2017 National Education Conference
Oral And Poster Presentations
Monday, June 19 and Tuesday, June 20, 2017
ORAL PRESENTATIONS

AWARDS:
1. Five (5) Best First Time Abstracts as chosen by the Abstract Review Committee. This is an abstract whose lead author has never before submitted an abstract to IPAC Canada or CHCA Canada. The award of $500 each is sponsored by Sage Products LLC (now part of Stryker). Award winners will be acknowledged at the Closing Ceremonies, June 21.
2. The three (3) top oral presentations as chosen by attendees will be repeated on Wednesday, June 21 (9:30 a.m.-10:15 a.m.). One oral presentation will be announced as Best Oral Presentation and receive an award of $500 sponsored by 3M Canada. Award to be announced at the Closing Ceremonies, June 21.
3. Best Poster Presentation as chosen by attendees will receive an award of $500 sponsored by 3M Canada. Award to be announced at the Closing Ceremonies, June 21.

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

DEADLINE FOR SUBMISSION: 5:00 p.m., Tuesday, June 21.

MONDAY, JUNE 19, 2017
ROOM TBA
BEACH GAMES - EDUCATION (WITH A TWIST)
3:00 p.m.

#iamprotecting: NUDGING TOWARDS POSITIVE CHANGE BY SHARING THE “WHY”
Sabrina Divell1, Cheryl Crouch1, Michael Rotstein1
1St. Joseph’s Health Centre Toronto
Every year across Canada, health leaders tell patients and providers to get their flu shot. Data and statistics are shared on how vaccination can help prevent people from getting influenza. Like most hospitals, St. Joseph’s Health Centre Toronto used the same messaging with little results – until 2013. This session will describe how following a year where we were the fourth-worst performing hospital in the Toronto Central LHIN for staff and physicians getting their flu shot (40% compared to a 50% average at other hospitals); we launched a campaign focused on lessons learned: engage leadership sooner, champions are key, and using small nudge marketing tactics help encourage positive behaviour. This translated into our “Who are you Protecting” campaign that used peer-to-peer personal storytelling focused on the human element of the flu – the WHY – across all frontline and leadership levels. This campaign saw significant increases in physicians, staff and volunteers receiving the flu shot moving from 40% compliance to 84% over three years) and reduction in sick time (decreasing sick time incidents from 169 to 53 over the same period).

3:15 p.m.

DESIGN-BASED RESEARCH: AN INNOVATIVE RESEARCH METHODOLOGY TO STUDY IPAC EDUCATIONAL PRACTICE
Gwyneth Meyers1, Elizabeth Henderson1, Michele Jacobsen1
1Alberta Health Services, 2University of Calgary
Background: Conventional research methods used to study IPAC educational interventions have been identified as problematic and contribute to inconsistent research outcomes regarding the effectiveness of education to impact healthcare provider IPAC practice. The field needs to adopt participatory research methods that have been designed to study educational impacts in the contextual complexity of healthcare environments. Design-based research (DBR), emerging from the field of the Learning Sciences, offers an innovative research methodology for studying change and innovations in educational practice.

Methods: DBR was used to design, develop, implement and evaluate an innovative educational professional development experience for ICPs in the Alberta Health Services (AHS) IPAC program. The goal of the innovation was to build the ICPS’ educational expertise and shift their conventional teaching practices to include more contemporary, active and engaged teaching approaches. The professional development experience was situated within a collaborative community where learning was mediated through participation in contemporary teaching and learning activities. The study was responsively grounded in theory and practice which systematically informed intentional engineered design change of the professional development experience made through several micro iterations within one macro DBR cycle over a period of 16 months.

Results: Several practical and theoretical study outputs and outcomes contributed to the development of ICPS’ educational expertise, shaped ICPS’ identity as educators, and influenced changes to the ICPS’ teaching practices. These outputs and outcomes contributed to theoretical and practical knowledge and understanding of IPAC educational practice, and led to recommendations for the advancement of the AHS IPAC program’s education approaches.

Conclusions: DBR is an effective, innovative research methodology for the study and exploration of IPAC educational practice. The DBR approach is designed to address the contextual complexity of the healthcare workplace and contribute to theoretical and practical knowledge for IPAC teaching and learning. As an innovative, participatory research methodology, DBR challenges our conventional concept of education and opens new possibilities and direction for IPAC educational research.

3:30 p.m.

THE GAME OF GOWNS, GLOVES AND MASKS: USING SIMULATION-BASED EDUCATION FOR PPE AND HAND HYGIENE PROTOCOL TRAINING
Dione Kolodka1, Gwyneth Meyers1, Joseph Kim1, Ghazwan Altabbaa1
Alberta Health Services
Issue: Personal protective equipment (PPE) is used by healthcare providers (HCPs) to prevent direct contact with body fluids and potentially infectious substances in clinical settings. Protocols governing the appropriate use of PPE require specific physical manipulations of the equipment and also rely on effective hand hygiene in order to ensure the safety of HCPs and patients. Infection Prevention and Control (IPAC) in collaboration with the Internal Medicine (IM) Simulation program identified the need to assess medical residents’ PPE practices during their clinical rotation due to the spectrum of formal training provided to trainees.

Project: IM Simulation Observed Structured Clinical Exams developed case scenarios requiring additional precautions. Using a structured observational tool, infection preventionists observed first and second year IM residents (PGY1 and PGY2) for adherence to PPE protocols and associated hand hygiene. A protocol breach was defined as any incorrect technique or missed PPE/hand hygiene opportunity that could lead to potential contamination.

Results: All 34 PGY1s were noted to breach at least one protocol step with respect to PPE and hand hygiene. Such breaches enable the potential for contamination. 94% of PGY1s had breaches resulting in the potential for self-contamination, 29% potentially contaminated hospital PPE supplies and 74% missed hand hygiene steps. Of the 15 PGY2s observed, 87% had PPE protocol breaches resulting in the potential for self-contamination, 40% potentially contaminated the PPE supplies and 67% missed hand hygiene steps.

Lessons Learned: IM residents need ongoing teaching as well as hands-on practice with PPE and hygiene protocols as these are an essential component in the prevention of hospital acquired infections. Simulation-based education may be a useful environment to train and receive constructive feedback to perfect their practices.

3:45 p.m.

HITTING THE GROUND RUNNING: AN INNOVATIVE APPROACH TO NOVICE INFECTION CONTROL PROFESSIONALS (ICP) EDUCATION
Vicky Willet1, Francine Paquette1, Mandy Deen1, Lori Schatzler1, Laura Farrell1, Amanda Britard1, Laurie Rodnick1, Rebecca Maskевич1, Amy Wrobel1, Brandi Kirchen1
1Public Health Ontario
Issue: In 2016 several Public Health Ontario’s (PHO) regional infection prevention and control (IPAC) support teams identified a need to support novice ICPS with <2 years’ experience in acute and long-term care. Discussion of challenges in reaching geographically dispersed stakeholders led to the development of a virtual IPAC education series that would empower novice ICPS to implement existing resources into their work, instead of traditional education approaches.
Project: The eight session webinar series, each 30-45 minutes in length, highlighted existing IPAC resources using an activity guide to enhance engagement. Webinars included polls, discussion questions, chat box and audio line to encourage interaction.

Results: An average of 31 stakeholders attended each session, with 59 attending more than one. A poll was conducted after each session, focusing on the PHO corporate measure “Overall how would you rate this session?” The average rating was 4.1/5. Two months after completion, a formal evaluation of the series content, delivery modalities, and guide, was emailed to registrants. A total of 31 responses were obtained, with 26 respondents fully completing the survey (44% response rate). Overall, 89% of respondents strongly agree/somewhat agree that the “webinar improved my understanding of the relevant IPAC resources.” Approximately 81% agreed that the mode of delivery enhanced their learning experience. Over 92% of respondents agreed the guide added value to their learning experience. Upwards of 92% of participants felt more confident upon completion of the series to address IPAC issues and 73% indicated they were making changes to their IPAC program.

Lessons Learned: Further evaluation is currently underway to identify if featured IPAC resources were implemented upon completion. Participants felt the delivery method was engaging, with 96% requesting future in-depth implementation education sessions and advanced delivery of learning packages.

4:00 p.m.

ESTABLISHING PROOF OF CONCEPT FOR A TABLET-BASED STAFF TRAINING TOOL TO HELP IN THE PREVENTION AND CONTROL OF HEALTHCARE ASSOCIATED INFECTIONS

Alastair MacNomand1, Colin MacCuff2, David Loudon1, Susan Wan3

Glasgow School of Art

Background and objective: Although educational programs focusing on healthcare associated infections increasingly employ visual images, our literature review found that very few evaluate process and impact aspects of these visualisations. Furthermore none reported on substantive design and co-development processes involving end users interacting with dynamic visuals. The Vision On project (http://visionon.org) sought to address this deficit by engaging a group of 150 healthcare staff in such processes to develop and evaluate a prototype tablet-based training tool.

Method: A 3-stage iterative prototyping and co-development process involved doctors, nurses, cleaning staff and hospital staff in other job roles. Themes of pathogen location, survival and transmission were developed and visualised on the tablet for three pathogens – MRSA, C difficile and norovirus using contemporary research evidence. Context was provided through a virtual world setting incorporating an environment/micro scale views. Learning points and other relevant text-based information accompanied the visualisations. Data were acquired at each stage from staff completing workbooks which included Likert scaled questions and invitations to comment.

Findings: Evaluations of the relevance, clarity, appropriateness and overall helpfulness of the evaluation prototype were very positive, with negative ratings never exceeding 5% of total responses. Visualisations were engaging and supportive of different learning styles. They offered staff a new contextualised perspective on pathogens. Information proved relevant for different staff cohorts, with a mix of experience levels. Visualisations increased participants’ awareness about pathogens by explaining ‘why’ IPC procedures should be followed.

Suggested further applications included: inductions for new starts, education in schools/universities, and refresher courses.

Conclusions: This work has established proof of concept and a new prototype is being developed from the feedback, with the intention of trialling by IPC managers during in-ward use.

4:15 p.m.

IMPLEMENTATION OF THE HAND HYGIENE 1B MOMENT IN A LEVEL 2 NICU UNIT

Doreen Alexander1, Dina Badawy1, Shaheen Doctor2, Judith Baisie1, Maureen Morash1, Wendy Carvalho1, Dianne Rice1, Maju McGuire2, Maureen Acombi1, Zorah Pichula1, Wil Ng1, Kevin Katz1

1North York General Hospital

Issue: Newborns in neonatal intensive care units (NICU) are at high risk for hospital acquired infections. The level 2 NICU at North York General (NYG) cares for infants >30 weeks gestational age. The blood stream infection (BSI) rate increased from 0 in 2011, to 3.4/1000 pt. days in 2014. Upon best practices review, it was noted that the 1B hand hygiene (HH) moment described by the Provincial Infectious Diseases Advisory Committee (PIDAC) document was not being followed (before contact with the neonate or the neonate environment).

Project: This project aimed to implement the 1B HH moment and to determine if the healthcare worker (HCW) compliance to the HH moment decreased the BSI rate. Meetings with NICU staff and Neonatologist commenced July 2016 to discuss the increased BSI rates and the need to observe practices in the unit. HH audits were conducted (August 2016) and findings revealed that the 1B moment was not being done. Audit results were shared with the project team and a plan was developed by September 2016. A HCW multimodal educational strategy (printed poster, instructional video) was developed in collaboration with an NICU nurse.

The strategy highlighted the required HH moments in accordance with best practices. Mandatory educational sessions were conducted in September 2016. A total of 58 staff, including 2 physicians, was educated. HH audits (Oct 2016-Jan 2017) were conducted after all educational sessions were completed.

Results: HH compliance of 74% (25/34) for moment 1B has been achieved post project implementation. Ongoing data collection to assess the impact on NICU BSI rates is underway.

Lessons Learned: Periodic review and audit of adherence to best practices is imperative to protect our patients from hospital-acquired infections. Involvement of NICU staff in the project helped to avoid resistance of staff and improve staff engagement and buy-in.

ROOM TBA

STRENGTHENING THE NATION – QUALITY/PROCESS IMPROVEMENT

3:00 p.m.

FROM ROLES AND RESPONSIBILITIES TO PERFORMANCE: CLARIFYING EXPECTATIONS

Wendy Norman1, Gayle Loh1

1Island Health

This session will present the Island Health IPAC progress “Placemat”: a graphical dashboard which shows at a glance, how successfully IPAC is delivering on its commitments, managing its work, and monitoring infections, hand hygiene rates, etc. The metrics can be used to drive quality improvements with unit staff, or to reset priorities and refocus resources. Island Health’s team of 20 Infection Control Practitioners dedicated time to produce a detailed clarification of their role. Using existing standards as benchmarks, the team detailed the components of their work in order to achieve consensus and shared understanding of their scope of responsibilities.

Once the “what” of the role had been defined via the roles and responsibilities work, the IPAC Placemat was created to help the team manage the full scope of efforts. The Placemat tool is helpful in providing the team with an overview of progress and hot spots, as well as to identify opportunities to standardize work and create efficiencies and improvements.

3:15 p.m.

THREE Rs: RETHINK...REDUCE...ROCEFPHIN

Alisa Cuff1, John Buistista1

1Central Health

Issue: Third-generation cephalosporins are generally only necessary for a limited number of clinical situations in the treatment of nosocomial gram-negative infections. Ceftriaxone, a third generation parental cephalosporin antibiotic, has been long favored for use in the outpatient population owing to its once daily dosing and the broad spectrum of activity. However, given its broad spectrum of activity, it may lead to resistance in situations where narrow-spectrum, and possibly, oral antibiotics may be equally effective.

Project: A disproportional amount of ceftriaxone was being sent to several rural clinics for use in outpatients in comparison to use in the referral centers emergency departments. This prompted an antibiotic stewardship intervention; an audit from October 2011-October 2012 completed at one of the rural sites for defining the indications for use. The audit included: (1) the indication for each dose of ceftriaxone, (2) the dose used, and (3) the date administered.

Results: Once the audit was completed, a comparison was made to the indication for the Ceftriaxone use and the recommendations from the 2012 Anti-Infective Guidelines for Community-Acquired Infections. Out of the 48 patients who received ceftriaxone and had documentation provided to support indications for use. 64% of patients was not consistent with Anti-infective Guidelines for...
Community-Acquired Infections 2012 Handbook. This result could have actually been as high as 100% if none of the patients being treated for cellulitis had severe, non-facial cellulitis, facial cellulitis, or a diabetic foot infection.

Lessons Learned: 1. Education must be provided to prescribers in health centers, especially in sites where auditing does not meet accepted guidelines 2. Results of this audit to be shared amongst all facilities and medical advisory committees, so all prescribers may become aware of inconsistencies 3. Need to conduct future audits at current site as well as others with high ceftriaxone usage 4. The need to increase clinical documentation 5. Communication to all users on recommended clinical uses.

3:30 p.m.

CHEEP: CLEAN HANDS EQUIPMENT ENVIRONMENT PATIENT
Susan Jacka1, Evelyn Myles1
'Covenant Health

Issue: Despite many infection prevention and control (IPC) interventions, ongoing hospital acquired (HA) Methicillin-resistant staphylococcus aureus (MRSA), Clostridium difficile (C-diff), gastrointestinal (GI) and influenza like illness (ILI) transmission exists within Alberta’s acute care facilities.

Project: Infection Control Professionals (ICPs) advocate, educate and train healthcare staff about the principles and positive outcomes of effective cleaning interventions of hands, equipment, environment and patient. However, to our knowledge, there has not been an IPC led healthcare initiative that uses the concept of care bundles to improve patient outcomes. Using Routine Practices as a guide, IPC collaborated with stakeholders to bundle the four specific cleaning interventions of hands, equipment, environment and patient with the goal of increasing consistency, accountability and compliance to these specific to cleaning processes to reduce HA transmission. For six months, at two separate urban acute care hospitals in Edmonton, Alberta the CHEEP project was implemented. (Facility one completed the six-month project pilot and Facility two will complete their six-month pilot in April 2017). CHEEP interventions included HA MRSA/C-diff/GI and ILI surveillance, hand hygiene compliance monitoring every three months, a weekly documented deeper cleaning of shared patient/unit equipment/devices using a standardized checklist, increased environmental cleaning audits of patient spaces and the use of 2% chlorhexidine gluconate (CHG) daily patient baths. The CHG manufacturer recalled the product for five months; therefore patients were bathed daily with non-CHG cleansing cloths.

Outcome Measures And Targets: Lower rates of HA MRSA, C-diff infections, GI/ILI transmission, no GI/ILI outbreaks, weekly completion of cleaning checklist compliance rates of >80%, environmental cleaning audit rates of ≥ 80% and hand hygiene compliance rates≥90%.

Results: (For Facility One – Facility Two pending): No change in HA MRSA transmission, lower C-diff infection rates, zero GI/ILI outbreaks, an average of 71% compliance in completing the equipment checklist, environmental cleaning audit rates (placeholder) and increases in hand hygiene compliance rates although less than the target.

Lessons Learned: Implementation of the CHEEP Project resulted in positive patient outcomes. Just in time feedback helped to increase hand hygiene rates. Challenges included not completing the Cleaning Checklist reportedly due to lack of resources and lack of staff buy-in as well as the inconsistent availability of 2% CHG for patient bathing. Going forward, mitigation of challenges for successful implementation of CHEEP should include early engagement with staff, collaborative development of realistic tools and use of resources as well as regular touch-base meetings between IPC and the stakeholders.

3:45 p.m.

