Letters to the editor

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COVID-19 pharmacologic therapy guidance for BC

To date (22 April 2020), there are no Health Canada–approved COVID-19 pharmacologic treatments, yet there is intense interest and media coverage of potential pharmacological agents.[1,2] In BC, we have had the benefit of a diverse group of experts (the BC COVID-19 Therapeutics Committee [CTC]) scanning and summarizing the emerging literature, as well as providing a weekly update and concrete recommendations about various experimental therapies. This summary of evidence and recommendations can be found on the BCCDC website.[3]

The committee convened on 13 March 2020 and initially consisted of front-line clinicians at Vancouver General and St. Paul's Hospitals. As the need for a provincial-level group was acknowledged, the group quickly expanded to 37 members, with representation from all health authorities, the Ministry of Health Pharmaceutical Services Division (MOH PSD), and university researchers. Clinical health profession members include specialists from critical care, infectious diseases, medical microbiology, general internal medicine, emergency medicine, hematology, rheumatology, anesthesia, family practice, pharmacy, transplant medicine, and antimicrobial stewardship.

The CTC developed its own terms of reference that outline how material will be reviewed and how changes will be made to provincial recommendations as evidence evolves. Virtual meetings occur weekly to review new material and decide on changes to recommendations. There is also an active group on the videoconferencing platform Slack, where sharing and discussions can take place in preparation for the weekly conference. Each drug class/therapeutic intervention is assigned to a small subgroup of CTC members who ensure that the latest material is summarized weekly. New literature

British Columbia COVID19 Therapeutics Committee (CTC) Clinical Practice Guidance for

Antimicrobial and Immunomodulatory Therapy in Adult Patients with COVID-19

Last updated May 11, 2020

Recommendations in this document apply to patients >18 years of age. For recommendations in special populations, refer to the complete guidelines.

There is limited clinical evidence to guide antiviral management for ill patients with COVID-19.

The guidelines recommend that specialist consultation (which may include Critical Care/Infectious Disease/Hematology/Rheumatology) be obtained if any investigational treatment is offered to a patient with COVID-19 outside of a clinical trial, and that informed consent be obtained from the patient or substitute decision-maker

SEVERITY OF ILLNESS	ANTIVIRAL THERAPY	ANTIBACTERIAL THERAPY	IMMUNOMODULATORY THERAPY
Critically Ill Patients *Hospitalized, ICU-based* Patients requiring ventilatory and/or circulatory support; also includes patients requiring high-flow nasal cannula, or higher concentrations of oxygen by mask **Suggeset Enoxaparin 30 mg SC bid for DVT prophylaxis*	**Chloroquine** or **hydroxychloroquine** (with or without azithromycin) is **not** recommended outside of approved clinical trials or where other indications would justify its use **Lopinavir/ritonavir** is **not** recommended outside of approved clinical trials **Remdesivir*** is **not** recommended outside of approved clinical trials	Empiric therapy with **ceftriaxone 1-2g IV q24h x 5 days** is recommended if there is concern for bacterial co-infection (Alternative for severe beta-lactam hypersensitivity: moxifloxacin 400 mg IV q24h x 5 days) Add **azithromycin 500 mg IV q24h x 3 days** to ceftriaxone empiric therapy if atypical infection is suspected (azithromycin is **not** needed if empiric therapy is moxifloxacin) De-escalate on the basis of microbiology results and clinical judgment	**Corticosteroids** are **not** recommended outside of approved clinical trials unless there are other indications for its use** There is insufficient evidence at this time to recommend for or against the use of corticosteroids for acute respiratory distress syndrome (ARDS) **Tocilizumab** (IL-6 receptor blocker) is **not** recommended outside of approved clinical trials. If considered on an individual basis in patients with cytokine storm, it should only be done so with expert consultation (Infectious diseases and Hematology/Rheumatology)
Moderately Ill Patients *Hospitalized, ward-based, long-term care* Patients requiring low-flow supplemental oxygen **Consider Enoxaparin 30 mg SC bid for DVT prophylaxis*	**Chloroquine** or **hydroxychloroquine** (with or without azithromycin) is **not** recommended outside of approved clinical trials or where other indications would justify its use **Lopinavir/ritonavir** is **not** recommended outside of approved clinical trials **Remdesivir*** is **not** recommended outside of approved clinical trials	Antibacterial therapy is **not** routinely recommended outside of approved clinical trials or where other indications would justify its use (eg. suspected bacterial co-infection in COVID positive patients)	**Corticosteroids** are **not** recommended outside of approved clinical trials unless there are other indications for its use** **Tocilizumab** (IL-6 receptor blocker) is **not** recommended outside of approved clinical trials
Mildly Ill Patients *Ambulatory, outpatient, long-term care* Patients who do not require supplemental oxygen, intravenous fluids, or other physiological support			

