International Federation of Infection Control

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2019 CONJOINT CONFERENCE | CONFÉRENCE CONJOINTE DE 2019

Québec City, Canada | Ville de Québec, Canada

May 26–29, 2019 | Du 26 au 29 mai 2019

2019 IFIC/IPAC Canada Conjoint Conference

Oral and Poster Presentations

Monday, May 27 and Tuesday, May 28, 2019

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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 CHICA-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 on May 29.
2. One (1) oral presentation will be announced as Best Oral Presentation and receive an award of $500 sponsored by 3M Canada. The award will be announced at the Closing Ceremonies on May 29.
3. Best Poster Presentation as chosen by attendees will receive an award of $500 sponsored by 3M Canada. The award will be announced at the Closing Ceremonies on May 29.

CONFERENCE ATTENDEES WILL VOTE FOR BEST ORAL PRESENTATION AND BEST POSTER PRESENTATION THROUGH THE CONFERENCE APP.
DEADLINE FOR SUBMISSION: 5:00 p.m., Tuesday, May 28.

ORAL PRESENTATIONS – MONDAY, MAY 27, 2019
3:00 p.m. – 4:00 p.m.
*Scheduled Presenter

CONCURRENT SESSION 1
HAND HYGIENE
ROOM 302AB

3:00 p.m. – 3:13 p.m. Oral presentation 1

WINNER OF A BEST FIRST TIME ABSTRACT AWARD

ELECTRONIC MONITORING OF HAND HYGIENE: WHICH FACTORS SHOULD BE CONSIDERED WHEN INTERPRETING THE RATES?

Maxime-Antoine Tremblay, Yves Longtin*
Jewish General Hospital

Background/objectives: Many studies have focused on comparing hand hygiene (HH) electronic monitoring systems (EMS) with direct observation and on improving absolute HH rates using EMS and predefined targets. However, few studies have investigated factors that could influence measured rates. We conducted a pilot study to identify spatiotemporal and behavioural factors that are associated with HH compliance measured by EMS.
Methods: Observational study of HH activity measured with an EMS and of factors influencing baseline rates. The EMS was installed in ten single-patient rooms on a surgical ward between December 2018 and January 2019. Motion- and heat-activated counters were installed at every room entrance to detect non-nominative entries and exits (a surrogate of HH opportunities). HH product dispensers fitted with electronic counters were installed immediately outside the rooms and at the points of care. HH compliance was computed as the aggregated number of electronic dispenser activations divided by the aggregated number of opportunities. Spatiotemporal data (i.e., time, date, room numbers) were collected from the EMS activity monitoring software. Direct observations were performed to collect behavioural information not captured by the EMS (i.e., type of individual, specific dispenser used upon room entry, and occurrence of contact within the patient zone as per the World Health Organization's definition). No interventions to improve HH rates were performed during the study period. Difference in HH compliance between groups was assessed by chi-squared test.
Funding: Funding was provided by GOJO Industries (Akron, OH).
Results: During a 43-day period, the EMS measured 60,216 opportunities and 20,240 HH events (global compliance rate: 34%). Most opportunities occurred during the day shift (50%) (evening: 36%; night: 14%). Compliance rates differed significantly between working shifts (day: 31%; evening: 35%; night: 42%; $p < 0.0001$ for each comparison) and day of week (weekdays vs weekends: 35% vs 31%; $p < 0.001$). Room-level HH compliance rates followed a sustained bimodal distribution with six rooms ranging between 22% and 24% and four rooms ranging between 34% and 49% ($p < 0.0001$ between high vs low compliance groups). Direct observation on 115 opportunities showed that healthcare workers (HCW) account for the majority (84%) of opportunities, compared to patients and visitors (16%). Among workers, nurses and orderlies represented 47% of opportunities. HCWs often performed HH (45% of HH events) on dispensers that were linked to a room other than the one entered/left, hereby leading to bias when measuring HH compliance at the level of patient rooms. Finally, following room entry, HCWs had contact within the patient zone in 27/51 (53%) of opportunities.
Conclusion: Our study identifies several spatiotemporal and behavioural variables associated with EMS HH rates. These characteristics should be taken into account when establishing EMS HH compliance targets.

3:15 p.m. – 3:28 p.m. Oral presentation 2

HAND HYGIENE AND ORGANIZATIONAL CULTURE

*Reisha Fernandes, Michelle Science, Barb Catt, Mandy Deeves**
Public Health Ontario

Background: Organizational culture has been identified as having an impact on the success of a hand hygiene (HH) campaign. However, there is a paucity of literature summarizing how to promote an organizational cultural change that will lead to increased accountability for HH and improvement in HH compliance.
Objectives: To summarize the literature on organizational culture as it relates to HH in order to inform the development of the new HH program, the following questions were explored: 1) What models, theories, frameworks, and strategies have been shown to influence organizational culture around HH and/or healthcare-associated infections (HAI) in healthcare centres? 2) Does organizational culture impact HH behaviours or HAI rates in healthcare settings? 3) Do role models/champions/opinion leaders influence an organization's culture around HH and define their characteristics?
Methods: Literature search of MEDLINE, Embase, CINHAL (Cumulative Index of Nursing and Allied Health Literature), and PsycINFO databases. The search was not limited by date or healthcare setting. Randomized control trials, quasi-experimental trials, case control studies, cross-sectional studies, and cohort studies were included. HH outcomes and HAI-related outcomes were measured.
Findings: 1) It was not clear if models, theories, and frameworks used in the studies improved culture to better suit HH practices because none of the articles measured organizational culture prior to the intervention. However, several strategies were noted to positively influence organizational culture and HH rates, including the use of strategies to improve leadership engagement, goals, and feedback, organizational incentives and rewards, tension for change, learning climate, compatibility, and role models. 2) Organizational culture change interventions were found to positively influence HH behaviour and may also positively impact HAI rates. 3) Aspects of organizational culture can be a barrier or facilitator to HH behaviour. The use of senior staff as role models may improve attitudes and beliefs in healthcare professionals around HH. Role models were described as enthusiastic individuals (supervisory role and non-supervisory role) at each ward/unit level and were shown to improved HH compliance. Senior medical leaders as role models can positively impact junior physicians and nursing staff and improve HH behaviour.
Conclusion: We found that organizational culture can positively influence HH behaviour and impact HAI rates. A number of strategies were identified that can be used to influence organizational culture positively and improve HH rates. Findings from this literature review are being used to develop Ontario's renewed HH program.

ORAL PRESENTATIONS

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3:30 p.m. – 3:43 p.m. Oral presentation 3

WINNER OF A 2019 IFIC SCHOLARSHIP

HAND HYGIENE PERCEPTION AND PRACTICES AMONG NURSING STUDENTS IN LAGOS STATE

Afolabi Oyapero,[1] Oyejoke Oyapero[2]*
[1]Lagos State University, Lagos, Nigeria
[2]Alimosho General Hospital, Lagos, Nigeria

Background: Against the background of Ebola haemorrhagic disease ravaging parts of West Africa and the implication of the contaminated hands of healthcare professionals as a vector in the transmission of potentially pathogenic organisms, we assessed hand hygiene (HH) perception and practices among a cohort of nursing students at three nursing schools in Lagos State.
Material and methods: This descriptive study was conducted on a probability random sample of 210 nursing students at the Lagos State University College of Medicine, Lagos University Teaching Hospital, and the Lagos State College of Nursing using an interviewer administered questionnaire. Data analysis was done using SPSS version 20; $p < 0.05$ was considered statistically significant. Multivariate linear and logistic regressions were done to assess significant predictors, with odds ratios (ORs) and 95% confidence intervals (CI) specified as the measures of association between predictors and outcome variables.
Results: The mean score on the HH beliefs scale was 89.5 ± 8.4, with scores ranging from 23 to 88 out of a possible high score of 115. The most positive health beliefs were associated with being a role model for HH (3.64 ± 0.49), while the worst were associated with imitating bad HH practices performed by senior colleagues (1.36 ± 1.24). Multivariate logistic regression analysis revealed that the odds of appropriate behaviour were more likely in students with a higher risk perception (OR = 1.62; 95% CI: 1.12-2.59).
Conclusion: Nursing students can influence future HH compliance and the inadequate perception and practices elicited underscore the importance of adequately incorporating HH into their academic curriculum.

3:45 p.m. – 3:58 p.m. Oral presentation 4

CREATION OF A TAILORED HAND HYGIENE PROGRAM IN COMMUNITY AUDIOLOGY

*Tamalee Andersen**
Alberta Health Services

Issue: Hand hygiene (HH) review programs typically emphasize definitions of the moments for HH and overlook how healthcare workers interpret patient and healthcare environments. In 2018, HH reviews were introduced in the Alberta Health Services (AHS) Community Audiology (CA) program in Calgary, AB. In the first four months, HH reviews showed inconsistencies in compliance. Audiologists perceived the reviews as arbitrary and reported that they felt they were performing HH as taught. Discussions exploring HH and low-level disinfection (LLD) of equipment revealed inconsistent sequences of steps amongst the audiologists. A HH review program could not be implemented in the absence of standardized processes employed by all audiologists.
Project: A quality improvement (QI) project was initiated to develop a HH review program for CA. Changes in clinical processes needed to maintain or improve existing levels of productivity. The manager supported the initiative and invited three audiologists to collaborate with the infection control professional (ICP) in applying the AHS Alberta Improvement Way QI framework. The ICP led the group to identify what was working well and what could be improved. Instruction was provided on the definitions of the moments of HH, which led to a detailed discussion about timing for LLD of equipment. The project was scoped and an analysis of the processes involved in an audiological workup (AW) performed. The group identified each individual task in an AW, which was then organized in a flow chart. Seeing their activities graphically facilitated spotting logical opportunities to perform HH and LLD. The HH reviewer and ICP assisted the QI group to create a HH program in the context of timing LLD. New processes were developed and presented to the CA team. A two-month trial of HH reviews was implemented with HH compliance targets of 75% and 90%, consecutively.
Results: Trial HH compliance targets were exceeded with 88.2% and 92.5%. The HH reviewer took time to discuss observations with staff, reinforcing the newly developed processes and explaining reasons for HH misses. A debriefing with the QI team, Infection Prevention and Control (IPC), and the HH reviewer occurred one month later. Feedback from the audiologists to the QI team was predominantly positive throughout the trial. The manager was satisfied with the progress in HH compliance and is moving to permanently adopt these new processes for HH and LLD in AWs. An audiologist will be trained to conduct future HH reviews.
Lessons Learned: Rather than impose IPC rules for HH and LLD, there is great benefit in taking time to thoroughly understand clinical processes and offer stakeholders a collaborative voice in how their IPC compliance is measured. Through the QI process, the audiologists developed a better understanding of IPC principles. These standardized processes for HH and LLD will now be introduced provincially for HH reviews in other CA programs.

CONCURRENT SESSION 2
EDUCATION
ROOM 301AB

3:00 p.m. – 3:13 p.m. Oral presentation 5

ESCAPE ROOM: INNOVATIVE EDUCATIONAL PLATFORM

Melisa Avaness,[1] Natalie Coyle,[1] Emily Stairs,[1] Natasha Salt, Jerome Leis[1]*
[1]Sunnybrook Health Sciences Centre

Background: Engaging and creating an interactive learning environment in Infection Prevention and Control (IP&C) can be a challenging task. Escape rooms are immersive games in which participants are locked into a room and are instructed to solve a series of riddles in order to escape. IP&C partnered with the Quality and Patient Safety department to design an escape room incorporating infection control and patient safety questions/principles for National Infection Control Week 2018.
Project: Various administrative, clinical, and research staff members formed interdisciplinary teams of five to six individuals. The escape room consisted of four riddles on IP&C and patient safety topics, which were two patient identifiers, falls risk, hand hygiene opportunities, and personal protective equipment doffing. The participants were given a patient scenario and had 15 minutes to solve the four consecutive riddles to escape the room. The facilitator would provide clues upon request, which would result in additional 30 seconds to the completion time. The activity was followed by a five-minute debrief to highlight the learning objectives. The team with the quickest time was recognized for its achievement
Results: A total of 48 staff members, comprising nine teams, voluntarily signed up for the activity. The participants were from diverse professional backgrounds, including nursing, allied health, pharmacy, physician, research, and senior leadership. Their feedback after completing the activity was that they found the experience enjoyable, informative, and challenging. The escape room was repeated during Canadian Patient Safety Week 2018 across three days at three different campuses.
Lesson Learned: Escape rooms are an innovative learning platform for IP&C education because they promote the application of IP&C knowledge in a real situation and encourage participants to practice teamwork, communication, and critical thinking. An escape room can be used as an adjunct to traditional didactic educational models for improving IP&C skills among healthcare workers.

3:15 p.m. – 3:28 p.m. Oral presentation 6

AN INTEGRATED APPROACH TO HAND HYGIENE: ENGAGING PATIENTS AND FAMILIES

Katherine Perkin, Karen Campbell, Dechen Chhakpa, Alissa Dicion, Jayvee Guerrero, Ronny Leung, Vydia Nankoosingh, Senthuri Paramalingam, Nelia Pena, Tiberius Stanescu*

Issue: Hand hygiene is accepted as the primary way to prevent infections in a healthcare setting. In Canada, it is estimated that every year, 250,000 people admitted to hospital will develop healthcare-associated infections. Evidence has shown that healthcare-associated infections are often correlated with the patient environment or the patient's own flora, yet limited resources are dedicated to educating patients about the importance of hand hygiene.
Project: In collaboration with the Patient and Family Advisory Council (PFAC), the Infection Prevention and Control (IPAC) department at the Scarborough Health Network implemented a patient education model that focused on increasing patients' knowledge and awareness of hand hygiene. This model provides patients with opportunity and education on hand hygiene as it relates to infection prevention. The first step of the project was to identify and engage key stakeholders to determine strategies that would increase hand hygiene among patients and families. The PFAC council and staff and patients from the trial units were identified as key stakeholders and were consulted. Patient surveys identified knowledge gaps. Stakeholders were asked about engagement strategies and

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ORAL PRESENTATIONS

interventions that would lead to increased awareness about hand hygiene and infection prevention and that would address these knowledge gaps.
Results: The education model consisted of four strategies: creating new patient-centred hand hygiene posters for each patient room; making hand sanitizer accessible to patients and families; creating educational brochures; and ensuring that hand hygiene stations on the unit are visible and accessible to family and visitors. The IPAC team will be evaluating this education model in February 2019 by distributing patient surveys on its trial units. The survey will consist of three questions to assess if the interventions increased hand hygiene awareness for patients, families, and visitors.
Lesson Learned: It is imperative to engage in dialogue with patients, families, and patient advisors prior to implementing a patient hand hygiene education program. PFAC was instrumental in providing constructive feedback and allowed the IPAC department to view this project from the patient's lens. The process of seeking feedback from patients and families was time- and labour-intensive. It is important to recognize these time commitments and plan accordingly when starting a patient and family hand hygiene campaign. Informal feedback from staff members has been a helpful way to make ongoing improvements to the project prior to formal evaluation in February 2019.

3:30 p.m. – 3:43 p.m. Oral presentation 7

COMING SOON TO A SCREEN NEAR YOU! PREVENTION OF INFECTION FILM FESTIVAL

Laura Golloher[1] (presented by Margaret Cameron)*
[1]Peterborough Regional Health Centre

Issue: As an Infection Prevention and Control (IPAC) team at an acute care facility, we regularly deliver education and training on IPAC competencies to stakeholders throughout the facility. While this training is essential, it is often perceived as dry. We identified the need to offer IPAC education in a way that is engaging and interactive in order to pique the interest of our audience and give them an opportunity to participate in IPAC-focused learning.
Project: In October 2012, the IPAC team organized the first Prevention of Infection Film Festival (PIFF). PIFF was an opportunity for departments to enjoy light-hearted, informative IPAC-themed clips and short films. In 2013 PIFF evolved and rather than showcasing external content, hospital employees were asked to submit films that they wrote, directed, and starred in. The only criterion was that the submissions be IPAC-themed. PIFF submissions are screened during National Infection Control Week and hospital staff are encouraged to attend to support their colleagues, enjoy free popcorn, get their influenza vaccine, and vote for their favourite video. Attendees have their name entered into a prize draw and at the end of the week winners are drawn and the recipient of the "People's Choice Award" for favourite film is announced.
Results: PIFF has been running for seven years. During this time, 43 videos have been submitted by 22 different departments. Responses from viewer surveys include the following: "Great quick informational session! Awesome" (Manager); "Great fun way to learn key info" (Allied Health); "Shocked at HAI stats – 4th largest killer in Canada" (Nursing); "Excellent approach to a rather 'tired topic'" (Nursing).
Lesson Learned: A creative, playful approach to IPAC education is an effective way of reaching a broad audience and engaging stakeholders who might not normally participate in IPAC initiatives.

3:45 p.m. – 3:58 p.m. Oral presentation 8

BEING PREPARED: ALL HAZARDS TRAINING FOR HIGH-CONSEQUENCE PATHOGENS

Gail Busto,[1] Tracey Woznow,[1] Pat Bleackley[2]*
[1]Vancouver Coastal Health
[2]Yukon Hospital Corporation (formerly Vancouver Coastal)

Issue: Despite regulatory and voluntary accreditation requirements, global infectious events over the past 16 years have forced Vancouver Coastal Health (VCH) to take extraordinary action in order to ensure readiness to protect patients and healthcare workers (HCWs) from rare but potentially serious threats to health. Responding to these events in a timely manner was detrimentally affected by overwhelming workloads, changing guidelines, and confusion at the point of care. A lack of clarity on best practices to handle hazardous events leaves HCWs unsure how to prepare for and operate effectively during crises, which can have catastrophic implications for patients, families, and staff alike.
Project: In an attempt to take a more proactive approach to preparing for rare hazardous events, the BC Ministry of Health (MOH) released the "Health Care Worker All Hazards Personal Protection Training Framework" and related reporting requirements in April 2016. The Framework mandates the minimum education requirements for HCWs in order to respond safely to all types of hazards (i.e., biological pathogens, chemical and radiation hazards). To satisfy the mandate, the MOH provided funding for "All Hazards Training." An All Hazards Program Manager (1.0 FTE) and Project Coordinator (0.5 FTE) were tasked with implementation of the program for VCH.
Goal: The goal of Phase 1 was to improve institutional readiness to safely manage communicable rare and emerging high-consequence pathogens across all VCH acute care sites.
Results: Initial training has been completed across VCH's three main sites (Vancouver General, Richmond, and Lion's Gate Hospitals), and the project has successfully: 1) Conducted 118 one-hour training sessions. 2) Trained 65% (n = 607) of total staff requiring training. 3) Received feedback from 88% (n = 533) of training session attendees. 4) Increased the capacity of VCH to respond to a high-consequence pathogen as measured by staff response to the feedback survey: 80% of respondents reported being "comfortable" or "very comfortable" regarding their ability to safely care for such a patient, with the remaining 20% reporting "neutral" (15%), "uncomfortable" (4%), and "very uncomfortable" (1%).
Lessons Learned: 1) Staff responded positively to the training opportunity despite initial resistance related to large workloads and competing priorities. 2) Appropriate instruction and practice resulted in a high degree of confidence among staff to be able to safely respond to an unusual biological hazard. 3) Staff feedback reinforced the value of ongoing training. 4) Flexible options for training and appropriate support (i.e., backfill, compensation) to attend sessions will continue to be a significant consideration.

CONCURRENT SESSION 3
ANTIBIOTIC-RESISTANT ORGANISMS
ROOM 303AB

3:00 p.m. – 3:13 p.m. Oral presentation 9

WINNER OF A BEST FIRST TIME ABSTRACT AWARD

A HOSPITAL'S EXPERIENCE WITH PREVENTING NOSOCOMIAL TRANSMISSION OF CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE DURING A COMMUNITY OUTBREAK

Katy Short,[1] Alexandra Jude,[1] Anne Brownlee,[1] Benjamin Mack,[1] Elizabeth Brodkin*
[1]Fraser Health

Background: Carbapenemase-producing Enterobacteriaceae (CPE) are a significant global health threat due to limited antibiotic treatment options resulting in high morbidity and mortality in infected patients. The evolving epidemiology of CPE requires ongoing monitoring by hospitals and the adoption of new control measures to prevent further spread. In January 2018, Infection Prevention and Control (IPC) staff in a British Columbia hospital identified a community outbreak of New Delhi metallo-ß-lactamase (NDM)-producing *Escherichia coli* (*E. coli*). The hospital rapidly implemented several interventions, effectively eliminating transmission within the hospital.
Methods: Between September 2017 and January 2018, three cases of NDM *E. coli* were detected in clinical isolates (one blood and two urine specimens) collected from admitted hospital patients. An additional three cases were detected through subsequent point prevalence and contact screening. During the case investigations, IPC staff identified that three of the cases lived in a local retirement community, while two of the remaining cases had shared a hospital room with one of the three residents. A comprehensive outbreak management plan was implemented at the hospital, including screening of all retirement community residents upon admission and weekly point prevalence screening of hospital units on which nosocomial transmission was suspected. As per the hospital's policy, patients with CPE were placed under an enhanced level of contact precautions, including isolation in private rooms with dedicated staff. A dedicated unit was set up at the hospital to manage the influx of newly identified CPE patients. Data on all CPE screens and cases associated with the outbreak were collected for surveillance and reporting.
Results: As of December 31, 2018, over 60 cases across two retirement communities have been linked to this outbreak through epidemiological and whole genome sequencing data. 36 of the cases have been identified at the hospital, including the three initial nosocomial cases. Since the outbreak interventions were implemented in February 2018, no additional nosocomial transmissions have been detected within the hospital. The hospital has collected 123 CPE screens from residents of the two retirement communities, representing

ORAL PRESENTATIONS

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99 unique residents. 32 residents (33%) screened positive for NDM *E. coli* upon admission to the hospital.
Conclusion: By quickly and effectively implementing appropriate control measures in response to a CPE outbreak in the community, the hospital halted nosocomial transmission from admitted residents. A lesson learned early in the outbreak response was the importance of providing front-line hospital staff with clear, consistent messaging for patients and family members.

3:15 p.m. – 3:28 p.m. Oral presentation 10

SURVEILLANCE OF ANTIMICROBIAL-RESISTANT ORGANISMS AND ANTIBIOTIC USE IN CENTRAL SOUTH ONTARIO

*Camille Achonuer, Bois Marufov**
Public Health Ontario
Issue: Antimicrobial resistance is a growing global concern which has been identified as a national and global priority. There is evidence to show that rates of transmission of antibiotic-resistant organisms (AROs) are related to infection prevention and control practices in healthcare settings. In addition, antimicrobial stewardship programs are essential in reducing antimicrobial resistance by limiting selective pressure on microbial populations through improved prescribing. In Ontario, there is limited provincial surveillance of AROs and no data on hospital antimicrobial utilization (AMU).
Project: To address the gap in provincial ARO and AMU data, Public Health Ontario (PHO), in collaboration with group of hospitals, modified the surveillance protocol, developed a data sharing agreement, and established an electronic data collection and reporting tool. The goal of the project was to strengthen regional surveillance of antimicrobial resistance amongst participating hospitals and PHO. Indicators for Methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant Enterococcus, Extended-spectrum beta-lactamases, Carbapenemase-producing Enterobacteriaceae, *Clostridium difficile* infection (CDI), and AMU were included. The regional ARO surveillance project was launched in June 2018; herein we summarize early evaluation conducted in September 2018 to understand challenges associated with implementation of the surveillance protocol and to evaluate data collection and reporting tools. We also surveyed project participants to gather feedback and assess the challenges with timely data collection and submission.
Results: We received survey responses from 100% of Infection Prevention and Control and 63% of Pharmacist representatives from all participating hospitals. Participants reported needing to make minor modifications to existing surveillance practices and slightly more time to collect ARO data, but that it was feasible. While all sites have been submitting ARO data monthly, only 50% were able to submit AMU data. Pharmacist respondents reported challenges with monthly reporting of AMU data and highlighted issues with comparing. Overall, participants were satisfied with data collection and reporting tools with minor recommendations to improve accessibility and use. Participants noted the potential value of sharing the regional data with key decision makers within their organizations and improved understanding and comparison of regional ARO trends.
Lessons Learned: Overall feedback from participants suggests this approach is a feasible method of collecting and reporting ARO and AMU data in Ontario. Additional work is required with project pharmacists to improve the process for collecting and reporting AMU data. There is a need for a provincial platform for ARO and AMU surveillance data collection, analysis, and reporting for comparison and benchmarking purposes, and this regional pilot provides a viable option for expansion across Ontario.

3:30 p.m. – 3:43 p.m. Oral presentation 11

REDUCING POPULATION METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS ACQUISITION THROUGH HOSPITAL-BASED TOPICAL DISINFECTION – AN INTERRUPTED TIME SERIES ANALYSIS APPROACH

Magdalena Wysocka,[1] Melisa Williams,[2] David Jenkins[3]*
[1]Gdansk University of Technology
[2]University of Leicester
[3]University Hospitals of Leicester NHS Trust
Issue: Interrupted time series (ITS) analysis is arguably the strongest quasi-experimental approach for evaluating longitudinal effects of interventions not amenable to randomized control trial approaches. We used ITS to analyze the impact of topical disinfection (TD) for all adult patients admitted to a secondary care 1,800-bed hospital (University Hospitals of Leicester [UHL]) on acquisition of Methicillin-resistant *Staphylococcus aureus* (MRSA) in the wider one million population of Leicester and Leicestershire between 2007 and 2018.
Project: A retrospective (February 1999 to June 2018) secular trend study using data from the single medical microbiology laboratory for the Leicester/Leicestershire population, analyzed as an ITS, was conducted to investigate the effect of TD with a didecyldimonium chloride body wash (all adult UHL inpatients) and nasal mupirocin (all UHL patients admitted to surgical or intensive care wards, patients with central venous cannulas, known MRSA carriers) on the incidence of new MRSA acquisition throughout Leicester/Leicestershire. Topical disinfection was introduced in April 2007. The incidence of new MRSA acquisition (first-ever MRSA culture positive from inpatients or community patients) was compared before and after the introduction and continued use of TD (April 2007) using ITS (Box-Tiao intervention analysis).
Results: New MRSA acquisition fell substantially after the introduction of TD. In February 1999 the incidence of new MRSA acquisition was 14.15 per 100,000 people per month with a minimal decrease of 0.022. A change-point occurred seven months after the introduction of TD, resulting in a relative reduction of 21.2% (95% confidence interval [CI] 9%-31%, $p < 0.001$). The analysis suggests that the intervention has had a long-term sustained effect, with the current (June 2018) new acquisition rate being 73% (95% CI 49%-82%, $p < 0.001$) below April 2007.
Lesson Learned: While causation cannot be proven, ITS has demonstrated that the incidence of new MRSA carriers reduced significantly throughout the population of Leicester/Leicestershire subsequent to the introduction of a hospital-based strategy to prevent MRSA transmission and this low level of acquisition has been sustained in line with the continued use of TD.

3:45 p.m. – 3:58 p.m. Oral presentation 12

SURVEILLANCE DATA AUTOMATION – IMPROVING PATIENT SAFETY AND PRODUCTIVITY OF AN INFECTION CONTROL TEAM

Azra Sharma, Bruce Nicholson, Bonnie Lantz, Christopher Lowe, Victor Leung*
Providence Health Care
Background/objectives: Surveillance of antibiotic-resistant organisms (AROs) and *Clostridium difficile* infection (CDI) is an essential function of Infection Prevention and Control (IPAC) programs. Manual data collection to satisfy surveillance requirements is time-consuming and diverts Infection Control Practitioners (ICPs) from working on the units with healthcare workers and patients to improve IPAC practices. It can also result in transcriptional errors, both from recording the primary data on a collection form and transcribing it into the database. With the intent to improve patient safety, staff efficiency, and productivity, we automated data collection and the reporting of AROs and CDIs.
Methods: At an urban academic hospital in Vancouver, BC, Infection Control epidemiologists collaborated with Analytics and Decision Support from November 2017 to July 2018 to convert our manually collected surveillance variables into an automated program. The program is triggered by a newly positive ARO or CDI laboratory result to automatically download patient demographics, admission information, and current and previous test results to into a Microsoft Access database. Furthermore, application of case definitions was automated based on previous laboratory results and admission data.
Results: 661 episodes of AROs and *C. difficile* were validated from January to July 2018. The accuracy of the automated system compared to manual surveillance was 96.2%. The errors identified during the validation included seven (1.1%) episodes that did not download into the new database, ten (1.5%) duplicates (episodes of previously known cases of MRSA and VRE), and eight (1.2%) episodes incorrectly attributed to our organization. Post-implementation validation showed further accuracy improvement to 98.9%.
Conclusion: Following the successful validation, our IPAC team implemented automated surveillance of AROs and CDIs. The automation of our surveillance program improved the productivity and efficiencies of six ICPs to work with unit staff and patients to increase their knowledge and skills in order to prevent the spread of infections.

