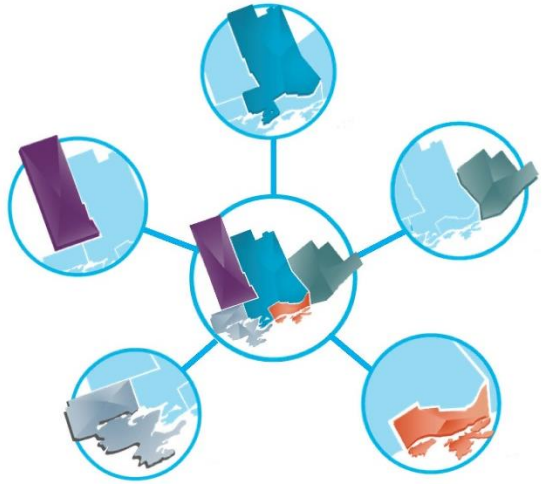
South East IPAC HUB & SPOKE



EDUCATION
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Carbapenemase-Producing Enterobacteriaceae (CPE)

LGL IPAC LEAD COMMUNITY OF PRACTICE
SOUTH EAST IPAC HUB
NOVEMBER 2024

South East IPAC HUB & SPOKE

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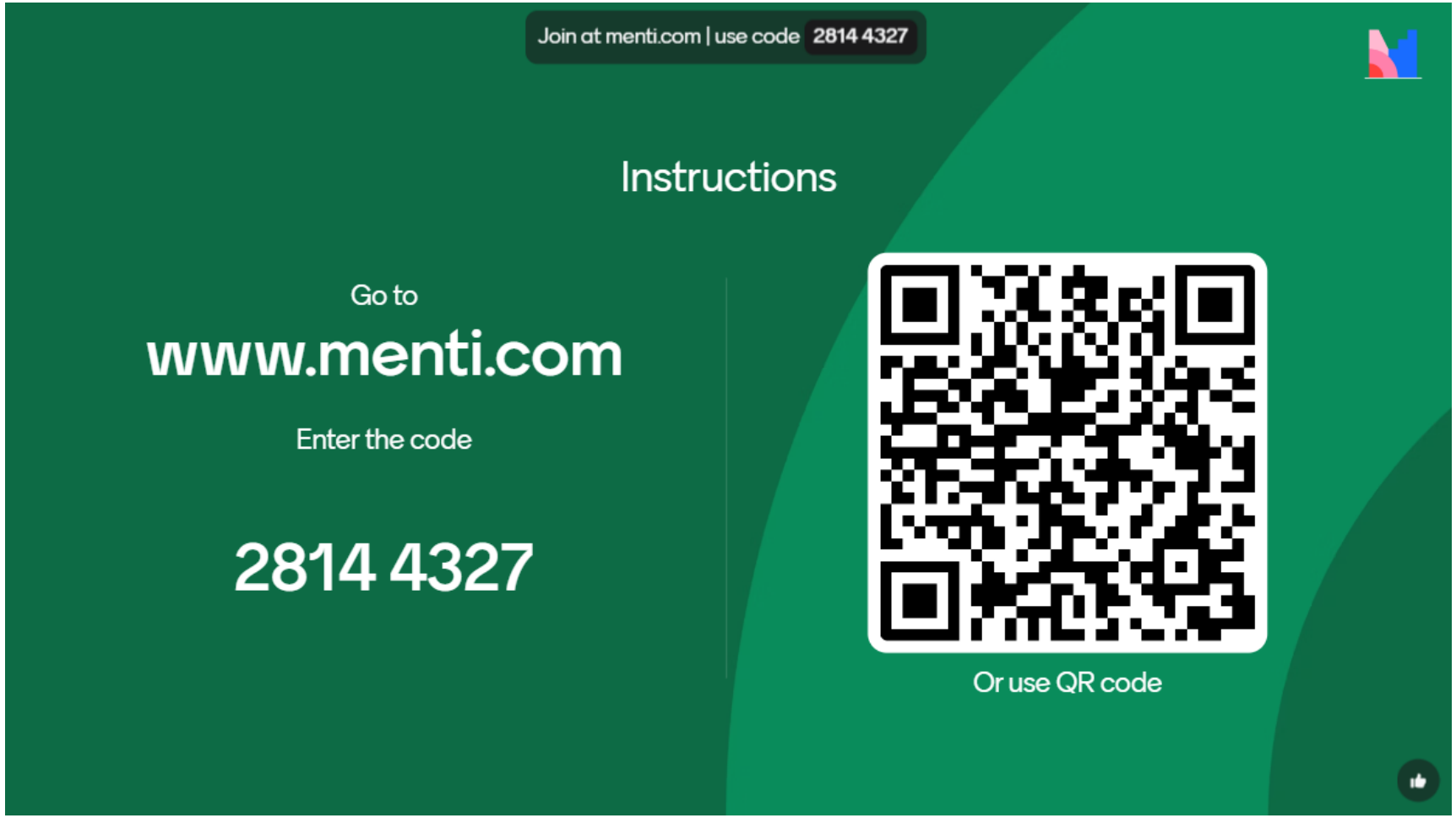


