



# Prescribing Paxlovid: A Webinar for Primary Care & Pharmacy Professionals



**Durham  
Ontario  
Health Team**

January 5, 2023

# Welcome



Mute line on computer or \*6 on your phone.



Questions? Raise hand or submit through the comment box.



This session is being recorded; a link will be shared following the presentation.

# Introductions



**Dr. Bradley Wiggers**  
Infectious Diseases Specialist  
Medical Director, Lakeridge Health COVID-19 Therapeutics Clinic



**Dr. Rebecca Wray**  
Durham OHT Primary Care Co-Lead  
COVID-19 Regional Response Co-Lead

# Agenda

1. Paxlovid
  - How does it work?
  - Who does it benefit?
  - Who is eligible?
2. Tools to Support Prescribing
  - Renal Dosing
  - Drug Interactions
3. Remdesivir – Pearls
4. Community Resources
  - CACs, Covid Therapeutics Clinic
5. Q&A



# Paxlovid (nirmatrelvir/ritonavir)

## ❑ Antiviral

- Nirmatrelvir – targets SARS-CoV-2 3C-like protease
- Ritonavir – CYP3A4 inhibitor (and HIV protease inhibitor)

## ❑ Dose: 300/100 mg po bid x 5 days (2 pink tabs and 1 white tab)

- eGFR 30–60: 150/100mg po bid x 5 days (1 pink tab and 1 white tab)
- eGFR <30 – see Ontario Renal Network dosing
- If no recent eGFR and no suspicion of kidney disease, reasonable to give full dose
- Take with or without food, *don't crush/chew*

## ❑ Contraindications

- Age < 18, symptoms >5 days
- Cirrhosis CPH C
- ~~Dialysis, eGFR < 30~~
- ~~Npo/enteral tube fed~~
- Drug interactions



# Advanced Renal Impairment

Current Recommendation		Proposed Dosing guidance	
<i>Kidney Function</i>	<i>Dosing schedule</i>	<i>Kidney Function</i>	<i>Dosing schedule</i>
GFR > 60	300 mg nirmatrelvir + 100 mg ritonavir both twice a day for 5 days	GFR > 60	300 mg nirmatrelvir + 100 mg ritonavir both twice a day for 5 days
GFR 30 - 60	150 mg nirmatrelvir + 100 mg ritonavir both twice a day for 5 days	GFR 30 - 60	150 mg nirmatrelvir + 100 mg ritonavir both twice a day for 5 days
GFR < 30	Do not use	GFR < 30	300 mg nirmatrelvir + 100 mg ritonavir both on day 1 then 150 mg nirmatrelvir + 100 mg ritonavir once a day for 4 more days
Dialysis	Do not use	Dialysis	300 mg nirmatrelvir + 100 mg ritonavir both on day 1 then 150 mg nirmatrelvir + 100 mg ritonavir once a day for 4 more days, to be dosed after dialysis <sup>1</sup>

Table 2: Proposed dosing guidance for Nirmatrelvir/Ritonavir in Chronic Kidney Disease

<sup>1</sup>The dose should be reduced to 150 mg nirmatrelvir + 100 mg ritonavir on day 1 then 150 mg nirmatrelvir + 100 mg ritonavir every 48 hours for 2 more doses, to be given after dialysis if patient weight less than 40 kg

# Crushing/Splitting Paxlovid

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BC COVID THERAPEUTICS COMMITTEE (CTC)  
COVID THERAPY REVIEW and ADVISORY  
WORKING GROUP (CTRAWG)

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## Therapeutic Brief: Crushing Nirmatrelvir/ritonavir (Paxlovid™)

### RECOMMENDATION SUMMARY:

Both ritonavir and nirmatrelvir (components of Paxlovid) **can be split or crushed and mixed with apple sauce, pudding or any common food or liquid** including dairy-containing products based on Phase I studies demonstrating that suspensions achieve similar pharmacokinetics to whole tablets.

**Both ritonavir and nirmatrelvir be crushed and mixed with water to the desired consistency and considered for administration via feeding tubes;** the tube should be flushed with water after administration. There are currently no precise recipes available; standard practices for administering regular powered tablets via feeding tubes should be applied. It may not be appropriate to administer crushed medications through smaller bore feeding tubes where obstruction is a concern (e.g., jejunal or naso-jejunal); consultation with an expert dietician or nursing staff may be required.

Due to lack of information pertaining to stability and storage of nirmatrelvir suspension, it is recommended that any suspension made with crushed nirmatrelvir and ritonavir be extemporaneously **compounded as single-dose preparation** and not as multi-dose liquid.

- ❑ Monograph says no crushing/splitting (due to lack of evidence)
- ❑ Phase I pharmacokinetic study shows acceptable levels when crushed and given as oral suspension

# Does Paxlovid Work?

"Oral Nirmatrelvir for High-Risk, Non-hospitalized Adults with Covid-19" *NEJM* 2022; 386:1397-1408

## Epic-HR Population

- ❑ 18+, COVID+, non-hospitalized, symptomatic, **5 or fewer days symptoms**
  - ❑ No history of infection, **unvaccinated** and no convalescent plasma
  - ❑ **At least 1 risk factor**: >60, BMI>25, smoker, immunosuppressed, chronic lung/CV/kidney disease, htn, diabetes, cancer, dev delay, medically complex conditions, medical-related technology dependence
- Median age: 46
  - Only ~ 20% had more than 1 comorbidity
  - <1% immunosuppressed

In fact, this study was massively under-represented by the very patients who we would typically treat with Paxlovid.