Note: This document is dynamic and will be updated as changes to recommendations occur. The complete and most up-to-date version of the guidelines is available at http://www.bccdc.ca/health-professionals/clinical-resources/covid-19-care/clinical-care/treatments

Original infographic design Greater Toronto Area COVID-19 Therapy Committee

** currently unavailable in Canada*
***e.g. asthma exacerbation, refractory septic shock, obstetric use for fetal lung maturation*

FIGURE. Antimicrobial and immunomodulatory therapy in adult patients with COVID-19

and unpublished materials are sourced by CTC member searches, and a daily service from the MOH PSD. There are three active documents under constant development, to which all members have editing access:

1. The working document where new studies and information is summarized in point form.
2. The formal summary of evidence (including complete citations), based on the working document, which is used to update the material posted on the BCCDC website.
3. The one pager—a very brief overview of the recommendations.

The committee has also developed an infographic to act as a quick reference for clinicians **[Figure]**. The infographic is dynamic and will be updated as changes to recommendations occur. The complete and most up-to-date version of the guidelines is available at www.bccdc.ca/health-professionals/clinical-resources/covid-19-care/clinical-care/treatments.

Weekly, after the committee has its virtual meeting, the updated material is submitted to the BC Health Emergency Coordination Centre Clinical Reference Group—Clinical Care Guidelines Working Group for final consideration. The approved documents are then posted to the BCCDC website and distributed throughout the province via communications teams at each of the health authorities.

—British Columbia COVID-19 Therapeutics Committee

Postscript: For concerns pertaining to the recommendations made by the BC COVID-19 Therapeutics Committee, please contact Dr David Sweet at ddsweet@mail.ubc.ca.

References

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3. British Columbia COVID-19 Therapeutics Committee. BC Centre for Disease Control. Unproven therapies for COVID-19. Updated 27 April 2020. Accessed 30 April 2020. www.bccdc.ca/Health-Professionals-Site/Documents/Guidelines_Unproven_Therapies_COVID-19.pdf

COVID-19 pandemic and adolescents' vaping epidemic

After careful review of more than 800 research papers on e-cigarettes, the National Academies of Sciences, Engineering and Medicines' evidence-based clinical guidelines concluded that there is "moderate evidence" for increased cough and wheeze in adolescents who use e-cigarettes.[1] In addition, nicotine-containing e-cigarette aerosols have the potential to adversely impact several host defence mechanisms in the lungs. Independent of nicotine, exposure to particulates and flavorings in e-cigarette aerosols could also potentially impair lung function.[1] Meanwhile, the Forum of International Respiratory Societies, a collaborative of nine international professional organizations that was created to promote respiratory health worldwide, published a position statement in 2018 warning that exposure to e-cigarette aerosol in adolescence and early adulthood can result in pulmonary toxicity.[2]

With the growing evidence of potential risk factors related to the COVID-19 pandemic, the immediate health effects of e-cigarette vaping have become apparent and are alarming. Also, the new evidence suggests COVID-19 and other respiratory infections will not only increase the risk of developing complications from the coronavirus but will increase chances of spreading it to others. Some American states are even issuing specific health advisories on vaping and COVID-19.[3] The evolving knowledge is especially worrisome, and in light of this evidence, serious efforts should be made to increase public awareness of the harmful effect of e-cigarette use. Physicians should step up and redouble their cessation and counseling efforts.

Smoking and vaping also seem to be associated with poor survival; therefore, we need to bring sensible policies to protect our young people from devastating effects of COVID-19. The American Academy of Family Physicians recently developed clinical guidance to highlight the well-known risk. People who smoke or use e-cigarettes have a significantly higher risk of contracting respiratory infections like the coronavirus, and people with decreased lung function caused by smoking or vaping are more likely to develop serious complications caused by infections. According to Dr Barbara Keber, president of the New York State Academy of Family Physicians, "Now more than ever, it is critical for the State and medical community to take actions to prevent our youth from ever using these highly addictive, deadly products, and to help our patients to reduce their risks through FDA-approved cessation and telehealth during this pandemic."[4]

The Canadian Paediatric Society has developed a COVID-19 resource for the health care community. The society encourages pediatricians and other health professionals who work with adolescents, youth, and families to communicate the message that smoking and vaping may increase the risk of acquiring the COVID-19 infection.[5]

According to scientific evidence, COVID-19 could be a serious threat to those who smoke e-cigarettes, combustible tobacco, or marijuana. Moreover, smoking or vaping increases people's vulnerability to severe illness once infected, and anything that makes the lungs less healthy will weaken our survival chances against COVID-19.