MANY HANDS MAKE LIGHT WORK: A YEAR OF HAND HYGIENE CAMPAIGNS
Helen Evans1, Roxanne Fitzsimmons2, Jessica Hainstock1, Amanda Fisher1, Diane Wild1, Ronnie Brown1, Moira McLean1, Cecile Cocicoda1, Deanna Hembrof2
1Provincial Infection Control Network of BC, 2Northern Health, 3Providence Health Care, 4Interior Health, 5Fraser Health, 6Vancouver Coastal Health, 7Vancouver Island Health Authority

Issue: How do we keep healthcare workers committed to hand hygiene without wearing them out from repeated messaging? The British Columbia Hand Hygiene Communications Group (BCHH CoG) is a committee composed of Communications experts from each of the seven BC health authorities. Successful hand hygiene promotions implemented by the group in the past, such as the provincial (and then national) Clean Shots photo contest, require a great deal of work on the part of the committee, yet we have no way of measuring how long the messaging stays with our staff. Staff also indicate that they are feeling over-messaged regarding hand hygiene.

The group brainstormed ways to create more educational and impactful campaigns, without additional time/work burden for the group members.

Project: The group decided to run a series of two-month campaigns focusing on specific sub-topics of hand hygiene, each led by a different health authority (HA).

Each HA decided on the nature of the campaign for its topic, and created materials to be distributed to the group. All HAs then used these to promote the topic within their facilities. In addition, the group wanted to investigate how much work each type of campaign would take to create and run, and which communications methods achieved the best results. To evaluate this, the HAs tracked staff responses for each campaign, including number of web pages hits, number of comments from staff, number of contest entries, etc. These results are now being compiled into a toolkit of hand hygiene campaigns that can be shared with other facilities/authorities/provinces, along with estimates of how much time/work each campaign involves, and which likely gives the most bang-for-buck (results for time and effort).

Results: Throughout 2016 and into 2017, the BCHH CoG ran six campaigns on the topics of (1) The Four Moments of Hand Hygiene; (2) The "Before" Moment; (3) Glove Use; (4) Patient Hand Hygiene; (5) Hand Care; and (6) Soap vs ABHR.

An additional "Meet your IPAC Team" campaign was run during October, to promote Infection Control Week. Communications methods included web banners for health authority intranets; accompanying online stories; e-newsletter items; posters; invited comments/suggestions from staff; social media posts; and contests. The total workload, and the number of staff who responded in some way, varied greatly across the campaigns.

Lessons Learned: Staff involvement is key! Contests and campaigns that directly asked staff for their opinions/suggestions yielded the greatest results. Campaigns involving "one-way" communication (simply disseminating information) showed poorer results. The purpose of asking for feedback from staff was two-fold: (1) to engage them, and (2) to solicit feedback/ideas that can be used to inform subsequent campaigns. Issues identified by staff were also forwarded to the Provincial Hand Hygiene Working Group (of which the BCHH CoG is a sub-group) for discussion at a higher, strategic level.

4:00 p.m.

DRIVING PHYSICIAN HAND HYGIENE COMPLIANCE FROM UNACCEPTABLE LOWS TO SUSTAINABLE HIGHS
Jennifer Happe1, Alicia Cortright1, Deena Hinshaw1
1Alberta Health Services

Issue: Hand hygiene (HH) is a simple, inexpensive and effective method to prevent microorganism transmission. However, HH compliance in healthcare can be shockingly low and ranges between 10-48%, based on data reported in peer-reviewed literature. Physicians are often in the lowest compliance category, neglecting to habitually practice evidence based HH recommendations from local, provincial and federal authorities. Why is this and how can lasting improvement be achieved?

Project: Phase I – Information Gathering: We conducted key informant interviews with physicians at a mid-size regional hospital in Alberta about their HH practices. Participants were selected based on their demonstrated personal attention to good hand hygiene and infection control practices as identified by nursing staff, managers, and Infection Prevention and Control (IPC) staff. We queried participants about HH barriers, motivations, and how the IPC department can support them in consistently performing HH. Interventions were planned and actualized based on physician responses. Phase II – Implementation of Interventions: Interventions included providing foundational education through a 4 Moments of Hand Hygiene memo series in partnership with the Medical Officer of Health (MOH) that included quotes from interviewed physicians on why HH is important to them; providing additional education incorporating time for open dialogue between physician leaders, IPC and the MOH on the importance of HH current compliance rates, and the data collection, analysis, and reporting process; posting monthly compliance data in the physician lounges, including data comparing local physicians with their counterparts in hospitals across Alberta to spur friendly competition; sharing the latest evidence from the scientific literature on the need for and impact of physician HH; enclosing a HH expectations letter signed by the senior hospital administrator and medical lead in each new physician hire welcome package; nurse managers in departments with the lowest physician compliance making a special effort to speak to individual physicians to raise awareness, answer questions and bolster compliance; providing positive reinforcement through a Caught Clean Handled campaign where physicians observed to perform good HH were awarded a small pin with a handprint to affix
to their identification badge. Several interventions became routine practice after the study period. HH compliance was measured before and after interventions to gauge the impact of our effort.

**Results:** Four themes emerged from physician interviews: knowledge, awareness of compliance data, regular reinforcement and administrative support. Interventions implemented to address these areas resulted in a climb from an average of 55.4% and 55.6% in the two years preceding this endeavour to 70.6% in the following year. Compliance continued to rise to 76.1% the year after.

**Lessons Learned:** Identifying key determinants that influence physician HH compliance is crucial to improvement efforts. Physicians themselves offer unparalleled insight into their barriers, motivations and needs in compliance with HH. An improvement campaign using these insights leads to higher compliance and, ultimately, a safer healthcare environment.

4:15 p.m.

**Winner of a Sage Products LLC (now part of Stryker) Best First Time Abstract Award**

**THE IMPACT OF VANCOMYCIN-RESISTANT ENTEROCOCCI (VRE) POLICY AND PRACTICE CHANGE IN BRITISH COLUMBIA**

Guanghong Han1, Bruce Gamage2, Jun Chen Collet3, Tara Donovan4, Leslie Forrester5, Deanna Hembroid6, Pamela Kibsey7, Anthony Leamon8, Julia Mort9, Elisa Lloyd-Smith10, Louis Wong11, Romali Ramasinghe12, Linda Hoang13, Elizabeth Bryce14

1Provincial Infection Control Network of BC, 2PICNet of BC, 3Provincial Health Services Authority, 4Fraser Health Authority, 5Vancouver Coastal Health Authority, 6Northern Health Authority, 7Island Health Authority, 8Interior Health Authority, 9Providence Health Care, 10BC Center for Disease Control

**Background:** Policy and practice around vancomycin-resistant enterococci (VRE) screening, contact precautions, and isolating patients has been debated recently. From 2010, four of six health authorities (HA) in British Columbia (BC) started to scale down or cease these practices. We reviewed VRE policy and practice in BC and evaluated the impact of changes on the incidence rate of VRE.

**Method:** VRE prevention and control policy and practice from 2010 to 2014 were reviewed in each of the six HA and Providence Health Care (PHC). Retrospective surveillance data including VRE incidences and VRE infections from 2008 when reliable data were available were provided to PICNet and reviewed. For HA that changed their VRE policy, the rate of VRE infections before and after change was compared.

**Results:** The rate of VRE infections is very low compared to VRE colonizations. Of the four HA that implemented change, an initial increase in rate of VRE infections was observed in three HA followed by a decrease to the level prior to the change after a year, and no increase was observed in one HA. For those that did not change, the rate of VRE incidence decreased significantly in one HA, and VRE colonizations increased but infections remained low and stable in another HA.

**Conclusion:** No apparent negative impact on the rate of VRE infections was observed after the changes in four HA, however, continued monitoring of VRE is needed to ensure quality of care in BC.

**ROOM TBA**

**KEEPING IT CLEAN! ENVIRONMENTAL CLEANING**

3:00 p.m.

**DEVELOPING AND MAINTAINING QUALITY ASSURANCE IN HOSPITAL HYGIENE: TWO ENVIRONMENTAL AUDIT TOOLS**

Rosemarie Howie1, Michael John2, Phil Hunt3

1London Health Sciences Centre

**Issue:** High contact surfaces in patient rooms present a potential for transmission of healthcare-associated pathogens. Best practice guidelines recommend auditing processes to measure cleaning quality, with regular feedback to staff and interventions to remediate deficiencies.

**Project:** Two audit tools were standardized and validated with ongoing monitoring of 10 high touch surfaces (HTS) in a sample of 10% to 15% of patient rooms per month. The adenosine triphosphate (ATP) bioluminescence assay measured bioburden and quantified the level of cleanliness. Validation included: development of systematic sampling; identification of sampling variability and a relevant benchmark of cleanliness; and evaluation of a statistically significant difference between pre- and post-cleaning. An in-house fluorescent environmental marker (FEM) system assessed the thoroughness of cleaning on a pass/fail basis, reported as a percentage of surfaces adequately cleaned per room. Compliance of 80% was a pass. Direct feedback and a tiered process for failure were established.

**Results:** ATP sampling of multiple samples per HTS revealed variability of 15% relative standard deviation. A database per high touch surface identified discrepant values. An ATP provisional benchmark of 100 relative light units was calibrated to the sampling area. Compliance improved by 30% over one year. The FEM system was readily standardized and implemented. Within 6 months cleaning scores improved by 25%.

**Lessons Learned:** Both systems provided a baseline of cleanliness that could be continually improved, but protocol consistency and relevant communication and training were imperative. Extensive ATP validation was required for meaningful data that also identified hygiene trends and the impact of interventions to improve cleanliness. As ATP does not directly correlate with pathogen risk, further work is needed to establish a significant benchmark. The FEM system was simple and less costly, but difficulty removing marks or visible marking on some surfaces had to be identified to prevent falsely low or high compliance and compromised feedback.

3:15 p.m.

**SPREADING THE LIGHT? THE CHALLENGES OF INTRODUCING ULTRAVIOLET-C DISINFECTION TO OUR ENVIRONMENTAL CLEANING PROCESS**

Charina Rivas1, Robyn Hunter1, Jun Chen Collet3, Michelle Chang3, Marney Hunt3, Julita Sienkiewicz3, Jocelyn Ng3

1Provincial Health Services Authority

**Issue:** The elevated rates of health care associated Clostridium difficile infection (HA‐CDI) on the oncology wards at BC Children’s Hospital (BCC) sparked the decision to introduce Ultraviolet-C (UVC) technology to optimize environmental cleaning and disinfection practices, with the goal of decreasing rates of HA-CDI.

**Project:** In January 2016, a multidisciplinary team comprised of the infection prevention and control service (IPACS), oncology nursing leadership, and environmental services collaborated to implement the UVC disinfection machine for all discharges on the oncology units, as well as the oncology outpatient clinic washrooms, with the intent to eventually spread its use across the hospital.

**Results:** After the initial introduction, a survey targeting the unit staff and housekeeping team yielded positive feedback about the use of the technology, while also identifying challenges related to staffing, training, and room turnover times. After 6 months of exclusive UVC disinfection for oncology discharges and weekly oncology clinic disinfections, it was determined that the UVC machine was not being used to its full potential due to structure and process issues that included: late discharges, pressure for beds, miscommunication, lack of sufficient training, and overreliance on the environmental services supervisor. After further discussion, the team decided to utilize the machine for discharges throughout the facility based on a priority list communicated daily to housekeeping through IPACS.

**Lessons Learned:** A comprehensive plan is required to introduce new technology to a facility in order to ensure smooth implementation. Secondly, all key stakeholders should be included in planning and be supportive of its use. Adequate staffing and training are key, as is a clear communication process. Future plans: A new committee has been established to ensure that the UVC disinfector is being used efficiently and effectively throughout the facility and can be transitioned into the new hospital building that is scheduled to open November 2017.

3:30 p.m.

**GENERATION OF IMAGES CONTAINING SPATIALLY SPECIFIC CONTAMINATION DATA FOR CLEANING PROCESS IMPROVEMENTS**

Mark McNamara1, Maximiliano Giulian1, Natalie Ambler3

1Swish Group of Companies, 2Charlotte Products Ltd.

**Issue:** Environmental surfaces are known to be reservoirs for infectious agents including bacteria, viruses and fungi. Current standards for assessing hospital hygiene in healthcare settings are based on visual assessments which alone are known to be unreliable in assessing cleaning and disinfecting process efficacy. Adenosine Triphosphate (ATP) meters and traditional microbiological swabbing techniques can also be used in some circumstances to provide additional data but generally may not offer information with adequate spatial specificity to identify the location of contamination in terms of the local surface topography. This lack of spatially targeted information makes it difficult to assess and improve cleaning processes, specifically on surfaces with complex or irregular shapes.

**Project:** A new technology was developed to capture macroscopic surface images and generate contamination density maps.

**Results:** Several case studies were conducted in public facilities using the device, with images revealing surfaces which were not adequately cleaned by standard
cleaning protocols. In most circumstances these inadequacies could be minimized by modifications such as the use of a brush on surfaces with embossed features or refining wiping patterns on surfaces with complex shapes including light switches or doorknobs. An unexpected positive outcome was the ability of the device to identify defects in finished surfaces, specifically porcelain, that are not visible under normal conditions.

Lessons Learned: The devise is able to produce informative images. The results of the initial case studies demonstrate the potential for spatially specific surface contamination data, presented in the form of a surface image, to be useful for understanding and ultimately improving cleaning process outcomes. Funding: National Sciences and Engineering Research Council (NSERC), Ontario Centers of Excellence (OCE), Ontario Economic Development Plan (EODP), Charlotte Products Ltd.

3:45 p.m.

IMPROVING DISINFECTION COMPLIANCE OF SHARED PATIENT EQUIPMENT USING FEEDBACK MECHANISMS

Luke Sequeira1, Stefania Cloutier1, Jennie Johnston1, Michael Rotshtein1, Yuka Hutton1, Florentina Belu1, Melissa Wills1, Heather Condon1

1St. Joseph’s Health Centre, 1Mackenzie Health

Issue: Shared patient equipment or non-critical patient care items (NCPs) are used during routine care and contact a patient’s intact skin. In our setting, clinical staff is required to clean/disinfect NCPs between patients with hospital-grade disinfectant. The objective of this study was to evaluate different feedback mechanisms to improve disinfection compliance of NCPs.

Project: A survey was issued to clinical staff to establish which NCPs were most frequently touched. Across five different in-patient medicine units, baseline disinfecting compliance rates for nine NCPs was established using direct observation (qualitative). Level of disinfection was assessed using ATP bioluminescence (quantitative) where readings of ≤100 relative light units (RLUs) was considered disinfected. The study included five arms: 1) control, 2) education on NCP disinfection, 3) education and qualitative feedback 4) education and quantitative feedback, and 5) education, qualitative and quantitative feedback. Feedback was provided over four weeks by posting compliance graphs on units. Student’s t-test was used when comparing each arm’s baseline to week four. Values for ATP RLUs were reported using a geometric mean and assessed using analysis of variance and post hoc analysis.

Results: The nine most frequently touched NCPs were: bladder scanner, transfer boards, seated scales, thermometers, stethoscopes, blood pressure cuffs, glucometers, electrocardiograms and pulse oximeters. The RLU values in arm 5 (education, qualitative and quantitative feedback) were significantly lower than the other arms. No difference between arms was observed in baseline audits observing qualitative compliance. While receiving weekly feedback, only arms 4 (education, and quantitative feedback) and 5 (education, qualitative and quantitative feedback) demonstrated a statistically significant improvement in direct observation of disinfection compliance and ATP level reduction (p<0.05).

Lessons Learned: Education coupled with qualitative and quantitative weekly feedback resulted in significant improvement in the overall level of NCP disinfection compliance; interventions without qualitative feedback did not result in improvement.

4:00 p.m.

TO CLEAN OR NOT TO CLEAN?

Wendy James1

1Guelph General Hospital

Background/Objectives: Environmental reservoirs of bacteria such as methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant enterococci (VRE), and Clostridium difficile (C. diff) are created when furniture cannot be adequately cleaned and/or can support bacterial growth. These reservoirs can persist in the environment for extended periods of time increasing the likelihood of transmission despite best-practice cleaning standards. As part of an acute care hospital’s investigation into fluctuating hospital-acquired (HA) MRSA, VRE, and C. diff infection and colonization rates, an audit of patient care units revealed a substantial amount of furniture and equipment with porous surfaces that would impede the effectiveness of cleaning, creating potential reservoirs. The purpose of this study was to assess the bioburden on furniture and equipment with fabric, porous or wood finishes used in patient care areas, particularly after cleaning with a hospital-grade disinfectant.

Methods: Pieces of furniture and equipment in 10 patient care units identified as being clean by an I am clean sticker (except for fabric desk chairs) were randomly selected for testing. Items: Touch surfaces were sampled for MRSA or C. diff using electrostatic cloths. The cloths were placed in an appropriately labelled individual Ziploc bag for transportation to the University of Guelph for culture. Four unused cloths similarly bagged as control samples (2 MRSA, 2 C. diff) were collected at different points in the study. The cloths submitted for MRSA and C. diff culture were initially submersed in an appropriate selective broth and incubated aerobically at 37°C for 24 hours for MRSA and anaerobically at 37°C for 48 hours for C. diff. A sample of the broth culture was then plated onto selective agar and incubated for an additional 24-48 hours. Suspect colonies were subjected to biochemical testing to confirm their identity.

Results: 62 specimens were collected in total: 29 plus two controls each for MRSA or C. diff testing. Three specimens were positive for MRSA and three were positive for C. diff. One fabric desk chair in a nurses’ station conference room was positive for both organisms. 25/29 MRSA samples grew blue colonies on the plate, identified as most likely Bacillus or Enterococcus species.