## What was the Outcome?

- **Reduced risk of hospitalization or death by 5.4 % (RRR 88%)**
- NNT = 18
- 10-fold decrease in viral load at day 5



# Other Data

## □ Arbel et al NEJM Sep 2022

- retrospective, Israel health system, omicron wave, age 40+, risk score > 2
- 109,254 eligible, 3902 (4%) received Paxlovid
- Age 65+: lower hospitalization (aHR 0.27) if received Paxlovid
- Age 40–64: no significant impact

## □ Ganatra et al CID June 2022

- retrospective propensity score matched, USA TriNetX database, 18+, vax, omicron wave
- 111,588 COVID+, 1131 received paxlovid
- 7.87% vs 14.4% – lower ED visit, hospitalized or death in 30 days (45% RRR)

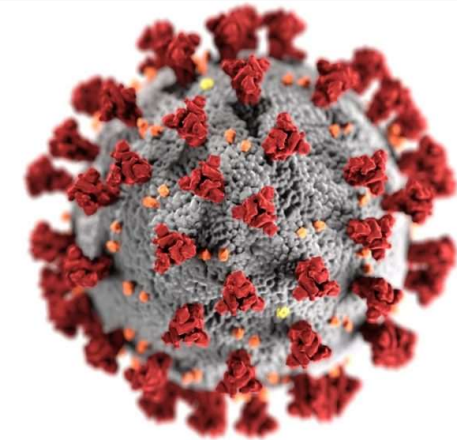
## □ EPIC–SR

- unpublished Pfizer RCT, standard risk patients (vaccinated and 1 risk factor)
  - Hospitalization 0.7 vs 2.4% (not statistically significant)
  - Did not meet end point for self-reported sustained alleviation of symptoms
- 

# Impact on “Long COVID”?

## □ Xie et al pre-print (medRxiv)

- Veteran Affairs study, outpatients, 1 + risk factor for severe infection
- 9217 treated, 47,123 untreated
- Paxlovid reduced risk of overall long COVID (HR 0.74), 10/12 post-acute sequelae, and post acute death and hospitalization
  - cardiovascular system (dysrhythmia and ischemic heart disease), coagulation and hematologic disorders (deep vein thrombosis, and pulmonary embolism), fatigue, liver disease, acute kidney disease, muscle pain, neurocognitive impairment, and shortness of breath
- Effect seen irrespective of vaccine status



# Ontario Science Table (June 2022)

## Who should receive nirmatrelvir/ritonavir?

Nirmatrelvir/ritonavir should be offered to patients at **higher risk** of severe COVID-19 (*proven by PCR\* or a provider-administered rapid test*), who are not yet on supplemental oxygen, and who are within 5 days of symptom onset.

\*PCR = polymerase chain reaction

AGE (years)	NUMBER OF VACCINE DOSES			RISK FACTORS
	0 doses	1 or 2 doses	3 doses	
<20 <sup>1</sup>	Higher risk if ≥3 risk factors <sup>1</sup>	Standard risk <sup>1</sup>	Standard risk <sup>1</sup>	<ul style="list-style-type: none"> <li>• Obesity (BMI ≥30 kg/m<sup>2</sup>)</li> <li>• Diabetes</li> <li>• Heart disease, hypertension, congestive heart failure</li> <li>• Chronic respiratory disease, including cystic fibrosis</li> <li>• Cerebral palsy</li> <li>• Intellectual disability</li> <li>• Sickle cell disease</li> <li>• Moderate or severe kidney disease (eGFR &lt;60 mL/min)</li> <li>• Moderate or severe liver disease (e.g., Child Pugh Class B or C cirrhosis)</li> </ul>
20 to 39	Higher risk if ≥3 risk factors	Higher risk if ≥3 risk factors	Standard risk	
40 to 69	Higher risk if ≥1 risk factors	Higher risk if ≥3 risk factors	Standard risk	
≥70	Higher risk	Higher risk if ≥1 risk factors	Higher risk if ≥3 risk factors	
Immunocompromised <sup>2</sup> individuals of any age	Higher 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. <sup>1,2</sup>			
Pregnancy	Higher risk <sup>3</sup>	Standard risk	Standard risk	

1. Evidence for the safety and efficacy of sotrovimab and nirmatrelvir/ritonavir (Paxlovid) in children <18 years of age is limited. While early evidence on risk factors for moderate and severe COVID-19 in children is emerging, the ability to reliably predict disease progression in children remains very limited, and the frequency of progression is rare. While not routinely recommended in children <18 years of age, the use of these agents may be considered in exceptional circumstances (e.g., severe immunocompromise and/or multiple risk factors, clinical progression) on a case-by-case basis. Multidisciplinary consultation with Infectious Diseases (or Pediatric Infectious Diseases) and the team primarily responsible for the child's care is recommended to review the individual consideration of these medications.

2. 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. These individuals should have a reasonable expectation for 1-year survival prior to SARS-CoV-2 infection.

3. Therapeutics should always be recommended for pregnant individuals who have received zero vaccine doses.

**Ontario Health  
Recommendation  
on the Use of Paxlovid  
December 8, 2022**

Paxlovid should be strongly considered for individuals who have a confirmed COVID-19 diagnosis (based on positive PCR, rapid molecular, or rapid antigen test result), present within 5 days of symptom onset, and meet one or more of the following criteria:

- 60 years of age or older;
- 18 years of age or older and immunocompromised;
- 18–59 years of age and is at higher risk of severe COVID-19. Patients at higher risk of severe COVID-19 include:
  - Those who have one or more **comorbidity** that puts them at higher risk of severe COVID-19 disease OR
  - Those with inadequate immunity, i.e.:
    - Unvaccinated or incomplete primary series OR
    - Completed primary series AND last COVID-19 vaccine dose was more than 6 months ago AND last SARS-CoV-2 infection was more than 6 months ago

# Eligible vs Beneficial

## Eligible vs. Beneficial

Patients may be **eligible** for Paxlovid therapy based on the updated MOH recommendations, but **will they benefit from treatment** is an important question for providers to consider.