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CONCURRENT SESSION 4
QUALITY/PROCESS IMPROVEMENT
ROOM 304AB

3:00 p.m. – 3:13 p.m. Oral presentation 13

WINNER OF A BEST FIRST TIME ABSTRACT AWARD

INCREASING COLLABORATION AND STAKEHOLDER ENGAGEMENT TO IMPROVE THE USE OF PERSONAL PROTECTIVE EQUIPMENT

*Ravneet Sandhu**
Alberta Health Services

Issue: The correct use of personal protective equipment (PPE) by healthcare workers is a cornerstone of routine practices for preventing and reducing hospital-acquired infections. Infection Control Professionals (ICPs) in the North Zone of Alberta Health Services have observed inconsistencies with proper PPE selection and practice of donning and doffing during the use of additional precautions. In particular, one healthcare facility was observed to have a significant increase in hospital-acquired infections. Formalized monitoring of PPE use in the North Zone has not been previously conducted due to competing surveillance priorities and initiatives and the geographical separation between ICPSs and the hospitals in their portfolios.
Project: As a pilot project, a PPE auditing tool was developed at a North Zone healthcare facility with an increased hospital-acquired infection rate to assess the selection of PPE and donning and doffing practices during additional precautions. Stakeholder engagement was pursued during meetings with leadership teams and with front-line staff using the TRIZ technique. In addition to this, a Think Tank session was organized with ICPs to generate ideas for possible interventions. The results and common themes collected from PPE monitoring were shared with key stakeholders.
Results: The PPE auditing tool revealed low PPE compliance results at the pilot site, which included selecting the correct type of PPE for the specified additional precautions and the proper donning and doffing practices of PPE. Stakeholder engagement with leadership teams revealed that educational interventions had been exhausted and that the issue was perceived to be rooted in the complexity of the steps involved in PPE practice. Interviewing front-line staff with the TRIZ technique determined that limited time during high-demand situations resulted in forgetting or failing to check the proper steps of PPE practice. The Think Tank with ICPs allowed for analysis of previous interventions. Through collaborative efforts, an intervention was developed that included the addition of a PPE visual poster, to be used in conjunction with the isolation cart, illustrating simple and pictorial steps for both donning and doffing of the PPE required for the additional precautions in place.
Lesson Learned: The audits and stakeholder engagement about PPE highlighted the importance of implementing an engineering control as an intervention to improve the proper selection and use of PPE. Educational interventions have been frequently used in healthcare facilities as a PPE intervention. However, these can prove to be unsuccessful if a comprehensive process of studying and addressing non-compliance is not conducted with key stakeholders. Collaboration and stakeholder engagement should be considered when creating sustainable behaviour change for PPE usage.

3:15 p.m. – 3:28 p.m. Oral presentation 14

WINNER OF A BEST FIRST TIME ABSTRACT AWARD

A CHEAP, FAST, ADAPTABLE, AND USER-FRIENDLY WAY OF MOTIVATING HEALTHCARE WORKERS TO IMPROVE BASIC INFECTION CONTROL MEASURES USING QUICK SCANS AND QUALITY MARKS

Diana van Netten, Juliëtte Severin, Margreet Vos
Erasmus MC

Issue: Infection prevention and control is a key contributor to patient safety. Nevertheless, the implementation of infection prevention policies has proven to be a challenge. Improving compliance by changing the behaviour of healthcare workers (HCWs) is hard to achieve.
Project: Our infection prevention team developed quick scans and quality marks, which give the HCWs insight into their implementation of the most important basic preventive measures. Quick scans, or short reviews, were performed in the Nursing departments, unannounced, every month over a period of four years. Immediately after the visit, the results of the quick scan were reported to the manager. Results were visualized in a feedback report using traffic light colours: green if everything was correct, red if a serious shortcoming was observed, and orange in the case of a mild shortcoming. In case a department had scored green twice, it received the quality mark. A quality mark also ensured quality awareness, as the quality mark was withdrawn in the case of a two-times red score. The quality mark was visibly hung at the nursing post. Quick scans were developed for three basic infection control components: cleaning and disinfection, isolation measures, and uniforms and jewellery.
Results: The effect of the quality mark has become visible over the last four years. The number of compliant (scoring green) Nursing departments for cleaning and disinfection increased from 5.6% (2/36 departments) to 29.0% (9/31) ($p = 0.018$ by chi-squared test), for isolation precautions from 50.0% (11/22) to 77.3% (17/22) ($p = 0.116$), and for uniforms and jewellery from 19.4% (7/36) to 90.3% (28/31) ($p = 0.0001$). The recurring nature of the quick scans, quality marks, and, thus, feedback reports contributed to sustained increased rates of compliance to infection control measures.
Lesson Learned: The success of this project depended on the sense of importance felt by HCWs and managers in obtaining the quality mark. Furthermore, retaining the quality mark must be earned by lasting good results. Detailed scoring criteria improved the reproducibility of the quick scan. Changes in policy shows a temporary decline in adherence, as the change has to be adopted by the departments. This project has increased the visibility of and collaboration with infection prevention professionals and the Nursing departments. Discussions have been started about the content, the rationale, and the feasibility of guidelines. In this way, the knowledge of infection prevention in HCWs increased. The major advantage of this quick scan method is that new infection control components can be easily and quickly included. The method is also widely applicable on different departments and clinics. Recently, we have introduced the quick scan in a rehabilitation clinic.

3:30 p.m. – 3:43 p.m. Oral presentation 15

INFECTION PREVENTION AND CONTROL ADDITIONAL PRECAUTIONS SIGNAGE IN A DIGITAL WORLD ENSURES ACCURACY AND EFFICIENCY!

Joan Osbourne Townsend, Seema Boodoosingh, Lillan Kariko,
Abraham Charummoottil, Nataly Farshait
Humber River Hospital

Issue: Signage for infection prevention and control (IPAC) precautions are widely used to alert patients, staff, family, and visitors of the required additional precautions that are in place; however, the visibility is often hampered by the location of the paper signage. Often, if the door is open (i.e., Patient on Contact Precautions), it is difficult to see the sign prior to entering the patient's room. Additionally, staff are required to find the appropriate signage and ensure that it was placed correctly and in a timely manner. This project outlines our experience with utilizing a digital room sign monitor that displays IPAC precautions.
Project: The IPAC team collaborated with the Information Technology team to have the additional precautions signage display on a digital room sign monitor that is located at each patient's room. The clinician documents the IPAC precautions required (based on clinical assessment) and the digital room sign monitor displays the information so that it is visible for staff, physicians, volunteers, and visitors. Daily audits are performed by IPAC coordinators to ensure that the correct IPAC signage is displayed. This audit process is conducted while doing daily rounds on all the units and by reviewing the documented precautions in the patient electronic medical record. To facilitate accurate documentation of additional precautions by the clinical staff, a pop-up window appears asking, "Are you sure you would like to change the precautions?" If the clinical staff inadvertently change the additional precautions in the electronic record, the IPAC team completes an incident report that notifies the unit manager and facilitates a follow-up with staff. The IPAC team continues to audit the impact of the IPAC precautions digital room signage.
Results: Staff and patient safety have improved with increased rate in correct documentation for additional precautions; all staff and visitors entering the patient's room are knowledgeable of the personal protective equipment necessary to enter the room. This has resulted in decreased staff exposure. Since 2015, when Humber River Hospital starting using a digital room sign monitor, there has been zero staff exposure to known infectious diseases patients. The digital room sign monitor displays additional precautions using information entered in the patient's electronic medical record. This eliminates the possibility of human error related to posting the wrong sign, saves time because nurses don't need to find and post an appropriate sign on the door, and creates redundant and robust process for flagging patients on additional precautions.
Lessons Learned: Initiating additional precautions using the digital monitor allows for efficiency and safety for staff and patients.

ORAL PRESENTATIONS

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3:45 p.m. – 3:58 p.m. Oral presentation 16

PATIENT, FAMILY, AND VISITOR HAND HYGIENE KNOWLEDGE AND PRACTICES

Lisa Krueckl, Zerlyn Lee, Joanna Lo, Eva Luan, Lisa Jacques, Jocelyn Srigley*
Provincial Health Services Authority of BC, BC Children's and Women's Health Centre

Issue: Despite the growing evidence that patient and family/visitor hand hygiene (HH) interventions demonstrate reduction to the rate of healthcare-associated infections, this area of infection prevention and control (IPAC) has been insufficiently explored. A recent attitudinal questionnaire and observational study at BC Children's Hospital in Vancouver indicated that family and visitor HH knowledge and practice was suboptimal. The patient and family HH survey indicated a clear discrepancy between information nurses thought was being taught and the information the families and patients felt they received. Only 14% of respondents reported that healthcare providers had spoken to them about HH. Direct observational audits based on a modified version of the "4 Moments of Hand Hygiene" showed that patients, families, and visitors only washed their hands during 3.8% of HH opportunities. These findings were consistent with a facility-wide patient experience survey and site assessment conducted by Nursing students during the same time frame.
Project: The Oncology/Hematology/Bone Marrow Transplant Program was the pilot unit participating in the development and implementation of interventions geared at improving patient and family HH. The Oncology/Hematology/Bone Marrow Transplant Quality and Safety Leader, the Oncology/Hematology/Bone Marrow Transplant Infection Control Practitioner, and the medical students working with IPAC collaborated to develop interventions aimed at increasing patient, family, and visitor HH knowledge, awareness, and practices. Collaboration included engaging bedside nurses from Oncology/Hematology/Bone Marrow Transplant to develop tools as a way of raising awareness of the upcoming interventions and promoting staff ownership.
Results: Interventions were aimed at standardizing the education provided by nurses. Several tools were developed, including a HH education checklist to ensure consistent messaging, and age-appropriate activity sheets to assist nurses and parents when talking to children about the importance of HH. Education provided to nurses across the Oncology/Hematology/Bone Marrow Transplant Program included rationale for interventions, introduction of the new tools, and guidance on how to talk about HH with patients and families.
Lessons Learned: Surveys conducted noted a discrepancy between what nurses thought they were teaching and what parents and families felt they were receiving around HH education. Pre-intervention audits of patient and family HH practices showed very low rates. These findings provided IPAC an opportunity to engage staff and quality leadership in improving patient and family HH. Interventions developed will likely have the benefit of reducing the rate of healthcare-associated infections, and this will be monitored going forward. Post-intervention audits will be conducted to determine if further interventions will be required and if this project can be expanded across BC Children's Hospital.

ORAL PRESENTATIONS – TUESDAY, MAY 28, 2019
3:00 p.m. – 4:00 p.m.
*Scheduled Presenter

CONCURRENT SESSION 1
QUALITY/PROCESS IMPROVEMENT
ROOM 304AB

3:00 p.m. – 3:13 p.m. Oral presentation 17

WINNER OF A BEST FIRST TIME ABSTRACT AWARD

USING MULTIMETHOD SIMULATION MODELLING FOR PANDEMIC INFLUENZA PREPAREDNESS PLANNING IN INTENSIVE CARE UNIT

Stanko Grabljevec,[1] Tatjana Mrvic,[1] Barbara Grabljevec Kranjc,[1] Andrej Skraba[2]*
[1]University Medical Centre Ljubljana
[2]University of Maribor

Issue: In each hospital, an important part of planning for a pandemic influenza is to understand how the pandemic can affect the hospital as a whole, and especially the intensive care units (ICU) as the most likely burdened units. Hospital decision makers may need to predict how many patients and healthcare workers (HCW) can become infected and the potential effects of protective measures. So far, a number of studies have been published in relation to simulation modelling of pandemic influenza in the population, but we did not find simulation modelling research to demonstrate ICU activity during a pandemic and the dynamic relations between different degrees of severity of pandemic influenza in the population and the processes in the ICU.
Project: To help better understand the potential impact of pandemic influenza on the performance of the neurological intensive care unit (NICU) in our hospital, we developed a compartmental epidemiological model of pandemic influenza spread in the community and an agent-based computer simulation model of the NICU. Using this model, we examined the potential impact of influenza pandemic on patients and HCW and the potential effects of different control measures, including the effect of timely therapeutic protections combined with other measures of infection control.
Results: Experimenting on models has shown that in the severe course of the pandemic influenza, the absenteeism of HCW and the greater influx of influenza-infected patients, including those without neurological symptomatology, that would be accepted in the NICU due to the lack of respirators would be a major problem. This would disable the cohorting of patients and HCW, which is a feasible and effective action in the event of a mild pandemic. In the event of a serious pandemic, chemoprophylaxis should be used in time for patients, as well as for employees and their family members, so that they do not stay at home due to their own illness or care for sick family members. Experimenting has shown that vaccination of HCW is an effective infection control measure but it is questionable if the vaccine for pandemic influenza would be available in time.
Lesson Learned: The construction of the simulation model proved to be a demanding task, as it required a lot of time and energy to collect the necessary data, build the concept of the model, and code it in a computer simulation program. Therefore, a simulation model of influenza spreading in ICUs has been built using a number of assumptions. The results of simulation modelling of different scenarios with varying degrees of severity of the pandemic influenza make it easier for us to write a pandemic plan for the NICU. The simulation model of influenza spreading could be relatively easily adapted for simulation modelling of other nosocomial infections in the NICU.

3:15 p.m. – 3:28 p.m. Oral presentation 18

BEYOND EBOLA: MANAGING VHF IN AN ACUTE CARE SETTING

Brigette Boaretto, Jaklin Mehrabian, Catherine Harlton-Strezov, Cathy Wood, Rachael Welch, Tanya Stipetic
Southlake Regional Health Centre

Issue: The Ebola alert issued for hospitals in 2014 led to an intense and exhaustive re-evaluation of travel screening protocols for patients entering Ontario hospitals for Infection Prevention and Control (IPAC) programs. The alert for Ebola viral disease has since been downgraded; however, organizations are expected to implement strategies to appropriately identify patients with travel history to areas endemic for all viral haemorrhagic fevers (VHF). These expectations are outlined in Public Health Ontario's "Guidance for Patients with Suspect or Confirmed Viral Haemorrhagic Fevers (VHF) in Acute Care Settings," published in July 2016. In response to this guideline, Southlake Regional Health Centre's IPAC team revised the Infection Control Screening Tool (ICST) to incorporate changes reflected in the guidelines. Feedback was obtained from various stakeholders, which included Emergency department (ED) staff, educators, managers, and Infectious Disease physicians, throughout the multi-draft revision process.

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ORAL PRESENTATIONS

Project: During the adaptation of the new VHF guidelines, we admitted multiple patients who met the criteria for failed travel screen, which provided us the opportunity to develop an infection control screening toolkit. This inspired confidence in the measures taken to protect both staff and patients. The IPAC team developed supplementary documents as part of the toolkit to support the IPAC screening tool for all patients coming into the organization, whether that was through the ED, outpatient clinics, or direct admissions to a clinical program. The toolkit includes the following documents: Infection Control Screening Tool (ICST); new additional precautions signage (Enhanced Droplet/Contact, Enhanced Respiratory/Contact); updated additional precaution template; affected travel list; updated policies and procedures; personal protective equipment (PPE) checklist; and a flowchart. The toolkit was presented in open forum education sessions that were pre-scheduled and available upon request. The education included policy review and staff received hands-on demonstration related to PPE required for the new categories of additional precautions.
Results: The Southlake Regional Health Centre recognizes that the level of precautions that the IPAC program recommended goes above and beyond the Provincial Infectious Diseases Advisory Committee's (PIDAC) recommendation. The organization is confident in its ability to manage a suspect/confirmed case of VHF. The most useful tool was the implementation of the flowchart. ED staff now have a better appreciation of travel screening and protecting themselves and others against emerging pathogens.
Lesson Learned: Implementing change is challenging for any organization; and, like many other healthcare organizations, staff and patient safety is paramount. As such, the IPAC team at Southlake Regional Health Centre aims to adhere to evidence-based best practices such as those published by PIDAC.

3:30 p.m. – 3:43 p.m. Oral presentation 19

IMPROVING HAND HYGIENE COMPLIANCE USING ELECTRONIC MONITORING

*Constance Cutler**
Chicago Infection Control, Inc.
Issue: Hand hygiene is the primary mechanism to preventing healthcare-associated infections. The typical way infection preventionists and quality professionals utilize to determine compliance is by employing secret shoppers. Numerous studies show that determinations of compliance by secret shoppers is often inaccurate with overestimation of rates as high as 95%. Because of that, a 325-bed suburban Chicago hospital installed a newly developed electronic hand hygiene compliance monitoring system that uses badges worn by healthcare workers. Implementation required tweaking the system, educating healthcare workers, giving managers access to employees' data, and oversight by infection prevention.
Project: The first generation of badges and sensors were installed in 2015 and required much evaluation of data transmission through walls and other architectural features. A second generation of badges with increased battery life was distributed in 2016. In addition, continuing adjusting of the positions of sensors took place that year. Because of this, the "true" baseline was reset at the end of 2016 and compliance was considered accurate, trusted, and monitored from that point on. Hospital leaders used frequent positive feedback to healthcare workers and physicians. Managers had the option of sharing individual level compliance to encourage those with low compliance to seek out those with high compliance to learn successful ways to improve results.
Results: The starting compliance rate was low at 23%. Using the electronic hand hygiene compliance monitoring system and methodology from implementation science, it climbed to a high of 73% in 21 months and has been sustained.
Lessons Learned: Some were originally skeptical since the hospital was an early adopter of electronic hand hygiene compliance monitoring using a badge system. The pros of the system need to be emphasized and the cons need to be minimized to continue improvement efforts. Positive reinforcement has been utilized to this point but disciplinary actions to low performers may be necessary to close the gap to reach our ultimate goal. Healthcare workers now trust the system and understand its limitations, specifically the need to always use hand hygiene when exiting one room and before entering the next room. Sharing individual, group, and department compliance openly may assist in reaching what is probably "perfect" compliance of 90%, given the hardware limitations of the system. Increases in hand hygiene compliance through use of an electronic monitoring system is a successful technology.

3:45 p.m. – 3:58 p.m. Oral presentation 20

REMOVING CONTACT PRECAUTIONS FOR VRE PATIENTS IN AN ENDEMICALLY COLONIZED RENAL MEDICINE/TRANSPLANT PATIENT POPULATION

Craig Pearce, Debbie Meilleur, John Conly*
Alberta Health Services
Background/objectives: Discontinuation of contact precautions (CP) for vancomycin-resistant enterococci (VRE) is controversial. Recent studies suggest that removing CP for VRE colonized patients has not increased infections in those patient populations. Published data shows little correlation between colonization and rates of infection from VRE. Our research tested this theory for a population with a high level of VRE colonization and high risk of infection (indwelling devices, frequent healthcare exposure, high co-morbidities). The goal of this research was to determine if we could remove CP without affecting infection rates, which would allow staff to shift their infection control focus to patients with higher risk of transmission.
Methods: For one year beginning in June 2017, we removed CP for VRE colonized patients admitted to a 45-bed renal medicine/transplant unit at the Foothills Medical Centre in Calgary, AB. This group met our criteria for high level of VRE colonization and high risk of infection. In addition to removing CP, four horizontal infection control practices were implemented. These included starting a unit infection control committee, increasing the hand hygiene observations for all staff, reducing clutter in patient rooms, and building a VRE risk screening tool. Our primary outcome was change in hospital-acquired (HA) VRE infections as well as three other major infection categories over a two-year period. Student's t-test and chi-squared tests were used to compare rates. Infections were monitored according to definitions by the U.S. Centers for Disease Control and Prevention's National Healthcare Safety Network. Internal Alberta Health Services data sources were used to track patient days, isolation orders, and supply costs.
Results: HA rates of select pathogens did not significantly change after removing CP for renal medicine/transplant patients. HA Methicillin-resistant *Staphylococcus aureus* (colonization and infection) increased non-significantly from 1.23/10,000 patient days (PD) to 2.47/10,000 PD (pre-intervention to post-intervention, respectively) ($p = 0.449$). *C. difficile* infections decreased from 11.11/10,000 PD to 9.89 ($p = 0.703$). Bloodstream infections decreased from 4.32/10,000 PD to 1.85 ($p = 0.220$). VRE infections decreased from 1.85/10,000 PD to 1.24 ($p = 0.718$). Removing CP resulted in an average of six less patients on CP per day and an estimated savings of at least $31,000 in personal protective equipment costs.
Conclusion: Removing CP for VRE colonized patients in a highly endemic VRE population did not significantly alter four major HA infection categories. Our findings suggest that managing renal/transplant patients colonized with VRE using routine practices instead of CP is safe and could be extended to patient population groups with similar or lower levels of VRE colonization such as general medicine or surgical patients.

CONCURRENT SESSION 2
OUTBREAKS
ROOM 303AB

3:00 p.m. – 3:13 p.m. Oral presentation 21

OUTBREAK COST ANALYSIS: THE DEVELOPMENT OF A TRACKING MECHANISM TO CALCULATE THE FINANCIAL IMPACT OF UNIT-BASED OUTBREAKS IN AN ACUTE CARE FACILITY

Benjamin Rogers, Florentina Belu,[1] Cameron Thomas,[1] Mark Downing,[1] Michael Rotstein,[1]*
[1]St. Joseph's Health Centre
Issue: Outbreaks in healthcare facilities have direct impacts on patients, families, visitors, healthcare providers, support services, and administration. The implementation of outbreak control measures incurs a financial burden on healthcare facilities and systems such as increased number of patients requiring additional precautions, increased staff to facilitate cohorting, enhanced cleaning and disinfection demands, and lost revenue.
Project: Identifying and quantifying measurable costs associated with the implementation of outbreak control measures can provide a financial perspective on the ramifications of outbreaks. A tracking template was developed to aggregate direct costs and revenue loss based on predetermined definitions. Direct costs included supernumerary clinical and support service staff, laboratory resources, Outbreak Management Team (OMT) meetings, and additional personal protective equipment needs. Costs of prophylaxis or point prevalence testing

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were considered based on the outbreak microorganism. Revenue loss related to decreased private accommodation and unavailable beds due to unit closures was incorporated. A tool was developed to capture these numbers on a daily basis, which were subsequently entered into the tracking template. Outbreak-related costs were reported regularly to the OMT and senior leadership. Outbreaks utilized to test the calculation spreadsheet functionality included vancomycin-resistant Enterococci, influenza, and norovirus.
Results: Shifting the emphasis away from outbreak expense to cost avoidance, achieved through prevention strategies, created a paradigm shift in the acceptance and implementation of infection prevention and control (IPAC) recommendations. Previously flagged priority recommendations from IPAC were revisited with a new sense of urgency, acknowledging the inability to accrue more costs within the limitations of the financially constrained healthcare system. Subsequently, clinical programs were motivated to purchase additional equipment, mitigating the practice of sharing between units. Patient care units are continually evaluating existing furniture and investing to meet patient safety and IPAC cleaning requirements for bedside tables, patient chairs, and over-bed tables.
Lessons Learned: The financial impact associated with an outbreak is far more extensive than initial conservative estimates predicted. Real-time collection of data to incorporate staffing increases or closed beds was a challenge and resulted in the development of a daily data collection tool, allowing for richer data integrity. The opportunity to look further into system costs such as increased staffing in the Emergency department for offload delay or in Pay for Results funding loss can be investigated for future iterations of the outbreak cost calculation tool.

3:15 p.m. – 3:28 p.m. Oral presentation 22

SEE THE FOREST FOR THE TREES – AN OUTBREAK TRACKING PILOT PROJECT

Sibina Fisher, Yvette Gable, Nicole Henderson, A. Uma Chandran*
Alberta Health Services

Issue: The Alberta Health Services (AHS) Edmonton Zone Continuing Care Infection Prevention and Control (EZ CC IPC) team services over 100 facilities. With the goal of decreasing the transmission, severity, and duration of influenza-like illness (ILI) and gastrointestinal illness (GI) outbreaks, EZ CC IPC performs outbreak visits with site representatives to evaluate outbreak control strategies upon outbreak declaration. Feedback and education are provided to facilitate alignment of site outbreak control strategies with AHS Public Health recommendations. During the 2017-2018 outbreak season, frequent and extended outbreaks led to multiple concerns regarding resident quality of life and the clinical impact of outbreak-related severe illness. This spurred a review of EZ CC IPC outbreak data collection and analysis.
Project: In April 2018, an electronic spreadsheet was created to collect a more robust data set that included site, care stream, outbreak type, organism, start and end dates, and duration (target: ten days for ILI, four days for GI). Also, existing outbreak visit checklists were condensed into a single fillable checklist to allow evaluation of outbreak control strategy implementation. Completed checklists noting any discordance with outbreak guidelines observed during outbreak visits were included in follow-up correspondence to streamline communication with facilities. Quarterly reports (summary slides, quarter comparisons, and trend charts) were developed and shared. Sites with frequent outbreaks, and with outbreaks of longer duration than expected, were identified and additional IPC consultation and resources were offered.
Results: After nine months of data collection, the EZ CC IPC team performed a total of 57 outbreak visits (26 ILI; 31 GI). The average ILI outbreak duration was 9.2 days (median 8; interquartile range [IQR] 6 to 11). The average GI outbreak duration was 8.1 days (median 8; IQR 4 to 11). Ten sites experienced multiple outbreaks, with one site experiencing five outbreaks. The three most common errors identified on the checklist were failure to remove shared items (e.g., puzzles and books), missing personal protective equipment (PPE) in the PPE carts, and continued self-service food for residents.
Lessons Learned: Targeted outbreak data collection allows IPC teams to identify patterns occurring during the outbreak season which otherwise could be missed as multiple concurrent outbreaks are managed. Common outbreak control strategy deficiencies can be addressed in group settings for shared learning and quality improvement. Enhanced IPC services can be provided to sites with higher frequency of outbreaks and/or longer outbreak durations. These interventions can decrease transmission, thus decreasing frequency, severity, and duration of outbreaks, and ultimately improving resident safety.

3:30 p.m. – 3:43 p.m. Oral presentation 23

CHALLENGES IN OUTBREAK MANAGEMENT OF CARBAPENEMASE- PRODUCING ORGANISMS

Dechen Chhakpa, Senthuri Paramalingam, Vydia Nankoosingh, Jayvee Guerrero*
Scarborough Health Network

Background/objectives: Carbapenemase-producing organisms (CPO) are organisms that inactivate certain antibiotics through the production of carbapenemase. CPOs are difficult to treat and can transfer resistance to other organisms, making them a concern in the healthcare setting as there is high usage of antibiotics and immunocompromised patients. This outbreak investigation describes an outbreak of CPO in a 36-bed medicine unit in a community hospital and the challenges it poses.
Methods: The index case was first identified in a rectal culture swab as positive for *Escherichia coli* OXA 48 gene on a transfer to a unit conducting a CPO point prevalence screen. This patient was not known to be colonized or infected prior to admission. Per the hospital policy, an investigation including contact tracing, additional cleaning, sink swabbing, and point prevalence was completed.
Results: A point prevalence screen was conducted weekly on the unit for three weeks per hospital policy. The prevalence identified no further cases of CPO. However, the contact tracing investigation identified six exposed patients, two of whom were still admitted. All six patients were flagged in the hospital electronic database and the two admitted patients were isolated for 21 days and rectal swabs were collected. Of the two exposed patients, one had a negative result on admission and during this contact tracing investigation was found to be positive with *Escherichia coli* OXA 48 gene. The sinks that were swabbed during this investigation were found to be negative. Based on the identification of a second case with an epidemiological link to the first, an outbreak was called and the unit was closed for 17 days. Both the isolates were genotyped by pulsed-field gel electrophoresis, which showed they were genetically closely related.
Conclusion: All outbreak measures were implemented to assist with controlling the outbreak and prevent further transmission. These measures include active prevalence screening, staff and physician education and heightened vigilance, dedicated equipment, increased hand hygiene audits with on-the-spot feedback, and terminal cleaning and sink cleaning throughout the unit. The identification of CPO on a unit in the absence of admission screen is concerning, as an unknown CPO case may expose many patients. In this case, the index case did not have risk factors to warrant CPO screening and therefore was not swabbed on admission. There were six patients exposed over a period of 15 days and the unit was closed for a total of 17 days. Additionally, the majority of the rooms on this unit are ward rooms, making having unidentified cases of CPO an even greater risk. This outbreak and an increasing number of CPO cases identified after admission across the hospital's three sites further support the need for admission screening for CPO. This facility will be implementing CPO screening upon admission to all patients, excluding mental health, paediatric, and family birthing units.

