COVID CORNER
School Opening and the Second Wave
Wednesday September 9, 2020
7:00 - 9:00 PM MDT

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Moderators

Kelly Burak MD MSc FRCPC
Professor and Associate Dean, Continuing Medical Education and Professional Development, Cumming School of Medicine, University of Calgary

Disclosure
Any direct financial payments, gifts, in-kind compensation or honoraria
• Employee, University of Calgary

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Disclosure
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We would like to acknowledge the traditional territories of the people of the Treaty 7 region in Southern Alberta, which includes the Blackfoot Confederacy (comprising the Siksika, Piikani, and Kainai First Nations), as well as the Tsuut’ina First Nation, and the Stoney Nakoda (including the Chiniki, Bearspaw, and Wesley First Nations). The City of Calgary is also home to Métis Nation of Alberta, Region 3.

Housekeeping

- Multiple speakers will address various aspects of the topic
- There will be a Q&A after all the presentations
- Use the Q&A box to enter questions by text. No spoken questions.
- Refer to this how-to-guide for info on Questions, Chat, etc.
- We get lots of questions: scan the list and give a thumbs up if you are interested in a question already posed.
- Formal notices, copyright, declarations and disclaimers will be offered throughout the presentation and within the chat box

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Disclosure of Financial Support

• The program was developed and planned to achieve scientific integrity, objectivity and balance

• This program has received educational grants from the College of Physicians Surgeons of Alberta, Alberta Health Services and Calgary Health Trust

Presenter Disclosure

Braden Manns MD MSc FRCPC
Co-Chair, Scientific Advisory Group, Alberta Health Services; Svare Professor, Health Economics & Nephrologist, Departments of Medicine & Community Health Science, University of Calgary; Health Scholar, Alberta Innovates – Health Solutions

Disclosure
None to Disclose
In the Corner with...

Dr. Braden Manns
Co-Chair
Scientific Advisory Group
Alberta Health Services

What risk factors are associated with severe outcomes in COVID-19?

COVID-19 Scientific Advisory Group
Rapid Evidence Report

Topic: What risk factors (such as age, medical conditions, or lifestyle factors) are associated with the development of severe outcomes in COVID-19?

Alberta Health Services

www.albertahealthservices.ca

Updated August 21, 2020

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Key Messages from the Evidence Summary

- Bulk of evidence is from jurisdictions with significantly different health systems and different rates of infection
- Risk of transmission is not influenced by comorbidities, but is a direct reflection of community transmission rates and exposure history
- Risk of disease severity can be influenced by comorbidities, but the strength and consistency of the associations vary
Key Messages from the Evidence Summary

- Adults >50, particularly those >65, and/or those with multiple risk factors for severe COVID-19 outcomes, including at least two of:
  - BMI ≥ 35, diabetes, hypertension, advanced CKD
  - and likely CHF / COPD and other rare conditions (e.g. lung transplant, cystic fibrosis)
- Where there is a high risk of COVID-19 transmission:
  - live or work in higher transmission risk settings (e.g. Public Health COVID-19 watch)
- Should be advised to:
  - take additional measures (e.g. medical masks & eye protection) if distancing not possible
- In settings with high community COVID-19 transmission, the risk associated with their current workplace should be carefully considered in:
  - pregnant women from 28 weeks gestation with additional risk factors
  - others over age 50 with multiple underlying health conditions noted above

For more information

COVID CORNER Webinar: 
School Opening and the Second Wave

Presenters: 
Jim Kellner, MD FRCPC 
Ian Mitchell, MD MB ChB FRCPC 
Anne Elizabeth Hicks, MD FRCPC MSc PhD 
Allison Carroll, MD FRCPC

Panellists: 
Natalie Forbes, MD FRCPC 
Alexander Doroshenko, MD FRCPC MPH FFPH

September 9, 2020

Learning Objectives

• Describe what to expect from COVID-19 in the fall with respect to a second wave, the impact of other viral illnesses and other unexpected consequences of the pandemic in pediatric populations.
• Identify the secondary impacts of school closures on children and youth.
• Compare the risk of SAR-CoV2 transmission and COVID-19 infection in children, adolescents and adults, focusing on the implications for school openings.
• Illustrate the impact of moral distress and the importance of advocacy and messaging to children and parents, including those at higher risk, during the pandemic.
What do you think will happen with Influenza in 2020/21?

