IPAC Canada National Conference
Banff, Alberta
May 27 – 30, 2018

2018 IPAC Canada National Conference

Oral And Poster Presentations

Monday, May 28 and Tuesday, May 29, 2018

ipac
Infection Prevention and Control Canada

pci
Prévention et contrôle des infections Canada

PCS
PROCESS CLEANING SOLUTIONS
Bringing Science to the Art of Cleaning®

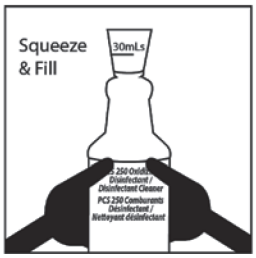
PCS MICROFIBRE NEXT GENERATION OF CLEANING, DISINFECTING AND SANITIZING

CLEANING TO A SCIENTIFICALLY VALIDATED STANDARD.

PCS validates its recommended environmental surface decontamination processes with CREM Co Labs newly developed third tier of the Quantitative Carrier Test Method (QCT-3) to assess decontamination of high-touch environmental surfaces (HITES) with the incorporation of field-relevant wiping.

MAXIMIZE PHYSICAL REMOVAL BY WIPING AND USE THE MINIMUM AMOUNT OF CHEMICAL TO PROTECT PUBLIC HEALTH AND THE ENVIRONMENT

PCS MICROFIBRE QCT-3 VALIDATED WIPING PROCESS.



PCS Microfibre Cloth
14" x 14" (35.56 cm x 35.56 cm)
- Moisten cloth with 60 mL of selected PCS cleaner, sanitizer or disinfecting cleaner.

PCS Microfibre Cloth
7" x 14" (17.78 cm x 35.56 cm)
- Moisten cloth with 30 mL of selected PCS cleaner, sanitizer or disinfecting cleaner.

Wipe surface with folded cloth with at least two pounds pressure on cloth; wipe surface twice, then flip cloth to clean side and rewipe surface with a single wipe.

Moisten a second piece of cloth and rewipe surface; allow surface to air-dry.

VALIDATED CLEANING PROCESS

Assessment of the Combined Activity of Wiping and Disinfection for \Decontaminating Hard, Non-Porous Environmental Surfaces: Testing with Healthcare-Associated Pathogens.

TEST ORGANISM

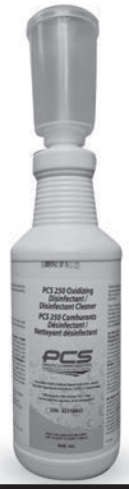
Clostridium Difficile spores (ATCC 43598), Staphylococcus aureus (ATCC 6538) and Salmonella Enterica Serotype Choleraesuis (ATCC 10708) Murine Norovirus (Strain S99).

TEST METHOD

Quantitative carrier test tier 3 or QCT-3.
Note reductions in the pathogen numbers remaining on surfaces after wiping to below the internationally recognized number required to transfer an infectious dose are considered a pass.

TEST SAMPLE IDENTITY

1. Saline T - Detergent
2. PCS 7000
3. PCS Neutral PH 250
4. Hydrogen Peroxide 1.4% Pre-moistened Wipe
5. Alcohol and Quaternary Ammonium Disinfectant Wipe
6. HPW .5 % Hydrogen Peroxide Wipe



Vegetative Bacteria (S. aureus and S. choleraesuis)
Average CFU per square centimetre

Product	Control CFU/cm2	After Wiping CFU/cm2	Transfer CFU/cm2	Percentage Transfer	Percent Reduction
1. Saline T - Detergent	14,650	31.1	0	0	99.79
2. PCS 7000	5,715	0	0	0	100
3. PCS 250	14,000	0	0	0	100
4. HP 1.4% Wipe	14,000	1.27	0	0	99.991
5. Q/A Wipe	34,400	2.54	0	0	99.993