3:45 p.m. – 3:58 p.m. Oral presentation 24

THE PLIGHT OF SHARED PATIENT CARE EQUIPMENT – GETTING MORE THAN YOU BARGAINED FOR

Sharon Connell, Leanne Harding**
Ross Memorial Hospital

Issue: Next to hand hygiene, shared patient care equipment is one of the first suspects identified when outbreaks wreak havoc on vulnerable patients. Is cleanliness of shared equipment a mountain worth tackling? Hopefully the following observations will convince you to embark on this worthwhile journey.
Project: Nosocomial *C. difficile* infections (CDI) and vancomycin-resistant enterococci (VRE) colonization rose sharply in 2016. Infection prevention and control professionals gathered a multidisciplinary team to explore process improvement opportunities, and from this the Green Means Clean project was born. Deliverables: standardize cleaning protocols and staff communication; green tag to identify clean vs contaminated equipment; adenosine triphosphate (ATP) luminometer audits measuring cleaning efficacy of shared patient equipment (safe zone ATP 250 or below = equipment clean/safe for use); five biweekly ATP audits per unit plus tracking percent of equipment that is green-tagged; real-time staff feedback and regular stakeholder progress reports. Proposed benefits: nosocomial antibiotic resistant organism (ARO) colonization reduction; healthcare-acquired infection prevention cost savings; reduced outbreak risk; raise awareness and protocol compliance.

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ORAL PRESENTATIONS

Results: Rates were calculated per 1,000 patient days. Year 1: ATP readings fell from the thousands down into the hundred by year-end; units average 44% ATP audits in the safe zone; 40% green tag compliance; high ARO nosocomial colonization rates: Methicillin-resistant *Staphylococcus aureus* (MRSA) = 0.25, VRE = 0.41; CDI rate down from 0.46 to 0.29. Year 2: units average 53% ATP audits in the safe zone; 42% green tagging; rates decline: MRSA = 0.10, VRE = 0.18; CDIs remain low at 0.29. Year 3 (end of third quarter): rare to find equipment with ATP reading in the thousands; units average 47% ATP audits in the safe zone; 40% green tagging; despite sharp rise in patient days, rates remain low: MRSA = 0.15, VRE = 0.10, CDI = 0.26.
Lessons Learned: Three years and 2,916 audits later, insight was gained, from administration to the frontline, that couldn't otherwise be achieved by teaching alone. Taking advantage of technology fascination, luminometer readings intrigued staff and provided tangible evidence. Improper practices discovered such as: ineffective cleaning of lift slings; neglected ultrasound machines; "It's not my job to clean it"; and soiled commodes in clean corrals. As cleanliness levels improved, a corresponding decline in nosocomial CDI, MRSA, and VRE rates were observed. Well-established antimicrobial stewardship, environmental cleaning, and hand hygiene programs remained constant during this time period. Outbreaks were not eliminated, but those that occurred ended sooner with minimal transmission. The Green Means Clean program removed a link in the chain of infection, having a positive impact on patient safety. We challenge you to start looking at the cleanliness of shared patient equipment, and you may find that you get more than you bargained for!

CONCURRENT SESSION 3
SURVEILLANCE RATES
ROOM 301AB

3:00 p.m. – 3:13 p.m. Oral presentation 25

PREVENTING SURGICAL SITE INFECTIONS – IMPACT OF BLOOD GLUCOSE MONITORING (BGM) IN THE CARDIAC SURGERY POPULATION

Connie Patterson, Jill Pancer, Charles Frenette, Sara Meltzer
MUHC-Royal Victoria Hospital

Issue: From 2014 to 2017, our surveillance data indicated that 48% to 72% of the patients who developed a surgical site infection (SSI) after cardiac surgery had blood glucose levels greater than 10 mmol/L in the 72-hour perioperative period. The SSI rate increased from 5.1% in 2014 to 6.7% in 2017 per 100 procedures. Bundles to reduce SSI have been in place since 2009 and are revised each year. Despite recommendations to control blood glucose levels below 10 mmol/L, a significant proportion of SSI still had elevated glucose levels and we initiated a project for better blood glucose monitoring (BGM).
Project: From May 2018 to January 2019, BGM was initiated on all patients for the first 72 hours of the perioperative period. A multidisciplinary team was formed. It included an intensivist, a cardiac surgeon, an endocrinologist, anesthesia, clinical educators, nursing, and a pharmacist. The objective is to maintain a blood glucose level below 10 mmol/L in 80% of the patients 80% of the time.
Results: Blood glucose insulin protocol targets were changed from 10 mmol/L to a target of 8 mmol/L to allow for an increased response time to initiate IV insulin. Prior to the intervention, the target of maintaining a blood glucose level below 10 mmol/L was reached in 8% of the patients. After the intervention, the target was reached in 67% of the patients. Detailed process analysis revealed that failure to reach target was: 1) Inappropriate transition from IV insulin to subcutaneous sliding scale insulin. 2) Elevated blood glucose levels prior to leaving the operating room. 3) Delayed initiation of IV insulin in the intensive care unit. 4) Failure to normalize the blood glucose within nine hours of initiation of IV insulin. Preliminary results of all the cardiac SSI during the period of May 2018 to January 2019 show a decrease of SSI when compared to the previous years' during the same time frame. The rate of SSI went from 6.56% per 100 procedures to a rate of 4.53% thus far. Risk factors identified for the cases that did not meet target included: male (64%), diabetes (71%), BMI (mean ± SD) 30.5 ± 6.5, first BGM in operating room (mean ± SD) 8.1 ± 1.8, and first BGM in intensive care unit (mean ± SD) 9.4 ± 1.9.
Lessons Learned: Detailed process mapping helped identify reasons for poor BGM in cardiac surgery patients and corrections at each of the identified steps helped reduce SSI.

3:15 p.m. – 3:28 p.m. Oral presentation 26

ADMISSION FOR CONDITIONS SENSITIVE TO PRIMARY CARE: IS THERE AN ASSOCIATION WITH THE ACQUISITION OF INFECTION RELATED TO HEALTHCARE?

*Thais Guimarâes,[1] Maria Clara Padoveze[2]**
[1]Instituto Central HC – FMUSP
[2]School of Nursing University of São Paulo

Background: Healthcare-associated infections (HAI) are a major public health problem. Primary care is a key component of healthcare, operating as an integrating element in healthcare settings. The prevention of unnecessary hospital admissions is one of the objectives of primary care, thus indirectly preventing exposing the patient to iatrogenic risks such as HAI. The Primary Care Sensitive Conditions (PCSC) have been used as an indicator that measures the effectiveness of primary care. We raised the hypothesis that patients admitted due to PCSC may be frailer and therefore more susceptible to acquiring HAI. However, we did not find studies that have investigated the association of PCSC with HAI acquisition.
Objective: The aim of the study is to identify whether there is an association between PCSC and HAI.
Methods: The study design is a prospective cohort. Sampling included 605 adult patients with more than 48 hours of hospitalization. Cases of HAI were identified by the Infection Control team according to their routine process. We used a structured questionnaire to characterize the potential social determinants in the profile of the participants. Variables such as HAI and PCSC were collected from the patient's medical record. We used the Brazilian national list to define and Scathe analyses were performed through descriptive statistic and univariate analysis with a significant level of < 0.05. This project was approved by our institutional ethics committee.
Results: We found 32 (5.3%) cases of HAI and 55 (9.09%) of PCSC. Among patients with PCSC, there were five cases of HAI (9.1%); the other 27 cases of HAI occurred among patients without PCSC (4.9%) (risk difference: 4.2; $p > 0.05$). Surgical site infection was the most frequent HAI in 21.8% of patients. Patients were 57% females with an average age of 52.8 years and 8.5 years of schooling. The Human Development Index (HDI) of cities of origin were high, varying from 0.72 to 0.81; the Gini index varied from 0.41 to 0.67. The average family income was around 2.5 times the national minimum wage. Overall, the most frequent PCSC was stroke in 25.4% of patients. In the group of patients with HAI, the most frequent PCSC was diabetes ($n = 2$).We observed no relevant differences among selected individual or social indicators when comparing patients with HAI and those without. The mean values for these indicators were, respectively for patients with HAI and without HAI, ages 57 and 52.6; Charlson comorbidity index 2.7 and 2.2; years of education 8.8 and 8.5; average monthly wage R$2,507.70 and R$2,751.43; HDI from 0.74 to 0.86 and from 0.71 to 0.88; Gini index from 0.45 to 0.67 and from 0.41 to 0.67.
Conclusion: We did not find statistical association between HAI acquisition and PCSC. However, the overall risk difference pointed out that a deeper study is necessary to evaluate the feasibility of our hypothesis. This is a preliminary study; in the next step, a multilevel analysis will be performed to eliminate potential confounders that may abstruse the deep understand of this phenomenon.

3:30 p.m. – 3:43 p.m. Oral presentation 27

FRASER HEALTH'S EXTRAORDINARY CDI JOURNEY: 2011/12 THROUGH 2018/19

Elizabeth Brodkin,[1] Fuad Ibrahimov,[1] Tara Leigh Donovan,[2] Ruth Dueckman,[1] Petra Welsh[1]*
[1]Fraser Health
[2]Provincial Infection Control Network of British Columbia

Issue: Fraser Health (FH) in British Columbia is one of Canada's largest health regions and provides comprehensive health services to over 1.8 million people in urban and rural settings. Like many health regions, FH is faced with the challenge of reducing healthcare-associated infections (HAIs), including *Clostridium difficile* infections (CDI). In 2011-2012, FH's healthcare-associated CDI incidence rate was of sufficient concern to the Infection Prevention and Control (IPC) program that an Infectious Disease physician was asked by the program to perform an external review and evaluate IPC practices in the region. In February 2012, due to increasing local physician and BC Ministry of Health concerns, FH embarked on a CDI quality improvement journey based in part on the external review.
Project: The external review tabled 13 recommendations to address the then-current state of CDI in FH, including hand hygiene strategies, use of a sporicidal

ORAL PRESENTATIONS

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agent for cleaning CDI patient rooms, engagement with front-line staff and key stakeholders, accountability for CDI management, resourcing for the IPC program, and establishment of an antimicrobial stewardship program. Along with these recommendations, FH has implemented approximately 45 HAI reduction initiatives to date. Key initiatives include: the introduction of a CDI Vulnerable Units List disseminated each fiscal period listing those units with the highest counts of CDI cases across the region, in order to focus improvement actions; extending IPC practitioner coverage from five to seven days a week; discontinuation of vancomycin-resistant enterococci screening/isolation in acute care facilities to free up resources for control of CDI; and implementation of ultraviolet light germicidal irradiation. In 2016, CDI was designated as one of FH's six Patient Safety Priorities to ensure ongoing consultation, communication, and support for improvement initiatives to reduce healthcare-associated CDI rates.
Results: FH's healthcare-associated CDI incidence rate has fallen from 11.5 cases per 10,000 patient days in 2011-2012 to 2.9 cases per 10,000 patient days in 2018-2019 (year to date). During this time, the IPC program evolved from a team of twenty to nearly fifty IPC professionals with a unique IPC program structure that supports the ongoing dramatic CDI rate improvements.
Lessons Learned: The FH CDI journey highlights the importance of a clear strategy, which began with the external review, to reduce HAIs. Additionally, a strong and engaged IPC team was critical to support quality improvement initiatives and provide front-line staff with the necessary resources, including clear policies and guidelines. Finally, transparency regarding the scope of nosocomial transmission and actions necessary to address it helped secure executive-level support and commitment to improve patient safety.

3:45 p.m. – 3:58 p.m. Oral presentation 28

A JOURNEY TO CHASE CLABSI REDUCTION: AN ACHIEVABLE GOAL

Cherlyn Simbulan-Martinez,[1] Emad El Magboul,[2] Fadia Ali,[1] Ezeddin Alataresh[1]
[1]Hamad Medical Corporation – Heart Hospital
[2]Hamad Medical Corporation

Issue: The most preventable healthcare-associated infections in hospitals are central line-associated blood stream infections (CLABSI). Despite the implementation of infection control strategies to reduce CLABSI in a 116-bed cardiac hospital, the infection rates remained high for six years. In 2015-2016, the observed infections (17) were more than expected (five), with increased standardized infection ratio (SIR) rates above the National Healthcare Safety Network (NHSN) SIR (0.0994). Comprehensive analysis was conducted and contributing factors were categorized as insertion- and maintenance-related factors. Interventions were focused on the identified significant risk factors to reduce CLABSI.
Project: The Infection Control Team conducted a thorough analysis about predisposing factors contributing in developing CLABSI along with a literature review of all evidence-based practices in the prevention of CLABSI. An infection control quality improvement initiative "STOP CLABSI Project" was organized in collaboration with a multidisciplinary team and CLABSI Task Force Teams. In 2016, the use of split septum connectors instead of mechanical valve needleless connectors and alcoholic caps for hub disinfection were introduced. In 2017-2018, interventions were focused on education and training of physicians and nurses about CLABSI preventive measures such as aseptic techniques, hand hygiene, central line insertion, and a maintenance bundle. Real-time notification of possible CLABSI events to unit leaders was developed and each case was carefully analyzed and discussed with unit champions. The multidimensional approach of evidence-based practices and new innovations in conjunction with education and training and implementation of central line insertion and the maintenance bundle were proactively monitored for strict compliance to reduce CLABSI.
Results: After education and training and implementation of CLABSI preventive measures, there were three insertion-related infections in 2017 and zero infection in 2018 compared to two and seven in 2015-2016, respectively, whereas maintenance-related infection in 2015 was reduced from six to two in 2016, to two infections in 2017, and increased to three in 2018 due to prolonged use of central lines. There was a remarkable decrease of CLABSI rates from 2.8 in 2015 (eights events) to 0.72 (three events) in 2018 after strict implementation of interventions. The CLABSI SIR dramatically reduced from 3.2 in 2015 to 0.87 in 2018, below the NHSN national SIR benchmark (0.994).
Lesson Learned: Physicians' acceptance and accountability for the increasing infections can make a difference. The implementation of a multidimensional approach to CLABSI interventions based on the identified risk factors is crucial in preventing infections. Real-time notification of possible CLABSI events promotes staff engagement and a proactive approach to preventing CLABSI. Staff dedication, commitment, process ownership, culture change, teamwork, and strong leadership support can make an enormous change in reducing and achieving zero CLABSI.

CONCURRENT SESSION 4
IMMUNIZATION
ROOM 302AB

3:00 p.m. – 3:13 p.m. Oral presentation 29

CATCH-UP IMMUNIZATION PROGRAM FOR ACTIVE HEALTHCARE WORKERS – WHAT HAPPENS TO THOSE WHO SLIPPED BETWEEN THE CRACKS?

Davidelle Eunsol Kim, Alanna De Fry, Maja McGuire*
North York General Hospital

Issue: In Ontario there are protocols provided by the Ontario Hospital Association that guide the operation of communicable disease surveillance programs for healthcare workers (HCW) in hospitals. The protocols advise that HCWs provide evidence of immunity to measles, mumps, rubella, varicella, and hepatitis B during pre-placement surveillance. Immunization surveillance conducted by Occupational Health and Safety (OHS) nurses in June 2018 for active staff found that 14% working on inpatient units were not immune to the five mandatory immunizations; this translated to roughly 143 inpatient HCWs not immune to at least one of the viruses in the protocols.
Project: OHS conducted a prevalence survey in the spring of 2018 to determine the immunization gap for staff. To address the gaps, OHS launched a catch-up immunization program across eight inpatient units from June 2018 to December 2018. Occupational Health nurses targeted between one and two units monthly in collaboration with the unit manager. Surveillance included the five mandatory immunizations, as well as annual tuberculin skin tests and biannual N95 mask fit tests. Successful staff follow-ups were bolstered by email communications to all staff with outstanding documentation and specific compliance time requirements. OHS enhanced program accessibility by extending hours of service and visiting the units twice weekly to provide immunizations and tests. The project was placed on hold during peak flu season but resumed in February 2019. The overall goal of the initiative was to increase compliance to above 90% on every inpatient unit by the end of 2019.
Results: Between June 2018 and December 2018, the records of 685 staff of eight inpatient medical units were reviewed by OHS to determine immune status. After intervention on the initial eight units, the overall immunization compliance rate increased from 76% to 92%. The compliance rate for mumps jumped from 82% to 91%, measles from 91% to 98%, rubella from 91% to 99%, and varicella from 91% to 96%. The overall HCW compliance for all inpatient units increased from 74% to 83%. To ensure consistency within OHS documentation, nursing algorithms and standards were developed and processes to address compliance for new hires were tightened up.
Lessons Learned: Immunization surveillance and catch-up immunization programs are vital for the HCWs who may have slipped between the cracks. To improve compliance, a multifaceted approach was successful in addressing the immunization gap among HCW and included: 1) Establishing consistency in documentation within OHS. 2) Enhance enforcement and education for mandatory immunization according to the Ontario Hospital Association regulations. 3) Increase accessibility and face-to-face interactions between OHS and HCW. 4) Be mindful of changes in immunization protocols that may happen over time.

3:15 p.m. – 3:28 p.m. Oral presentation 30

WHAT TAKES PRIORITY? THE ACT OF IMMUNIZATION OR ITS DOCUMENTATION? WHEN "JUST BECAUSE" IMPEDES QUALITY IMPROVEMENT

Alanna Nicole De Fry, Davidelle Eunsol Kim, Maja McGuire*
North York General Hospital

Issue: In 2009 the Occupational Health department of a community hospital went electronic for all employee health and disability files, overlooking 3,800 employees, 800 physicians, and 700 volunteers. Over time, data entry for vaccine status did not take into account new vaccine formulations, such as the trivalent vaccine for tetanus, diphtheria, and pertussis (Tdap). An internal audit conducted by Occupational Health nurses (OHN) in 2018 measured healthcare worker (HCW) immune status record-keeping and found haphazard, free-text

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ORAL PRESENTATIONS

documentation between nurses over nine years that led to inconsistencies and incomplete documentation. Overall compliance of the Tdap vaccine appeared to be 0% immunity, although true immunity existed due to the act of immunization. With the current anti-vaxxer movement, incomplete immunity documentation for hospital associates poses a risk to the organization and makes communicable disease exposure tracing in staff challenging.
Project: To accurately capture the Tdap vaccines given and create sustainability for the future of data informatics, every active employee had their occupational health record reviewed by an OHN. Tetanus/diphtheria (Td) vaccine with comments were audited, separating the two vaccines by reviewing comments, handwritten nursing notes, and consent f and searching through new hire records to determine if the vaccine was truly Td or Tdap. After review, the OHNs manually re-entered Tdap into the new entity created in 2018 and deleted the haphazard, duplicate documentation of Tdap in Td only. The entire process was completed between February and December 2018.
Results: Prior to the project, documented compliance to pertussis immunization was 0%, whereas after completion pertussis immunity jumped to 52%. The new Tdap entry created was sustainable and continues to be used, separating the Td and Tdap vaccines for accurate immunization and documentation. In the event of a pertussis outbreak or exposure, OHNs can now quickly generate an accurate list of staff's immune status.
Lesson Learned: As technology evolves, nursing critical thinking, judgment, and informatics must move with the times. Although this initiative seemed like a simple fix, it was tedious to correct a decade of inaccurate documentation. Making staff immunization records accessible and organized increased accuracy and reduced the time required to determine unit compliance based on immune status. For the future, we have learned that keeping the norm "just because" keeps us in the past and at risk. Thus, proactively evolving our system of documentation must remain a priority in maintaining optimal employee and patient safety.

3:30 p.m. – 3:43 p.m. Oral presentation 31

HEALTHCARE WORKER IMMUNIZATION IN ONTARIO ACUTE CARE SETTINGS

Caitlin Johnson, Kathryn Suh,[1] Maureen Cividino,[2] Kevin Schwartz,[2] Gary Garber,[2] Natasha S. Crowcroft[2]*
[1]The Ottawa Hospital
[2]Public Health Ontario

Issue: Immunization ensures that healthcare workers (HCWs) are protected from vaccine preventable diseases and also help prevent and control outbreaks in healthcare facilities. Occupational Health Services (OHS) in Ontario acute care hospitals benefit from the Ontario Hospitals Association (OHA)/Ontario Medical Association/Ministry of Health and Long-Term Care Communicable Diseases Surveillance Protocols (CDSP). These protocols apply to all people who carry out activities within hospitals and include recommendations for immunization of HCWs. CDSPs have been available since 1989 and are excellent, regularly updated resources. It is currently unknown how well the recommendations in the CDSPs are implemented. We wanted to better understand current practice and the barriers that acute care hospitals in Ontario face in implementing these protocols and learn what solutions might be most useful in practice.
Project: We conducted a survey of all OHS in Ontario acute care hospitals using a web-based questionnaire. The survey was developed by Public Health Ontario and members of the CDSP Committee. We focused on the tetanus, diphtheria, and pertussis (Tdap); measles, mumps, and rubella; hepatitis B; and varicella vaccines. Questions asked about the size and type of hospital, Occupational Health staffing, processes for immunizing HCWs, record-keeping, levels of immunization for HCWs, outbreaks and exposures, and an open text area for identifying barriers and solutions to implementing the CDSPC protocols. The survey was piloted in June 2018 and disseminated to all Ontario acute care hospitals by OHA between September and October 2018. Each hospital was asked to respond only once.
Results: Responses from 52 of 141 acute care hospitals (37% response rate) were submitted and included. Verification of immune status was overall higher for new hires (100% for Tdap) compared with existing staff (74% for Tdap) and was highest for hospital employees (vs physicians, volunteers, students). 40% of facilities do not have a process for ensuring that HCWs returning from leave are identified for "catch-up" immunization on return. When asked to report the percentage of HCWs with evidence of immunity to the four vaccines, the most common response was "do not know." The time required to assess HCW immune status after an exposure or in outbreak ranged from < 2 hours to > 48 hours. Use of an efficient and effective electronic system was repeatedly identified as a key facilitator in being able to access information about HCW immune status.
Lessons Learned: Although all acute care hospitals did not respond to our survey, our results identify key challenges to implementing OHA protocols and significant gaps in processes to ensure that HCWs are protected from infectious diseases. This information is an essential starting point for exploring potential feasible solutions to these challenges and reinforces the need to develop a plan of action.

3:45 p.m. – 3:58 p.m. Oral presentation 32

WINNER OF A 2019 IFIC SCHOLARSHIP

INCREASED EFFORT REQUIRED TO DECLINE INFLUENZA VACCINATIONS LEADS TO HIGHER EMPLOYEE VACCINATION RATES

Heidi Poole
Mayo Clinic Health System, Austin, MN

Background: Influenza is a serious disease that can lead to hospitalization and sometimes even death. It is the number one cause of vaccine-preventable death in the United States. During a 2017 Joint Commission survey, a health system facility in southeast Minnesota received feedback that healthcare facilities need to establish a goal and plan that would achieve a 90% employee vaccination rate to meet the Healthy People 2020 objective.
Method: Employee participation is mandatory in the Southeast Health System Influenza Vaccination Program by way of declination or administration of the influenza vaccine. The health system's Infection Prevention and Control department, with the support of the leadership team, implemented a new approach during the 2017-2018 flu season that made it more difficult for employees to decline the influenza vaccination. The approach incorporated mandatory in-person training sessions for employees who wished to decline the vaccination. The training sessions utilized a mobile device application that provided education about influenza vaccinations. A web link was emailed to participants after their session to meet the mandatory influenza vaccination participation requirement.
Results: Employee vaccination rates for the Southeast Minnesota Health System reported to the National Healthcare Safety Network increased from 84.3% in the 2016-2017 season to 91% in the 2017-2018 season.
Conclusion: The Healthy People 2020 objective was met with the new declination process implemented by infection prevention and control.

POSTER PRESENTATIONS

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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 CHICA-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 on May 29.
2. One (1) oral presentation will be announced as Best Oral Presentation and receive an award of $500 sponsored by 3M Canada. The award will be announced at the Closing Ceremonies on May 29.
3. Best Poster Presentation as chosen by attendees will receive an award of $500 sponsored by 3M Canada. The award will be announced at the Closing Ceremonies on May 29.

CONFERENCE ATTENDEES WILL VOTE FOR BEST ORAL PRESENTATION AND BEST POSTER PRESENTATION THROUGH THE CONFERENCE APP.
DEADLINE FOR SUBMISSION: 5:00 p.m., Tuesday, May 28.

MONDAY, MAY 27, 2019

POSTER BOARD 1

THE DEVELOPMENT OF AN AUDIT PROGRAM AND ELECTRONIC TOOL FOR HEALTHCARE CONSTRUCTION IN AN ACADEMIC TEACHING HOSPITAL

Louis Wong, Barbara Shea, Jack Ranieri, Lauren McLeod, Luke Sequeira, Liz McCreight, Jennie Johnstone, Allison McGeer
Sinai Health System

Issue: Mount Sinai Hospital (MSH) is a 485 bed acute care teaching hospital located in Toronto, Ontario. The Renew Sinai Phase 3A redevelopment project involves construction in an actively operational hospital of 300,000 square feet over 130 phases in five years (2017-2022). Healthcare associated infections due to construction activities have been well documented in the literature and contractor and staff adherence to infection prevention and control (IPAC) standards is critical to ensuring patient safety. Paper-based audits of the construction site were initially developed and implemented in October 2017 and focused on a few key IPAC indicators. As the number of construction sites and complexity of issues increased, IPAC identified the need to conduct more detailed audits and enhance the audit process to capture, refine, quantify, and report the data collected.
Project: This project consists of four main phases: 1) Development of audit tool content. 2) Development of a mobile device based application. 3) Auditor training. 4) Reporting.
Results: An IPAC construction audit tool incorporating two audit types were created and piloted: one that measures exterior indicators only and one that measures interior and exterior indicators. IPAC then worked with the Information Technology (IT) Department to develop an electronic tool to facilitate data collection and reporting. From 1 April to 30 September 2018, 1659 audits were completed by five trained auditors and successfully entered into an in-house developed application for use on mobile tablets. IPAC reports the audit outcomes through a multifaceted approach. Reports on deficiencies are sent daily to the contractors and the project office so that they can be resolved in a timely manner. Summary reports are also disseminated to project stakeholders on a weekly basis. With the development of the electronic tool, automation of reporting templates have been created. Data from fiscal quarter 1 and 2, 2018 were summarized in a report and shared with key stakeholders for feedback. Initial feedback was positive, noting the report was easily interpreted and the ability to quantify and identify location of deficiencies and trends was value added.
Lessons Learned: The new auditing and reporting processes for IPAC standards during construction activities has improved IPAC surveillance and feedback processes. IPAC requires a tool that is flexible to add or modify indicators as new issues arise and to tailor reports that are unique to specific construction sites. The development of the electronic tool and production of the reports required significant resources from both the IPAC and IT Departments. Several challenges were identified during this process including defining subjective indicators and training auditors, organizing sites to enable proper data collection and reporting, and resolving the lack of WiFi connection in many construction sites which made data entry difficult.

POSTER BOARD 2

CARBAPENEMASE PRODUCING ORGANISMS (CPO) SCREENING OF NEW PATIENT REFERRALS IN THE OUTPATIENT ONCOLOGY POPULATION

Adriana Ezelyk,[1] Sheetal Kainth,[1] Alison Chant,[1] Kerstin Humbert-Droz,[1] Kristie Harding[1], Judy Tearoe,[1] Vladlena Abed,[1] Beth Skuggedal,[1] Kimberly Mallory, Robyn Hunter,[1] Ghada Al-Rawahi,[1] Joy Bunsko,[1] Lori Rowe[1]
[1]Provincial Health Services Authority

Issue: Carbapenemase producing organisms (CPO), through resistance to broad spectrum antibiotics, including carbapenem antibiotics, leave limited treatment options for serious infections. Typically, surveillance is not done routinely in outpatient oncology settings. However, the outpatient oncology patient population may be considered particularly vulnerable and at higher risk for complications upon acquisition of these bacteria. Early detection of colonized and/or infected patients and implementation of infection prevention and control measures are instrumental to decrease the impact of transmission to other vulnerable patients and healthcare workers.
Project: In September 2016, the Surrey Cancer Centre, with support from the Infection Prevention and Control (IPAC) program, implemented an outpatient CPO screening initiative. This initiative involved asking all new patients during the pre-visit telephone interview if they have had healthcare encounters outside of Canada in the past twelve months. If it was determined that the patient met requirements for screening, then a fecal-stained rectal swab was arranged for collection at their first appointment. Until the status of CPO colonization could be determined, the patient was cared for under 'contact precautions'.
Results: During two years of implementation, a total of 6,260 new patient referrals were screened for CPO risk factors (retrieved via Analytics on Demand). Of these, 268 (4.3%) patients answered 'YES' to having out of country healthcare exposure. Through collaboration with adjoining health authorities, we successfully identified 6 (2.2%) CPO colonized patients prior to entry into the facility, allowing implementation of timely and appropriate infection control measures, limiting potential exposures to other vulnerable patients and staff in our centre.
Lessons Learned: · An outpatient setting provides many challenges in establishing surveillance protocols for antibiotic resistant organisms. Key stakeholders need to be involved well before implementation of screening; this includes organization and site leadership, physician groups, environmental services, frontline representatives, laboratory staff and any adjoining health authorities that may be impacted by the initiative. · We will continue to screen all new patients, with out of country healthcare exposures, for CPO having had successful identification of CPO colonized patients early on in the oncology treatment process. · Future plans include expanding active surveillance to other British Columbia Cancer centres with potential to automate much of this process with the introduction of a new electronic medical records platform.

