



Contact Charlene E. Le Beau: clebeau@jccf.ca

April 28, 2022

VIA EMAIL: dsutherland@csrd.bc.ca

Columbia Shuswap Regional District
555 Harbourfront Drive NE
PO Box 978
Salmon Arm, BC V1E 4P1

Attention: Derek Sutherland, Team Leader, Protective Services

Dear Mr. Sutherland,

Re: Columbia Shuswap Regional District mandatory Covid-19 vaccine policy

We have been retained by Craig Nygard in relation to the above-referenced matter. We have been advised by Mr. Nygard that the Columbia Shuswap Regional District has imposed a Covid-19 vaccine mandate on its volunteer firefighters. Although a volunteer firefighter, caselaw confirms that Mr. Nygard is afforded the same protection under human rights legislation as employees. In any event, Mr. Nygard advises that he was paid for his services when called out to a fire, as well as for his service fighting forest fires. Accordingly, Mr. Nygard is not a "volunteer" in the true sense of the word.

Mr. Nygard's work as a firefighter is extremely important to him. Providing such an essential service to the community fulfills his wish to contribute to society and to be of service to mankind.

Mr. Nygard seeks an exemption to the vaccine mandate on the basis of sincerely held religious beliefs, as well as on the basis of having natural immunity to the SARS-CoV-2 virus. He advises that he has submitted a request for religious exemption to you, but that his request was denied. He also advises that you do not accept natural immunity as a reason for exemption from the vaccine.

Mr. Nygard is unable to consent to receive any Covid-19 vaccines and is requesting a reasonable accommodation.

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Mr. Nygard has informed himself of the risks and benefits of receiving a Covid-19 vaccine. He has learned that the Covid-19 vaccines available at this time carry substantial risks including severe allergic reactions and death, and they have warning labels from Health Canada for the conditions of myocarditis, pericarditis, blood clots, and Bell's Palsy.

Mr. Nygard relies on the following references from the Christian Bible, the full text of which can be made available upon request:

1. His faith informs him that his body is the temple of the Holy Spirit. Therefore, he must carefully consider how he treats his body. For this reason alone, he cannot take this vaccine. **1 Corinthians 6:19**
3. His faith instructs him that however well-meaning government health provisions are, they may conflict with his personal conscientious convictions and when they do, he is to choose the latter. This is the present case. **Daniel 1: 5-8**
4. His faith instructs him that even when government officials think his choices will make him sick or put other lives in danger, he needs to follow conscientious conviction. **Daniel 1:10**
5. His faith instructs him that there can be difference of conviction in Christianity. This means that other Christians, even in his denomination, including those holding positions of leadership, may not be persuaded as he is. His convictions are not based on his fellow believers - they are between him and God. **Romans 14:1-5**
6. Likewise, his faith informs him that every individual must be fully persuaded in their own minds. The evidence for him is not conclusive that this vaccine is safe. He is not fully persuaded in his own mind and therefore cannot conscientiously take this vaccination. **Romans 14:5**
7. His faith informs him that he is to submit to local and federal government when he is convinced that government is acting in his best interests. He is not convinced that CSRD's mandating of the current vaccinations is in his best interests. **Romans 13:1-4**
8. His faith tells him to yield to local and federal governments for conscience's sake, but in circumstances where the civil authorities attempt to override conscience, he must obey God rather than man. Taking this vaccine, and acceding to the mandates of it, are a violation of his conscientious convictions. **Romans 13:5**
9. His faith instructs him that his obligation to his community is love. He is to love others as he loves himself. Taking this vaccination encourages others around him that this vaccination is safe and best for them. It communicates a message that he believes is untrue. Therefore, it is not a loving act towards his community. **Romans 13:8**

10. His faith instructs him to love his neighbour. To acquiesce to the mandate by submitting to it implies his support of the mandate and of this vaccine. Acting in this way places undue hardship on his fellow citizens who are not convinced to take it. Therefore, acquiescing to the vaccine mandate is not the loving thing to do for his neighbour. **Matthew 22:39**

11. His faith calls him to conscientiously stand against the economic pressure currently placed on people to make decisions under the real and unconscionable threat of economic hardship. **Revelation 13:15-17**

12. His faith teaches him that liberty and freedom of choice are a vital part of God's presence in his life. To support the government and employer pressure to be vaccinated or lose one's job is a violation of this liberty and the denial of God's presence in his life. **2 Corinthians 3:17**

Mr. Nygard also believes that innocent life is sacred to God, from conception to birth, to natural death - **Jeremiah 1:5**:

5 Before he formed thee in the belly he knew thee; and before thou camest forth out of the womb he sanctified thee, and he ordained thee a prophet unto the nations. 6 Then said he, Ah, Lord God!

He must not endorse the killing of human life - Exodus 20:13

"You shall not murder."

Mr. Nygard understands that the manufacturers of the Covid-19 vaccines have used abortion-derived fetal cell lines as part of their development or testing of vaccines¹. Thus, his sincerely held beliefs prohibit him from participating or benefiting from an abortion, no matter how remote in time that abortion occurred.

After considering the risks, benefits, alternatives, the use of abortion-derived fetal cell lines, Mr. Nygard has taken the matter to the Lord in prayer and is convinced that he should not take a vaccine for Covid-19 and that to do so would violate his conscience and religious beliefs.

As noted above, he respectfully requests an exemption based on his strongly and sincerely held conscientious and religious beliefs in accordance with the provincial human rights legislation which protects him from discrimination.

¹ <https://immunizebc.ca/ask-us/questions/do-covid-19-vaccines-contain-aborted-fetal-cells>

He is also protected by section 2 of the *Canadian Charter of Rights and Freedoms*, which guarantees that all Canadians are entitled to freedom of conscience and religion, expression, thought, opinion, and belief.

Further, liberty and security of the person under section 7 of the *Charter* protects individual's rights to bodily autonomy. Ownership and autonomy over the body and the ability to freely choose what does or does not enter one's body is a critical aspect of individual and religious liberty. Government agencies do not own or control people's bodies and must never be permitted to act as if they do by coercing anyone to take Covid-19 vaccines without their consent, and by penalizing them if they refuse. Liberty is egregiously interfered with by the threat of being fired and excluded from programs and services if individuals decline to be unnecessarily injected with the Covid-19 vaccines that may carry serious risks and limited benefits.