C. difficile spores
Average CFU per square centimetre

Product	Control CFU/cm2	After Wiping CFU/cm2	Transfer CFU/cm2	Percentage Transfer	Percent Reduction
1. Saline T - Detergent	15,150	3565	296	1.95	76.47
2. PCS 7000	9745	2.30	0.31	0.0032	99.976
3. PCS 250	741	3.44	2.33	.018	99.5
4. HP 1.4% Wipe	1150	14.3	15.3	1.33	98.7539
5. Q/A Wipe	664	263	161	24.25	60.39

Murine Norovirus
Average PFU per square centimetre

Product	Control PFU/cm2	After Wiping PFU/cm2	Transfer PFU/cm2	Percentage Transfer	Percent Reduction
1. Saline T - Detergent	4480.48	3.40	7.67	0.17	99.92
1. Saline T - Detergent	4480.48	3.40	8.49	0.19	99.92
3. PCS 250	3894.07	3.82	9.34	0.24	99.90
3. PCS 250	5529.96	0.42	7.64	0.14	99.99
6. HPW	5529.96	0.85	8.49	0.15	99.98

With both Hydrogen Peroxide and Quat alcohol wipes surfaces where cleaned with one wipe then wiped a second time with a fresh wipe.

Request a copy of QCT-3 CREM Co study

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Toll Free: 877.745.7277

CERTIFIED ENVIRODESIC™

All presentations will be held at the Banff Centre for Arts & Creativity (rooms to be announced). Unless specifically named as a co-author, no reviewers were directly involved in the research or publications cited in any of the abstracts. Reviewers recuse themselves if they have co-authored an abstract.

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, May 30.
2. The three (3) top oral presentations as chosen by attendees will be repeated on Wednesday, May 30 (8:45 a.m. – 9:30 a.m.). One oral presentation will be announced as Best Oral Presentation and receive an award of $500 sponsored by 3M Canada. Award to be announced at the Closing Ceremonies, May 30.
3. Best Poster Presentation as chosen by attendees will receive an award of $500 sponsored by 3M Canada. Award to be announced at the Closing Ceremonies, May 30.

CONFERENCE ATTENDEES WILL VOTE FOR BEST ORAL PRESENTATION AND BEST POSTER PRESENTATION THROUGH THE CONFERENCE APP. DEADLINE FOR SUBMISSION: 4:00 p.m., Tuesday, May 29.

ORAL PRESENTATIONS – MONDAY, MAY 28, 2018
1:30 PM – 3:00 p.m./3:15 p.m.
*Scheduled Presenter

CONCURRENT SESSION 1
PATHWAYS TO THE TOP (QUALITY IMPROVEMENT)

ROOM TBA

1:30 – 1:43 p.m.

IMPROVING ADHERENCE TO PPE FOR ADDITIONAL PRECAUTIONS USING A MULTI-MODAL INTERVENTION

Melisa Avaness, Natasha Salt, Victoria Williams, Jinnah Fatema, Jerome Leis; Sunnybrook Health Sciences Centre, Toronto*

Background: Use of Additional Precautions (AP) by health care workers (HCW) to prevent transmission of infections remains suboptimal in many healthcare settings. The AP sign is the main mode of communication to HCWs, family and visitors yet there is a paucity of literature regarding the usability of signs to improve adherence to AP.
Methods: At our multi-campus, academic health sciences centre, we redeveloped our AP signs using principles of human factors engineering. Specific changes included pre-selected personal protective equipment (PPE) based on type of AP, standardized sign placement to improve visibility, and introduction of new PPE outside of patient rooms. The revised signage and placement was piloted on two
Results: HCW adherence to donning appropriate PPE at baseline was 55% (72/131; 95% CI, 0.46-0.63) and improved to 82% (36/44; 95% CI, 0.68-0.90) following intervention ($p<0.05$). The improvement appeared to be related to improved usability as evidenced by better visibility from doorway (70% vs. 91%), and appropriate PPE being checked off (80% vs. 100%) for the type of AP.
Conclusion: Improving usability of the AP led to a rapid improvement in adherence of HCWs. Input from staff during usability testing was crucial to the iterative improvements in design and eventual successful implementation.

1:48 – 2:01 p.m.