Jim Kellner MD FRCPC
Professor (and former Head) Department of Paediatrics, Professor, Department of Microbiology, Immunology and Infectious Diseases, and Department of Community Health Sciences, University of Calgary. Child Health and Wellness Researcher (Infectious Diseases and Vaccines), Alberta Children's Hospital Research Institute. Federal COVID-19 Immunity Task Force Leadership Group member and Co-Chair Field Studies Working Party. Member, Alberta Advisory Committee on Immunization.

Disclosure

- Name of for-profit or not-for-profit organization(s): Pfizer Canada Unrestricted grant-in-aid for pneumococcal disease surveillance, Merck Contract clinical trial - new pneumococcal vaccine, GSK Contract clinical trial - new rotavirus vaccine.

What to Expect in the Fall 2020
COVID Corner: School Opening and the Second Wave

Dr. Jim Kellner
Pediatrician, Infectious Diseases specialist & Professor, Department of Pediatrics
Cumming School of Medicine, University of Calgary &
Calgary Zone, Alberta Health Services
COVID-19 Immunity Task Force Leadership Group Member
Jim.Kellner@ahs.ca  @Dr_Jim_Kellner

Slow Burn or Heading to a Second Wave?

• Alberta has a more permissive approach than many other jurisdictions to acceptable levels of COVID-19 infections in the community
  • “Open” if <50 cases/100,000 persons

• How prepared are our communities and the health system?
  • Low COVID-19 infection rate in community – AB not “low” and may not be stable but serious outcomes continue to decline +/-
  • Ample testing ✓ and accurate contact tracing +/-
  • Health system capacity to deal with surges in disease ✓
  • Compliance with control measures e.g., distancing, masks, hand hygiene ?
Active COVID-19 Cases, Sep 8, Alberta

- **Active Cases** – 1585
  - 36/100,000
  - Hospitalized – 45 persons (2.8%)
  - Intensive Care – 7 persons (0.4%)

- **Total Cases** – 15,191
  - 342/100,000 (vs 356 for Canada)
  - Hospitalized – 724 (4.8%)
    - 0-19 years – 18 (0.7%)
  - ICU – 134 (0.9%)
    - 0-19 years – 3 (0.1%)
  - Cumulative deaths – 248 (1.6%)
    - 6/100,000 (vs 24 for Canada)
    - 0-19 years – 0
  - Recovered – 13,358 (88%)

https://covid19stats.alberta.ca

COVID-19 Testing, Alberta, Sep 7, 2020

- **Total COVID-19 tests to Sep 7**
  - 825,046 persons tested (19% of pop)
  - 1,052,446 tests performed
  - Since August 25
    - Average 10,660 tests/day
    - 2.4 tests/1000/day
    - 1% of daily tests positive (6% peak April)

- **Contact tracing**
  - Improving since mid-August
  - But unknown contact in 31% compared to early in pandemic, when <10% unknown

https://covid19stats.alberta.ca

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New COVID-19 Cases/Day/Million Persons, AB, Sep 7
from https://covid19stats.alberta.ca

Canada & Australia

Daily new confirmed COVID-19 cases per million people

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Positive Impacts of COVID-19 Mitigation

- Reduced contagious infectious diseases
- Reduced premature births
- Reduced major trauma

Australia Influenza Surveillance 2020

- Syndromic and testing surveillance in community and hospitals similar to Canada
- Reduced laboratory testing in 2020 but similar office and hospital syndromic surveillance as previous years
- “Interpretation of 2020 influenza activity data should take into account... impact of social distancing... changes in health seeking behaviour...”
- “Current COVID-19 related public health measures and the community’s adherence to public health messages are also likely having an effect on transmission of acute respiratory infections, including influenza.”


