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IPAC Canada
Virtual Conference
April 25-27, 2022
PreConference: April 21, 2022

2022 ORAL AND POSTER PRESENTATIONS ABSTRACT SUMMARIES

A Supplement to the *Canadian Journal of Infection Control*
Spring 2022, Volume 37, No. 1



PCS 1000 Plus Oxidizing Disinfectant Cleaner

This product is a broad-spectrum virucidal hard surface disinfectant that is expected to inactivate the SARS-CoV-2 (the virus that causes COVID-19) Kills 99.99% of bacteria and viruses, Kills 99.99% of germs, Kills Staphylococcus aureus, Pseudomonas aeruginosa, Human Coronavirus, and Adenovirus Type 5 Broad Spectrum Virucide, Bactericide/Virucide PCS 1000 Plus pH – neutral oxidizing disinfectants are available in ready to use or dispense on-demand formats.



PCS 1000 Plus Oxidizing Disinfectant Cleaner

DIN: 02521431

- Oxidizing cleaner
- Oxidizing hospital grade disinfectant
- This product is a broad-spectrum virucidal hard surface disinfectant that is expected to inactivate the SARS-CoV-2 (the virus that causes COVID-19) AND OTHER ENVELOPED AND NON-ENVELOPED VIRUSES
- Active Ingredient
Sodium Hypochlorite - 0.13% w/w when packed
Hypochlorous Acid - 0.01% w/w when packed
- Color/Form Colorless, liquid
- pH 8.5
- Ready to use solution
- Scent Characteristic of ingredients slight bleach sent
- Shelf Life 1 year
- PCS 1000 Plus Oxidizing Disinfectant Cleaner for use on hard non-porous environmental surfaces in domestic, health care facilities, institutions, schools and hospitality industries

PCS 1000 Plus Oxidizing Disinfectant Cleaner Concentrate

DIN: 02521504

- Oxidizing cleaner
- Oxidizing hospital grade disinfectant
- This product is a broad-spectrum virucidal hard surface disinfectant that is expected to inactivate the SARS-CoV-2 (the virus that causes COVID-19) AND OTHER ENVELOPED AND NON-ENVELOPED VIRUSES
- Contains 2 % sodium hypochlorite
- Concentrate when diluted through NPH dispenser contains the Active Ingredient
Sodium Hypochlorite - 0.13% w/w when packed
Hypochlorous Acid - 0.01% w/w when packed
- Color/Form Colorless, liquid
- pH 12.45 (Concentrate)
- pH 8.5 at use dilution
- Scent Characteristic of ingredients bleach odour
- Shelf Life 2 years (Concentrate), 30 days (Use Dilution)
- PCS 1000 Plus Oxidizing Disinfectant Cleaner Concentrate for use on hard non-porous environmental surfaces in domestic, health care facilities, institutions, schools and hospitality industries

Code	Description
5906-6	6 x 946 ml containers with flip top
5906-4	4 x 3.78-liter containers
5906-CS	2 x 4.73-liter containers with vented tap

Code	Description
5948-2	2 x 3.78 liters closed loop containers PCS 1000 Plus Oxidizing Disinfectant Cleaner Concentrate. Dilutes through NPH dispenser.
6050-2	2 x 3.78 liters closed loop containers Neutralizing Solution dilutes through NPH dispenser.



Dispenser that simultaneously dilutes PCS 1000 Plus Oxidizing Disinfectant Cleaner Concentrate and dilutes 6050-2 Neutralizing Solution to create 0.13 % sodium hypochlorite 0.01 % hypochlorous acid.
US Patent number 11,103,840

SP9200-1000NPH-D

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AWARDS

1. One (1) Best First-Time Abstract as chosen by the Abstract Review Committee. This is an abstract where the lead author has never before submitted an abstract to IPAC Canada, or CHICA-Canada. Award winner(s) will be acknowledged at the Closing Ceremonies on April 27. In the event of unavoidable delays, the award will be announced post-conference. The award of \$500 will be sent to the lead author for further distribution to the abstract authors.
2. One (1) oral presentation will be announced as Best Oral Presentation and receive an award of \$500. The award will be announced at the Closing Ceremonies on April 27. In the event of unavoidable delays, the award will be announced post-conference.
3. Best Poster Presentation will receive an award of \$500. The award will be announced at the Closing Ceremonies on April 27. In the event of unavoidable delays, the award will be announced post-conference.

CONFERENCE ATTENDEES WILL VOTE FOR BEST ORAL PRESENTATION AND BEST POSTER PRESENTATION THROUGH THE CONFERENCE PLATFORM.

**DEADLINE FOR SUBMISSION:
3 p.m. (Eastern), Wednesday, April 27**





ORAL PRESENTATIONS

Unless specifically named as a co-author, no reviewers were directly involved in the research or publications cited in any of the abstracts.

Reviewers recuse themselves if they have co-authored an abstract.

Each presenter will have 11 minutes for presentation and two minutes for Q&A. Recorded sessions will be available post-conference.

TUESDAY, APRIL 26, 2022 – Surveillance and Epidemiology
1:45 – 2:45 p.m. (Eastern)

1:45 p.m.

INFECTION PREVENTION AND CONTROL INVESTIGATIONS AND FOLLOW-UP ON A CASE OF CUTANEOUS CORYNEBACTERIUM DIPHTHERIA

Erica Susky¹, Stacey Del Castillo¹, Shaindel Kestenberg¹, Carly Rebelo¹, Erika Bartels¹, Susy Hota¹
¹University Health Network

Issue: *Corynebacterium diphtheriae* is a gram-positive bacillus that occurs in non-toxicogenic and toxicogenic forms. The toxicogenic forms cause more severe disease, which often presents as a sore throat, fever, respiratory symptoms, and skin and wound infections. Since widespread immunization programs began in the 1930s, diphtheria is rare in Canada. Re-emerging non-toxicogenic cases of cutaneous diphtheria are associated with outbreaks, and though rarer, can cause serious infections, such as bacteremia. Carriers may be established in outbreaks that may later acquire the diphtheria toxin if exposed to toxin-producing strains. Though there are guidelines for managing cases of diphtheria, Infection Prevention and Control (IPAC) programs may be less familiar with applying them in different settings as cases of diphtheria are infrequent.

Project: We describe a single case of cutaneous diphtheria on a surgical unit, and the processes of managing additional precautions and exposure investigations. Once a laboratory-confirmed case of *C. diphtheriae* infection was identified, contact/droplet precautions were started based on symptoms and the likelihood of pharyngeal colonization. The transmission risk was determined based on the above criteria, the duration the patient was on no additional precautions, ambulation on the inpatient unit, and containment of the wound. Patient and staff exposures were investigated, staff were considered exposed if they interacted with the patient wearing insufficient personal protective equipment (PPE).

Results: The wound cultured *C. diphtheriae*, and was polymicrobial. The National Microbiology Laboratory verified for the presence of toxins in the isolate, which was negative. Nasal and throat swabs were negative, however, this was after 10 days of antibiotic therapy. Therefore, the possibility of pharyngeal colonization could not be eliminated. As pharyngeal colonization was possible, droplet as well as contact precautions were started. As the wound was not always containable, and with a large number of healthcare workers (HCWs) potentially exposed, an enhanced disinfection of common areas was completed. There were no patient exposures. In total, 49 HCWs had direct contact with the wound. Universal masking was in effect for COVID-19 control measures (mandatory facemasks and face shields). HCWs who were in direct contact with the wound wore gloves. The history of diphtheria vaccination was as follows: 12 within the past 5 years, 10 within 5-10 years, 10 over 10 years ago, and 17 could not recall. The last two groups were provided education regarding the benefits of receiving another dose of the vaccine.

Lessons Learned: It is crucial for HCWs to be current on their vaccination schedules to increase their protection against infectious disease exposure, and to use appropriate PPE. Due to cutaneous forms of *C. diphtheriae* re-emerging and the noted potential for outbreaks, IPAC departments should anticipate and familiarize themselves with case management methods.

2:00 p.m.

FACTORS CONTRIBUTING TO A COVID-19 OUTBREAK ON A MIXED MEDICAL SURGICAL UNIT IN A CANADIAN ACUTE CARE HOSPITAL

Megan McCallum¹, Tammy MacDonald¹, Ian Davis¹, Glenn Patriquin¹, Lynn Johnston¹
¹Nova Scotia Health

Background: An outbreak of COVID-19 was declared on a unit of a tertiary-care hospital in Nova Scotia (NS) after an admitted patient tested positive for SARS-CoV-2. In the subsequent 14 days, an additional 20 patients admitted to the unit and 11 staff working on the unit tested positive for the virus. To better understand potentially preventable factors that may contribute to the transmission of SARS-CoV-2 in healthcare facilities, we conducted an outbreak investigation.

Methods: A case-control study was used to investigate the nosocomial SARS-CoV-2 outbreak by examining patient variables and outcomes. The study period was the 14 days before the outbreak was declared until 28 days after the last patient case, when the outbreak was declared over. The study population included all patients who were hospitalized on the unit in the 14 days prior to outbreak declaration, and all healthcare workers (HCWs) who worked on the unit during the outbreak period. Simple and multiple logistic regression were used to identify risk factors for SARS-CoV-2 infection. Whole genome sequencing (WGS) was performed and consensus sequences from all WGS on SARS-CoV-2 isolates submitted from NS in the six weeks prior to and 14 days after outbreak declaration were included in the analysis.

Results: SARS-CoV-2 infections were reported in 21 of 71 (29.6%) patients hospitalized on the unit, and in 11 of 167 (6.6%) staff who worked on the unit during the outbreak period. There were 11 patient deaths (15%) during the outbreak, six in patients (28.6%) who tested positive for COVID-19 and five in patients (10.0%) who did not. COVID-19 was the cause of death for three patients, a contributing factor in one patient death, and in two patients, their death was unrelated to COVID-19. Genome sequencing identified four distinct clades of related sequences; two clades consisted of a single case each, and the other two clades contained four patients and two staff, and 13 patients and eight staff. Patients who shared a room with a COVID-19-positive patient during their infectious period were at high risk of developing COVID-19 (OR: 15.33; CI: 4.02-58.46; p-value: <0.001).

Conclusion: This nosocomial COVID-19 outbreak likely resulted from the admission of two patients with unrecognized acute COVID-19, and was subsequently transmitted to 17 additional patients and 11 staff. We believe two other patients were admitted with unrecognized acute COVID-19, but did not transmit the virus to any patients or staff, which was supported by WGS. Transmission between roommates was supported by the risk factor analysis showing that sharing a room with a patient with COVID-19 during their infectious period was the most significant risk factor for COVID-19 infection. We were unable to conclusively identify from our evidence the direction of transmission between all infected patients and HCWs beyond the two index cases. It was apparent that infection prevention and control measures work in preventing and containing outbreaks of COVID-19.

2:15 p.m.

**CAESAREAN SECTION SURGICAL SITE INFECTIONS (SSIs)
AT SCARBOROUGH HEALTH NETWORK**Senthuri Paramalingam*¹, Reena Lovinsky¹, Vydia Nankoosingh¹, Jayvee Guerrero¹, Katherine Perkin¹, Danielle Powell¹, Claudia Browne-Byno¹, Colette Rutherford¹, Tama Cross¹¹Scarborough Health Network

Background: Caesarean sections (C-sections) are the most common inpatient surgical procedure in Canadian hospitals, occurring more than 104,000 times between 2017 and 2018. Surgical site infections (SSIs) are a common complication following C-sections, and have an incidence rate of 3-15% worldwide, these SSIs can prolong hospital stays, and are a burden on the healthcare system. Implementing a C-section SSI surveillance program has shown to decrease SSI rates.

Objectives: To implement and identify the C-section SSI rate for the obstetrics program across two sites at a community hospital and share with key stakeholders to help identify improvement opportunities.

Methods: All patients undergoing a C-section were included in the study. The project was started in May 2021. A C-section SSI form was created and provided to the obstetric program. The obstetrician or midwife for the patient completed the 30-day surveillance form at the six-week follow-up appointment, it was submitted to the program and entered into a database. Centers for Disease Control and Prevention definitions were used to identify an SSI (superficial, deep, or organ space). C-section SSI rate was calculated by dividing the number of infections reported by the number of C-sections performed. Patients who did not present for their six-week visit were excluded from the study.

Results: From April-November 2021, there were 3,452 births and a total of 1,063 C-sections performed. Of the total C-sections, 70 patients did not show up for their six-week appointment, 197 had missing reports, and 796 completed forms were submitted. There was a total of 47 SSIs reported during this period. The C-section SSI rate was 5.9 SSIs per 100 patients. During the project, methodology was changed to have assigned staff follow up with the obstetrical team to submit SSI reports. This method increased the SSI report submission rate and helped to provide a more accurate SSI rate.

Conclusion: The SSI rate of 6% identified at Scarborough Health Network (SHN) is similar to rates identified in other Canadian community hospitals. The SSI rates were shared with the obstetrical team. Ongoing analysis will be performed to identify key areas for improvement. The main challenge in implementing an SSI surveillance program for obstetrical patients was conducting post-discharge surveillance. This is more time-consuming compared to other surveillance programs in the hospital which are done on in-patients where records and data are easier to collect. Conducting surveillance on C-section SSI rates allows providers to follow post-discharge complications, share data with key stakeholders, and can highlight the need for changes in practices. Monitoring C-section SSI rates is the first step to implementing changes in practice to improve patient safety and the patient experience. To sustain an ongoing C-section SSI surveillance program, SHN is looking at the possibility of incorporating it into a pre-existing surveillance program, National Surgical Quality Improvement Program.

BEST FIRST-TIME ABSTRACT

2:30 p.m.

**IMPACT OF THE COVID-19 PANDEMIC ON
HEALTHCARE-ASSOCIATED VIRAL RESPIRATORY INFECTIONS
AT A TERTIARY CARE PEDIATRIC HOSPITAL**Michal Stachura*¹, Marie-Astrid Lefebvre¹, Marina Salvadori¹, Heidi Sleno¹¹Montreal Children's Hospital, McGill University Health Centre, ¹Montreal Children's Hospital, McGill University Health Centre

Background/Objectives: Viral respiratory tract infections (VRIs) are a leading cause of disease and hospitalizations in the pediatric population. VRIs are a common healthcare-associated infection in pediatric hospitals, with rates often mirroring community-acquired VRI incidence.

Methods: Montreal Children's Hospital (MCH) at McGill University Health Centre is a 154-bed tertiary care pediatric hospital located in Quebec. The MCH Infection Prevention and Control (IPAC) program performs prospective total hospital surveillance for preventable healthcare-associated infections, including healthcare-associated VRIs (HA-VRIs), following standardized definitions. The IPAC database was accessed to retrieve the incidence of HA-VRIs (per 1,000 patient days) by

fiscal period since April 1, 2020, and by fiscal year since 2009 (earliest year with data available), and to obtain yearly distribution of causal respiratory viruses since 2019.

Results: Between April 1, 2020, and March 31, 2021 (fiscal year 2020-2021), nine HA-VRIs occurred in our in-patients, for an incidence of 0.2/1,000 patient-days, representing a significant decrease from 70 infections (incidence 1.6 /1,000 patient-days) from 2019-2020. It is the lowest rate seen in our institution since 2009. From 2019-2020, most common causal viruses of HA-VRIs were rhinovirus in 35% (n=26), rhinovirus/enterovirus in 21% (n=16), adenovirus in 13% (n=10), influenza A in 9% (n=7), and respiratory syncytial virus (RSV) in 9% (n=7). During 2020-2021, of the seven HA-VRIs with virus detected, rhinovirus alone was found in 43% (n=3), SARS-CoV-2 in 43% (n=3) and rhinovirus/enterovirus in 6% (n=1). During the first five months of 2021 and 2022, rhinovirus accounted for 40% (n=2), parainfluenza virus type 3 for 40% (n=2), and RSV for 20% (n=1) of HA-VRIs.

Conclusion: The pandemic has resulted in monumental shifts in IPAC practice in the healthcare setting. The greatest shift has been the continuous masking policies in healthcare settings. Policies instigated to control SARS-CoV-2 transmission resulted in a near absence of viral respiratory infections in later 2020 and until fall of 2021. Despite large numbers of patients admitted with viral respiratory infections, there was a marked decrease in nosocomial viral respiratory outbreaks. With parents, visitors and all staff wearing procedure masks, there is universal source control. Benefits of stringent infection control practices applied in this pandemic must be teased out and thoughtfully applied to post-pandemic times. If universal masking on shifts in healthcare facilities continues to reduce nosocomial infections, innovations in mask design to optimize comfort and fit, respond to environmental considerations related to disposal, and improving communication by adopting a transparent design would be important.

TUESDAY, APRIL 26, 2022 – Quality/Process Improvement

1:45 – 2:45 p.m. (Eastern)

1:45 p.m.

**A DESCRIPTIVE ANALYSIS OF IPAC COMPLAINTS, INFRACTIONS
AND LAPSES IN PERSONAL SERVICE SETTINGS IN ONTARIO IN 2018**Katherine Paphitis*¹, David Ryding*¹¹Public Health Ontario

Background: In Ontario, Public Health Inspectors assess whether premises are adhering to infection prevention and control (IPAC) best practices as outlined in the provincial "Guide to IPAC in Personal Service Settings" document (2018). Adherence to best practices is assessed via annual routine compliance inspections and through additional non-routine (i.e., complaint-driven) demand inspections of personal service settings (PSS). Deviations from IPAC best practice may be further deemed an IPAC lapse if the infraction has the potential to cause an infection in a client. The objective of this study was to understand the prevalence of common PSS infractions by service type (i.e., hair/barbering, aesthetics or body modification) by analyzing the frequency of specific infractions identified during PSS inspections and IPAC lapse investigations in PSS.

Methods: PSS inspection data were obtained from three of 34 geographically diverse public health units (PHUs) in Ontario for all PSS inspections and re-inspections conducted in 2018, as well as for all publicly disclosed IPAC lapses in all PHUs in 2018. Data fields included premise type, inspection date and details regarding specific infractions. Descriptive analyses were performed in order to identify specific service types that are commonly associated with infractions, as well as those specific practices that are commonly identified to be non-compliant with best practice (e.g., reuse of single-use items, inadequate reprocessing of reusable items). Data from routine and non-routine inspections were compared to assess if the same services and practices were routinely identified to be non-compliant.