SIRI "AM I SICK"? SMART ELECTRONIC SURVEILLANCE SYSTEMS TO PREVENT OUTBREAKS IN HEALTHCARE SETTINGS

Natasha Salt, Jerome Leis, Carla Corpus, Lorraine Maze dit Mieusement, Wendy Morgan, Imelda Quizon; Sunnybrook Health Sciences Centre, Toronto*

Issue: Hospital healthy workplace policies require that staff report illnesses to Occupational Health and Safety (OH&S) and stay home when potentially infectious. Sunnybrook Health Sciences Centre (SHSC) is composed of 3 campuses with over 8000 staff where in-person reporting to OHS is not always feasible. As such, the use of an electronic surveillance system (eNurse) supports this function. As part of a multimodal strategy to preventing healthcare-associated outbreaks, we developed a new electronic surveillance system allowing staff to report infectious symptoms while receiving real-time guidance regarding whether or not they should stay home or return to work after infectious symptoms.
Project: A collaborative project was undertaken between OHS, Infection Prevention and Control (IP&C), Human Resources and an external software designer to revise the existing electronic surveillance system which provided minimal guidance for staff reporting symptoms. Clear communication was provided to staff regarding exemption from Attendance Management System (AMS) for any potentially infectious illness, which was a perceived barrier to staying home.
Results: Within 3 months, eNurse was redesigned and successfully launched by December 2017. Content expertise and overall vision for the new system was provided by IP&C and OH&S. The software company was able to translate our needs into a new program with intuitive capabilities that could provide staff with real-time feedback regarding exclusion criteria consistent with our healthy workplace policy. The return-to-work component is also able to provide re-assessment of symptoms and a print-out for managers when an employee has been cleared to work. The tool was piloted by staff and managers and further refinements made to improve usability. Education and awareness of the new system was rolled-out at one campus in January 2018 as part of a larger outbreak prevention strategy.
Lessons Learned: Understanding and engaging appropriate stakeholders including OHS, IP&C, HR, unit managers and staff, was crucial to revamping the electronic system for reporting potential infectious symptoms. External partnerships need to be leveraged to deal with fiscal constraints of hospital budgets.
While initial qualitative and quantitative feedback suggests an improvement over the previous reporting system, longer-term evaluation is needed to assess impact on infectious outbreaks and staff absenteeism.

2:06 – 2:19 p.m.

ADVENTURES IN HEMODIALYSIS: FROM DRAIN DISASTER AND REDESIGN TO A CLI SPIKE AND RESPONSE

Christina Murphy, Andrew Park; Peterborough Regional Health Centre*

Issue: In 2016, a regional hemodialysis program in a large community hospital temporarily relocated to unconventional and cramped space while addressing drains and infrastructure issues in their permanent program space. Following the 8-month relocation, the program moved back into their redesigned state-of-the-art dialysis space. The hospital's IPAC program, frontline hemodialysis staff and several other stakeholders were actively engaged in decision-making during the redesign process. Three months after relocating to the redesigned space, the program experienced a spike in nosocomial central line-associated bloodstream infections. The epidemiological analysis did not identify transmission between patients but did highlight potentially widespread gaps in technique in catheter access leading to contamination of the site and/or lines of dialysis patients. Further investigation found that the spike in infections was in part, an unexpected and unintended consequence of the challenges of working in new and improved space.
Project: A multidisciplinary improvement team came together in August 2017 to better understand and address root causes of the spike in central line infections. The team identified several factors that disrupted workflow in the new space, contributing to inadvertent lapses in line access technique. These factors included changes in staffing ratios between the temporary and new spaces, challenges in managing patient expectations regarding time required for important tasks, the increase in acute dialysis starts and treatments, a more open layout, and staff turnover. Based on a deeper understanding of the root cause issues and gaps, the team developed an improvement plan with a series of initiatives under six themes:

- Patient and Staff Engagement and Communication;
- Clinical Practice and Education;
- Patient Education;
- Staffing/Workflow;
- Supplies;
- IPAC support.