We strongly believe that the recent evidence needs to be appropriately reflected in COVID-19 prevention and control efforts. Further, this information should be widely circulated as an emerging clinical guideline in order to assist front-line physicians' informed clinical decision making efforts to treat COVID-19.

—Aki Nilanga Bandara, BSc
Founding Chair, Global coalition to empower adolescent and youth on harmful therapeutic interventions to prevent combustible tobacco use
Instructor, UBC Faculty of Land and Food System

—Mehara Seneviratne, Senara Wanniarachchi, BSc, and Ricky Jhauj, BKin
Coordinators, Global coalition to empower adolescent and youth on harmful therapeutic interventions to prevent combustible tobacco use

—Vahid Mehrnoush, MD
Senior Advisor, Global coalition to empower adolescent and youth on harmful therapeutic interventions to prevent combustible tobacco use
Section of Trauma, Acute Care, and Global Surgery, Vancouver General Hospital, UBC

References

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Corporatization of family medicine in BC

Over the past decade there has been a remarkable change in the ownership of family medicine practices in BC. Large numbers are now owned and operated by private corporations, which are neither owned nor controlled by the physicians who work in them. This has occurred largely because family physicians are neither business people nor endowed with the upfront financial resources to invest in the start-up of increasingly large and complex office structures.

These corporate structures often operate efficiently and all are well equipped with modern electronic medical record systems. They give more freedom to the individual physicians who have no financial obligations to the practice. They have definitely filled a void in medical care in BC, but the question arises whether they will have a net benefit to the people of the province. After all, it is the people of BC who pay for them through taxation and fees paid to these corporations through physicians' billings.

So, one must first ask: Why would private corporate entities want to invest in primary care delivery? All private companies exist to make money for the owners of those companies. In health care this is no different.

The answer is that private companies have seen the void in the organization of primary care in BC and identified it as a business opportunity. The owners of these companies all want financial compensation for their investment. If this compensation can be attained by driving efficiencies in primary care and saving money globally, then the corporations can be viewed as a net benefit for the people of BC and also for the physicians who work for them.

If, however, these private companies excessively control the behavior of the physicians who work in them, and demand excessive profits for their efforts, then they will be viewed through a different lens. It must also be understood that these private companies control the electronic health records of the patients registered with them. While it can be argued that the medical records belong to both the patient and the physician, there have been instances in BC where conflicts have arisen between private clinic owners and physicians working in those clinics. These conflicts have resulted in physicians being physically locked out of the private premises and being denied access to their patients' medical records. This is a dangerous situation for the people of BC.

As well, private corporate structures can terminate the contracts of physicians who work on their premises. If this happens, these physicians are at the mercy of the corporations when it comes to supplying them with their patients' electronic medical records. And not having immediate access to patients' electronic medical records makes practising medicine very difficult, if not impossible.

I think it is both prudent and necessary for the Ministry of Health and Doctors of BC to review the status of primary care in BC as it relates to private ownership of medical clinics. The corporatization of primary care in BC reminds me of the corporatization of all medicine in the US. I practised in the US for nearly a decade, and I have intimate knowledge of the abuse of corporate medicine. Currently in the US, over 65% of all family physicians work in privately

owned corporate structures. These corporate structures use something called "economic credentialing" when they review the usefulness of the physicians who are contracted to work in the clinics. If physicians don't make enough money for the private corporations, they are let go. Conversely, if the physicians make more money for the corporations, they are rewarded financially. This means that these family physicians end up working for the benefit of the corporations, not for the benefit of their patients. This is one of the many fundamental stumbling blocks in American health care.

This letter is meant to serve as a warning for the possible storm on the horizon in BC. We do not want to have anything resembling the American health delivery system in Canada. The time to conduct this due diligence is now, before private corporations become any more powerful in the ownership of family medicine in BC.

—Robert H. Brown, MD, CCFP
North Saanich

Search engine to identify the most affordable drug, coverage availability, and special authority resources

Drugsearch.ca is a free search-engine website that shows the price of medications (brand and generic), whether a medication is covered by specific BC PharmaCare plans, and whether special authority is first needed for coverage. When special authority applies, links to the special authority criteria and application forms are provided. The search engine is refreshed monthly and syncs drug wholesaler pricing with the PharmaCare database. The website can also be accessed via the Pathways platform using "drugsearch" as a search term.

I created this website, with the help of a local software developer, for several reasons. I once encountered a child with severe asthma whose parents had purchased only Ventolin, avoiding the steroid due to costs. I realized that if the prescriber had a rapid way to see which inhaled steroid was covered, the situation could have been averted. I am also frequently contacted by physician friends and colleagues asking for the prices of different medications because the PharmaCare formulary website does not show the full retail price, only how much the government would pay per dose. I have also found that most pharmacists and prescribers do not realize that costs only from covered medications count toward satisfying a patient's annual deductible, meaning that the increased prescribing of noncovered medication actually hinders a patient from receiving PharmaCare assistance.