Goals

- What is CPE?
- What is the difference between colonization and infection?
- Why are we concerned?
- How do they spread?
- How can transmission be prevented?
- Is special cleaning required?
- Reminders for Visitors
- Can residents leave their room?

What are CPE?

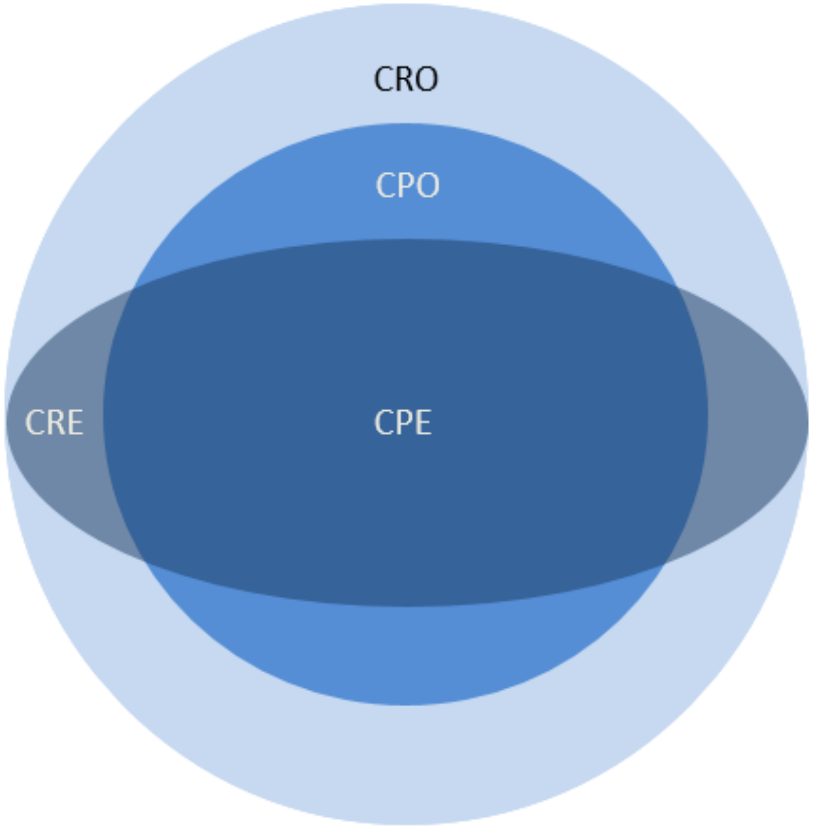
CPE are a type of bacteria that can cause infections and are challenging to treat.

Bacteria that produce an enzyme called *Carbapenemase*.

This enzyme inactivates many types of antibiotics, making CPE resistant to them.

CRO? CPO? CRE? CPE?