ORAL PRESENTATIONS

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Results: Driven by a highly engaged leadership and improvement team, several process changes and tools have been developed to optimize central line maintenance and prevent infections in the dialysis program, including:

- Central Line Infection Prevention discussed at daily huddles and posting of days since last CLI for all staff to see daily;
- Increased visibility of leadership observing and supporting IPAC practices in the dialysis pods;
- New Central Line Accessing and Dressing Change Competency Video and Learning Module
- "Did You Know?" Patient Education Strategy on the importance of allowing time to scrub the hub and dry the site, and tips on keeping their site clean;
- New staffing schedule to provide more support during peak patient treatment times;
- Trials of new CVC covers, CHG impregnated dressings and caps;
- IPAC alerts for new CLIs, and creation of Regional Renal Program ICP role to review all CLIs.

Since initiating the improvement team, the number of CLIs has been reduced by 50%. As of February 2018, it has been more than 60 days since the last CLI.

Lesson Learned: Don't assume that returning to a newer, more spacious environment will itself prevent IPAC issues. Staff must have continuous support from leaders and IPAC to adapt and align their workflow and processes to the new environment.

2:24 – 2:37 p.m.

ENHANCING INFECTION PREVENTION AND CONTROL (IPAC) THROUGH PLAN-DO-STUDY-ACT (PDSA) IN THE EMERGENCY DEPARTMENT (ED)

Sheila Le-Abuyen, Debra Davies, Camille Lemieux, AnnMarie Tyson; University Health Network, Toronto*

Issue: The Emergency Department (ED) plays a critical role in keeping patients and staff safe as they are the first line of defense in identifying and promptly isolating patients with potential communicable diseases. In today's global village, ED staff must also be vigilant against novel imports of emerging infectious diseases (EIDs). EIDs are an evolving field and thus, frontline knowledge and organizational protocols must constantly be updated and disseminated for timely implementation. A nimble and steadfast alliance between the ED and IPAC is an excellent approach to staying one step ahead of EIDs and safeguarding patient and staff safety.

Project: One of the responsibilities of IPAC Practitioners is to assess the ongoing learning needs of staff and address knowledge and practice gaps using a multimodal adult education approach. Because the ED is a fast-paced environment with an extensive staff roster and exposure to patients incubating EIDs from all corners of the world, the need for IPAC core competencies is high yet dedicated time for formalized IPAC education is scarce. As such, a creative and responsive education strategy is employed to maximize reach and impact. Rapid PDSA cycles inform and tweak IPAC protocols to engineer against human error and enhance process efficiency. This ED-IPAC dynamic has proven to be very successful and well-received as demonstrated by feedback from ED staff and management; and progressive application of new IPAC protocols.

Results: The approach includes:

- Staff huddles covering hot topics such as the Middle East Respiratory Syndrome during periods of high activity.
- Distribution of 51 electronic memos, whether refreshing education or offering feedback, and with topics ranging from the standard IPAC issues to protocols for managing EIDs.
- Maintenance of an IPAC binder for handy staff reference; containing all electronic memos, user-friendly visual tutorials; and IPAC cheat sheets.
- Revisions to IPAC-related flags in the electronic patient database such as provision of clearer direction for isolating patients with a known history of carbapenemase-producing organisms.
- Use of electronic Whiteboard to communicate real-time isolation status for admitted patients.

Lessons learned:

- IPAC education strategies must cater to knowledge and practice gaps while considering time and staffing constraints in order to maintain relevance, influence practice change and achieve effectiveness.
- Rapidly employed PDSA cycles are a valuable tool for testing potential solutions and streamlining process efficiency.
- EIDs such as the Middle East Respiratory Syndrome, Avian Influenza and Ebola Virus Disease are a rapidly evolving global public health challenge and in order to systematically tackle this, it must begin at the level of the ED microcosm.

2:42 – 2:55 p.m.