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POSTER PRESENTATIONS

POSTER BOARD 3

THE COMMON, WEIRD AND WACKY FINDINGS OF THE CANINE SCENT DETECTION PROGRAM IN VANCOUVER COASTAL HEALTH AND FRASER HEALTH AUTHORITIES

Ruth Dueckman,[1] Amira Imamovic-Buljubasic,[2] Infection Prevention and Control Fraser Health,[1] Infection Prevention and Control Vancouver Coastal Health,[1] Jaime Kinna[2], Teresa Zurberg[2]
[1]Fraser Health
[2]Vancouver Coastal Health

Issue: Infection Prevention and Control (IPC) programs look for novel approaches to reduce *Clostridium difficile* (*C. difficile*) infections, one of the most common causes of nosocomial infections with significant associated morbidity and cost. In 2016 Vancouver Coastal Health (VCH) developed an innovative Canine Scent Detection (CSD) program to detect environmental reservoirs of *C. difficile* in healthcare sites. Fraser Health (FH) has since contracted with VCH to bring the dogs two days a week to their acute care sites. Common, as well as unusual, findings and lessons learned from the two IPC programs will be presented.
Project: The CSD teams, including canines and their handlers, search high risk units/areas within acute care sites looking for environmental reservoirs. The teams record their findings and respond to contaminated areas (alerts) with immediate remediation. Findings are presented back to the units, clinical staff and site leadership to help identify gaps in IPC best practices and cleaning/disinfection processes.
Results: From May 2017 to November 2018, 12 acute care sites were visited in the two health authorities, and more than 900 searches in areas/units were conducted. Over 1,500 alerts were recorded. Environments with frequent alerts included hallways, clean storage areas, and nursing stations. Commonly contaminated items included: supply carts, patient charts, medical equipment (including vital signs machines and stethoscopes), staff lockers, mobility devices including slings and wheelchairs, and patient beds/mattresses. There were also a number of *C. difficile* alerts that were completely unexpected.
Lessons Learned: The CSD program provides visual reminders of the importance of IPC best practices and highlights the modes of *C. difficile* transmission in a non-punitive way. Our observations have reinforced the importance of hand hygiene, de-cluttering and replacing damaged equipment. The data have also provided site leadership with a better understanding of the scope of contamination. Each alert is an opportunity for discussion and feedback with front-line staff and assists in identifying gaps in processes that may be contributing to nosocomial infections. The program has also provided opportunities to positively engage and empower front-line staff in addressing specific IPC concerns. Examples of initiatives developed by units following CSD visits include the provision of designated shoe racks in staff locker rooms and the implementation of a cleaning schedule for patient charts. While the two health regions implemented their CSD programs independently, they have been able to collaborate on investigation and remediation initiatives when common concerns are identified. The CSD program has proven to be a valuable tool in changing the conversation regarding IPC and environmental reservoirs of *C. difficile*.

POSTER BOARD 4

IT'S NOT "JUST A COLONIZATION": FIVE YEARS OF ACUTE CARE MRSA SURVEILLANCE DATA IN A MULTI-SITE HEALTH REGION

Avani Lamba,[1] Xuetao Wang,[1] Shehlina Arshad,[1] Tara Leigh Donovan,[2] Katy Short[1]
[1]Fraser Health
[2]Provincial Infection Control Network of British Columbia

Background/objectives: Methicillin-resistant *Staphylococcus aureus* (MRSA), while common, is still a major healthcare concern due to its association with increased hospital admission rates, mortality and healthcare costs. A review of surveillance data was conducted in Fraser Health (FH), a health region in British Columbia with sixteen acute care sites, to understand the epidemiology of healthcare-associated MRSA and the progression from colonization to infection among patients.
Methods: As part of routine surveillance, FH infection prevention and control (IPC) practitioners review all MRSA-positive laboratory results from admitted acute care patients and assess whether the specimen represents a colonization or an infection by applying the National Healthcare Safety Network surveillance definitions for infections following a review of patient chart notes. Practitioners enter surveillance records for the first isolate, the first infection, and all bloodstream infections (BSIs) for each patient. Surveillance records from fiscal year 2012/13 through 2016/17 were extracted and linked by unique patient identifier. The proportions of first isolates which represented an infection, versus colonization, over time were calculated and compared. To measure progression from colonization to infection, the proportion of patients with a first infection within one year of a first isolate assessed as a colonization was calculated. Finally, the BSI rate for healthcare-associated MRSA cases was calculated.
Results: Between 2012/13 and 2016/17, 37.8% of new healthcare-associated MRSA cases were first identified as infections, decreasing over time from 57.0% in 2012/13 to 23.9% in 2016/17. The proportion of healthcare-associated MRSA colonization cases that progressed to an infection within one year was 12.6%, ranging from a high of 15.4% in 2014/15 to a low of 6.6% in 2016/17. The BSI rate for healthcare-associated MRSA has remained relatively consistent, ranging from 0.62 cases per 10,000 patient days in 2013/14 to 1.03 cases per 10,000 patient days in 2014/15.
Conclusion: The majority of healthcare-associated MRSA cases are first identified as colonizations. However, during a five-year period, over one-third of new healthcare-associated MRSA cases were infections, and of the remaining colonization cases, more than one in ten were hospitalized during the next year with an MRSA infection. MRSA continues to have a detrimental impact on patient safety and continued efforts are needed to prevent nosocomial transmission as well as progression from colonization to infection.

POSTER BOARD 5

APPLICATION OF A THEORY AND EVIDENCE-INFORMED APPROACH TO ENABLE THE DEVELOPMENT OF A PROVINCIAL HAND HYGIENE PROGRAM

Andrea Chaplin, Reisha Fernandes, Julia Moore, Mandy Deeves, Sam Macfarlane, Erin Berenbaum, Sunita Tanna
Public Health Ontario

Background: Public Health Ontario is in the process of transforming the provincial hand hygiene program "Just Clean Your Hands". Existing hand hygiene programs produce modest outcomes and a number of recommendations have been made to incorporate a theory-informed approach to support hand hygiene practices in the healthcare setting. Implementation science literature provides a systematic approach to understand barriers and facilitators to change and incorporate theory in the selection of hand hygiene improvement strategies.
Objectives: The objective of this project was to identify what types of hand hygiene improvement strategies should be incorporated into Public Health Ontario's hand hygiene program using a theory and evidence-informed approach.
Methods: A literature review was used to update an existing qualitative systematic review that had summarized barrier and facilitator themes from 36 qualitative studies. Inclusion and exclusion criteria and a search strategy were designed in alignment with the original review. A total of 19 members of a program development team and 13 members of an external advisory committee reviewed the resulting themes and contributed additional perspectives. Two reviewers mapped each theme to one or more domains from the theoretical domains framework with discrepancies resolved through group discussion. In parallel, two reviewers mapped hand hygiene improvement strategies currently recommended as part of the Just Clean Your Hands Program to domains of the theoretical domains framework.
Findings: A total of 52 qualitative studies contributed 48 unique barrier or facilitator themes. All domains from the theoretical domains framework, with the exception of one (beliefs about capabilities), were mapped to one or more barrier or facilitator themes with a high percent agreement between the two reviewers (83%).The majority of the themes were related to beliefs about consequences. A detailed review of the core improvement strategies found in Ontario's Just Clean Your Hands Program revealed a number of gaps. The program only focused on five domains (knowledge, skill, social influences, environmental context and resources, and behavioural regulation). Notably there has been a lack of focus on beliefs about consequences, professional role and identity, optimism, memory, attention and decision processes (e.g., establishing habits).
Conclusion: This project has demonstrated the need to find innovative ways to motivate healthcare professionals beyond typical domains of knowledge and skill and to identify strategies that can support the development of hand hygiene as a habit.

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POSTER BOARD 6

IMPACT OF AUDITING AND TEACHING ROUTINE ENVIRONMENTAL CLEANING OF THE OPERATING ROOM (OR) TO HOUSEKEEPING AND OR STAFF

Philippe Fournier, Josee Shymanski, Marcelle Thibeault, Mychele Rheaume, Martin Carriere
Hopital Montfort

Issue: Environmental contamination has been associated with increased risk of infection. Although the Operating Room Nurses Association of Canada (ORNAC) has clear standards for operating room (OR) cleaning, both housekeeping and OR staff in our facility reported that these standards were not always met nor well understood by all staff involved in cleaning procedures. This may have contributed to increased risk of surgical site infections (SSI).
Project: The goal of the project was to optimize OR cleaning practices by developing, teaching and auditing standardized cleaning procedures using a collaborative approach. A standardized auditing tool based on ORNAC standards was created to measure compliance to OR cleaning process. Baseline data was collected by an infection control practitioner who completed sixteen observations of in between case cleaning over two days, evaluated if a morning cleaning was done for each of the nine operating theaters and observed one terminal cleaning. Results were inputted in an excel spreadsheet which automatically calculates compliance rates and populates graphs. Baseline data was used to develop the training material which was then taught to both environmental and OR staff. Audits are now performed on a weekly basis by our Environmental service coordinator and feedback is given to staff after each evaluation.
Results: Baseline data showed a compliance rate of 58% for in between case cleaning, 0% for morning cleaning and 0% for terminal cleaning. Following this initiative, compliance improved from 58.4% to an average of 82.8% over seven months. Improvements resulted from outlining expectations, changing the sequence of certain cleaning steps or clarifying responsibility. This initiative likely contributed to improving our SSI rates, which have decreased by 58% and 89% for knee and hip prosthesis respectively.
Lessons Learned: It is well known that bacteria and viruses can survive in the environment. Suboptimal OR cleaning procedures can therefore contribute to increased risk of SSI. Maintaining a clean OR environment is a shared responsibility requiring collaboration between OR and housekeeping staff. Our project showed that conducting training, audits and feedback resulted in improved cleaning of the OR environment, thus improving patient safety.

POSTER BOARD 7

OUTBREAK MANAGEMENT MADE EASY

Natasha Salt, Victoria Williams, Sonja Cobham, Dariusz Pajak, Melanee Eng-Chong, Amber Linkenheld-Struk, Melisa Avaness, Catherine Kerr, Kuldeep Virdi, Fatema Jinnah, Tanya Agnihotri, Jerome Leis
Sunnybrook Health Sciences Centre

Issue: In the last 6 years, Sunnybrook Health Sciences Centre, a 1325-bed tertiary care centre that includes acute care, rehabilitation and long term care patients, has declared on average 38.2 outbreaks per year. Most have been respiratory outbreaks in our long term care facility, identified through multiplex polymerase chain reaction viral testing, while some have been related to antibiotic resistant organisms or gastrointestinal illnesses. A lack of standardized outbreak management tools has led inconsistencies in practice and communication among infection prevention and control (IPAC) coordinators.
Project: Pre-existing copies of outbreak documents and communication templates were reviewed, amalgamated and updated. An outbreak management toolkit was developed by IPAC team in collaboration with a local public health liaison. This toolkit was saved on a secure network which contains guiding documents supporting the IPAC team from the pre to post-outbreak period. Standardized documents created include outbreak declaration checklist, guiding tools indicating outbreak definition and threshold for various conditions and organisms, outbreak signage, communication templates with up-to-date distribution list of key stakeholders, patient and visitor outbreak education pamphlet, line list, debrief agenda, setting specific guidance and interventions for common conditions and organisms. Evaluation included qualitative feedback from IPAC coordinators and front-line staff.
Results: Eight outbreaks have been declared since introduction of the finalized toolkit in June 2018. Positive qualitative feedback from unit staff, managers, IPAC staff, including novice coordinators, regarding the toolkit was noted with specific improvements in outbreak management efficiency and consistency in communication processes.
Lesson Learned: Outbreak management toolkits are a backbone for a consistent and rapid communication in response to an outbreak. They remain evergreen documents that can be tailor made for specific environments and risk settings, and then adapted further for specific situations.

POSTER BOARD 8

IMPROVING SAFETY AND EFFICIENCIES WITHIN FORMULA AND ENTERAL FEED PROCESSES USING THE IPAC KITCHEN AUDIT TOOL

Caroline Ivorra, Colleen Kilroy, Cara Sudoma
Holland Bloorview Kids Rehabilitation Hospital

Issue: Lack of oversight in the process of ordering, storing and managing expiry dates of enteral feeds and formulas, poses the risk of having expired products reach patients. This could cause potential harm to children and cost inefficiencies within the organization. In April 2017 Infection Prevention and Control (IPAC) at Holland Bloorview Kids Rehabilitation Hospital implemented the use of IPAC Canada's Unit Kitchen Audit Tool. During those audits, deficiencies were found. Incident reports were completed to monitor trends. One client drank expired juice resulting in emesis. After a check on the unit expired formula was found in several locations. In total, over 200 individual expired items were discarded between December 2017 and January 2018. Most of these items were part of our non-stock items or items delivered from our supplier.
Project: A quality improvement initiative began involving eight stakeholders: Operations Managers, Manager of Patient Safety, Infection Control Practitioners, Clerical Assistants, Materials Management, Senior Buyer, Food Services, Nursing, Clinicians (such as dieticians, speech pathologists and occupational therapists). The goal was to create a structured oversight for enteral feeds and formulas in a decentralized system. Collaboration from all was required to understand each stakeholder's role. Once established the team determined changes that needed to take place in how and where enteral feeds are stored. Through a lean project, the reorganization of our equipment room took place. This room was then allocated for special order items only. For ease of auditing expiry dates wire baskets were purchased for the inpatient unit pantries. Process changes were implemented for clerical assistants to verify stock available prior to ordering and to monitor stock and expiration dates. IPAC increased doing audits from quarterly to monthly, and added the role of checking expiry dates of individual items stored, updating signage and educating staff and families on practice changes. Audits occurred throughout this project in order to keep track of trends as new processes were being implemented.
Results: The amount of expired/unlabeled formula/feed found, with the potential to reach the bedside dropped from 120 bottles to 2 in a ten-month period. Between April 2016 and August 2018, the monthly amount spent on enteral feeds trended down to almost half while occupancy rates remained stable.
Lessons Learned: Communication between stakeholders involved in the same process is key to ensure patient safety and improve cost efficiencies. To describe the oversight structure of monitoring the utilization and expiration dates of enteral feeds and formulas, the importance of developing a policy was recognized. This exercise can be used in other areas of the organization that have decentralized processes.

POSTER BOARD 9

SINK HYGIENE AND PATIENT RISK: THE IMPACT OF OCCUPANCY, SINK PRACTICES AND DISINFECTANT CHEMISTRY

Rosemarie Howie, Michael John
London Health Sciences Centre

Background/objectives: Sinks in patient rooms are a potential reservoir and risk for transmission of healthcare-associated pathogens. The level and rate of contamination may be linked to the number of patients per room, the exposure to contaminants and the disinfectant chemistry used for routine cleaning. A quantitative assessment of bioburden on sink surfaces, pre- and post-cleaning was conducted with rebound time to pre-cleaning levels to evaluate the impact of occupancy, standardized sink management practices, and a change in cleaner disinfectant chemistry from a quaternary ammonium compound (QUAT) to an enhanced hydrogen peroxide disinfectant (EHP).
Methods: Sinks were assessed in 18 private, 18 semi-private and 18 ward (three or four-patient) occupied patient rooms in an acute care hospital's medicine and surgical units. Bioburden assessments were at 0.5 hours pre-cleaning and at 0, 0.5,

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1.5, 2.5, 4.5 and 6.5 hours post-cleaning, measured by adenosine triphosphate (ATP) bioluminescence. The impact of sink practices on the bioburden levels and rate of recontamination were evaluated in private rooms. Disinfectant chemistry was evaluated in ward rooms by comparing the pre- to post-cleaning bioburden reduction for each disinfectant and the rate of recontamination. The Wilcoxon rank-sum test compared bioburden reduction pre- and post- cleaning per room type and per intervention; and the Kruskal-Wallis test compared room types, ($p<0.05$).

Results: Immediately post-cleaning, median ATP levels for sinks in all patient rooms decreased significantly and were within acceptable levels of cleanliness, except for ward sinks. Bioburden levels were significantly higher and rebounded quickest to pre-cleaning levels at 1.5 hours for ward sinks compared to 2.5 and 4.5 hours for semi-private and private rooms, respectively. Post sink practice intervention, ATP levels were reduced by 53% and remained significantly below pre-cleaning levels at the end of the test period. The EHP disinfectant resulted in 23% greater bioburden reduction immediately post cleaning and a rebound to pre-cleaning levels at 6.5 hours compared to 1.5 hours for the QUAT.

Conclusions: The relative levels of cleanliness of sink surfaces significantly improved after routine cleaning, but levels and persistence differed depending on the room occupancy. Sinks in wards posed the highest risk of recontamination. Yet, private room sink hygiene did not persist beyond the test period, emphasizing the value of infection control measures in conjunction with cleaning. The results of the targeted interventions suggest that disinfectant chemistry and standardized sink practices may be a valuable part of a bundled approach to mitigate patient risk.

POSTER BOARD 10

HOW CLEAN IS YOUR OR REALLY?

Mary Ellen Konrad, Tina Stacey-Works, Jennifer Blue
Halton Healthcare

Issue: Environmental cleaning in surgical settings is required to minimize patients' and health care providers' exposure to potentially infectious microorganisms. The Operating Room Nurses Association of Canada (ORNAC) and Provincial Infectious Disease Advisory Committee (PIDAC) have published standards for environmental cleaning in surgical settings that include training and documentation. An investigation and evaluation of current cleaning practices was initiated after visible dust and stained floors were observed in the operating rooms of a new hospital.

Project: Infection Prevention and Control (IPAC), Environmental Services (EVS), Operating room (OR), and project management staff collaborated over a three year period to improve the cleaning processes and meet best practice standards for surgical services. The auditing process included direct observations, environmental cleaning audits (fluorescent marker), work observations and process mapping.

Results: The Operating rooms were audited and found to be inadequately cleaned through direct observations by IPAC and the OR manager. The fluorescent marker results (n=13) from 2017 indicated that certain high touch areas were not cleaned 55% of the time. Analysis of the results determined that shelving, work stations, scrub sinks, anesthesia cart, flat surfaces of booms, TV monitor, and storage cabinets were not listed on either groups cleaning routine. OR support staff clean between cases and EVS staff perform end of day cleaning. A process mapping exercise uncovered the following gaps: an understanding of 1) what equipment and surfaces require cleaning, 2) the direction to work from clean to soiled, 3) the accountability for cleaning and the frequency of terminal/end of day cleaning. Several important changes in the cleaning process were implemented. Disinfectant wipes were changed to a new product with a one minute kill time to expedite room turn over. An extra cleaning staff member was added to perform daily terminal cleans. A between case and an end of the day cleaning checklist has been created for both EVS and OR support and results are documented daily. These changes are reflected in the environmental cleaning audits (fluorescent marker) (n=11) which averaged 92.1% in 2018.

Lessons Learned: The results of this project lead to further work observations by the Project Management and IPAC teams. The main issues that became apparent during work observations were communication gaps between OR support and EVS staff to indicate when rooms were clean; and EVS staff prioritization of which rooms to clean first. A visual cue indicating when rooms have been cleaned has been added to allow EVS staff to prioritize their work. OR support and EVS staff are now trained on cleaning procedures for the OR according to standards. This work is ongoing and may lead to future changes in the cleaning model, job title/ classification change and modification of shift times.

POSTER BOARD 11

IF YOU BUILD IT, THEY WILL COME: HOW WE SOLVED COMMON PPE CHALLANGES THROUGH INNOVATION

Lindsay Samoila, Justin Quinn[1]
[1]Hotel-Dieu Grace Healthcare

Issue: Personal Protective Equipment (PPE) stored at point of care at the organization was not designed in a manner that promoted best practice donning and doffing techniques. Current state storage illustrated the positioning of the storage did not facilitate best practice for hand hygiene and donning. PPE was stored in carts endorsing hoarding of gowns, gloves, masks, and linen along with a variety of other healthcare supplies. In addition, lack of ownership contributed to the absence of stock rotation and maintenance of the PPE carts.

Project: Infection Prevention and Control partnered with Environmental Services to create an inter-professional team consisting of Material Management, Nursing, Facilities, and Ergonomists. This team innovated how PPE was stored at point of care, while exploring linen consumption. This team implemented a continuous "Plan Do Study Act" cycle to develop and integrated a facility wide process improvement. During the study, it became clear, a new model for PPE storage was essential. This required the team to collaboratively develop a new innovative solution for laundered gowns, as well as facial protection and gloves. After research and analysis from the team, the creation of a point of care PPE storage solution was created. This innovation included the development of gowns stored in laundered bags stored outside of each room, and the availability of gloves and facial protection at point of care.

Results: Collaboratively, the inter-professional team developed and implemented a permanent self-sustaining point of care storage, which promotes the appropriate donning sequence of PPE and hand hygiene. Since implementation, hoarding has significantly diminished with a 27% reduction of protective gown consumption and 8% reduction of gloves. The new arrangement has increased hand hygiene compliance rates by 29%.

Lessons Learned: Utilizing a collaborative inter-professional team approach, point of care PPE was successfully integrated into practice. Incorporating frontline feedback into the design, motivated the healthcare worker's to embrace the innovative point of care PPE storage. The successful implementation validated, great ideas can come from within the organization, innovation does not need to come from external sources or be "State of the Art".

POSTER BOARD 12

IMPLEMENTATION OF A PROVINCE-WIDE DEEP CLEAN PROGRAM FOR AMBULANCES

Janie Nichols,[1] Janice Butler,[2] Brandi Morin,[1] Lisa Young[3]
[1]BC EHS
[2]BC Ministry of Health
[3]Island Health

Issue: Routine cleaning of the inside of ambulances and patient care equipment is a best practice infection prevention and control (IPAC) principle. Due to the physical environment and often urgent or emergent care situations, routine cleaning and disinfection practices can be inadequate and do not meet Infection Prevention and Control (IPAC) standards. British Columbia Emergency Health Services (BCEHS) is a province-wide program, with 800 patient care vehicles. Historically, ambulances have been cleaned and disinfected in an ambulance bay or outside an ambulance station, between patient calls, relying on the expertise and training of paramedics in the principles of decontamination.

Project: A centralized deep clean process was implemented, ensuring a standardised and consistent clean without impacting the availability of the vehicles. A UV indicator gel was used to identify whether surfaces have been appropriately cleaned. A standard of 80% of all surfaces cleaned has been set as a pass rate.

Results: The pilot site was in Victoria in 2014. The deep clean program initially supported 20 vehicle cleans per month and each year the service was expanded. In 2019 it is anticipated that 25 vehicles per day will be deep cleaned. When auditing began, it was at an average of 80%; to improve results, dedicated staff were employed and regular IPAC education was provided. These supporting measures increased the number of successful cleans, thus demonstrating improvement. In the last 6 months, 143 vehicles were cleaned with an average pass rate of 98.5%, validating a consistently high standard of cleanliness; no audit fell below 90%. Phase 2 involved expansion to a facility in the lower mainland in 2017. In the last 6 months, 448 cars were cleaned with

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an average pass rate of 95.5%. Phase 3 began in January 2019 to address facility access issues identified during phase 2 evaluations. Phase 4 will be offered in the interior region in early 2019.
Lessons Learned: Training of staff in environmental cleaning and disinfection is vital to ensure the success of the program. Staff are also educated in routine IPAC principles, e.g. hand hygiene and personal protective equipment. Regular updates to education are essential to maintaining the practice. Although an audit process has been put in place, a follow-up process needs to be developed when pass rates are not achieved and it is important to support improvement and patient safety by returning the vehicle for cleaning and disinfection. The addition of a mobile unit is under review to offer the deep clean service in more remote areas that are impacted by the geographical distance; a mobile unit would attend remote stations and deep clean vehicles at the station. Future considerations include the use of new technologies such as a fogging machine as an adjunct to the current deep clean and disinfecting processes.

POSTER BOARD 13

PROTECTING STERILE INSTRUMENTS FOR HOME CARE FROM HUMIDITY RISKS DURING TRANSPORT

Deborah Bonser, Cara Wilkie
Association of Ontario Midwives

Issue: The Canadian Standards Association (CSA) describes exposure of sterile pouches to environmental conditions outside the range of 18 to 23 degrees Celsius (C), with relative humidity (RH) of 30 to 60% as an event compromising sterility. Canadian temperatures can range from 40C in summer to -40C in winter with RH from 10% to 100%. In Canada, home care services are expanding, and instruments must be kept sterile to point of use with limited environmental control during transport and storage. Globally, environmental control is not always feasible or affordable, even when care is provided in facilities.
Project: The Association of Ontario Midwives applied knowledge of microbiology, meteorology and implementation science to understand the risks and assess mitigation strategies for midwives who must carry sterile instruments in their cars for use at home births. The meteorological concept of 'dew point' explains how temperature change and RH interact to create the risk that moisture carrying microorganisms will wick through permeable packs. Weather conditions while instruments are in a vehicle, and moving instruments in and out of climate controlled buildings can both pose moisture risks. Three mitigation strategies were assessed individually and in combination in small scale field tests over a period of one year: 1. Storage containers intended to prevent moisture from reaching the contents, 2. The use of desiccant in the containers to control RH, and 3. Insulation to moderate temperature changes. Sterile packs were stored in a variety of containers, with and without desiccant and insulation, in the trunk of a car. Humidity indicator cards were used to monitor the RH of the air in the containers.
Results: A review of CSA documents and research revealed no risk to sterility of stable high or low temperatures outside the prescribed range. The interaction of changes in temperature and RH can create moisture risk. Rigid plastic containers with a high quality seal on the lid (a silicone seal around the rim of the lid and a click lock) improved RH control compared to containers which were less air tight. These containers, normally used for food storage, protected the sterile pouches from external changes in RH for at least several weeks. Desiccant kept the RH within the target range until the desiccant was saturated. In our limited tests, this occurred after 3 to 4 months in the well-sealed containers. Insulating containers by wrapping in a blanket inside a canvas bag, extended the time between humidity incidents by a few days.
Lesson Learned: Understanding the science behind the environmental control standards enabled identification of low cost approaches for reducing humidity risk to sterility for care provided outside climate controlled facilities.

POSTER BOARD 14

STRENGTHENING INFECTION PREVENTION AND CONTROL PROGRAM AT THE MINISTRY OF HEALTH AND SOCIAL SERVICES NATIONAL LEVEL IN NAMIBIA

Augustinus Kasterhody
Ministry of Health & Social Services, Namibia

Issues: The National Infection Prevention and Control (IPC) program in Namibia sits within the Ministry of Health and Social Services (MoHSS) Quality Assurance unit formed in 2003. Before 2016, IPC activities were coordinated by the Quality Assurance manager as there was no national IPC practitioner. IPC guidelines and training manuals for healthcare workers were developed in 2011 with support of MoHSS partners and stakeholders. There are 35 public hospitals, with each hospital having an IPC focal person. However, their training is limited to a four day IPC generic training, and they are not dedicated only to IPC activities which pauses a challenge regarding IPC implementation in all health care facilities. Before June 2017, there were no specific IPC indicators identified for regular reporting by hospitals. Most hospitals still have challenges with the availability of essential IPC commodities however each hospital has access to running water. Also, there was no national IPC steering committee before October 2016.
Project: The aim was to strengthen IPC program at the MoHSS national level to effectively coordinate and monitor IPC practices within healthcare facilities. The MoHSS identified and recruited a national IPC practitioner in October 2016 to coordinate all IPC activities. Also, in November 2016 a national multi-disciplinary IPC steering committee was established to develop interventions to improve patient safety through good IPC practices. Terms of reference for the committee were drafted and endorsed by the MoHSS management. The committee was to meet every three months. Also, a total of five IPC indicators that includes; hand hygiene compliance rates, surgical site infections, waste segregation, monthly hospital IPC committee meetings and hepatitis B immunization of healthcare workers were selected to be monitored and reported every three months. Hospital IPC focal persons were trained on the indicators and reporting requirements in June 2017.
Results: The national IPC steering committee was initiated in November 2016 and has been meeting every three months. By November 2018, the committee held a total of nine meetings. The IPC practitioners from private healthcare facilities who are part of the steering committee are now mentoring IPC focal persons in the public facilities since June 2018. A total of 25/35 IPC focal persons were trained on the five selected IPC indicators. Since March 2018, the hospitals are reporting on IPC indicators. In the first quarter of January to March 2018 a total of 11/35 (31%) hospitals submitted data on IPC indicators whereas, in the second quarter (April to June 2018), the number of hospital reporting increased to 21/35 (60%). In the third quarter (July to September 2018) however, the reporting reduced to 15/35 (43%).
Lesson Learned: A national multidisciplinary IPC steering committee is crucial in coordinating IPC activities as it brings different stakeholders together to support IPC efforts. Selection of specific IPC indicators is critical in monitoring IPC initiatives however continuous support is needed to ensure; IPC focal persons understand the indicators, the importance of reporting, and use of the data to improve on gaps identified. The national IPC steering committee will continue to support the healthcare facilities through capacity building and soliciting support for IPC activities.