Conclusions: The results indicate that furniture that cannot be adequately cleaned because of porous surfaces finishes such as fabric or wood can have microbial growth after cleaning. These items serve as a reservoir for microorganisms and can contribute to HA infections and colonization. These findings are consistent with evidence that the environment plays an important role in nosocomial transmission. The proportionately high number of surfaces positive for fecal organisms is particularly concerning. These results highlight the need to ensure that items coming into health care settings can be adequately cleaned and disinfected.
ROUGH WATERS AHEAD, RISK FACTORS FOR HEALTHCARE-ASSOCIATED CLOSTRIDIUM DIFFICILE INFECTION (HA-CDI), 2013-2015, SCARBOROUGH AND ROUGE HOSPITAL (SRH)

Senthuri Paramalingam1, Zahir Hijji1, Martuza Diwan1, Jayvee Guerrero1, Ronny Leung1, Katherine Perkin1, Tiberius Stanescu1, Vidyia Nankoooshing1
1The Scarborough Hospital

Background: The effects of Clostridium difficile in increasing morbidity and mortality have been well noted. Historically the rates of HA-CDI have been high at SRH and in order to identify a targeted reduction strategy, a retrospective case-control study was undertaken to identify modifiable risk factors.

Methods: Cases were identified using the Infection Prevention and Control Department data and all HA-CDI cases ≤1 years of age admitted and discharged between 2013 and 2015 were included. Controls were matched on 2:1 ratio based on site, age (±10years), length of stay (±2years) and program. Univariate analysis was completed, and a forward model building approach was used to identify significant variables for conditional logistic regression. Risk factors assessed include: antibiotic class; gastric acid suppressant; immunosuppressive therapy; comorbidities; exposure to CDI in the room; and burden of CDI on the unit.

Results: A total of 200 HA-CDI were included at the study with 59 (29.5%) at site A and 141 (70.5%) at site B. On average, cases stayed in hospital for 19 days, and were primarily medicine patients. At site A exposure to CDI in the room, cephalosporin, gastric acid suppressants and fluorquinolones emerged as risk factors with adjusted odds ratios of 4.5 (95% CI: 1.5 -13.4), 2.6 (95% CI: 1.1 -6.3), 2.8 (95% CI: 1.3 -6.2), and 1.5 (95% CI: 0.7 -3.5), respectively. At site B significant risk factors include high comorbidity, cephalosporin, fluorquinolone, and antineoplastic drug usage, with adjusted odds ratios of 2.1 (95% CI: 1.1 -1.2), 3.4 (95% CI: 1.9 -6.0), 2.2 (95% CI: 1.3 -4.0), and 0.2 (95% CI: 0.1 -0.8), respectively. *Preliminary results

Conclusions: The results of this study are consistent with literature indicating a need for greater focus on antibiotic stewardship and environmental cleaning to decrease HA-CDI. The protective effect of antineoplastic drugs for HA-CDI is contraindicated and is further being analyzed.
4:00 p.m.
INTER-HOSPITAL PATIENT TRANSFERS INCREASE THE RISK OF CLOSTRIDIUM DIFFICILE INFECTION IN ONTARIO’S LARGE COMMUNITY HOSPITALS

Gülio DiBiodeato, Leslie McArthur
1Royal Victoria Regional Health Centre

Objective: To determine the impact of inter-hospital patient transfers from academic to large community hospitals (LCHs) on the incidence of Clostridium difficile infection (CDI) in the receiving hospitals.

Methods: Using data from Orange (Provincial Transfer Authorization Centre (PTAC) database) from 2010 to 2015, we identified 43 614 PTAC requests for patient transfers from 11 academic to 40 LCH corporations. This was combined with data from the Ministry of Health and Long-Term Care (CDI cases) to compute a weighted CDI score from the CDI cases in the sending facility along with the number of patient transfers. This CDI score was included as a variable in a multi-level mixed-effect poisson regression model of CDI cases in LCHs. Other covariates included year to account for temporal effects, diagnostic testing strategy used for CDI, presence of an antimicrobial stewardship program (ASP), and criteria used for isolation of diarrheal illnesses. Hospital-specific random effects were estimated for the baseline rate of CDI (intercept) and ASP effect (slope).

Results: The weighted CDI score ranged from 0 to 103, with mean 14.5 (standard deviation 18.1). Every 10-point increase in the CDI score was associated with a 4.47% increase in the incidence of CDI in the receiving LCH (95% confidence interval 3.96% to 5.01%). The ASP effect was significant in the model used for LCHs, and there was a strong negative correlation of -0.85 (95% CI -0.94, -0.65) between these random components suggesting that LCHs with ASPs had lower rates of CDI.

Conclusion: Our results suggest the risk of CDI in LCHs is adversely affected by inter-hospital patient transfers from academic centres. ASPs appear to reduce this risk, however, these ASP effects demonstrate significant heterogeneity across LCHs suggesting some ASPs may be more effective than others in reducing CDI risk.

4:15 p.m.
CLOSTRIDIUM DIFFICILE INFECTION SURVEILLANCE: APPLICATION OF THE CASE DEFINITION IN A REGIONAL HEALTH AUTHORITY IN BC

Louis Wong1, Jannie Nicholas1, Tara Leigh Donovan1
1Frasier Health

Background/Objectives: According to the US Centers for Disease Control, C. difficile is an urgent threat because of its association with antibiotics. C. difficile is the most common healthcare-associated pathogen, and C. difficile infection (CDI) is a major cause of morbidity and mortality. Three to seven percent of healthy adults are colonized with C. difficile; among inpatients with diarrhea tested for C. difficile, 5 to 10% have diarrhea due to CDI (Cohen et al., 2010), but diagnosis of CDI is challenging as more people in the community and in hospital are colonized with C. difficile rather than infected (Duberke and Burnham, 2015).

Methods: All lab-positive C. difficile results are reviewed by infection prevention and control (IPC) practitioners using a standardized C. difficile infection surveillance protocol, which aligns with the provincial protocol. An evaluation of adherence to the case definition was conducted for quality assurance purposes, and to evaluate the review process in a new surveillance system. An IPC consultant was tasked with conducting an independent assessment of patients with positive C. difficile results and determining whether the patient met surveillance case definition at time of testing. A random sample of non-cases (i.e., colonizations) was selected from April–October 2014. A random sample of true cases (i.e., infections) was included to blind the reviewer. Descriptive analyses were performed and inter-rater reliability was calculated between the reviewer and the practitioners’ original assessments in Microsoft Excel 2010.

Results: 167 records were sampled; 145 were included in the final analysis. 22 records were excluded because patient charts were not available at the time of the review. 31 records were followed-up by the reviewer to obtain additional patient information. IPC practitioners had additional information on 65% of these records that had not been documented in the surveillance database. 11 assessments were changed from the original assessment. There was substantial agreement between the reviewer and the IPC practitioners; the inter-rater reliability between the reviewer and the IPC practitioners was 0.75 (95% confidence interval: 0.59-0.92).

Conclusions: IPC practitioners are encouraged to articulate their decision-making processes when cases are challenging, and recommended to document the reasons a case does not meet surveillance case definition. It would be beneficial to conduct another review of cases to assess whether the improvements (e.g., consistent documentation) have been sustained.

TUESDAY, JUNE 20, 2017

2:00 p.m.
ACINETOBACTER BAUMANNII OUTBREAK IN A BURN INTENSIVE CARE UNIT

Melisa Avanes3, Natasha Salt1, Marc Andre Smith1, Mary Vearncombe1, Barbara Catt3
1Sunnybrook Health Sciences Centre

Background: Acinetobacter baumannii (Ab) ranks second after Pseudomonas in causing healthcare-associated non-fermentative Gram-negative infections. An outbreak of multi-drug resistant (MDR) Ab occurred in a 14-bed burn intensive care unit at Sunnybrook Health Sciences Centre, Toronto, from June 2016 to November 2016. An outbreak investigation was initiated and preventive measures were implemented.

Methods: Routine microbiological surveillance included rectal screening and clinical specimen collection (i.e., burn wound culture). The investigation included environmental sampling (Operating Room (OR), patient room, sink drains, hydrotherapy room), line listing of cases with timeline, molecular typing of isolates by pulsed-field gel electrophoresis (PFGE) and practice review with staff.

Results: There were 8 nosocomial cases of infection/colonization with MDR-Ab identified between May and October 2016. The outbreak was declared on June 29, 2016 after identification of 3 cases within 5 days. The PFGE showed the isolates to be identical. The index case was transferred from a U.S. hospital in April 2016 and was infected with the MDR-Ab on admission. As part of the initial investigation, environmental sampling was conducted; 2 out of 10 samples collected from the OR tested positive: the computer station and anesthetic cart. Additional interventions included Contact Precautions for all positive cases, cohorting of staff, and dedicated equipment. Enhanced environmental cleaning continued throughout the duration of the outbreak, including additional environmental service personnel and use of two-stage terminal cleaning with fluorescent marker application for all patient rooms upon discharge and the burn OR. The computer keyboards in the OR were replaced with washable ones. The last case was identified in September.

Conclusion: Effective surveillance programs are essential to identify outbreaks in a timely manner to implement measures to prevent further spread. Continuous enhanced environmental cleaning, microbiological surveillance and increased awareness of clinical staff regarding infection control practices were essential in containing the outbreak.

2:15 p.m.
PSEUDO-OUTBREAK OF MYCOBACTERIUM FORTUITUM ASSOCIATED WITH ICE MACHINES ON TWO ACUTE CARE MEDICAL UNITS

Barbara Shea1, Nancy Mohammed1, Kala Selvadurai1, Pauline Lo1, Allison McGeer1, Bianche Sham1, Karen Pike1
1Sunnybrook Health Sciences Centre

Background: Mycobacterium fortuitum (MF) is a rapidly growing mycobacterium that causes soft tissue infections. Water is a common source, and pseudo-outbreaks of this organism from water contaminating sputum specimens are known to occur. We identified an increase of MF in sputum samples, with most specimens from patients on 2 adjacent medical units. Methods: A review of patient information, sputum collection procedures and the cleaning and maintenance of ice machines was undertaken. Ice machines and their filters were cultured. The proximity of positive patient rooms to the ice machines was reviewed.

Results: MF was not identified from any in-patient specimens from 2012-2014. Specimens yielding MF were obtained from 8 in-patients in 2015, and 7 in 2016. 14/15 patients with positive samples were from the 2 medical units in question. Preventive maintenance records for the 2 ice machines on these units identified inconsistent maintenance over the previous 2 years. MF was isolated from both ice machines. Coincidentally scheduled maintenance of the machines was associated with a sharp decline in positive specimens. Typing of the MF patient and environmental isolates is pending.

Conclusion: MF isolates in sputum are most often contaminants, but positive smears may result in unnecessary patient moves and isolation. The positive cultures from ice machines and the temporal association of machine maintenance with termination of the pseudo-outbreak suggests one or both ice machines as the cause. IPAC teams should be aware of the possibility of pseudo-outbreaks of rapidly growing mycobacteria, and consider the need to ensure that appropriate maintenance of hospital ice machines is occurring.
2:30 p.m.

Winner of a Sage Products LLC (now part of Styrker) Best First Time Abstract Award

THE MATTERS APPROACH TO ANTIMICROBIAL STEWARDSHIP

Lisa Pyke¹, Jennifer Boxsell², Greg German²

¹CADTH, ²Health PEI

Antibiotic resistance is one of the largest threats to global health today. Antibiotics are one of the most commonly prescribed medications and overuse of antibiotics is a serious problem. Responding to a call for action from our pan-Canadian stakeholders to have contextualized evidence to support informed decision-making, CADTH facilitated an innovative approach to engage clinicians and support antimicrobial stewardship activities. CADTH partnered with local clinicians, health leaders and affiliated members of the Health PEI Provincial Drugs and Therapeutics Antimicrobial Stewardship Subcommittee to foster the creation of a series of yearly collaborative educational “Matters” events around the themes: urine, cough and antibiotic matters. The Matters events were designed to place current evidence, local guidelines, and emerging practice tools on center stage to facilitate discussions and collaborative efforts between diverse group of clinicians from different parts of the health system. The Matters events were accredited by the Canadian College of Family Physicians for continuing medical education (CME) credits, which empowered engagement with clinicians to positively influence antimicrobial stewardship efforts, optimize health system resources and appropriate laboratory testing, and to reduce the impact and limit the spread of antibiotic resistance within the province of Prince Edward Island. Through the reporting of results and outcomes resulting from support and promotion at the Matters events, local goals and objectives to reduce the impact and limit the spread of antibiotic resistance were realized including: MRSA ~40% decreased from a peak in 2010 and 2011; Cdiff decreased by ~40% in hospital and ~20% within community; High risk fluoroquinolone prescriptions used in community reduced by ~20%; Use of clindamycin, meropenem, and fluoroquinolones reduced at the main acute care hospital; Lab processes optimized: new request forms, quick specimen handling, improved quality of samples, less rejected specimens, faster reporting, and more detailed reports; Prevention practices improved such as: hand hygiene, environmental and equipment cleaning, bedpan processing, antibiotic guidelines, use of probiotic therapy, and targeted antibiotic reviews; A new medical directive established: Long-Term Care Urinary Tract Infection Diagnosis and Management Medical Directive: a first of a kind in Canada;¹ Three long term care facilities implemented pilot projects with the new medical directive, demonstrate a 2/3 reduction of drug resistant urinary tract organisms (since 2014); New Empirc Treatment Guidelines for Adults created; CADTH evidence was incorporated into discussions supporting guidelines and tools. After three Matters events we have learned a number of lessons to share in this presentation including: details on design and approach, collaborating with multi-disciplinary clinicians, resources required and communication strategies.

2:45 p.m.

POINT PREVALENCE SURVEY FOR ANTIMICROBIAL RESISTANT ORGANISMS WITHIN CANADIAN LONG-TERM FACILITIES

Denise Gravel¹

¹Public Health Agency of Canada

The emergence of infections caused by antibiotic-resistant organisms (AROs) is a growing concern and has now become a major health issue in long-term care facilities (LTCFs) however the extent of the problem in Canada is not known. The Canadian Antimicrobial Resistance Surveillance System (CARRSS) has partnered with IPAC Canada LTC interest group to assess the prevalence of infections caused by AROs in a number of LTCFs in Canada. Residents were identified at each LTCF by the facility census on any day occurring between March 13 and March 27, 2017. Information on eligible residents infected or colonized with AROs and/or receiving antibiotics was captured. Results of the survey will be made available in June 2017.

ROOM TBA

2:00 p.m.

HELPING HANDS: A PATIENT HAND HYGIENE PROGRAM

Laura Reesor¹, Christina Murphy¹

¹Peterborough Regional Health Centre

Issue: Peterborough Regional Health Centre (PRHC) has a well-established hand hygiene program focused on improving staff and physician compliance with cleaning their hands at key moments. Patients, families and staff members identified the need to implement a similar hand hygiene program for patients. Baseline observations and interviews with patients confirmed that patients lacked access to the tools and support required to clean their hands at key moments.

Project: Our quality improvement initiative was built on the foundation of six moments for patient hand hygiene and the design and testing of two initiatives to support these moments on two inpatient units. Initiative 1: The HELPing Hands: Patient Support Program – a volunteer-led program during which trained volunteers helped patients clean their hands and provided verbal cues regarding hand hygiene prior to meals. Initiative 2: This initiative focused on ensuring that patients had the knowledge and tools to effectively clean their hands at the 6 identified patient hand hygiene moments. Each patient bedspace in the inpatient unit was equipped with a) a bottle of alcohol-based hand rub (ABHR) that was affixed to their overbed table with a specific point-of-care (POC) holder; and b) a laminated patient-friendly card wrapped around the bottle that showed the 6 patient moments for hand hygiene and outlined strategies and rationale for effective hand cleaning.

Results: Since the onset of the HELPing Hands initiative, the volunteers have provided assistance with patient hand hygiene over 60% of the time. The unit has had no new hospital acquired infections since the initiation of the program 10 months ago, compared to 3 infections in the same time period prior to program. Since the onset of Initiative 2, there has been a steady increase in hand rub utilization and the number of patients that report regular use of it. The ABHR in the point-of-care holder and information wrap have remained at the bedside for the most part which is an improvement from the past where standalone ABHR bottles often went missing. Patients report a high level satisfaction with easy access to the ABHR and the educational card, and understand their purpose.

Lessons Learned: Involve those closest to the patient: In order for both initiatives to gain traction and succeed, input and support from the unit staff and those working directly with the patients was integral. Our working groups for both initiatives included a variety of disciplines including volunteers, Recreation Therapists, nursing staff, Occupational Therapists etc. Communication is key: It was important for us to share the importance of hand hygiene and provide tips for hand cleaning instead of simply affixing dispensers to patient beds and expecting immediate uptake. We spent substantial developing the information wrap with input from staff and patients to ensure that the messaging was clear and user-friendly.

2:15 p.m.

UTILIZING VISUAL CUES AND ENGAGING FAMILIES IN THE SIBLING HEALTH SCREENING PROCESS

Marney Hunt¹, Megan Bolton, Tina Stewart, Jan Chen-Collet, Simon Dobson, Dave Goldfarb, Robyn Hunter, Jocelyn Stigle, Valoria Huit

¹Children’s Hospital and Women’s Hospital and Health Centre of BC

Issue: Sibling health screening (SHS) prior to entering the Neonatal Intensive Care Unit (NICU) is critical to avoid communicable disease exposures to vulnerable NICU infants. The NICU at British Columbia (BC) Women’s Hospital utilized a SHS process that was found to be unsuccessful due to inconsistent practices. An audit done over the summer of 2016 indicated that 30% of SHS forms were not completed. In addition, the form required updated vaccine information.

Project: A working group comprised of Infection Prevention and Control (IPAC) Service, Quality and Safety and NICU leadership was struck to develop a new SHS process. The group: a) explored screening tools and processes with other IPAC teams and NICUs within BC and across Canada b) revised screening questions, created process algorithms and signage and c) obtained feedback from the local IPAC team, frontline NICU staff, the parent advisory leader, and families. The process commenced October 2016.

Results: Gaps in SHS form layout and process were identified. Key principles of the new process include: a) nurses completing the initial SHS with families and incorporating education on the importance of SHS and hand hygiene (HH); b) engaging families to complete subsequent SHS, and c) introducing a visual cue in the form of a “sticker of the day” (e.g., Monday Monkey) for siblings to wear as a signal that the SHS was completed. An updated audit indicated 60% of siblings were wearing stickers with the other 40% missing a sticker triggered the nurse to complete the SHS.