A NOVEL APPLICATION OF INCIDENT MANAGEMENT SYSTEMS FOR SEASONAL INFLUENZA OUTBREAKS IN AN ACUTE CARE NETWORK

Kelsey E. Houston[1], Julia Robson[2], AnnMarie Tyson[1], Susy Hota, Lucia Cheng[2]*
1. University Health Network, Toronto; 2. University of Toronto

Issue: In a multi-site acute care network, influenza season can strain the resources of the Infection Prevention and Control (IPAC) department and the institution as a whole. This strain is especially acute when multiple outbreaks occur simultaneously at different sites, requiring response processes to be scaled-up. Many different departments play a role in an effective outbreak response; clear communication and chains of command are therefore required. The objective of this quality improvement initiative was to improve communications and facilitate an efficient outbreak response.

Project: From May to August 2017, two lead developers adapted standard Incident Management System (IMS) frameworks and developed an IPAC Toolkit to facilitate a coordinated outbreak response during Influenza season. Development of the Toolkit and adapted IMS framework involved three steps: interviewing four experienced Infection Control Practitioners (ICPs) and two members of the IPAC leadership team, consulting with the Manager of Emergency Preparedness regarding the tenets of IMS systems, and liaising with other stakeholders, including Occupational Health, Pharmacy, Legal, Patient Relations, and Public Affairs to ensure that the strategy was consistent with existing hospital policies and would not create redundancy or contradiction. Developers received feedback in October 2017 on the initial proposal during a meeting with site managers, directors, and the Vice-President.

Results: A multifaceted seasonal influenza outbreak management plan was developed, including an IMS framework for use throughout the network, and an internal IPAC Outbreak Toolkit. The IMS framework includes: a Chain of Command that clearly outlines reporting structures and identifies involved personnel, a formal four-step Activation Algorithm, an After-Hours Protocol, internal and external Communications
Cycles, and pre-populated Job Action Sheets that clearly outline each responder's immediate, intermediate, and recovery responsibilities. The internal Toolkit includes templates for vital communications such as outbreak declaration emails, and prepopulated email contact lists of desired recipients. The Toolkit is fully integrated with the IMS framework. While the IMS framework has not yet been tested in a real-life setting, the toolkit has been successfully used to guide management of smaller scale (single-unit) influenza outbreaks.

Lessons Learned: Whenever possible, experts in Infection Control, Emergency Management and Outbreak Management should be consulted early in the development process to ensure the framework is consistent with best practices and does not contain internal inconsistencies. The use of checklists for pre-declaration, active outbreak, and termination duties enables standardization of outbreak responses. Opportunities for program evaluation should be incorporated during development and implementation to allow for future improvements. To maximize acceptance of novel processes, interdepartmental dynamics, behaviour change theory, and current operating procedures must be taken into account. Following the first use of this novel framework, stakeholder feedback and areas for improvement will be identified and implemented.

CONCURRENT SESSION 2
LEARNING THE ROPES (EDUCATION)

ROOM TBA

1:30 – 1:43 p.m.

NAVIGATING THE COMPLEXITIES OF CLOSTRIDIUM DIFFICILE INFECTION SURVEILLANCE AND OUTBREAK MANAGEMENT WITH THE USE OF E-LEARNING

Vicky Willet, Camille Achonu, Esther Chan, Laurie Rodnick, Anne Augustin; Public Health Ontario*

Issue: Since the introduction of patient safety indicator reporting in Ontario, there has been increased attention on the reporting of Clostridium difficile infection (CDI) cases and outbreaks. Best practice guidelines and documents provide guidance to healthcare facilities on CDI surveillance and outbreak management. A review of frequently asked questions received by Infection Prevention and Control (IPAC) staff within Public Health Ontario (PHO) identified common areas of misinterpretation and confusion among IPAC professionals (ICPs) relating to CDI case definition and attribution, and, outbreak declaration and management.

