risk, consider no anticoagulation or prophylactic dose LMWH

● **Tocilizumab is recommended** at a dose of 400 mg one time IV.

- For residents on supplemental oxygen, only given if they have not shown improvement with dexamethasone after 24-48 hours and their CRP>75
- Illness severity, need for evaluation of CRP, IV route of admission, and drug availability make tocilizumab administration very challenging in LTC, and so would require acute care transfer if consistent with goals of care

■ Currently **not recommended** – SARS-CoV-2 neutralizing antibodies and nirmatrelvir/ ritonavir (Paxlovid)

▶ **Supportive therapies**

Fluids

Consider fluid intake as LTC residents with COVID-19 are at risk of volume depletion. For those with decreased oral intake, encourage oral fluids or consider initiating hypodermoclysis as a temporary measure as needed, through the acute illness.

(Hypodermoclysis up to a rate of approximately 50 cc/hour using an isotonic solution (e.g., normal saline)).

Oxygen – supplemental oxygen up to 5L/min via nasal prongs.

Target SpO2 > 92% (unless prior chronic lung disease, where lower SpO2 levels could be targeted)

RECOMMENDED AGAINST*

The following therapies are not recommended for treatment of COVID-19 due to lack of benefit, potential harm, and system implications of overuse:

■ Antibiotics (azithromycin)

■ Casirivimab-imdevimab due to lack of neutralizing activity against the Omicron variant

■ Hydroxychloroquine or chloroquine

■ Ivermectin

■ Lopinavir/ritonavir

■ Sotrovimab due to reduced neutralizing activity against Omicron BA.2 subvariant

** Applies to residents with any severity of illness*