POSTER BOARD 16

EPIDEMIOLOGICAL AND MOLECULAR CHARACTERIZATION OF A POST-PARTUM INVASIVE GROUP A STREPTOCOCCAL OUTBREAK IN ONTARIO HOSPITAL

Jeya Nadarajah, Kornelija Delibasic
Markham Stouffville Hospital

Background: Group A Streptococcus (GAS) outbreaks are an uncommon occurrence. In Canada, rates of invasive Group A Streptococcal (iGAS) disease are on the rise with 2,167 cases reported in 2016, while 31 of cases reported by York Region. GAS has a significantly higher attack rate in pregnant and post-partum women. At Markham Stouffville Hospital, 3 cases of iGAS presented on the post-partum ward within 10 days in beginning of 2017. An outbreak investigation began simultaneously with educational and infection control campaign.
Methods: Pulsed-field gel electrophoresis (PFGE) of the 3 isolates was performed by the Public Health Ontario Laboratory. Dr. Allison McGeer?s laboratory at Mount Sinai Hospital, Toronto, provided rapid M Protein Gene (emm) typing. A collaborative investigation was initiated to determine if the iGAS cases were epidemiologically linked. Surveillance protocol was undertaken to identify additional possible cases, including Infectious Diseases consultation, protocols for clinicians and infection control measures including early recognition of sepsis. Investigation focused on healthcare workers as source of transmission. A 4 week surveillance yielded no further cases, declaring the outbreak over. A 4-month enhanced surveillance period began identifying possible cases of staff or patients colonized with the outbreak strain. A 6-month retrospective review of all iGAS cases in the hospital was performed to identify any linkages.
Results: Of the 3 identified iGAS cases, epidemiological tracing could not link Case 1 with Case 2 and 3. Case 2 and 3 delivered in the same delivery room within 12 hours of each other. Using PFGE and emm typing, the blood isolates

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from Case 2 and 3 were found to be M28.0, and from Case 1 as M2. Healthcare worker surveillance was performed based on epidemiological linkage to the cases and/or risk of exposure. Throat, vaginal/rectal swabs and swabs from open lesions were collected. Over 200 epidemiologically linked healthcare workers were identified, 1 staff member tested positive for GAS, however a different strain than the outbreak. A second staff member had tested positive, but the isolate was not available for typing. The enhanced surveillance period and the retrospective surveillance did not yield any additional linked cases. The baby of Case 1 presented at day 3 of birth with groin cellulitis with purulent discharge which grew GAS. The baby of Case 2 presented with ear discharge at 4 weeks of age and the swab was positive for GAS M28.0 strain.
Conclusion: An outbreak of iGAS with 2 cases occurred in a post-partum ward with strain M28.0. A definite source was not identified. Enforcement of droplet/contact precautions, intensive surveillance, early and intervention and education prevented ongoing transmission of the outbreak. The M28 strain is associated with a propensity for peri-partum GAS infection. This outbreak showed possible transmission of GAS from the mother to the newborn.

POSTER BOARD 17

IMPLEMENTATION OF A PATIENT HAND HYGIENE QUALITY IMPROVEMENT INITIATIVE ON A SURGICAL UNIT

Lauren McLeod, Diana Heng, Penny Dooks, Kyle McLaughlin, Louis Wong, Liz McCreight, Jennie Johnstone, Allison McGeer
Mount Sinai Hospital

Issue: Patients are increasingly interested in being involved in their care while in hospital and patient hand hygiene is integral in protecting themselves. However, there is a need for tools and resources that resonate with patients and can be easily integrated into the workflow of frontline staff; tools that allow frontline staff to engage with patients to improve patient hand hygiene.
Project: A patient hand hygiene pilot was implemented on a high turnover surgical unit at Mount Sinai Hospital (MSH), a 485 bed acute care teaching hospital in Toronto, Ontario. The pilot took place in September-November 2018. The objectives of the pilot were: 1. To provide patients with access to alcohol based hand rub (ABHR) in the patient space (e.g., overbed table and entrance/exit to patient room); 2. To determine if nursing staff can provide patient hand hygiene education to their patients; and 3. To standardize hand hygiene education provided to patients. The multimodal patient hand hygiene pilot involved a multidisciplinary team including Infection Prevention and Control (IPAC), Nursing, Hand Hygiene Champions and Environmental Services. The team developed visual hand hygiene prompts (e.g., posters and information cards) and a standardized script. ABHR was placed on patient overbed tables and mounted at the entrances/exits of patient rooms. Patient hand hygiene information card was placed on the patient overbed table by Environmental Services following each discharge clean. Service Assistant's ensured that wall mounted dispensers were full. IPAC surveyed patients to determine if patients had access to ABHR, if they received hand hygiene education and the information card. Nurses were surveyed for their feedback on pilot design and implementation.
Results: In total, 33 additional ABHR dispensers were mobilized to the patient space. 194 patients were surveyed over the course of two months. 97% of patients indicated they could use the dispenser in the patient space. 48% of patients indicated that they received hand hygiene education from their nurse and 80% of patients recalled receiving an information card during their admission on the surgical unit. Fifteen nurses provided feedback regarding the pilot (44% response rate). 93% were able to find time to provide hand hygiene education to their patient within their existing workflow. 93% of nurses found the patient hand hygiene information helpful when engaging with their patients.
Lessons Learned: The patient hand hygiene pilot on a surgical unit demonstrated that: 1. Patients were able to access the ABHR; 2. Nurses were able to integrate patient hand hygiene education within their existing day-to-day tasks; 3. Standardized patient hand hygiene education is useful in involving patient's in their care; 4. Involving key stakeholders early on and often during development and implementation

POSTER BOARD 18

QUESTIONING THE ROLE OF SINKS IN THE SPREAD OF CPE: BULLET OR BLANK?

Catherine Kerr,[1] Melisa Avaness, Natasha Salt,[1] Jerome Leis[1]
[1]Sunnybrook Health Sciences Centre

Background: Carbapenemase-producing Enterobacteriaceae (CPE) are an important public health concern. CPE-contaminated sink drains have been implicated in transmission and outbreaks, especially in intensive care units (ICUs). A patient known to be colonized with CPE was admitted to a 13-bed Level 2 ICU, (comprised of 4 private rooms and 9 open-concept bedspaces), at Sunnybrook Health Sciences Centre, and sinks were managed and screened post-transfer to identify contamination with CPE.
Methods: A patient known to be colonized with Klebsiella pneumoniae carbapenemase (KPC) was admitted into the ICU and placed in a private room with a dedicated hand hygiene (HH) sink, which was made inaccessible to prevent contamination. A shared macerator was to be used for the disposal of waste in the soiled utility room. Most other HH sinks on the unit were located in an open environment at least 1 or more meters away from a patient, and all sinks had design risk factors that could encourage the spread of CPE from the sink. The CPE positive patient had a length of stay of 7 days on the unit, after which all sinks were screened for CPE upon the patients discharge.
Results: Overall, 5 of 7 HH sinks tested positive for KPC (5/7, 71.4%). Among 46 environmental contacts, 25 patients were screened for CPE acquisition through day 21 post-exposure. The mean length of exposure for patients who completed screening for acquisition through day 21 was 5.84 days. No patients were identified as newly colonized or infected with CPE.
Conclusion: The role of sink drains in acquisition of nosocomial CPE has been reported but the quantitative risk varies in the literature. We made one HH sink inaccessible, which forced staff to use alternative sinks in our open concept ICU, which could have led to the unit wide contamination of sinks. Despite this, we did not identify any nosocomial acquisition of CPE in exposed patients. Sinks continue to be an area that require further research, and elements such as sink design and proximity to the patient may play a role in transmission risk.

POSTER BOARD 19

ANTIBIOTIC PRESCRIBING HABITS AMONG PRIMARY HEALTHCARE WORKERS IN NORTHERN NIGERIA: A CONCERN FOR PATIENT SAFETY IN THE ERA OF GLOBAL ANTIBIOTIC RESISTANCE

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Background: Antibiotic overprescribing is associated with antibiotic resistance worldwide. Disparities in prescribing habits exist both geographically and among different categories of healthcare workers. Primary healthcare personnel, especially Community Health Extension Workers (CHEWs), are by far the greatest number of first-line healthcare providers in Nigeria where prescription and consumption of antibiotics are poorly regulated at all levels. Minimal information exists on the antibiotic prescribing habits of essentially all cadres of healthcare workers in Nigeria and almost none for the primary healthcare workers. This study explored the antibiotic prescribing habits of Nigerian primary healthcare workers in the context of growing antibiotic resistance globally.
Method: We conducted a cross-sectional study in which self-administered paper-based questionnaires were distributed to 422 primary healthcare workers across three Northern Nigerian states of Gombe, Sokoto and Kwara. Data obtained was analysed using SPSS version 20.
Results: We recruited 422 participants 98.2% of whom prescribe antibiotics. The five most common antibiotics prescribed were metronidazole (98.1%), cotrimoxazole (86.4%), tetracycline (84.1%), amoxicillin/clavulanate (80.5%) and amoxicillin (71.7%). Identified indicators for unnecessary use/abuse of antibiotics include vaginal discharge (95.4%), trauma (91.3%), common cold (85.9%), diarrhea (87.1%), abdominal pain (68.2%), chest pain (57.6%), heat rash (52.5%), body

POSTER PRESENTATIONS

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itching (49.4%), body swelling (48.8%), body pains (25.3%) and headache (19.3%). Additionally, a few respondents also prescribe antibiotics to healthy birds (31.5%) and animals (18.3%). Some reasons attributed to over-prescribing among the participants include lack of awareness (87.0%), lack of penalty (79.4%), desire to help patients (76.5%), pressure from sales representatives (61.0%) and patients' pressure (58.3%). Overall, majority (85.8%) of respondents identified over-prescribing as a cause of antibiotic resistance.
Conclusion: Over-prescribing of antibiotics leading to the development of resistance may primarily arise from the community especially in developing countries where regulations and restrictions on sales/consumption of antibiotics are absent or weak.

POSTER BOARD 20

HUMIDITY MONITORING AT FIFTEEN-MINUTE INTERVALS IN THE OPERATING ROOM AND STERILE STORAGE RESULTS IN SAFE PATIENT CARE!

Joan Osbourne Townsend, Seema Boodoosingh, Lillian Kariko, Abraham Charummoottil, Nataly Farshait
Humber River Hospital

Issue: The ideal relative humidity levels in the operating room is 30 - 60 percent. Levels above 60 percent pose the risk of condensation and microbial growth in sterile packaging, and levels below 30 percent can result in static electricity.
Project: At our facility, the Infection Prevention and Control (IPAC) collaborated with our Facility Management team to put a process and policy in place that ensures proactive monitoring and reporting of humidity levels in the operating room, sterile storage rooms, and medical device reprocessing departments. Daily monitoring is part of best practices as indicated by the Canadian Standards Association (CSA). The report is provided daily, by email to all the stakeholders as well as IPAC. The report captures the readings at fifteen-minute intervals. An alarm threshold is set at 29.9 and 60.1 percent, so that an alarm is triggered at these readings. When the alarm is triggered, a notification goes out to the team. This early notification helps to mitigate potential risk to patients that are scheduled for surgery. The reports identifies specific areas affected, and the time taken to resolve the problem. The established threshold provides a safety net for the organization and provides ample time for engineers to investigate. An established threshold for response within the organization is 30 minutes. If the 30-minute threshold for resolution is exceeded, a meeting with key stakeholders is scheduled and next steps are determined and communicated within the organization.
Results: Alarm tracker report are sent in a timely manner; this allows decision making regarding surgical cases, removal of storage item; items to be reprocessed prior to use. The reports provide a record of the time it takes to resolve the humidity levels; this helps in any decision making process. For example, a humidity of 65 percent for a downtime of five minutes may not have the same impact on sterile supplies if the humidity issue was for greater than an hour.
Lesson Learned: Proactive monitoring and reporting of humidity levels allows the organization to be timely in responding to any air quality issues that pose a threat to both staff and patients. Early response allows the organization to mitigate ongoing risks to the safety of our patients.

POSTER BOARD 21

BUILDING AN INFECTION CONTROL E-LEARNING MODULE FOR CONTRACTORS

Jeremy Jamilano
Alberta Health Services

Issue: Construction projects in healthcare facilities introduce an increased risk for construction-related infections to patients. The infection control professional (ICP) must participate in discussions with the multidisciplinary team (MDT) to determine preventive measures and also act as an educator to ensure the MDT understands the infection control risks associated with construction projects. Currently, there is no dedicated infection control education for external contractors in Central Zoe Alberta Health Services (AHS). Delivering education to external contractors has been challenging for ICPs due to competing priorities, geographical distances and limited formal education opportunities.
Project: An e-learning module was developed for external contractors to improve their understanding of the infection control risks in construction and the importance of infection control preventive measures. An online education format was selected to reduce the acknowledged barriers for ICPs providing in-person education but also provide the targeted audience flexibility for access and completion. The education was developed through a dedicated software program and integrated into an online data collection system. The e-learning module is accessed through a dedicated website address, which can be viewed using a computer with internet access. Participant evaluation is integrated into the education and can be collected along with demographic and completion data.
Results: The proposed e-learning module was reviewed by all AHS Central Zone ICPs and Web Communications prior to implementation. As of September 2018, the e-learning module has been integrated into the ICP's process for participating in construction projects with the expectation that they will distribute the web address to external contractors. The education is also supported by AHS Capital Management, who may also distribute the e-learning module through the dedicated web address to bidding external contractors for the construction project. Learner participation data is collected for process surveillance and evaluation purposes.
Lesson Learned: The collected data from the e-learning module will be reviewed after one year to assess process outcomes and determine if additional e-learning modules are justified. Completing the developed e-learning module is not mandatory for external contractors and is a barrier in obtaining a 100% completion rate. There is no consistent IPC education process dedicated to construction in AHS and represents a gap in protecting patients in our healthcare facilities. Additional collaborative work is required between IPC and Capital Management in all zones of AHS. A provincial Design and Construction Working Group has formed an Education and Support sub-working group, where one of its main functions is to develop a consistent infection control education module dedicated to external contractors.

POSTER BOARD 22

MISTING AWAY TRANSMISSION IN AN ACUTE-CARE FACILITY WITH ADVANCED TECHNOLOGY: THE COLLABORATIVE JOURNEY OF IMPLEMENTING AN ENVIRONMENTAL DISINFECTION SYSTEM

Shelby Ludington, Kim Hobbs, Sonalben Shah
Woodstock Hospital

Issue: In 2017, Woodstock Hospital's nosocomial Vancomycin Resistant Enterococcus (VRE) cases were effectively decreased by 48%, due to a change in cleaning product from a quaternary ammonium chloride everyday disinfectant to accelerated hydrogen peroxide. Organizationally, a bed realignment project occurred during the same time period, reducing internal patient transfers. Unfortunately, in February 2018, a VRE outbreak on a medical unit resulted in ten nosocomial cases. During a gap analysis, Infection Prevention & Control (IPAC) noticed a lack of cohesiveness between interdisciplinary teams, which was a probable epi-link regarding VRE transmission. New strategies had to be implemented to enhance collaboration and adherence to best practices and outbreak prevention.
Project: IPAC and Environmental Services (EVS) initiated a trial of an automated, vaporized, hydrogen peroxide disinfection system for all VRE and C. difficile terminal cleans. EVS staff were instructed to perform the normal discharge clean and trained on measuring each patient room to ensure the required amount of product was vaporized during the 1-hour disinfection process to achieve effective contact time. Front line staff was educated about the product and process. The system met IPAC best practices and safety requirements, while eliminating potential human error. After 3 months, a retrospective review of the system trial identified multiple gaps in staff education. IPAC and EVS worked collaboratively with the vendor to ensure additional staff training and facility-wide education occurred. Subsequently, IPAC continued to work with multiple departments to assess the impact using a variety of surveys and data analysis.
Results: In comparison to the previous year, transmission was reduced by 22% for VRE and by 43% for C. diff. IPAC investigated all gaps identified in retrospect and followed up with departments. EVS staff surveys conveyed positive reviews on the system, particularly in regards to the ability for EVS to accomplish other tasks while the system disinfects the room; and with feedback on areas requiring improvement, such as storage location and supply management. Clinical Educators reported that Time to Inpatient Bed was not impacted due to cleaning times and Occupational Health received zero chemical exposure complaints linked to the system.
Lesson Learned: Additional education and IPAC's collaborative method of re-engaging key stakeholders was effective in assisting with the reduction of transmission. Interdepartmental data collection processes tend to provide retrospective data, which impacts obtaining statistical data in a timely manner. It would be beneficial to receive this data during implementation in order to identify gaps and barriers sooner. Furthermore, it would have been advantageous to implement the influencer model prior to the study to enhance department collaboration.

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POSTER PRESENTATIONS

POSTER BOARD 23

OUTBREAK OF PNEUMOCYSTIS PNEUMONIA IN A TRANSPLANT CENTER LINKED TO A SINGLE GENOTYPE: INFECTION PREVENTION AND CONTROL'S RESPONSE AND SUPPORT

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Background/objectives: To describe the Infection Prevention and Control (IPAC) response for an outbreak of *Pneumocystis jirovecii* pneumonia (PJP) within solid organ transplant (SOT) recipients at London Health Sciences (LHSC) from 2014-2016.
Methods: The Transplant Infectious Disease Service at LHSC notified IPAC of a potential PJP outbreak in SOT patients in fall of 2014. Only SOT patients with clinical disease and positive PJP lab results within the previous 4 years were included. Patients were divided into early onset disease (<1year from transplant) and late onset disease (>1year from transplant). Physical review of the clinical area was completed. Prophylaxis of new SOT patients and all renal transplant patients was initiated by the Transplant Infectious Disease service. IPAC reviewed epidemiological interactions of PJP patients via the electronic patient record. Visits in outpatient clinics, inpatient stays, and treatment centers were reviewed. Analysis was completed utilizing a timeline graph, allowing for the calculation of an incubation period.
Results: Calculated baseline surveillance averaged 3 cases per year for all patient types at LHSC (range 2-4 cases per year) from 2010-2013. A total of 15 SOT recipients developed PJP from Dec 2013 to Feb 2016, indicating an increase from baseline. The distribution of positive PJP SOT patients was: 8 renal, 2 liver, 4 heart and 1 kidney/pancreas. Epidemiological linkages were confirmed in 14 cases. Previously treated patients were epidemiologically linked to 6 new cases raising the possibility of chronic carriage. Nine patients had clear interactions with patients post-disease. Four patients had interactions with other transplant patients' who had exposure to PJP, but prior to disease onset. Ten bronchoalveolar lavage samples were analyzed by multilocous sequence typing (MLST) and it was determined that the genotypes were identical; suggesting nosocomial transmission. The incubation period ranged from 8-284 (mean 108) days. Interactions between patients occurred due to: admissions to the transplant unit, outpatient visits to the nephrology clinic, transplant clinics and physical therapy. IPAC confirmed with facilities that the air exchange filter changes had occurred on schedule. IPAC also recommended reinforcement of screening requirements for acute respiratory illness, and minimizing time patients spent in crowded waiting rooms.
Conclusion: An increase in PJP cases seen at our multi-organ transplant program may be attributable to nosocomial transmission. Although appropriate hospital infection control procedures were adhered to, further actions were required. The outbreak was contained with the reinforcement of screening for acute respiratory illness, minimizing time spent in waiting rooms and offering PJP prophylaxis to all SOT patients.

POSTER BOARD 24

RESULTS FROM THE 2018 SURVEY OF ONTARIO HOSPITALS REGARDING USE OF SCREENING AND ADDITIONAL PRECAUTIONS FOR PATIENTS WITH VANCOMYCIN-RESISTANT ENTEROCOCCUS (VRE)

Arezou Saedi, Jennie Johnstone, Kwaku Adomako, Emily Shing, Eva Truong, Jennifer Robertson, Gary Garber
Public Health Ontario

Background/objective: Infection control strategies for preventing spread of vancomycin-resistant Enterococcus (VRE) are heterogeneous in Ontario. Before 2012, all Ontario hospitals were screening and initiating Additional Precautions (AP) for patients with VRE. In 2012, some hospitals introduced changes in their VRE control policies. Our 2015 survey showed that 21% of Ontario hospitals no longer screened and/or initiated AP for VRE. Mandatory reporting of VRE bacteremia cases for all Ontario hospitals has been implemented since 2008. The objective of this study was to update the 2015 survey results to better understand the current status of VRE screening and use of AP across the province.
Method: A survey was sent to infection control professionals at all 211 in-patient facilities across the province in Fall 2018. Hospital type was classified as per the Ontario Hospital Association (OHA) definitions and included 25 acute teaching hospitals, 90 large community hospitals, 59 small community hospitals, 23 complex continuing care (CCC) and rehabilitation hospitals, and 14 mental health hospitals. Respondents were asked if their hospital site screens patients for VRE (yes/no); if yes, whether screening is universal, based on VRE colonization risk, VRE infection risk, or any other related policies. Respondents were also asked if their hospital site uses AP for patients who are positive for VRE (yes/no); as well as the dates for when each of the VRE control strategies were implemented, changed or discontinued.
Results: All 211 eligible hospitals in the province responded to the survey. As of December 2018, 70 hospital sites (33%) no longer screened or used AP for VRE. These sites were geographically spread across 8 of 14 local health integration networks (LHINs). Of those 70 sites, 12 (17%) were acute teaching hospitals, 25 (36%) were large community hospitals, 13 (19%) were small community hospitals, 9 (13%) were mental health hospitals and 11 (16%) were CCC and rehabilitation hospitals. One acute teaching hospital stopped screening and AP for VRE in 2015 however, both practices were restarted in 2018. Compared to the 2015 survey, a notable increase in discontinuation of VRE screening and/or AP in 2018 was observed (21% in 2015 compare to 33% in 2018, $p = 0.0045$) and the largest change was seen amongst large community hospitals (12% in 2015 vs. 28% in 2018, $p = 0.006$). VRE bacteremia rates continued to climb during this time period (0.053 per 10,000 patient days in 2015 to 0.130 per 10,000 patient days in 2018).
Conclusion: VRE control practices across Ontario hospitals continue to become more heterogeneous. Currently 1/3 of the Ontario hospitals no longer screen institute AP for VRE, compared to 1/4 of facilities in 2015. Provincial surveys on hospital infection control policies help provide potential insights into the relationship between policy changes and epidemiology of VRE in Ontario.

POSTER BOARD 25

BEHIND CLOSED DOORS: INFECTION PREVENTION IN THE OPERATING ROOM

Lauren Kim
Vancouver Coastal Health

Issue: Poor infection prevention and control practices were observed while performing walkabouts in the operating room area. Environmental Services (EVS) staff were observed performing turnover-cleans with no friction action, incorrect cleaning processes with no disinfecting, and using the same microfibre cloth for multiple surfaces with no folding of the microfibre cloth. Operating room staff were also not performing proper cleaning and disinfection of commonly shared equipment.
Project: A committee with members from the operating room, EVS management and Infection Prevention and Control (IPAC) convened every two weeks for several months to address identified issues. In addition, observations of EVS cleaning practices supplemented with Adenosine Triphosphate (ATP) testing were conducted every two weeks with the EVS manager, Infection Control Practitioner and/or Quality Assurance personnel. Observations and ATP results were shared with EVS staff and management to provide immediate feedback with EVS management implementing many changes including re-education of staff to improve their infection control practices. Operating room management shared both the ATP results for commonly shared equipment and their observations with operating room staff to emphasize the importance of basic infection prevention and control practices.
Results: EVS and operating room staff are more aware of the two-step cleaning process. Taped and/or torn equipment was refurbished or discarded and decluttering of the operating room environment was performed. Stronger collaborative relationships have been formed between EVS, the operating room and IPAC. EVS management and IPAC have shared lessons learned with other operating rooms in the Lower Mainland.
Lessons Learned: The operating room environment is intimidating, takes more effort to physically enter the environment, and requires the building of trusting relationships with staff who are not usually integrated into the general hospital population. But by making the effort, direct observations of infection control practice can be done and results in opportunities for in-the-moment education and feedback. Through this work the EVS, operating room staff and the IPAC program built a better relationship. The committee continues to meet and collaborate every month.

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POSTER BOARD 56

VENTRICULOSTOMY-ASSOCIATED INFECTIONS IN THE NEUROLOGICAL INTENSIVE CARE: RESULTS OF AN 8-YEAR SURVEILLANCE STUDY AT A MAJOR TERTIARY CARE CENTER

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[2]McGill University Health Center

Background/objectives: Ventriculostomy-associated infections (VAIs) are serious causes of morbidity and mortality in the neurological intensive care unit (neuro-ICU). Recent studies have reported an upward trend in incidence rates from 6.1% to 7% over a decade. Despite this, data describing epidemiology of VAI and outcomes are limited. The objective of this study is to report VAI incidence rate, pathogen distribution, and patient-related outcomes in a neurocritical care population between April 1, 2010 and March 31, 2018.

Methods: This is a prospective observational study conducted over 8 years in a single referral center for neurologic diseases with up to 14 bed mixed neurological-neurosurgical ICU. Since 2010, strict external ventriculostomy drains (EVD) insertion and maintenance protocols were implemented. Samples for cerebral spinal fluid cultures were drawn only when clinically indicated. Laboratory results and specific clinical indicators were used to categorize culture proven VAI. Patient outcomes studied included 30-day all-cause mortality and neuro-ICU and hospital lengths of stay.

Results: There were 8,315 neuro-ICU admissions resulting in 27,892 neuro-ICU days over the 8-year study period. Of 310 HAIs, 21 (7.2%) were VAIs. Device utilization ratio for EVD was 0.19. VAI incidence rate of infection was 3.9/1,000 EVD days. Diagnostic categories on admission of patients complicated with VAIs were subarachnoid hemorrhage (81%) and intracerebral hemorrhage (19%). The median ICU and hospital lengths of stay were 22 and 47 days, respectively. The median duration from EVD insertion to infection was 10 days (range 4-32). Five of the infections occurred within 7 days of insertion. Twenty of the 21 EVD were inserted in the ICU. Of the total 24 isolated pathogens, the most common bacteria for VAI was coagulase negative Staphylococcus (75%), other gram positives (17%), gram negative (4%) and Candida (4%). All cause 30-day mortality was 4.7% with 1 death being directly linked to infection.

Conclusions: VAI is a serious nosocomial complication in neurocritical care patients and their effect on hospitalization. Strict adherence to preventive strategies with audits for compliance with reinforcement and adjustment kept rates of VAI low. Duration of EVD over 7 days seems to be associated with increased risk of infection and internalization of external shunt should be done earlier to prevent infections.

POSTER BOARD 58

HAND HYGIENE: PRACTICE, KNOWLEDGE, AND PERCEPTION IN OUTPATIENT TUNISIAN HOSPITAL IN RURAL SETTING

Aymen Bakir, Dhekra Chebil, Latifa Merzougui
Hospital Of Chebika

Background/objectives: Little is known about Hand hygiene (HH) in outpatient Tunisian Hospitals especially in Rural Setting. Better knowledge of weaknesses in HH practice, knowledge, perception and infrastructure is helpful to conduct multimodal intervention.

Methods: The study was conducted at Chebika district hospital. Survey of infrastructure, compliance, knowledge and perception of HH was made according to tools issued by WHO (2009).

Results: Survey showed that good clean water is always available. All taps were hand operated. Disposable towels were always available in 12,5% of rooms. Study showed insufficient knowledge about handrub (HR): its indications, mucocutaneous tolerance and efficacy. The priority given by managers and the institution was perceived as moderate. Hand hygiene training, Alcohol Based Formulation provision, and feedback were perceived as the most effective actions to improve hand hygiene in the institution. Compliance to HH was 16,7% (402 opportunities collected in 31 sessions). Hand Wash (HW) was more frequent than HR (10% versus 6,7%). Compliance was better for self-protection purpose especially "After body fluid exposure risk" (36,6%) and "After touching a patient (19,3%) than for the protection of patient: "before touching a patient" (9,7%) and "before clean/aseptic procedure (9,5%).

Conclusion: results were presented to the local authorities in order to put in place corrective measures appropriate to our context based on the multimodal strategy of WHO.

POSTER BOARD 60

NEW ALTERNATIVE TO ANTIBIOTIC AGENTS: 4% TETRASODIUM EDTA IS A NON-ANTIBIOTIC ANTIMICROBIAL SOLUTION EFFECTIVE AGAINST CANADIAN SUPERBUGS AND ASSOCIATED BIOFILMS

Chantal Lainesse
SterileCare Inc.