Freedom of conscience and religion guarantees the rights of individuals to manifest in their daily lives their sincerely held conscientious and religious beliefs. Individuals who are precluded from receiving Covid-19 vaccines due to their pro-life, religious beliefs, and moral convictions have the *Charter*-protected right to decline Covid-19 vaccination without being penalized by their employer through the loss of employment.

In addition, Mr. Nygard has natural immunity from Covid-19. He contracted Covid-19 during the summer of 2021 while fighting forest fires. Mr. Nygard underwent a PCR test on August 13, 2021 to test for Covid-19, and the result came back positive for the virus. Please find attached a copy of the text message he received from the BC CDC, indicating his positive test result. Mr. Nygard now has natural immunity to the virus.

The evolving science does not support a vaccine mandate. It is clear now that the Covid-19 vaccines do not prevent transmission or infection of the virus, and there are numerous studies to prove that assertion, one being a study published by the *Lancet* in January 2022². Studies show that vaccination is no substitute for mitigation protocols. An opinion article published in the February 7, 2022 edition of *The Lancet*³ concludes, after review of numerous studies, that healthcare workers who have previously been infected with SARS-CoV-2 should arguably be exempted from any vaccine mandate indefinitely. Furthermore, the BC Covid Therapeutics Committee, which reviews and critically appraises evidence on the use of therapies in the management of COVID-19, has stated in its Clinical Practice Guide for the Use of Therapeutics in Mild-Moderate COVID-19, dated February 1, 2022, at page 4, that "[p]revious infection alone is equivalent to 2-dose vaccination without a booster." See attached Clinical Practice Guide.

² [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(21\)00761-1/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(21)00761-1/fulltext)

³ [https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913\(22\)00038-8/fulltext](https://www.thelancet.com/journals/lanrhe/article/PIIS2665-9913(22)00038-8/fulltext)

You are doing a disservice to the community by denying volunteer firefighters of their volunteer services. Communities rely on the volunteer firefighters for protection from fire and other safety hazards. The CSRD has created a staffing shortage by dismissing the unvaccinated firefighters, thus putting communities at risk. Mr. Nygard advises there are approximately 30 volunteer firefighters in the CSRD who have been terminated from their positions for refusing to take the Covid-19 vaccine for reasons of conscience, religion, or natural immunity.

Thank you in advance for your understanding and accommodation of Mr. Nygard's sincerely held religious beliefs, rights of conscience and recognition of his natural immunity. Please confirm that the CSRD will accommodate Mr. Nygard's request for an exemption from the Covid-19 vaccine mandate.

We are prepared to take legal action if you do not accommodate Mr. Nygard's request for an exemption from the vaccine mandate, and to forthwith allow him to return to work as a volunteer firefighter.

Sincerely yours,



Charlene E. Le Beau

Staff Lawyer at the Justice Centre for Constitutional Freedoms

Enclosures: Clinical Practice Guide for the Use of Therapeutics in Mild-Moderate COVID-19, dated February 1, 2022
Positive Covid-19 test result, dated August 14, 2021

**BC COVID THERAPEUTICS COMMITTEE
(CTC)**

Clinical Practice Guide for the Use of Therapeutics in Mild-Moderate COVID-19

GENERAL INFORMATION

Nirmatrelvir/ritonavir is now available, along with sotrovimab and remdesivir for select patients

Recently, various novel agents have become available in BC for the treatment of COVID-19 in mildly-moderately ill patients. These therapies include an anti-spike protein monoclonal antibody (mAB) **sotrovimab** (Xevudy) and a direct-acting oral antiviral **nirmatrelvir/ritonavir** (Paxlovid). **Remdesivir** (Veklury), an IV antiviral initially approved for severe COVID-19 has recently been shown efficacious in treating mild-moderate illness and another oral antiviral, **molnupiravir** (Lagevrio) is currently being considered for Health Canada approval. Both are included in this guide as peer-reviewed data are available. These four agents have added to the armamentarium of previously available repurposed therapies (**inhaled steroids, fluvoxamine, colchicine**). This document provides general guidance on the use of these therapeutics for clinicians and supporting evidence, with additional practice tools available separately.

RECOMMENDATIONS

Only the highest-risk patients should be considered for therapy (*See Practice Tool 1 – Assessment Guide*)

- **Immunocompromised individuals** identified as Clinically Extremely Vulnerable Group 1 and Group 2 (**CEV 1 and CEV 2**), **regardless of vaccine status** or previous infection. (*See Practice Tool 2 – CEV Definitions*). Generally, these are patients who:
 - Have received a solid organ transplant and are taking immunosuppressive treatment
 - Had a bone marrow or stem cell transplant
 - Are currently being treated for cancer, including haematological malignancies
 - Diagnosed with a moderate to severe primary immunodeficiency
 - Have untreated or advanced HIV (CD4 \leq 200 cells/mm³)
 - Are taking immunosuppressive treatment, such as high dose of steroids, biologics (e.g., adalimumab, etanercept, infliximab, interferon products), anti-CD20 agents (e.g. rituximab, ocrelizumab, ofatumumab, obinutuzumab, ibritumomab, tositumomab), B-cell depleting agents (e.g. epratuzumab, belimumab, atacicept, anti-BR3, alemtuzamab), or immune-suppressing agents (e.g. cyclophosphamide, cisplatin, methotrexate)
 - Patients who are on dialysis or have severe kidney disease who are also receiving any immunosuppressants
- **Unvaccinated or partially vaccinated individuals with high-risk conditions** identified as Clinically Extremely Vulnerable Group 3 (**CEV 3**) (*See Practice Tool 2 – CEV Definitions*). Generally, these are patients who:
 - Have Cystic fibrosis