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Reduction in Preterm births

• Reported from numerous countries – Canada, Australia, Denmark, Ireland, USA
  • 20% - 90% ↓ in premature births (various definitions)

• Calgary - Alshaikh et al
  • Abruptly, since late March: births at <29 weeks ↓ 34%-40%; <1 kg ↓ 50%
  • ? Related to
    • Physical distancing and fewer infections
    • ↓ activity and ↑ resting
    • ↓ pollution

www.ctvnews.ca/health/fewer-babies-are-being-born-premature-during-covid-19-1.5056815

Pediatric Guidance

• Spectrum app
  • Alberta specific Pediatric and Adult versions for infectious diseases management
  • Combined version for COVID-19 management
  • https://spectrum.app

• Primary Care COVID-19 Pediatric Patient Management Pathway
  • One page flow diagram with multiple links
The most important reason for in person education in fall 2020 is:

Secondary Effects of School Closure During Pandemics

Allison Carroll MD FRCPC
Assistant Professor, Faculty of Medicine & Dentistry - Pediatrics Dept University of Alberta, Pediatric Respirologist at Stollery Children’s Hospital

Disclosure
• Grants or clinical trials: Astra Zeneca, Vertex
Learning Objectives

• Identify impact of COVID-19 on childhood education worldwide

• Identify basic needs required to participate in education

• Identify how school closures affect delivery of basic needs during a pandemic

Note: Figures correspond to number of learners enrolled at pre-primary, primary, lower-secondary, and upper-secondary levels of education (ISCED levels 0 to 3), as well as at tertiary education levels (ISCED levels 5 to 6). Enrolment figures are based on latest UNESCO Institute for Statistics data. See methodological note. https://en.unesco.org/covid19/educationresponse
Spectrum of harm is dependant on socioeconomic factors

- In developing countries:
  - Increased gender disparity
    - Domestic responsibility
    - Abuse and violence
    - Early marriage
    - Pregnancy
  - A crisis within a crisis

Addressing the gender dimensions of COVID-related school closures
UNESCO, August 2020

Spectrum of harm is dependant on socioeconomic factors

Maslow’s Hierarchy of School Needs

- Self-Actualization:Student is Available to Learn
- Esteem:Positive Classroom Culture Present (positive feedback, time for reflection, encouragement to take risks)
- Belonging:Forming Relationships (advisory, adult role models, friendship groups, peer relationships)
- Safety:Emotional and Physical Safety (clean school/class routines, access to counselors/nurse, ok to take risks)
- Physiological:Basic Needs Are Met (food/breakfast, clean clothing, safe place to go home, able to sleep)

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Spectrum of harm is dependant on socioeconomic factors

https://en.unesco.org/covid19/educationresponse

Harms associated with school closures

- Food Insecurity and Poverty
  - 8.7% Canadian households are food insecure at baseline
    - 1 million children are supported with breakfast
  - 19.2% households with children during pandemic (StatsCan)
  - 35 million children in US access school meal programs daily
  - Families must balance child care with employment
Harms associated with school closures

- Abuse
  - 30-40% decrease in child abuse reporting in Canada
    - Children’s Aid Society, Toronto
    - Zebra Child Protection Centre, Edmonton
  - Restrictions to child welfare visits
  - 16x increase in abusive head trauma in March/April
    - Sidpra et al., JAMA, August 2020

Harms associated with school closures

- Mental Health
  - Suicide most common cause of death in youth aged 10-24 (StatsCan)
  - Psychological effects of quarantine
    - Increased PTSD in youth
    - Increased anxiety and depression symptoms
    - Decreased access to mental health resources
  - Decreased identification of symptoms, suicidal ideation and substance use

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Harms associated with school closures

Access to Health Services

Vaccinations
Significant decrease in diphtheria, tetanus, pertussis from Jan-Apr 2020 – WHO

Early childhood services
PT/OT/SLP

School nurses

Harms associated with school closures

- Decreased access to behavioural/educational aides
- Decreased physical activity (StatsCan)
  - 62% Canadian children less physically active
  - 79% Increased screen time
- Bullying and Racism
- Unequal access to computers, internet, additional support
Social Inequalities Magnify Harm From School Closures