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Existing resources and "Frequently asked Question" formats did not adequately address the complexities to interpreting and adopting best practices.
Project: Current literature and adult learning principles suggest adults learn best when they perceive their learning is related to their daily practice. The use of scenario-based e-Learning accelerates expertise, improves knowledge transfer, and assists learners to think critically to solve real problems. PHO has incorporated these concepts into scenarios that address key knowledge and performance gaps. The scenarios mirror real life situations, provide links to best practice resources and guidance, and challenge users to apply their knowledge to the situation as they work through the problems and examine the background information, analyze the data and consider appropriate follow-up actions.
Results: Two case scenarios are now available on the PHO website with additional scenarios under development. Pilot testing and feedback surveys of the first two scenarios were conducted amongst ten hospitals and three public health units' staff across Ontario. The scenarios have also been used as teaching aids at workshops targeting ICPs. Overall, participants found the case scenarios effective in demonstrating how to apply CDI case definition and attribution. The interactive format facilitated knowledge uptake and retention, and the scenarios accurately captured their work setting.
Lessons Learned: The primary audience for the scenarios is ICPs in hospitals, though ICPs in other settings may benefit as similar IPAC principles apply when dealing with CDI. Feedback from pilot testing and workshop evaluations indicate that the case scenarios provide a valuable learning experience. Challenges associated with developing this type of product include increased development time and the complexities inherent with the use of technology. Numerous reviews, fine-tuning, piloting and testing help to ensure the quality of the resources. Preliminary feedback from initial focus groups and pilot testing is promising and further evaluation is planned for future case scenarios.

1:48 – 2:01 PM

IPAC ESSENTIALS: REMODELING NOVICE ICP EDUCATION BY FOCUSING ON KEY STRATEGIC RESOURCES

Catherine Richard, Jill Richmond, Melissa Miller, Darlene Rojek;*
Public Health Ontario

Issue: An effective IPAC program is best achieved when the responsible Infection Control Professional (ICP) has an understanding of their knowledge gap and takes action to address their learning needs. Many resources exist that can assist the novice ICP in preparing for the IPAC role in their individual setting, but for many reasons, identifying them can be a challenge. To address this need, an approach was developed to orient the novice ICP by Public Health Ontario's IPAC Regional Support teams in a consistent way provincially.
Project: A working group was created with the purpose of executing a consistent approach to capacity building for the target audience: those in an ICP role for less than two years and who had no formal IPAC education. The goals of the working group included examining evidence-informed approaches to supporting and building IPAC capacity in novice ICPs and creating a common strategy to be used across the province by session facilitators. To identify topic areas of interest, a simple needs assessment was completed by reviewing previously developed resources and consulting Novice ICPs in the field. A two-stage evaluation plan was established to support this program with the first evaluation to be completed immediately following delivery of the first session to measure if the topic objectives were met and seek feedback on the effectiveness of the session delivery. In six months, the second phase of the evaluation will assess practice change as a result of participation.
Results: A model "workshop" approach entitled "IPAC Essentials: An Introduction to Key Resources for your IPAC Program" was created. The approach involves orienting participants to resources applicable to six identified topic areas through the use of facilitated discussion, application of principles, setting-specific case scenarios, and short didactic presentations. The approach does not focus significantly on the teaching of IPAC content as participants are expected to complete online IPAC Core Competency modules as a prerequisite and use the sessions as a way to identify future learning goals. Three delivery models were developed: in-person, virtual or a blend of the two formats. These options will be organized in regions where a need has been identified and areas for improvement in the approach will be evaluated by facilitators after completion of three sessions provincially.
Lessons Learned: When redesigning an approach to addressing a knowledge gap, it is critical to begin with a stakeholder needs assessment to ensure it is relevant to the target audience. To support novice ICPs over a vast geography, it is important to design a consistent, unique approach which enables participation from all those in need and encourages self-directed learning, but facilitates the novice's success.

2:06 – 2:19 p.m.