Hospital-acquired infections are particularly problematic for hemodialysis, oncology and total parenteral nutrition (TPN) patients with chronic central venous access devices (CVADs) prone to microbial colonisation and exposed to multiple antibiotic treatments. This catheter is supposed to provide life-saving treatment but makes them vulnerable to the third most common hospital acquired infection, central-line associated bloodstream infections (CLABSI). According to the Centre for Disease Control, one out of six of these infections are caused by superbugs. The current standard of care for CVADs is saline or heparin which do not prevent CLABSI and may even promote infections.

Objective: The objective of this clinical evaluation was to confirm the in vivo safety and efficacy of a non-antibiotic antimicrobial catheter lock solution containing 4% Tetrasodium EDTA (T-EDTA) to eradicate current and clinically relevant microbes and associated biofilms colonising the lumen of CVADs of Canadian patients.

Materials and Methods: Hemodialysis, oncology and TPN patients with CVADs were selected across Canada based on their high risk of complications: CLABSI and occlusions. The latter determined from the high use of expensive alteplase. Selected patients used the 4% T-EDTA lock solution as the sole lock solution rather than their standard of care. Main clinical endpoints included reduction of alteplase use and infection, and safety assessment. Before and during data were collected.

Results: Canadian data collected over a 24-month period in hemodialysis, oncology and TPN patients show both a clinically relevant decrease in CLABSI, in-hospital days, catheter replacement and alteplase use when the standard lock solution was replaced by 4% T-EDTA. No adverse events including hypocalcemia was observed with its use over time. Findings correlate well with previously published in vitro results and further supporting the multicentre, prospective, randomized controlled clinical trial showing statistically significant eradication of clinically relevant microorganisms by 87% within CVADs of hemodialysis patients by 4% T-EDTA compared to heparin.

Discussion: Intraluminal microenvironment of a CVAD is ideal for polymicrobial biofilm formation where quorum sensing promotes antibiotic resistance and therefore provides the perfect hiding spot for superbugs. There is a close interrelated process between clot, bacteria and biofilm propagating CVAD complications: infections and occlusions. Clinical results from this evaluation show reduction of CLABSI, in-patient hospital days, alteplase use and catheter replacement by 4% T-EDTA correlating well with in vitro results. Routine use of an effective non-antibiotic antimicrobial solution such as the 4% T- EDTA solution is crucial in reducing the risk of the third most common hospital acquired infections within Canadian hospitals and addresses the need to use alternatives to antibiotic agents.

POSTER BOARD 61

COMPRESSED VIRTUAL CIC® STUDY GROUP

Sam MacFarlane
Public Health Ontario

Issue: A key purpose of the certification (CIC®) process in infection prevention and control (IPAC) is to protect the public by providing standardized measurement of current basic knowledge for Infection Control Professionals (ICPs). Many employers are moving towards making certification a condition of hire. However, for many ICPs the process to prepare for the examination can be stressful and the ability to access content areas or experts can be problematic, especially for those ICPs working in smaller facilities or who are geographically isolated.

Project: In the spring of 2018 a group of stakeholders from a local public health unit reached out to the IPAC East Team of Public Health Ontario (PHO) to look into the possibility of organizing a study group to support them in preparing to write the CIC exam. IPAC East Team contacted two local IPAC Canada Chapters, IPAC Ottawa Region (IPAC OR) and IPAC Eastern Ontario (IPAC EO) to determine if there was interest in creating a collaborative CIC study group. The chapters identified speakers who would cover 9 subject areas presented over 6 sessions. PHO organized the dates, times and webinar technology. In order to accommodate working hours the sessions took place between 5-7pm. The participants expressed that the study group should be completed before the summer, therefore sessions ran between April-June 2018.

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Results: The CIC series covered the following subject areas; microbiology; dialysis surveillance; surgical site surveillance; reprocessing; occupational health and safety; communication & management; renovation and construction; environmental cleaning and epidemiology. Forty seven participants registered for the series, representing 4 IPAC Canada chapters (IPAC OR, IPAC EO, IPAC Northeastern Ontario and IPAC Northwestern Ontario). The participants represented acute care, long term care, community health centres and public health units. Some participants intended to write their initial or re certification exam while others joined to deepen their IPAC knowledge. Participants could hand pick which sessions they wanted to participate in based upon their own learning needs. Presentations were shared in advance of the sessions and participants had the ability to ask questions on the teleconference line or via Adobe webinar chat. An evaluation was sent to participants with a response rate of 31.6% (15/47 participants). Using a 5 point Likert scale, the response to *"How you would rate this series"* was 4.6.
Lessons learned: Using the Adobe platform for this CIC study group was an effective way to reach a large number of participants who might not otherwise have access to a study group. The collaborative efforts of chapters working together to foster CIC certification not only built stronger relationships but supported smaller chapters who would otherwise have difficulty supporting CIC study groups. The evaluation offered feedback that will be incorporated into upcoming study groups such as: recording the sessions; receiving study questions in advance; repeating sessions on difficult subject areas; focusing content as it is applied to the exam versus practical application. Going forward the team would like to monitor how many participants were successful in completing their CIC following the study group and open up the invitation to more IPAC Canada Chapters across Ontario.

POSTER BOARD 63

WINNER OF A 2019 IFIC SCHOLARSHIP

HAND HYGIENE COMPLIANCE: AN EFFECTIVE MEASURE TO PREVENT HOSPITAL ACQUIRED INFECTIONS

Anam Hakim, Sania Shamsuddin
The Aga Khan University Hospital, Karachi, Pakistan

Background: Healthcare associated infections are the leading concern for healthcare workers as it has been widely observed that the burden of healthcare-associated infections is increasing in the intensive care units of tertiary care hospitals, leading towards surplus morbidity and mortality. There is a wide range of factors leading towards HCAIs. Perhaps, the primary reason behind this phenomenon is hand hygiene which can assist in reducing these infections.
Literature review: According to WHO, 2009 "hands are the main pathways of germ transmission during healthcare, that causes hospital acquired infections (HAI)". McCalla, Thomas & Reilly, (2014) stated that healthcare associated infections have become the center of attention for patients, quality and patient safety department and higher authorities. Although these infections are preventable, still they are leading towards increased morbidity, mortality and financial burden of patients.
Aim: To assess practices and hand hygiene compliance of all healthcare workers (HCWs) working in cardiac intensive care unit (CICU), while caring for a patient and to improve attitude and perception towards hand hygiene practices.
Methods: It was an observational study which was conducted in CICU to assess the total number of hand hygiene opportunities in patient care setting. The assessment tool was designed according to WHO model of "Five Moments of Hand Hygiene". Hand hygiene practices were observed for 3 months at different timings covering all three shifts.
Findings: On average, 420 HHOs per patient were observed for each staff in three different shifts consisting morning, evening and night. Overall, 73.6% hand hygiene compliance was observed in total 78 HCWs of CICU as a result of spot checks by silent observers. However, the external audits conducted by hospital quality and patient safety department (QPSD) showed significant increase in hand hygiene compliance in the first two quarters of the year 2018 compared to the previous year.
Conclusion: Compliance of the study group is affected by the activity index (number of opportunities they come across during patient care). The HCWs recorded less information, absence of inspiration, expanded remaining task at hand as a portion of the elements influencing hand hygiene.

TUESDAY, MAY 28, 2019

POSTER BOARD 26

INFECTION PREVENTION AND CONTROL CHAMPION PROGRAM FOR EMERGENCY HEALTH SERVICES

Janie Nichols,[1] Lisa Young[2]
[1]BC EHS
[2]Island Health

Issue: The transmission of healthcare-associated infections (HAIs) can occur as easily in the pre-hospital care setting as in acute or long-term care settings. Due to the physical environment and often urgent or emergent care, hand hygiene practice can be inadequate and compliance with other routine infection prevention and control (IPAC) principles are compromised. British Columbia Emergency Health Services (BCEHS) is a province-wide program, with a workforce of over 4,700 staff across a wide range of specialist services, including community paramedicine, adult and pediatric critical care. BCEHS has one dedicated IPAC lead.
Project: The IPAC Champion role was explored to address IPAC challenges within BCEHS with limited resources while engaging the expansive workforce. The IPAC Champion is intended to support paramedics within their geographical area, improve communication between the IPAC lead and paramedic team, and act as an IPAC role model.
Results: The project plan has identified several key ways to support the development of paramedics to become IPAC Champions. Pre-reading will be provided, utilising pre-existing IPAC courses on topics such as basic infection prevention, guidance for the use of personal protective equipment and links to provincial and national IPAC websites to encourage familiarisation to IPAC resources. The initial four-hour training is offered in person to review more complex IPAC principles, providing a deeper insight into communicable diseases, HAIs, the auditing process for hand hygiene and daily cleans of the ambulance. The IPAC lead will attend District meetings and provide the initial training. This is also an opportunity for the Champions to connect and discuss ideas to increase IPAC awareness in their stations.
Lessons Learned: Literature supporting the IPAC champion program is predominantly European and set in acute care environments, with the emphasis chiefly on nurses. This is a novel application of a champion program to the pre-hospital setting. Operationally it has been challenging to gather the IPAC champions together over the defined Districts and rotating schedules; thus adding additional education sessions for the IPAC Lead. Regular check-ins with the champions will be via Skype and annual updates are anticipated. Evaluation methods for IPAC champion programs traditionally utilise surveillance data, i.e. a decrease in HAIs. It is not possible for EHS to capture such data and therefore planned evaluation methods will rely on results from vehicle cleanliness and hand hygiene audits. A pre and post training survey will capture the paramedics' knowledge, and further surveys will be completed to elicit opinions of the program and capture improvement suggestions The planning stage for the IPAC champion program is complete and the implementation of the program will begin with training commencing in March.

POSTER BOARD 27

DEFYING CONVENTION: A NOVEL APPROACH TO RESPIRATORY OUTBREAK MANAGEMENT IN ACUTE CARE

Jackie Nugent,[1] Samar Tahhan, Lorne Small, Angela Jackson-Lee
[1]Trillium Health Partners

A multi-site acute care hospital in Mississauga Ontario, experienced 22 respiratory outbreaks in the 2017/18 respiratory season. With high capacity demands, concurrent outbreaks and use of hallways and unconventional spaces, occupancy was maximized. To optimize infection prevention and control (IPAC), a novel way of thinking emerged and innovative IPAC measures were implemented. Barriers and enablers to customary and unconventional outbreak approaches are highlighted in this presentation. Outbreak management methodologies and outcomes will be elaborated. Lessons learned from exploring new perspectives when managing multiple outbreaks in an acute care setting will also be shared.
Project: Between December 2017 and March 2018 the IPAC department declared 22 respiratory virus outbreaks, while patient volumes increased simultaneously, exceeding 120% capacity. The IPAC team used novel out of the box perspectives and approaches to address these challenges which led to the implementation of unconventional or grey measures. Measures included forming dedicated

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outbreak and Influenza A space within affected units while maintaining operation of remaining unit beds. Comprehensive risk assessments were conducted, considering onset of respiratory symptoms, incubation period, burden of active cases, infrastructures and clinical specialities, locations and thoroughfare, number of occupied/unoccupied beds, prophylaxis and staffing. Following the implementation of these measures, the organization was able to reopen respiratory outbreak units to admissions with no further transmission of respiratory virus infections among patients, thus offsetting capacity pressures. Barriers such as limited private rooms, patient volumes, competing priorities, infrastructure and low staff influenza vaccination rate were identified. Senior team engagement, enhanced IPAC support, awareness and education, an outbreak dashboard to enhance organizational communication, and strong internal and external stakeholder partnerships enabled processes. Outcomes include Influenza A unit cohorts supported by an formal space modification procedure (unit in a box), improved access to online IPAC resources, Outbreak Risk Matrix development, and improved staff awareness. Subsequently, a reduction of outbreaks in the 2018/19 season and changes to local public health unit outbreak criteria to better address acute care demands has occurred.
Lessons Learned: Exploring unconventional approaches to outbreak management while continuously assessing safety risks can lead to enhanced flexibility to overcome capacity challenges during outbreaks. Success depends on senior team support, staff engagement, multidisciplinary partnerships, easy access to IPAC resources, and timely communication. It is critical to work with local public health units when going beyond conventional strategies. This process may assist other hospitals to overcome challenges and better address surge issues during outbreaks.

POSTER BOARD 28

LOST IN TRANSLATION: THE IMPACT OF INTERCHANGEABLE JARGON ON HEALTH CARE CONSTRUCTION OUTCOMES IN BC WOMENS HOSPITAL URGENT CARE CENTER

Vladlena Abed, Robyn Hunter, Laura Sauve
Provincial Health Services Authority of BC
Issue: In 2017, renovations were undertaken to build a new Urgent Care Center (UCC) at BC Women's Hospital, which is the first point of contact for almost 12000 peripartum patients per year. One of the major requirements of the renovations was to add two Airborne Isolation Rooms (AIR) as per the Canadian Standards Association (CSA) guidelines and Accreditation Canada requirements. After project completion and when first patient requiring Airborne precautions arrived at UCC, IPAC discovered that AIRs were non-compliant with CSA standards.
Project: The IPAC construction specialist, in collaboration with other IPAC team members, Facilities Maintenance and Operations (FMO) and UCC leadership, undertook an investigation and development of mitigation strategies for this deficiency. It was discovered that AIR modifications were made during the design phase to accommodate clinical team requests. In the course of these modifications, the inappropriate use of jargon and terminology lead to the AIR modifications that caused them to become non-compliant with CSA standards. Infection Control Practitioners and direct care providers often refer to AIRs as "negative pressure rooms". From a technical point of view, this terminology is incorrect. According to engineers and HVAC specialists, the "negative pressure room" term refers strictly to the inward directional airflow and omits other crucial CSA requirements responsible for prompt removal of airborne pathogens (CSA, 2017). These variances in jargon and terminology resulted in the building of CSA non-compliant AIRs, that compromised patient and staff safety through transmission of airborne infections.
Results: Once the IPAC construction specialist discovered the issue, education to the UCC leaders and staff was immediately provided to clarify the differences. This led to the development of collaborative and positive relationships between IPAC, FMO and clinical leaders and resulted in effective development and implementation of short term and long term mitigation strategies to the issue.
Lessons Learned: This serves as a good example of the negative impact of jargon on outcomes in the construction of health care facilities and should encourage IPAC members nationally to understand the differences and use this terminology appropriately. We learned that IPAC construction specialist involvement in all stages of construction and renovation adds tremendous value in ensuring that the newly designed and build facilities are meeting IPAC requirements and standards. The construction specialist was able to guide all stakeholders in achieving positive results in this situation and building positive partnerships with FMO and clinical leaders. The relationship led to clinical leader engagement and positive responses to having ongoing IPAC educational support by ICPs.

POSTER BOARD 29

A HOSPITAL'S EXPERIENCE MANAGING A PATIENT WITH SUSPECTED EBOLA VIRUS DISEASE: LESSONS LEARNED

Philip Tran, Christine Moore, Liz McCreight, Susan Poutanen, Allison McGeer, Jennie Johnstone
Sinai Health System
Issue: During the West Africa Ebola outbreak (2014 - 2016), healthcare systems throughout the world prepared to manage patients with suspected or confirmed Ebola virus disease (EVD). Since the West Africa EVD outbreak ended in 2016, there continue to be small EVD outbreaks in Africa. On August 1, 2018, an EVD outbreak was declared in the Kivu region of the Democratic Republic of Congo (DRC). Shortly thereafter, a patient presented to the Emergency Room (ER) of an acute care hospital in Toronto, with symptoms potentially compatible with EVD, and travel to the EVD outbreak region.
Project: The objective is to summarize the experience of the hospital and to share lessons learned.
Results: A patient with potential signs and symptoms of EVD and travel to the DRC presented to ER; this was flagged at triage as a potential concern and Infection Prevention and Control (IPAC) notified. Following IPAC's assessment, the patient was placed in an airborne isolation room on EVD precautions. Staff were provided with just-in-time EVD education by IPAC as well as via accessible on-line training tools. Internal and external stakeholders were notified; once the suspicion of EVD was confirmed by Infectious Diseases and Public Health, baseline blood work including malaria and EVD testing was obtained. The patient was transferred to ICU for supportive care. On Day 2, the patient continued to receive supportive care and remained on EVD precautions. There were repeated delays in the EVD specimen boarding the plane to Winnipeg; by end of Day 2, the specimen has not yet arrived at the National Microbiology Laboratory (NML). On Day 3, NML arranged testing locally and the patient was confirmed negative for EVD. The patient clinically improved and was discharged home.
Lessons Learned: Hospitals must be prepared to manage patients with suspected EVD, as well as other viral hemorrhagic fevers, even when the threat is perceived to be low. The investment the healthcare system made in EVD preparedness during the West African Ebola outbreak (2014 - 2016) was critically important in ongoing preparedness. Local policies and procedures should be reviewed to ensure they remain up to date. New staff in relevant areas should be trained in Ebola preparedness. There is potential for delays in EVD testing due to the logistics of transporting specimens potentially containing a Risk Group 4 human pathogen; hospitals should be prepared to manage a patient with suspected Ebola for at least 72 hours.

POSTER BOARD 30

PHYSICIAN OFFICE MEDICAL DEVICE REPROCESSING ASSESSMENTS- YEAR ONE

Samira Kermanchi
College of Physicians and Surgeons of BC
Background: In 2017, the College of Physicians and Surgeons of BC launched the Physician Office Medical Device Reprocessing Assessments (POMDRA) to support, educate and assess community-based physicians on the reprocessing practices for reusable semi-critical and critical medical devices. POMDRA is a quality improvement initiative under the Physician Practice Enhancement Program (PPEP), which through its physician assessment program identified that community-based physician offices were deficient in their medical devices reprocessing practices as required by the current standards outlined in the Ministry of Health's *Best Practice Guidelines for Cleaning, Disinfection and Sterilization of Critical and Semi-critical Medical Devices* document. Last year, POMDRA initiated for assessment 141 phone assessments and 151 on-site assessments of community-based physician offices. The outcomes of these assessments highlighted the top ten common deficiencies related to the use of a table top steam sterilizer, which include: lack of chemical indicator use, lack of biological indicator use, lack of documenting quality assurance parameters, and incorrect cleaning products. In addition, through POMDRA, outdated and inappropriate methods of reprocessing were identified in community-based physician offices such as soaking medical devices in a chemical solution.
Conclusion: The physician feedback response to year one of the POMDRA initiative demonstrated that physicians found the assessment process effective in identifying deficiencies in MDR practices but also supportive of physicians and physician offices in making the required changes. 96% percent of physicians surveyed indicated a positive outcome with this initiative.

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POSTER PRESENTATIONS

POSTER BOARD 31

WTF...WHY THE FOLEY? STANDARDIZING PROCESSES FOR INDWELLING URINARY CATHETERS

Sheila Lee
Nova Scotia Health Authority

Issue: An increasing trend in Hospital-acquired Catheter-associated Urinary Tract Infections (HA-CAUTI) was observed during annual point prevalence studies despite a downward trend of catheter utilization rates.

Project: Between 2014 and 2016 the Infection Prevention and Control (IPAC) Team identified many gaps in processes for the insertion of indwelling urinary catheters (IUC) through root-cause analysis. Various types of supplies available in storage rooms was creating inconsistencies in supplies being used to insert an IUC, sterile closed urinary drainage systems were not available, routine meatal hygiene prior to insertion of an IUC and as part of regular maintenance was not occurring, there was a lack of catheter securement devices being used, the old technique of pre-inflating the balloon prior to catheter insertion was still occurring, how to identify "signs and symptoms" of CAUTI, when to send a urine specimen and how to properly collect a specimen was also identified. Often specimens were being sent for reasons such as concentrated urine, foul smelling, or sediment which was also causing unnecessary duplicate specimens to be sent. It was evident that standardized products, processes and education was needed! The IPAC Team provided several education sessions for nursing staff titled "WTF...Why the Foley?" which was designed to reinforce best practices for insertion, maintenance, and proper use of IUCs. These sessions provided a chance for further discussions with staff and also gave staff the opportunity to share uncertainties with other processes. Many staff members felt as though there would be value in having a best practice guide/tool as a quick reference on the units that could also be used during new staff orientation to support consistency in practices. Two comprehensive toolkits were developed standardizing products and processes in relation to best practice strategies for the insertion, management and prevention of HA-CAUTI. In 2017 several repeat education sessions were held promoting the toolkits and highlighting best practice strategies covered in the "WTF...Why the Foley?" education sessions. These toolkits have since been strategically placed on the front of the patient care Kardex on each of the inpatient units.

Results: The implementation of standardized products, processes and the toolkits has had an impact on further reduction in catheter utilization rates, and a reduction in HA-CAUTIs. A significant improvement in the quality of urine specimens being collected for C&S has also been noted.

Lessons Learned: There is no end to this project, it requires ongoing education and continual reinforcement of best practices through collaboration and discussions with front line nursing staff. Persistence and the ability to provide supporting data that proves this quality improvement initiative directly impacts patient safety outcomes were key contributing factors to the success of this project.

POSTER BOARD 32

ROLE OF SBCC IN IMPROVING LOCAL PERCEPTIONS AND PRACTICES TOWARDS NEWBORN CORD CARE IN RURAL BANGLADESH

Lutfe Ara,[1] Md. Ehsanul Haque Tamal,[1] Eben Kenah,[2] Fahima Hossain,[1] Faiza Chowdhury,[1] Azharul Islam Khan,[1] Tarannum Rahman1
[1]International Centre for Diarrhoeal Disease Research, Bangladesh
[2]University of Florida

Issue: Socio-cultural beliefs play an important role in newborn care by influencing pregnancy and childbirth related decision making. Each year developing countries account for 99% of the 2.7 million neonatal deaths occurring worldwide and more than one third results from preventable infections. Umbilical cord sepsis is one such potential contributor and strong human interaction is considered an adept initiative for overcoming societal misconceptions. This community-based intervention study therefore aimed to explore the role of social and behavioral change communication (SBCC) in promoting 7.1% chlorhexidine use for improving local perceptions and practices towards newborn umbilical cord care in Jamalpur district, Bangladesh.

Project: The study was carried out from 2017 to 2018 at two purposively selected unions (1 control, 1 intervention groups) of Jamalpur in 3 phases: baseline, intervention and end line. Data were collected on important aspects of childbirth and cord care following delivery involving 748 pregnant women from both unions during pre and post intervention phases. Similarly total 200 semi-structured interviews were conducted before and after SBCC on postnatal mothers, grandmothers, traditional birth attendants, pharmacists and influential members of both unions. SBCC was implemented through awareness generation and knowledge development in intervention union only and follow up data were collected for comparison from both study sites.

Results: Following SBCC, the intervention group exhibited significant increase in 7.1% chlorhexidine use from 1.1% to 58.3% and consequent decline in rate of umbilical cord infection from 23% to 15.7%. Similarly, the neonatal mortality rate in the SBCC group declined from 33.52 to 16.30 per 1,000 live births following the intervention with number of live births, still births and neonatal deaths amounting to 358(95.7%), 16(4.3%), 10 (2.8% of live births) at baseline and 369(98.7%), 5(1.3%), 4 (1.1% of live births) at end line respectively. Furthermore, significant improvements were also achieved in knowledge, attitude and practice of newborn caregivers and influential members of the intervention union regarding causes of umbilical cord infection, importance of cord cleanliness, use of antiseptic and other preventive measures and care seeking behavior and hygiene maintenance during childbirth.

Lesson Learned: Study outcomes establish the success of SBCC model in promoting 7.1% chlorhexidine use and changing community's knowledge and behavior towards umbilical cord care effectively in Bangladesh. Therefore, by positively influencing health and well-being of a community, SBCC can contribute to achieve the target of SDG 3.2 and secure the future of a nation.

POSTER BOARD 33

KEEPING IT FRESH: UPDATING THE ALBERTA HEALTH SERVICES CONTINUING CARE RESOURCES

Janet Barclay, Sara Gallinger, Yvette Gable, Brenda Jenkins, Maureen Kano, Heather MacLaurin, Zaheeda Jessani
Alberta 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 benchmarks 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 AHS was formed. The group standardized processes with a focus on improving resident outcomes relating to infection control. Efforts of this group resulted in the completion of the AHS Continuing Care Resource Manual in 2014. Ongoing limited resources prompted the working group to remain active, identifying priority actions and/or projects approved by IPC Operations in support of IPC's strategic direction in collaboration with Provincial Senior's Health. Regular reviews of the existing resources indicated the resource manual needed an evaluation and plan for updates.

Project: A small task group was formed to review existing documents for relevancy and accuracy. Over 3 years, this group came together on a monthly and as needed basis to evaluate and revise existing resources and develop new resources. All documents were reviewed by key stakeholders for input before final approval.

Results: In November 2018 an updated version of The Continuing Care IPC Resource Manual was launched. Some of the highlights include: ·An updated Diseases and Conditions Table developed in collaboration with the Acute Care Working Group which reduced the duplication of information and provided consistent messaging for groups of related illnesses such as Gastrointestinal. ·New resources and tools to assist facility operators in meeting Alberta Continuing Care Health Service Standards on Infection Control. ·Revision of the Point of Care Risk Assessment (PCRA) to include all care streams. ·Updated routine practice information sheet that includes sections specific to resident placement assessment and strategies to align with Resident Centered Care. New sporicidal contact precaution signage and information sheet were included to align with the AHS environmental services standardized products. ·An infographic was developed to summarize and highlight the new and updated resources.

Lessons Learned: Accessible resources to guide infection control practice require continued efforts to provide current and consistent recommendations applicable to Continuing Care. IPC practices and activities in AHS owned and contracted Facility Living and Supportive Living Continuing care sites in Alberta are enhanced by online guidance documents that support the provision of quality resident care. In addition, having a provincial centralized online resource provides ease of access regardless of geographic location and ensures colleagues and partners have current and consistent information that supports best practices.

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POSTER BOARD 34

CURRENT SITUATION REGARDING OCCUPATIONAL EXPOSURE AND MANAGEMENT OF HEMATOGENOUS PATHOGENS IN MEDICAL INSTITUTIONS IN A PROVINCE

Shanhong Fan, Yao Suo, Ying Li, Wen Xu, Wei Ge, Xiaoqin Cao, Lili Ma, Yanlan Wu, Yi Wang

Background/objective: Many healthcare workers (HCWs) are under occupational exposure to multiple hematogenous pathogens, whereas sharp injury is a common event when they are under such exposure. This study aims to investigate the current situation regarding the exposure and the management department's action of controlling hematogenous pathogens in a province, in the hope of providing theoretical basis for formulating protective measures against occupational exposure to hematogenous pathogens.

Methods: In this study, we surveyed HCWs from 147 hospitals in nine cities in a particular province of China, through electronic questionnaires, about their exposure to hematogenous pathogens and the management of hospitals regarding this issue during the period of September 2015 to August 2016. Responses from those who volunteered to answer the questionnaires were collected, and a total of 2386 valid responses were collected. SPSS13.0 software was used for statistical analysis of the data.

Results: The 1845 participants can be divided into two categories: clinical/technical and logistic workers. A total of 3095 incidences of injury was reported by 593 participants, with 358 of them (60.37%) had been exposed to hematogenous pathogens 610 times simultaneously. Within the clinical/technical workers, 580 people reported injury. For the logistic workers, only 13 in 101 of them reported injury. The difference in frequency of injury occurrence between clinical/technical workers (33.26%) and logistic workers (12.87%) is of statistical significance ($x2=18.191$, $P<0.001$,$\alpha=0.05$). It is worth noting that some types of pathogens were reported to be frequently involved in cases of occupational exposure handled by participants working at the administrative department. Namingly, hepatitis B virus was involved in 95.77% of the cases, hepatitis C virus in 75.00%, treponema pallidum in 73.08%, and human immunodeficiency virus in 56.54%. Unfortunately, only 133 of the 260 participants (51.15%) who work at administrative department clarified that HCWs in their hospitals were able to respond to injuries in time when they were under occupational exposure, and only 1195 of the 1744 clinical/technical workers (68.52%) reported that medical devices with protective functions were used during the work.

Conclusion: Injury is a potential risk factor when HCWs are under occupational exposure to hematogenous pathogens. The results showed that within the province, clinical/technical workers had a higher chance of getting injured by sharp objects in hospitals. In response to this, the hospital should work on its first-aid for such injuries to reduce the risk of infection. The mandatory use of protective devices should also be promoted in order to minimize the consequences of being injured under exposure to the pathogens.