RCT data shows benefit in *high-risk unvaccinated* populations

Observational studies suggest benefit in vaccinated populations with risk factors




Initial guidance from Ontario Science Table used evidence from early Omicron wave hospitalization data to identify individuals with over 5% hospitalization risk

Ontario Health subsequently have strongly recommended usage for a much broader population (December 8, 2022)

# Three (3) Main Downsides to Treatment

1. Side Effects – mainly intestinal issues
    - Metallic taste in mouth is common
    - Nausea or diarrhea (10%) – mostly mild, rarely diarrhea is worse than COVID symptoms
  2. Drug Interactions
  3. Rebound COVID
    - 2% in trial up to 15% in cohorts, can happen without antiviral but more likely if treated
    - Take drug, feel better, RAT becomes negative, then generally 5–7d post-treatment symptoms return and RAT+ again
    - Typically, milder and more short-lived than initial illness
    - We don't typically re-treat unless very immunocompromised (downside of more side effects and possibly more prolonged time with chronic medications held/adjusted)
    - Contact us to discuss
    - If rebound – contagious – isolate at least another 5 days
- 

# Common Interactions

- ❑ Statins
  - ❑ CCBs
  - ❑ Anticoagulants
  - ❑ Antiplatelets
  - ❑ Benzos
  - ❑ Prostate medications
  - ❑ Domperidone
- Inhalers
    - Advair/Wixela (salmeterol)
    - ICS interaction insignificant
  - “Sleep” meds
    - Quetiapine, zopiclone, trazodone, mirtazapine
  - Pain meds
    - Oxycodone, fentanyl 
    - Codeine, HM 
- 

# Absolute Contraindications

- ❑ Long half-life and life-threatening side effects
  - Amiodarone, propafenone, dronedarone, flecainide, quinidine
  - Lurasidone, pimozide, clozapine, risperidone (long-acting IM)
  - Fentanyl patch
  - PDE5 inhibitors for PAH – sildenafil, bosentan, tadalafil
  
- ❑ Induce nirmatrelvir metabolism and make Paxlovid ineffective
  - Carbamazepine, dilantin, phenobarbital, primidone
  - Rifampin
  - St. John's Wort





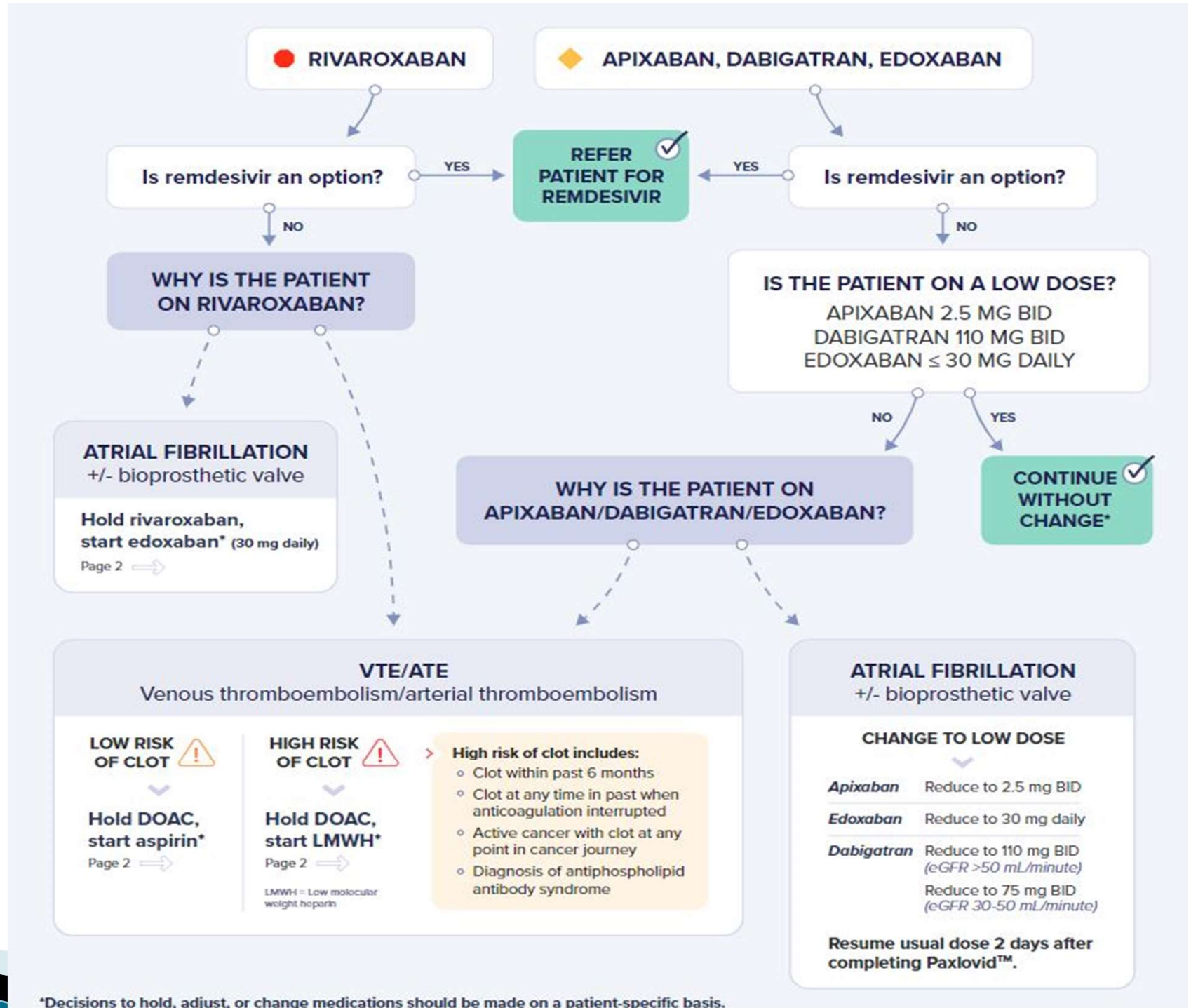
# Challenging Interactions

- ❑ Transplant medications
- ❑ Warfarin
- ❑ DOACs
- ❑ Antiplatelets
- ❑ Cardiac medications