- Have severe COPD or asthma requiring hospitalization in the last year
- Are on long-term home oxygen; assessment for a lung transplant; severe pulmonary arterial hypertension; severe pulmonary fibrosis/interstitial lung disease
- Diagnosed with a rare blood disorder: urea cycle defects; methylmalonic aciduria; propionic aciduria; glutaric aciduria; maple syrup urine disease
- Have had a splenectomy or have functional asplenia
- Have Insulin-dependent diabetes
- Have significant developmental disabilities: Down Syndrome, or Cerebral Palsy, or Intellectual Developmental Disability (IDD), or receiving supports from: Community Supports for Independent Living (CSIL) or Community Living British Columbia (CLBC)
- Have cancer not captured by the CEV 1 and 2 category
- Are pregnant and have a serious heart disease, congenital or acquired, that requires observation by a cardiologist throughout pregnancy
- Have neurological or other conditions causing significant muscle weakness around lungs requiring the use of a ventilator of continuous Bi-level positive airway pressure (Bi-PAP)
- Are on dialysis or have stage 5 chronic kidney disease (eGFR \leq 15ml/min)

Note: Dialysis and stage 5 CKD is classified as a CEV 2 for vaccine, but regarded as CEV 3 for treatment

- **Unvaccinated or partially vaccinated individuals aged \geq 70 years with one or more chronic condition/co-morbidity** (e.g., obesity, diabetes, heart failure, stroke, neurological conditions)
- **Unvaccinated or partially vaccinated individuals \geq 60 years with three or more chronic conditions/co-morbidities** (e.g., obesity, diabetes, heart failure, stroke, neurological conditions)
- **Unvaccinated or partially vaccinated individuals \geq 60 years who are Indigenous**

Note: For this group, unvaccinated or partially vaccinated refers to the receipt of 0, 1 or 2 vaccine doses.

Previous infection alone is equivalent to 2-dose vaccination without a booster (see Vaccination Status)

Therapy Recommendations

Nirmatrelvir/ritonavir 300/100mg PO BID x 5 days is recommended within 5 days of symptom onset (CONDITIONAL RECOMMENDATION pending peer-reviewed publication)

Nirmatrelvir/ritonavir roll-out is gradual. Check with leadership if it can be used in your treatment setting (e.g., in-hospital, LTC)

OR, if drug-drug interactions or contraindications prohibit administration (See Practice Tool 3 – Drug Interactions and Contraindications)

Sotrovimab 500mg IV x 1 dose is recommended within 7 days of symptom onset as an alternative to nirmatrelvir, in cases where IV administration is feasible

OR, in mildly-moderately ill hospitalized patients admitted for reasons other than severe COVID-19

Remdesivir 200mg IV on day 1, followed by 100mg IV on days 2 and 3 can be considered within 7 days of symptom onset as an alternative to nirmatrelvir/r or sotrovimab

THERE IS NO INDICATION TO COMBINE THESE THERAPIES: Due to drug scarcity and limited additional benefit, patients should receive ONE COVID-19-specific therapy.

Molnupiravir 800mg PO BID x 5 days is not routinely recommended (*if/once available in Canada*); if used on a case-by-case basis in patients who are unable to receive nirmatrelvir/ritonavir, sotrovimab or remdesivir, the uncertainty of benefit and the absolute risk of hospitalization, including factors such as age, number and type of co-morbidities and severity of symptoms need to be considered.

Inhaled budesonide 800 µg twice daily for 14 days may be considered on a case-by-case basis in patients who have lower respiratory tract symptoms (cough, shortness of breath) for symptom relief in addition to other therapies or as monotherapy. There is no evidence of additional benefit of inhaled steroids to antivirals or antibody therapy. Use clinical judgement and symptom type, severity and progression.

Colchicine is not recommended due to low certainty of benefit and potential risk of adverse events and additional immunosuppression in this population.

Fluvoxamine is not recommended due to low certainty of benefit and potential risk of adverse events associated with the dose evaluated (100mg PO BID), especially in vulnerable and elderly patients.

PRACTICAL CONSIDERATIONS

Priority Criteria

Single variable criteria (e.g., age only) identify patients who have a wide range of risk and are imprecise. Priority criteria were developed utilizing provincial multi-variable modelling to identify highest risk patients who would benefit most from treatment using age, vaccine status and type and number of co-existing chronic conditions/co-morbidities. Within these criteria, however, the absolute risk still varies. Patients who are unvaccinated have a higher risk of those who have received any vaccine doses. Each additional chronic condition/co-morbidity also increases risk. This document provides guidance only; **patients defined above are those who *may benefit* from treatment – case-by-case assessment is still required, and the totality of risk factors needs to be considered when offering treatment.** Even within the highest-risk priority group, a wide range of risk exists; risk increases by age number of comorbidities and incomplete vaccination status. In the setting of resource scarcity, expert consultation can assist with additional risk assessment and prioritization. *For more information, see Risk Models below.*

Vaccination Status

Unvaccinated or partially vaccinated refers to the receipt of 0, 1 or 2 vaccine doses.

Immunosuppressed patients can be offered treatment regardless of vaccine status. Each vaccine dose mitigates the risk of immunocompromised patients; however, **those fully vaccinated still have significant absolute rates of hospitalization.** Patients without significant immunocompromise have 9-fold lower odds of hospitalization if they are fully vaccinated, and this risk is low even in advance-age categories. Patients who

are at risk of hospitalization due to age or chronic conditions will be offered treatment if they are unvaccinated or have received 1 or 2 doses.

Previous infection alone is equivalent to 2-dose vaccination without a booster.

Previous infection with other VoC (e.g. Delta) has shown to be insufficiently protective from *re-infection* with Omicron. Vaccination is still recommended in those with previous infection history. However, the risk of hospitalization or ICU admission has been overserved to be low in those with previous infection in BC. Furthermore, epidemiological data from South Africa showed that the hospitalization risk went down significantly in the Omicron wave, despite that only ~40% of the population was vaccinated. The low hospitalization rate was attributed in part to a large proportion of patients being previously infected, and very small numbers of re-infected patients developed severe disease. Precise data on the severity of disease with reinfection is forthcoming.

Testing

Patients who are eligible for treatment are those who test positive for COVID-19 via a Polymerase Chain Reaction (PCR) or Rapid Antigen Test (RAT) test. During early days of symptom onset, PCR is the preferred diagnostic test due to its increased sensitivity (standard PCR or rapid molecular tests).