EMPOWERING ENVIRONMENTAL SERVICES WORKERS TO HELP CONTROL THE SPREAD OF INFECTION IN FIRST NATIONS HEALTH FACILITIES

Sabrina Chung, Patricia Huntly, Nany Grimard-Ouellette, Sabrina Chung, Genevieve Monnin, Fanie Lalonde, Erin Henry;*
Department of Indigenous Services Canada

Issue: The most frequent adverse event in healthcare delivery, healthcare-associated infection (HAI) affects patients and staff worldwide, including those in First Nations (FN) communities. It leads to significant mortality and financial burden for health systems. The lack of consistent, yet customizable, training, based on infection prevention and control (IPC) principles and practices, for Environmental Services (ES) workers in FN health facilities poses a constant challenge in maintaining a clean environment and equipment, and contributes to the persistence of HAIs. In 2011-2012, Canada's First Nations and Inuit Health Branch (FNIHB) initiated, then pilot-tested in two FN communities, a video-based environmental cleaning training program for group training and self-guided learning. This informed the following project.
Project: A working group (WG) with representation from FNIHB National Office (project lead), FNIHB Regional Offices, the Assembly of First Nations and other stakeholders was established in 2015 to steer the development of a revised training tool: the *Environmental Cleaning Training Guide* (*ECTG*). This WG provided input on key aspects of the *ECTG*, including the title and content. A contractor added graphics/animation, narration, closed captioning for an educational resource that would be captivating plus accessible to those with hearing and/or visual impairments. The illustrative and interactive tool consists of five modules, divided into several lessons, that provide the theory behind, and practical techniques for, safe and effective cleaning and disinfecting of FN health facilities. Printable resources (e.g., glossary, step-by-step instructions, suggested training activities) accompany it. Designed for managers/supervisors to use when training ES workers on cleaning FN health facilities in which they work, it is customizable to learner needs and training plans.
Results: The computer-based *ECTG* was launched in 2016. In accordance with the dissemination strategy, the bilingual tool and supporting resources were distributed via memory sticks, and used by FNIHB Regional Offices and partner authorities to deliver webinars and/or on-site training to ES workers from FN health facilities. Upon request, some training sessions were facilitated by FNIHB National Office, who also promoted the *ECTG* by presenting it to internal FNIHB stakeholder groups.
Lesson Learned: While developing the tool, the WG realized that the initial intent of the *ECTG* as a self-paced independent learning product was unrealistic; thus, it re-envisaged the tool as a guided training resource. Ultimately, feedback from both learners and trainers was extremely positive, especially regarding the *ECTG*'s user-friendliness and practicality. However, a need for additional supporting resources was identified. This led to the creation of a lesson guide containing optional activities for select lessons, as well as six video vignettes depicting specific procedures.

2:24 – 2:37 p.m.

HOLD ME CLOSER, ROUTINE PRACTICES

Sibina Fisher, Melissa Kastelic, Elisa Ahn, A. Uma Chandran;*
Alberta Health Services

Issue: Due to ever increasing demands on frontline healthcare workers (HCW), achieving staff engagement in infection prevention and control (IPC) best practice can be challenging. The IPC team is seen as "policing" rather than as part of the health care team. Conventional messaging about routine practices can lead to desensitization. The Hand Hygiene Rebranding Initiative, led by Glenrose Rehabilitation Hospital (GRH) IPC in Edmonton, Alberta, found that staff required regular engagement in educational events as well as site-specific branding in order to maintain interest in hand hygiene practices. When several months passed between events, staff engagement waned. To foster sustained engagement in IPC-related initiatives, an innovative approach was needed.
Project: GRH IPC identified Routine Practices (RP) as an area needing focus for all healthcare workers (HCWs). From 2014 to 2017, HCW engagement and education was provided through unique activities and site-specific written materials. Activities included interactive roving carts such as "The Crap Cart"