**When in doubt:  
Refer!**



# Paxlovid for a Patient on a DOAC: Ontario Science Table (June 6, 2022)



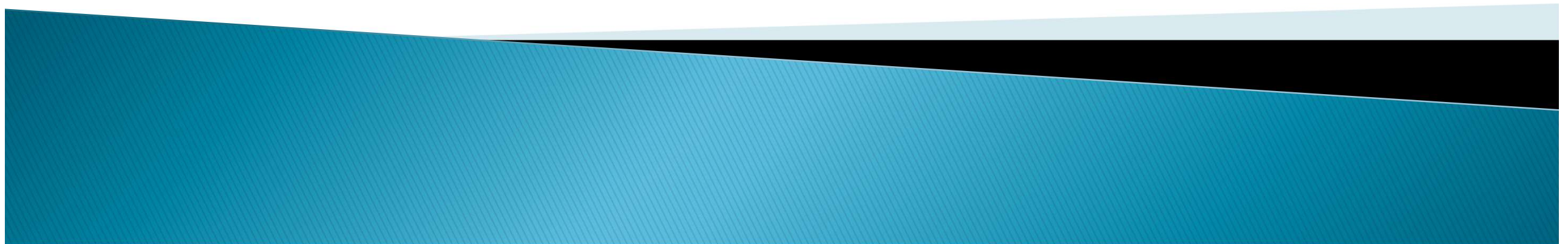
\*Decisions to hold, adjust, or change medications should be made on a patient-specific basis.

# Treatment Options for Patients Ineligible for Paxlovid

- ❑ Symptom management, isolation, present to medical attention if symptom progression
- ❑ Inhaled budesonide
- ❑ Referral for remdesivir
  - Similar efficacy to Paxlovid
  - No concerning dangerous drug interactions
  - Intravenous (3 daily doses, 1h minimum visit each)
  - Only offered at Oshawa infusion clinic in Durham Region
  - **Limited resource – criteria are not the same as Paxlovid**
    - Unable to receive Paxlovid (DDI, advanced cirrhosis) AND
    - Very high risk for severe COVID/hospitalization\*
      - Immunocompromised, age 65+ with 2+ risk factors or vaccine >6 months ago



# Prescribing Tips & Resources



April 18, 2022

# STARTING PAXLOVID™ TIMELINES



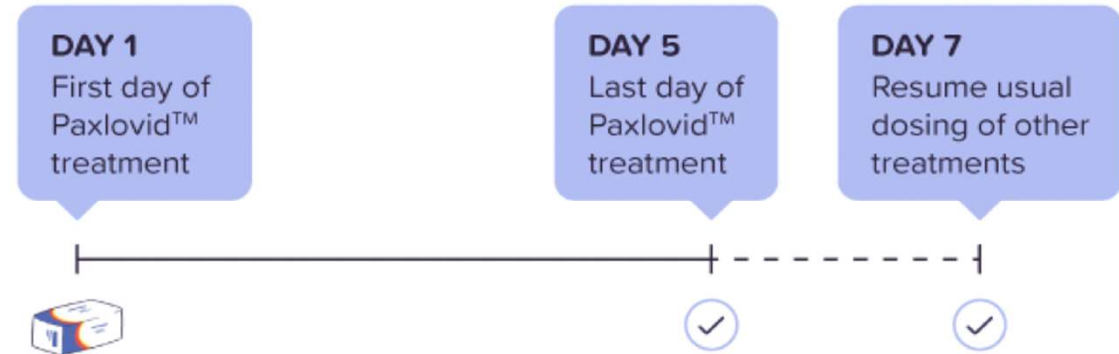
## SYMPTOMATIC PHASE:



### What to do:

- Confirm diagnosis (rapid antigen test/PCR)
- Confirm eligibility
- Obtain best possible medication history
- Assess for drug interaction(s)
- Counsel on expected side effects

## TREATMENT PHASE:



### What to do:

- Day 2-3: Follow-up with patient to assess tolerability, need for further interaction dose adjustments, etc.
- Day 5: Ensure treatment completion, remind patient when to resume normal dosing of interacting co-medications.

# Drug Interaction Tools

If a drug is not listed below it cannot automatically be assumed it is safe to coadminister.

COVID Drugs	Co-medications	Drug Interactions
<input type="text" value="paxlovid"/>	<input type="text" value="Search co-medications..."/>	<input type="checkbox"/> Check COVID/COVID drug interactions
<input checked="" type="radio"/> A-Z <input type="radio"/> Class <input type="radio"/> Trade	<input checked="" type="radio"/> A-Z <input type="radio"/> Class	Drug Interactions will be displayed here
<input checked="" type="checkbox"/> Nirmatrelvir/ritonavir (5 days) [Please read the interaction details as management of these interactions may be complex.]	Selected Co-medications will be displayed here	
<input checked="" type="checkbox"/> Nirmatrelvir/ritonavir (5 days) [Please read the interaction details as	<input type="checkbox"/> Abacavir	
	<input type="checkbox"/> Abemaciclib	
	<input type="checkbox"/> Abiraterone	

The Liverpool Tool  
(An online drug  
interaction tool)

[www.covid19-druginteractions.org](http://www.covid19-druginteractions.org)

# Tools for Practice

Ontario Health Resources for Health Care Providers prescribing Paxlovid

## 1 of 5 to COVID-19 antiviral treatment (Paxlovid):

### Information for primary care providers and other health care providers caring for patients in the community

This document was last updated December 8, 2022, to reflect revised eligibility criteria and update links to resources. Note: Paxlovid prescribing by pharmacists is not within the scope of this document.