New testing guidelines issued by the BCCDC prioritize patients who may be candidates for treatment. Such patients should be encouraged to get tested if they are symptomatic. In cases of limited access to timely PCR results, if a RAT is provided at the testing centre or if a patient performs a RAT from their own purchased supply, positive results will be accepted for treatment considerations. A positive RAT test does not require confirmation by PCR to proceed with treatment; however, in some settings patients may be asked to also get a PCR test for other reasons (e.g., to facilitate documentation of treatment outcomes in medical records).

Patients will be informed that providers who assess them for treatment eligibility will ask them questions about their RAT and its result.

Symptoms and Symptom Progression

Patients offered treatment should be **appreciably symptomatic from COVID 19**. Patients who are **moderately ill**, i.e., showing evidence of lower respiratory disease during clinical assessment or imaging and who have an oxygen saturation (SpO2) $\geq 94\%$ on room *are most likely to progress to severe illness and can be offered therapy.*

Mild illness, i.e., individuals who have any of the various signs and symptoms of COVID-19 (e.g., fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhea, loss of taste and smell) but who do not have shortness of breath, dyspnea, or abnormal chest imaging can progress to severe illness, especially if those symptoms are profound, or exist in combination. Flu-like symptoms such as fever and diffuse myalgia are indicative of systemic illness and have been shown to be associated with higher risk of illness progression. *Great deal of case-by-case clinical judgement is required to discern whether mild*

symptoms warrant treatment. In equivocal cases, a 24-48 hour follow-up period is reasonable, if still within the treatment window.

Illness trajectory is a useful in establishing progression of COVID-19. Patients who are visibly deteriorating are more likely to become severely ill. *Treatment is unlikely to benefit those who are mildly ill who are clearly improving on their own. Treatment should not be given to asymptomatic or minimally symptomatic patients.*

Symptom Window

Symptom windows vary with each therapeutic agent and follow study inclusion criteria. **Sotrovimab and remdesivir should be given within 7 days of symptom onset** whereas for **oral antivirals should be given within 5 days.** *It is appropriate to allow the addition of adequate time for drug delivery of medication for those living in remote and rural communities.*

In clinical trials it was apparent that viral loads decreased from the nasopharynx by $\geq 95\%$ within the treatment window regardless of the receipt of an antiviral or placebo. Furthermore, most patients produced their own antibodies shortly after becoming infected and exogenous antibodies do not confer additional benefit. *There is little clinical rationale for extending the treatment window.*

Patients who have had prolonged symptoms or more or protracted illness despite recently testing positive for COVID-19 may require a clinical assessment of the illness trajectory to rule out other causes responsible for their symptoms. Patients are encouraged to get tested as soon as possible after COVID symptoms appear to avoid conflating persistent symptoms with COVID-19 infection.

Hospitalized Patients

Patients who are hospitalized for other reasons and are mildly-moderately ill with COVID-19 can be considered for treatment if they meet the eligibility criteria. Many patients admitted to hospital are incidentally diagnosed or are part of nosocomial outbreaks and are offered testing with very low thresholds that often does not warrant treatment. **Patients who are offered treatment in hospital need to be appreciably symptomatic and benefit from careful case-by-case assessment by an expert.**

Hospitalized patients, if they meet treatment criteria, can more easily receive intravenous therapy than outpatients. Remdesivir, due to its multiple-day IV dosing, is only feasible in this setting and has been added to nirmatrelvir/ritonavir and sotrovimab as an option in this population. These three drugs are similar in their efficacy but differ in safety and administration considerations. *The ultimate choice of therapeutic agent in-hospital depends on drug scarcity, drug-drug interactions and contraindications and needs to be determined on a case-by-case basis at the time of treatment selection. Currently remdesivir and sotrovimab are preferred while supplies last, but this is subject to change.*

Nirmatrelvir/ritonavir roll-out is gradual. Consult leadership for prescribing ability in your setting (e.g., ED, in-hospital, LTC facility)

Contraindications

Nirmatrelvir/ritonavir should not be used in end-stage liver disease (Child-Pugh C), severe renal disease (eGFR < 30ml/min). In patients with hepatitis B and C, or HIV infection regardless of treatment status, Specialist Consultation (e.g., Infectious Diseases, HIV Specialist) is recommended. Many drug-drug interactions contraindicate the use of nirmatrelvir-ritonavir, most common include amiodarone, DOACs, rivaroxaban, antipsychotics, clozapine, midazolam and triazolam, as well as illicit drugs especially fentanyl and methamphetamine (*see Practice Tool #3: Drug Interactions and Contraindications*). Patients with hypersensitivity to ritonavir or other protease inhibitors should not be prescribed nirmatrelvir/ritonavir. **Drug interactions must be verified and a management plan in place before prescribing.**

Sotrovimab is known to cause hypersensitivity reactions and infusion reactions, although they are rare. Sotrovimab is contraindicated in those who are hypersensitive to this drug or to any ingredient in the formulation: if reactions develop during the 1-hour infusion, the infusion should be stopped.

Remdesivir is contraindicated in those with demonstrated hypersensitivity to the product or any of its ingredients, eGFR < 30ml/min (due to the cyclodextrin component) and pregnancy (due to lack of data). Remdesivir should not be used in patients with ALT ≥5 times the ULN. The pharmacokinetics and safety of remdesivir in hepatic impairment have not been evaluated; expert consultation is recommended.

Molnupiravir contraindications are not well articulated as the Canadian Monograph has not been published due to lack of Health Canada approval. This will be updated when known. Based on FDA data, molnupiravir will be contraindicated in pregnancy, breastfeeding, in those trying to conceive and in pediatrics.

Pregnancy, Breastfeeding and Pre-Conception

Pregnancy is a significant risk factor for hospitalization and pregnant women have 3 times the odds of hospitalization in BC compared to age-matched non-pregnant women. Vaccination in this population is also lower than age-matched cohorts.

