INFECTION PREVENTION & CONTROL (IPAC) MANAGEMENT OF COVID-19 IN LONG-TERM CARE
Presented by Dr. Jerome Leis

Moderators
Sarah Forgie  MD, MEd, FRCPC
President
Association of Medical Microbiology and Infectious Disease (AMMI) Canada

Marina Salvadori  MD, FRCPC
COVID-19 Clinical Lead
Public Health Agency of Canada (PHAC)

All attendees will enter the meeting with their mic muted and will be unable to turn on their video.
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To ask a question:
• Click the Q&A button at the bottom of your screen
• Please type your question in the Q&A box (not in the chat box)
• At the end of the presentation questions will be answered live
Dr. Leis is the Medical Director of Infection Prevention & Control at Sunnybrook Health Sciences Centre and Associate Professor in the Department of Medicine at the University of Toronto. His research is focused on the development of new models of care that reduce the risk of hospital-acquired infection and promote the appropriate use of antibiotics. During the COVID-19 pandemic, Dr. Leis has supported both hospital and long-term care sectors in both prevention and control of COVID-19 transmission.
Objectives

1. Review the transmission of COVID-19 in long-term care homes that experienced outbreak

2. Discuss the best IPAC practices for protecting residents and healthcare workers in long-term care
Faculty/Presenter Disclosure

• **Relationships with commercial interests:**
  - Grants/Research Support: None
  - Speakers Bureau/Honoraria: None
  - Consulting Fees: None
Disclosure of Financial Support

- This program has NOT received financial support other than the support of the MOHLTC
- This program has NOT received in-kind support
- Potential for conflict(s) of interest: None to be disclosed
Mitigating Potential Bias

The information presented in this CME program is based on recent information that is explicitly “evidence-based”
COVID-19 more fatal with age

0-9 years: 0%
10-19 years: 0.2%
20-29 years: 0.2%
30-39 years: 0.2%
40-49 years: 0.4%
50-59 years: 1.3%
60-69 years: 3.6%
70-79 years: 8%
80+ years: 14.8%

Children that are infected with the virus appear to be at lower risk of dying.

Older populations are most at risk. 14.8% of people aged 80 or older who were diagnosed died.

China CDC, 2020; Our World in Data, 2020
The COVID-19 challenge among older adults

• Atypical presentations common

• Challenges in obtaining reliable history

• Efficient pre-symptomatic transmission

• Behaviors can increase exposures (eg. wandering)
COVID-19 has exposed chronic problems in Canadian LTCHs

• LTCHs account for the majority of Canadian COVID-19 deaths (>80%)
• Twice the average of OECD countries (42%)
Figure 2: Total number of COVID-19 related deaths among long-term care residents and proportion of all COVID-19 related deaths in 19 countries

Source: Official figures of COVID-19 related deaths, as summarised in Comas-Herrera & Zalakain (2020). Reproduced with permission from authors.
COVID-19 outbreak in a Seattle LTCH

• 101/118 residents infected (86%)
  • 55 (55%) hospitalized
  • 34 (34%) deaths by March 18
• 50 staff infected
  • 3 hospitalized, all survived
• “Once Covid-19 has been introduced into a long-term care facility, it has the potential to spread rapidly and widely.”

Michmichael et al, NEJM, 2020
Contributing Factors

- Staff who worked while symptomatic
- Staff who worked in more than one facility
- Inadequate familiarity with and adherence to PPE recommendations
- Inadequate supplies of PPE and other items (e.g., alcohol-based hand sanitizer)
- Delayed recognition of cases
- Limited availability of testing
- Difficulty identifying persons with Covid-19 on the basis of signs and symptoms alone.

Michmichael et al, *NEJM*, 2020
PPE ‘maximalism’

- N95 masks without indication
- Double gowns, head covers or booties
- Double masking
- Wearing PPE across clean areas
Hospital response to LTCH outbreaks in Ontario

• Emergency order enabling hospitals to provide support to LTCHs in April, 2020
  • IPAC
  • PPE
  • Testing
  • Human resources
  • Clinical support
  • Environmental cleaning

Stall N et al, J Am Geri Soc, 2020
Objectives

1. Review the transmission of COVID-19 in long-term care homes that experienced outbreak

2. Discuss the best IPAC practices for protecting residents and healthcare workers in long-term care
1. Adequate IPAC resources for LTCH

- 1.0 FTE ICP per 200 beds
- Medical Director/Director IPAC
- IPAC training upon hire and minimum every 2 years
- Key elements of program
  - Hand hygiene
  - Surveillance
  - Policies/practices
  - Occupational Health and Safety
  - Education/training

Best Practices for IPAC programs in Ontario, PIDAC 3rd edition revised May 2012
2. Elimination of multi-bed rooms

- Population-based retrospective cohort study in Ontario
  - 4496 (86%) infections in 63 (10%) homes
  - Incidence and mortality increased with number of residents per bedroom and bathroom (RR=1.7)

- Conversion from 4-bed to 2-bed rooms
  - Would avert 18% of infections/death

Brown KA et al, medRxiv 2020
3. Preventing introduction of COVID-19 in LTCHs

• Limiting gatherings

• Physical distancing

• Universal masking
4. Active surveillance

- Residents
- Healthcare workers
- Visitors
5. Occupational Health & Safety

• Identification of staff exposure/illness

• Streamlined assessment and/or testing
6. Testing

- Symptom-based testing remains mainstay of surveillance

- Asymptomatic testing in Ontario – majority of positives identified in homes that already had known outbreak but low yield otherwise
7. Management of a single healthcare-associated case

- Sentinel event
- Point prevalence of unit
- Cohorting of positive cases

Roxby et al, JAMA Intern Med 2020
Dora et al, MMWR, 2020
Arons, NEJM, 2020
8. Ensuring PPE supply and proper technique
9. Cleaning / Disinfection

- High-touch surfaces
- Shared equipment
- Dedicated equipment
10. Chemoprophylaxis (research only)

- Favipiravir
  - RNA polymerase inhibitor
- In vitro activity against influenza, VHF and SARS-CoV-2
- Safety data from >40 clinical trials

Shiraki, *Pharmacol Ther*, 2020
10. Chemoprophylaxis (research only)

• Placebo-controlled cluster-randomized trial
  – Efficacy of favipiravir for control of COVID-19 outbreaks in LTCHs

http://www.tibdn.ca/control-covid
Favipiravir – Exclusions

1. Pregnancy
   • Females < 55 years of age require a negative urine pregnancy test, and either menopause or two concurrent reliable methods of contraception need to be confirmed

2. Previously diagnosed liver cirrhosis

3. Known abnormality of uric acid metabolism (other than gout)

4. Hypersensitivity to remdesivir or favipiravir

5. Medications, which cannot be discontinued for the study duration:
   • Pyrazinamide
   • Hydralazine
   • > 3000 mg of acetaminophen per day

*Courtesy of Allison McGeer and Eric Coomes*
Summary

• Chronic gaps in some Canadian LTCHs exposed by COVID-19

• Adequate IPAC resources for LTCHs essential to improving outcome of residents and staff
Thank You For Joining Us!

Following the webinar we ask that you please complete the survey about today's presentation.

Please be sure to register for the next CUPA-tea Webinar on July 23rd.

**Topic:** Challenges Around COVID-19 Diagnostic Testing

**Speaker:** Dr. Carmen Charlton & Dr. Nathan Zelyas

More information and registration visit the AMMI Canada website.