Maslow’s Hierarchy of School Needs

- Self-Actualization: Student is ready to learn
- Esteem: Positive classroom culture, growth mindset, safe learning environment
- Belonging: Forming relationships, OnDestroy, adult-adolescent, meaningful groups, peer relationships
- Safety: Physical and emotional safety, school rules, norms, expectations, home, social sharing
- Physiological: Basic needs are met; home safety, clean clothing, safe place to sleep

Safe School Opening Strategies

COVID-19 Effects on Public Health

Images via https://pixabay.com/
References


The following is true about SARCoV-2 viral transmission in kids

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Transmission in Children and School Opening

Elizabeth Anne Hicks MD FRCPC MSc PhD
Assistant Professor Department of Pediatrics Division of Pediatric Respirology, Pulmonary & Asthma, University of Alberta

Disclosure
• Grants or clinical trials; Vertex Cystic Fibrosis disease modifying drug, IQVIA RSV prophylaxis

Learning Objectives

At the end of this session, participants will be able to:
• Discuss viral shedding and transmission mechanisms
• Compare transmission patterns based on context
• Consider transmission risk in children vs adults

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How do we transmit?

Saliva, droplets or mucus

Enters through mouth, nose or eyes

Viral load and shedding

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Viral load by age

- Children <5 years old had higher viral counts
- Older children were similar to adults

Viral shedding by age: Cycle Threshold RT-PCR
## Viral shedding

### Nasopharynx
- Load: nasopharyngeal > oral
- Highest area of shedding
- Maximal shedding around when symptoms start

### Fecal
- Starts later during infection, may be prolonged
- Mainly detectable RNA but infectious virus has been isolated
- No strong evidence for fecal transmission but is possible

### Blood, urine, breastmilk and other fluids
- Detection is rare in blood and urine
- RNA detected in breastmilk but no evidence of transmission

## Antibodies
Antibody timeline

[Image of antibody timeline graph]

Seroprevalence studies (UK)

- Risk of seropositivity increased for children of health care workers
- 50% of positive seroprevalence asymptomatic

[Image of seroprevalence study table]

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Seroprevalence

Spain 5.0%
- 1.1% < 1
- 2.4% 1-19
- 4.4% 20-34
- 5.3% 35-49
- 5.8% 50+

Sweden 7.3%
- 0-19 4.7%
- 20-64 6.7%

Switzerland 10.6%
- 5-9 0.8%
- Few children in this study

Canada
- National blood donor samples May <1%
- Vancouver outpatient labs March 0.28%
  May 0.55%

Transmission

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Do symptoms impact transmission?

Admitted patients → 4,950 close contacts → Who developed COVID-19?

Average
- Infection incidence 2.6%

Children 0-17 years
- 15.8% of contacts
- Infection incidence 1.8%

Adults > 60 years
- Infection incidence 4.2%

Contacts infected by index case symptoms

- Asymptomatic: 0.33%
- Mild symptoms: 3.3%
- Moderate symptoms: 5.6%
- Severe symptoms: 6.2%
- Fever: 10.2%
- Expectoration: 13.6%

Transmission in children vs adults

5,706 index patients, 59,073 contacts (South Korea) January-March

- Household contacts: 11.8% infection rate
- Non-household contacts: 1.9% infection rate

- 0-9 years: 5.4%
- 10-19 years: 18.6%

Early studies impacted by lockdown and school closure, limiting pediatric index cases and direction of transfer analysis.
Age-related spread

Heat map from Netherlands showing that spread is more consistent between people of the same age.