Results: PSS offering aesthetics were more commonly associated with infractions and with IPAC lapses compared to premises offering hair/barbering or body modification services. Common infractions (regardless of the reason for inspection) included improper use, storage and/or selection of disinfection products, reuse of items intended to be single use, and failure to reprocess (clean and disinfect or sterilize) reusable instruments after use.

Conclusions: Development of infection control resources for specific PSS targeted at those practices commonly identified to be non-compliant with infection control best practices, could assist in consistent awareness, implementation, and reinforcement of IPAC practices in PSS across Ontario. Ideally, this will result in fewer infractions being identified on inspection by PHUs. Upstream operator education and infraction prevention could also contribute to a reduction in the number of public complaints received regarding these premises.



2:00 p.m.

BECOMING HAND HYGIENE HEROES: AN INFECTION PREVENTION AND CONTROL CAMPAIGN FOR PATIENTS AND FAMILIES IN HOSPITAL SETTINGS

Brooke Cheng^{*2}, Mavis Chan¹, Sandra Harris¹, Pamela Harrison¹, Carole Rodger¹, Tracey Swallow³, Jocelyn Srigley¹

¹BC Children's and BC Women's Hospitals, ²University of British Columbia, ³BC Women's Hospital

Issue: As a result of the COVID-19 pandemic, hand hygiene has become increasingly important as one of the most effective ways to prevent infections. Although healthcare worker hand hygiene is a well-established strategy to prevent healthcare-associated infections, there has been far less attention placed on patient and family hand hygiene. Audits at BC Children's and BC Women's hospitals found hand hygiene rates to be under 10% among this population.

Project: We launched an educational campaign focused on patient and family hand hygiene, with the goal of increasing hand hygiene rates from 10% to 20% in three months, and to 60% in one year. The "Hand Hygiene Heroes" campaign, which began in the summer of 2021 will run until the summer of 2023. Phase one involved visual reminders (e.g., posters, stickers), which were designed with input from patient and family partners, and disseminated in care areas and online. In phase two, initiatives specific to different areas were developed in partnership with local staff champions. These tailored educational activities met the unique needs of each area. Interventions included frontline staff hand hygiene role models (e.g., performing hand hygiene demonstrations). Phase 3 will focus on sustaining quality improvement processes. This will include post-intervention hand hygiene observations to celebrate increased hand hygiene rates in patients and families, and follow-up with champions to evaluate the effectiveness of the area-specific initiatives. Hand hygiene rates will continue to be measured covertly by trained students through direct observation.

Results: Baseline hand hygiene rates from June/July 2021 were 14.3% for patients and families and 54.2% for healthcare workers. Post-intervention hand hygiene observations will be conducted after six months. Currently, we have engaged nine areas in communications for tailored initiatives with further outreach ongoing. Lesson Learned: Baseline patient and family hand hygiene remains suboptimal; there is significant opportunity to prevent the spread of infections among this population. Competing priorities during the COVID-19 pandemic complicated staff involvement. However, we learned that partnering with areas to develop targeted, safety-focused interventions increased staff enthusiasm. Novel ways to enhance staff engagement and ownership in hospital quality improvement programs can help lead to a long-term culture shift towards greater patient safety.

2:15 p.m.

PROTECTING OUR PATIENTS, PEOPLE AND THE PUBLIC: DEVELOPMENT AND IMPLEMENTATION OF A PROVINCIAL PERSONAL PROTECTIVE EQUIPMENT SAFETY COACH PROGRAM IN ALBERTA

Sandra Bolton^{*1}, Chad Herbers^{*1}, Kimberly Miller^{*1}, Aimee MacCallum^{*1}, Blair McFerran^{*1}, AHS Provincial PPE Safety Coach Program Working Group AHS Provincial PPE Safety Coach Program Working Group¹

¹Alberta Health Services

Issue: Early in the COVID-19 pandemic, personal protective equipment (PPE) breaches and inadequate PPE use were significant factors in COVID-19 transmission and outbreaks, impacting patients and healthcare providers (HCPs). There was a need to support HCPs with appropriate selection and use of PPE, and to address PPE fatigue. Background: As part of the Alberta Health Services (AHS) COVID-19 pandemic response, the infection prevention and control (IPAC) program developed a Provincial PPE Safety Coach Program. The AHS PPE Task Force and Workplace Health and Safety sponsored the program. An environmental scan identified local PPE improvement initiatives, which informed the development of the provincial program.

Project: The goal of the program was to create a system of peer safety coaching to provide just-in-time support and mentorship to frontline employees and physicians when selecting and using PPE. A provincial working group formed to create a virtual training program available to all HCPs across AHS acute care and non-acute care facilities. Smaller subgroups developed training resources and communication and evaluation plans. Training was designed to take approximately two hours to complete and included five components: four of them being self-directed and accessible for completion with the final step being a virtual

competency check facilitated by IPAC. Various mechanisms to engage with and support coaches were developed. These included a dedicated website and email address to facilitate communication and information sharing, and custom Zoom background images available for use at ongoing virtual community of practice sessions where knowledge and experiences were shared amongst coaches. The program launched in November 2020.

Results: The Provincial PPE Safety Coach Program provides a standardized and consistent service with a focus on protection and safety, regardless of an individual's role (i.e., patient, staff, physician, visitor, or volunteer). As of November 2021 – the program's one-year anniversary – 124 facilities have implemented the program and 1,382 coaches have been trained. The program provides consistent information and communicates regularly using various networks, such as the AHS President and CEO messaging/all-staff emails, memos and videos. The peer-to-peer approach increased teamwork while enabling staff to feel supported, safe, and confident when donning and doffing PPE. The program is able to rapidly develop and revise resources based on evolving literature and evidence on PPE recommendations. The use of PPE Safety Coaches is now an organizational best practice for outbreak prevention and management. Although initially implemented in acute care and non-acute care facilities, there is support to continue with the program and expand it to other areas across the continuum of care beyond the pandemic.

2:30 p.m.

A CONVERGENCE OF WAVES: IMPLEMENTATION OF A CLINICAL INFORMATION SYSTEM DURING THE COVID-19 PANDEMIC

Samantha Woolsey^{*1}, Bonita Lee², Janine Moen¹, Janice Pitchko¹, Jennifer Happe¹, Jennifer Parsonage¹, Maureen Kano¹, Philana Choo³, Erin Savignac¹, Seigharra Neufeld¹, Brian Paulson¹, Lisa Letendre¹, Mamatha Kankanala¹, Jeanette Deere¹, Haley Sommer¹, Karen Hope¹

¹Alberta Health Services, ²Stollery Children's Hospital, ³Covenant Health

Issue: In November 2019, Alberta Health Services (AHS) launched Wave 1 of Connect Care, a provincial Clinical Information System (CIS). A few months following the launch at the University of Alberta Hospital and Stollery Children's Hospital in Edmonton, the COVID-19 outbreak was declared a pandemic by the World Health Organization. It was quickly recognized that the existing processes in Connect Care were inadequate for the management of the pandemic.

Project: AHS infection prevention and control (IPAC) had been working on the IPAC Module, dubbed "Bugsy" since 2016 as part of a larger team consisting of AHS IPAC subject matter experts from across the province, and AHS IT analysts. At the start of the pandemic, this team was called upon to rapidly modify existing content, and to create new content in order to safely and effectively manage inpatients and outpatients with suspected and confirmed COVID-19 infection. Processes and triggers to screen for and identify patients with COVID-19 symptoms and risk factors were developed, including travel and exposure screening in emergency departments, and later in more complex ambulatory settings. Laboratory results triggered COVID-19 alert flags were created and linked with decision support practice advisories, and IPAC input was provided in the development of COVID-19 order sets. Symptom identification and monitoring flowsheets were developed to monitor all inpatients for signs and symptoms of COVID-19 and to help identify clusters of symptomatic patients. Patient and staff exposure investigation processes were fine-tuned, as was decision support for testing, patient accommodation, and management of additional precautions. Second and third waves (October 2020 and April 2021 respectively) of Connect Care were launched during the pandemic, bringing in more acute care sites in Edmonton and Northern Alberta and requiring multiple revisions to the tools as the pandemic progressed. Most of the new build, modifications, staff work flows and decision support were successful, however, some of the processes were not well adopted, and modifications continue to be made to optimize and enhance the CIS, as the Bugsy team becomes more experienced and familiar with Connect Care.

Results: The process improvements made to AHS's CIS during the pandemic proved to be generally successful through the lens of the pandemic. One great success was the collaboration by multiple groups to prioritize this work, and to expedite the review and implementation. This team will continue to evaluate and optimize IPAC content and functionality. The AHS IPAC pandemic experience with CIS design and patient management will lend invaluable expertise and experience for future emerging pathogen threats within Alberta and for other jurisdictions anticipating a move to a comprehensive CIS.



TUESDAY, APRIL 26, 2022 – Patient Centred Care

1:45 p.m. – 2:45 p.m. (Eastern)

1:45 p.m.

I CAN ONLY SHOW YOU THE DOOR, YOU'RE THE ONE THAT HAS TO WALK THROUGH IT – CREATING A COVID-19 EXPOSURE-RISK MATRIX IN LONG-TERM CARE AND RETIREMENT HOMESJames Wong^{*1}, Dylan Kain¹, Liz McCreight¹, Jennie Johnstone¹
¹Sinai Health

Issue: In an effort to reduce the COVID-19 exposure in congregate living, long-term care (LTCH) and retirement homes (RH) have implemented many mitigation strategies. One of these strategies includes reducing or eliminating group activities offered for residents. This has had unintended consequences on the mental and physical health of residents. As a result, developing a COVID-19 exposure-risk matrix was an important tool which homes could use to better assess the risk-benefit ratio of reintroducing group activities.

Project: The creation of a risk matrix must incorporate factors like community incidence of COVID-19, provincial guidance/directives and local public health unit guidance while balancing the resident's wellbeing. The risk matrix should ideally be easy to interpret and provide examples and scenarios that would reflect the home setting. Given the changing guidance, many homes were either hesitant to restart group activities, or required support in assessing the risks.

Results: Our risk matrix combines different factors that either increase or decrease the risk of COVID-19 transmission. The location (virtual, outdoors, indoors), type of activity (fitness class, walking group, movie night, Bingo, communal dining), and mitigating factors (COVID-19 immunized/recovered, masked, more than 2 metres apart) were risk-stratified. The levels of risk were identified as none, low, medium and high. Homes could identify the type of activity being planned and mitigating factors to determine the overall level of risk, and whether the activity was placing residents at a higher level of risk. Homes were reminded that during an outbreak, non-essential activities should be discontinued and that the risk matrix would not apply. The application of this risk matrix was also shared and adapted by our rehab/complex continuing care hospital for their setting.

Lessons Learned: The creation of a COVID-19 exposure-risk matrix can help guide congregate care settings in managing the risk levels associated with group activities. The risk matrix can also be adapted for other healthcare settings where group activities take place at a rehab or complex continuing care hospital.

2:00 p.m.

MANAGEMENT OF OMICRON WAVE USING A DECENTRALIZED MODEL FOR COVID-19 CAREMelisa Avanes^{*1}, Natasha Salt¹, Victoria Williams¹, Lorraine Maze Dit Meusement¹, Jerome Leis¹¹Sunnybrook Health Sciences Centre

Background: The pandemic introduced unprecedented bed pressures in hospitals across the globe, but the Omicron variant presented substantial challenges due to the number of patients testing positive on admission. As the numbers expanded, so did our approach to increasing footprints to include additional units supporting hybrid care. By the third wave, all care had been decentralized whereby care of COVID-19-positive patients was managed on units based on their primary diagnosis instead of COVID-19 status. We describe the evolution of a decentralized model supported by a centralized model which was fundamentally an innovative solution to optimize bed capacity while balancing infection prevention and control risks/benefits and staffing during the Omicron wave.

Project: Rather than create dedicated COVID-19 units like in prior waves of the pandemic, our hospital implemented a decentralized model where 17 units that were previously optimized for ventilation were able to admit patients with lab-confirmed COVID-19. Patients were admitted to the appropriate unit based on their primary reason for admission and specialized care needs, rather than for COVID-19. As the number of patients with primary diagnosis of COVID-19 began to rise, one ward and one intensive care unit (ICU) was designated to group these patients in order to streamline the clinical management of this subset of patients. Results: In total, 319 patients were admitted to our hospital during the Omicron Wave (December 15, 2021 to January 28, 2022), including 71 (22%) who required ICU-level care. Among these, 115 (36%) patients were admitted to the dedicated

units for management of COVID-19, including 24 (8%) in the ICU. Standard staffing ratios were used on all units except the dedicated unit for COVID-19, which required a lower nurse-to-patient ratio due to higher acuity.

Lesson Learned: With the increased transmissibility of Omicron and far higher community spread, a decentralized model supported by a centralized COVID-19 ward and ICU for caring for patients who tested positive for SARS-CoV-2 helped to distribute patients to the most appropriate unit based on the care needed. This model may be more sustainable for supporting capacity and staffing levels during further COVID-19 pandemic waves.

2:15 p.m.

USE OF COVID-19 RAPID MOLECULAR ASSAY FOR EXPEDITED PATIENT PLACEMENT DURING PERIODS OF HIGH COMMUNITY TRANSMISSIONKevin Stinson^{*1}¹St. Mary's General Hospital, Kitchener, Ontario

Background: During periods of high COVID-19 community activity, challenges placing patients admitted to acute care facilities arise as a result of high numbers of patients requiring droplet/contact precautions, particularly in older facilities with limited private room availability. The purpose of this initiative was to evaluate the use of a rapid molecular platform for ICP-directed (infection control professional) patient testing with high suspicion of COVID-19, to allow for expedited and cohort placement into designated COVID-19-positive spaces of the hospital.

Methods: Patients admitted to the emergency department (ED) were identified as candidates for rapid molecular testing by the IPAC team if they had been swabbed for COVID-19, and presented as high-suspicion patients. This included presentation with any respiratory illness, multiple secondary symptoms with any symptoms of COVID-19 in the context of a high-risk exposure, or reported as having had a positive rapid antigen test with no lab-based confirmation testing. Nasopharyngeal swabs were collected by nursing staff in the ED and processed on the rapid molecular system by the IPAC team. A positive test result would allow the patient to be immediately placed in COVID-19-positive areas of the hospital without PCR confirmation. A negative result would remain in isolation pending PCR confirmation, prior to discontinuation of droplet/contact precautions. The efficacy of this process in facilitating expedited bed flow, along with the percent-positive agreement (PPA) and percent-negative agreement (PNA) with PCR testing was reviewed to evaluate efficacy.

Results: An initial cohort of 59 patients tested between January 6 and 31 were evaluated. Of these, 28 were identified as positive by PCR, and 31 as negative. A total of 27/28 patients were identified as positive, and 31/31 patients were identified as negative, via the rapid molecular platform for a PPA of 96%, and a PNA of 100%. The expedited positive results allowed for immediate placement of the 27 patients identified as positive into inpatient beds on average 12 hours faster than waiting for the PCR result alone, providing critical relief to ED flow at a time or record-breaking admissions amidst the Omicron wave of the pandemic.

Conclusions: During times of high community transmission levels, the rapid molecular platform provides a reliable means of identifying COVID-19-positive individuals for expedited placement into inpatient areas and improving flow of patients through the ED. Risk of false-negative results posed a concern for placement of negative patients, and use of the platform should be re-evaluated as community transmission levels decrease.

2:30 p.m.

BALANCING ADDITIONAL PRECAUTIONS WITH QUALITY OF LIFE IN CONGREGATIVE SETTINGSChristopher Okeahialam^{*1}, Michelle Oliveira¹, Magdalena Krawczyk¹, Madeleine Ashcroft¹¹Trillium Health Partners

Issue: Additional/transmission-based precautions (contact, droplet, airborne and combinations) are often implemented in long-term care and other congregate settings as a means of limiting the transmission of the infectious agent between residents and healthcare workers. Usually initiated by local public health units (PHUs), these measures may be applied to specific areas or an entire facility. While these precautions have been shown to reduce transmission, their impact on the psychosocial well-being and quality of life of residents is also recognized and well documented. This is further exacerbated when a blanket approach to



additional precaution measures is imposed for an extended period with minimal risk assessment for selective application, or timely discontinuation of precautions. Congregate settings often lack the infection control expertise to press for such considerations. PHUs may have such expertise, but may lack sufficient human resources and context-sensitive information to guide optimal risk assessment.

Project: An IPAC (infection prevention and control) hub team identified their role as mediators in these circumstances, working to increase ongoing collaboration with two PHUs and IPAC leadership at congregative living settings. The hub advocated for flexibility between and within facilities, emphasizing risk assessment and used bi-weekly community of practice meetings to bring facilities and PHUs together for meaningful discussion.

Results: Strong communication was the key element for success. Individual facilities shared examples of residents confined to their rooms for weeks while staff awaited delayed swab results, and residents having medical appointments cancelled because they were retested and still found to be positive. The hub was able to address these misunderstandings through discussions with the facilities and PHUs. Over time, PHUs began to modify their requirements, including removing individual residents from droplet and contact precautions and supporting a broad range of beneficial interventions for residents including increased ambulation, small group activities, improved hygiene (showers and using hair salon sinks for washing hair), and streamlined repatriation from hospital. By offering ongoing monitoring and support, the Hub staff built increased comfort levels.

Lessons Learned: While PHUs have enforcement capacity and must always be consulted, infection control professionals have a duty to advocate for the best interest of residents in congregate settings, mitigating risk of infection transmission while supporting optimum quality of life. A collaborative approach builds communication, agreement, and trust to overcome misunderstandings and balance resident safety and well-being.

WEDNESDAY, APRIL 27, 2022 – Program/Professional Development 11:35 a.m. – 12:45 p.m. (Eastern)

11:35 a.m.