- Carbapenem-resistant organism (CRO)
- Carbapenemase-producing organism (CPO)
- Carbapenem-resistant *Enterobacteriaceae* (CRE)
- Carbapenemase-producing *Enterobacteriaceae* (CPE)



Ontario Agency for Health Protection and Promotion (Public Health Ontario). PHO Webinar: New Carbapenemase- Producing *Enterobacteriaceae* (CPE) Resources for Long-Term Care Homes (LTCHs) December 12, 2023.

Colonization vs. Infection

Colonization = CPE is present on the body, but does cause illness

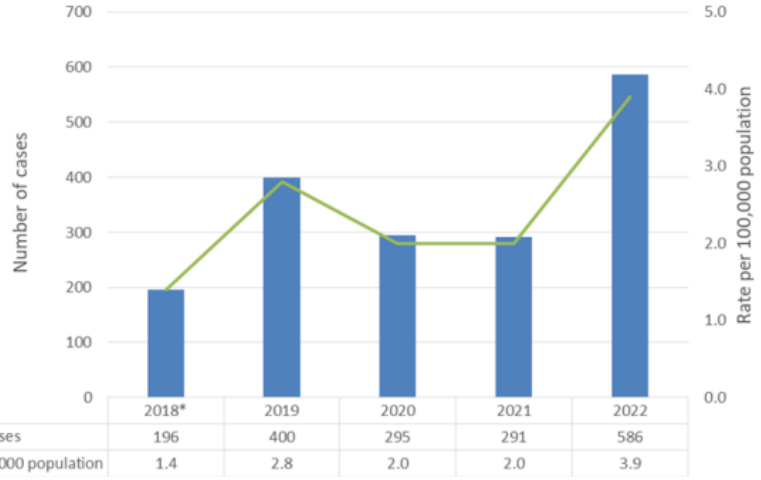
- Commonly found in urine and in the gut
- Individuals can be colonized for months to years

Infection = CPE is making the person sick and they have signs & symptoms of infection

- UTI, skin infection etc.

Epidemiology

Figure 1. CPE cases and rates per 100,000 population in Ontario, May 1, 2018 to December 31, 2022



	2018*	2019	2020	2021	2022
Number of cases	196	400	295	291	586
Rate per 100,000 population	1.4	2.8	2.0	2.0	3.9

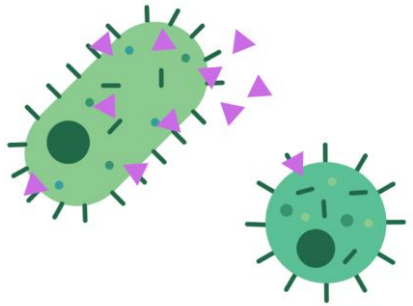
*2018 is a partial year (May 1, 2018-December 31, 2018)

TOTAL NORTH EAST	18	0.6
Eastern Ontario Health Unit	9	0.8
Hastings Prince Edward Public Health	23	2.7
Kingston, Frontenac and Lennox & Addington Public Health	18	1.7
Leeds, Grenville & Lanark District Health Unit	16	1.8
Ottawa Public Health	106	2.0
Renfrew County and District Health Unit	9	1.7

DOPHS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024 to date COUNT	2024 to date RATE per 1,000,000 population	5-year average year-to-date COUNT	5-year average year-to-date RATE
Carbapenemase-Producing Enterobacteriaceae	69	81	68	95	105	81	104	76	72				751	48.1	340	22.8

Why are we concerned?

1) Infections with CPE are difficult to treat
2) Mortality in patients with CPE bloodstream infections may be as high as 50%
3) Able to transfer resistance to other bacteria
4) Residents can remain colonized with CPE for long periods of time



How do they spread?