Where do we transmit SARS-CoV-2

Cases per exposed individual

- **Household**
  - Total: 22.86
  - Pediatric: 19.32
  - Adult: 20.49

- **Community**
  - Total: 2.59
  - Pediatric: 1.70
  - Adult: 1.98

- **Daycare**
  - Total: 0.40
  - Pediatric: 0.16
  - Adult: 1.11

- **School**
  - Total: 3.19
  - Pediatric: 1.59
  - Adult: 6.11

- **Public transport**
  - Limited data
  - Has been linked to transmission

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Transmission in schools

**Single confirmed cases**
- Early years: 5 children, 5 staff
- Primary school: 21 children, 24 staff
- Other settings: 2 children, 6 staff

**Co-primary cases**
- 4 events: 10 children, 0 staff
- All asymptomatic
- All tested due to positive household member (4/5 parent)

**Confirmed outbreaks**
- Early years: 7/30
- Primary school: 18/30
- Secondary school: 2/30
- Special education: 3/30

Public health interventions to decrease transmission

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Summary: transmission in a nutshell

- Children vs adults
  - Less severe disease
  - Similar viral shedding
- Transmission
  - More likely between adults than from children to adults or each other
  - Children catch COVID-19 at home, adults at work
- Schools
  - Some cases, some transmission
  - Limited with public health precautions

Which statement about Kids with underlying Chronic Medical Conditions/Medical Complexity and COVID is false?
Children with Medical Complexity (CMC) and Other Puzzles

Ian Mitchell MD MB ChB FRCPC
Clinical Professor, Professor Emeritus of Paediatrics University of Calgary, Child Health & Wellness Researcher Care Transformation for Children Program Alberta Children's Hospital Research Institute

Disclosure
• Grants or clinical trials: Investigator Initiated grant, AbbVie Canada
• Clinical Trials: Medimmune, Regeneron, Boehringer Ingelheim
• Patents, royalties: Book - Ethics in Pediatrics Achieving Excellence When Helping Children

Learning Objectives

• Recognize the issues around CMC returning to school
• Relate to feelings of moral distress and develop personal coping strategies
• Identify levels of advocacy and how to help children and families
• Understand the need for clear messages in a crisis
This section will cover....... 

• Back to school and COVID
  • Why parents are so conflicted
• Pediatricians and COVID
  • Moral Distress
    • Examples and helping ourselves
  • Advocacy
    • Why, what, how and pitfalls
• Messaging
  • Why consistency isn’t rigid conformity

What are complex chronic illnesses—conditions?

• Heterogeneous/multisystem/most individually rare:
• May be technology-dependent;
• Frequent inpatient admissions;
• Requires multiple medications:
• Multiple subspecialists:
• Care coordination across all inpatient and outpatient settings.

CMC Sequestered at Home

- Reduced health care access:
  - CMC often dependent on medical technology
  - Need continuous care from multiple service providers
- School closure:
  - CMC often receive medical and other services at school.
  - School provides a regular source of respite for families.
- Social distancing:
  - Parents of CMC
    - Provide complicated medical care,
    - Concurrently maintaining their own health and health of family members
    - Maintain employment;
  - All exacerbated by physical distancing


COVID and CMC Attending school

- Unknowns
  - Risk of infection to CMC
  - Risk of CMC transmitting infection
  - Risk if severe illness if infected
- Knowns
  - Provides parental respite
  - Improves access to therapists
  - Access to aides
    - Not all children/May be shared
Why CMC might not attend school

- Parental Choice
  - Considerations
    - Information
    - Medical sources
    - Family/neighbours
    - Online sources
  - Family situation
    - Family attitudes including fears
    - Health of family members

- Medical reasons
  - No literature
  - Immune deficiency
    - Actual, not a diagnosis by itself
    - E.g. Recent transplant
  - Upcoming major surgery
  - If formal support to be given, involve physician colleagues and other health care professionals
  - an individual physician decision will get less attention

But **must** always consider the child’s voice

Moral Distress

Knowing the right thing to do but constraints make it difficult to pursue the desired course of action

- Definition comments
  - Constraints usually institutional
    - Here multi-institutional
  - Assumption that any one of us has the right answer
  - Assumption that there is a right answer
**Moral Distress**

Knowing the right thing to do but constraints make it difficult to pursue the desired course of action

- **Definition comments**
  - Constraints usually institutional
  - Assumption that any one of us has the right answer
  - Assumption that there is a right answer

**Examples in COVID era - restrictions on a low incidence group**

- Limited access by both parents when child in hospital
- May be direct communication with one parent/virtual communication with the other
- Only access by one parent in when clinic is in clinic
- Sensitive personal medical details must be passed to bureaucrats when exemption requested
- Reduced access to care, including surgery
  - Anxiety re reduced access
  - ..........