DIVERSITY, EQUITY AND INCLUSION WORKING GROUP – ONE STEP AT A TIME

*Dan Dimacuha*¹, Murtuza Diwan*¹, Marianna Ofner², Zahir Hirji³, Hibak Mahamed⁴, Jessica Pedersen⁵, Karmjit Sandhu⁶, Adelia Santos⁷, Amber Haw⁸, Meghan Engbretson⁹, Stephen Palmer¹⁰, Gerry Hansen¹⁰*
¹Halton Healthcare, ²Public Health Agency of Canada, ³Scarborough Health Network, ⁴Mackenzie Health, ⁵Interior Health, ⁶Fraser Health, ⁷Rumel Santos Consulting, ⁸Brant Community Healthcare System, ⁹Kingston Health Sciences Centre, ¹⁰IPAC Canada

Issue: In all areas of healthcare, there are disparities and inequalities. During the COVID-19 pandemic, these disparities have been brought to the forefront. IPAC Canada's Board of Directors was determined to meet these disparities head on and address them, while planning for the future. A committee was formed consisting of diverse IPAC Canada members tasked with identifying key priorities, sharing knowledge and information in order to implement change.

Project: IPAC Canada initiated its first Diversity Equity and Inclusion (DEI) Working Group to identify healthcare disparities within infection prevention and control (IPAC). The group's purpose was to identify DEI areas of bias and areas of championship, within IPAC.

Results: Establishment of the DEI Working Group has resulted in a plethora of accomplishments, which have directly impacted IPAC Canada members and the clients they serve. The DEI Working Group's priorities included:

- 1) development of a webpage of DEI related resources;
- 2) input into various statements released by IPAC Canada, e.g., values statement and 2022-2024 strategic plan;
- 3) development of DEI Core Competencies for IPAC Professionals and healthcare workers;
- 4) development of a DEI and Privacy interactive module for the 2022 IPAC Canada distance education course: Essentials in Infection Prevention and Control;
- 5) development of a DEI Learning Series to provide an education platform for presenters and clients to share their healthcare inequality stories;
- 6) creation of a DEI calendar to acknowledge multicultural events that IPAC Canada members and clients celebrate throughout the year; and,
- 7) a DEI poster contest launched to celebrate the importance of DEI, with IPAC Canada members encouraged to utilize visuals to showcase what DEI means to them.

Lessons Learned: In the six-month period that the DEI Working Group has been together, it is evident that there was so much to do for DEI within the IPAC world. The Working Group's future plans are to continue to work with the Standards and Guidelines Committee to incorporate DEI into future position statements, and to create a DEI glossary so all can understand DEI-related terminology and acronyms. A checklist will be created for all IPAC Canada education events, committees, chapters and interest groups to ensure DEI consistency in all documents. The DEI Working Group has been an agent of change and instrumental in developing the foundation for DEI within IPAC Canada. The greatest lesson learned this past year is that there is a great need accompanied by a great desire to be inclusive. The Working Group plans to continue to address and combat inequality by ensuring that everything will be examined through a diverse, equitable, inclusive and accessible lens.

11:50 a.m.

DEVELOPMENT OF INFECTION PREVENTION AND CONTROL TRAINING TRACK IN MASTER OF PUBLIC HEALTH PROGRAM

*Kim Allain*¹, Heather Candon*¹, Kim Sears¹, Prameet Sheth¹, Bradley Stoner¹, Denise Stockley¹, Paula Muis¹, Erica Weir*¹*
¹Queen's University

Objective: The COVID-19 pandemic highlights the systemic need for public health (PH) professionals with specialized training in infection prevention and control (IPAC). In 2021, faculty at Queen's University developed an IPAC stream within the Master of Public Health (MPH) Program to equip professionals with advanced knowledge and skills. This specialized training within an MPH program is the first of its kind in Canada.

Methods: The IPAC stream was developed by experts in the fields of IPAC, microbiology, community medicine, nursing, patient safety, and healthcare quality. IPAC Canada serves as a developmental resource. The program and course curriculum were developed within an interdisciplinary and team-learning environment.

Results: The IPAC stream is embedded in the existing MPH program structure and content. It consists of three new elective courses covering the foundations of IPAC, medical microbiology, and healthcare quality. It is delivered through a blended format with a combination of face-to-face classes and use of both synchronous and asynchronous approaches. Further, students complete a 400-hour practicum with a host organization to apply their knowledge in a practical setting. The IPAC stream offers an interprofessional approach to developing core competencies and addressing current/emerging IPAC concerns. In January 2022, MPH students were offered enrollment into the IPAC-track courses. Students applying for the MPH-IPAC stream will enter the program in Fall of 2022. Student, preceptor and faculty feedback will be used to evaluate and revise the program as needed.

Conclusion: The pandemic exposes the societal need to develop an advanced academic pathway for existing and new infection prevention and control professionals. Graduates of the MPH-IPAC will have leadership, foundational and experiential training in PH and IPAC core competencies. This program will provide a unique and exciting opportunity to advance the fields of IPAC and PH, and protect the health of Canadians.

12:05 p.m.

A REGIONAL MODEL FOR COORDINATING IPAC SUPPORT TO LONG-TERM CARE HOMES

*Jennie Johnstone**
Members of the Toronto Region IPAC Hub Coordinating Table

Issue: In Ontario, during the first wave of the COVID-19 pandemic, COVID-19 outbreaks overwhelmed many long-term care homes (LTCHs). In April 2020, to help support LTCHs, hospitals in the Toronto Region were assigned a group of LTCHs in their area and asked to provide additional support to those homes. This included infection prevention and control (IPAC) support for COVID-19 outbreak management. Following the first wave, to help build LTCH IPAC capacity pre-emptively and to ensure IPAC on-the-ground support during outbreaks, the Toronto Region more formally implemented an IPAC hub model of support for LTCHs and other congregate care sites.

Project: In October 2020, an IPAC Hub Coordinating Table was created. Membership of the table included hospital IPAC hub IPAC medical directors and IPAC operational leads of the five IPAC hubs, local public health associate medical



officers of health leading LTCH public health response, one LTCH representative for the 35 LTCHs in the region, leaders from the Ministry of Long-Term Care and other congregate care ministries, Public Health Ontario leadership, and both hospital and Ontario Health executive sponsors. Goals of the table included: 1) a forum for communication across sectors; 2) IPAC coordination between sectors; 3) developing a shared understanding of emerging guidance and standardization of approach where feasible; 4) a pathway for identifying and escalating relevant concerns; and 5) a community of practice to address challenges, and to share opportunities. Operational issues (e.g., staffing, personal protective equipment and testing and therapeutics) were out of scope for the table, however, concerns on these topics could be escalated via the table.

Results: Since its inception in October 2020, the table has met every one to two weeks, depending on the intensity of the COVID-19 waves. The first priority for the table was to map out roles and responsibilities. The large number of sectors, many of which had never worked together before, initially presented a challenge in understanding the optimal approach. Mapping helped each sector better understand each role, minimized overlap, and ensured gaps were filled. The table has helped provide a coordinated and consistent approach to IPAC support for COVID-19 throughout ensuing COVID-19 waves; both for IPAC prevention as well as outbreak support and to begin to address non-COVID-19 IPAC concerns. The cross-sector communication has been instrumental in building relationships across sectors, and in turn, optimizing the health system response.

Lesson Learned: The COVID-19 pandemic has exposed longstanding systemic challenges within the LTCH sector, including gaps in IPAC. The IPAC hub model was a novel regional approach to help build IPAC capacity. It is clear that there is far more work to do to improve IPAC in LTCHs as many challenges exist. Having a platform to coordinate IPAC support has been instrumental as the region works towards this shared goal.

12:20 p.m.

'ORANGE' YOU GLAD YOU PREPARED!

Natasha Salt*¹, Claudia Cocco¹, Robert Burgess¹
¹Sunnybrook Health Sciences Centre

Issue: Sunnybrook Health Sciences Centre (SHSC) is a 1355 bed quaternary care centre, in Toronto Ontario. A Code Orange at SHSC represents a response to: mass casualty incidents, including chemical, biological, radio-nuclear, explosive or environmental events due to natural, accidental or intentional acts and pandemics. Maintaining preparedness for high consequence pathogens (HCP), and mass casualty incidents were priorities prior to 2020 and enhanced our readiness for the COVID-19 pandemic. Over the past five years, SHSC has had several Code Orange events, including six major exercises, multiple small-scale exercises and five real events. Each event presented infection prevention and control (IPAC) an opportunity to enhance preparedness, response and recovery activities.

Project: Under the leadership of the SHSC Emergency Preparedness team, multiple stakeholders throughout the organization were identified to participate in the preparation, execution and debrief of each planned code orange exercise; real events are followed by a debrief. After action reports collated the findings and identified key opportunities for improvement that supported response during the COVID-19 pandemic and beyond.

Results: All exercises were executed with various levels of internal and external stakeholder engagement. One exercise involved 34 participating organizations. Types of exercises included table-top, functional, and full-scale. Real events include mass casualties and the pandemic. Several opportunities to enhance IPAC were identified with each event, including how to optimize environmental support services, evaluate surge spaces, identify cohort opportunities or discontinue additional precautions, prioritize placement of IPAC coordinators, suspend non-priority program areas, support patient flow, improve notification and fan-out processes, identify and mitigate risks to patient safety, improve contact tracing capabilities, and expedite identification and placement of patients presenting with an HCP. As a result of these exercises and events, several processes were identified for improvement. An IPAC-specific fan-out list and all-hazards business continuity plan was developed before the COVID-19 pandemic.

Lessons Learned: IPAC matters in all Code Orange emergency events and lessons learned during these events helped us reform processes. Our learnings from an HCP exercise enabled us to quickly mobilize and restructure our approach to triaging ED patients. This change enabled us to successfully identify and manage the first COVID-19 case in Canada without any IPAC breaches. Participating or supporting development of exercises and plans should be a

priority for an IPAC team. Learnings applied from code orange exercises or events are transferable to regular business operations, such as surge planning, which supports occupancy pressures.

WEDNESDAY, APRIL 27, 2022 – Public Health and Environment of Care 11:35 a.m. – 12:45 p.m. (Eastern)

11:35 a.m.

ADOPTING CONTACT TRACING AS AN APPROACH TO COMBAT THE SPREAD OF HIV/AIDS IN KEY GROUPS: A CASE OF SEXUAL MINORITIES IN UGANDA

Clifford Benoni*¹, Rebecca Namuddu¹
¹LGBTQI Voices Organisation Uganda

Objective: Efforts to fight HIV and AIDS in Uganda have yielded positive results over the last couple of decades. Nearly 71 people living with HIV (PLHIV) know their HIV status and 61% are on ARVs. On the other hand, in the 2020 UNAIDS country report on Uganda, under multiple sexual behavior and condom use, according to the 2017 Uganda Population-based HIV Impact Assessment report, among the general population, there was a low-risk perception of casual sex and condom use. This was higher (58.6%) among the young people as compared to adults (36.7%). The study aimed at using a smartphone app to enable contact tracing in sexual minorities at higher learning institutions in Kampala. We aimed to promote the use of contact tracing to accelerate diagnosis and HIV transmission prevention at learning institutions. Hopefully, this can be replicated countrywide.

Method: We designed a prototype app that targeted sexual minorities groups, collecting information concerning condom use and tracking the willingness of sexually active youth to anonymously share information about their sexual activities and their partners. The choice of this methodology is based on the current and foreseeable increase in the use of smartphones by young people. We set two groups within our sample based on age: group A for those aged 20-35, and group B for those 35 and upwards.

Results: The study proved that contact tracing is possible and safe. Out of the sample group (N=200), 60% were in group A, of which 50% used the app and confidentially shared their sexual activities, including their last encounters. 40% belonged to group B of which 65% declined to reveal their previous sexual activities, including the exact dates of last sexual activity. 90% of group A were willing to receive health workers' contact details for referral purposes and potential screening and related services. Members of this group were willing to come along with their partners, especially those categorized as permanent. 40% of group A showed interest in continuing to use the app as well as receiving more information about HIV/AIDS and related STIs through the app. The average usage of the app in group A was greater than that in group B (20.4±0.3 g vs. 8.4±0.6 g; p<0.01). Note that the p-value effectively conveys that the difference was significant; thus, the word "significant" is no longer needed.

Conclusion: Our study revealed that contact tracing significantly allows for confidential identification of sexual and/or needle-sharing partners of PLHIV. Health workers can then work with individuals who are at risk for HIV to both prevent further spread and to ensure that infected partners are linked to care and treatment services.

11:50 a.m.

SURFACE DISINFECTION INCOMPATIBILITY WITH MEDICAL DEVICES CREATES POTENTIAL PATIENT RISKS

Linda Lybert*¹, Barbara Strain*²

¹Healthcare Surfaces Institute, ²Association Healthcare Value Analysis Professionals

Abstract: A large midwestern hospital, with approximately 700 licenced beds and over 1.2 million patient encounters yearly, purchased several hundred state-of-the-art, non-invasive medical device monitoring systems. Within two years, there was visible damage to the monitoring systems due to chemical exposure during the disinfection process. Surface disinfectant compatibility is not a new issue to the healthcare industry. The goal of this case study is to find the problem's root causes through deep dive, real-world analysis.

Methods: The following investigational methods were used by the authors in this case study to evaluate and understand the selection process used by the hospital for purchasing medical devices; review instructions for use (IFU) and testing data



compared to the hospital's cleaning and disinfection process, review test method criteria and disinfectant products used for FDA 510(k) approval and all follow-up testing, calculate both soft and hard costs incurred by the hospital and the medical device company.

Results: Through the deep dive analysis and testing performed, it became evident that one of the root causes of the damage was chemical exposure to components by the hospital's use of disinfectants known to cause damage. Additionally, there was a complex combination of challenges and gaps, including a lack of understanding about infection prevention products and guidelines used within the hospital by the medical device company and breakdowns in communication within each organization and between both parties. These problems created potential risks to patients and high costs for both the hospital and the medical device company, which could have been avoided. Another root cause of the problem occurred during the design phase of the monitoring device. Without guidelines or minimum testing standards of all categories of EPA-registered hospital grade disinfectants, the medical company was left to determine which cleaning agents to test for cleanliness and compatibility between surface materials and disinfectants when designing their product. As we found in this case study, the hospital's infection prevention and control (IPAC) guidelines to prevent patient risk were not compatible with the only validated cleaning method prescribed by the medical device manufacturer.

Conclusion: Surface disinfection compatibility challenges came to the forefront of the hospital's awareness through the discovery and analysis of damage to its monitoring devices. This case study is an example of how these challenges create risks to patient safety and present significant liability for both the healthcare facility and the manufacturer when not addressed. Due to the complexity of this problem, many facilities pay high costs for repair, replacement, and ongoing maintenance and in many cases the problem is virtually overlooked.

12:05 p.m.

PUBLIC HEALTH RESPONSE TO AN INFECTION PREVENTION AND CONTROL LAPSE IN AN ONTARIO DENTAL CLINIC

Jane Jacobsen^{*1}, Maureen Horn¹, Monali Varia¹, Christina Gorman¹
¹Region of Peel – Public Health

Background: In September 2019, Peel Public Health responded to a complaint about infection prevention and control (IPAC) practices in a dental office.

An onsite inspection identified an IPAC lapse related to improper cleaning, sterilization processes and storage of dental equipment.

Objectives: To describe the public health response to the IPAC lapse, identify lessons learned from the large-scale public notification and available results of the patient lookback investigation, including testing for the hepatitis B (HBV), hepatitis C (HCV) and human immunodeficiency viruses (HIV).

Methods: All patients who received services at the dental office since it opened in 2014 were advised to get tested for HBV, HCV and HIV. Due to a lack of timely access to patient contact information, patient notification was conducted via a media release, social media messaging, patient information packages distributed at the dental office and/or the notification sign on the front door of the dental office. A search was conducted in September 2019 in the provincial reportable disease system, Integrated Public Health Information System (iPHIS), for any cases of HBV, HCV and HIV that could potentially be attributed to the dental practice. An expanded search in iPHIS was conducted in December 2021 using fuzzy string match comparisons between the patient list and all HBV, HCV, or HIV cases reported since January 1, 2014.

Results: The iPHIS search conducted in both September 2019 and December 2021 revealed no cases of HBV, HCV and HIV attributed to the IPAC lapse. Challenges in this investigation included reprocessing knowledge gaps among clinic owners and practitioners. A lack of electronic record keeping of clients necessitated public disclosure of the infection control lapse to 3,833 patients possibly exposed to improperly cleaned, reprocessed and stored equipment. Due to the diverse languages spoken by clients, a translation sheet was posted and provided in the patient information package, however, less than 5% underwent testing.

Conclusion: No evidence of HBV, HCV or HIV transmission associated with the IPAC lapse was found. While the risk of transmission is low, transmission cannot be ruled out due to very low uptake of testing by possibly exposed patients. The low uptake of testing, plausibly attributed to the inability to notify patients directly because of lack of timely access to patient contact information, highlighted the need for electronic record keeping for easy access and communication to patients during a lapse investigation.

12:20 p.m.

DUODENOSCOPE REPROCESSING: USING FAILURE MODE EFFECT ANALYSIS TO IDENTIFY AND REDUCE RISK

Rosemarie Howie^{*1}, Suzanne Schwab¹, Rosilee Peto²
¹London Health Sciences Centre, ²St. Joseph's Health Care

Issue: Duodenoscopes pose a higher risk for infection transmission than other gastrointestinal endoscopes due to a complex design that challenges reprocessing efficacy. Efficacy requires appropriate policies, protocols, education, implementation, documentation and quality assurance. A failure mode effect analysis (FMEA) was conducted to identify system vulnerabilities and develop and implement proactive processes to reduce reprocessing risks in a medical device reprocessing department of an acute care hospital.

Project: A multidisciplinary team was assembled to optimize strategies and improvement capability. Primary stakeholders included: infection prevention and control, accreditation, and medical device reprocessing. Consultant groups included: endoscopy, quality improvement and patient safety. The FMEA Patient Safety Essentials Toolkit from the Institute of Health Improvement was used. A review of current standards, best practice guidelines, manufacturer's instructions for use (MIFU), and relevant publications was conducted. An ordered list of all steps in the reprocessing process was created. The FMEA template guided brainstorming and detailing the: 1) Failure Mode – what could go wrong; 2) Failure Causes – what would lead to the failure; and, 3) Failure Effects – what would be the consequences of failure.