Lessons Learned: a) Engagement of all stakeholders in a process is key to success; b) Performing SHS engages families and helps facilitate IPAC education (e.g., HH); c) IPAC-led group initiatives can be fun and improve patient safety.
ORAL PRESENTATIONS

2:30 p.m.
CROSSING THE BRIDGE: ENGAGING PATIENTS AS PARTNERS IN INFECTION PREVENTION AND CONTROL (IPAC)
Katherine Perkin1, Martuza Diwan1, Joyvee Guerrero1, Zahir Hirji2, Ronny Leung1, Senthari Paramalingam1, Tiberius Stanesca1, Vydia Nankosungle1
1The Scarborough Hospital

Issue: Being a patient has been called “one of the most dis-empowering situations one can experience in modern society.” Person and Family Centered Care (PFCC) is a rapidly expanding field with the goal of increasing patient engagement and satisfaction. Historically, IPAC departments have limited opportunities to engage patients and families and have been seen as a barrier to providing PFCC.

Project: In alignment with the Scarborough and Rouge Hospital's (SRH) strategic plan, IPAC created a multifaceted approach to increase patient and family engagement. This consisted of individualized education for patients with new antibiotic resistant organisms (ARO), incorporating a patient volunteer on to the hospital's IPAC Committee and involving them in the creation of new IPAC patient education brochures. In addition, IPAC education was uploaded to waiting room TV screens, and our patient volunteer was featured in a new hand hygiene video.

Results: Incorporating a patient volunteer into our IPAC team has provided the department deeper insight into how patients view and understand infection prevention. Our patient volunteer was instrumental in the creation of visually appealing and easy to understand patient education brochures. Their presence on the IPAC Committee helped to remind to make PFCC a priority. The IPAC team educated 85% of our patients/families with new AROs. Informal feedback from the education from patients was very positive.

Lessons Learned: Within the PFCC approach, patients should be given the option of IPAC education. Most patients were keen to listen; a few patients did state that education was not wanted. The department recognizes that PFAC terminology is complicated and brochures alone as an educational resource are ineffective. The combination of easy-to-read brochures, plus in person education seemed to be most effective. The incorporation of a patient volunteer continues to offer new opportunities to promote IPAC with patient and families.

2:45 p.m.
IT’S ALL HEARSAY IMPROVING PATIENT EDUCATION IN IPAC
Kate Hoogenboom1, Anne Bialachowski1, Maria Ralph1, Marek Smieja1
1St. Joseph's Healthcare Hamilton

Background/Issue: There is a risk of significant adverse outcomes and recurrence resulting from a C. difficile infection (CDI); thus, the retention of information and knowledge of appropriate actions to take in the event of a flare in symptoms is very important. Infection Control Professionals (ICPs) provided fact sheets and engaged patients in a discussion about their CDI post-diagnosis. Once education was completed no formal assessment of comprehension was performed. The objective of the study was to compare and contrast the effectiveness of the Teach Back method for patient education versus standard teaching techniques. Methods: The Infection Prevention and Control (IPAC) team at St. Joseph’s Healthcare, Hamilton conducted a stepped-wedge study with hospitalized patients who tested positive for C. difficile to evaluate their knowledge retention and comprehension related to information they had been provided about the infection. Interviews were conducted at baseline to evaluate the effectiveness of standard teaching techniques. The Teach Back method was then rolled out in a stepped wedge format over the study period. This continued until all participants received either standard teaching or Teach Back. Knowledge retention rates were calculated based on patient responses to four, pre-established questions, taken during an interview three to five days after initial education was provided. The interview answers were captured on a paper tool, identified with a randomly generated number. The number, provided by one of the investigators not interviewing the patients, indicated whether the participant was in the standard teaching or Teach Back group. Once all the surveys were completed the data was entered in an electronic database. Knowledge retention was assessed on a 5-point scale. Median scores were compared between the Teach Back and standard teaching groups using the Mann-Whitney test. Medians, first and third quartiles, and p-values are reported. The level of statistical significance was set at alpha=0.05 Results Starting in the summer of 2016 hospitalized patients were provided education related to their CDI. Half of the patients (30) were provided education using standard teaching techniques and the other half (30) received education using the Teach Back method. Effectiveness of each technique was compared using results from the interview questions.

Conclusions: Preliminary results reflect patient knowledge retention related to CDI improved as a result of implementing the Teach Back method. This project resulted in an evaluation and adjustment of the way IPAC education is provided for all hospitalized patients by adopting the Teach Back method.

ROOM TBA

2:00 p.m.
TREATING ASYMPTOMATIC BACTERIURIA IN ORTHOPEDIC SURGICAL PATIENTS: A RISKY AND OUTDATED PRACTICE
Jennifer Happe1, Courtney Walz2
1Alberta Health Services

Issue: Urinary tract infections (UTI) are the most common healthcare-associated infection in Canadian adult acute-care hospitals according to a 2007 point prevalence survey. Accurate diagnosis depends on both symptoms of infection and laboratory results. The presence of bacteria in the urine of an asymptomatic patient is known as asymptomatic bacteriuria (ASB). Antibiotic treatment of ASB is not routinely recommended. However, ASB patients were historically treated to reduce the risk of prosthetic joint infection before undergoing implant surgery. Recent evidence indicates ASB is not a risk factor for prosthetic joint infection. Inappropriate antibiotic exposure can lead to increased bacterial resistance, adverse events, collateral damage (e.g., Clostridium difficile infections) and toxicities that can diminish the well being of patients. An evaluation was launched on an orthopedic surgical unit to measure the incidence of UTI and ASB and to evaluate identification and treatment practices. The findings were used to inform the need for interventions that bring practices in line with current, evidence based recommendations.

Project: Infection Control partnered with Pharmacy to review all catheterized and non-catheterized patients on an orthopedic surgical unit with a positive urine culture over a three-month period. UTI identification and treatment practices were compared to best practices set forth by Bugs & Drugs, Toward Optimized Practice and the Infectious Disease Society of America, including symptoms charting or rationale for sending a urine culture, pushing fluids for 24 hours before collecting a culture, diagnosing true UTIs based on culture and symptom results, treating true UTIs with appropriate antibiotics and abstaining from antibiotic treatment of ASB.

Key Results: The rate of UTI and ASB was 23.8 and 64.7 cases per 10,000 patient days respectively. UTI cases presented within 3 days of admission in all but one case suggesting most UTI patients were admitted with the infection and did not acquire it on the unit. All UTI cases were identified and treated according to best practices (charting symptoms, sample collection, treatment). Less than 50% of suspect ASB cases had complete symptom charting. Case classification cannot be accurately assigned without supporting symptom information. 68% of suspect ASB patients received antibiotic treatment. 75% of orthopedic surgical patients with suspect ASB received antibiotic treatment. There were more UTI and suspect ASB cases in non-catheterized patients than catheterized patients.

Lessons Learned: ASB identification and treatment is not concordant with current best practices for orthopedic surgical and non-surgical patients. Inappropriate antibiotic exposure can put a patient’s health and well being at risk. A multimodal intervention campaign is required to realign local practices with current recommendations. Infection Control Professionals across Canada should consider investigating continuance of the outdated practice of ASB treatment in their orthopedic surgical populations.

2:15 p.m.
TREATMENT OF ASYMPTOMATIC BACTERIURIA: A PATHWAY TO ZERO
Lorraine Maze dit Mieusement1, Jerome Leis2, Janice So1, Allison McGeer1, Michael Larocque1, Stephanie Wong1, David Kim1, Christine Soong1, Mount Sinai Hospital Infection Prevention and Control Team1
1Mount Sinai Hospital, 2Sunnybrook Health Sciences Centre, 3McMaster University

Background: Asymptomatic bacteriuria (ASB) is the presence of bacteria in urine without symptomatic urinary tract infection (UTI). Except during pregnancy, the benefits of ASB treatment are greatly outweighed by the risk of adverse events (e.g., CDI). Although up to 98% of inpatient non-catheter urine (NCU) specimens are from patients with ASB, positive cultures lead to treatment in 40-50% of cases. Many interventions to reduce ASB treatment have not had sustained impact. In a pilot study, an intervention of not reporting NCU specimen results reduced ASB treatment to 32%. Here we provide an update on the continued progress and expansion of this intervention.
Methods: In 2014, our lab stopped processing NCU specimens from 2 surgical units. The specimen is held in the microbiology lab and the EMR displays a message advising the clinician that the specimen will not be processed unless the lab is called. In 2015, the intervention was expanded to include all surgical units.

Results: Of 797 NCU specimens; 117 were labelled incorrectly (i.e., were catheter urines). Of the 680 NCUs, 197 were associated with SUTI; symptomatic status was unknown for 21, and 462 were associated with ASB. Of 197 SUTI specimens, 150 were processed due to calls, 51 (34%) were positive. 54 patients (27%) were treated empirically; 12 were treated based on culture results. Of the 462 ASB specimens, calls were made for 160 (43, 27% were positive). Overall, 14 patients with ASB were treated based on culture results. Had all 462 ASB specimens been processed, 50-62 patients would have been treated (based on 27% positive culture and 40-50% of positive cultures treated).

Conclusions: Collaboration between nursing, physicians, microbiology, informatics, and IPAC has significantly decreased ASB treatment. Accurate specimen labelling and ongoing education of new clinicians present opportunities for improvement. An expansion to medical units is planned.

CATHETER-ASSOCIATED URINARY TRACT INFECTION (CAUTI): MOUNT SAINI HOSPITAL’S COLLABORATIVE JOURNEY TOWARDS PATIENT SAFETY AND BETTER DATA

Janisse So for Infection Prevention and Control1, William Mundle for the Clinical Nurse Specialists1, Judy Fleming for Informatics1, Tanaz Jivraj1, Allison McGregor1, Maya Sinno for the Magnet Program1, Christine Soong1
1Mount Sinai Hospital

Issue: In 2014, Mount Sinai Hospital became the first Canadian hospital to achieve the American Nurses Credentialing Center (ANCC) Magnet designation for nursing excellence. As of 2014, Magnet requires demonstrated excellence in CAUTI prevention. This created an opportunity to design and develop a surveillance system; but with the pressure of urgency as CAUTI rate reporting had to start in 2015.

Project: An interdisciplinary working group comprised of Nursing, Physicians, Quality and Performance Management, Informatics and Infection Prevention and Control (IPAC) was formed to examine how existing processes could be best used for CAUTI surveillance. Results: Our existing IPAC data system was adequate to facilitate the identification of infections. However, collecting urinary catheter-day denominators was challenging. We found no existing processes (e.g., workload measurement tools) that could be leveraged to meet unit-based requirements. We also identified challenges with the accuracy of nursing documentation. Given the time constraint, denominator data collection began manually, with designated staff recording number of patients with catheters daily on each unit. A tool was then developed to extract information from regular nursing electronic charting, which was combined with strategies to improve consistency in catheter documentation.

Lessons Learned: The teamwork supported learning about CAUTI prevention and facilitated improvements in urinary catheter management across the hospital. Fatigue in manual data collection set in quickly, and continuing effort was needed to maintain manual data collection. Challenges continue with adequate documentation of urinary tract symptoms. Designing a system for electronic denominator data collection required much longer than anticipated. Organizations embarking on CAUTI surveillance should ensure buy-in from all involved disciplines, recognize the need to standardize documentation of CAUTI elements and set realistic timelines for development and implementation.

BARRIERS TO APPROPRIATE INDWELLING URINARY CATHETER PLACEMENT IN THE EMERGENCY DEPARTMENT

Catherine Kerr1, Carla Corpus3, Jonathan Mong3, Will Thomas-Boza2, Natasha Salt1, Mary Yearncombe1, Jerome Leis1
1, 2Sunnybrook Health Sciences Centre, 3University of Toronto

Issue: Catheter-associated urinary tract infections (CAUTIs) are the most frequent cause of hospital-acquired infection (HAI) and lead to significant morbidity and mortality. Indwelling urinary catheters (IUCs) are often placed in the emergency department (ED) where the effects of CAUTI on patients are rarely seen. While IUC placement can be a necessary intervention, a point prevalence study in our ED demonstrated that 17% of non-trauma patients had IUCs placed, while only 39% of these were clinically indicated.

Project: A project was undertaken to reduce the risk of CAUTI that included education reinforcing the appropriate clinical indications for IUC placement in the ED, while also identifying barriers to correct IUC placement. ED nurses were provided 1-on-1 education outlining the appropriate clinical indications for IUC placement, and were surveyed for feedback about barriers to appropriate IUC placement and were surveyed for feedback about barriers to appropriate IUC placement.

Results: Stakeholders participated in a CAUTI working group and a poster was developed that could assist with training and serve as a reference tool for staff. To date, >80% of the ED nurses have been provided with 1-on-1 education regarding the appropriate clinical indications for placement of IUCs, with many providing valuable feedback regarding barriers to be able to meet these criteria. ED nurses report that many barriers exist, including, but not limited to, human resource issues in a fast-paced environment, culture in the ED (we put things in, we don’t take them out), patient/family requests for IUCs and suboptimal equipment that promotes alternatives to IUCs (e.g., lack of plastic inserts for bed pans, functioning condom catheters and availability of commodes).

Lessons Learned: Despite staff already appreciating the risks associated with placing IUCs without appropriate clinical indications, multiple system factors lead to IUC placement which will need to be addressed to achieve sustainable improvement. Among these factors, increasing availability of equipment that promotes alternatives to IUC placement is the easiest barrier to address, while changes in staffing and patient/family expectations will require longer-term effort.

ROOM TBA

SNIP SHAPE – HOSPITAL RENOVATION AND DESIGN

2:00 p.m.

Winner of a Sage Products LLC (now part of Stryker) Best First Time Abstract Award

CLOSTRIDIUM DIFFICILE RATES ASSOCIATED WITH ENGINEERING CONTROLS IN A NEW HOSPITAL FACILITY: WHAT IS THE IMPACT OF POINT OF CARE WASTE DISPOSAL SYSTEMS?

Tina Stayce-Works1, Jennifer Blue2, Neil Baul1
1Halton Healthcare

Background: Oakville Trafalgar Memorial Hospital (OTMH) moved patients from a facility that was over 50 years of age into a new 1.6 million square foot acute care facility in late 2015. The new facility features improved engineering controls with the intention of reducing the risk of hospital-associated infections such as Clostridium difficile. Improved engineering controls included 80% single patient rooms, dedicated hand washing sinks in each patient/exam room, over 50 airborne isolation rooms, and cleanable finishes and furnishings. In addition, OTMH is now the only hospital in Ontario to have washer disinfectors in each inpatient washroom for emptying and reprocessing basins, bedpans and urinals.

Objectives: To compare hospital associated C. difficile (HA-CDI) rates 12 months before and after moving into a new facility, and to compare the change in rates to a comparator hospital with similar engineering controls with the exception of point of care waste disposal systems.

Methods: HA-CDI rates per 1000 patient days were obtained from Ontario’s patient safety quality indicator website for OTMH and a similar sized comparator hospital in a new facility that opened less than 5 years ago. The 12-month pre and post move mean HA-CDI rates were compared for each hospital and then the difference in means between facilities was compared using paired and unpaired t tests.

Results: The pre-move annual HA-CDI mean rates of OTMH and the comparator hospital were nearly identical. The annual mean HA-CDI rate for the 12 months preceding the OTMH patient move was 0.63 per 1000 patient days and the rate improved by 54% to 0.29 in the 12 month period after the move (p = 0.01). The annual mean HA-CDI rate of the comparator hospital was 0.64 pre-move and decreased by 45% to 0.35 post-move (NS p = 0.14). Although the decrease in HA-CDI rates associated with moving to new facilities, the difference in the post move HA-CDI rates between the two hospitals was only 0.07 (NS p=0.42).

Conclusions: Moving into new facilities with improved engineering controls substantially reduced the annual C. difficile rates at two new acute care hospitals in Ontario. The additional impact of point of care waste disposal units at OTMH’s new hospital remains uncertain after one year of observation. A longer period of evaluation is required to confirm the validity of this observation.
APPLYING INFECTION PREVENTION & CONTROL (IP&C) PRACTICES TO AN ENDOSCOPY CLINIC SETTING, USING A MULTIDISCIPLINARY APPROACH

Barbara Catt\textsuperscript{1}, Sandra Callery\textsuperscript{1}, Barbara McArthur\textsuperscript{1}, Denise Henry\textsuperscript{1}, Illya Vilenkin\textsuperscript{2}, Abdool Karim\textsuperscript{1}, Rosalina Tierra\textsuperscript{1}, Aaron Campigotto\textsuperscript{2}, Mary Yearendom\textsuperscript{1}
\textsuperscript{1}Sunnybrook Health Sciences Centre

\textbf{Issue:} Outbreaks of carbapenemase producing Enterobacteriaceae (CPE) have been associated with duodenoscope procedures due to the inherent difficulty in reprocessing this complex equipment, resulting in contaminated duodenoscopes. Project: The project goals were to identify risk factors of patients for CPE colonization and to involve a multidisciplinary team in developing a plan for implementation and response to surveillance culture results.

\textbf{Results:} A review of current duodenoscope reprocessing was done, included manual cleaning, leak testing, and placement in an automated endoscopic reprocessor. A prompt was added to the existing patient documentation form directing staff to complete a new risk assessment screening tool to identify patients at risk for CPE and perform a CPE rectal screening culture if criteria are met. When a high-risk patient is identified, infection prevention and control are notified and a two-stage cleaning protocol is carried out on the duodenoscope by two separate reprocessing staff. The scope is quarantined until patient results are known. If patient results are negative, the scope is placed back into circulation; if patient results are positive; the scope is cultured, re-cleaned and returned to quarantine until scope culture results are confirmed. If the scope results are negative, the scope is placed back into circulation; if positive, then the cleaning cycle and cultures repeat. Formal educational sessions were provided to all clinic, IP&C and reprocessing staff. This has resulted in updates of policies, procedures, fact sheets, creation of a screening tool, development of a video on collection of scope sampling cultures and a kit with items to collect scope samples.