Currently available therapies have not been evaluated in pregnancy or breastfeeding. The Reproductive Infectious Disease and Maternal Fetal Medicine COVID-19 working group have deemed sotrovimab appropriate for use in pregnant or breastfeeding women if they otherwise meet the above-mentioned treatment criteria (e.g. immunocompromise). Nirmatrelvir/ritonavir may also be acceptable due to familiarity and comfort with prescribing protease inhibitors to this population. Animal studies have not demonstrated a significant risk to the fetus from both drugs. Prescribers may consult Reproductive Infectious Disease on call at BCCW if prescribing COVID-19 therapy, especially nirmatrelvir/ritonavir in pregnancy in high risk women, or for advice during breastfeeding.

Pregnancy alone is currently not an indication for treatment; pregnant women will be offered treatment if they are in the CEV categories (e.g., also receiving immunosuppressants or have cardiac issues). More pregnant women will be prioritized as soon as further drug supply becomes available.

Molnupiravir has been found to negatively impact fertility, embryonic development and pregnancy outcomes in animal studies and is contraindicated in these settings.

It is unknown whether COVID-19 therapies impact fertility. Patients are encouraged to use protection while taking these medications. Those who are on oral contraceptives should use a back-up method when taking nirmatrelvir/r due to drug interactions leading to lower plasma levels of estrogen, decreasing its efficacy in preventing pregnancy.

Pediatrics

Nirmatrelvir/r is not approved for pediatric use, and remdesivir is not approved in children with mild-moderate COVID-19. Sotrovimab is the only agent that can be safely considered for use in this population. The following statement regarding pediatric use of sotrovimab has been developed in collaboration with experts from BCCH:

Current sotrovimab authorization for children aged 12-17 years is based on adult clinical trial data as COMET-ICE trial did not include participants below 18 years of age. Pediatric patients with immune compromise are generally considered to be at lower risk of developing severe COVID-19 illness and requiring hospitalizations compared to adults with immune compromise. Risk of severe COVID disease in children with immune compromise appears to be related to underlying comorbidities rather than immune suppression itself. Immunocompromised children may present with atypical signs and symptoms of COVID-19 that can fluctuate rapidly between being asymptomatic to having mild to moderate symptoms and vice versa. Information on COVID-19 vaccine immunogenicity in children with immune compromise is currently limited.

In consultation with pediatric infectious diseases and appropriate subspecialist, sotrovimab should be considered for COVID 19 positive immunosuppressed children 12 years of older and minimum 40 kg with mild to moderate COVID-19 symptoms not requiring hospitalization who are:

- Solid organ transplant recipients
- Hematopoietic stem cell/bone marrow transplant recipients within the past 2 years and/or are currently receiving immunosuppression
- Immunosuppressed due to primary immunodeficiency or due to iatrogenic causes
- Have been otherwise classified as extremely clinically vulnerable due to immunosuppression (CEV 1 or 2)

AND

- Have another major chronic condition/comorbidity putting them at risk of severe COVID-19, especially significant lung disease (e.g. lung transplant recipients, lung GVHD, obstructive lung disease). Being unvaccinated or partially vaccinated is a risk factor for severe COVID-19 disease, bearing in mind that some fully vaccinated children with immune compromise also may not generate vaccine immune response.

Children with immune compromise and no major comorbidities are unlikely to develop severe COVID-19 disease. The benefit of providing sotrovimab in these cases is likely very small.

Ultimately, decisions around the use of Sotrovimab should be made on a case-by-case basis. Clinicians are encouraged to discuss cases with the Pediatric Infectious Diseases physician on call at BC Children’s hospital.

Sotrovimab infusions can be arranged at BC Children’s hospital through the patient’s BC Children’s Main Responsible Physician (MRP)/Service, as per hospital protocol. For those patients outside the vicinity of BC Children’s hospital, arrangements will need to be made through the local health authority at an available infusion site.

Drug-Drug Interactions

Nirmatrelvir and ritonavir have significant drug-drug interactions, many of which contraindicate its use. Nirmatrelvir and ritonavir are potent inhibitors of CYP 3A4 and increase the concentration of many drugs metabolized by this enzyme. Nirmatrelvir/r is also contraindicated with drugs that are potent CYP3A inducers where significantly reduced nirmatrelvir or ritonavir plasma concentrations may be associated with the potential for loss of virologic response and possible resistance.

Some drug-drug interactions can be managed. For a comprehensive list of drug-drug interactions and management strategies see *Practice Tool #3: Drug Interactions and Contraindications*.

The most comprehensive resource for DDI assessment with nirmatrelvir/ritonavir is available from the University of Liverpool at <https://www.covid19-druginteractions.org/checker>.

Sotrovimab possesses no significant drug-drug interactions. COVID-19 vaccination after sotrovimab infusion should be delayed by at least 90 days.

Remdesivir has no DDIs that contraindicate its treatment, except for chloroquine and hydroxychloroquine which reduce its antiviral efficacy. Strong CYP 3A4 inducers (e.g. phenytoin, rifampin, carbamazepine) may decrease the serum level of remdesivir but the clinical relevance of this interaction is not known.

Dosing

Nirmatrelvir/ritonavir is dosed at **nirmatrelvir/ritonavir 300/100mg PO BID x 5 days for those with eGFR > 60 ml/min**. It is supplied as a pre-packaged kit containing both products: 2 tablets of nirmatrelvir 150mg and 1 tablet of ritonavir 100mg per dose. The patient takes 3 tablets per dose, for a total of 30 tablets during the treatment course.

Patients with an **eGFR of 30-60 ml/min should take nirmatrelvir/ritonavir 150/100mg PO BID x 5 days**, or one nirmatrelvir 150mg tablet and one ritonavir 100mg tablet per dose. The second nirmatrelvir tablet should be removed from the kit from each dose by the dispensing pharmacist for the patient to avoid confusion and diversion.

Sotrovimab is dosed at 500mg IV x 1 dose infused over 60min. There are no dose adjustments required for obesity or mild-moderate renal or liver impairment. The drug is not recommended for IM use.

Remdesivir for mild-moderate COVID-19 is dosed with a loading dose of 200mg IV on day 1, followed by 100mg IV on days 2 and 3. *This dose differs from its dose in the monograph for severe COVID-19 infection.* Each vial contains remdesivir 100mg for a total of 4 vials per full treatment course. There is no dose adjustment required for obesity or mild-moderate renal or liver impairment.