The failure modes were scored by: Likelihood of Occurrence, Likelihood of Detection, and Severity. Risk was defined by a Risk Priority Number (RPN), calculated by: Occurrence × Detection × Severity. A list of actions to improve safety was prepared for each failure mode, which were ranked by RPN. Failure modes with the highest RPNs were prioritized.

Results: Six areas for potential failure were identified: 1) Policy and protocol review; 2) Adherence to guidelines and MIFU; 3) Education and training; 4) Quality assurance, audits or surveillance of processes; 5) Manual cleaning adequacy, particularly scope parts that are difficult to access and visualize; and, 6) Protocols associated with carbapenemase-producing *Enterobacteriaceae* (CPE) and other multidrug-resistant microorganisms.

Two failure modes presented the greatest risks, which were detailed and prioritized: Quality assurance of manual cleaning adequacy of the elevator mechanism and biopsy channel; and CPE-associated protocols and processes. An improvement plan was developed with assigned responsibilities, Plan-Do-Study-Act cycles and completion target dates.

Lessons Learned: The FMEA was a valuable tool to assess risk associated with duodenoscope reprocessing. It required a multidisciplinary team with relevant expertise to evaluate processes for potential failure. FMEA-facilitated identification of the most likely failures to occur and/or those resulting in the greatest risk. Mitigation plans could be targeted and focused on prevention or severity reduction. FMEA enabled timely improvement of existing processes aimed to maximize patient safety and stakeholder satisfaction.

WEDNESDAY, APRIL 27, 2022 – HCW Health & Safety

11:35 a.m. – 12:45 p.m. (Eastern)

11:35 a.m.

BIOAEROSOL CHARACTERIZATION IN DENTAL CLINICS

Khaled Altabtbaei^{*1}, Ata Rafiee, Ramon Carvalho, Doris Lunardon,
Carlos Flores-Mir, Paul Major, Bernadette Quemerai
¹University of Alberta, School of Dentistry

Introduction: Many dental procedures are considered aerosol-generating which may put the dental operator at risk for infection due to contamination of the aerosols by patient fluids from the nose and saliva. This aerosol, due to the size of the particles, may stay suspended in the air for hours.

Objective: The objective of the study is to characterize the particles emitted from seven different dental procedures by way of particle size and concentrations, as well as to estimate the contribution of the nasal and salivary fluids of the patient to the emitted bioaerosol.

Methods: This cross-sectional study was conducted in an open-concept clinic with multiple operators simultaneously. Particle size, mass/particle concentrations



were done by using two direct-reading instruments. Active bioaerosol sampling was done before, during and after procedures. The contribution of the bioaerosols coming from patient's nasal and salivary fluids was calculated based on Bayesian modelling of long-reads of 16s rDNA.

Results: Regarding particles larger than 1µm in diameter, orthodontic debonding and denture adjustment had more particles in the PM1, PM2.5, PM4, and PM10 ranges compared to other procedures. Bioaerosol samples were significantly different from saliva and nose samples ($p < 0.05$), but not different from preoperative ambient air samples. Therefore, exposure to patient fluids is at most minimal. Each operator was equally exposed to their own patient's fluids as other patients. The median of this bioaerosol is 1.45-2.75%. Corridor exposure has more nasal bioaerosols than oral. When a high-volume saliva ejector and saliva suction were used with ultrasonics, the result was ~10-fold reduction in escape to the other areas (Median=0.2%).

Conclusion: Patient nasal and salivary fluids are minor contributors to the bioaerosol content. Dual-usage of HVE/saliva suction is an effective way to reduce aerosol escape from the operatory.

11:50 a.m.

BARRIERS TO HEALTHCARE WORKERS' ADHERENCE TO INFECTION PREVENTION AND CONTROL PRACTICES IN BRITISH COLUMBIA DURING THE COVID-19 PANDEMIC

Brooke Cheng^{*1}, Jun Collet¹, Ayesha Ali, Tara Donovan¹, Guanghong Han, Dave Keen, Ka Wai Leung¹, Julie Mori, Jocelyn Srigley¹

¹Provincial Health Services Authority,

Background/Objectives: The COVID-19 pandemic heightened awareness of the need for robust infection prevention and control (IPAC) practices in healthcare environments to maintain patient and staff safety. It is well established, however, that healthcare workers (HCWs) face many barriers that affect their ability to follow these practices. Understanding the experiences of HCWs during the pandemic can provide an important learning opportunity to inform future IPAC policy. We administered a cross-sectional online survey to identify the barriers affecting HCWs' adherence to IPAC practices in British Columbia.

Methods: The survey was disseminated through health authority communication teams from August 11 to September 24, 2021. Eligible respondents included direct-care providers and IPAC professionals in acute care, long-term care/assisted living, outpatient facilities, mental health, pre-hospital care and home care settings in all health authorities across British Columbia. Respondents were asked to rate the extent to which various barriers affected their ability to follow IPAC practices throughout the pandemic.

Results: A total of 2,488 responses were included for analysis. Of these, 750 were nursing staff, 684 were clinical support, 95 were paramedics, 63 were physicians/providers and 896 were grouped as other staff, including facilities/maintenance operations, housekeeping and food services. The primary workplace was acute care for 36% of respondents, followed by 29% in outpatient/community clinics, 18% in long-term care/assisted living, 8% in home care visits, 5% in mental health settings, and 4% in pre-hospital care. Overall perceptions of IPAC practice among non-IPAC professionals were favourable: 77% reported that IPAC measures were a priority and 91% agreed that they prevented transmission in the workplace. While 97% reported knowing how to properly use PPE, 16% missed at least one required component when asked about its use for patients with suspected or confirmed COVID-19 infection. Among all participants, barriers to adherence included inadequate staffing to cover sick leave absences (57%), limited space capacity in staff rooms (56%) and confusing messages about IPAC practices within workplaces (52%). Common suggestions for improvement included receiving more support from IPAC professionals (e.g., education and consultation), and more clear and frequent communication about required IPAC practices (e.g., email, training, meetings).

Lesson Learned: Our findings highlight HCW perspectives on the priority areas needing improved IPAC interventions, such as improved IPAC support and communication on PPE use. Addressing these issues can help enhance HCW adherence to IPAC practices for preventing transmission of healthcare-associated infections, including COVID-19.

12:05 p.m.

ASSOCIATION BETWEEN INFLUENZA AND COVID-19 VACCINE UPTAKE AMONG HEALTHCARE WORKERS

Alexandra Chirila^{*2}, Victoria Williams¹, Nicholas Tomczek¹, Adina Weinerman², Jerome Leis¹

¹Sunnybrook Health Sciences Centre, ²University of Toronto

Background/Objectives: Vaccination of healthcare workers against COVID-19 and influenza is critical in preventing healthcare-associated infections. This year it is expected that influenza and COVID-19 will co-circulate, highlighting an urgent need to optimize both immunization rates. The objective of this study was to systematically assess influenza and COVID-19 vaccine uptake among a cohort of healthcare workers to inform future vaccine strategies.

Methods: Sunnybrook Health Sciences Centre implemented identical policies for COVID-19 and influenza vaccination in April 2021, requiring all healthcare workers to complete one of the following by May 7, 2021: 1) receive the vaccine; 2) submit a verified medical exemption; or 3) complete a mandatory online learning module and either sign a declination statement, or receive the vaccine. The correlation between healthcare workers who received the influenza vaccine and those who received the COVID-19 vaccine was measured. Differences in vaccine uptake were also compared by facility type, interaction with patients, location, department, and professional role.

Results: Vaccine uptake was 66.0% for influenza and 80.7% for COVID-19. The rates of influenza and COVID-19 vaccination among healthcare workers were positively correlated, with 19% of healthcare workers receiving only the COVID-19 vaccine and 4% receiving only the influenza vaccine.

Conclusion: Across our organization, 15% of healthcare workers refused both the COVID-19 and the influenza vaccine, suggesting a group with more generalized rejection of vaccines. However, 19% of healthcare workers received the COVID-19 vaccine but not the influenza vaccine, representing a potential target group for influenza vaccination. Addressing barriers specific to the influenza vaccine among those with prior receipt of the COVID-19 vaccine may help to optimize annual influenza vaccination rates.

12:20 p.m.

FACTORS INFORMING HEALTHCARE WORKERS' WILLINGNESS TO WORK DURING THE COVID-19 PANDEMIC IN UGANDA

Clifford Benoni^{*1}

¹IGBTQI Voices Organisation Uganda

Objective: The COVID-19 pandemic has been a substantial challenge for healthcare workers. Understanding the determining factor for their willingness to report to work has and is still critical to ensuring hospital functionality during and after the outbreak resulting in a study examining the factors affecting the motivation and hesitation of health workers in the face of the COVID-19 pandemic in Uganda's worst-hit urban areas.

Method: The respondents were asked about their demographic characteristics, stress-related factors, and their self-reported motivation and hesitation to work. The study was conducted between January and December 2021.

Results: (n=800) valid responses were received. Of these, 19.75% (N = 158) respondents reported being strongly motivated to work while 80.5% (N = 644) expressed strong hesitation. The participants' demographic characteristics and their responses to the stress-related questions were assigned to four categories depending on the odds ratios of motivation and hesitation. While some factors were linked to enhanced motivation and reduced hesitation, others solely affected either motivation or hesitation, while others had a positive impact on both.

Conclusion: Our final results indicate that workers' motivation is tied to the level of protection during work operations, perceived remuneration, and compensation to family in cases of fatality. Furthermore, outcries of continued poor pay to the vaccinating teams and a looming vaccine mandate paint a gloomy picture.

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WEDNESDAY, APRIL 27, 2022

12:35 – 1:35 PM (Eastern)

HAND SANITIZERS AND DISINFECTANTS: ADDRESSING COVID-19-RELATED SUPPLY CHAIN DISRUPTIONS IN A PROVINCIAL HEALTHCARE ORGANIZATION

Frederick Cundict*, Bernice Henrichs¹, Jennifer Happe¹, Blair McFerran¹,
Hand Sanitizer & Disinfectant Working Group¹
¹Alberta Health Services

Issue: Hand sanitizers and disinfectant supplies are fundamental to infection prevention and control (IPAC), and patient and staff safety in all healthcare environments. Increased demand and global supply chain disruptions for hand sanitizer and ready-to-use (RTU) disinfectant wipes emerged early in the COVID-19 pandemic. The Alberta Health Services (AHS) provincial IPAC program established a multidisciplinary hand sanitizer and Disinfectant Working Group (WG) to proactively address these challenges and mitigate risks for AHS and various community-based services, addiction and mental health, and continuing care.

Project: IPAC, reporting to the Emergency Coordination Centre (ECC), led the WG with key representatives, including Linen and Environmental Services, Environmental Public Health, Workplace Health and Safety, Contracting, Procurement and Supply Management (CPSM), and Product Quality and Safety teams. The WG was formed to: 1) proactively identify and resolve issues of hand sanitizer and disinfectant access; 2) act as a conduit for communication between frontline staff and local, zonal and provincial leaders; 3) review substitute products, and, 4) recommend practice changes. For example, CPSM sourced RTU liquid disinfectant and dry wipes as a substitute for pre-moistened RTU disinfectant wipes. The WG reviewed substitute products, developed a process for alternate dispensing methods, communicated changes and supported implementation. Documents and processes were regularly reviewed for relevance, accuracy and to reflect supply changes. The WG also helped address other emerging issues such as shortage of povidone iodine swabs, medical device damage due to disinfectant products, and hand sanitizer ingestion.

Results: The WG leveraged existing communication networks, strengthened working relationships, and established new ones to mitigate risk, correct misinformation and facilitate effective communication to all stakeholders. Communication methods included best practice recommendations and information sheets, AHS President and CEO messaging/all-staff emails, ECC memos and videos, and representatives attending unit huddles and site meetings. Resources were easily accessible on external and internal AHS and IPAC COVID-19 websites. Communication flowed between provincial, zone and local levels to identify issues, answer inquiries, and implement actions.

Lessons Learned: The WG worked within the incident command system structure in place within AHS, including a provincial ECC, zone emergency operation centres, and site and program incident command posts to promote a consistent approach. This system supported a provincial perspective; timely response to an evolving environment and facilitated rapid action to streamline communication flow, to address issues proactively, maintain confidence, and protect patient and staff safety.

FROM NEAR ZERO TO COVID-19 HEROES: A HEALTH UNIT'S SUPPORTIVE PROCESS FOR ONBOARDING STAFF, ONGOING TRAINING AND PROFESSIONAL DEVELOPMENT DURING THE PANDEMIC IN LONG-TERM CARE AND RETIREMENT HOMES

Laura Koczerginski¹, Patricia Stevens¹, Danielle Steinman*¹
¹City of Toronto

Background: Toronto Public Health's (TPH) long-term care (LTCH) and retirement home (RH) congregate (LRC) team manages outbreaks (OBs), COVID-19 case and contacts (CC), and provides infection prevention and control (IPAC) guidance to Toronto LTCHs and RHs. LTCHs and RHs suffered tragic losses during the early COVID-19 waves, and continue to face significant challenges. In response to the overwhelming demands, LRC increased staffing by more than 10-fold in the restructuring of the city's incident management system. New/redeployed staff had no experience in IPAC and OB management, which presented both challenges and opportunities to develop comprehensive onboarding and knowledge translation systems. This growth occurred amidst unprecedented pressures and frequent changes in provincial directives, CC management systems, among other changes at the local health unit level.

Project: In response to the steep learning demands, LRC's Innovation, Data, Education and Application (IDEA) team was created, bringing together various staff to improve the onboarding experience, and invest in a network of support, continued education and skill building initiatives. The goal was to equip staff with foundations in IPAC practices, COVID-19 OB and CC management, as well to manage continuity of operations, such as facilitating OB preparedness, and non-COVID-19 OB management. The IDEA team implemented a fully remote training and knowledge exchange model, consisting of e-learning modules, Q&A and scenario sessions, communication blasts, resource/policy development, team level and 1:1 support to increase staff's confidence and competence in the liaison role. The team now uses survey tools to track requests and resolutions, and evaluate training for future initiatives.

Results: Over the past two years, LRC has trained 120-plus staff to respond to 160 Toronto facilities in areas such as IPAC competencies, OB management, and the liaison role. On average, the IDEA team responds monthly to 110 support requests, 86% of which are resolved without the need to escalate further. LRC is now better positioned to respond to the ongoing challenges of this pandemic, existing seasonal OBs, and new or emerging infectious diseases, which is vital to protecting the health and well-being of vulnerable seniors and adults in congregate settings.

Lessons Learned: Using a step-wise approach to capacity-building through education, training, policy, and resource development, the IDEA team is able to implement just-in-time responses to the evolving needs. We've learned that it is imperative to be creative in delivery, variety, and engagement modalities. Moreover, providing consistent messaging and responding to change fatigue is paramount in meeting the different learning needs during this pandemic response and beyond. While LRC staff continue to work closely with their facilities, we've seen benefits in more effective communication and collaboration with partner, to achieve common goals.

BRIDGING THE GAP: DEVELOPMENT OF PPE AUDITING RESOURCES FOR ALL CARE SETTINGS

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¹Public Health Ontario

Issue: Evidence shows that poor personal protective equipment (PPE) practices are associated with an increased risk of infection in staff, and that audits and feedback can effectively improve quality of care by helping to identify gaps in practice to inform improvements. Gaps in knowledge and skills in PPE use for infection prevention and control (IPAC) were common prior to the COVID-19 pandemic, and became even more evident throughout it. This was demonstrated by the increasing number of inquiries and requests for support by healthcare stakeholders, and observations and recommendations by Public Health Ontario (PHO). A PHO summary report on visits performed in long-term care (LTC) and retirement homes (RHs) identified that 28% of recommendations were related to PPE. Additionally, local public health units and PHO-recommended auditing of PPE practices in these settings, however, there were no readily available resources to guide them.

Project: The overall goal of this project was to support stakeholders in all care settings with IPAC best practices through the development of comprehensive PPE auditing resources. A working group of four IPAC specialists and an IPAC physician identified the need for and developed four products: two audit forms, and an implementation guide with a complementary presentation. Various consultations were performed internally with other PHO IPAC staff and knowledge translation/evaluation specialists, and externally with stakeholders from a range of settings including PHUs, acute care, primary care, community care and congregate living settings. These consultations informed content and ensured applicability to various care settings.

Results: Four resources were published on a PHO webpage dedicated to PPE auditing. Two forms developed included one for observing PPE use by staff, and one for the IPAC lead to evaluate PPE use supports. A written guide details a five-step process for implementation of a PPE-auditing process using knowledge translation principles. Lastly, a recorded presentation provides a refresher on best practices for PPE use, and discusses the importance of auditing tools for practice improvements. Within a month of publishing, the webpage had over 1,500 views.

Lessons Learned: In order to support a broad range of care settings, particularly those that are under-resourced with implementation and maintenance of IPAC best practices such as safe PPE use, accessible and practical tools need to be available to bridge these gaps. Internal and external stakeholder consultation is key during new product development to ensure user-friendly resources and a comprehensive dissemination plan. The substantial number of website hits within the first month of publication, and feedback during a stakeholder event identifying that 60% of stakeholders felt a need for written tools and resources confirms the need for these PPE audit resources.

USING PROSCI® CHANGE MANAGEMENT FOR CONTRACTED CONTINUING CARE PROVIDER INFECTION PREVENTION AND CONTROL SITE DESIGNATE PILOT PROJECT

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¹Alberta Health Services

Issue: A site-based infection prevention and control (IPAC) lead is a recommended best practice often missing in long-term care (LTC) and designated supportive living (DSL) settings. According to Improving Quality of Life for Residents in Facility-Based Continuing Care (April 30, 2021), there needs to be a dedicated IPAC lead “who can monitor, evaluate, and ensure compliance with proper protocols; support and provide basic training for all staff.” The COVID-19 pandemic has highlighted inconsistencies in IPAC resources and practices within LTC/DSL settings. As infection control professionals, we are implementing a pilot project utilizing change management principles to establish an IPAC designate at select sites. The goal is to strengthen IPAC practices and improve resident and staff safety.