- Direct and indirect **contact transmission**
  - Poor hand hygiene compliance
  - Poor cleaning of shared equipment or shared spaces
  - Particular concern sharing washrooms

Risk Factors

- Inpatient hospitalization in Canada in the last 12 months
- Received healthcare outside of Canada in the last 12 months
- ICU admission in the last 12 months

Resident Characteristics Impacting Transmission

- Increased transmission routes such as open wounds
- Inability to fight off infection
- Hand hygiene and personal hygiene
- Indwelling devices (catheter, PICC line, central line)
- Continence Status

Risk Factors	Cases	Proportion† (%)
Chronic illness/underlying medical condition	985	76.8
Hospitalization in Canada in the last 12 months	640	49.9
Travel outside of Canada in the last 12 months	589	45.9
Medical/surgical procedure in Canada in the last 12 months	535	41.7
Received health care outside of Canada in the last 12 months	361	28.1
Other	301	23.5
Known previous colonization with CPE	68	5.3
Resident of a long term care facility	53	4.1
Known contact with confirmed case in the last 12 months	36	2.8
Total number of cases with a reported risk factor †	**1,283**	-

† Only cases reporting risk factors were included in the denominator. Cases may report more than one risk factor.

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Surveillance report: Carbapenemase-producing Enterobacteriaceae in Ontario, May 1, 2018 – December 31, 2022. Toronto, ON: King's Printer for Ontario; 2023.

Screening guidelines

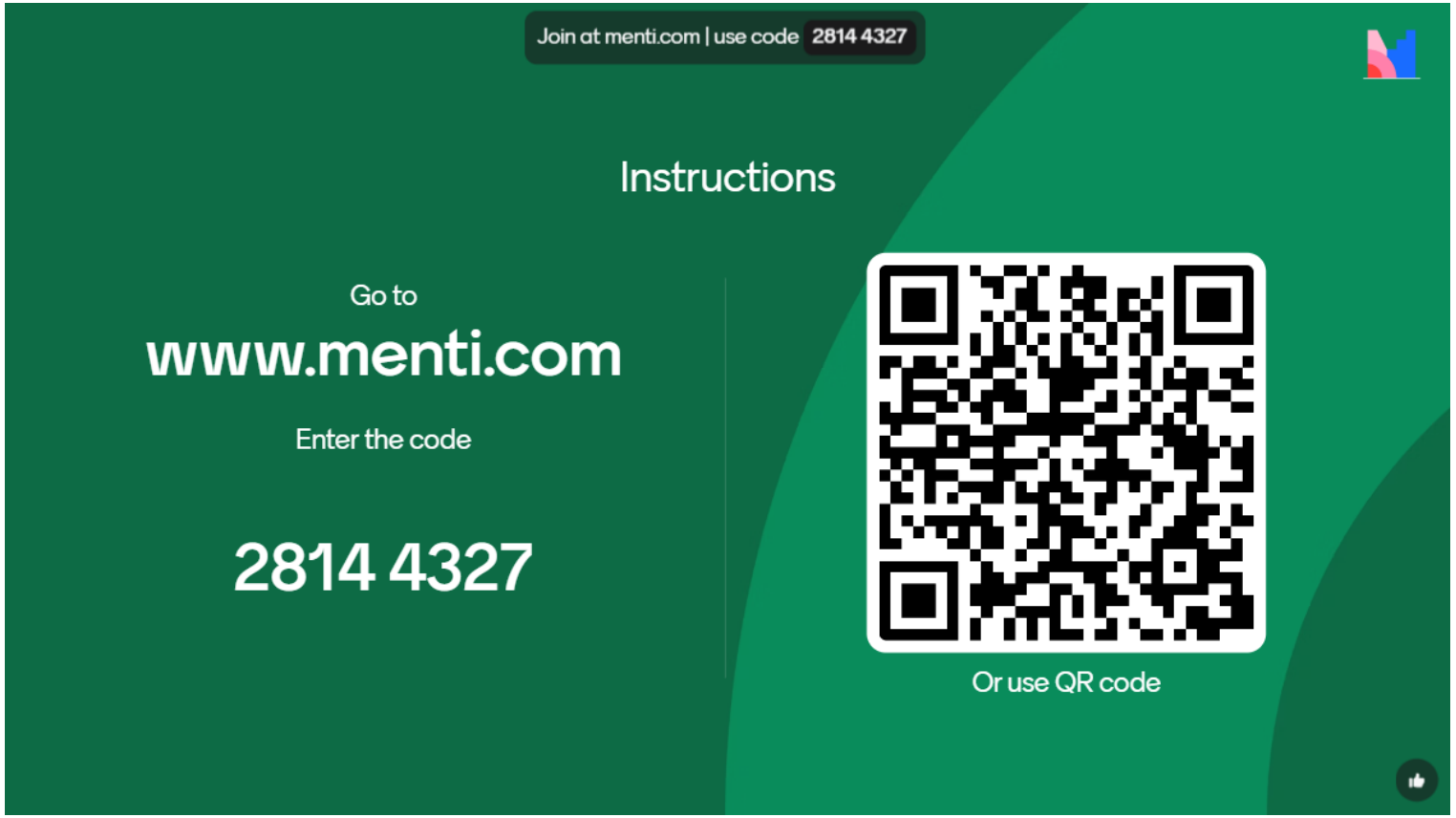
- For admission/re-admission
- Based on resident risk factors