\textbf{Lessons Learned:} The goal is to provide patients with the safest level of care by developing strategies to minimize the risk of transmission of infection from complex equipment such as duodenoscopes. A multidisciplinary approach is necessary to improve a complex process.

PREVENTIVE MEASURES DURING CONSTRUCTION - A BOTHER OR A BOON? A SURVEILLANCE PROJECT FOLLOWING A MAJOR FLOOD

Jennifer Happe\textsuperscript{1}
\textsuperscript{1}Alberta Health Services

\textbf{Issue:} A fire suppression line was severed during a construction project resulting in a water release that severely damaged seven operating theatres, the medical device reprocessing department and surgical ward inpatient rooms at a hospital in Alberta. Remediation activities were carried out in compliance with Canadian Standards Association and Alberta Health Services Infection Prevention and Control (IPC) requirements. IPC launched a surveillance project to measure surgical site infections (SSI) during three months of remediation activity. The goal was to record and follow up incidence of infection after surgery, and use results to review or change practice as necessary during the course of remediation and for future construction projects.

\textbf{Project:} All surgical procedures were reviewed by a team of 10 Infection Control Professionals for the development of an SSI using paper and electronic inpatient, emergency and home care records. Cases with wound classifications of III and IV were excluded as it is impossible to distinguish if any infection following surgery is a consequence of the procedure itself or the wound condition prior to the procedure. SSI cases were identified and classified as superficial or complex (deep and organ/space infections) using criteria published by the American National Hospital Surveillance Network (NHSN). Patients initially identified with an SSI were assessed by a second reviewer for the presence of an SSI and the classification. Discrepancies in presence and/or classification were discussed with the original reviewer for consensus. Patients determined not to have an SSI were not assessed by a second reviewer.

\textbf{Results:} 1841 procedures qualified for inclusion in the review including orthopedic, general surgery, gynecology, plastics, urology, ear, nose and throat, vascular, and ophthalmology cases. Less than one complex SSI per 100 procedures was identified for orthopedic and general surgery procedures. In fact, complex SSI rates were less than expected based on historical SSI rates. Superficial infections may be a consequence of care provided following the procedure (e.g., wound care), and are not as useful an indicator as complex infections in this case. None of the infections could be linked to remediation activities occurring at the time of the procedure based on surgeon and nurse notes. Note that non-viable air quality testing was routinely conducted during remediation and results were negative. This indicates construction dust was effectively contained within the remediation zone and did not migrate into the air of adjacent spaces.

\textbf{Lessons Learned:} Development of an SSI is complex and related to multiple factors. Strict adherence to established infection prevention requirements during construction and renovation activities (e.g., appropriate hoarding, air pressure, traffic patterns) helps to create and maintain a safe environment for surgery and recovery.
MONDAY, JUNE 19, 2017

POSTER 1

HAND HYGIENE: LINKING TRAINING TO IMPLEMENTATION AND OUTCOMES

Finding Mayah-Toto, MD, Kayla Enriquez, MD, MPH, Kanagasabai Udhayashankar, MD, MPH, Michelle Niescierenko, MD, MPH

1Redemption Hospital, Liberia 1University of California (San Francisco).

Introduction: Healthcare workers were the highest risk group for contracting Ebola Virus Disease (EVD) during the West African outbreak, due to the lack of Infection Prevention and Control (IPC) practices within healthcare facilities. The Safe Quality Services Package (SQS) was implemented in Liberia in 2015/2016 and sought to address these IPC gaps and promote better practices, specifically hand hygiene (HH) compliance. HH has proven to be the best way to prevent healthcare associated infections, protecting healthcare workers, patients and community members.

Methods: Hand Hygiene audits were conducted at 24 public hospitals in Liberia from October 2016-January 2017. Data collection was done through direct observation of healthcare worker hand hygiene practice before and after patient contact. Observation was done for 20 minutes duration, on different hospital wards at different times of the day to ensure representation of all cadres of healthcare workers were observed. Average HH compliance was calculated for each hospital as well as across all facilities.

Results: A total of 507 healthcare worker hand hygiene practices were observed across 24 hospitals. Average HH compliance across all facilities was 46% with individual facility results ranging from 11%-80%. One out of 24 hospitals achieved HH compliance above 80%. Analysis by cadre showed a range of compliance from 20%-61%.

Conclusion: Healthcare worker HH compliance is paramount in preventing the spread of infections. Despite SQS focus on this key concept, overall HH compliance was found to be low, with some cadres performing better than others. This highlights that training and education, although essential, are not enough to encourage behaviour change in Liberian public hospital healthcare workers. Further support via mentorship and hand hygiene tool kits is needed to achieve a compliance of 80% or better.

POSTER 3

CHALLENGE OF SYNDROMIC SURVEILLANCE AND AN INFLUENZA B OUTBREAK IN A MEDICAL ONCOLOGY UNIT

Fatema Imamh1, Sandra Gallary1, Natasha Sait2, Mary Vearncombe1

1Sunnybrook Health Sciences Centre

Issue: Nosocomial influenza outbreaks in hospitals, particularly in oncology units, are associated with increased patient morbidity and mortality, increased cost and negatively impact patient flow. An influenza B outbreak occurred in a medical oncology unit in April 2016 with seven cases and one death. A delay in identification of the outbreak occurred as co-morbid conditions masked symptoms (i.e., lung cancer, lung metastases, radiation pneumonitis and febrile neutropenia). A number of patients developed new onset of symptoms while they were on antiviral prophylaxis due to their immunocompromised status and a delayed response to the antiviral. The staff influenza immunization rate was low (80%) and some staff worked with acute respiratory infection (ARI). At one point 18 out of 36 beds were closed, presenting a challenge as hospital occupancy was greater than 100%. Management of visitors with unknown influenza immunization history was difficult.

Project: Outbreak control measures were implemented including: patient and staff cohorting, antiviral treatment or prophylaxis, staff immunization, and strict syndromic surveillance and initiation of Additional Precautions. Admissions were allowed to the unexposed cohort 4 days after declaration of the outbreak with consent and agreement to prophylaxis.

Results: No additional nosocomial transmission occurred after all the control measures were in place. Staff immunization rates increased to 96%.

Lessons Learned: Daily surveillance for ARI, prompt initiation of Additional Precautions and communication with Infection Prevention and Control is necessary to recognize possible influenza outbreaks and prevent transmission. This outbreak was initiated by a staff member working with ARI and prolonged by another staff member working with ARI during the outbreak. The importance of staff immunization prior to influenza season and not working while ill needs to be reinforced.

POSTER 7

CANDIDA AURIS: IS YOUR FACILITY PREPARED?

Carla Corrêa1, Natasha Sait1, Mary Vearncombe1

1Sunnybrook Health Sciences Centre

Issue: Candida auris is a new emerging pathogen that can cause invasive infection and is associated with a high mortality rate. C. auris poses a threat to patients as it is often misidentified using traditional biochemical laboratory methods and treatment options are limited due to antifungal resistance. C. auris has been documented to be transmitted in hospitals. Due to its novelty, our Infection Prevention and Control (IP&C) policies did not reflect specific control measures required to prevent C. auris transmission in the healthcare setting. Prior to February 2017, Sunnybrook Health Sciences Centre, a large tertiary referral Toronto-teaching hospital, managed all candida infections and colonization using Routine Practices.

Project: A literature review was conducted to form IP&C recommendations in our facility. An article was selected to be reviewed and presented to the IP&C team during our monthly journal club. The objective was to determine how this could influence future practices and policies.

Results: Some of the key findings on C. auris IP&C management from the literature review include: use of Contact Precautions for confirmed cases and direct contacts and environmental cleaning with disinfectant with fungal claim. The duration of Additional Precautions remains unclear as the duration of colonization remains unknown, but would remain in place for the current acute hospitalization. Because the mechanism of development of resistance is not well defined, precautions are implemented regardless of susceptibility of the isolate at the time of identification. The IP&C team has updated our internal disease specific chart and policy to reflect the current recommendations of Contact Precautions for confirmed C. auris cases and contacts.

Lesson Learned: IP&C play a critical role in protecting the healthcare setting by keeping policies and procedures updated to contain new emerging pathogens as they arise.

POSTER 9

DEVELOPING A NEW CROSS-DISCIPLINARY NETWORK TO REALISE THE POTENTIAL OF VISUALISATION APPROACHES TO ADDRESS HEALTHCARE ASSOCIATED INFECTIONS

Colin Macduff1, Alastair Macdonald1

1Glasgow School of Art

Issue: A central issue in infection prevention and control work is the invisibility under normal circumstances of pathogenic organisms. Associated lack of, or delayed, feedback to clinicians on the efficacy of their IPC practice compounds the challenge for education, practice development and quality improvement. Within this context the potential for more dynamic approaches to visualising pathogens, practice and place remains under-developed. This presentation outlines key aspects of the inception of a new international network to address this issue.

Project: The HAVARN (Healthcare Associated Infection Visualisation and Ideation Research Network) project (http://visionon.org) aims to explore the question: how can we better address the problem of HAI’s through visualisation-related ideation and applications? Its ambit ranges from visualisation of micro, unseen phenomena such as pathogens and the mind’s eye, to visualisation of macro phenomena relating to human interactions in particular healthcare environments, e.g., from aspects of the imagination through to new, scientific information (e.g., microbiological data) and related professional behaviours. Enquiry is structured around a series of workshop events with interim activities.

Results: This UK based network has so far coalesced expertise from medical microbiology, psychology, social geography, literature, design, nursing, cleaning services, communication, social policy and health humanities. This includes inputs from Canada and Australia, and a first workshop meeting has taken place. This established insights into how different disciplines understand and use visualisation and associated ideas, and identified areas of perceived research need and opportunity such as: mapping pathogen movement; communicating risk in context; designing interventions to influence practice; and visualising healthcare staff experiences. A set of visual mappings is currently being created to highlight foci and foci for cross-disciplinary work and two further workshops are planned.

Lessons Learned: There is much enthusiasm for breaking down disciplinary barriers and the presentation aims to further this process to expand the network.
POSTER 11
CREATING A NEW PARADIGM FOR CONTROLLING MRSA OUTBREAKS
Margaret Cameron1, Carrie Cleverdon1
¹Peterborough Regional Health Centre

Issue: New cases of MRSA transmission on a 30-bed alternative level of care locked unit were discovered in a patient population where the primary diagnosis is dementia. Prevalence screen revealed approximately one-third of the unit was colonized with MRSA. Not all patients were able to remain in their rooms on contact isolation due to cognitive/behavioural issues making it challenging to get the outbreak under control and prevent further cases.

Project: Modified contact precautions were utilized – attempts made to keep patients in their rooms as much as possible but recognizing that this approach would not work for all isolated patients. If unable to limit MRSA positive patients contact with the environment outside the patients’ rooms then frequent hand hygiene and cleaning of surfaces touched by the patients was required. All MRSA positive patients bathed with chlorhexidine wipes. MRSA decolonization initiated for 12 patients. Use of no touch clean technology (UV-C light) used to reduce MRSA burden on the unit.

Results: Outbreak was declared on July 8, 2016 and deemed over on September 15, 2016 once prevalence screens demonstrated no further transmission of MRSA. 80% success rate for decolonization.

Lessons Learned: Could not maintain full contact precautions but needed to allow wanderers to wander (modified precautions). Focus on hand hygiene and constant cleaning of common spaces by entire health care team key in reducing transmission. Decolonization of known positive cases helped reduce burden on the unit. Twelve decolonization protocols initiated. Success with decolonization achieved when using only one oral antibiotic versus two in cases where contraindications existed for the second antibiotic. Changed how meal trays are delivered and picked up to reduce opportunities for patients to eat food off other patients’ trays. Not all patients are the same so some modifications tailored to individual’s needs. No touch cleaning technology used to reduce burden. Provide regular outbreak education and communication to families and include them in the outbreak debriefing.

POSTER 13
AN UNCOMFORTABLE SPOT(S): A MEASLES EXPOSURE IN A LARGE TERTIARY CARE CENTRE
Natalie Bruce1, Michelleau McGuiness1, Brigitte Cottette1, Jennifer Fitzpatrick1, Angela Wigmore1, Andrea Fisher1, Janet Graham1, Karen Stockton1, Kathryn Suh1, Caroline Nott1
¹The Ottawa Hospital

Background/Objectives: Measles is a highly communicable disease transmitted by the airborne route. Because the likelihood of secondary infection from a single case is high in susceptible individuals, outbreak investigations must be timely and thorough. A measles investigation is often labour intensive for the Infection Prevention and Control Departments (IPAC).

Methods: In September 2016 a patient with measles was seen in our hospital ER and one clinic, without being placed on precautions. A measles post-exposure investigation was conducted. Contact tracing of all patients in the ER and the outpatient setting was completed. All healthcare workers (HCWs) who were in the departments at the time of the patient’s visit were contacted and immunity was assessed. Serology was drawn on all HCWs and patients whose immunity was unknown. High risk exposed patients were screened and offered immunoglobulin (Ig). In conjunction with our local Public Health unit, a communication strategy was developed to inform the public about possible exposures. Routine IPAC work was halted to conduct this investigation.

Results: 175 patients were identified as exposed; of these, 15 patients remained in hospital, and five were immediately placed on Airborne Precautions until serology results were available. Two patients were non-immune and remained on Airborne Precautions for the duration of their stay. Three exposed high-risk patients were susceptible and received Ig. Twenty-five HCWs were considered exposed; four had undocumented immunity. No secondary cases were identified. No adverse outcomes were reported as a result of the delay in routine IPAC work.

Conclusion: Despite heightened awareness of communicable diseases based on recent global events, and enhanced screening mechanisms in place in hospitals, delays in recognition of less common communicable diseases such as measles and implementation of appropriate preventive measures continue to occur. Measles investigations place a significant but avoidable burden on IPAC and hospital resources.

POSTER 15
IMPLEMENTATION OF INFECTION PREVENTION AND CONTROL GUIDELINES: CHALLENGE FOR INFECTION CONTROL NURSES IN PAKISTAN
Aryfa Khan1
¹Infection Prevention Nurses Association, Pakistan

Introduction: Infection control and prevention measures are essential components of quality healthcare and patient safety in health facilities; moreover infection control nurses play a vital role in implementation of infection control and prevention guidelines. Healthcare associated infections effect people worldwide and is a global issue for patient safety. Patients in low middle income countries are at a higher risk for hospital acquired infections. Implementation of infection prevention and control is a challenge in hospitals. The objective of this paper is to discuss the role of infection control nurses in implementing infection control guidelines in hospitals of Pakistan.

Method: Telephonic surveys were conducted from major hospitals of Pakistan, Infection Control nurses at nine hospitals were approached, out of which eight responded. The interview took 15 minutes with 06 questions, with all of them being open-ended.

Result: All most all Infection Control Nurses gave similar answers as to the issues they were facing. The most common issue were, lack of modified guidelines and policies, reluctance for compliance, lack of structured educational program for Infection prevention and control, inadequate or shortage of supply, overburdened, unrecognized sub-specialty. Moreover there is no surveillance and audit system in place to monitor infection rates. Conclusion: Infection control nurses must have educational opportunity and requires multidisciplinary efforts, and experts from their respective field like physicians and nurses. The hospital based policies need to be developed so as to ensure continuous monitoring, audits and surveillance for the progress and outcome of implemented policies. Also need dedicated efforts to promote the specialty.

POSTER 17
IT’S IN THE BAG! SELECTION, IMPLEMENTATION, AND USE OF HYGIENIC BAGS FOR HUMAN WASTE MANAGEMENT IN AN ACUTE CARE HOSPITAL SETTING: A QUALITY/PROCESS IMPROVEMENT INITIATIVE
Sheila Shepperd1
¹Nova Scotia Health Authority- Valley Regional Hospital

It’s in The Bag! Issue Bedpans and commodes were used to manage human waste in a rural Nova Scotia hospital district. These needed to be cleaned after each use. Frontline staff used spray wands or hoppers to clean and dispose of pan contents. After a hospital in the province experienced an outbreak of Clostridium difficile (Cdiff), provincially, recommendations were made to remove spray wands from patient care areas. Background Early in 2011, some hospitals in Nova Scotia experienced an outbreak of Cdiff. Spray wands were a common tool used by staff to clean bedpans and commodes at the time. However, research indicated that spraying these items caused aerosolization of their contents and subsequent contamination of the environment and health care workers (Alfa, 2010). Cdiff outbreaks in Ontario and Quebec implicated spray wands as being one source of contamination (Lobb, 2009). After review a provincial recommendation that spray wands be removed or decommissioned in patient bathrooms and soiled utility rooms was sent. While alternatives were being reviewed strategies that reduced contamination were implemented for frontline staff, which required use of full Personal Protective Equipment. These interim waste management processes required much additional time and resources to implement. In addition there was resistance by staff to change practices.

Project: Methods reviewed: 1. Bedpan flusher/disinfectors that cleaned and disinfected bedpans required expensive equipment. 2. Macerators using disposable pans offered single patient use solution but were ultimately rejected due to infrastructure and hospital sewage line issues. 3. Hygienic bags were easy to implement but represented ongoing expense. Results: Ultimately hygienic bags were selected as the best method to manage human waste in this health district. Because it represented improved infection control outcomes and overall cost reduction.

Lessons Learned: Simple changes in the management of human waste saved valuable nursing staff time in a safe and acceptable manner.
IPAC Canada 2017 Conference
Charlottetown, PEI | Monday, June 19 and Tuesday, June 20, 2017

All sessions will be held in the PEI Convention Centre, Exhibit Hall. Posters are available for viewing from Sunday, June 18 (7:30 p.m.) to Tuesday, June 20 (2:00 p.m.). Poster Presentations will be held from 12:30 p.m. to 1:15 p.m.