Project: The purpose is to implement an Alberta Health Services (AHS) IPAC-supported site designate program at select locations. Site operators will identify and provide time for staff members to assume the role of designate. Site designates will receive training, touch base during meetings, have access to resource documents, and receive support for outbreak management, site practice reviews, and construction and renovation project risk assessments. Change management process includes building and assessing the sponsor coalition, reviewing project health, identifying, and overcoming barrier points, and developing plans for communication, coaching and training. The sponsor roadmap and communication plan support the implementation

of the designate program and engagement of site staff.

Results: Three LTC/DSL contracted provider sites selected in discussion with community and senior’s health leadership team, are participating in the project. Site operators joined the project team which approved the project plan, terms of reference, roles and responsibilities and a needs assessment. Staff IPAC leads received training in IPAC foundations. Topics include routine practices, outbreak management, antibiotic-resistant organism management, and site practice reviews. Participants engage, during online sessions, with the content using whiteboard and poll features and case studies. AHS IPC professionals act as change managers of the project to facilitate site adoption and staff engagement. Anticipated outcomes of the site designate include enhanced IPAC routine practices, management of risks related to outbreaks, and improved resident safety and quality of care.

Lessons Learned: Components of change management, project management and leadership must be strong and cohesive for achieving successful change. Assessment of project health, engaging the primary sponsor, building the sponsor coalition, and clear communication are integral in supporting the pilot project. Coaching site operators through the change process allows sites to support their teams in the adoption process.

HARNESS THE STORM: OPTIMIZING INFECTION PREVENTION AND CONTROL BEST PRACTICE DURING COVID-19 OUTBREAKS IN CONTINUING CARE FACILITIES

Sibina Fisher^{*1}, Erica Yip¹, Yvette Cable¹, Nicole Henderson¹, Kelvin Yu¹,
Melody Cordoviz¹, Alexandra McFarlane²

¹Alberta Health Services, ²University of Alberta

Issue: Continuing Care sites face unique challenges in the COVID-19 pandemic setting. The Alberta Health Services (AHS) Edmonton Zone Continuing Care (EZ CC) Infection Prevention and Control (IPAC) team supports over 100 such facilities, including long-term care, supportive living, and home living sites. The team desired to understand the most common challenges faced by sites during COVID-19 outbreaks in order to guide future interventions.

Project: During the COVID-19 pandemic an AHS IPC provincial process for in-person outbreak site assessment was formalized. This process included a report with questions addressing IPC principles and outbreak control strategy compliance answered with “Yes”, “No”, or “Other”, and an area for comments. An infection control professional (ICP) completed the visit, recommendations were discussed with the site, a copy of the report was provided, and sites received ongoing support to address challenges. The EZ CC IPC team reviewed 73 COVID-19 outbreak site practice reviews completed between July 1, 2020 and December 31, 2020. Data from 19 questions and 562 ICP comments were collected. Eight comment themes were identified. Comments were categorized independently by two ICPs. Disagreements were resolved by a third team member. Means, medians and interquartile ranges (IQR) were calculated by standard methods.

Results: Questions answered with “yes” indicated site compliance. The average compliance to individual questions was 85% (median, 89%, [IQR], 75% to 98%). The most common deviations, reflected by a “no” or “other” answer, were related to isolation cart availability, personal protective equipment (PPE), routine cleaning, client social distancing, and staff donning and doffing of PPE. These deficiencies were noted in 25-38% of reviews. Comments with themes of cleaning and disinfection and outbreak control strategies were most common, each making up 22% of total comments ([IQR], 22%). Staff break room concerns (11%), social distancing of staff and residents (14%), and staff PPE concerns (21%) fell in the median quartile ([IQR], 6% to 22%). Communication, visitor screening, and hand hygiene themes were least frequent, each representing 5% to 6% of total comments ([IQR], 6%).

Lessons Learned: Common challenges in meeting best practice identified by analysis of site practice reviews revealed a combination of historic challenges (e.g., staff PPE use, cleaning and disinfection) and novel challenges unique to the COVID-19 pandemic setting (e.g., staff breakroom concerns, adherence to social distancing). Prioritizing themes identified through recent data can help to focus future IPAC outbreak sites visits and guide educational programming. This supports continuing care site achievement of IPAC best practice and establishment of excellent outbreak control strategies.

HOW PEOPLECARE TAVISTOCK USED AUTOMATED ROOM DISINFECTION TO OVERCOME STAFFING SHORTAGES DURING THE COVID-19 PANDEMIC WHILE ALSO INCREASING INFECTION CONTROL OUTCOMES

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¹peopleCare Communities, ²A.M.C. Medical Inc., ³peopleCare Tavistock, Superior Facility Services, ⁴peopleCare Tavistock

Issue: peopleCare Tavistock's housekeeping team faced three main issues during the COVID-19 pandemic: 1) Increased IPAC measures – Interviews showed that to manually disinfect a space during COVID-19 took 28.4 minutes. The home had 80 residents and 15 non-resident spaces, which had to be treated multiple times per day. This meant 59.6 hours of disinfection per day. 2) Decreased staff – Housekeeping staff declined by 28.6%. Some resignations were due to fear of infection and mask mandates. 3) Cohort – 'A' wing with 27 beds was chosen for infected residents and was sequestered from the rest of the home. Staff were assigned to either the outbreak wing (OW) or the non-outbreak wing (NOW). OW held 34% of beds but 40% of staff were assigned to it, regardless of whether it was occupied. Prior to COVID-19, Tavistock cut the time to disinfect patient rooms during outbreaks, including *Clostridioides difficile* (*C. diff*), by 50% (30 minutes) by adopting a hydrogen-peroxide-based automated (HPA) room disinfection system into its protocols. Staff levels allowed for manual disinfection in non-outbreak situations. They also had a large-scale outbreak plan which included the cohort of affected residents and kept up Y2K preparedness. As COVID-19 began, the blueprint was in place, but increased IPAC measures and limited staff required expanded use of the HPA system as it could treat complex spaces independently. This occurred each time a positive or potentially positive resident moved to OW and when they returned to NOW. The home also leveraged the system by placing all available shared equipment in the rooms to be disinfected. With two machines in use, a machine was dedicated to OW and to NOW.

Results: Tavistock had only one outbreak during the pandemic over a 62-day period. The incidence of *C. diff* remained low due to increased IPAC measures and: 1) Saved 97.1 hours of labour from December 2020 to October 2021, based on TCs. The outbreak represented 56.6 hours (58.3%) of these savings; 2) 116.4 hours of staff time saved by filling rooms to be treated with shared equipment; 3) Ensured disinfectant was applied to the entire piece of equipment, and that contact time was respected.

The new measures helped to contain and curtail outbreaks in three ways:

1) Reducing frequency and time staff were in contaminated rooms; 2) Reducing staff time required for TCs and equipment disinfection; and, 3) Producing more reliable disinfection of shared equipment.

Lessons Learned: COVID-19 exposed many under-met needs in long-term care including: 1) Understanding the science behind cleaning and infection control; 2) Ongoing training on appropriate techniques for this environment; and, 3) Staffing requirements for sustainable IPAC culture; implementation takes time. Meanwhile, automated technologies can provide consistent disinfection results in complicated situations, freeing staff up for training and activities which require manual effort.

EVALUATION OF NATIONAL CLABSI DATABASES DEMONSTRATES A REDUCTION IN CLABSI RATE BY UTILIZATION OF A DEDICATED NEEDLELESS CONNECTOR

Marcia Ryder^{*2}, Xiaowu Sun³, Jason Battle¹
¹ICU Medical, ²Ryder Science, ³Adelphi Values

Background/Objectives: Intravenous therapy (IV) is an essential procedure in approximately 70-80% of hospital treatments. These IV therapies present the possibility of complications, including risk of central line-associated bloodstream infections (CLABSI). Needleless connectors (NCs) currently included in IV therapy guidance, while protective against needlestick injury, have long been implicated as a potential risk for CLABSI. In some reports, NCs have shown risk reduction of CLABSI events but, these studies are limited to facility/regional scope and without accounting for variations in infection control practices. Debate regarding the selection and importance of certain design factors of a NC with the least risk for CLABSI, continues. This evaluation analyzed a national-level repository of publicly reported CLABSI data to determine if hospitals utilizing the study group (SG) NCs resulted in decreased relative risk (RR), standard infection ratio (SIR), and associated costs of CLABSI compared to hospitals utilizing comparator NCs in order to provide non-biased, multi

factor data to clinicians to enhance their decision-making ability related to NC choice.

Methods: The healthcare-associated infections national data was accessed via the Centers for Medicare and Medicaid Services database for 2019. This data set was merged with SG NC client database during 2019 to identify hospitals using the SG NC versus the comparator group NCs. Two sub-groups of SG NCs were analyzed: 1) SG customers; and, 2) SG high-volume customers. The RR and SIR was determined for each study group, adjusting for care locations, and hospital demographics.

Results: Both SG sub-groups showed statistically significant lower RR compared to the comparator NC group. For the SG customers, the RR of CLABSI was 0.93, signifying a 7% decreased CLABSI rate ($p=0.04$) and for SG high volume customers, the RR of CLABSI was 0.81 ($p=0.04$), representing a 19% decrease in CLABSI rate. SIR for CLABSI was also significantly lower for SG high volume customers. The SIR for SG customers for FY2019 is 0.68 (95% CI 0.66-0.69) and for SG high volume customers, the SIR is 0.61 (95% CI 0.54-0.67). In comparison, the comparator customer group SIR was 0.70 (95% CI 0.68-0.72). Utilizing the decrease in RR of CLABSI for SG and SG high volume customers the realized cost savings was determined to be \$23,738,671 and \$3,356,560, respectively.

Conclusion: Implementation of the SG NC technologies may offer an opportunity to realize a significant decrease in the RR of CLABSI and SIR, which may translate into decreased incidence of CLABSI, morbidity and mortality, and related costs. While CLABSI prevention requires a combination of evidenced-based strategies, this data demonstrates that the use of the SG NCs, in and of itself, is a critical component of CLABSI prevention.

ETHANOL SURFACE DISINFECTING WIPES: AN EFFICACIOUS SOLUTION FOR HEALTHCARE

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¹GOJO Industries, Inc.

Background/Objectives: In healthcare facilities, effective and easy-to-use disinfectants for hard surfaces are essential. Products must work quickly to kill microorganisms and prevent transmission or cross-contamination of other surfaces. Healthcare is especially sensitive to this requisite in the presence of healthcare-associated infections (HAIs) and drug-resistant pathogens. A group of bacteria known as ESKAPE pathogens are particularly concerning in the clinical setting due to their ability to evade many drug treatments and cause serious infection. ESKAPE pathogens (*Enterococcus faecium/faecalis*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii*, *Pseudomonas aeruginosa*, and *Enterobacter* species) are a leading cause of HAIs and result in an increased burden on providers. A novel surface disinfecting wipe containing 20% ethanol (EtOH) was evaluated for bacterial efficacy on ESKAPE pathogens. Ethanol is a well-recognized antimicrobial with benefits of use on surface disinfection. The level of alcohol in the formula helps achieve the lowest toxicity profile for surface products while providing better coverage of surfaces, attaining efficacy with one wipe. Suitability of the surface wipe product is examined for use to reduce important pathogens in the healthcare setting.

Methods: The EtOH disinfecting wipe was tested for efficacy according to ASTM E2362-15 (Standard Practice for Evaluation of Pre-saturated or Impregnated Towelettes for Hard Surface Disinfection), in accordance with OCSPP 810.2200 test guidelines. This is a recognized test method by Health Canada for marketed surface products. Carriers were inoculated with challenge organisms and allowed to dry. Once dried, the carriers were wiped with a test wipe for a defined contact time (varying per organism). Test carriers were then neutralized, incubated, and sub-cultured to evaluate surviving test organisms. Challenge organisms for this research purpose were focused on ESKAPE pathogens.

Results: There was a complete reduction of microorganisms on the sub-cultured carriers, equating to at least a four-log reduction. Per the requirements of Health Canada, disinfection was achieved after the following contact times, in seconds (s): – *Enterococcus faecium/faecalis*, Vancomycin-resistant *Enterococcus* (VRE): 60s – *Staphylococcus aureus*: 110s – *Klebsiella pneumoniae*, multi-drug resistant (MDR): 60s – *Acinetobacter baumannii*, (MDR): 60s – *Pseudomonas aeruginosa*: 60s – *Enterobacter aerogenes*: 75s.

Conclusion: Ethanol surface disinfecting wipes containing 20% EtOH successfully met established criteria for disinfection of ESKAPE pathogens on hard surfaces. The ethanol surface wipe is successful in achieving critical disinfection claims. The surface wipe is safe to use, fast-acting (< 2 minutes) and effective against ESKAPE pathogens, allowing for integration of product use into flow of healthcare/clinical settings with direct patient care.

IS THIS A SAFE PLACE? RISK ASSESSMENT IN THE CONTEXT OF UNIVERSAL FACIAL PROTECTION

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¹Trillium Health Partners

Issue: Facial protection is a critical component of routine practices based on personal/point-of-care risk assessment, and a required element of Droplet and Droplet and contact precautions. Early in the COVID-19 pandemic, universal masking became mandatory in healthcare facilities and congregate living settings in Ontario. In addition, universal eye protection (face shields, goggles, protective eye glasses) has been required based on local epidemiology and facility outbreak, especially with the more transmissible Omicron variant. In late December 2021, N95 respirators were required for care within 2 metres of known or suspected cases. Facilities have developed a range of strategies for staff to deal with facial personal protective equipment (PPE), which has frequently included removal and cleaning/disinfection of eye protection and changing of mask/N95 at the door of the resident's/client's room. But is this a safe practice?

Project: Four IPAC hub staff visited close to 200 long-term care, retirement homes, and other congregate living settings from March 2020 to present and observed infection prevention and control (IPAC) practices, including donning and doffing of PPE. Provincial guidance has continued to state to remove PPE at the doorway of the resident room, however, the hub staff have identified removal of facial PPE as a high-risk practice in the context of universal masking - and often universal eye protection. In at least three outbreaks, it was likely the main contributing factor in transmission between residents and care providers, leading to a consistent recommendation that healthcare workers (HCWs) make a personal risk assessment after removal of gloves and gowns and subsequent hand hygiene, and ensure that they are in a safe place prior to removal of facial protection.

Results: The doffing sequence recommended was to: remove gown; make a risk assessment as to if hands are contaminated before removing gloves; clean hands; make a risk assessment as to if the location is safe to remove eye protection and mask; move to an identified safe location; remove eye protection and clean, disinfect, and store (e.g., on head as crown for break); clean hands; remove mask; clean hands; apply new mask or proceed to break.

Lessons Learned: Everyone wants to do the right things to protect themselves and those they care for. Routine practices and additional precautions are the core of IPAC and when circumstances change, staff may hold to long-practiced habits or become confused and frustrated by new requirements. Rather than enforcing an existing standard process for PPE removal, reinforcing personal risk assessment between every step of PPE removal empowers HCWs to make decisions which impact safety for themselves and their residents and to understand IPAC in a more meaningful way.

CULTURAL INFLUENCES ON COVID-19 VACCINATION HESITANCY IN LONG-TERM CARE: AN EASTERN EUROPEAN EXAMPLE

Magdalena Krawczyk¹, Michelle Oliveira¹, Christopher Okeahialam¹,
Madeleine Ashcroft¹

¹Trillium Health Partners

Issue: Vaccine hesitancy has featured largely over the past year since the availability of vaccines to reduce the risk of COVID-19, and can be attributed to multiple causes, including ethnic and cultural considerations. Black, Indigenous, People of Colour (BIPOC) have been identified as a vaccine-hesitant group, but staff from Eastern European backgrounds have been the most vaccine-hesitant and vaccine-resistant in local long-term care and retirement homes. In order to address this issue and to support these healthcare workers to be vaccinated, it is important to understand the background and contributing factors to this mindset.

Project: In order to tailor vaccination promotion to the Eastern European staff, the existing literature was explored and staff were interviewed. The impact of various interventions, including onsite discussions with a public health unit physician and mobile vaccine clinics in the parking lot were evaluated in light of the strong cultural beliefs of many staff.

Results: As supported in the limited literature, vaccine hesitancy amongst Eastern Europeans arises from distrust of the government, especially in those who have lived under communist regimes. This extends to distrust of those who work for these regimes, including doctors, and mandatory programs generally, including for vaccination. Current populist messaging is to follow trusted natural treatments which sustained past generations and are what mothers taught. In one LTC home,

there was a history of vaccine hesitancy with consistently low staff influenza vaccine uptake and frequently stated preference for herbal and massage therapy and "keeping well". Interviews with staff about their attitudes to COVID-19 vaccines echoed these ways of thinking and revealed underlying peer pressure to remain strong and free and not to give in to government pressure. Despite best efforts for supportive communication and onsite coaching, when COVID-19 vaccination became mandatory in 2020, this facility experienced a loss of 25% of their long-serving staff as a result of vaccine hesitancy and resistance and has continued to suffer from staff shortages.

Lessons Learned: Understanding the cultural influences on vaccine uptake can help to tailor interventions to the population and to plan for suboptimal outcomes.

SURFING THE COVID-19 WAVES – A JOURNEY FROM IPAC EXTENDER TO ICP

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¹Trillium Health Partners

Issue: In the first wave of the COVID-19 pandemic, Canada had the highest rates of COVID-19 infections and deaths in long-term care (LTC) facilities in the world. The pandemic highlighted the importance of infection prevention and control (IPAC) to protect the health and safety of residents/clients and staff within congregate living settings, including LTC and retirement homes, adult and child residential settings, shelters, and supportive housing, and put a spotlight on IPAC gaps. In a region in central Ontario, an IPAC extender program was quickly launched to address the need for onsite IPAC assessments and support. Healthcare professionals were drawn from other settings, including volunteer nurses from home and community support services. They completed the Public Health Ontario (PHO) core competency modules, and were oriented to a checklist. While they were intended to visit homes that were not in outbreak, increasing demand saw them enter outbreak settings and do their best to provide auditing, advice and support with minimal preparation and IPAC knowledge. With the inception of the IPAC hubs, extenders began to work with experienced infection control professionals (ICPs) to deliver a higher level of support.