<u>CPE is reportable to Public Health</u>

A. Methicillin-Resistant *Staphylococcus aureus* (MRSA), Vancomycin Resistant Enterococci (VRE) and Carbapenemase-Producing *Enterobacteriaceae* (CPE) Risk Factor-Based Screening Guidance

Has the patient / resident spent time in a health care facility outside of Canada (including the United States) within the previous 12 months? • If yes, initiate Contact Precautions in a private room with dedicated toileting facilities, and dedicate all equipment and supplies as able.	☐ Yes	☐ No
Has the patient / resident been transferred from a unit in a health care facility with an ongoing outbreak of MRSA, VRE, or CPE? • If yes, initiate Contact Precautions in a private room with dedicated toileting facilities, and dedicate all equipment and supplies as able.	☐ Yes	☐ No
Does the patient / resident have a prior history of colonization or infection with MRSA, VRE, or CPE, or is the patient / resident chart flagged with a history of MRSA, VRE, or CPE? • If yes, initiate Contact Precautions in a private room with dedicated toileting facilities, and dedicate all equipment and supplies as able.	☐ Yes	☐ No
Is the patient / resident chart flagged with a history of exposure to another case of MRSA, VRE, or CPE? • If yes, and the exposure was to a case of CPE only, initiate Contact Precautions in a private room with dedicated toileting facilities, and dedicate all equipment and supplies as able. Contact Precautions for MRSA or VRE exposures may be implemented depending on your local risk assessment.	☐ Yes	☐ No
Has the patient / resident been admitted, or spent >12 hours in any health care facility (including this one) within the previous 12 months?	☐ Yes	☐ No
Has the patient / resident been directly transferred from another health care facility (e.g., hospital-to-hospital, long-term care home-to-hospital)?	☐ Yes	☐ No
Does the patient / resident belong to a high-risk population as identified by Infection Prevention and Control or Public Health (e.g., admission to ICU, travel to high-risk areas, or resides in an area with high rates of community transmission)?	☐ Yes	☐ No

Menti - Let's Discuss!



How can transmission be prevented?

STOPPING THE SPREAD OF CPE

- Dedicated washroom/commode and re-usable equipment to the resident
- Increased cleaning and disinfection
- Additional precautions (PPE = gown and gloves)
- Good hand hygiene compliance
- Not sharing personal items

Is special cleaning required?

- Routine cleaning and disinfection
- CPE can survive in the environment and can be difficult to get rid of once established
- These organisms can survive in the biofilm of **sink drains**
- Pay extra attention to sink and drain cleaning

Areas to Focus:

- Resident washroom
- Tub and shower room
- Shared equipment

Appendix 7: Sample Procedure for Enhanced Shower and Sink Cleaning

These procedures may be used for enhanced sink cleaning if the grid over the plug hole is removable.