#### Background and scope

Nirmatrelvir/ritonavir (Paxlovid) is an oral antiviral medication that can reduce the risk of hospitalization or death in people at higher risk of serious illness due to COVID-19.

**Paxlovid must be administered within five days of symptom onset to be effective.**

This document outlines how primary care providers and other health care providers can access Paxlovid for patients in the community.

This document focuses on access to Paxlovid. Remdesivir, an intravenous antiviral medication administered as a three-day course, may also be available for people at higher risk of serious illness due to COVID-19 who cannot take Paxlovid or as an alternative to Paxlovid, based on clinical assessment. Remdesivir is available to outpatients through pathways that vary regionally and is also available to hospitals via their inpatient supply. Providers should contact their **Ontario Health regional contact** to learn more about local pathways to access remdesivir for outpatients.



#### Who is eligible for Paxlovid

**All patients who are at higher risk of severe outcomes based on clinical assessment, have tested positive (PCR, rapid molecular, or rapid antigen test [including self-administered]), present within five days of symptom onset, and do not have contraindications are eligible for Paxlovid based on clinician judgement.**

Public messaging will encourage anyone who may be at higher risk of severe outcomes (based on the criteria listed below) to seek testing and an assessment (see **Ministry of Health website** and **screener tool**). Clinicians will need to assess these patients and determine whether treatment with Paxlovid is appropriate.

Paxlovid should be strongly considered for individuals who have a confirmed COVID-19 diagnosis (based on positive PCR, rapid molecular, or rapid antigen test result), present within 5 days of symptom onset, and meet one or more of the following criteria:

- 60 years of age or older;
- 18 years of age or older and immunocompromised;
- 18–59 years of age and is at higher risk of severe COVID-19. Patients at higher risk of severe COVID-19 include:
  - Those who have one or more **comorbidity** that puts them at higher risk of severe COVID-19 disease OR
  - Those with inadequate immunity, i.e.:
    - Unvaccinated or incomplete primary series OR
    - Completed primary series AND last COVID-19 vaccine dose was more than 6 months ago AND last SARS-CoV-2 infection was more than 6 months ago

Social determinants of health may confer an increased risk of disease progression. Individuals who are at a higher risk of poor outcomes from COVID-19 infection based on social determinants of health should be considered priority populations for access to Paxlovid. Individuals at higher risk include Indigenous people, Black people, other members of racialized communities, individuals with intellectual, developmental, or cognitive disability, people who use substances regularly (e.g., alcohol), people who live with mental health conditions, and people who are underhoused.

Combinations of risk factors are associated with higher risk of severe COVID-19.

Drug-drug interactions leading to potentially serious and/or life-threatening reactions are possible due to the effects of ritonavir on the hepatic metabolism of certain drugs. Contraindications and interactions must be carefully considered before Paxlovid is prescribed.



Ontario Health  
Ontario Renal Network

### Nirmatrelvir/Ritonavir (Paxlovid) and Remdesivir Use in Patients on Dialysis with COVID-19: Quick Reference Guide

Paxlovid is currently the most effective therapy for reducing severe outcomes in individuals with mild COVID-19 infection. In cases where Paxlovid is unavailable/contraindicated or would not be well tolerated, Remdesivir may be an option. However, both Paxlovid and Remdesivir lack approved recommendations in their product monographs for use in individuals receiving dialysis treatment, as this patient population was excluded in clinical trials.

The purpose of this document is to summarize the proposed dosing guidance in the use of Paxlovid and Remdesivir in patients receiving dialysis treatment, based on review of recent pharmacological evidence and following consultation with clinical experts.

#### ADDITIONAL RESOURCES:

Adamsick ML, Gandhi RG, Bidell MR, Elshaboury RH, Bhattacharyya RP, Kim AY, Nigwekar S, Rhee EP, Sise ME. Remdesivir in Patients with Acute or Chronic Kidney Disease and COVID-19. *J Am Soc Nephrol.* 2020 Jul;31(7):1384-1386.

Australian Government Department of Health. Therapeutic Goods Administration. TGA provisionally approves Pfizer Australia Pty Ltd's COVID-19 treatment nirmatrelvir + ritonavir (PAXLOVID). In: Therapeutic Goods Administration (TGA) [Internet]. [cited 8 Apr 2022]. Available: <https://www.tga.gov.au/tga-provisionally-approves-pfizer-australia-pty-ltds-covid-19-treatment-nirmatrelvir-ritonavir-paxlovid>.

Cheng M, Fowler R, Murthy S, Pinto R, Sheehan NL, Tseng A. Remdesivir in Patients With Severe Kidney Dysfunction: A Secondary Analysis of the CATCO Randomized Trial. *JAMA Netw Open.* 2022 Aug 1;5(8):e2229236.

Gottlieb RL, Vaca CE, Paredes R, Mera J, Webb BJ, Perez G, Oguchi G, Ryan P, Nielsen BU, Brown M, Hidalgo A, Sachdeva Y, Mittal S, Oslyemi O, Skarbinski J, Juneja K, Hyland RH, Oshinski A, Chen S, Camus G, Abdelghany M, Davies S, Behenna-Renton N, Duff F, Marty FM, Katz MJ, Ginde AA, Brown SM, Schiffer JT, Hill JA; GS-US-540-9012 (PINETREE) Investigators. Early Remdesivir to Prevent Progression to Severe Covid-19 in Outpatients. *N Engl J Med.* 2022 Jan 27;386(4):305-315.

Hiremath, Swapnil. "Renalists Return with Remdesivir." *NephJC, NephJC* [Internet]. 29 Dec. 2020 [cited 29 September 2022]. Available: <http://www.nephjc.com/news/remdesivir-in-aki>.

Office of the Commissioner. Coronavirus (COVID-19) Update: FDA Authorizes First Oral Antiviral for Treatment of COVID-19. In: U.S. Food and Drug Administration [Internet]. 22 Dec 2021 [cited 8 Apr 2022]. Available: <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-first-oral-antiviral-treatment-covid-19>.