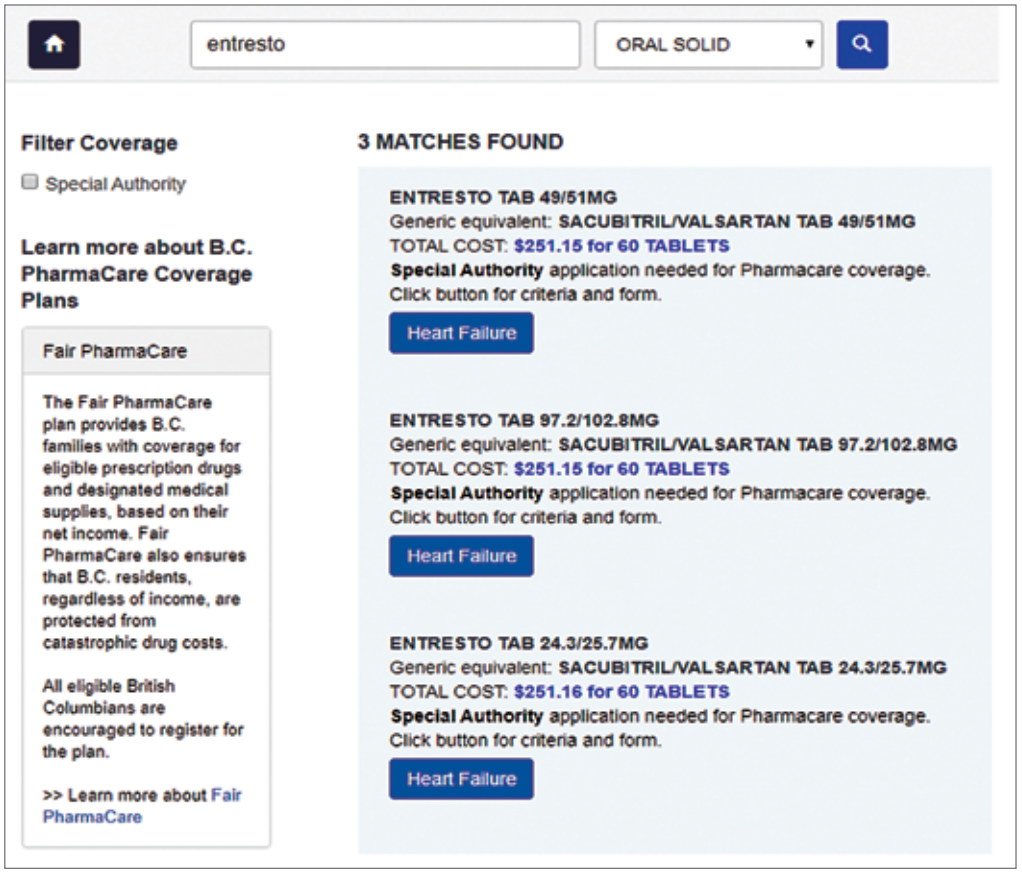

FIGURE. The results of a search for Entresto on Drugsearch.ca.

Drugsearch.ca allows a prescriber to search for and compare medications by brand or generic name, filter the search results by application (e.g., inhaled versus topical), and see the price that a patient would pay inclusive of pharmacy fees. The price takes into account whether the medication is covered by PharmaCare and how much a patient would pay if it is covered. Drugsearch.ca results also show if a drug first requires special authority application to activate PharmaCare coverage, and has one-click links to the PharmaCare criteria page and application forms **[Figure]**. The need for a fast way to show pharmacists and prescribers special authority availability arose after I encountered the case of an elderly pensioner who had paid nearly $2000 over a year for Entresto and did not receive PharmaCare assistance for his other medications. It was later found that the special authority had been missed by both pharmacists and prescribers, resulting in the Entresto drug costs not being applied toward his annual deductible, which needed to be met before PharmaCare coverage could begin. Unfortunately, BC PharmaCare policy does not permit retroactive reimbursement to the patient in these situations.

My hope is that patients, pharmacists, and prescribers can use drugsearch.ca to minimize patients' financial burdens and reduce the amount of paperwork faxed to pharmacies requesting alternative covered medications.

—Anthony Chiam, RPh
North Vancouver

Disclosure: We are applying for a grant from the Ministry of Health for revenue to support the upkeep and cover host and server fees. The website will not track or sell data; all users are anonymous. There will be no advertisements on the site.