Patient Location

Patients with mild to moderate COVID-19 are usually outpatients recovering at home. However, many patients hospitalized for non-COVID reasons can also be offered treatment (*see Hospitalized Patients above*). Patients in Long-Term Care are eligible for treatment if they meet criteria, with an understanding that IV therapeutics cannot be administered easily in LTC settings. Patients may also be offered treatment in Emergency Departments. This guidance is not specific to any particular patient location.

This guide does not specify priority for patients in remote or rural areas; CTRAWG (a committee responsible for equitable distribution of scarce drug resources) may prioritize different geographical areas if needed. Additional time added to the patient’s symptom window is clinically acceptable for drug transport to remote and rural areas.

Clinical Judgement

This guide should not replace clinical judgement. Patients who are technically eligible for treatment may not be good candidates due to clinical status, goals of care, or willingness to provide consent for treatment. These factors need to be considered with each patient assessment.

SUPPORTING EVIDENCE

Summary of Trials

Sotrovimab:

Sotrovimab has been evaluated in a single peer-reviewed, double blind, randomized-placebo controlled trial (COMET-ICE). In this trial, 1057 patients with mild symptoms of COVID-19 and at least one risk factor for disease progression were randomized to receive a single dose of sotrovimab 500mg IV compared to placebo. Most patients were younger (<50) and had one single chronic condition, with obesity being the most prevalent comorbidity. The primary endpoint was a composite outcome of all-cause hospitalization for >24 hours or death within 29 days of the receipt of the infusion. Hospitalizations were consistent with progressive COVID-19 requiring oxygen support and hospital-level care; only 1 hospitalization was not COVID-related. Out of the 528 patients who received sotrovimab, 6 met the primary endpoint of hospitalization or death vs. 30 of the 529 who received placebo (1% vs. 6%; p<0.001; ARR=5%, NNT=20). There were only 2 deaths observed (placebo arm); the primary endpoint was driven entirely by hospitalizations.

Secondary outcome results demonstrated that sotrovimab significantly reduced progression to severe/critical respiratory COVID-19 compared with placebo (1 vs. 5% p=0.002). Sotrovimab did not reduce

length of stay or ICU-bed-days. The proportion of patients reporting adverse events was similar between treatment groups; sotrovimab was well tolerated, and no safety concerns were identified; 6 patients in each placebo and sotrovimab groups experienced mild to moderate infusion reactions.

The COMET-ICE trial was well conducted, with a high degree of generalizability posing no major concerns during critical appraisal. Sotrovimab is given a positive conditional recommendation by the Infectious Diseases Society of America and a Grade AIIa recommendations supporting its use by the NIH.

Nirmatrelvir/ritonavir

Nirmatrelvir is a protease inhibitor with a 2-hour half-life; it is co-administered with ritonavir to allow BID dosing. Nirmatrelvir/r has been evaluated in a phase 3 clinical trial EPIC-HR, which has not been published as a pre-print or peer reviewed article. All data currently available on this drug comes directly from Pfizer, and the FDA fact sheet provided post-approval.

EPIC-HR was a randomized double-blind placebo-controlled trial of 2246 adult outpatients with mild-moderate COVID-19 within 5 days or less of symptom onset. Patients enrolled had to be at increased risk of developing severe disease, defined as age 60 or older or a chronic condition such as diabetes, heart condition or chronic kidney disease. Final baseline characteristics of patients in the trial have not been released. Patients were randomized in a 1:1 fashion to receive nirmatrelvir/ritonavir or placebo; the primary endpoint was COVID-19-related hospitalization (not all-cause), or death from any cause. The primary endpoint occurred in 66/1064 (6.3%) patients given placebo vs. 8/1039 (0.8%) patients randomized to active treatment for a relative risk reduction of 88%, an absolute risk reduction of 5.5% and an NNT of 18. The rate of hospitalization from any cause, or the rate of mortality has not yet been reported. A high-risk subgroup of ~200 patients was analysed (those over 65 with more risk factors). This group experience a nearly 15% absolute risk reduction in COVID-19 hospitalization (16.3% vs. 1%).

Despite the lack of published data, nirmatrelvir/ritonavir is given a AIIa recommendation by the NIH and a conditional recommendation by the IDSA. This guidance will be updated pending top line published and peer-reviewed data.

Remdesivir

Remdesivir is an intravenous antiviral initially evaluated in severely ill inpatients with COVID-19 requiring oxygen support in a landmark trial ACTT-1. It was approved by Health Canada for this indication, and some nationally procured supply remains unused due to subsequent data showing its lack of impact on meaningful outcomes in the severely ill population.

In December 2021, a trial called PINETREE was published evaluating remdesivir in mildly-moderately ill outpatients. Patients were randomized to receive remdesivir 200mg IV on day 1, followed by 100mg on days 2 and 3 or placebo and evaluated in a double-blind fashion. Patients were included if they presented within the previous 7 days and who had at least one risk factor for disease progression (age ≥60 years, obesity, or certain coexisting medical conditions). The trial was stopped when only 45% of the planned population was recruited due to widespread use of vaccination and the availability of proven treatments

like sotrovimab making randomization to placebo ethically challenging. Despite this, 546 patients were recruited.

In evaluating the primary outcome of Covid-19–related hospitalization or death from any cause, 2 of 279 patients (0.7%) in the remdesivir group and in 15/283 (5.3%) in the placebo group met the primary endpoint, $p=0.008$. This equated to a 77% relative risk reduction, a 4.6% ARR and a NNT of 22, which is slightly higher than nirmatrelvir/ritonavir or sotrovimab (17 and 20, respectively). A total of 4 of 246 patients (1.6%) in the remdesivir group and 21 of 252 (8.3%) in the placebo group had a Covid-19–related medically attended visit by day 28 and no patients died by day 28. Remdesivir was generally well tolerated; transaminases must be monitored as some patients experienced asymptomatic transaminitis. Remdesivir has been given to patients with renal disease without dose adjustments; it is not renally eliminated and thought to not be affected by renal impairment.