Ontario Renal Network. COVID-19 Supplemental Clinical Guidance #4: Nirmatrelvir/Ritonavir (Paxlovid) Use in Patients With Advanced Chronic Kidney Disease and Patients on Dialysis with COVID-19. COVID-19 Supplemental Clinical Guidance for Patients with Chronic Kidney Disease. 13 April 2022.

WHO Solidarity Trial Consortium. Remdesivir and three other drugs for hospitalised patients with COVID-19: final results of the WHO Solidarity randomised trial and updated meta-analyses. *Lancet.* 2022 May 21;399(10339):1941-1953.

[www.ontariohealth.ca](http://www.ontariohealth.ca)

[www.ontariohealth.ca](http://www.ontariohealth.ca)

# Community Resources



## Important Links

### COVID-19 Resources

[Durham Region COVID-19 Main Page](#)

[Durham Region COVID-19 Tracker](#)

### PAXLOVID Resources

#### — Paxlovid Tools

[Memo to Primary Care Providers – Paxlovid Tools](#)

[Lakeridge Health Paxlovid Referral Form](#)

#### + Prescribing Paxlovid

#### + Paxlovid Presentations

### RESPIRATORY TRACT INFECTIONS (RTI)

[primarycarenetworkdurham.ca](http://primarycarenetworkdurham.ca)

A screenshot of the Lakeridge Health website. The top navigation bar includes the Lakeridge Health logo, a search bar with the text "Search for...", and a "Menu" button. Below the navigation bar is a large orange banner with the text: "View our **COVID, Cold, and Flu information page** for testing, assessment, and treatment options." Underneath the banner is a section titled "COVID-19 Information" with a hamburger menu icon to its right. Below this section are three colored buttons: a green button for "COVID, Cold, and Flu Care Clinics" (with subtext "Testing, Assessment, and Treatment" and a "Click Here" button), a blue button for "COVID-19 Vaccine Information" (with a "Click Here" button), and an orange button for "Urgent Care Options" (with a "Click Here" button). Below these buttons is the text "What is a COVID, Cold, and Flu Care Clinic?". At the bottom of the page is a large orange footer with the text "lakeridgehealth.on.ca".



# COVID-19 Testing Clinics

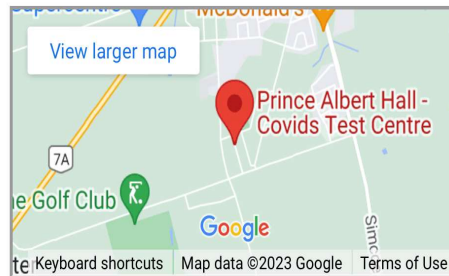


SELF REFER

[covid19swab.lh.ca](https://covid19swab.lh.ca)

## Port Perry COVID, Cold, and Flu Care Clinic

Location -19 Jeffery Street, Prince Albert



### Hours

Monday-Sunday 12:00 p.m. - 4:00 p.m.

Book a COVID-19 test or assessment at [covid19swab.lh.ca](https://covid19swab.lh.ca)

## Courtice CAC/ILI clinic

Lakeridge Health  
1405 Bloor St Unit #5  
Courtice, ON  
L1E 0A1

[Map it \(opens Google Maps\)](#)

### Who can get a test (if eligible)

- Can test anyone over 1 months old

### Appointment and location details

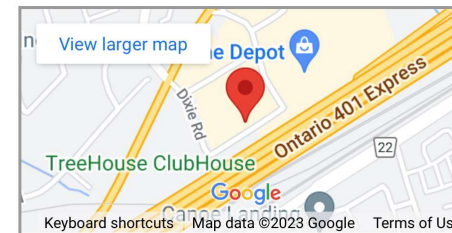
- Provides clinical assessment (can assess, test, and provide treatment options for COVID-19)
- Appointment only. Visit their website to make an appointment

### Hours

Monday - Sunday: 9 a.m. to 8 p.m.

## Pickering COVID, Cold, and Flu Care Clinic

Location -1101 Kingston Road, Unit 140,  
Pickering



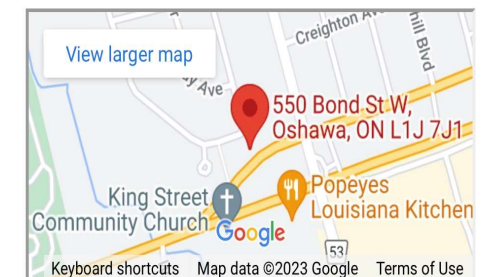
### Hours

- Monday: 2:00 p.m. - 8:00 p.m.
- Wednesday: 2:00 p.m. - 8:00 p.m.
- Friday: 2:00 p.m. - 8:00 p.m.
- Saturday and Sunday: 9:00 a.m. - 3:00 p.m.

Book a COVID-19 test or assessment at [covid19swab.lh.ca](https://covid19swab.lh.ca)

## Oshawa COVID, Cold, and Flu Care Clinic

Location -550 Bond Street W, Oshawa



### Hours

Monday-Sunday: 8:30 a.m. - 7:30 p.m.

Book a COVID-19 test or assessment at [covid19swab.lh.ca](https://covid19swab.lh.ca)

# Covid-19 Therapeutic Clinic

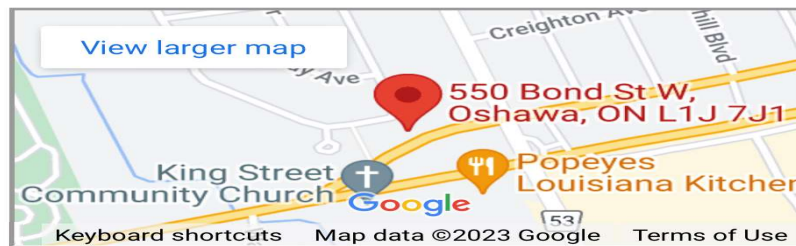


## COVID-19 Therapeutic Clinic



Learn more about the COVID-19 Therapeutic Clinic and how to access antiviral treatment.