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**Moral distress and coping**

- Moral residue one consequence
- Need to cultivate resilience
  - Recognize source of distress
  - Develop support network – learn how to reach out
    - This is more than venting
  - Is there something I can do?
    - i.e action means taking personal responsibility
- Can I contribute organization-wide?
- Province-wide?
Moral distress and coping

**What it means to us**
- Moral residue one consequence
- Need to cultivate resilience
  - Recognize source of distress
  - Develop support network – learn how to reach out
    - This is more than venting
  - Is there something I can do?
    - i.e action means taking personal responsibility
- Can I contribute organization-wide?

**On the other side**
- Managers/directors etc
- Must recognize reality of moral distress
- Analyze issues
- Provide support
- May want to initiate change

Advocacy

- A duty
- Using expertise and influence to advance health and well being of individual patients, communities and populations
  - i.e.3 levels
    - Every day practice – helping families
    - Facilities – improving services
    - Provincial/national/international – focus on child health
  - A broad focus

Advocacy in practice

- It’s about helping families
- *Accurate and evidence based*
- Specific to the individual child
- Avoid conflicting views between physicians (not always!!)
- Multisystem problems will have multisystem teams and multisystem solutions
- We can disagree with families and still be
  - Supporting
  - Reassuring

Example of Advocacy and CMC

- Request for a letter for....
  - A new drug/specific preparation
  - Perhaps an increase in respite resources
  - More access to therapist
  - Child to be home schooled
  - Parent to be at home to care for vulnerable child
The letter of advocacy

• Who is it addressed to/how to send
• Based on our knowledge the child’s medical condition
  • It’s a statement of our assessment of medical evidence
• Must be based on available evidence
• Should be to the point
  • One page if possible
• Support for a parent doesn’t mean agreement with everything the parent wants

Messaging and advocacy

• Main message must be clear
  • One voice works best/may reduce anxiety
• Must be based on evidence
  • Enormous background before information announced
• Operational details – actions – never as clear
• Advocacy for change essential
  BUT
• Must be done carefully
• Easy to increase anxiety and still not get changes
• Allies essential in effecting change
Recommendations

• Analyze carefully all available information around CMC returning to school
• Recognise personal feelings of moral distress and develop personal coping strategies
• Advocate for children and families
  • Do so responsibly
  • We can disagree and still be supportive
• Accept evidence behind MOH announcements
  • Act when details of roll out are less evidence based and may be harmful
  • Act in a way that facilitates success

References

Panellists

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Disclosure
• None to disclose

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Disclosure
• Direct financial payments, gifts, in-kind compensation or honoraria: Sanofi Pasteur
• Grants or clinical trials: Canadian Institutes of Health Research (CIHR), Public Health Agency of Canada (PHAC), Alberta Health, University of Alberta Hospital Foundation (UHF), Workers Compensation Board (WCB) of Alberta, Women and Children Health Research Institute (WCHRI), National Sciences and Engineering Research Council of Canada (NSERC)

Natalie Forbes

• What have you been hearing in your practice from families and kids regarding school opening?

• What have you found most helpful to address anxiety about COVID as schools open?
Alexander Doroschenko

- How are we responding when a case occurs in school?
- What are the implications for testing and contact tracing when schools are reopened?

Q&A

Jim Kellner
Ian Mitchell
Allison Carroll
Elizabeth Hicks
Natalie Forbes
Alexander Doroschenko

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• Your feedback is essential; please complete the online evaluation survey https://survey.ucalgary.ca/jfe/form/SV_eba3FqlguFSGAVD

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COVID CORNER
Lingering Maladies and Long Haulers: The Long-term Effects of COVID-19
Wednesday October 7, 2020
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