Project: In response to the emerging need for IPAC support in non-acute health and congregate settings, IPAC extenders and then local networks of IPAC expertise (IPAC hubs) were created province-wide to assess IPAC practices and build capacity in community-based, congregate living settings.

Results: The creation of first the IPAC extender role and then the IPAC hubs, truly connected people, science, and practice, resulting in collaboration across local community partners. The IPAC hubs have forged mutually supportive relationships with a broad range of leaders and frontline staff in individual facilities as well as in public health units, the local health integration networks/Ontario Health, the Ministries of Health, LTC, and children, community and social services, and PHO. IPAC support evolved and expanded beyond the original onsite assessments with hand hygiene and PPE coaching to include facilitating communities of practice, providing a series of education sessions for IPAC champions, developing and adapting tools and resources, and participating in stakeholder meetings, including for outbreak management. With each new wave of COVID-19, community partners demonstrated greater confidence and compliance in implementing best practices and reducing infections. It was gratifying to witness increasing collaboration and exchange of ideas and creative solutions to deal with IPAC challenges.

Lessons Learned: The IPAC extender/ICP role has provided increasing satisfaction and has validated that we are all in this together, helping to ensure the safety of the vulnerable people in our community.



STANDARDIZING DONNING AND DOFFING OF PERSONAL PROTECTIVE EQUIPMENT AMID PANDEMIC PREPAREDNESS

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Issue: Sinai Health includes Mount Sinai Hospital and Hennick Bridgepoint Hospital located in Toronto, Ontario. In light of the pandemic, and to ensure the organization's ultimate preparedness for an increase in COVID-19 cases, the Infection Prevention and Control (IPAC) Department reviewed existing practices to maintain and reinforce foundational IPAC practices across the organization to prevent COVID-19 transmission from patients to healthcare workers (HCWs) while aligning with current practices to support organizational goals of reducing personal protective equipment (PPE) consumption and conservation. In February 2020, IPAC determined the need to make enhancements and refine current practices for the safe donning and doffing of PPE.

Project: Key stakeholders were identified and unit-specific work plans were developed with clinical leaders to implement standard doffing stations. Doffing stations were implemented in a sequenced fashion starting with the Emergency Department, followed by inpatient units, the perioperative program, and ultimately in ambulatory care clinics. Auditing and continued education was required.

Results: Unit-specific plans were created to determine the locations of donning and doffing stations based on the unit workflows and physical space. IPAC worked with each unit to ensure that IPAC guiding principles and doffing station requirements were met, thereby creating a standardized process and cross-campus alignment. Additional supplies (e.g., garbage bins, linen hampers) were required to be purchased and signage was developed. Decluttering, improved separation of clean and dirty, and IPAC education was essential for mobilizing doffing stations. IPAC worked closely with support services (SS) to audit and maintain doffing stations on the units. Several challenges were identified during the rollout of doffing stations, including improper use and altering locations of bins, hampers, and signage. Some process improvements initiated by other stakeholders did not meet IPAC best practices and further highlighted the need for interdisciplinary collaboration.

Lessons Learned: This project emphasizes the need for planning and stakeholder engagement for best implementation outcomes, especially given the challenges in implementing changes quickly and in real time, during an evolving pandemic. Heightened awareness of IPAC practices as a result of the pandemic facilitated behaviour changes in donning and doffing. Ongoing education and auditing, and incorporation of doffing stations in future design, will be and helpful in ensuring that safe donning and doffing practices remain in place well beyond the COVID-19 pandemic.

EMERGENCY RESUS ROOM REDESIGN AND OPERATIONALIZATION IN RESPONSE TO COVID-19

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Issue: The COVID-19 pandemic highlighted the risks of virus transmission from patients in the Emergency Department (ED), particularly during resuscitation of patients with unknown exposure histories. Various public health agencies now recommend that all aerosol-generating medical procedures (AGMPs) are performed in airborne infection isolation rooms, or in a private room with the door closed when there is a potential risk of COVID-19. resuscitation, which can include AGMPs and Code Blue responses are commonly performed in ED resuscitation (resus) rooms, and thus their design is critical to enable adherence to best practices. Understandably, standards for resus room design had not yet been updated to incorporate COVID-19 pandemic learnings. The existing design and proposed workflows for new resus space within the Mount Sinai Hospital ED were not conducive to new best-practice recommendations as it allowed for multiple patients in one room. Given that construction was underway, an emergent need to incorporate pandemic learnings into resus space design and operationalization in real time was identified and required Infection Prevention and Control (IPAC) support.

Project: Original ED resus space was designed as a single room with two bed spaces separated by a curtain, and included millwork within the room to store supplies. Construction was already about 50% complete, limiting our ability to make major space and infrastructure changes. IPAC collaborated with

redevelopment and clinical teams to redesign the space within a constrained timeframe of roughly six weeks. Workflow planning and changes continued as the space was operationalized.

Results: Support from senior leadership was achieved, which was critical in enabling major design change approval at a late stage in the project. Workflow planning with clinical teams to incorporate IPAC best practices, reflecting COVID-19 learnings, was critical to inform redesign in the absence of updated design standards. The resus space was redesigned into a single bedroom with a vestibule and separate space dedicated for clean supplies. Clean and dirty workflows, including Code Blue response, were established, and personal protective equipment donning and doffing station locations were identified. Challenges included redesigning new space without updated standards, working in a condensed timeframe, and establishing and maintaining clean and dirty workflows.

Lessons Learned: This work highlights the necessity of collaboration and redesigning space in real time when new pathogens demand changes to existing best practices. There is a need for the Canadian Standards Association to re-evaluate standards around resus rooms that incorporate pandemic learnings. Simulations, education and frequent observations in newly constructed spaces are critical to ensure continued application of developed workflows and application of best practices.

LONGITUDINAL EVALUATION OF INFECTION PREVENTION AND CONTROL PRACTICES IN LONG-TERM CARE AND RETIREMENT HOMES THROUGHOUT THE COVID-19 PANDEMIC

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Background: Since the beginning of the pandemic, aggressive infection prevention and control (IPAC) measures have been taken to prevent transmission of COVID-19 in Long-Term Care Homes (LTCHs) and Retirement Homes (RHs). The objective of this study was to serially assess the level of adherence IPAC practices among LTCHs and RHs supported by a hospital-based IPAC hub.

Methods: Outreach visits were conducted by the hospital-based IPAC hub weekly for LTCHs (n=2) and bi-weekly for RHs (n=10). A standard audit tool was developed based on Public Health Ontario COVID-19 IPAC Checklist for LTCHs and RHs and World Health Organization COVID-19 IPAC Preparedness Checklist for LTC facilities. The tool assessed competency in five areas: hand hygiene (HH), environmental cleaning (EC), use of personal protective equipment (PPE), screening, and physical distancing. After determining a baseline adherence rate, ongoing staff education and training occurred, combined with serial direct observations over 18 months. **Results:** Between April 2020 and December 2021, we conducted over 250 visits across 12 LTCHs/RHs. For HH and EC, the overall median adherence improved from 70% at baseline to 100% by 18 months, while PPE improved from 60% to 100%, and screening from 90% to 100%. The greatest improvement was in physical distancing, which was 30% at baseline and reached 100% by 12 months and regressed slightly by 18 months to 80%.

Conclusion: A hospital-based IPAC hub that offered consistent on-site auditing and performance feedback in LTC/RH has supported improved adherence to IPAC practices. Furthermore, targeted education and training reinforced frontline awareness and promoted internal IPAC capacity. Further long-term evaluation is needed to determine the impact of these improvements on resident outcomes.

COMPARING EDUCATION HUDDLES TO FORMAL EDUCATION IN LTCH SETTINGS DURING COVID-19 PANDEMIC (THE IPAC HUB EXPERIENCE)

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Issue: Staff in long-term care homes (LTCHs) had increased needs for infection control (IPAC) education, but decreased time to attend education during COVID-19 pandemic. Healthcare providers needed education to prevent the spread of COVID-19 amongst staff, visitors and residents. Critical IPAC education included donning and doffing of personal protective equipment (PPE), hand hygiene, additional precautions, routine practices and point of care risk assessment. **Project:** The IPAC hub conducted assessments to assist LTCH stakeholders in applying IPAC principles in their settings. Gaps identified during visits were addressed through education. Huddles, 10-15 minutes in length, were conducted on evenings and days at convenient times. The hub educator provided informal education, which included demonstration of donning and doffing and hand hygiene. Staff did not have time to demonstrate skills back. Multiple 30-minute formal education sessions were also conducted during the day over a three-hour period. The LTCH leadership or hub educator advertised and organized staff attendance. These sessions included interactive opportunities. Sessions included donning and doffing, hand hygiene, and other IPAC prevention measures, including chain of transmission. Staff demonstrated skills back to the IPAC hub educator.

Results: Advantages of formal education included a dedicated room without interruption, and increased time to teach and practice taught skills. Disadvantages of formal education included decreased staff attendance due to length of time needed away from resident care and impact on staff break times, more planning time required for educator, and increased need for supplies for planned activities. There was also increased costs for facilities, which provided additional staff to cover those attending the sessions. Advantages of huddles were convenience of setting (staff did not have to leave the unit), shorter sessions, higher attendance, staff preference, no additional cost for the home, less advance planning required by the educator, decreased use of PPE supplies for demonstration. Disadvantages of huddles included decreased time to ask questions, greater distractions, and unscheduled events which meant that not all staff were able to attend, and the need for more sessions due to physical distancing requirements.

Lesson Learned: Although staff in LTCHs preferred huddles, there was no opportunity to demonstrate critical IPAC safety skills such as donning and doffing of PPE and hand hygiene. The hub educator overcame this barrier through one-on-one teaching when doing IPAC rounds on units. Due to the staffing shortages during COVID -19, huddles were a more convenient and faster way than formal sessions to provide required IPAC education. A combination of both staff huddles with follow-up and formal education sessions was optimal to reinforce important IPAC measures.

CONTINUING CARE AND IPAC: MEETING IN THE MIDDLE TO ACHIEVE RESIDENT SAFETY AND QUALITY OF LIFE

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Issue: Approximately 500,000 people in Canada live in residential care facilities in Canada, primarily long-term care or seniors care homes (Statistics Canada, 2021). Implementing infection control practices in continuing care settings comes with unique challenges. Strict adherence to infection control principles is required to prevent transmission of microorganisms to frail residents. However, strict infection control measures can be met with resistance by residents, families, and site administration since, unlike acute care, these settings are considered the resident home. Therefore, restrictions to movement, visitation, and activities as part of transmission control measures can lead to frustration by continuing care. Requirements for IPAC measures can be confusing with the mix of semi-private and private resident suites, and congregate/common shared living spaces.

Project: Provincial continuing care regulations, accreditation requirements, and provincial health authority expectations related to infection control can cause confusion and mixed messages for care centre staff who are balancing these expectations while trying to maintain a home-like environment for the residents. IPAC and continuing care providers can work together to find common ground and compromise on infection control issues that are feasible in a congregate living environment. The definition of "risk" in continuing care settings should be viewed

holistically. The risk of residents contracting infection and having negative outcomes should be balanced with risk to personhood and decreased quality of life when restrictive measures are implemented. Sites are tasked with balancing the risks to individuals with the risks of the other residents, staff and visitors. The pandemic has hit the continuing care sector particularly hard, with very large outbreaks in all provinces, and this has demonstrated the importance of strong IPAC practices in these settings (Statistics Canada, 2021). However, the devastating impact of reduced visitation and social isolation in the resident population has also been well documented (LeVasseur, 2021, Hindmarch *et al.* 2021, Rodrigues *et al.*, 2021) Therefore, it is more important than ever for IPAC and the continuing care industry to engage in a collaborative problem-solving process to implement practices that are achievable, flexible, and realistic in this unique setting. Care for individuals living with dementia pose challenges with implementing outbreak measures due to wandering and cognitive impairment and thus creative solutions must be explored. **Lessons Learned:** Engagement between site administration and IPAC, along with collaboration with residents, family members, health authorities and government to share information and problem-solve goes a long way towards finding common ground and ensuring IPAC measures are integrated appropriately.

A LITTLE EXERCISE GOES A LONG WAY – CREATING A TABLE-TOP EXERCISE FOR LONG-TERM CARE HOMES AND RETIREMENT HOMES

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Issue: In the fall of 2020, the Ontario government, in an effort to prepare for the second wave of COVID-19 and other respiratory viruses, created an IPAC hub model to support congregate care settings. In Toronto, the IPAC hubs were led by a hospital resource partner (HRP) and worked alongside local public health units (PHUs). Throughout the COVID-19 pandemic, many local and provincial guidance tools were made available to support Infection Prevention and Control (IPAC) practices for long-term care (LTCHs) and retirement homes (RH). These documents included checklists, webinars, recommendations, and best-practice documents. Our IPAC hub, the HRP and local PHU identified an opportunity to provide additional support for the application of these tools – a table-top exercise (TTX). The Ministry of Long-Term Care in Ontario and the Centers for Disease Control and Prevention (CDC) have recognized that TTXs are a well-recognized tool to support response planning.

Project: The HRP collaborated with the local PHU on the creation and delivery of a TTX tailored to the LTC and RH settings. Based on the current index of concern, COVID-19 was selected as a pilot case scenario. These case scenarios were based on real-life examples. The homes were asked for a one-hour time commitment to review two case scenarios via video conference. The invitation was sent to the IPAC champion, director of care and administrator. From the onset of the TTX, it was stated that this was not meant to be punitive, but was to help generate discussion around procedures, recommendations and guidance and to identify areas for improvement. Two case scenarios were created: resident with a positive COVID-19 result and staff with a positive COVID-19 result. The resident case scenario focused on working through each step of the scenario, including management of roommates, identifying high-risk exposures, principles of outbreak management. The second case scenario focused on general risk mitigation strategies.

Results: Feedback was received from the homes that participated and it was overwhelmingly favourable. All homes found the exercise useful and enjoying participating and were willing to participate in more TTXs. As a result of the feedback received, additional TTXs have been created and delivered by the HRP and PHU using examples of other organisms of IPAC importance. Our goal is to create and deliver one TTX per month. We have factored in seasonality of organisms and have prioritized those currently circulating or predicted to circulate. These TTXs have also been shared with other IPAC hubs.

Lessons Learned: Finding different ways to engage and apply knowledge learned through TTXs can support critical thinking and continuous learning and preparedness while ensuring that the participants know the TTX is not punitive but a safe forum to ask questions and learn.



TOXIC ANTERIOR SEGMENT SYNDROME: WHAT IS IPAC'S ROLE IN CLUSTER EVENTS?

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Issue: Cases of toxic anterior segment syndrome (TASS) in post-operative ophthalmic procedures, while rare in occurrence, require immediate investigation into potential causes to prevent further cases. While the etiology of TASS is inflammation-based, it shares similar symptomology to endophthalmitis, which is caused by an infectious process. Access to standardized TASS guidelines that provide case definitions, communication procedures and outbreak protocols are essential for swift action in cluster management. Additionally, support provided from infection control professionals (ICPs) during case investigation, outbreak management, and the audit review process are fundamental to evaluating and mitigating risk of future cases of TASS. ICP review of TASS cases is an opportunity to also identify and mitigate endophthalmitis infection-related risks.

Project: Following notification of three cases of TASS and one case of endophthalmitis, investigations were initiated to identify potential causes and epidemiological links. Consultation between Infection Prevention and Control (IPAC) and IPAC medical leads assisted in case definitions. ICPs provided virtual and onsite support consulting on patient symptomology and sharing of existing operational guidelines and resources. Most importantly, ICPs performed lead roles in audits of the operating room and medical device reprocessing department. IPC findings were reported to stakeholders along with recommendations to prevent future cluster events.

Results: Investigations supported by IPAC did not find any causes or urgent epi-links between the three cases of TASS, which is also a common outcome in available literature. These investigations included an IPC-led review of all ophthalmologic-related processes in the operating room, and a focused review of the medical device reprocessing department's ophthalmic instrument procedures. Review findings included multiple low risk discrepancies between protocols in practice and manufacture instructions for use including pre-cleaning of instruments, sterilization settings, and cleaning solutions. Overall, the most significant finding was the need for specific TASS-related protocols and guidelines which align with national protocols.

Lessons Learned: Early recognition and swift action are critical to achieving a successful response in cluster events. Access to TASS-specific protocols and guidelines is a key factor in achieving that success. Resources should identify communication algorithms, outbreak definitions and clear role definitions for stakeholders. As part of the multi-disciplinary team, IPC expertise played an important role in supporting both the initial epidemiological investigations as well as leading IPC focused audits. In conclusion, ICPs play an important role in TASS cluster outbreaks and their investigation findings are essential for achieving immediate, actionable results.

NOT ANOTHER COVID-19 OUTBREAK: THE UNINTENTIONAL CONSEQUENCES OF MOVING PATIENTS DURING HIGH COMMUNITY PREVALENCE OF COVID-19

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Background/Objectives: In Canada, the peak of the second wave of COVID-19 occurred in January 2021. During this time, unprecedented pressures were experienced by Mount Sinai Hospital (MSH) due to the increasing number of COVID-19 admissions, transfers to MSH through Ontario's incident management system (IMS), and pressures related to surges in non-COVID-19 patient care. Anticipating an increase in patients requiring specialized care due to COVID-19 complications, MSH designated a unit to specialize in high-flow nasal cannula (HFNC) oxygen therapy. On January 25, 2021, the HFNC unit began relocating patients not requiring HFNC to other units. The following abstract will reflect on the resultant risk of COVID-19 transmission which occurred following these transfers, and the investigation initiated by the infection prevention and control (IPAC) team.

Methods: COVID-19 management plans were overseen by the Outbreak Management Team. Epidemiological mapping was conducted through chart review and staff interviews.

Results: In preparation for the opening of a new HFNC unit, patients were moved to multiple new units across the hospital. Between January 28 and February 19, 2021, six COVID-19 cases were epidemiologically linked to transfers of patients off the

HFNC unit. These cases were not of at the time of transfer. In total, one additional inpatient unit outbreak resulted from the transfers. Fortunately, patients transferred to the remaining inpatient units, rehab centre, and long-term care home did not result in additional outbreaks. Moreover, there were four staff cases of COVID-19 linked to the outbreaks.