The COVID-19 Therapeutic Clinic is located at **550 Bond St W, Oshawa, ON L1J 7J1**.




The clinic provides specialized antiviral treatment that will help eligible adults with mild to moderate COVID-19 who are at risk of progressing to serious illness. The clinic is by appointment only.

[Click here to access the COVID-19 Therapeutic Clinic Self Referral form](#)

### Accessing antiviral treatment

Paxlovid is an outpatient treatment for COVID-19 that can reduce the risk of serious illness if started within the first 5 days of symptoms. It is available

 **Lakeridge Health**

**COVID-19 Therapeutic Clinic**  
PAXLOVID or REMDESIVIR

550 Bond St. W., Oshawa, ON L1J 7J1  
Telephone: 905-985-4721 Fax: 905-831-8326  
Email: CTC@lh.ca  
Hours of operation: Monday to Sunday 1000 to 1800

Name: \_\_\_\_\_  
DOB: \_\_\_\_\_  
HCN: \_\_\_\_\_  
Phone #: \_\_\_\_\_  
Email: \_\_\_\_\_

**\*\*\*PLEASE ENSURE THE PATIENT HAS A FULL LIST OF MEDICATIONS, INHALERS, AND SUPPLEMENTS AVAILABLE TO REVIEW WITH THE CLINIC\*\*\***

**CLINIC EXCLUSIONS**

- Patient unwilling to receive antiviral therapy
- >7 days symptoms

**CLINIC INCLUSIONS (check all that apply)**

Date of positive covid test: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Test:  RAT  PCR  Pending


Date of symptom onset (must be <7 days): \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**AND at least one criteria under A, B, C or D below:**

**A) Immunocompromised or immunosuppressed individuals not expected to mount an adequate immune response to COVID-19 vaccination or SARS-CoV-2 infection (regardless of vaccine status) defined as one of the following:**

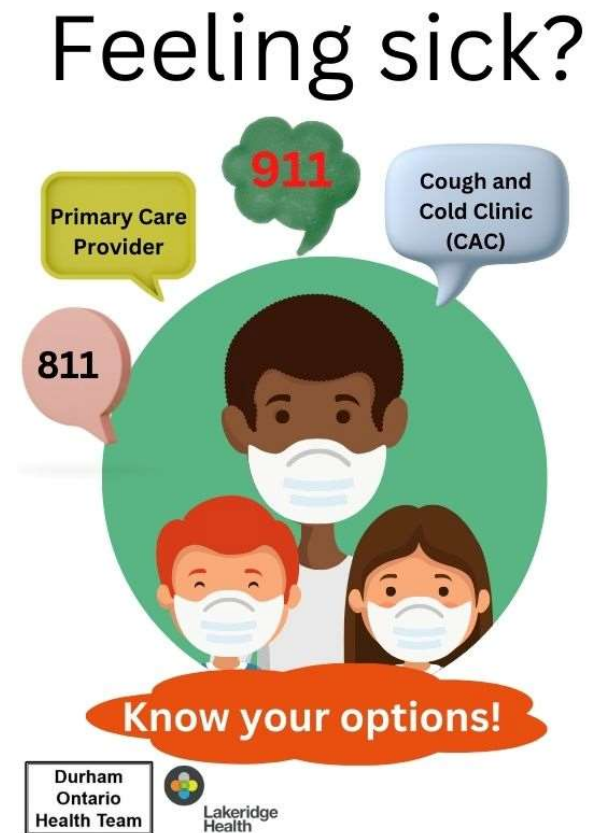
- Active treatment for solid tumor and hematologic malignancies (including individuals with lymphoid malignancies who are being monitored without active treatment) (Specify: \_\_\_\_\_).
- Receipt of solid-organ transplant and taking immunosuppressive therapy (Specify: \_\_\_\_\_).
- Receipt of chimeric 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) (Specify: \_\_\_\_\_).
- Advanced or untreated HIV infection.
- Active treatment with high-dose corticosteroids (i.e. equal or greater than 20 mg prednisone or equivalent per day when administered for equal or greater than 2 weeks).
- Active treatment with alkylating agents, antimetabolites (including methotrexate), transplant-related immunosuppressive drugs, cancer chemotherapeutic agents classified as severely immunosuppressive, tumor-necrosis factor (TNF) blockers or other biologic agents that are immunosuppressive or immunomodulatory (Specify: \_\_\_\_\_).

REF0090 REVISED 16NOV2022  
 Harmonized Page 1 of 2



# Cough and Cold Clinics (CAC)

- Physicians Onsite for Assessments
- All ages
- Cold and Flu Symptoms (ILI's)
- Poster available to post/share
- Patients can Call 811 and Register to Find a Doctor or Nurse Practitioner



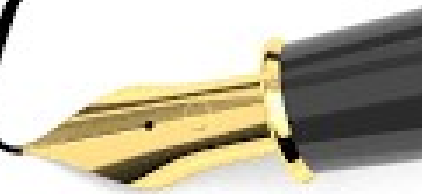
## KNOW WHERE TO GO!