POSTER BOARD 35

ANTIBACTERIAL USE AND MICROORGANISMS DETECTION OF 202 MEDICAL INSTITUTIONS IN A PROVINCE

Shanhong Fan, Yao Suo, Ying Li, Wei Ge, Wen Xu, Xiaoqin Cao, Lili Ma, Yanlan Wu, Yi Wang

Background/objective: Multi-resistant bacteria has been a major challenge of public health, as it requires the proper usage of antibacterial drugs. This study investigated the usage of antibiotics and detection of resistant bacteria on discharged patients within a province of China from January to December 2017, in the hope of providing some theoretical evidences regarding the reasonable use of antibiotics and the prevention of bacterial resistance.

Methods: Electronic questionnaires surveying the use of antibiotics and detection of resistant bacteria on discharged patients were sent to 209 hospitals within the province. SPSS13.0 software was used for statistical analysis of the data.

Results: Of the 209 questionnaires, 202 of them were valid and were thus used in the study. The 202 participating hospitals included 58 tertiary hospitals with 2,276,848 discharged patients and 144 secondary hospitals with 2,030,175 discharged patients. The frequency of using antibiotics on discharged patients in secondary hospitals (53.7%) was higher than that in tertiary hospitals (46.6%), and this difference was significant ($Z=-2.828$,$P=0.005$,$\alpha=0.05$). 75% of secondary hospitals had microbial culturing programs undergone, which was less than that in tertiary hospitals (94.8%), and the difference was significant ($\chi2=10.433$,$P=0.001$,$\alpha=0.05$). The etiological examination rate of specimens of patients before or after using antibiotics was 34.6% in secondary hospitals, which was lower than that in tertiary hospitals (56.1%), and the difference was significant ($Z=-5.671$,$P<0.001$,$\alpha=0.05$). Six types of drug-resistant bacteria was included in the study, which were *Carbapenems-resistant Acinetobacter Baumannii* (CRAB), *Methicillin-resistant Staphylococcus Aureus* (MRSA), *Carbapenem-resistant Pseudomonas Aeruginosa* (CRPA), *Carbapenems-resistant Enterobacter* (CRE), *Carbapenem-resistant Klebsiella Pneumonia* (CRKP) and *Vancomycin-resistant Enterococcus* (VRE). A total of 17,081 strains of drug-resistant bacterias were isolated, and the detection rate of drug-resistant bacteria were 49.4% in CRAB, 33.5% in MRSA, 20.2% in CRPA, 6.7% in CRKP, 2.0% in CRE and 1.8% in VRE, in descending order.

Conclusion: Although antibiotics were more frequently used in secondary hospitals, a quarter of these hospitals had not carried out the microbial culturing programs. Besides, within the province, the rate at which etiological examination was carried in the hospitals was quite low. Therefore, it is necessary to promote the establishment of microorganism laboratories in secondary hospitals, and to standardize the etiological examination as a routine, in order to guide the use of antibiotics and to reduce drug resistance in bacteria based on laboratory results.

POSTER BOARD 36

FIVE-FINGER TIPS FOR EFFECTIVE HAND-CARE: AN INTERACTIVE EDUCATION SIMULATION

Kishori Naik, Amanda La
West Park Healthcare Centre

Issue: Despite ongoing staff education on the importance of hand care policy and hand hygiene compliance, staff reported confusion over certain practices and standards, which we contend, led to inconsistent practice. The purpose of the project was to develop innovative strategies for explaining proper hand care to staff. We theorized real-world examples which could help to maintain proper standards of hand care, which would lead to effective hand hygiene compliance. An initial survey was conducted, and result indicated a lack of consistency in understanding best practices. Some staff were unsure about the appropriate finger nail length, others were confused about the correct use of nail polish, and some on how to follow the policy regarding hand and arm jewelry. Skin integrity was another issue which staff needed additional education on.

Project: Our own hands were used to demonstrate the concept of how ideal hands to look and the various errors that could be made by staff when it came to hand care. On the hands, incorrect process was explained such as how staff should avoid nails that are too long or chipped nail polish, inappropriate jewelry, etc. Additionally, the pictures of our hands were taken and used in brochures, a poster, and a PowerPoint presentation for the purposes of staff education. The hand images were accompanied by relevant text which highlighted each of the various components and aspects of maintaining ideal, clean hands. Educational sessions including, Glo germ activities were conducted and participants were able to note, more "microorganisms "escaped the act of hand hygiene, particularly around the finger jewelry, long nails, and in the dry cracked skin. Important instructions under specific subheadings within the brochure were given on appropriate nail length, jewelry, nail polish, no nail enhancements, and about skin integrity. Brochures were made available to departments regularly to have easy access.

Results: A post-education session survey was given to all 56 participants. 100% of respondents indicated they understood the hand hygiene policy, and all respondents correctly identified the appropriate fingernail length to maintain. Additionally, 86% identified the correct policy regarding nail polish and 83% identified the correct policy regarding hand and wrist jewellery. 78% of respondents rated the session quality as 5/5, 22% rated the session as a 4/5.

Lesson Learned: Overall, the staff reported they enjoyed and found it very informative and engaging. The majority mentioned that they learned something new about hand care in an innovative way. It was learnt that one of the most effective ways adult learners learn and retain hand hygiene practices was they preferred more application based and interactive learning sessions rather than theory, an important principle which was established through the post survey result.

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POSTER PRESENTATIONS

POSTER BOARD 37

NATIONAL ADVISORY COMMITTEE ON INFECTION PREVENTION AND CONTROL (NAC-IPC)

T. Ogunremi,[1] K. Dunn,1 L. Johnston,[2] J. Embree[3]
[1]Centre for Communicable Disease and Infection Control, Public Health Agency of Canada, Ottawa, ON
[2]Dalhousie, University, Halifax, NS
[3]University of Manitoba, Winnipeg, MB

Issue: The National Advisory Committee on Infection Prevention and Control (NAC-IPC) is an advisory committee of experts facilitating a national approach for responding to public health emergencies and recommendations for IPC practice. The Committee reports to the Assistant Deputy Minister of Infectious Disease Prevention and Control, and works with staff of the Public Health Agency of Canada to provide ongoing and timely public health advice. The objective of this poster is to describe the role of the National Advisory Committee on Infection Prevention and Control (NAC-IPC)

Project: The NAC-IPC is composed of volunteer members with various expertise, across the continuum of healthcare settings, jurisdictions, and specialized area of practice including infectious diseases, infection prevention and control, occupational health, medical microbiology and public health. Members contribute to the development of PHAC guidelines, tools, publications and promotion of best practices. Topics for guideline development are prioritized based on a number of criteria, such as emerging issues, public health impact, occurrence of public health events of national and global significance, and data obtained from national surveillance programs, such as the Canadian Nosocomial Infection Surveillance Program (CNISP). Guidelines are developed using a standardized process involving systematic reviews or environmental scans, and evidence grading where applicable.

Results: Some examples of documents developed by the NAC-IPC are shown in Table 1. Recommendations are informed by evidence and collective expert opinion where evidence is sparse. The NAC-IPC produces four main types of documents: comprehensive (e.g. Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings), targeted (e.g. Canadian Tuberculosis Standards 7th Edition; Chapter 15-Prevention and control of tuberculosis transmission in health care and other settings), emerging infections (e.g. Infection Prevention and Control Expert Working Group: Advice on Infection Prevention and Control Measures for Ebola Virus Disease in Healthcare Settings), and peer-reviewed publications (e.g. Mycobacterium chimaera infections in post-operative patients exposed to heater-cooler devices: An overview). Depending on the scope of the guideline and the breadth of evidence available, a literature search, environmental scan, or systematic review may be used to develop the guideline.

Lessons Learned: The NAC-IPC is well-positioned to facilitate development of national guidelines for HAIs and emerging pathogens, inform federal-provincial-territorial public health networks and provide opportunities for international collaboration, knowledge exchange and mobilization. IPAC Canada is a key partner, and liaison member representative on the advisory committee.

POSTER BOARD 38

INFECTION PREVENTION IN PERSONAL SERVICES SETTINGS: RISKS OF INFECTION, MITIGATION, AND GAPS

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Issue: Personal services settings and the types of procedures offered, is a continuously evolving industry that encompasses a variety of aesthetic treatments and personal enhancement services. The range of services spans from non-invasive (e.g. hair and nail services) to invasive procedures (e.g. microneedling, tattooing, piercing and other body modifications). From a public health perspective, there is a potential risk of infection for both clients and personal services workers, through intentionally or accidentally penetrating the body's defences. While guidance and regulation of personal services settings do exist in some jurisdictions, these vary across Canada.

Project: PHAC established a multidisciplinary working group including public health nurses and inspectors, and infection prevention and control professionals working in the field. The expert working group conducted an environmental scan of regulations across jurisdictions, completed a review of relevant guidance and literature, and identified key measures to reduce the risk of infection, applicable to personal services settings in Canada. There is no national surveillance system monitoring the complications associated with personal services.

Results: The results of the literature review determined that guidelines and regulations exist at the provincial/territorial level in Canada; however, there is variation in scope. The main infection risks identified included inadequate training and skill level of personal services workers (resulting in poor infection prevention practices) and poor or non-compliance with generally established public health practices. Infections associated with personal services included bacterial, viral, or fungal, and there are specific risk factors associated with bloodborne infections. Guiding infection prevention principles that mitigate the risk of exposure to infections in personal services settings include: administrative controls, risk assessments, hand hygiene, environmental cleaning and disinfection, single use devices, and reprocessing reusable devices.

Lesson Learned: The gaps and challenges identified from the review and working group discussions focused primarily on issues related to infection prevention practices. A number of recommendations for this setting are extracted from the body of evidence for healthcare settings. Existing guidelines and standards are often limited, or do not directly apply to personal services settings. In addition, there is limited or poor quality evidence on the risk of infection for specific procedures, and recommendations for cleaning and disinfection exist in varying degrees. Education and training of workers may not be feasible or enforceable, and workplace and practice audits by trained personnel are often not available. Challenges outside the scope of this project include legal infrastructure, client safety, occupational health and worker skill and knowledge.

POSTER BOARD 39

IMPROVING STAFF ATTENDANCE USING A HOLISTIC APPROACH TO ENCOURAGE INFECTION PREVENTION & CONTROL BEST PRACTICES AND KNOWLEDGE RETENTION AT THE FORENSIC PSYCHIATRIC HOSPITAL

Tracia Batson-Dottin, Robyn Hunter, David Harris
Forensic Psychiatric Hospital

Issue: The Forensic Psychiatric Hospital (FPH) has experienced a decrease in staff interest and motivation to attend infection prevention and control educational sessions. This lack of motivation has proven to be a challenge for Infection Prevention and Control (IPAC) and innovative ways had to be formulated to capture the staff's attention.

Project: This project focused on the educational and motivational needs of the employees. It was designed to increase morale and attendance at infection control educational opportunities. The IPAC team focused on Hand Hygiene (HH) Day and Infection Control Week in 2018 using adult educational learning styles. The learning styles used to engage staff were - Visual : PowerPoint presentation on HH; Auditory : roaming carts were used to promote and discuss new policies and initiatives: Green Means Clean initiative, Blood and Body Spills, HH Policy and Outbreak management; Kinesthetic : HH techniques with interactive sessions and demonstrations using Alcohol-based hand sanitizers, demonstration using Glow Germ and ultra-violent light with paired peer feedback tool, yoga, aerobics, kahoot online game, nature walks; Reading/writing : Quizzes & Puzzles, infection control online Courses.

Results: 60 anonymous questionnaires were returned by staff members from various disciplines working at FPH. 56 (95%) staff thought that IPAC was an interesting topic. When asked about preferred learning style, scores varied: visual 30 (50%) staff, physical 15(25%) staff and verbal 15(25%) staff, 36 (60%) staff liked the online courses and 59 (98%) staff reported that the teaching/educational style of the Infection Control Practitioner (ICP) was engaging. 57 (95%) staff expressed interest in repeating the Infection Prevention and Control Fair, Puzzles & Quizzes, yoga, roaming carts and nature walks. Education remembered by staff was the four moments of hand hygiene and "Green means Clean" initiative. Moreover, 48 staff (80%) reported that they attended activities during the week and 12 staff (20%) said that they could not attend due to being off duty or could not get the time off the units. Furthermore, 54 staff (90%) stated that the support of the administration made it easier for them to participate in activities; 24 staff (40%) volunteered to assist Infection Prevention and Control in organizing activities for 2019.

Lesson Learned: Use of a variety of educational delivery methods may have played a role in increasing staff's enthusiasm and engagement with infection control practices. A supportive FPH administration gave staff time to attend the infection prevention and control activities and donated prizes. Actively listening to

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staff's valuable feedback along with conducting an educational needs assessment, allowed the ICP to tailor the information which may have contributed to a change in attitude, increased engagement and willingness on the part of staff to participate in IPAC activities.

POSTER BOARD 40

CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE (CPE) IN THE NEONATAL INTENSIVE CARE UNIT (NICU): OUR NICU'S EXPERIENCE WITH THIS SUPERBUG!

Joyce Mahinda, Jake serieska, Angela Neish, Liz McCreight, Jennie Johnstone, Allison McGeer
Mount Sinai Hospital

Issue: Carbapenemase-Producing Enterobacteriaceae (CPE) is an emerging pathogen that is highly resistant to carbapenems and most antibiotics. The mortality rate for patients with infections from CPE is approximately 50%. We describe our experience with CPE in the NICU, as well as the infection prevention and control (IPAC) guidelines we developed.

Project: In 2018, a mom who delivered twins at 31+3 weeks became bacteremic with a CPE E. coli immediately post-partum. IPAC, along with the Quality and Safety nurse and NICU staff physicians developed and implemented CPE guidelines for colonized or infected mom's to help parents, healthcare workers and visitors who care for and visit neonates. A subsequent CPE colonized mother with twins requiring NICU care was identified and the new guidelines were applied.

Results: A multidisciplinary team was established to develop guidelines for the management of a CPE positive mom and their baby. Preventative measures in the guidelines were divided into two components: 1. To help prevent the babies of CPE positive moms from becoming CPE colonized: · Babies were placed on CPE precautions (use of gown, gloves, dedicated equipment and room cleaning twice daily); · Breastfeeding was not recommended while the neonates were not known to be colonized (potential risk of transmission of CPE to the baby) - babies received donated breast milk; · Skin to skin care was not recommended; · Each baby was assigned a dedicated nurse or one nurse who would change personal protective equipment (PPE) in between each baby. 2. To protect the environment: · Parents were prohibited from the use of common areas (e.g. visitor bathroom); · Parents and visitors were given their own personal carry alcohol based hand rub for hand hygiene; · Medications and feeds were delivered to the babies' room in disposable plastic bags; · The use of hand hygiene sinks in the babies' room was not permitted; · The zone with babies on CPE precautions were screened once a week. During CPE screening, the babies in the initial case were found to be colonized with CPE E. coli six days after birth; the same NDM E. coli as their mother. They did not develop a CPE infection. Parents and visitors of said babies were no longer required to wear PPE once the babies tested positive. The babies in the second case were never identified as being CPE positive during their admission. Mom was identified as CPE positive for OXA - 48 by PCR only; all culture results were negative. Parents and visitors were required to wear PPE for the duration of admission when visiting the babies.

Lessons Learned: The identification of a CPE positive mom with babies requiring NICU care meant that NICUs: 1. Must ensure that they have clear guidelines and procedures in place to manage babies and moms with CPE, and 2. Should consider each case differently while ensuring infection control best practices are adhered to.

POSTER BOARD 41

ULTRAVIOLET LIGHT TECHNOLOGY IS IMPROVING HAND HYGIENE COMPLIANCE IN THE NICU

Jody Baker, Carmen Bentley
Island Health

Issue: In 2015 the Health Authority launched its new Automated Shift Callout (ASC) system resulting in front-line staff to have unrestricted access to personal cell phones. In addition, accessibility to clinical applications and live video streaming has resulted in the use of cell phones at the bedside at an unprecedented rate. It was during this time period blood stream infections (BSI) increased while hand hygiene (HH) compliance rates started to decline. The identification of cell phones being a reservoir for pathogens and a potential source of transmission was explored.

Project: A retrospective review of both BSI and HH compliancy rates over a two-year period was conducted. A literature review was then completed to explore potential methods of disinfecting cell phones. The ultraviolet (UV) disinfecting technology was chosen based on its ease of use, sustainability and minimal impact on the environment. Prior to the launch of the project, HH education and manufacturer's operating instructions for the UV device was provided for staff, volunteers and families visiting the Neonatal Intensive Care Unit (NICU). Educational material on proper HH technique and device instructions remain accessible for all persons entering the NICU environment. Efficacy of the UV system is studied by the random culture collection taken from: staff and family cell phones, intra hospital personal communication devices, identification badges and stethoscopes. Cultures are collected pre and post UV disinfecting upon arrival to the NICU and again prior to departing the unit.

Results: Hand Hygiene compliance rates have increased and have remained above 90% since the launch of the UV project. Although in its infancy, BSI rates appear to be declining but will remain under surveillance for a year. The project also prompted the creation of a cell phone cleaning policy for the NICU which easily could be adopted in other clinical areas. Overall the implementation of mandatory cell phone cleaning and HH has become an accepted practice by both the staff and public.

Lesson Learned: Improving HH compliancy rates requires buy in from both staff and public accessing the NICU and requires constant vigilance and support from leadership. It is also recognised that HH and cleanliness of cell phones used at the bedside is only part of an existing problem and other bedside practices require further review.

POSTER BOARD 42

EFFICACY OF A FOOD CONTACT SURFACE DISINFECTANT AGAINST ENTERIC VIRUSES

Rachel Leslie, Mary Czaplicki
GOJO Industries

Background/objectives: Enteric virus outbreaks can have a rapid onset in healthcare settings and can result in severe illness for vulnerable patients. Viruses responsible for such outbreaks include norovirus and Hepatitis A. Both viruses are transmitted orally via contaminated food or other contact with contamination. Norovirus has low susceptibility to disinfectants and a low infectious dose. In addition, it can quickly spread in a facility and has been known to cause outbreaks in both acute care and long-term care facilities. Hepatitis A is emerging in clustered outbreaks throughout North America and is very resistant to most disinfectants. Food preparation and serving areas present the highest risk for transmission of these viruses. Therefore, there is a need for disinfectants that are both effective and safe to use on food contact surfaces. This study examines the efficacy of a food contact surface disinfectant, without health hazard precautionary statements, against Hepatitis A and Feline calicivirus, a human norovirus surrogate.

Methods: The efficacy of a food contact surface disinfecting spray against Hepatitis A virus and Feline calicivirus was evaluated by ASTM E1053-11. Test virus with 5% serum was dried on a 2"x2" area of a sterile glass petri dish and sprayed until thoroughly wet with the selected disinfectant containing 29.4% ethanol. At the end of the contact time, a neutralizer was added to the petri dish, the bottom of the dish was scraped to recover the virus, and the neutralized virus was serial diluted and inoculated onto host cells to assay for infectious virus. This study was funded by GOJO Industries, Inc.

Results: After a 30-second exposure, the test product demonstrated a ≥4.0 log reduction against Feline calicivirus. Hepatitis A virus was reduced by ≥3.5 logs after a 60-second exposure.

Conclusion: This study demonstrates that a disinfectant for food contact surfaces is effective against Hepatitis A virus and Feline calicivirus, a surrogate for human Norovirus. These are two viruses that have low susceptibility to many antimicrobials, are enteric viruses transmitted through the oral route, and can cause outbreaks in healthcare settings. A disinfectant that is safe for food contact surfaces and is without health hazard precautions, can be used in close proximity to patients, including on eating surfaces, to help prevent virus transmission.

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POSTER BOARD 43

SURFACE IMAGING TECHNOLOGY AS A DIAGNOSTIC ASSESSMENT FOR EFFECTIVE IPAC TRAINING

Natalie Ambler, Brad Evans
OptiSolve

Issue: The health and safety of residents and staff is a primary objective in long-term care. Infection prevention and control (IPAC) is a daily practice that contributes to this outcome. However, current standards for auditing fomite hygiene in healthcare settings are based on primarily visual assessments which alone are known to be unreliable in assessing cleaning and disinfecting process efficacy. A further challenge for IPAC practitioners is that it is often difficult to effectively communicate issues to a broad audience with differing educational and social backgrounds.

Project: A long-term care organization developed a proactive approach to streamline IPAC training and ultimately improve health and safety throughout their facilities. Monthly diagnostic assessments were completed in multiple facilities within a one-year period. A combination of test methodologies was used including traditional audit tools of adenosine triphosphate bioluminescence (ATP) and environmental cultures, as well as new surface imaging technology that generates contamination density maps to provide visual feedback. Stakeholder participation included surface imaging specialists, environmental services personnel, nurses and administration. A summary report issued by surface imaging experts provided immediate feedback for individual facilities. The report included written results and recommendations as well as contextual and surface contamination images. Further, the diagnostic assessments provided cumulative results that were analyzed. Three key themes for IPAC training were noted and were presented at the organization's quarterly conference.

Results: Proactively identifying collective best practices resulted in mitigating risk and a return on investment in efficiency for the LTC organization. Test data supported by surface imaging technology provided an impactful illustration of cleaning and disinfection concerns and improvements. Studies of adult learning behaviour indicate that training including visual and experimental involvement increase comprehension and application of results. Participant testimonials (and often visceral reactions) supported this theory. Shared results also provided an opportunity for individual facilities to learn from each other and collaborate as an organization.

Lesson Learned: An approach of conducting diagnostic assessments for IPAC training provided the following benefits: i) engagement of multiple stakeholders in an overview of IPAC practices and results in order to identify current strengths as well as opportunities for improvement; ii) demonstration that visual feedback of surface contamination provides a new tool for training communication iii) establishment of an initial benchmark for ongoing progress and learnings.

POSTER BOARD 44

SOMETIMES THE BEST PRACTICES DON'T ALWAYS GIVE THE BEST OUTCOMES: LESSONS FROM HOME CARE

Victoria Tait, Robin Johnson, Marilyn Weinmaster, Meredith Faires
Saskatchewan Health Authority

Issue: Home Care services in the city of Regina, Saskatchewan, provide care to approximately 105 clients who have long-term indwelling urinary catheters. Unique challenges are encountered by Home Care staff related to client specific needs and preferences, diversity of products utilized, and different manufacturer guidelines regarding the care and maintenance of urinary catheter systems. These issues created inconsistencies for employee education and performing catheter care. Saskatchewan's Ministry of Health Infection Prevention and Control Program recommended maintaining a continuous closed system and not rinsing catheter bags on a routine basis. As current Home Care processes were not standardized and did not align with the Ministry's guidelines, the Home Care Education team was tasked with identifying and adopting a closed system and creating a standardized process for urinary catheter care that met client needs and aligned with best practices.

Project: An environmental scan was conducted to determine urinary catheter bag systems that were currently being utilized by other Home Care and health centres in Canada and if standard work for maintaining those systems had been developed. For systems that were identified and aligned with provincial best practices, four Home Care clients were selected to trial the product for 6-8 weeks. Standardized work was developed for the trial and educational materials were created for clients and employees. Following the trial, clients and employees evaluated the product.

Results: The environmental scan resulted in limited responses related to Home Care practices. A closed urinary system (i.e., allowing for the conversion from day use to night use without opening the system) was identified and piloted. Evaluations indicated several issues with the closed system including volume limitations of the urinary bag, disconnection of the connection tip from the bag tubing, and the length of tubing for nocturnal and day use. In addition, clients with poor dexterity had difficulties maintaining independence related to the lower leg placement of the bag and trouble opening the drainage clamp. Although a closed system aligned with best practices, Home Care staff had to develop alternative processes to meet their client's needs. These processes included aseptic changing from leg bag to night bag, discontinuing catheter irrigations and catheter bag rinses, and emphasizing nursing efforts to achieve the best possible catheter care and urinary bladder health.

Lesson Learned: The Home Care Education team was unsuccessful in adopting a single urinary catheter system that could be used on all clients that aligned with provincial best practices without negatively affecting the client's quality of life. New processes were developed to provide more explicit direction for Home Care staff in addition to reinforcing client assessments and education to ensure that the best possible care was delivered while promoting client autonomy.

POSTER BOARD 45

THINKING OUTSIDE THE FACILITY? APPLYING INFECTION PREVENTION AND CONTROL (IPAC) BEST PRACTICES IN HOME CARE

Cara Wilkie
Association of Ontario Midwives

Issue: Midwives and other home care workers face unique challenges implementing IPAC principles in non-standard work environments. Unlike hospitals, homes are not equipped with clean procedure rooms, clean and soiled utility areas, dedicated hand hygiene sinks, or purpose-built surfaces to lay out equipment and instruments. The Association of Ontario Midwives (AOM) searched for resources to support midwives to achieve best practices in IPAC at home births. When nothing well suited to the purpose was found, the AOM created an educational resource illustrating the adaption of IPAC best practices to home settings.

Project: An IPAC Work Group comprised of practicing midwives, IPAC experts and AOM staff participated in the project. The midwives shared their experience of IPAC challenges and adaptive strategies. They selected prevention of cross contamination from newborn resuscitation equipment used at home births as the project focus. Newborn resuscitation encompasses a complex set of procedures, using non-critical, semi-critical and sterile devices. This topic would illustrate practical approaches to implementing IPAC best practices at home which could also be applied to other IPAC scenarios faced by midwives. It was problematic to succinctly describe in a written document the variations in client needs and physical space at home births. Therefore, the medium chosen was video, with a combination of images, narration and written captions and titles. Studies have found that video instruction is associated with a higher learning effectiveness, efficiency and acceptability for skills training for clinical learners. (1,2)

Results: A five minute long video entitled "Newborn Resuscitation Equipment: Preventing Cross Contamination" was produced and made accessible through desk top and mobile devices. It depicts IPAC risks and mitigation strategies applied in realistic home birth settings. The narration by a midwife provides tips and strategies to achieve best practices.

Lesson Learned: Midwives and other home care workers require a strong understanding of IPAC combined with critical thinking and problem solving skills to apply IPAC principles in spaces not designed for clinical care. Educational resources to support clinicians to adapt their knowledge of IPAC to the home setting are not readily available. The response from midwives to the video resource created by the AOM has been very positive. There has not yet been opportunity to measure impact on practice. References: 1. Hurtubise L, Martin B, Gilliland A, Mahan J. To play or not to play: leveraging video in medical education. J Grad Med Educ. 2013;5 2. Weber U, Constantinescu MA, Woermann U, Schmitz F, Schnabel K. Video-based instructions for surgical hand disinfection as a replacement for conventional tuition? A randomised, blind comparative study. GMS J Med Educ. 2016;33(4):Doc57.

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POSTER BOARD 46

HOSPITAL ASSOCIATED CLOSTRIDIUM DIFFICILE AND METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS RATES THREE YEARS AFTER MOVING INTO A NEW HOSPITAL FACILITY

Tina Stacey-Works, Neil Rau, Jennifer Blue
Halton Healthcare

Background: Oakville Trafalgar Memorial Hospital (OTMH) is a new community hospital that opened in December 2015. The new facility features eighty percent single rooms with dedicated hand hygiene sinks at the entrance to each room. There is one washroom in each private and semi-private room and two washrooms in the 4-bed ward rooms.

Objectives: To compare hospital associated Clostridium difficile (HA-CDI) and Methicillin resistant Staphylococcus aureus (HA-MRSA) rates two years before and three years after moving into a new facility.

Methods: The cases definitions and indications for laboratory testing for HA-CDI and HA-MRSA have remained consistent in the five years under review. HA-CDI cases and HA-MRSA bacteremia cases were identified using the standardized case definitions for mandatory public reporting in Ontario. Total HA-MRSA incidence rates include patients identified as colonized or infected with MRSA more than 72 hours after admission. Patients colonized with MRSA are identified on inpatient medical/surgical units by screening on transfer to chronic units, once a month screening of all patients who have been admitted to an acute care unit for equal to or greater than 30 days, and by contact tracing. Patients on rehabilitation and complex transitional care units are screened every six months. The HA-CDI and HA-MRSA incidence rates were compared before the move (2014-2015) to the 36 months after the move (2016- 2018). The pre and post move mean incidence rates were compared using a t test.

Results: The mean annual HA-CDI incidence rate has continued to decrease since moving into the new hospital (2016=0.29; 2017=0.18; 2018=0.12); the incidence rate before the move (n=24 months) was 0.76 per 1000 patient days and this rate significantly improved by 74% to 0.20 in the first 3 years in the new hospital (SS p=<0.0001). The mean annual HA-MRSA incidence rate has also declined since moving into the new hospital (2016=0.37; 2017=0.18; 2018=0.15). The mean rate for the two years prior to the move was 0.32 per 1000 patient days; and this rate improved by 28% to 0.23 three years after the move (NS p=0.1). The MRSA bacteremia rate slightly decreased from 0.012 (n=4) in 2014-15 to 0.008 (n=4) in 2016-2018 (NS p=0.64).