Conclusion: This outbreak highlights the risks associated with moving patients when there is a high prevalence of COVID-19 in the community due to the risks of unrecognized outbreaks. Moving patients between units should be minimized when done for non-medical reasons. Additional mitigation during times of high COVID-19 community prevalence should be considered, including potential test-based strategies and added additional precautions.

THE IMPACT OF COVID-19 ON POSTPONED OR CANCELLED SURGERIES AT NIAGARA HEALTH

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Background/Objectives: The fourth wave of COVID-19 has caused another ramp down for elective surgeries, leaving the surgical team to focus on emergent and cancer cases only. While awaiting results for COVID-19 swabs for patients entering the operating theatre is ideal, it is not always attainable in patients that require emergency surgery. Traffic flow for all emergent cases were automatically streamlined to negative pressure rooms, thus causing a further backlog of emergent cases as patients were left waiting for surgery. Understanding the risk difference when prioritizing which emergent surgical patients can move to the negative pressure room or non-negative pressure room and how we can prioritize without causing additional backlog, while keeping exposure risks to both the surgical team and patients to a minimum.

Methods: Changing the flow for this process by assessing patients using point of risk assessment. High-risk patients such as those that are unvaccinated, patients coming from an outbreak facility, or patients from a hot zone area/unit, will now utilize the negative pressure rooms. Lower-risk patients who are fully vaccinated, asymptomatic and pass the point of risk assessment, can utilize the non-negative pressure rooms. From January 2022 onward, pulling data from surgical cases from before and after implementation of the change of flow to see the wait times for emergent cases and exposure risk to staff and patients.

Results: Implementing a point-of-risk assessment, a pre-surgical clinical assessment and strategy for determining appropriate patient flow in the OR. Updating the surgical team on the appropriate personal protective equipment to use and deciding which patients can be placed in negative pressure rooms and which ones can be routed to regular rooms, will eliminate the additional backlog of emergent cases. In the three weeks prior to implementation, the total number of hours delayed was 471. In the two weeks after the new process was streamlined, the total number of hours delayed dropped to 48.

Conclusion: Utilizing increased infection control measures and collaborating in decision-making will decrease transmission of COVID-19 in the operating room, provide additional protection for the patients and surgical team, and in turn allow more surgeries to be completed, which will also assist in decreasing the overall backlog of surgeries.



IPAC RESPONSE TO DISRUPTION OF ALCOHOL-BASED HAND-RUB SUPPLY DURING THE FIRST WAVE OF THE COVID-19 PANDEMIC

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Issue: In spring of 2020, at the onset of the COVID-19 pandemic, supply chains were disrupted which affected a number of products, including alcohol-based hand rub (ABHR). Shipments of raw materials were limited, and manufacturers were unable to produce the sufficient quantity and quality of ABHR product to meet demand.

Project: At Mount Sinai Hospital, an acute care hospital in Toronto, Ontario, an ABHR conservation project was conducted in April 2020 in response to the ABHR shortage. A multi-pronged mitigation strategy was implemented. The goal of the project was to extend the life of the supply of ABHR, monitor use and supply, while maintaining high hand hygiene compliance. In collaboration with IPAC, medical device reprocessing department (MDRD), materials management, support services, and unit management an environmental scan was conducted across in-patient, out-patient and public spaces. To conserve ABHR supply, mitigation efforts were implemented and a list of key principles was created as follows: ABHR is readily available at the point of patient care and met minimum requirements for best-practice guidelines, available in every patient room/clinical area, accessible near personal protective equipment doffing stations, and strategically placed to ensure accessibility in public spaces.

Results: Prior to the pandemic, a total of 1,779 ABHR dispensers were in use across in-patient units at Mount Sinai, a total of 399 dispensers did not meet the key criteria for ABHR placement and were decommissioned. Dispenser signs were created to indicate which dispensers were decommissioned. Communication strategies were implemented to raise awareness and engage staff in conservation efforts. Procurement was able to identify and obtain a hospital grade ABHR that could be substituted. ABHR reserves and supplies were strictly monitored. Metrics were developed to assess risk of ABHR supply and identify units that were safe, at risk, or in crisis. ABHR usage and supply was tracked across Sinai until the fall of 2020 when supply chain constraints were resolved.

Lesson Learned: In a pandemic, healthcare facilities need to adapt quickly to changes in product availability and avoid complications associated with supply chain disruptions. In the event of future ABHR shortage, healthcare facilities should be pro-active and have a list of several vendors who can supply a variety of hospital grade ABHR in different formats. Furthermore, any device used for collection of hand hygiene data should be adaptable to a variety of ABHR dispenser formats to ensure there is no disruption in quality performance reporting. Dispenser placement should be consistent across the facility as to avoid unnecessary additions of ABHR dispensers which are not associated with the four moments of hand hygiene. Modifications to ABHR supply and restocking highlighted changes from previous practices, and the importance of education and resources for various stakeholders.

IPAC HUBS IN THE FIELD: IDENTIFYING AND SUPPORTING LTCH TRAINING NEEDS IN TIMES OF CRISIS

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Issue: Proper environmental cleaning and disinfection products and processes have been documented in the scientific literature as ways to prevent transmission of infectious agents in healthcare settings. The IPAC hub identified gaps in environmental service (EVS) practices and use of personal protective equipment (PPE) during an LTCH visit. Staff did not have knowledge of proper PPE donning and doffing and extended the use of gloves and cloths between resident spaces. The home did not have a standard operating procedure (SOP) for cleaning and disinfection for staff review. Staff did not understand how to read chemical labels and were using some chemicals on surfaces for which they were not intended. Staff were also unable to state the wet contact time. A need for staff re-training was identified.

Project: IPAC hub met with the EVS manager and identified a need for an education package and a SOP to address gaps in EVS staff knowledge. A needs assessment was conducted to determine content and an approach to education. The needs assessment included a review of current procedures to determine staff motivation and learning needs. The home had a modern chemical dispensing system, housekeeping carts, and colour-coded microfibre cloths and buckets. Staff practised good separation of clean and soiled items on the housekeeping carts and

janitor closets were cleaned and decluttered. Staff were, however, using chemicals inappropriately. Staff were educated to ensure they were aware of intended application of chemicals for floors and surfaces. The IPAC hub team developed a training package, which included trainer notes for donning and doffing PPE, hand hygiene, chain of transmission, and proper cleaning and disinfection processes. IPAC hub staff and EVS Manager collaborated to schedule a one-hour training session for all cleaners with practice exercises. Senior leadership attended the session, demonstrating their support for the training provided. The training package, including speaker notes was shared electronically and provided to all attendees. An SOP was provided for posting in the janitor closet as a resource for staff.

Results: A train-the-trainer program was developed for EVS staff to be used for future training sessions. The session was attended by all EVS staff and leadership. Provision of IPAC assessment, training and administrative controls (SOP) to EVS staff in a LTCH resulted in increased staff knowledge. Evaluations showed that staff felt more confident in their practices. Knowledgeable staff are better prepared to ensure their own safety and the safety of residents and visitors in the home.

Lessons Learned: These include the need to consider training needs when developing education, the value of leadership presence at training, and the need for IPAC expertise and presence in the field.

IS UNIVERSAL MASKING HERE TO STAY?

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Background/Objectives: Since May 14, 2020, universal masking has been established at Niagara Health facilities. This protective measure not only mitigates COVID-19 transmission. Wong *et al.*, (2020) found an absence of hospital acquired infections of Influenza A, B and Respiratory Syncytial Virus and COVID-19 with universal masking with compliance rates of 100% and 75.9% for staff and patients, respectively. This demonstrates that universal masking can significantly reduce the transmission of various respiratory infections within the hospital setting. Additionally, Kociolek *et al.*, (2021) found that universal masking was associated with decreased healthcare worker (HCW) COVID-19 infection when compared to HCW infection rates prior to the universal masking policy. The objective of this paper is to determine the significance of these interventions at Niagara Health, and whether they should continue post-pandemic.

Methods: A retrospective study comparing non-COVID-19 respiratory outbreaks declared at Niagara Health from November 2018 to November 2021; reviewing 18 months before and after implementation of mandatory universal masking. Electronic searches in *PubMed*, *Medline* were reviewed using keywords: universal masking. **Results:** There were five non-COVID-19 respiratory outbreaks declared across all Niagara Health sites from November 2018 to May 2020, eight months prior to universal masking. During the first 18 months of mandatory universal masking, there was only one non-COVID-19 respiratory outbreak declared at Niagara Health. This demonstrates an 80% decrease in non-COVID-19 respiratory outbreaks with the implementation of universal masking. Additionally, all respiratory outbreaks occurred during peak flu season from December to February.

Conclusion: Universal masking was initiated during the start of the COVID-19 pandemic, and has proven to be beneficial in protecting patients and staff. This measure should continue beyond the COVID-19 pandemic, especially during peak flu season.



ALLEVIATING BED PRESSURES THROUGH IPAC BEST PRACTICES

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Background: Acute care capacity challenges significantly increased during Omicron transmission. Rapid increase of COVID-19 cases presented from December 20, 2021 to January 28, 2022 affected hospitals unlike previous waves, as they aimed to manage a surge in COVID-19 cases amidst being already at full capacity. Emergency planning, including redirecting of patients to other hospitals was not an option, as Ontario hospitals faced the same challenges. IPAC contributes significantly to alleviating bed pressures through providing guidance on movements and the cohort of patients to help mitigate the risks of disease transmission.

Methods: A colour-coded algorithm was developed for clinical teams to follow a cohort of patients in consultation with IPAC. The algorithm highlighted the need for private rooms by grouping patients in semi-private and wardrooms and separated into zones based on risk for outbreak management. Six different COVID-19 patient types were identified: 1) Negative; 2) Positive; 3) Exposed; 4) Resolved; 5) PCR Pending/Passed Screening; and, 6) PCR Pending/Failed Screening.

In outbreak units, segregating physical space could be divided into three sections creating cold, warm and hot zones. Resolved cases were considered universal once grouping with all patient types was possible, with the exception of other known communicable diseases. Analysis was conducted using simple descriptive statistics.

Results: During the Omicron wave, four of five acute care sites within Niagara Health (NH) experienced a total of 19 COVID-19 outbreaks, including both in-patient and outpatient units and one long-term care facility starting December 22, 2021, and ending February 9, 2022. The average outbreak length was 16.73 days with long-term care being 35 days and maximum length in acute care being 24 days and total 178 healthcare-associated infections. Bed pressures were on average 30 patient admissions with no beds available daily at three out of the five sites. The algorithm was provided to the entire organization, clearly demonstrating which type of patients could be grouped together and in what zone of the outbreak unit. Education was provided to directors on the use of the algorithm and some directors adapted the algorithm for patient flow planning. The wait times in the emergency department after a decision to admit, until placement on a unit were consistent before and after implementation at 71.56-73.58 hours at the 90th percentile, and the number of bed movements remained consistent with the average number of bed moves per patient at 2.0 across all of NH. The peak of outbreaks (OBs) occurred on January 16, 2022 with a total of 13 simultaneous OBs with peak range from January 12 to January 19.

Conclusion: Bed flow remained consistent throughout the peak of Omicron at NH, while maintaining IPAC best practices. An aspect that contributed positively to reducing duration of OBs was the change from 14 to 10 days in which to declare an outbreak, which was initiated on January 17, 2022 at NH.

INFECTION PREVENTION AND CONTROL IN FEDERAL CORRECTIONAL INSTITUTIONS DURING THE PANDEMIC: A HARM REDUCTION APPROACH

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Issue: Correctional institutions are congregate living settings where persons in federal custody live, work, and interact, often in enclosed spaces. This has significant implications for the implementation of infection prevention and control (IPAC) measures to mitigate the risk of COVID-19 transmission and outbreak management. Institutions are also challenged by facility design, including factors such as age of buildings, limited space, inflexible infrastructure, ventilation systems, and the use of many shared facilities. The correctional population also has unique health needs. Patients may present with underlying chronic conditions, or have complex mental health needs. Security considerations, such as the inability for certain populations to mix, can also impact the ability to implement cohorts and other measures. Since the start of the pandemic, there have been a number of COVID-19 outbreaks among inmates and staff in federal correctional institutions across Canada.

Project: Correctional Service Canada (CSC) is the federal government agency responsible for administering court-imposed sentences of two years or more. As such, CSC is responsible for providing essential health services to offenders in accordance with professionally accepted standards. In response to the

COVID-19 pandemic, CSC has implemented a number of IPAC measures to prevent the introduction and spread of COVID-19 in correctional institutions. This includes the principles of outbreak management (i.e., test, trace, and isolate), whereby CSC developed a national testing strategy, internal contact tracing capacity, and clear patient care decision aids for isolation. Training and education for all staff working on site, along with the implementation of site-level risk assessments and IPAC audits to improve the culture of IPAC and foster basic understandings of communicable disease prevention in congregate living settings. Other achievements include strengthened relationships with local, provincial, and federal public health authorities, as well as unprecedented interdisciplinary partnership across sectors and areas of government, which we anticipate to continue well beyond the pandemic.

Results: In navigating the many challenges to implementing an IPAC program in a correctional context, we have found a number of key lessons learned that we believe clinicians, policymakers, and infection control professionals can benefit from when undertaking the prevention and management of COVID-19 in non-traditional settings. The overarching need for a harm reduction approach that not only balances the infectious disease risk of COVID-19, but also the unintended consequences of restrictive measures, conditions of confinement, other mental and physical health needs, and security considerations is critical to IPAC practice in the correctional context. The tenets of a harm reduction approach can be applied to other IPAC programs, in both traditional and non-traditional settings.

BETTER TOGETHER: DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED MULTI-SECTOR ONTARIO HEALTH TEAM-WIDE INFECTION PREVENTION AND CONTROL PROGRAM

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Issue: It is well known that infection prevention and control (IPAC) knowledge and resources are not distributed equally across the healthcare system, and we have seen throughout the pandemic how settings without strong IPAC programs have been disproportionately affected by COVID-19. The Huron Perth and Area Ontario Health Team (HPA OHT) sought to provide consistent, high quality, evidence-based IPAC practices through the development of IPAC Huron Perth – a county-wide IPAC program which serves all HPA OHT partner organizations.

Project: IPAC Huron Perth is a four-pronged approach to IPAC in Huron and Perth and includes:

1. suite of IPAC policies based on current guidance and best practices in IPAC. Partner organizations will adopt the policies as is, or will review their own policies against these policies to ensure alignment with minimum IPAC standards.
2. Minimum expectations around basic IPAC education for all staff, and additional educational requirements for those identified as IPAC leads.
3. Requirements for IPAC auditing, including an annual IPAC risk assessment in addition to hand hygiene, environmental cleaning, and other audits as required or recommended by Public Health Ontario or regulatory bodies.
4. Participation in local IPAC Communities of Practice (CoPs). Partner organizations are encouraged to take part in existing CoPs where available (acute care, LTCH/RH) and new CoPs were developed for underserved sectors, such as primary care, hospice, and emergency shelters.

Results: Throughout the development of IPAC Huron Perth there was engagement across the HPA OHT. The IPAC Working Group, led by the IPAC hub lead and the HPA OHT Project Coordinator, consisted of IPAC representatives from each of the nine sectors represented in the HPA OHT. This group collaborated to create the IPAC policy manual and agreed on the four pillars of the IPAC program as outlined above. The project is still ongoing at this time, however at this time 13 of 65 organizations have adopted or aligned with the HPA OHT IPAC policies, and that many more were expected to get on board before the deadline of March 31, 2022. More detailed results can be provided after that date.

Lessons Learned: OHT partner organizations with no previous exposure to IPAC before the development of this program would have benefited from an initial educational campaign which focused on the fundamentals of IPAC, including rationale for, and benefits of, a strong IPAC program in non-traditional healthcare settings.

1. Developing and implementing the program in the midst of the pandemic was both challenging and opportune. The new pandemic reality provided intrinsic and extrinsic motivation to improve IPAC programs, however, IPAC leads had less time than ever to dedicate to this task.
2. Compromise in language, but not in the standard of care, was required in order to achieve buy-in from all organizations. For example, the term “healthcare worker” did not resonate with less traditional healthcare settings such as shelters



and group homes resulting in disengagement with the program. Also, changing the goal of “adoption of a shared IPAC policy manual” to “alignment with minimum IPAC standards” allowed more flexibility for larger corporations with minimal control over their organization policies.

CONTINUING COLLABORATION WITH THERAPEUTIC RECREATION DURING THE PANDEMIC TO ENHANCE PATIENT SAFETY DURING GROUP ACTIVITIES

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Issue: Our hospital is a 464-bed complex care and rehabilitation hospital. There is a strong therapeutic recreation program and group activities play an important role in patient rehabilitation and well-being. However, at least one hospital-wide influenza outbreak was linked to a large group mixed unit inpatient activity at our hospital, prior to the COVID-19 pandemic. To reduce the risk of influenza and other respiratory virus transmission during group activities, Infection Prevention and Control (IPAC), in partnership with the therapeutic recreation team had implemented several IPAC interventions including: active patient screening prior to participation, patient hand hygiene before and after the session, contact tracing list maintenance, unit-cohort sitting and elevator transfer, cleaning of shared equipment, and modification to group activities once there is an increase in respiratory viruses as identified by IPAC.

Project: In preparation for the COVID-19 pandemic, recognizing the importance of therapeutic recreation and group activities to patient health, IPAC collaborated with the leads of therapeutic recreation and built upon the pre-pandemic respiratory virus transmission mitigation work, to facilitate the program during wave one of the COVID-19 pandemic, while balancing patient safety.

Results: In addition to existing pre-COVID-19 pandemic IPAC mitigation measures in place, starting in wave one, additional measures implemented included: only allowing unit-based group activities; ensuring a minimum physical distancing of 2 metres between patients; procedure masks for patients during the sessions; minimizing shared items, and cleaning/disinfecting shared items between use; disposable items to be used whenever possible to reduce interpersonal sharing. In the most restrictive phases of the pandemic, therapeutic recreation programming had a maximum five participants, all from the same unit. Therapeutic recreation moved to 10 persons as restrictions eased. If patients could not participate in group programming due to additional precautions, they were provided with bedside leisure activities. No COVID-19 outbreaks or nosocomial transmission events were linked to group activities.