- Call your Primary Care provider
  - If they are closed, listen to their message for hours of operation
  - For urgent care options visit [lh.ca](http://lh.ca)
- A Cough and Cold Clinic (CAC) is a medical clinic that can:
  - Test, assess, and provide treatment for people of all ages for COVID-19 and other cold and flu-like illnesses
  - Book an appointment visit [covid19swab.lh.ca](http://covid19swab.lh.ca)
- Get advice from a nurse 24/7
  - Call 811
  - Online chat at [ontario.ca/HealthConnectOntario](http://ontario.ca/HealthConnectOntario)
- If you or your child are severely ill call 911 or go to your nearest emergency department

# Questions?



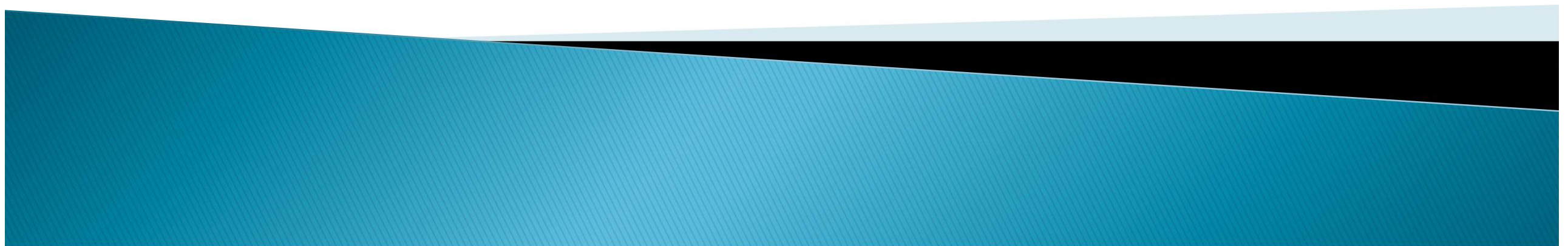
*Thank  
you*



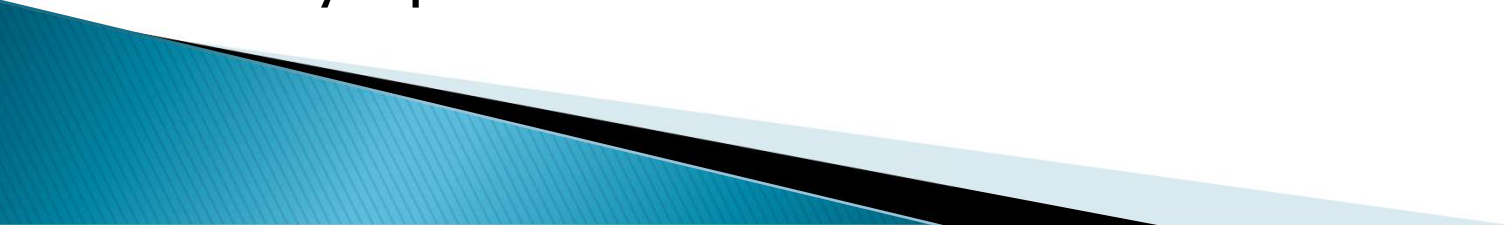
*for Being our  
Partners in Care!*

If you have any questions, please email [covidresponse@lh.ca](mailto:covidresponse@lh.ca).

# Appendices



# Case Examples

- ❑ 72F, 5x vax, on warfarin for mechanical mitral valve, cardiac risk factors
  - ❑ 42F, 3x vax (last dose 8 months ago), on blexten daily for allergies
  - ❑ 70M, 5x vax, day 1 symptoms, ASA/crestor/candesartan/allopurinol
  - ❑ 74M, eGFR 59, DM/PPI/alfuzosin/dutasteride, had paxlovid in April
  - ❑ 63M, 5x vax, DM/HTN, tamsulosin/metformin, eGFR 92, day 3, symptoms worse
  - ❑ 72M, 5x vac, DM/HTN, primidone for tremor, day 2 very mild symptoms
- 

	<b>Remdesivir</b>
<b>Dosing</b>	<b>200mg IV day 1, 100mg IV days 2 and 3</b>
<b>Mechanism</b>	Antiviral, targets viral replication
<b>Evidence</b>	<b>PINETREE: 0.7% vs 5.3% covid-related hospitalization or death (87% reduction)</b> <b>**Unvaccinated with at least one risk factor**</b>
<b>Side effects</b>	<b>Infusion reactions, possible transaminitis</b>
<b>Contraindications</b>	<b>Renal dysfunction (emerging data suggests safe)</b>
<b>Consideration</b>	<b>Logistics (come to Oshawa CTC x 3 days, at least 1h each visit)</b> <b>Only for very high risk (not for all meeting OH criteria for Paxlovid)</b>



# Antivirals in Pregnancy

## ❑ COVID risks in pregnancy

- worse clinical course for mom (increased risk admission, ICU, ventilation, death)
- no evidence of congenital anomalies or increased miscarriage
- inconsistent evidence of increased preterm labour
- possible increase in pre-eclampsia
- vaccines reduce risk
- OST – consider anti-virals if unvaccinated, or if qualify based on immunocompromising condition

## ❑ Antivirals

- either remdesivir or paxlovid can be given (more experience with rem), data are limited for both
- Paxlovid – case series 47 patients – well tolerated, no complications (Garneau et al JAMA Open Access 2022)

Immunocompromise	Examples/caveats	Not covered
Active treatment for solid tumor	Cytotoxic chemotherapy ?targeted agents ?immunotherapy	Anti-androgen Hormonal therapy
Active treatment for hematologic malignancy/surveillance of lymphoid malignancy		
Solid organ transplant recipient		Pre-transplant
CAR-T-cell therapy		
Bone marrow transplant	Within 2 years or still requiring immunosuppressive therapy	
Moderate/severe congenital immunodeficiency	DiGeorge, CVID, Wiskott-Aldrich, hyper IgE, Good's syndrome	
Advanced/untreated HIV		Well controlled HIV, CD4 > 200
Immunosuppressive biologics	Anti-CD20 (ritux), anti-TNF	Evolocumab, denosumab
High dose steroids	Pred >20mg/d x 2 weeks	Inhaled steroids, oral/rectal budesonide
Alkylating agents, antimetabolites	MTX, leflunomide, teriflunomide, cyclophosphamide, azathioprine	HCQ, copaxone, ?5-ASA, ?sulfasalazine (anti-inflammatory but listed for booster eligibility)