Conclusions: Three years after moving into a new hospital with improved engineering controls, the rates of hospital associated C. difficile infections and cases of HA-MRSA continue to decrease. The rates of HA-CDI substantially improved and have been sustained in the new hospital. Rates of total MRSA and MRSA bacteremia have decreased, but this finding is not statistically significant. This will continue to be monitored.

POSTER BOARD 47

HOSPITAL ACQUIRED INFECTIONS (HAIS) IN GOMBE NIGERIA: HIGHLIGHTING THE CHALLENGES OF INFECTION CONTROL AND PATIENT SAFETY IN DEVELOPING NATIONS

Mohammed Manga,[1] Ronah Joseph,[2] Zainab Yunusa-Kaltungo,[2] Isaac Elon,[3] Ayuba Kudi,[2] Joshua Abubakar,[2] Abubakar Saidu[3]
[1]Federal Teaching Hospital; Gombe State University
[2]Federal Teaching Hospital
[3]Federal Teaching Hospital; Gombe State University

Background: Hospital Acquired Infections (HAIs) have remained a major public health menace in the world. Their effect is worst in developing nations where Infection Prevention and Control (IPC) programmes are either absent or very weak. Several challenges both from within and outside the hospitals in low income countries have continued to be major barriers to successes in IPC. The Federal Teaching Hospital Gombe (FTHG) started routine surveillance of HAIs over 2 years ago. Although many successes have been recorded, challenges still exist. This study presents a summary of the two-year report of HAIs in FTHG while highlighting the challenges being faced in IPC and patient safety.

Methods: We conducted a secondary data analysis of the monthly surveillance reports of HAIs spanning a period of two years between January 2017 to December 2018. The overall prevalence, five most common bacterial isolates and three most common types of HAIs were determined.

Results: The overall prevalence of HAIs in FTHG during the two-year period was 4.5% for 2017 and 5.3% for 2018. The three most prevalent types of HAIs were Urinary Tract Infections (41.1% in 2017 and 45.9% in 2018), Surgical Site Infections (38.5% in 2017 and 30.6% in 2018) and Blood Stream Infections (12.6% in 2017 and 11.5% in 2018). The five most common bacterial isolates within the period under review were Klebsiella species (28.4%), Staphylococcus aureus (20.9%), Pseudomonas aeruginosa (17.4%), Escherichia coli (13.9%) and Proteus species (7.8%).

Conclusion: This study presents a snapshot of the HAIs in Gombe Nigeria with Urinary Tract Infection (UTI) being the highest type and Klebsiella species as the commonest bacterial isolates. Poor staffing, inadequate expertise, lack of budgeted funding for IPC, background poverty/ignorance of patients and overall weak health system have remained the major challenges facing the IPC team.

POSTER BOARD 48

PREVALENCE OF CARBAPENAMASE RESISTANT ENTEROBACTERIACEAE (CRE) BACTERIA UPON ADMISSION TO THE INTENSIVE CARE UNIT IN AN ACUTE CARE HOSPITAL AND ADOPTING A CLEANING PROTOCOL OF SINKS

Zoran Pikula, Wil Ng, Doreen Alexander, Maja McGuire, Kevin Katz
North York General Hospital

Issue: Carbapenamase resistant enterobacteriaceae (CRE) produce carbapenemase enzymes which render bacteria resistant to all beta-lactams and carbapenems. CPE infections carry a high morbidity and mortality. Common reservoirs include patients and the environment (specifically sink/shower drains). Limiting spread in high risk populations such as the intensive care unit (ICU) would be desirable and developing protocols for detection and decontamination of sinks to reduce spread will be important.

Project: We conducted a prospective study to determine the prevalence of CRE colonization identified by rectal swab culture on selective media upon admission to ICU from June 14, 2017 to March 15, 2018. Any patient positive for CRE admitted to the ICU during the project had the room sink drain tested for CRE and a special cleaning protocol of the sink took place after discharge of the patient. The protocol was adapted from St Joseph's Health Centre, Toronto.

Results: There were 767 admissions to ICU during the study period. All 767 (100.0%) patients were screened on admission to ICU. There were 765 (99.7 %) patients negative on admission and 2 (0.3 %) patients positive for CRE colonization on admission. Both these patients had a previous history of CRE and were kept on additional precautions. CRE unit prevalence screens were done periodically and all resulted negative. The sink drains tested for CRE resulted negative. No CRE transmission took place during the 9 month period.

Lessons Learned: During a 9 month study period, the prevalence of CRE colonization on admission to the ICU was 0.3% but all cases had previously been identified. Additional precautions were put in place and no transmission of CRE occurred. In comparison, ESBL screening done from June 14, 2014 to March 15, 2015 demonstrated an ESBL colonization prevalence on admission to ICU of 16.3%, of which 14.0% was newly identified. Again, no transmission occurred. Universal screening of all patients admitted or transferred into ICU remains current practice in this high risk group. A protocol for the cleaning and swabbing of sinks in the rooms of positive patients was adopted. Universal screening on admission to hospital for CRE remains controversial and further study is required.

POSTER BOARD 49

TRAIN THE TRAINERS: TOOLS FOR TRAINING AND EDUCATION OF HAND HYGIENE AUDIT

Sumawadee Skuntniyom, Thipakorn Pornmee, Kumthorn Malathum, Manassanan Ngernsod
Ramathibodi Hospital

Issue: Direct observation of health care workers (HCWs) is recognized as a "gold standard" for monitoring hand hygiene compliance. Although described as "gold standard" approaching to hand hygiene audit, this method is a labor intensive on routine observation. The training programs in healthcare facilities are provided using hand hygiene auditor training program during one day workshop using standard models with useful training materials. This study aimed to evaluate personnel performance who were trained on monitoring to ensure the quality control.

Project: A one-day workshop using standard model and video clips with common clinical healthcare problems encountered will be conducted. After course completion, infection control nurses and well trained personnel concurrently collecting data using independently observation of hand hygiene practices among healthcare workers in various clinical settings for 12 months.

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Results: In total, 160 external observers were trained, including senior nurse and head nurse. Overall and 5-moment category HH compliance rates obtained by routine observer was 75.3% (95% CI: 50.5-87.7, n=1,616) and external observer was 76.3% (95% CI: 69.3-88.6, n=17,372) and HH compliance was similar across all professional and 5-moments categories, which were not statistically significant different.
Lesson Learned: This study shows that the effective, well-designed training programs was successfully implemented resulting in more competent personnel for hand hygiene observation in the hospital, which reflect to the good understanding during on the training programs. Such program should be expanded to cover even more numbers of healthcare facilities in all areas.

POSTER BOARD 50

MAKING THE BUSINESS CASE FOR A FAST DIAGNOSTIC PLATFORM FOR BLOODSTREAM INFECTIONS WITH A CLINICAL IMPLEMENTATION SUPPORT TEAM

Maureen Spencer, Nicholas Strohminger, Susan Eren, Jared Sutton, Bola Adesuyi, Sarah Hinkson, Pat Garland, Pete Bantock
Accelerate Diagnostics
Issue: Canadian government is tackling antibiotic use and resistance through infection prevention, stewardship and innovation. There is an urgent need for diagnostic technologies to provide fast antibiotic sensitivity tests (AST) for optimization. A novel diagnostic platform for bloodstream infections (BSI) provides both identification (ID) and antimicrobial susceptibility test (AST) in 7 hours which is 40hrs faster than standard lab procedures. This represents a significant paradigm shift in workflow options. To support this new laboratory and clinical workflow our company formed a Clinical Implementation Support (CIS) team to aid in budget justification and clinician and staff education
Project: The CIS team was formed in February 2018 and consists of two infection preventionists, a business analyst, program manager, clinical review specialist and process analyst. Using a health economic calculator and process workflows the team prepares a business presentation based on publicly reported value-based health outcome data and current laboratory standard of care (SOC) procedures for identifying BSI. After laboratory adoption a prospective review of the new faster SOC and clinical outcomes is conducted by CIS. This includes length of stay (LOS), mortality rates and antibiotic usage to clinically justify the system.
Results: Since Feb 2018 there were 63 contracted accounts and of these 33 engaged the CIS team who facilitated the hospital forward in laboratory adoption of the system (52.4%).
Lesson Learned: The engagement of a CIS team can assist in laboratory budgetary support and clinician and staff education. The benefit to clinicians are 1) reduced use of empiric antibiotics, 2) earlier directed optimal therapy, 3) early ID of MDROs, 4) reduced LOS and 5) lower mortality rates. A CIS team can assist in the engagement of administration and clinicians when implementing fast diagnostics for value-based health care outcomes for bloodstream infections.

POSTER BOARD 51

A SYSTEMATIC REVIEW OF 48 RESEARCH REPORTS ON THE MANAGEMENT AND CLEANING AND DISINFECTION OF ENDOSCOPIC TREATMENT CENTERS IN CHINA FROM 2004 TO 2017

Yi Kong
Nanjing Drum Tower Hospital
Objective: This study will summarize and analyze the research reports on the quality of management, cleaning and disinfection of endoscopy published from 2004 to 2017 in order to understand the current situation and problems of the development of endoscopy centers in China.
Methods: All the literatures on cleaning, disinfection and infection management of endoscopy centers from 2004 to 2017 were retrieved from the Chinese Citation database (CNKI), and the data in the literatures were summarized and analyzed. Finally, the data will be presented from the following six aspects: management requirements, layout and facilities, equipment requirements, cleaning and disinfection operating procedures, monitoring and recording, training and occupational safety protection, and acceptance rate of sampling inspection.
Results: A total of 48 relevant literatures were collected from 2004 to 2017, involving 2692 medical institutions. In terms of management, 81.4% of healthcare institutions have established various regulations for endoscopy management. In terms of layout and facilities, 77.1% of hospitals have set up independent cleaning and disinfection rooms. In terms of cleaning and disinfection process, 74.1% of the hospital cleaning process conformed to the standards, and 74.7% of the hospital disinfection/sterilization process conformed to the guidelines. In terms of monitoring and recording, 83.3% hospitals carry out quarterly monitoring of endoscopic disinfection quality. In terms of training and occupational safety protection, 73.1% of disinfectors received professional training, and 69.2% of disinfectors wore suitable personal protective equipment. As for the qualified rate of sampling, 78.7% of endoscopy disinfection were qualified.
Conclusion: At present, the basic management system and cleaning and disinfection process established by the endoscopy center in China can ensure the quality of most endoscopes cleaning and disinfection. However, with the development of economy and the expansion of endoscopy centers, the standardized management of endoscopy centers should be refined to ensure the quality of cleaning and disinfection of endoscopes and the safety of patients.

POSTER BOARD 52

PATIENT SAFETY CULTURE AMONG HEALTH CARE PROVIDERS IN A TUNISIAN UNIVERSITY HOSPITAL

Dhekra Chebil, Sarra Sghaier,[1] Haifa Aroui,[1] Nadia Radaoui,[1] Hayett Harbi,[1] Latifa Merzougui[1]
[1]University Hospital Ibn Al Jazzar
Background/objectives: Nowadays, Patient safety (PS) is considered a major priority in health care systems. In Tunisia, few attempts have been made since 2011 to evaluate patient safety level. The purpose of this study in context is to measure the PS culture level at Ibn El Jazzar hospital in Kairouan (Tunisia).
Methods: This cross-sectional study was conducted over three months in a Tunisian University hospital. The French model of the Hospital Survey on Patient Safety Culture 'HSOPSC' was used to explore 10 dimensions of patient safety culture. The survey was distributed to 446 health care providers (physicians and nurses). A score per composite has been calculated. Then the results were compared according to professional categories and work Units.
Results: The overall average positive response rate for the 10 patient safety culture composites of the HSPSC survey was 61.65 %. Areas with potential for improvement were, Overall perception of security (40.73%), Leadership (30.9%), Organizational learning (41.9%), Communication openness (38.3%) and Frequency of events reported (33.2%). The Area of strength was Teamwork within units (58.1%), Non-punitive response to error had the lowest score (29.6%). The comparison of the scores according to the professional category, showed a significant difference for one composite score which was the non-punitive answer to the errors which was particular to nurses (16.3% vs 32.7%; $p = 0.020$). In contrast, no significant difference between work Units was found for all composites scores in our study.
Conclusion: Our results demonstrate that PSC remains undeveloped and should be improved at Ibn El Jazzar hospital. Therefore, further studies should be conducted in the context of continuous assessment quality of care.

POSTER BOARD 53

SURGICAL SITE INFECTION FOLLOWING CAESAREAN SECTION. A PROSPECTIVE STUDY IN THE MATERNITY OF THE UNIVERSITY HOSPITAL OF KAIROUAN, TUNISIA

Dhekra Chebil, Ridha Fatnassi, Nadia Marouen, Tarek Barhoumi, Latifa Merzougui
University Hospital Ibra Al Jazzar
Background/objectives: Surgical site infection (SSI) is a substantial health system concern, it is one of the most common complications following cesarean section and has an incidence of 3%-15%. We aimed to estimate the incidence and determinate the risk factors of SSI after cesarean section in a Genecology obstetrics department in the region of Kairouan in Tunisia.
Methods: A prospective cohort study of all patients who delivered by cesarean section between December 2015 and February 2016, in Kairouan department of genecology and obstetrics. Their clinical condition was monitored for postoperative period of 30 days (at the external consultation, in emergencies and if not, they were contacted by phone) A multivariable logistic regression model was used to identify risk factors.
Results: Of the 714 patients admitted for cesarean delivery, 636(89%) were monitoring for 30 days. Of these, 32 were diagnosed with SSI, giving incidence rate of 5% (The confidence interval= (3,3%-6,6%). Of SSI; 87,5% (n=28) were superficial and 12,5% (n=4) were complex (deep and organ/space). Using the multivariable logistic regression model, age of patient was identified as a risk factor of SSI (RR=1,07 for every year increment, 95% CI=1,007; 1,17) whereas drainage

POSTER PRESENTATIONS

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was identified as a protective factor (RR=0,16, 95% CI=0,05; 0,48).
Conclusion: Our study identified the incidence and risk factors of postsurgical infection following caesarean section. Prevention of these infections should be public health priority.

POSTER BOARD 54

THE IMPORTANCE OF RATIONAL USE OF ANTIMICROBIALS IN RESPECT OF THE PROFILE OF KLEBSIELLA PNEUMONIAE SUSCETIBILITY IN BRAZIL

Daniella Pereira, Beatriz Araújo, Jamily Carapina, Flavia Elias
Oswaldo Cruz Foundation

Bacterial resistance to antibiotics is considered a threat to global public health. The *Klebsiella pneumoniae* species represents a serious threat to public health worldwide, as they have high rates of antimicrobial resistance and cause Healthcare-associated infections (HAI), especially in the hospital environment. The clinical impact of these infections can be quickly noticed due the hospitalization time increase, considerable cost increase in patient care, morbidity and mortality growth. To evaluate the susceptibility profile and the main antimicrobial resistance mechanisms of clinical isolates of *Klebsiella pneumoniae*. A systematic literature review was performed adapting the methodology of the Cochrane Collaboration to obtain the state of the art on the susceptibility profile to the antibiotics of the *Klebsiella pneumoniae* species isolated from adult patients hospitalized in Brazilian Intensive Care Units, compared to eight antibiotics of choice for treatment of HAI in the last 20 years. It was identified studies in six scientific databases as well as theses and dissertations. After reading the title and abstract, we selected 185 studies that met the inclusion and exclusion criteria. Between 1997 and 2001 Ceftriaxone was the medicine that presented the higher resistance rates (35 to 40%). However, in 2012 and 2013 imipenem has become the most dominant drug for *K. pneumoniae* resistance rate (90%). The main mechanism of resistance to antibiotics described in the literature was the production of enzymes carbapenemases, capable of hydrolyzing carbapenems and other beta-lactams, such as cephalosporins, penicillins and monobaccharides. There is an alarming trend towards increased resistance of K. pneumoniae to broad spectrum antimicrobials used in Brazil. There is an eminent need for proposals to raise awareness of this situation in the hospital environment, in order to reduce the indiscriminate prescription of antibiotics, reduce self-medication, better monitoring of hygiene issues, greater adherence to HAI prevention protocols, implementation of strategies for rapid diagnosis and health surveillance, continuous assessment of antimicrobial quality and greater commitment of health professionals. The dissemination of information based on scientific evidence, more effective and specific, can enable health teams to make assertive decisions, favoring the achievement of more favorable results, contributing to the reduction of multiresistant microorganisms to antimicrobials.

POSTER BOARD 55

CLINICAL AND MICROBIOLOGICAL ASPECTS OF NONTYPHOIDAL SALMONELLA BACTEREMIA

Yiching Huang

Background: Nontyphoidal salmonellae are Gram-negative bacilli causing foodborne diseases, including gastroenteritis, bacteremia, and focal infections. Risk factors for severe infection include extremes of age, diabetes, malignancy, HIV infection, use of immunosuppressants, gastric hypoacidity, and alteration of the endogenous intestinal flora. Antibiotic therapy is usually not recommended for mild-to-moderate gastroenteritis in immunocompetent individuals between 12 months and 50 years of age. Fluoroquinolones and third-generation cephalosporins are reasonable empiric antibiotics for severe disease and higher risks of complications.
Methods: The data was from the records of medical charts and microbiology laboratory at Jen-Ai Hospital - Dali, a 602-bed regional teaching hospital in central Taiwan. This study enrolled patients with nontyphoidal salmonella bacteremia from 1 January 2015 to 31 December 2018. The antimicrobial susceptibility testing was performed with disk diffusion method (routine testing: ampicillin, cefotaxime, cefixime, levofloxacin, ciprofloxacin, and trimethoprim-sulfamethoxazole). The following information was collected: age, gender, co-morbidities, antimicrobial susceptibility testing results, antibiotic treatment, and outcomes.
Results: Totally 47 patients were enrolled. Twelve patients were under 2 years old. Sixteen patients were over 60 years old, and seven were over 80 years old. The gender difference is male predominance (26 men). The comorbid illnesses include diabetes mellitus (12), liver cirrhosis (5), hemodialysis (4), newly-diagnosed HIV (3), pancreatic cancer (1), and polymyositis (1). The resistance rates of ampicillin, trimethoprim-sulfamethoxazole, cefotaxime are 49%, 34% and 6%. Six percents are intermediate to ciprofloxacin. The average length of hospitalization was 7.4 days. The mostly used intravenous antibiotic is ceftriaxone. A 92-year-old man died because of recurrent nontyphoidal salmonella bacteremia one month later.
Conclusion: The risk factors of nontyphoidal *salmonella* bacteremia in our study are toddlers, elderly, diabetes mellitus, and chronic liver and kidney diseases. Fluoroquinolones and third-generation cephalosporins are reasonable empiric antibiotics for severe disease, but we faced challenges in treating a few nonsusceptible pathogens.

POSTER BOARD 57

REPORT AUTOMATION FOR THE IDENTIFICATION AND ESCALATION OF GUIDELINE DISCORDANT *CLOSTRIDIUM DIFFICILE* INFECTION THERAPY

Xuetao Wang, Katy Short, Petra Welsh, Colin Lee, Kevin Afra, Elizabeth Brodkin
Fraser Health

Issue: Infection prevention and Control (IPC) practitioners in Fraser Health (FH) review all toxin-positive *Clostridium difficile* (*C. difficile*) laboratory tests from admitted acute care patients as part of routine surveillance, to identify *C. difficile* infections (CDI). Case reviews are also conducted to capture any CDI-related harm events. In early 2017, a review of CDI-related harm events suggested that some patients might have benefited from more timely pharmacy intervention.
Project: The FH Antimicrobial Stewardship (ASP), Pharmacy, and IPC programs collaborated on a quality improvement project to improve CDI patient outcomes. In the summer of 2017, an algorithm was developed and piloted to guide IPC practitioners in assessing CDI patients for compliance with treatment guidelines and escalating discordant treatment to clinical pharmacists for review. Based on the feedback from the pilot, the escalation process was modified with cases escalated directly to the ASP pharmacists rather than to the clinical pharmacists. The escalation algorithm was also simplified based on the updated CDI treatment guidelines from the Infectious Diseases Society of America. The revised algorithm and escalation process were implemented across FH acute care sites in July 2018. At the same time, the FH Integrated Analytics (IA) team began development of an automated process to replace the manual IPC practitioner assessment.
Results: An automated daily report, validated and optimized by the project team, was implemented in November 2018. The automated report flags patients with toxin-positive *C. difficile* tests from the previous 24 hours with guideline-discordant antibiotic treatments and sends the report to ASP pharmacists for review. The report algorithm incorporates patients' laboratory and medication data from the FH electronic medical records system.
Lessons Learned: The automated report eliminates the need for IPC practitioners to manually review patients' antibiotic therapy, leading to more timely interventions where indicated. However, occasional "false positives" are escalated as there is a lag in medication orders being reflected in the electronic medical records system. In addition, the automated report requires resources for ongoing optimization of the business rules. The manual review by IPC practitioners was faster to implement than the development and validation of the automated report. However, the manual report required more effort to keep stakeholders informed and engaged. This project highlights the value of interdepartmental collaboration for improving patient safety. It also demonstrates the importance of a pilot to evaluate the effectiveness of a project and make necessary modifications before final implementation.

POSTER BOARD 59

UNE APPROCHE MULTIDISCIPLINAIRE POUR RÉDUIRE L'UTILISATION D'ANTIBIOTIQUE POUR DES INFECTIONS URINAIRES PRÉSUMÉES CHEZ UNE POPULATION HÉBERGÉE

France Nadon
McGill University Health Centre

Enjeu : Les infections urinaires (IU) sont fréquemment traitées chez les personnes âgées vivant en centre d'hébergement pourtant, la colonisation asymptomatique (ASB) touche 25-50 % des femmes et 15-40 % des hommes. Le principal facteur de risque pour développer une IU est la pose de sonde urinaire. Le diagnostic IU repose principalement sur la culture urinaire et les symptômes cliniquescependant, chez la personne âgée les symptômes peuvent être atypiques. Or, l'enjeu est d'éviter les antibiothérapies abusives en l'absence de symptômes afin de prévenir la résistance antimicrobienne et le C-*difficile*.
Projet : Population : CHSLD Camille Lefebvre comptant 134 résidents dont 20 résidents ventilo-assistés.

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Objectifs : 1) Réduire le nombre de cultures des ASB. 2) Réduire l'usage des sondes urinaires. 3) Réduire l'usage d'antibiotiques des ASB. 4) Réduire l'incidence des IU. De 2015 à 2018, révision systématiquement de toutes les cultures d'urine positives pour déterminer : raison de la culture, présence de symptômes cliniques et sonde, traitement d'antibiothérapie avec justification ou non. De plus, des séances éducatives sur la prévention des IU selon les meilleures pratiques ont été offertes au personnel soignant et médical.
Resultats : La surveillance des IU a dénombré 440 cultures positives sur 3 ans pour:*La proportion d'ABS traitées a diminué de 38 % en 2017 et de 43 % en 2018. Parmi les IU, plus de 40 % étaient associés à l'utilisation du cathéter urinaire. Le recours aux sondes urinaires a été revu et a considérablement diminué passant de 1,72 à 0,11 soit plus de 90%.
Leçons à tirer : La surveillance et l'analyse des données ont permis de fixer des objectifs d'amélioration de qualité des soins par la mise en place d'interventions ciblées afin de réduire les cultures d'urines pour les ASB, l'utilisation des sondes urinaires, le traitement des ASB et l'incidence des IU de notre population hébergée.

POSTER BOARD 62

WINNER OF A 2019 IFIC SCHOLARSHIP

CAUSES AND CONSEQUENCES OF THE MAIN MISTAKES IN INFECTION PREVENTION AND CONTROL IN TUBERCULOSIS-SPECIFIC HOSPITALS

Andrii Aleksandrin,[1] Ekateryna Soiak,[1] Yevgenii Grechukha,[1] Arkadii Vodianyk,[1] Mariya Dolynska[2]
[1]NGO "Infection control in Ukraine," Kyiv, Ukraine
[2]Bogomolets National Medical University, Kyiv, Ukraine
Introduction: Ukraine is facing tuberculosis (TB) and multidrug-resisting TB burdens that are among highest in the world; one of the main reasons is the lack of components of infection prevention and control programs (IPC).
Interventions: During the last two years was the assessment of approximately 40 TB-specific hospitals for the main component of infection control: administrative, environmental\engineering, personal protective equipment(PPE) and overall IPC outcome.
Results: In Ukraine, national plan for infection control (general and TB-specific) is absent and, in fact, there is only one existing policy on the national level – outdated standard of infection control (that was adopted 8 years ago and includes issues that are not related to IPC) which significantly limits all activities. Administrative component includes facility`s annual IPC plan, but unfortunately quite often there is neither quantitative or qualitative indicators (every point of facility`s IPC plan is performed and verified formally – "done"\"not done" and signature); at the same time loads of unnecessary documentation exist as a tradition (e.g. journal of UV-lamps working hours). Appropriate ventilation is available in less than 5% of medical facilities around the country. In most cases, there is insufficient number of PPE (80% of cost is spent for disinfectants). There is a lack of well trained and motivated staff.
Conclusion: The lack of updated policy, good quality administrative actions, equipment, adequate distribution of costs for PPE and monitoring at healthcare facilities in Ukraine puts healthcare workers and patients at serious risk and threatens the sustainability of TB control efforts.

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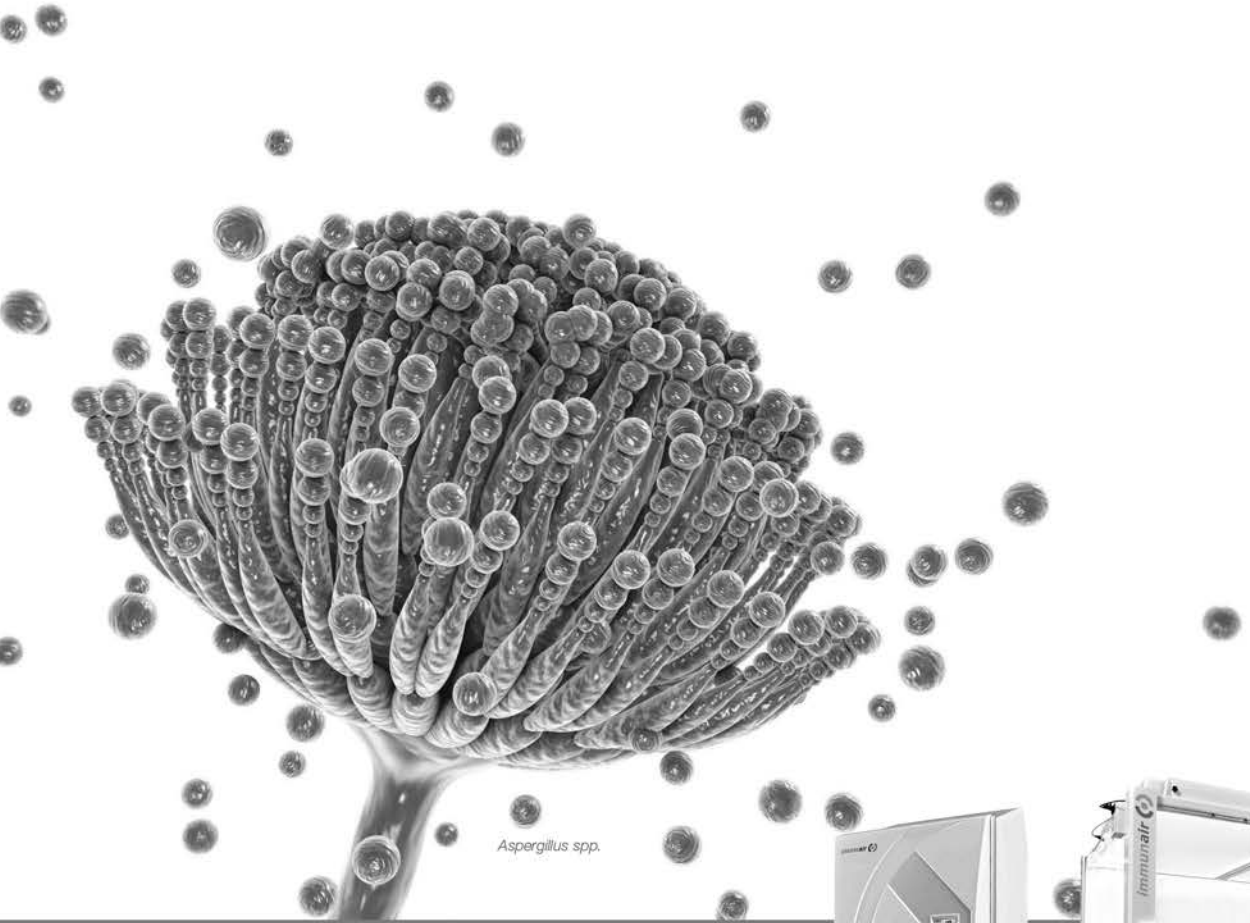

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