POSTER PRESENTATIONS

POSTER 19
REPROCESSING IMPROVEMENT INITIATIVE AMONG ONTARIO MIDWIVES
Carla Wilkie

In 2015, midwives in one community experienced a small, localized outbreak of invasive Group A Strept. This outbreak served as a catalyst for a provincial IPAC improvement initiative, led by midwives’ professional body, the Association of Ontario Midwives. Existing resources from provincial and national bodies were voluminous, costly, confusing, and often irrelevant to this sector. Recognizing the challenges of making improvements among these diverse, under-resourced and hard-to-reach community healthcare providers, the AOM adopted a change management approach. This presentation will review the initial catalyst for change, the gaps in current provincial and national approaches to the communication of reprocessing standards, and how the AOM stepped into fill this gap for midwives. The AOM has created a number of knowledge translation resources and implementation tools to support midwives to understand and comply with these standards. The presentation will also review how some standards had to be adapted to be relevant and implementable in community healthcare. For example, the AOM has completed a quality improvement study (using the Plan-Do-Study-Act methodology) on how to maintain sterility during transportation without climate control in mobile healthcare.

POSTER 21
THE SILENT OUTBREAK: LEAN TO THE RESCUE
Lorena McGuire1, Julie Mori2, Nicki Gill3

1Interior Health

Issue: In November 2015, there were 2 surgical site infections with MRSA among patients in a 33-bed surgical unit. These triggered an investigation because the surgeries did not seem to be the source and there was some microbiological evidence that transmission may have occurred on the unit. From December 2015 through February 2016 additional cases were identified retrospectively and, in order to halt transmission, many infection control measures were carried out on the unit. As the end of the investigation, transmission among 16 cases was confirmed through microbiological and epidemiological evidence.

POSTER 23
TESTING NONTUBERCULAR MYCOBACTERIUM (NTM) IN HEATER-COOKER UNITS FROM HOSPITALS ACROSS CANADA
Michael Saleh, MHSc; Amin Maharaj, MSc; James Scott, PhD; Yaima Arocha-Rosete, PhD; Susan Du, Msc; Kristine White BA

Background: Heater-Cooler devices are commonly used during surgical procedures to warm or cool the temperature of the patient. Temperature is controlled by heat exchangers and water tanks which can support microbiological growth. In 2015, the FDA issued a safety communication based on European data about the risk of nontuberculous Mycobacterium (NTM) infections associated with Heater-Cooler devices. In October 2016, Health Canada issued communication on this issue. Given the critical nature of the use of these devices, there was an expressed need to reduce any downtime. The standard culture based analytical techniques are very specific for the identification of NTM, but have the limitation of taking up four weeks for results. The need arose for a quick turnaround testing solution to determine the contamination of the devices and to confirm disinfection that the traditional culture techniques could not meet. The development of Polymerase Chain Reaction (PCR) based tests specific for Mycobacteria has decreased testing time from several weeks to several hours by allowing the direct detection of Mycobacteria from mixed samples without the need for culturing.

Methods: Water samples from in-use machines from Hospitals across Canada were collected to determine whether NTM were present. Water samples were concentrated and tested by real-time PCR for the presence of Mycobacterium. Presence of heterotrophic bacteria, Escherichia coli and Pseudomonas aeruginosa was also determined by traditional culture methods. Devices that were positive for NTM underwent a disinfection procedure and were retested.

Results: More than 300 samples were tested, and there was a positive correlation between heterotrophic bacteria and the presence of NTM. Based on a cursory review of the data, it appears that thorough cleaning resulted in a reduction and/or elimination of microbial contamination in a vast majority of the units. A statistical analysis of the incidence of NTM and efficacy of disinfection will be presented.

Conclusions: The real-time PCR approach allowed for an extremely quick result when compared to traditional Mycobacterium culture methods.

POSTER 25
GLOVE BEST PRACTICES: AUDIT GAPS & EXPECTATIONS
Melanie Lipka, Michael Tsang

Issue: To validate that best practice guidelines are being followed, organizations typically use audit tools to identify gaps between standards and practice. Many Infection Control Practitioners (ICPs) have expressed interest in auditing best practices for gloves in Acute care and other environments, but we are not aware of standardized glove auditing tools that would allow them to do so.

Project: To better understand the current state of auditing for glove best practices, we undertook a scan of guidelines (Center for Disease Control, Provincial Infectious Diseases Advisory Committee, and World Health Organization). We also compiled related audit tools and tabulated which guidelines were covered, and cataloged the gaps between what the tools measure and what the best practices suggest.

Results: Most audit tool questions can be placed into three broad categories: ‘Technique’, ‘Appropriate Use’, and ‘Product’. So far, “75% of the tools covered Technique, “62% covered Appropriate Use, and “25% covered Product. However, the most detailed recommendations from the guidelines were not specifically covered by the audit tools. We are in the process of surveying ICPs about their attitudes towards various best practice guidelines and practicality of auditing. We anticipate being able to report insights as to why there is such a large gap between the guidelines and the tools that are used to audit glove compliance.

Lessons learned: There appears to be a large gap between glove best practice guidelines and what is being audited. It is not immediately clear why this is the case. To gain insight into this gap, we are in the process of conducting a survey to measure the attitudes of ICPs with respect to the importance of the guidelines and their view on the benefit of auditing. We will present the gap between guidelines and of the survey, results, and lessons learned. Funding support generously provided by the Government of Canada through the National Research Council’s Industrial Research Assistance Programme.

POSTER 27
ASK THEN ACT: THE PATH TO CONTINUOUS QUALITY IMPROVEMENT
Jun Chen Collet1, Robyn Hunter1, Helen Evans1, Sarah Wells1, Viola Tang1, Rishi Chatterjee1, Ghada Al-Rawahi1, Alisson Chant1, Michelle Chang2, Adriana Ezeley1, Simon Dolson1, David Goldfarb3, Kristie Harding1, Louise Holmes1, Marney Hunt1, Sheetal Kaisb3, Kimberly Mallory4, Bon Morley1, Charina Rivas1, Julita Senkiewicz4, Judy Tearoe4, Lisa Young1, Jocelyn Srigley1

1Provincial Health Service Authority, 2Provincial Health Service Authority, BC, 3Provincial Infection Control Network of British Columbia, 4BC Cancer Agency, 5BC Children’s Hospital, 6BC Forensic Psychiatric Hospital, 7BC Emergency Health Services

Background/Objective: The Infection Prevention and Control (IPC) service at the Provincial Health Services Authority (PHSA) was formed in 2006. The IPC team works collaboratively with different groups at PHSA to ensure that everyone has both knowledge and confidence in infection prevention. In order to identify service gaps and opportunities for improvement, we conducted a survey to assess PHSA staff perception of IPC services. Methods: The health authority-wide anonymous survey was conducted between October 14th and November 7, 2015, and targeted all PHSA employees, medical staff, and contracted providers (e.g., housekeeping, food services). The key survey themes included: 1) awareness of the scope of IPC services; 2) satisfaction with IPC services; 3) perception of infection control practices in preventing the spread of infection and 4) accessibility and usefulness of IPCInformation.

Results: There were 668 responses received, of which 90% agreed that good infection control practices will prevent the spread of infections. Among respondents who had contact with IPC (n=378), 59% rated IPC services in their workplaces as either good or excellent and satisfaction increased with frequency of IPC contact (daily contact 69%, weekly 64%, monthly 60% and yearly 55%). Awareness of eight major types of IPC information listed on the survey ranged from 17% (IPC annual report) to 96% (hand hygiene information), and those who had accessed IPC information found them useful, ranging from a low of 71% for the IPC annual report to a high of 88% for hand hygiene information. Few gaps in IPC education and communication with staff as well as IPC service accessibility at certain facilities were also identified.

Conclusions/Future Direction: The survey results have allowed the IPC team to identify new priorities and improvement activities to move forward. Reinforcing
consistent communication, targeting education for patients and providers, and improving availability and accessibility of IPAC resources and contact information are currently under way.

**POSTER 29**

**CARBAPENEM RESISTANT ENTEROBACTERIACEAE (CRE): DEVELOPING A CONTINUUM OF CARE TO REDUCE TRANSMISSION IN THE COMMUNITY**

Nicole Poliquin¹, Gaylaine Morin¹, Frédéric Gaspard¹, Maria Jesus Arrieta²

**Issue:** The emergence and dissemination of Carbapenem Resistant Enterobacteriaceae (CRE) and other multidrug resistant organisms (MDRO) has become a serious threat to public health. One hospital in our organisation has been facing this challenge since 2012 from cases identified after extended antibiotic use or from clusters of KPC Klebsiella species and Citrobacter freundii. Transmission has always been limited to the Intensive Care Unit. Recently the epidemic situation has evolved to a territorial and a regional issue. The MWI UHSSC covers the entire Montreal West Island territory and includes hospitals, public and private LTCF, clinics, CLSC, and the community. IPM measures to control CRE had to be adapted to each health care model. The official provincial CRE Guidelines developed (Quebec Public Health National Institute, NSPIQ) for acute care centres only. The objective was to aim at a better integration of services by evaluating needs, human and material/equipment resources available when patients were transferred from the hospitals. This meant adapting current policy and procedures to each environment, validating and revising practices: 1) Routine practices and additional precautions 2) Screening: Routine, follow up and point prevalence 3) improvement of communication between establishments 4) Educational tools. Individual consultation with each service manager and IPC practitioner was useful to evaluate the environment, human resources and to highlight the service’s needs for education and for communication. An IPC policy and procedure were implemented, specifically for the LTCFs and for private small residences.

**Lessons Learned:** A continuum of care from the hospital through the community facilities is strategically important in order to control transmission of CRE.

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**POSTER 31**

**CHICKEN POX AFTER SHINGLES EXPOSURE**

Feng Linda Shi¹, Gordana Pihlola¹, Jane Toove¹, Judy Whitfield¹, Liz McCreight¹, Allison McGeer³, Sharon Leveque³

¹Sinai Health System Bridgepoint Active Healthcare

**Issue:** Chicken pox resulting from shingles exposure is extremely uncommon in adults in Canadian hospitals, because virtually all Canadian-born adults are immune to varicella. However, as the number of immigrants from tropical/subtropical countries increase, and exposure to children with chickenpox decreases because of vaccination programs, the number of non-immune adults at risk of chickenpox from shingles exposure may increase. Exposure/Investigation: An 86 year-old in-patient in continuing care developed abdominal shingles. His roommate, a long-stay 62 year-old, developed chicken pox 13 days later. The roommate immigrated to Canada from a subtropical country; no records of disease, vaccination or immunity testing were available. Appropriate additional precautions for chicken pox were initiated. Infection Prevention and Control (IPAC) undertook an epidemiological investigation to identify patient and staff exposure. Criteria for immunity testing was set based on each exposed person’s age, history of chicken pox, country of origin and extent of exposure. Communication tools were developed for patients, staff and visitors.

**Results:** 48 patients were considered exposed: 35 were classified as immune based on clinical criteria and 13 required serologic testing. Eleven of these tested positive for VZV IgG, one tested negative and one test was equivocal. The two non-immune patients were managed in airborne precautions until day 21 after exposure. 260 exposed staff were all determined to be immune. No patients or staff developed chicken pox.

**Conclusion:** Exposure to shingles in our hospital resulted in chicken pox which required substantial resources to manage. As the prevalence of varicella non-immune adults increases in Canada, continuing care hospitals should consider VZV vaccination programs, routine immunity assessments for long-stay patients, and shingles exposure assessments of patients.

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**POSTER 33**

**SPASHBACK FROM HAND HYGIENE (HH) SINKS: INVESTIGATION INTO POTENTIAL FOR TRANSMISSION OF CARBAPENEMASE-PRODUCING ORGANISMS (CPO)**

Terry Dickson¹, Swas Narayan¹, Kanwajit Bharti², Elizabeth Brodkin¹, Louis Wong¹, Susan Roman¹, Dale Puyry¹, Marc Dagane², Matthew Leveque¹

¹Fraser Health Authority, ²Fraser Health, ³Fraser Health Authority

**Issue:** A study conducted in 2016 by Brodkin et al. concluded biofilm in sink drains may act as an environmental reservoir for resistant Gram-negative bacteria (GNB) and plumbing should be considered as a point source when sporadic cases of highly resistant GNB are detected in the absence of a known patient source. New CPO cases were identified in the intensive care unit (ICU) of an acute care hospital that could not be explained by patient-to-patient transmission. All sinks and drains in the ICU were cultured and seven sinks were found to be colonized with CPO. Molecular testing suggested a link between the newly colonized patients and the colonized sinks.

**Project:** Environmental investigations and a review of clinical practices occurred from January to November 2016. Clinical practice review included HH and environmental audits, and a survey of the use and misuse of HH sinks. Discussions were held with housekeeping and nursing to clearly identify cleaning responsibilities. Sink remediation was initiated with replacing the talipieces and P-traps. A careful review of the HH sink design revealed the sinks were too shallow and water from the faucets was discharging directly into the drains. Therefore, the faucets were changed and the water pressure was adjusted to reduce splash back during HH. A trial of an enzymatic cleaner was conducted to attempt to reduce the biofilm in the drains.

**Results:** Investigations revealed that HH sinks were being used for various purposes, including discarding unwanted intravenous fluids, enteral feeds, and water contaminated with patient fluids. A ‘Hand Washing Only’ sign was placed above all HH sinks to ensure appropriate use. Review of HH audits indicated poor compliance with the required fiscal period audits. A two-step hand hygiene process was implemented, which included hand washing with soap and water followed by alcohol-based hand rub. Monthly sink drain cultures revealed some remediated sinks became re-colonized with CPO. Weekly point prevalence screening for CPO showed sporadic healthcare-associated transmission on the unit. As previous remediation efforts had been unsuccessful in preventing CPO transmission from the sinks, a decision was made to replace all ICU HH sinks with models designed to prevent splash back.

**Lessons Learned:** The shallow sink design which had been chosen for wheelchair accessibility proved inappropriate for use as a healthcare HH sink for staff. Healthcare facilities need to ensure Canadian Standards Association (CSA) guidelines are followed and HH sinks are selected for the population which will use them. Not all ICU HH sinks need to be wheelchair accessible. A designated HH auditor to ensure compliance with local policies is essential.
typing. Investigation into admission dates and room placement revealed no epidemiologically significant room links, but many patient admissions overlapped. Targeted environmental sampling by PCR demonstrated adenovirus DNA on high-touch surfaces in patient rooms, shared anterooms, and common areas. Enhanced infection prevention and control measures were instituted including Contact Precautions for all patients with a positive adenovirus specimen (regardless of symptoms), double-cleaning of rooms with adenovirus-positive patients, closure of communal spaces, targeted education on infection prevention, and family engagement. With these measures, there has been no evidence of sustained transmission for one year.

Conclusions: Severe outcomes from adenovirus infections are a major concern in the HSCT population. While most cases represent viral reactivation, healthcare-associated acquisition can occur. This cluster of adenovirus was likely multifactorial. Diligent infection prevention and control measures, with enhanced focus on environmental cleaning, appeared to be key factors in preventing ongoing transmission of adenovirus on our HSCT unit.

**POSTER 37**

**UTI MANAGEMENT AND BEST PRACTICE ON A LONG-TERM CARE UNIT**

Natasha Usher-Hameluck¹, Natasha Usher-Hameluck²

¹, ²Alberta Health Services, Stettler Hospital and Care Center, Central Zone

**Background:** Urinary tract infections (UTIs) represent at least 30% of all healthcare-associated infections and are commonly seen in catheterized and non-catheterized residents of long term care (LTC) facilities (LTCF). There is a high incidence of asymptomatic bacteriuria (ASB) in the elderly (6). UTI is difficult to detect in the resident population and as a result antibiotics are prescribed more often for UTI than any other diagnosis in LTCF (6). Treatment of ASB can lead to incongruous use of antibiotics which increases risk of *Clostridium difficile* diarreal infection (CDI) and resistant organism development, such as extended spectrum beta lactamase (ESBL) (6).

**Introduction:** The UTI Phase I best practices review in Heritage House (July 2013-February 2014) identified gaps in best practices including a need for a urine culture reading tool. This tool was created (Sip Before You Send Tool) and implemented in phase II, in conjunction with the Do Bugs Need Drugs (DBND) Long Term Care Facility (LTCF) checklist tool and a second review of best practices. The goals of phase II were improved UTI identification and treatment practice, uptake and use of practice support tools. UTI best practices and management of catheterized and non-catheterized residents in Heritage House was reviewed using the UTI best practices information from the Alberta Toward Optimized Practice (TOP) guideline and information from Cathout.org

**Methodology and Results:** 33 chart reviews were based on urine samples sent to the lab, identified antibiotic treatment and residents identified with an indwelling catheter. The nursing unit staff placed the culture and sensitivity interpretation tool (Sip Before You Send) and LTCF checklist tool on the resident chart when the need for a urine sample was questioned. All charts were reviewed for catheter use and review, urine sample sent, sample result, signs and symptoms, hydration, and treatment. During the eight months of the project, best practices and resident cases were discussed with staff and at several staff meetings.

**Discussion:** Of those residents with a catheter, the need for the catheter was reviewed on a regular basis and rationale for catheter use overall on the unit was 95.5%. Staff charted hydration 73.3% of the time when there was a query of UTI. The long-term care facility checklist and the sip before you send tool were used by the unit staff about half of the time. Residents with a catheter who had a significant culture finding received treatment 54.5% of the time. Those residents had UTI signs and symptoms charted 26.7% of the time. Residents without a catheter who had significant culture findings received antibiotic treatment 90.9% of the time and those residents had signs and symptoms charted 9.1% of the time. Half of residents who received antibiotic treatment within the last 6 months, developed an ESBL.