Remdesivir has the advantage of having few drug interactions while maintain comparable risk reductions to nirmatrelvir/ritonavir. However, the 3-day IV dosing regimen is unlikely to be operationally feasible and as such, if remdesivir can be used in BC, the CTC recommends that it be reserved to mildly-moderately ill patients who are situated in a hospital setting. Many patients admitted to hospitals in BC are hospitalized for other reasons besides COVID-19 and are incidentally diagnosed or are part of nosocomial outbreaks. As such patients pose infection-prevention and control issues and antivirals have been shown to drastically reduce viral load, treatment may also benefit further spread to other patients and staff. The NIH recommends remdesivir as an alternative to sotrovimab and nirmatrelvir/ritonavir with a Grade BII rating. The IDSA suggests remdesivir with a conditional rating and low certainty evidence.

Molnupiravir

Molnupiravir is a nucleotide analogue which when incorporated into viral RNA causes base-pair mismatch leading to mutations and viral catastrophe. The mechanism of action of the drug has been scrutinized by regulators for the fear of emerging VoCs due to emerging mutations as well as reproductive safety.

Molnupiravir was evaluated by a randomized, double blind controlled trial called MOVE-Out, where outpatients with mild-moderate COVID-19 presenting within 5 days of symptom onset were assigned in a 1:1 fashion to receive molnupiravir 800mg PO BID x 5 days or placebo. The primary endpoint was all cause hospitalization or mortality within 29 days. The trial stopped when a pre-planned interim analysis revealed that it met the primary endpoint with a 50% relative risk reduction and a p value (set at $p<0.0092$ to allow for alpha spending) which was statistically significant. In that analysis, 28/385 (7.3%) of patients on active treatment experienced the primary outcome, vs. 53/377 (14.1%) who received placebo, for an ARR of 6.8%. Trial recruitment stopped, but there were still another ~600 patient who were undergoing 29-day follow-up.

In the final analysis published in December 2021, it was discovered that the ARR for the entire trial population declined to just 3%, with 6.8% (48/709) patients in the treatment arm experiencing the primary outcome vs. 9.7% (68/699) in the placebo arm. This difference, if the same pre-specified p value from the interim analysis is applied, is not statistically significant. A time-to-event analysis depicted by a Kaplan-Meier curve as also not statistically significant. Data from the FDA reveal that during the second half of the

study, the event rate was numerically higher in the molnupiravir arm than the placebo arm (20 vs. 15 events, respectively). Furthermore, the primary outcome appeared to be driven by very high event rates (>20%) that were apparent in countries like Brazil, whereas higher income countries like the US had no appreciable reductions in hospitalization resulting from the effects of the drug.

Repurposed Therapies

The CTC has evaluated various other therapies that are not routinely recommended, including colchicine and the abovementioned SSRI fluvoxamine.

In short, Colchicine was evaluated at 0.6 mg PO BID x 3 days, then 0.6 mg daily x 27 days in a single large Canadian RCT and demonstrated a reduction in progression of COVID-19 and hospitalization in a sub-group of patients with PCR confirmed COVID-19. The trial was stopped early; due to decreased power leading to the low certainty of its results, as well as a higher risk of adverse events (diarrhea and blood clots) guidelines (WHO, NIH) do not recommend colchicine. The CTC states that if colchicine is used outside of clinical trials, full disclosure of risks and benefits with consideration of patient values are necessary. Overall, the uptake of the drug in BC has been very low to none.

Fluvoxamine was evaluated at 100 mg PO BID x 14 days in a Brazilian RCT and shown to reduce emergency room visits > 6 hours, a surrogate endpoint for hospitalizations. It has not demonstrated a benefit in reducing actual hospitalizations from COVID-19, length of stay or mortality. For every 12 trial participants, one additional patient stopped fluvoxamine prematurely. Due to low generalizability from a very high event rate, as well as lack of robust safety data, guidelines (e.g., IDSA) do not recommend the use of fluvoxamine outside of clinical trials. A Canadian fluvoxamine study stopped enrolment due to futility. The CTC states that if fluvoxamine is used outside of clinical trials, full disclosure of risks and benefits with consideration of patient values are necessary. There were also additional concerns posed about the lack of full safety evaluation with this dose. The recommended starting dose in patients over 55 years old is 25mg daily, whereas the trial’s dosing is 8 times that dose. As fluvoxamine can cause a variety of side effects such as hypotension, dizziness, falls, QT prolongation and GI effects, the safety of this regimen deserves further study before the drug can be routinely used for treating COVID-19.

Five trials have evaluated inhaled steroids for the symptomatic relief of COVID-19 manifestations such as shortness of breath and cough, showing that treatment with inhaled steroids reduces symptoms and may reduce the need for hospitalization (although the latter has not been consistently demonstrated and has thus far been a secondary endpoint of trials). Due to familiarity and safety, inhaled budesonide 800 µg twice daily for 14 days may be considered on a case-by-case basis in adults with mildly ill COVID-19 aged 65 and over or aged 50 and over with underlying health conditions and within 14 days of symptom onset, acknowledging the limitations of these trials.

Risk Models

Therapies mentioned above were evaluated in the pre-Omicron wave; variants of concern (VoCs) in trials included predominantly Delta, with other VoCs comprising a small fraction of sequenced virus. They were shown to reduce the risk of disease progression (i.e. hospitalization or development of severe COVID-19)

from about 6% to about 1%, for a relative risk reduction of ~85%, an absolute risk reduction of 5% and a number-needed-to-treat of ~20.

During the Omicron wave, the risk of hospitalization in BC has decreased drastically to 1.2% from 6.3% in the preceding period. As such, patients who are offered treatment need to be carefully selected for therapy to yield clinically meaningful reductions in hospitalizations. Furthermore, as therapies are in short supply, higher risk patients need to be prioritized. General guidance has been offered by groups such as PHAC, CADTH and NIH about which patients are the most likely to benefit from treatment. The CTC has partnered with HSIAR, the BCCDC and other epidemiology research groups to carefully hone in on the patients to whom treatment should be offered using multiple variables, and has developed priority criteria which can be used to select patients depending on drug supply and operational capacity. Patients in this priority tier have a hospitalization rate between 15-20% according to data from December 2021 and January 2022; mitigating this level of risk is beneficial to the individuals and maximizes the health benefits to the population as per the Ethical Framework for Allocating Scarce Drug Therapies.