After cleaning the bathroom as described in Appendix 5:

- Put on personal protective equipment (e.g., tyvek suit, gloves, facial protection)
- Take out shower grate.
- Remove debris from shower grate, descale if necessary, rinse.
- Squall grout and pipe.
- Rinse with water for 10 minutes.
- Apply enzymatic cleaner to grout, pipe sides; fill P-trap with cleaner.
- Insert plumbers plug.
- Fill pipe with enzymatic cleaner and cover grout. Allow for sufficient contact time as per cleaner instruction.
- Remove plumbers plug.
- Brush drain.
- Rinse with water for 10 minutes.
- Apply sporicidal agent to grout, pipe sides; fill P-trap with sporicidal agent.
- Insert plumbers plug.
- Fill pipe with sporicidal agent and cover grout. Allow for sufficient contact time as per

It is important that we remember ***not*** to dump body fluids or IV solutions down our sinks.

Important points to note

- Private bathroom is essential, with private shower/bath if possible
- If shared shower/bath, bathe the CPO positive resident **last** and follow with environmental cleaning

Important points to note

- Pay extra attention to ambulatory aids when cleaning (i.e. wheelchairs, canes, walkers)
- Pay extra attention to shared equipment and devices in general (IV poles, vital towers, blood pressure cuffs etc.)

Can residents with CPE leave their room?

YES! As long as -

1. Bodily fluids contained (wounds, urine, etc.) –No Leaks!
2. Clean clothes
3. Clean hands

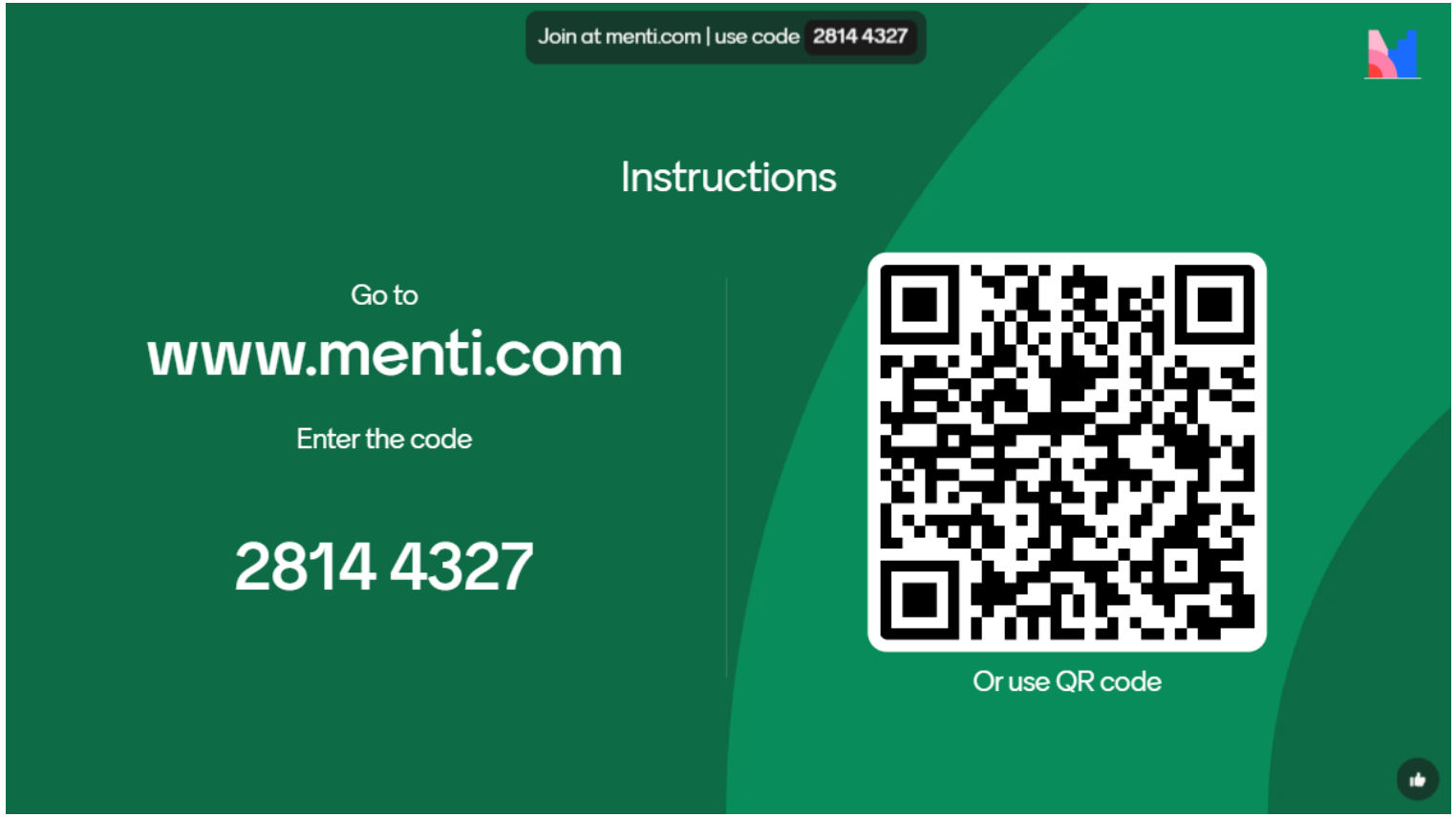
Encourage activities that do not involve direct contact or sharing items!