**Conclusions:** There are further improvement opportunities related to identification, prevention and treatment of urinary tract infections at this site including the consistent use of the LTCF checklist, charting of UTI signs and symptoms according to the LTCF checklist, proper urine sample collection for those with a catheter in situ and judicious use of antibiotics for treatment.

**Project:** The quality improvement project included representatives from dental, medical, respiratory therapy, pharmacy, nursing and infection prevention and control. First, a 5-year retrospective chart review was conducted to determine the population baseline incidence rate of VAP using the Center for Disease Control (CDC) criteria for Clinically Defined Pneumonia in Children > 1 year or > 12 years old and the CDC Criteria for Clinically Defined Pneumonia for Any Patient. The 5-year incidence rate was 0.89 VAP’s per 1000 patient days. All clients with a tracheostomy and/or use of mechanical ventilation were included. Clients who required non-invasive ventilation (Continuous Positive Airway Pressure or, Bi-level Positive Airway Pressure), respire clients and those allergic to chlorhexidine were excluded. Second, a literature review was conducted to determine what is known to date on effective preventative treatment for VAP in children. Third, an oral

**References:**

7. Heritage House unit staff and management, pharmacy, infection prevention and control, surveillance and microbiology are all acknowledged for their contributions to this project.

**POSTER 39**

**AN ORAL CARE INTERVENTION FOR THE PREVENTION OF VENTILATOR-ASSOCIATED PNEUMONIA IN A PEDIATRIC REHABILITATION HOSPITAL: AN EFFECTIVE QUALITY IMPROVEMENT PROJECT**

Carla Sudoma¹, Kathy Maxwell¹, Ana Diambro¹, Andrea Hoffman¹, Jackie Chiang¹, Chitra Gananasabesan¹, Nathan Ho¹, Maryanne Fellin², Robert Carmichael², Nita Moosani²

¹Holland Bloorview Kids Rehabilitation Hospital

**Issue:** Children in rehabilitation care with tracheostomies and who receive invasive mechanical ventilation are at risk for ventilator-associated pneumonia (VAP). Yet, there is little research on the treatment of VAP in rehabilitation and long-term care hospitals. Research has primarily been conducted in pediatric and adult acute care hospitals, without attention to chronic long-term ventilator dependent populations. We aimed to address this gap by undertaking a quality improvement project that included an interprofessional expert task force who led four key initiatives.

**Project:** The quality improvement project included representatives from dental, medical, respiratory therapy, pharmacy, nursing and infection prevention and control. First, a 5-year retrospective chart review was conducted to determine the population baseline incidence rate of VAP using the Center for Disease Control (CDC) criteria for Clinically Defined Pneumonia in Children > 1 year or > 12 years old and the CDC Criteria for Clinically Defined Pneumonia for Any Patient. The 5-year incidence rate was 0.89 VAP’s per 1000 patient days. All clients with a tracheostomy and/or use of mechanical ventilation were included. Clients who required non-invasive ventilation (Continuous Positive Airway Pressure or, Bi-level Positive Airway Pressure), respire clients and those allergic to chlorhexidine were excluded. Second, a literature review was conducted to determine what is known to date on effective preventative treatment for VAP in children. Third, an oral
daily care routine plus chlorhexidine oral rinse intervention for VAP in acute care was identified and adapted to our pediatric setting and a standard of care was developed. The oral care intervention was then implemented and tracheostomy aspirates were taken at four time points (baseline, 3, 6 and 12 months) post implementation to evaluate effectiveness. Surveillance of lower respiratory tract infections was monitored on these clients. Implementation occurred over a one-year period and was supported through the use of a fact sheet, education with point-of-care nurses, and letter outlining the risks and benefits was created and consent from each parent/guardian or substitute decision maker was obtained. Results: There were 10 clients that qualified for the initiative. Three clients were discharged prior to completing the project, with a final population of seven clients. The implementation of the daily oral care routine plus chlorhexidine oral rinse effectively reduced the number of VAP to 0 from a pre-implementation average of 6.75 VAP/1000 per year (range of 2 to 10 per year) in our pediatric rehabilitation hospital.

Lessons Learned: The use of daily oral care plus chlorhexidine oral rinse intervention is effective in reducing the amount of VAPs on this unit. Other benefits include the overall effect on oral health. Next steps are to continue to follow all clients across time for VAP and any negative effects such as teeth staining.

**POSTER 41**

**CRE CARRIAGE FOLLOWING HOSPITAL ADMISSION**

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1Integrated Health and Social Services Network - West Central; Jewish General Hospital, McGill University

**Issue:** We are a 637-bed tertiary care academic hospital that is part of an integrated health and social services network. Since August 2010 we experienced several *carbapenem-resistant Enterobacteriaceae* (CRE) outbreaks. An electronic alert code or “flag” is placed for all patients identified as CRE carriers: 120 patients are in our database. Patients can remain identified as CRE carriers for extended periods. There are no clear guidelines regarding removal of the “flag” in acute care. Once patients are discharged follow up screening is difficult. Consequently, patients remain flagged in database for years and may risk being placed in a CRE cohort, if readmitted, despite previous negative CRE results. A process to remove the alert post discharge was identified and is being tested with CRE carriers. Project: A literature review on duration of CRE carriage guided us in establishing criteria for removing the alert. Lab results of all CRE carriers since August 2010 to January 2016 were reviewed to identify patients that meet the inclusion criteria. Eligible patients were contacted by phone to request their participation to provide required CRE screening post-discharge. Home visits will be conducted for those unable to come to hospital. Specimens will be processed using PCR. An information pamphlet was developed for mailing to all participating patients.

**Results:** 74 of 120 patients were eligible. From these, 14 have passed away, 19 could not be contacted, 9 refused, 11 needed follow-up, and 21 accepted. Results will determine duration of CRE carriage and the need for cohorting/isolation on readmission.

**Lesson Learned:** Retesting patients post discharge may be beneficial as it can guide in the elaboration of a “de-flagging” protocol allowing us to remove patients from isolation in a safe and timely fashion. The burden of positive CRE carriage within our establishment and the prevention of re-exposure to CRE may be reduced as a consequence.

**POSTER 43**

**A PROVINCIAL INFECTION PREVENTION AND CONTROL LEARNING NEEDS ASSESSMENT: USING BEST PRACTICES TO GUIDE SURVEY DEVELOPMENT**

Juliana Barry1, Provincial Infection Prevention and Control Education Task Group

1Queen Elizabeth Hospital

**Issue:** The Provincial Infection Prevention and Control Education Task Group was developed in 2012 to function within the Provincial Infection Prevention and Control Program to help build capacity for Infection Prevention and Control within provincial health system and community counterparts. The Education task group’s mandate is to develop education programs based on identified needs in the provincial health care system and plan provincial delivery of the education program. Infection Prevention and Control Canada have developed a set of core competencies that provide essential information that a health care worker involved in patient care needs to allow them to work safely and prevent transmission of organisms in their work place.

**Project:** In fall 2014, a survey was developed to identify the learning needs of healthcare staff. The survey development was guided by the consensus document of core competencies in Infection Prevention and Control for health care workers. The survey was distributed electronically to healthcare stakeholders in early January 2015.

**Results:** Over 230 responses were received from the survey. Results were tabulated using Microsoft Excel. Priorities identified were hand hygiene and personal safety. Majority of staff preferred formal education sessions. Lessons Learned: Effective staff development programs begin with a needs assessment of the learners. Research indicates that adults are interested and motivated when they enter education programs because of perceived needs they have identified. Using the results of the survey, the Provincial Education Working Group developed two successful programs: Enhancing staff’s awareness of appropriate body fluid exposure management and standardizing staff hand hygiene education across the healthcare continuum. Future projects will be guided by the survey results.

**TUESDAY, JUNE 20, 2017**

**POSTER 2**

**THE IMPACT OF ISOLATION PRECAUTIONS ON HEALTH CARE WORKERS AND THE INFLUENCE OF INFECTION CONTROL EDUCATION ON PERCEPTIONS AND ACTIONS**

Rosemarie Howe1, Yasmine Chagla1, Michael John1

1London Health Sciences Centre, St. Joseph’s Health Care

**Issue:** Infection control (IC) precautions mitigate transmission of health care-acquired infections (HAIs). Unintended consequences have included reduced patient interaction time. Poor compliance by health care workers (HCWs) has also been reported. Various factors such as the category of HCW, workload, years from graduation and related education have been shown to have an impact on the attitudes and actions toward isolated patients. Project: The effect of IC precautions on HCWs’ perceptions of patients and delivery of care, compared to patients not on precautions, was studied. An established questionnaire regarding these issues was distributed to HCWs anonymously to define any potential negative impact on healthcare. Following an aggressive HAI reduction plan, with interactive education sessions, organizational strategies and auditing of IC practices with feedback, the impact on HCWs’ attitudes and actions was objectively and statistically evaluated (Chi-square, Wilcoxon 2 sample test, p < 0.05).

**Results:** The typical participant was a female Registered Nurse; 5 to 9 years work experience, caring for 4 to 5 patients, including 2 to 3 isolation precautions. HCWs felt that stress and time for care was increased by higher acuity patients on IC precautions. Education and auditing had a significant positive impact on the HCWs with respect to patient care, patient outlook and organizational skills. Hand hygiene and personal protective equipment use improved immediately after the education sessions, however, compliance declined as time passed and was negatively impacted by the introduction of new clinical initiatives.

**Lessons Learned:** By understanding the impact of IC precautions on patient care we were able to design educational interventions for HCWs, which led to improved compliance with precautions. Results stressed the importance of identifying crucial moments that lead to non-compliance and vital behaviors to prevent errors from occurring, as per the influencer model of six sources of influence involving personal, social and structural motivation.

**POSTER 4**

**THE INCIDENCE AND SEVERITY OF SURGICAL SITE INFECTION IN WOMEN UNDERGOING MASTECTOMIES FOR BREAST CANCER WITH AND WITHOUT IMMEDIATE RECONSTRUCTION**

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1Sunnybrook Health Sciences Centre

**Background:** Surgical site infections (SSI) are the most common nosocomial infection in surgical patients, accounting for about 38% of such infections. SSIs result in increased length of stay, morbidity, mortality and healthcare costs. The incidence of SSI following breast surgery varies in the literature ranging from 1% to 30% depending on the surgical methods and indication for surgery, comorbidities of the patient, time of follow up, and perioperative management. There is limited data available regarding the risk of SSIs in patients who have undergone mastectomies and immediate reconstruction.
Objective: To assess the incidence and severity of SSI in mastectomies with and without immediate reconstruction for patients with cancer.

Methods: Prospective SSI surveillance was conducted in patients undergoing elective mastectomies for cancer from April 2015 to September 2016. Patients were followed post-operatively for up to 30 days for only mastectomy and 90 days with reconstruction. SSI diagnosis was based on the Centers for Disease Control (CDC) criteria. The severity of SSI was classified as superficial, deep and organ/space.

Results: There were a total of 215 mastectomy cases performed from April 2015 to September 2016. The incidence of SSI was 9.3% (20/215) overall, 8.2% (12/146) for mastectomy only and 11.6% (8/69) for mastectomy with reconstruction (4 implants, 4 autologous). With respect to severity, 95% (19/20) of the cases were superficial, 5% (1/20) deep (immediate reconstruction case) and no organ/space.

Conclusion: The incidence of SSI was 3.4% higher in patients who underwent immediate reconstruction compared with mastectomy only. There is no difference in the incidence of SSI between autologous or implant reconstruction. The majority of infections were superficial.

POSTER 6

AN 8-YEAR RETROSPECTIVE REVIEW OF DECOLONIZATION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) TREATMENT IN A PEDIATRIC REHABILITATION HOSPITAL

Cara Sudoma1, Kathy Maxwell1
1Holland Bloorview Kids Rehabilitation Hospital

Issue: Colonization with Methicillin Resistant Staphylococcus Aureus (MRSA) bacteria in hospitals can be challenging for patients, healthcare providers and health care systems. One strategy used to limit MRSA transmission is to isolate patients to their rooms in additional precautions (AP). For pediatric rehabilitation hospitals, the practice of isolation restricts the child's goal-attainment opportunities, participation and inclusion; reduces access to therapy; and increases hospital length of stay. The infection control and clinical teams sourced and trialed a MRSA decolonization treatment protocol and subsequently, retrospectively reviewed treatment outcomes over an 8-year period. Project: A treatment protocol that included Chlorhexidine bathing, Mupirocin cream, Trimethoprim, and Rifampin was identified in the literature as effective in reducing MRSA colonization. Each child was assessed on a case by case basis and treated with the protocol medications for seven days. The implementation of protocol medication combinations varied over time and in accordance with the site of colonization. For example, if the nares were the only site of colonization, treatment with a single medication (Mupirocin cream) was given. Whereas, children with multiple colonization sites were treated with multiple medications. All children had affected sites swabbed pre-treatment and three times post-treatment at 48 hours, 1 week and 2 week intervals. Decolonization was deemed successful based on three consecutive negative swabs. A retrospective chart review was conducted to determine the treatment patterns and outcomes for all children colonized with MRSA over an 8-year period from January 2008 to December 2016.

Results: In total, 57 children were admitted and colonized with MRSA at our rehabilitation hospital. Thirty-four clients did not qualify for treatment, e.g., short stay admissions, on long term antibiotic therapy, and colonization cleared prior to treatment. The remaining 23 children were treated with one or more protocol medications. Six children were lost to follow-up. Decolonization was successful in 17 clients, for a success rate of 73.9%. Continued clearance of MRSA 1 to 2 months after initial treatment was achieved.

Lessons Learned: We found that the use of Chlorhexidine liquid or impregnated wipes were equally effective. Clients with one site affected (nares) cleared with the use of one drug (Mupirocin). Clients with multiple sites affected cleared their MRSA equally with a triad vs. quad treatment protocol. Rifampin was used the least. Next steps are the recommendations for a standard of care that is site specific to be developed for the treatment of decolonization of MRSA in our population. Clients were lost to follow up so our success rates could be higher. Hidden benefits are increased client and family satisfaction, reduced stigma, increase in socialization and decreased length of stay.

POSTER 8

CREUTZFELD JAKOB DISEASE PROTOCOL IN A TORONTO TEACHING HOSPITAL

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1Sunnybrook Health Sciences Centre

Issue: Proper management of suspect Creutzfeld Jakob Disease (CJD) cases is described in a policy at Sunnybrook Health Sciences Centre. In October 2016, an incident report generated by the laboratory outlined issues on specimen handling and labeling related to a possible CJD case. Infection Prevention and Control (IP&C) identified two main practice issues: Medical Residents were unaware of the IP&C CJD policy for invasive procedures involving high and low infectivity tissue; a biohazard bag was not used to transport the specimens to the laboratory.

Project: Two tools were created to assist with staff education. A CJD algorithm was developed with feedback from Neurology outlining IP&C recommendations for lumbar puncture (LP), the most common procedure performed on CJD cases. The algorithm requires notification of IP&C prior to performing the LP, single use disposable equipment, incineration container, specimen labeling and transportation. The algorithm was circulated to stakeholders, posted on the intranet and inserted by Neurology into new Medical Residents’ orientation packages. In addition, signage was designed to differentiate the two bags available with a reminder to use “biohazard” bags for all specimen transportation. The signage was strategically posted to all specimen collection areas to prompt staff to use the appropriate bag.

Results: One query CJD case has been reported to IP&C since implementation of this algorithm in November 2016. Residents reported referring to the algorithm prior to performing the LP on a possible CJD case. Specimens were sent to the laboratory using correct container and no further safety issues were identified since the implementation of the two tools.

Lesson Learned: Easily accessible tool and clear signage are some key interventions that can be used to educate new or rotating staff.

POSTER 10

USING AN ARTS-BASED METHODOLOGY TO EXPLORE HEALTHCARE WORKERS CONCEPTIONS OF PATHOGENS IN THE CONTEXT OF HEALTHCARE-ASSOCIATED INFECTIONS

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1Glasgow School of Art

Background and Objective: The invisibility of pathogens under normal circumstances is a particular challenge for healthcare staff seeking to prevent and control infection in clinical areas. Within this context, very little is known about the extent to which these staff use the mind’s eye to visualise pathogens and their relationship to healthcare associated infections. This presentation reports on an initial study which addressed this knowledge deficit by exploring how healthcare workers envisage pathogens in the hospital context.

Methods: Ten hospital-based healthcare workers and two patient representatives participated in an in-depth workshop combining risk identification, making activities and in-depth interviews. This methodology was based on Sullivan’s Dimensions of Visualisation framework relating to data, text, ideas and objects. A descriptive cross case analysis approach was used to summarise and synthesise the data.

Findings: Participants described their respective roles and routines and indicated perceived loci and foci for pathogens in a hospital context and associated risks. Few of the participants actively visualised pathogens in their mind’s eye during clinical practice. However, an activity that invited participants to make representations of pathogens using a modeling toolkit yielded detailed insights into imagined pathogen characteristics. Conceptions appeared to be influenced primarily by microbiology and infection control campaigns.

Conclusion: Sullivan’s Dimensions of Visualisation framework proved useful in structuring this initial enquiry and merits wider application and evaluation by qualitative health researchers. Moreover, with increasing international interest in the role of mental models in influencing clinical IPC practice, further research on the nature and impact of visual representations is merited.

POSTER 12

PREVENTING HOSPITAL-ACQUIRED INFLUENZA: OLD STRATEGIES TO NEW POLICY

Tim Doyle1
1The Ottawa Hospital

Issue: Influenza immunization is recommended for individuals aged 6 months and older. At The Ottawa Hospital, there is an interdisciplinary Influenza Committee with a focus on staff immunization. There is an influenza immunization policy for staff but not for patients. During the 2016 17 influenza season, newly admitted patients were not routinely offered influenza immunization. Influenza immunization status for patients was not being assessed or documented on admission.