Clinically Vulnerable Patients

Patients categorized as CEV group 1 have the highest risk of hospitalization, requiring ICU-level care and death; although the receipt of 3 or more doses (achieved in >80% of this population) mitigates this risk, they still experience hospitalizations rates of 15-30%, especially if elderly. Transplant is by far the single highest risk co-morbidity with OR for hospitalization of >10 during the pandemic, and an OR of >4 in the Omicron wave. Patients in CEV group 2 have a lower risk of hospitalization than group 1, but it often surpasses 20% in circumstances when 2 doses or less of a COVID-19 vaccine are given. Combined, CEV groups 1 and 2 have 2.5-4 times the likelihood of hospitalization than the general population of the same vaccine status and age category.

Vaccination Status

Vaccination greatly reduces the risk of hospitalization from infection with the Omicron variant. Vaccination with 2 doses reduces the probability of hospitalization by a factor of 4; a third dose is associated with a 9-fold reduction of hospitalization. In the lower risk general population, a 3rd vaccine dose does not lead to a large absolute change in the risk of hospitalization, whereas in higher-risk groups, this change is significant enough to warrant placing in a different priority Tier. As such the term “fully vaccinated” refers to three vaccine doses in Tier 1 but a 2-dose regimen is considered adequately immunized in Tiers 2 and 3, especially since patients in these tiers have likely received second doses in the last 6 months.

Age

Age is a well-known single most powerful predictor of hospitalization and death; an 80-year-old patient with COVID-19 has 28 times greater odds of requiring hospitalization than a patient who is 18. Patients over 70, even if vaccinated, still significant hospitalization rates despite the decreased likelihood in the Omicron wave, whereas individuals younger than 50 have a hospitalization rate of <1 - 2.5%, even if

unimmunized. Age is also a confounding factor for chronic conditions/co-morbidities, which further increase the risk of hospitalization.

Number of chronic conditions/co-morbidities

Completely healthy individuals, even if unvaccinated, have a low risk of hospitalization except perhaps for those with very advanced age (80 years and older), who still have a hospitalization rate of 9.5%. The number of at-risk chronic conditions, as opposed to the type of co-morbidity, is a strong predictor of hospitalization across all age groups. Those with three or more chronic conditions need to be specifically considered as even 2 or 3 vaccine doses does not fully mitigate the risk of multi-morbid elderly patients. The risk of hospitalization never reaches below 20% if an elderly adult has three or more chronic conditions and is unvaccinated.

Thermal Map of Hospitalization Risk by Age, # of Vaccine Doses and # of at-risk Conditions in BC (Dec-Jan)

# of at-risk conditions	Age group	0 Doses	1 Dose	2 Doses	3 Doses
0 at-risk conditions	<20	0.4%	0.2%	0.1%	0.0%
	20-39	1.8%	0.7%	0.4%	0.2%
	40-49	2.3%	0.8%	0.5%	0.3%
	50-59	3.2%	1.2%	0.8%	0.4%
	60-69	3.6%	1.3%	0.8%	0.4%
	70-79	6.3%	2.2%	1.5%	0.7%
	80+	11.8%	4.0%	2.7%	1.3%
1-2 at-risk conditions	<20	1.2%	0.4%	0.3%	0.1%
	20-39	4.7%	1.8%	1.1%	0.6%
	40-49	5.9%	2.2%	1.3%	0.7%
	50-59	8.3%	3.2%	1.9%	1.0%
	60-69	9.5%	3.6%	2.2%	1.1%
	70-79	17.2%	6.9%	4.2%	2.0%
	80+	33.9%	13.1%	8.1%	3.9%
3+ at-risk conditions	<20	7.3%	1.8%	1.4%	1.4%
	20-39	25.2%	11.0%	6.6%	3.6%
	40-49	35.6%	8.3%	6.5%	4.0%
	50-59	37.0%	12.3%	8.9%	5.1%
	60-69	40.3%	16.2%	9.4%	5.0%
	70-79	59.6%	26.6%	15.9%	7.5%
	80+	83.7%	43.8%	26.3%	12.7%

References:

1. ACOG. <https://www.acog.org/clinical-information/physician-faqs/covid-19-faqs-for-ob-gyns-obstetrics>. Accessed Dec 2, 2021
2. <https://www.covid19treatmentguidelines.nih.gov/therapies/statement-on-patient-prioritization-for-outpatient-therapies/>
3. https://covid19-sciencetable.ca/wp-content/uploads/2022/01/Clinical-Practice-Guidelines_Update_20220108-1-scaled.jpg.
4. http://www.bccdc.ca/Health-Professionals-Site/Documents/Drug_Scarcity_Framework.pdf

Positive Covid verification

Begin forwarded message:

From: Craig Nygard <IMCEAEX-_O=FIRST+20ORGANIZATION_OU=EXCHANGE+20ADMINISTRATIVE+20GROUP+28FYDIBOHF23SPDLT+29_CN=RECIPIENTS_CN=0006BFFD8E963042@sct-15-20-4755-11-msonline-outlook-89723.templateTenant>
Date: April 13, 2022 at 10:12:05 AM PDT
To: Me <[REDACTED]>

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The screenshot shows the Outlook for Android interface. At the top, the time is 10:10 and the battery is at 32%. The message header shows a back arrow, a profile icon, a redacted name, and a dropdown arrow. The date is Saturday, August 14, 2021. The message content consists of three paragraphs: a redacted name followed by 'Use this code for CDC COVID19 verification.', 'Registration Successful for Craig N. You will be notified at this number when a new result is available.', and 'You have 1 COVID-19 result(s) in the past 7 days. To view these results Reply with: SHOW'. The time 1:53 p.m. is shown below the third paragraph. At the bottom right, the time 1:54 p.m. is shown next to a green 'Show' button. The bottom of the screenshot shows the start of another message: 'The COVID 19 result from'.

The COVID-19 result from 08/13/2021 for Craig N is POSITIVE. You and the people you live with need to self-isolate now. Public health will contact you. If you are a health care worker, please notify your employer. Monitor your health and contact a health care provider or call 8-1-1 if you are concer

View all



1:54 p.m.