Lessons Learned: IPAC interventions are critical to reduce the risk of transmission of respiratory viruses during group activities. The collaboration and creativity between IPAC and therapeutic recreation allowed for the continuation of group activities throughout the COVID-19 pandemic, while ensuring safe processes whereby potential risk of transmission was minimized during group activities. Ongoing collaboration between IPAC and therapeutic recreation is crucial to ensuring that patients can continue to benefit from participating in group activities during future respiratory virus seasons.

SAILING THE SHIP WHILE LEARNING TO SAIL: A NOVICE ICP'S APPROACH TO IPAC SUPPORT IN LONG TERM CARE HOME (LTCH) SETTINGS DURING COVID-19

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Issue: For novice Infection Control Practitioners (ICP), it was a challenge to learn and apply infection prevention and control (IPAC) best practices in the face of ever-changing information. Novice ICPs needed to develop strategies to manage their own learning needs in order to meet the needs of those they were supporting.

Project: The novice ICP identified the following needs: Principles of adult education, IPAC subject matter expertise, knowledge of settings, building relationships, time management skills, application of IPAC tools, technology and changing directives and tools. A power point module for adult learning principles was created for the team. By creating and delivering this module, presentation principles and skills were practiced with other team members. A plan was developed to set priorities for personal learning. Public Health Ontario (PHO) COVID-19 modules were completed before entry into the LTCH setting. Sessions with IPAC hub Manager identified three best practice documents, considered as minimum knowledge requirements (hand hygiene, environmental cleaning and disinfection and Routine Practice and Additional Precautions). PHO assessment

tools were reviewed by the IPAC hub Manager with suggested feedback. Time management skills were needed to complete both visits and report writing when working at home. An IPAC hub schedule was used to visits. A team schedule was provided based on requests and the ICP self-scheduled follow up visits. Tools used in managing schedules included electronic task lists, outlook calendar entries, electronic flags, email rules and alerts. Maintaining currency with the most recent Ministry directives was overcome by saving the link to Ministry and PHO websites for ease of access, sharing the workload to review changes in documents, networking with stakeholder partners for updates and review of summary of changes. Technology challenges included access to shared remote drives, learning new ways to connect in meetings (Teams and Zoom). These were overcome through online learning modules and learning management systems at the host hospital. Relationship building with homes was developed through active listening, debriefing at end of each visit, and a supportive approach that included helping with implementation.

Results: The knowledge, skills and experiences gained in one year, working as a novice ICP in the LTCH setting during the COVID-19 pandemic has been exponentially greater than could have been imagined. Success has been due to the described planned approach, a diligent work ethic, education, time management strategies and support to and from IPAC hub teammates. In addition, building a good working relationship with LTCH staff, supported the success of capacity building in IPAC programs during the pandemic.

USING AN IPAC CARE BUNDLE TEAM APPROACH TO IMPROVE KNOWLEDGE-BASED LEARNING AND SKILLS TO REDUCE COVID-19 TRANSMISSION IN THE ICU: LET'S WRAP IT UP

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The COVID-19 global pandemic has evolved into unprecedented severity of illness, with new variant strains impacting the critical care setting in the healthcare systems. Five waves of this pandemic has led many healthcare providers to work with various degrees of mental and physical disorders. Exhausted healthcare workers along with trying to follow the Public Health Ontario IPAC best practices and guidance documents, increased the risk of potential COVID-19 exposures, making it difficult to keep up with their own safety and providing optimal patient care. Diverse modes of education was necessary to support front line staff with the changing guidelines. Bundles of care are evidence-based practices grouped together to encourage the consistent delivery of practices. Bundles of care are common in the ICU setting such as VAP and CLI. This report outlines an IPAC care bundle team approach that can be used as an educational guidance tool in the ICU setting with principles that can also be applied to other healthcare services. This approach can help coordinate and systematically organize the COVID-19 guidance for infection control professionals to improve the knowledge-based learning and skills to front line staff.



PROACTIVE COVID-19 TESTING UPON ADMISSION AND ITS IMPACT ON NIAGARA HEALTH

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Background/Objectives: As COVID-19 transmission advanced since December 2021, within the Niagara Health System, identifying COVID-19 positive patients became crucial who were asymptomatic and not tested upon admission, considering asymptomatic individuals just as able to infect others as symptomatic individuals. In attempts to better control the virus transmissibility, Niagara Health expanded COVID-19 testing for ALL patients admitted. Hence, timely and proactive testing, contact tracing, and appropriate isolation for all admitted patients resulted in controlled transmission from becoming explosive outbreaks, with the drawback of higher resource use.

Methods: Proactive testing for all admitted patients initiated after December 23, 2021, was used to identify asymptomatic COVID-19 positive cases to decrease viral transmissibility. A retrospective study was conducted in Niagara Health from December 23, 2021 to January 28, 2022 on patients who passed screening and ended up tested positive for COVID-19.

Results: 4.2% patients who passed screening received a PCR COVID-19 test ended up resulted positive. All admitted patients were placed in appropriate precaution and exposures were limited as a result. A total of 25 patients' exposures and potential outbreaks avoided.

Conclusion: Utilizing timely, proactive testing and IPAC control measures led Niagara Health to further control COVID-19 transmission due to the Omicron variant. Due to the increase testing, longer turnaround time, and shortage of resources led to bed flow issues/bed pressure. Further research required to determine better risk mitigation strategies.

EMERGENCY DEPARTMENT SCREENING FOR HIGH CONSEQUENCE PATHOGENS

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Issue: As the COVID-19 pandemic enters its third year, the threat of novel pathogens emerging remains. As travel restrictions ease, the importance of screening patients with infectious symptoms for a relevant travel history continues to be important. While adherence to Routine Practices is paramount for the protection of healthcare workers (HCW), the emergence of novel respiratory pathogens and large outbreaks of Ebola have necessitated the use of protective measures above those that are normally initiated for patients with infectious symptoms. For pathogens that are not known to circulate in Canada, identifying patients with recent relevant travel histories is key to implementing the highest level of protection as early as possible in a care episode.

Project: Our team sought to 1) review and enhance the symptom and travel screening process in the emergency department (ED), and 2) to devise a system to ensure all HCWs have easy access to up-to-date information on areas of the world where high consequence pathogens (HCP) are currently circulating.

Results: Chart audits in the ED revealed low completion rates (30/98, 31%) of the previous screening form; however, patients presenting with infectious symptoms were appropriately placed on Additional Precautions most of the time (9/10, 90%). To address this documentation gap, the Infection Prevention and Control (IP&C) team worked in conjunction with ED staff to make the screening form more concise and user friendly. This was done by decreasing the number of questions and changing the format so relevant questions were grouped according the type of Additional Precautions required. Pathogens potentially causing a patient's symptoms were also added. An intranet page listing HCP areas of concern was created along with a process to ensure this information is regularly reviewed and updated.

Lessons Learned: We worked closely with ED staff to ensure the form met their needs and workflow, as this is where patients with infectious symptoms and recent travel are most likely to be seen. However, much of the ED triage process is done electronically and so the completion of a paper form remains a barrier. It is hypothesized that a technological intervention that incorporates symptom and travel screening into the existing electronic triage process would yield higher compliance. The creation of an intranet page listing HCP countries of concern has been beneficial in that staff have continuous access to up-to-date information. The

process of ensuring this information is kept up to date however, is time consuming and error prone as one individual on the IP&C team must regularly search multiple websites for the current status of several outbreaks around the world. The creation of a national or provincial IP&C-focused resource listing the locations of current HCP outbreaks that is regularly updated would ensure all facilities are screening patients consistently using the most up to date information.

RAPID REVIEW AND EVALUATION OF PERSONAL PROTECTIVE EQUIPMENT, HAND SANITIZER AND DISINFECTANT WIPES IN THE MIDST OF A GLOBAL MEDICAL SUPPLY CHAIN CRISIS

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Issue: The COVID-19 pandemic has placed unprecedented strain on the global medical supply chain. In particular, personal protective equipment (PPE), hand sanitizer (HS) and disinfectant wipes (DW) were in very short supply in 2020 as industries and individuals around the world stocked up. As a result, healthcare organizations were forced to explore non-conventional sources for these items, including donations and suppliers who had recently transitioned to producing these items. It remained imperative, as new products were being sought, to ensure they were safe and met healthcare standards.

Project: In order to efficiently review PPE, HS and DW available for purchase or donation, an interdisciplinary committee was formed to ensure that all products used in our organization met required standards (e.g., Health Canada, ASTM, etc.) and performed well in a clinical environment. The committee was comprised of members from the Infection Prevention and Control, Occupational Health and Safety, Enterprise Risk Management, Medical Stores and Finance departments.

Results: The committee met daily at the peak of global supply chain challenges to rapidly evaluate all potential sources of PPE, HS and DW, perform hands on evaluations and review supporting documentation. The process was refined over the course of the pandemic and culminated in the creation of a PPE standards document to serve as a reference for all future procurement decisions. A process to incorporate frontline testing into the evaluation was created to ensure adequate usability and performance in a clinical environment. Notification of product changes were posted on the hospital's intranet site to assure staff new products had been rigorously evaluated. A comprehensive documentation and tracking system was developed to record all evaluations, and feedback from the committee to vendors also resulted in improvements in products.

Lessons Learned: The use of an interdisciplinary committee to review and approve all new PPE, HS and DW was vital to ensuring quality and safety during the pandemic in spite of disruption to the global medical supply chain. One strength of this approach is that it went beyond ensuring that safety standards were met, but also included clinical usability and performance based on clinical assessment. Although products changed rapidly due to the changing supply chain, healthcare worker feedback was that being able to compare the products they were seeing on their units to a list of approved products on the hospital's intranet site provided reassurance that a thorough evaluation had been completed. A feedback loop from healthcare workers allowed the committee to share real-time information with product vendors that resulted in iterative improvements.



UTILIZING DOCUMENTATION DATA DURING THE COVID 19 FOURTH WAVE

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Background/Objectives: Documentation is an accountability for regulated healthcare professionals under the *Regulated Health Professionals Act, 1991, S.O. c 18* care and this accountability is shared by all non-regulated health professionals who provide direct patient/client care. In the acute care practice environment, the expectation is to document patient/client assessments utilizing best-practice guidelines. The implementation of an organizational wide health information system that captures COVID-19 status, as well isolation classification and isolation precautions can aid in the safe placement of patients/clients requiring isolation and provide healthcare professionals with timely access of information. We are continually working towards the development of standardized fields to aid in future data collection and analysis. Methods: Current data fields include: isolation; aerosol generating medical procedure (AGMP); acute respiratory illness (ARI); *clostridium difficile/c. diff* suspect; COVID-19 positive/COVID-19 suspect/COVID-19 variant of concern; CPE; ESBL; gastrointestinal illness; multi-resistant pseudomonas; MRSA; VRE and TB. Additional variables include: COVID-19 HAI/non-HAI/under investigation; COVID-19 resolution date.

Results: Outputs and reports generated: Total number of COVID-19 cases, total number of active cases; infection control workload; isolation burden; total number of HAI/non-HAI COVID-19 cases; total number of resolved cases. Conclusion: Documentation and reporting allows Niagara Health to extrapolate volumes, trends, prevalence and incidence data crucial for reporting with key stakeholders during the COVID-19 pandemic. This helps ensure the reliability and the accuracy in the public reporting to the ministry for hospital acquired cases of COVID-19 to track and monitor our COVID-19 resolutions. Information can be generated to impact resource utilization, identify opportunities and gaps and contribute to safe practice.

TRANSMIT KNOWLEDGE, NOT MICROBES: NOVEL ONLINE LEARNING TOOLS

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Issue: Sunnybrook Health Sciences Centre is a 1355 bed quaternary care centre in Toronto Ontario. Preventing, managing and recovering from outbreaks has always played an important role in Infection Prevention and Control (IPAC). Didactic education and job shadowing have been prevailing strategies for training new IPAC members. However, contemporary strategies would incorporate experiential learning using a heutagogy approach for onboarding new staff in a healthcare setting.

Project: Using a heutagogy approach, an IPAC teaching guide that supports various learning styles with experiential learning opportunities was developed. The guide provides innovative tools that target training on preventing, controlling and recovering from outbreaks including relevancy to a global pandemic. Existing research, resources and experiences at SHSC formed the basis of the cumulative guide. To support information sharing, it was created on a platform that could easily be shared with other organizations.

Results: A public google website called "Learning from Outbreaks: Pre, Peri and Post" was developed based on adult learning theories using a quality improvement focus. Quality improvement exercises and hands-on tools engage the learner in a series of activities that support prevention, control and recovery from outbreaks. Audit tools, scaffolding exercises and games augment the learning journey and enable the participant to engage in self-determined learning. The website has been incorporated into the existing orientation manual for new staff at SHSC.

Lessons Learned: Heutagogy and experiential learning are highly effective strategies to train and empower learners who come with their own life experiences, self-efficacy, and growth needs. Experiential learning is facilitated through quality improvement initiatives and can also result in transformational organizational changes. Didactic instruction and job shadowing remain complimentary tools that supplement an IPAC learners' ability to develop their own critical thinking and reflection in the learning process. Developing a free Google website should be leveraged as a method to share resources and training modules across organizations.

IPACWORKS...EVERYWHERE

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Issue: Airplane hangars, tents, decommissioned patient care units and remote communities all have one thing in common...they needed Infection Prevention and Control (IPAC) during the COVID-19 pandemic in order to support safe surge capacity for patients and staff. The COVID-19 pandemic has provided extraordinary pressures on the healthcare system and non-conventional patient care areas became realized. Likewise, remote healthcare settings, already resource challenged, lacked IPAC expertise and infrastructure to effectively manage COVID-19 outbreaks and needed out-of-the-box solutions to improve care and staff safety. The IPAC department at Sunnybrook Health Sciences Centre, in Toronto Ontario, supported multiple projects both internally and externally.

Project: Assimilate a compilation of projects that created additional surge spaces or redeveloped existing infrastructure to support COVID-19 response during the pandemic. Thread common features found in each project into basic concepts that an IPAC professional must consider when supporting these developments. Additionally, highlight key operational features that made the operations successful. Results: IPAC staff who have experience in construction or renovation have a solid foundation to help inform the design and development of new patient care environments in austere, resource limited or unchartered environments. Essential elements to consider: physical barriers or layout, portable walls, novel cleaning approaches, ventilation, preferred patient populations, microbiological testing criteria/accessibility, waste disposal, safe water and food. Partnerships with internal stakeholders, industry and third-party consultants may help to inform recommendations. Evergreen IPAC operational manuals and training protocols were developed for each setting. Continuous quality improvement activities and assessments facilitated improvements to operational manuals as multidisciplinary teams identified implementation challenges in real-time.

Lessons Learned: Creating pop-up patient units or care areas involve careful consideration of risks and benefits. Creative thinking, versatility and teamwork is essential to success. Simulation activities guided by expert staff are extremely helpful where available. Ongoing assessments and evaluations are important to inform changes that can improve workflow or identify deficient resources. IPACWORKS not only EVERYWHERE, but with EVERYONE.

COVID-19 MONOCLONAL ANTIBODY OUTPATIENT INFUSION CLINIC: LESSONS LEARNED

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Introduction: While monoclonal antibodies have been approved by Health Canada for the treatment of COVID-19 since the end of 2020, their use within outpatient clinic settings have not yet been fully integrated and operationalized within the healthcare system in Ontario. Monoclonal antibodies (Mab) are laboratory created proteins that mimic the body's ability to mount an immune response to an infection (Government of Canada, 2020). Patients early in their infection treated with mAB, have decreased risk of progression to severe disease. Supply of mAB in Ontario is currently limited. The aim of this abstract is to share learnings on outpatient clinic implementation that adheres to all infection prevention and control protocols, identify eligible patients who would benefit from treatment and evaluate clinical outcomes.

Methods: In collaboration with a tertiary acute care centre, we piloted and opened an outpatient monoclonal antibody infusion clinic at Toronto Grace Health Centre (TGHC), a complex continuing care hospital located in Toronto, Ontario. Our clinic first opened on January 4, 2022 and provided patients with sotrovimab given by intravenous infusion, supported by on site monitoring by the CCC team, and virtual follow up by the referring acute care clinician. Patients were screened for mAB eligibility by the acute care centre, using the COVID-19 Science Table's Evidence-Based Recommendations on the Use of Casirivimab + Imdevimab, and Sotrovimab for Adults in Ontario. The aim of this paper is to share learnings on outpatient clinic implementation that adheres to all infection prevention and control protocols, identify eligible patients who would benefit from treatment and evaluate clinical outcomes.

Results: As of January 18, 2022 37 patients have been screened by the acute care centre and received treatment at TGHC. 22 (59%) males and 15 (40 %) females were seen in clinic. Median age of patients was 57.5 years. Median time to treatment from onset of treatment was five days. 24/37 (65%) of patients were



recipients of organ transplants, and 9/37 (24%) had history cancer as a primary past medical history. One patient was asymptomatic at the time of treatment. To date there have been no documented adverse reactions.

Discussion: This was one of the first outpatient mAB clinics assembled in response to a growing need for novel treatment in Ontario. From our experience we recommend the following: 1) Supportive leadership from collaborating centres; 2) Internet web-browser electronic system for shared patient medical records and orders; 3) IPAC consult to ensure appropriate set up of treatment room, patient flow and adherence to best practices; 4) Minimum of two nurses: preference for at least 1 ICU trained nurse; 5) Additional on-site expertise in venipuncture. Future metrics to evaluate treatment effectiveness include prospective follow up of hospital admission following mAB treatment.

Conclusion: Without a doubt there is a need for this type of novel outpatient infusion clinic as COVID-19 therapeutics emerge. As a result, we must be creative with how patients can access these types of time sensitive treatment within our current healthcare system. Many of our patients travelled from around the Golden Horseshoe region of Southern Ontario. Challenges for setting up and operationalizing this healthcare service requires flexibility in not only human resources, drug procurement, and logistics but also a willingness and recognition that during a pandemic there will always be a degree of uncertainty, despite planning and anticipation of adverse events.



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A background image of a laboratory setting with various glassware including beakers, flasks, and test tubes, some containing liquids. The lighting is bright and clinical.

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