Project: As a result of cluster of hospital-acquired influenza cases in December, a communication blitz to managers and educators on medical units was completed. This included the importance of reminding their nursing staff to assess influenza immunization status, offer immunization if appropriate, and document in the
An audit of compliance was completed approximately one month after the communication blitz. At the end of January, a case review of a patient with hospital-acquired influenza A was presented to physicians and residents on the medical service. The importance of influenza immunization for hospitalized patients and the need to document immunization was emphasized.

**Results:** An audit after the communication blitz found documentation of assessment for immunization status only 2 of 92 patient charts. Chart audits before and after the case presentation identified 0/5 and 3/7 charts respectively with documentation of influenza immunization status.

**Lessons Learned:** Increased communication to Clinical Managers and a case review presentation to physicians did not result in an increase in assessment of influenza immunization among newly admitted patients. Future consideration should be given to developing a patient specific immunization policy to guide practice. Auditing documentation of patient influenza immunization should be performed regularly and feedback provided to frontline staff. Failure to offer the influenza vaccine to newly admitted patients in an acute care setting should be highlighted as a patient safety issue.
national average. To overcome this challenge, IPAC championed an initiative to introduce 2% chlorhexidine Antiseptic Body Cleanser for daily bathing.

Methods: A four-month trial was conducted in 4 units at the General and Birchmount sites of SRH (ICU, nephrology and medicine). In lieu of using traditional bathing products (basin, soap, linens), staff were introduced to the concept of waterless bath using one package of Sage ABC. HA-ARO rates from March-June 2015 were compared to those of March-June 2016. Return on investment (ROI) and additional length of stay were calculated using hospital data and estimates of costs to treat an ARO from provincial organizations and other literature. Compliance was measured through monitoring product usage and comparing it with the unit census.

Results: From March-June; SHR experienced 15 HA-ARO cases in 2015 and a total of 5 HA-ARO cases in 2016, with an overall reduction of 67%. There was a decrease in MRSA and C. Diff cases from 4-0(100%), and 10-2(80%); and an increase in VRE from 1-3(200%) when comparing those two periods. In terms of cost, this initiative generated an ROI for SRH of $64,556 and saved up to 90 patient-days. Overall compliance of product usage was 78%. Conclusions: The overall decreased transmission of HA-AROs during the trial period provided basis for the implementation of daily chlorhexidine bathing at SHR. In addition to the benefits of reduced AROs, staff reported that the product saved time, was easy to use and was positively received by patients.

POSTER 22

FOOL ME ONCE, SHAME ON YOU; FOOL ME TWICE, SHAME ON ME: LESSONS LEARNED FROM INFLUENZA OUTBREAKS

James Wong¹, Rebecca Ramsden for the nurses of the ACE unit¹, Vicki Lau for the MAUVE program¹, Vivien Lam¹, Shona Sen-Rew¹, Mount Sinai Hospital Infection Prevention and Control Team²

¹Mount Sinai Hospital - Sinai Health System
²Issue: Influenza outbreaks occur frequently in hospitals and nursing homes. During H3N2 waves, increased bio-burden and risk of outbreaks occurs because of both staff illness and the number of patients requiring hospitalization for influenza. In 2011, our hospital converted an internal medicine unit into a 28-bed Acute Care for Elders (ACE) unit that provides specialized care for particularly vulnerable older adults. In 2013, the ACE unit moved to new space. Since the move, new influenza outbreaks occurred in 2014/15, and two in (2015/16) and have occurred: the first influenza outbreaks at our hospital since 1999.

Project: A multi-disciplinary group was established to review current practices and develop prevention strategies.

Results: Three types of prevention strategies were implemented: patient and family engagement, physical separation and heightened surveillance.

Patient & Family Engagement: Patient/visitor information was developed and distributed to all admissions. Infographic posters and signage were created for the 2016/17 influenza season and placed throughout the unit. The patient influenza vaccination program was re-instituted.

Physical Separation: Space markings were created as a visual reminder to maintain one metre separation whenever patients are outside their rooms.

Modifications were made to patient programs being offered for ACE patients to reduce the risk of influenza transmission.

Heightened Surveillance: A nursing “influenza prevention and management” order set was created to facilitate recognition and testing of patients with possible influenza. IPAC kept the unit informed about the current status of influenza activity. Staff call logs were monitored. A single case of nosocomial influenza activated additional measures.

Lessons Learned: Staff and families have been enthusiastic and dedicated to prevention. At the time of abstract submission, even with many patients admitted with influenza, we have not had an outbreak. While we cannot control which influenza strains are circulating, we can mitigate risk by working collaboratively to develop outbreak prevention strategies.
Project: The aim of the project was to identify those patients with latent tuberculosis prior to start of cancer treatment to prevent the development of active disease. A one-step TST is performed at intake into the cancer centre. Patients with positive TST are referred to the Infectious Diseases clinic for assessment.

Results: A multidisciplinary group consisting of physicians, pharmacy, nurses, infection prevention and control, and public health met numerous times to determine the process for implementation of TST for patients identified at high risk of active tuberculosis. The process included: determining clinic areas and times for testing and follow-up; educating nurses on performing TST; identification and chart development for TST referral criteria; purchasing equipment such as a Ministry-approved monitored refrigerator; and ordering of Tuberculin as per Ministry guidelines. Information sessions for the physicians caring for at risk patients were held during their rounds.

Lessons Learned: The goal is to provide patients with the highest quality of care and safety by developing strategies to minimize the risk of transmission of TB. A multidisciplinary approach is necessary to improve a complex process.

POSTER 30
SHOULD SCREENING LONG STAY PATIENTS AT 30 DAYS
BE PART OF AN ACUTE CARE MRSA CONTROL PROGRAM
Maureen Accon1, Zoran Pikuša2, Wil Ng3, Doreen Alexander4, Maja McGuire4, Kevin Katz5
1North York General Hospital

Issue: A best practice surveillance program for Infection Prevention and Control (IPAC) includes screening for antibiotic resistant organisms such as Methicillin Resistant Staphylococcus Aureus (MRSA) upon admission, as well as periodic prevalence screening. North York General Hospital’s (NYGH) MRSA screening strategy includes universal admission screening for all new medical program admissions, transfers from long-term care facilities, patients with a previous history of MRSA, those who have been admitted out of country within 12 months, and all orthopaedic patients admitted through the emergency department. Other surgical patients are screened using standard risk factors as outlined by the Provincial Infectious Diseases Advisory Committee (PIDAC). Prevalence screening for MRSA is done periodically (unit by unit) and informed by new nosocomial cases, or, a high burden of colonization/infection. NYGH instituted MRSA screening of long stay patients, at 30 days after admission, in 2009.

Project: From July 2009 until Sept 2016 a total of 1498 long stay patients were screened at day 30. Those patients with a known history of MRSA were excluded. 1471 (98.2%) patients were found negative while 27 (1.80%) patients were found positive for MRSA and were, therefore, nosocomial. This prevalence of 1.80% is comparable to the risk of MRSA colonization among general admissions to NYGH where 5 out of 362 patients were found positive, a prevalence of 1.38% (previously published).

Lessons Learned: Screening long stay patients contributes to MRSA control; however, further study is required to determine cost effectiveness.

POSTER 32
CONTINUING CARE PROVINCIAL WORKING GROUP: COLLABORATION IN ALBERTA HEALTH SERVICES
Karen Cargill
1Alberta Health Services

Issue: A gap analysis in Alberta Health Services (AHS) in 2011 identified that Infection Prevention & Control (IPC) human resources for continuing care fell short of the benchmark norms in Infection Control Professionals to bed ratios. In order to make existing limited resources more effective, a continuing care working group with representatives from all 5 zones in Alberta Health Services was formed in 2012 to standardize processes with a focus on improving resident outcomes relating to infection control. The purpose of the group was to identify priority actions and/or projects and to provide deliverables, approved by IPC Operations in support of IPC’s strategic direction in collaboration with Provincial Seniors Health. This working group provided a forum for mutual support within AHS to access resources, documents and tools to assist in the development of evidence-based best practice guidelines for IPC activities in the continuing care environment. Recommendations apply to AHS owned and contracted Facility Living and Supportive Living Continuing Care sites in Alberta.

Results: Work over the past 5 years created opportunities for the working group to review existing IPC resources and develop new resources for Alberta’s Continuing Care facilities. The Continuing Care IPC resource manual was key which includes: disease and transmission table, additional precaution information sheets and posters, guidelines for Antibiotic Resistant Organism (ARO) management, glove fact sheet, and point of care risk assessment. Best practice guidelines developed include: animals in healthcare, furniture selection, mobility devices. Ongoing work continues with other continuing care care topics with a current focus on improving compliance with Alberta’s Continuing Care Health Service Standards by providing supporting documents and resources related to infection control.

Lessons Learned: The reorganization of health services in Alberta established a province wide program which brought an opportunity to improve the efficiencies within the Infection Control Program. A provincial working group focused on continuing care brought expertise and resources together to provide consistent recommendations to enhance infection control interventions and improve outcomes for residents in Continuing Care.

POSTER 34
ONE DISPENSER AT A TIME...INCREASING HAND HYGIENE ADHERENCE ON A MENTAL HEALTH UNIT
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1St. Josephs Health Centre Toronto, 2Mackenzie Health

Issue: The focus of hand hygiene compliance in acute care facilities is typically on acute care areas, resulting in missing improvement opportunities in other patient populations. Inpatient Mental Health Units (MHUs) present a unique challenge due to the nature of the patients that are served and the nature of the physical environment. Concerns have been raised by MHUs related to the placement of Alcohol Based Hand Rub (ABHR) dispensers on MHUs such as consumption by patients, use of bottles/dispensers as projectiles, and lanyards as a garrote. The objective of this initiative was to make ABHR readily available on our inpatient MHU in a large community teaching hospital and evaluate the impact on hand hygiene compliance, while monitoring for unintended adverse events.

Project: Representatives from Infection Prevention and Control and the inpatient MHU met to review the physical layout of the unit and identify key interactions where hand hygiene is indicated in their practice. There were no ABHR dispensers available outside of the main nursing station. An ABHR dispenser was installed beside the door to the main nursing station in October 2015. This location was chosen because it is in a high-traffic area and is visible to staff. The hand hygiene compliance rates were compared pre- and post-installation using two-tailed Student’s t-test. Pre-installation period was January to September 2015 and post-installation period was November 2015 to July 2016.

Results: The hand hygiene compliance rates were significantly improved by 31% on the MHU post installation of the ABHR dispenser. No safety incidents related to the installation occurred since the installation.

Lessons Learned: Making ABHR readily available to staff resulted in significant improvement in the overall hand hygiene compliance without adverse patient events. Moving forward, we are investigating opportunities to further increase the number of dispensers on the unit.

POSTER 36
PARTNERING IN PATIENT’S SAFETY- BRINGING INFECTION PREVENTION AND CONTROL (IPAC) INTO THE PUBLIC’S HANDS
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1West Park Healthcare Centre

Background: Upon hospital admission a patient is given general information regarding infection-prevention practices. Patients with MRDs, additional precautions, or on outbreak units are educated to varying extents. However, often because of stigmatization, varying cultural backgrounds, language barriers and medical conditions affecting cognition, many patients may be overwhelmed by the material and ultimately are not adequately informed of the IPAC needs relevant to their admission. We set out to address this challenge at our 276-bed Rehabilitation and Complex-Continuing-Care hospital in the northwestern-Toronto. This abstract addresses the project for improving patient education in 3 different rehabilitation units-Tuberculosis, Neuro-Stroke and Respiratory.

Objective: To ensure patients and their visitors understand basic IPAC practices relevant to their admission, regardless of any barriers.

Methods: Multidisciplinary working groups were created between patients and clinical staff to create educational materials. Patients and their visitors were educated in small groups or individually using the appropriate supplementary materials/methods developed to focus on their condition. Feedback was taken
verbally or via written form to determine the effectiveness of the program. The aim was to capture/target all admitted patients in the hospital, providing continuing education throughout their stay. IPAC partnered with clinical, recreational staff and volunteers/students to enhance education.

**Results:** Targeted customized education was delivered to 400+ Respiratory and 200 Neuro-stroke and TB patients/victims over 24 and 8 months respectively. Feedback shows participants liked both group and individual education, having their concerns/questions addressed on a personal level. 95% reported the new approach as excellent, commenting they learned something new and helpful. 5% were previously aware of the information, thought it a good refresher.

**Conclusions:** The current IPAC educational material might not be effective for all patients. As such, developing IPAC education can be a beneficial tool; particularly for those who require accessible information due to language barriers, mental confusion, isolation and more.

**POSTER 38**

**HUMAN RESOURCES FOR HEALTH IN IPC:**

**GLOBAL CHALLENGES IN DEVELOPING LOW-INCOME COUNTRIES**

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¹Health Star International Inc.

**Introduction:** In low-income countries, hospital managers, consultants, policy makers, and decision makers most commonly base their staffing decisions around a few basic questions: What are the objectives? Who does what as job-description? What incentives are needed? What other motivation is needed? In response to these questions, consultants and managers try to address these challenges in improving capacity building of staff by implementing performance-related incentives for compensation and monitoring of data for the evaluation of implementation.

**Situation Analysis:** The links (and often undocumented leaps) in logic between human resources and health outcomes are derived from an analysis of employee knowledge and skill set, particular expertise with specific healthcare tasks, and various other components that improve delivery of health services to the entire network of beneficiaries. In low-income countries (Africa), there is a challenge to get human resources trained and qualified in IPC. This has a negative impact on health outcomes. Most staff doing IPC in these countries are not trained and they cumulated job activities including IPC a part from their main task for what they are employed for. Managers are allocating tasks based on these few IPC knowledge and staff is overused due to the lack of proper job description with committed allocation duties. This is a big challenge to quality care in service delivery.

**Conclusion:** To ensure that the ingredients of a performance management “system” are in place, we must first have a JOB DESCRIPTION. Absenteeism (sick leave) is a big gap area in performance and contributes to the negative health outcomes, among other related results, to be considered in improving health service delivery. “Everyone’s action counts.”

**POSTER 40**

**BEYOND THE WALLS: DEVELOPING A SURVEILLANCE PLAN FOR AN OUTPATIENT CHEMOTHERAPY TREATMENT CLINIC**

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**Issue:** Considering the prevalence of antibiotic resistant organisms and increasingly number of immunocompromised patients that use health care services, it is paramount to have a surveillance program to promptly detect suspected healthcare-associated infections. Surveillance programs enable Infection Control Programs to implement strategies to reduce the frequency of such infections, resulting in improved patient outcomes and reduced financial burden.

Not surprising, Accreditation Canada recognizes the importance of identifying and tracking healthcare infections and mandates that health organizations have a surveillance plan. As accreditation renewal is upcoming for the provincial health organization, it seemed logical for the Infection Control Team in the largest acute care facility to review the facilities’ current surveillance plan. Since the outpatient services have grown in capacity in recent years, it seemed reasonable to include these areas in the review. Considering that the outpatient areas rely on paper charting for patient care, it was unknown how this would affect the surveillance plan.

**Project:** In the fall of 2016, a nursing student partnered with the Infection Control Team to complete a needs assessment of the surveillance plan for the outpatient chemotherapy treatment clinic. Knowing that cancer patients are at a higher risk of catheter related infections the student assessed the reporting process for central line and peripheral intravenous exit site infections to the Infection Control Team.

**Results:** It was identified that there was no formal referral process for exit site infections to the Infection Control Team. Through collaboration of key stakeholders, a paper-based referral form was created to report exit site infections to the Infection Control Team. Once education was provided, the referral form was implemented. To ensure utilization of the new referral form, the Infection Control Team met with staff one month later. Staff identified the appropriate indication of the form.

After three months of the project being implemented, the Infection Control Team has received one referral form. Ongoing success of this initiative is expected from the strong partnership between the staff working in the outpatient chemotherapy treatment clinic, the Clinic Lead/Educator and the Infection Control Team.

**Lessons Learned:** A surveillance program provides health data to justify what resources are needed most for what population. Though cancer patients continue to be high risk for catheter related infections, the absence of reported exit site infections may imply effective healthcare practices. This project showed that staff is engaged with preventative practices and patient safety initiatives. Future surveillance projects will include staff as a key stakeholder.

**References:**


**POSTER 42**

**DURATION OF PRECAUTIONS FOR METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS IN THE OUTPATIENT ONCOLOGY SETTING: A CANADIAN SNAPSHOT**

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**Issue:** Research into the required duration of additional precautions for meth... (MRSA) has been a highly debated topic for many years. Multiple studies have investigated risk factors that may identify patients who are particularly prone to persistent colonization or infection. Several risk factors commonly identified include recent hospitalization and breaches in skin integrity. Though malignancy is often mentioned as a potential risk factor, there is insufficient data regarding the specific contributing factors among the oncology population (e.g., underlying malignancy, extent of disease, active treatment, etc.). In general, Infection Control Programs in oncology settings look to general guidelines to establish protocols. However, a significant amount of care for oncology patients is now delivered in the outpatient setting and as such, the implementation of these inpatient-focused guidelines poses many challenges.

**Project:** Infection Control Practitioners working in oncology from across Canada were polled regarding their current MRSA management practices in their outpatient departments. We asked: are patients with a history of MRSA being isolated in outpatient departments? If so, are repeat swabs collected after a set period of time to reassess MRSA status? For patients who are removed from precautions, are there any ongoing monitoring systems in place to track their status during subsequent encounters?

**Results:** All centres surveyed have processes for removing a patient with a history of MRSA from additional precautions. The time for MRSA status reassessment ranges from immediate to 10 years. Isolation practices vary by centre.

**Lessons Learned:** There is significant variation in MRSA management in this specialized setting. The role of a cancer diagnosis as a risk factor for MRSA carriage remains undefined.
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