***Staff do **not** need to wear PPE when ambulating resident in the hallway!*

Reminders for Visitors

- Perform hand hygiene during visits:
  - Before entering the home and residents room
  - After potential contact with blood/bodily fluids
  - After leaving the resident's room
  - Before and after eating
  - Not putting any body fluids or other fluids down a handwashing sink
  - Not using resident's washroom

Menti – Let's Discuss!



Resources

[Public Health Ontario – CPOs]

[PIDAC - Screening, Testing and Surveillance for AROs]

[PHO Webinar: New Carbapenemase Producing Enterobacteriaceae (CPE) Resources in Long Term Care]

[PHO: Information About CPE for Long Term Care Homes Residents, Families and Visitors]

[PHO: CPE Transmission Risk Factors in Long-Term Care Homes]

[PHO: Resident Admission, Discharge, and Transfer Considerations for CPE]

[PIDAC – Best Practices for Environmental Cleaning for Prevention and Control of all Infections in All Health Care Settings]

Reminders

- Hub Spoke Signal will be coming out at the end of this month!
  - Geared towards study tips for CIC/LTC-CIP

Upcoming Education:

- Novice Infection Control Network Group (Contact Emily.Moslinger@kingstonhsc.ca)
  Tuesday, December 3rd from 1330-1430
- PHO CoP for IPAC Leads & EVS Managers:
  Wednesday, December 4th from 1100-1200
- Webber Education: New Developments in Environmental Cleaning and Disinfection
  Thursday, December 12th from 1330-1430

Next LGL CoP Date: Tuesday December 17th 1:30-2:15pm

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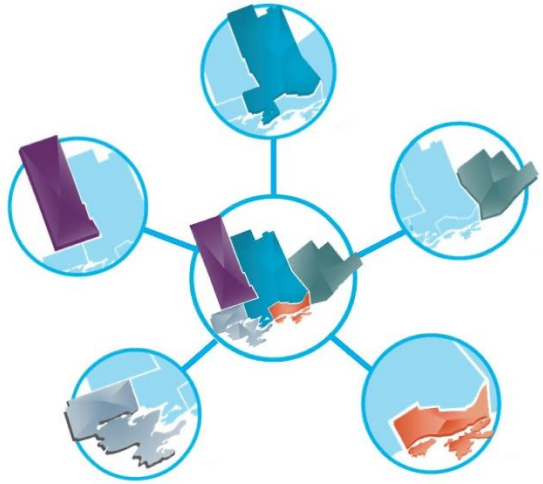

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Thank you!

Questions? SEhubintake@kingstonhsc.ca