which used curated chocolate samples to review use of the Bristol Stool Chart and site diarrhea algorithm. For the "Name that Tune" roving cart, IPC created RP-themed parodies of popular and Disney songs. At Halloween, IPC dressed as "Germbusters" to reinforce the hospital-wide fight against hospital-acquired organisms. Unit challenges included the "PPE Throw Down" where staff went through a donning and doffing obstacle course, and various contests for Stop! Clean Your Hands day, including an alcohol-based hand rub dispenser display contest. "ICC!" (Infection Control Chronicles) has been distributed quarterly since 2014, taking a playful approach to general IPC reminders and seasonal information. More recently, in 2017, a seven-part monthly series of one-page resource documents outlining each aspect of RP was created and branded as the "GRH Everyday Way" to harness the pride and identity of GRH staff. The approaches for general information presentations were also reviewed, and the use of themes (e.g. Game of Thrones) and Prezi were incorporated to counteract PowerPoint fatigue.
Results: The engagement and education of HCWs through unique activities and site-specific written materials led to improved awareness of RP and staff engagement with the IPC team. An increase in calls and emails with follow-up questions about RP was noted. The GRH Senior Operating Officer supported these initiative, tweeted about it, and encouraged the use of hashtags in the documents.
Lesson Learned: Education and engagement of HCWs is most effective when tailored to the site, provided in multiple formats, and done on a regular basis. Creating engaging activities can be completed with little to no budget. By providing a variety of methods and a unique approach, the relationship between IPC and frontline HCWs is strengthened, and staff are more likely to engage with IPC.

2:42 – 2:55 p.m.

USING ROLE PLAY TO SUPPORT INFECTION PREVENTION AND CONTROL PROFESSIONALS (ICPS) IN NORTHERN ONTARIO TO APPLY BEST PRACTICES IN ADDRESSING ANTIMICROBIAL RESISTANT ORGANISMS (AROS)

Vicky Willet*, Amanda Brizard, Esther Chan, Lori Schatzler, Ryan MacDougall, Lauriedawn Boyer; Public Health Ontario
Background: Public Health Ontario's (PHO) Infection Prevention and Control (IPAC) Regional Support Team members across the province field scientific and technical inquiries from ICPs or delegates from all healthcare sectors. The IPAC North Team ("The Team") has used presentations and case studies in the past to address stakeholder learning needs about best practices in the control and management of antimicrobial resistant organisms (AROs). In spite of previous education offerings, the team noted a trend of increased inquiries from stakeholders regarding the application of ARO best practices. The Team opted to take a different approach in providing an educational offering designed to engage attendees in building capacity and developing problem solving skills related to the challenges of managing AROs.
Methods: The use of roleplay can allow participants to share experiences in a safe and supportive manner. The Team developed, conducted, and evaluated the impact of utilizing experiential learning methods (roleplay simulation). Objectives were developed and detailed scenarios and scripts for roleplay addressing complex real-life situations were created. Participants from acute care, long-term care, and Public Health Units functioned as the interactors and improvised their actions and reactions as part of the simulated scenarios. Discussions were facilitated to explore the experiences of the participants, encourage reflection on key messages and reinforce best practices. A summary document was provided after the event to participants.
Results: Thirty-three attendees participated in and evaluated one of two sessions in the north during the fall of 2017. The vast majority of participants rated the session highly on a five-point likert scale, indicating that most found the roleplay workshop on AROs
- provided opportunities for learning and clarification of IPAC practices
- increased their knowledge and skills about ARO management
- provided an opportunity to actively participate in learning through realistic scenarios and
- reinforced the concepts learned through debriefing discussions.

Lessons Learned: While a number of participants indicated that they were initially wary of role play, the majority of written and verbal comments post simulation, reflected that a positive experience and valuable learning had occurred. Comments such as "this sounded scary at first, but was easy in the end", "this increased empathy for other roles in the hospital" and "it's clear practices are not consistent" further support the value of this alternative approach. Detailed planning and strong facilitation skills are essential to ensuring participants are engaged and have a meaningful learning experience. Further studies are warranted to determine if this approach will result in sustained application of ARO best practices.

3:00 – 3:13 p.m.

THE AWARD FOR BEST COLLABORATION IN A MOTION PICTURE GOES TO YOUR INFECTION PREVENTION AND CONTROL (IPC) TEAM: MOVIE MAKING FOR INFECTION CONTROL PROFESSIONALS

Melody Cordoviz, Ian Albert, Mark Joffe, Sharla Manca, Amber-Leah Edmiston, Winnie Winter, Samantha Woolsey, Sharon Pelletier, A. Uma Chandran, William Banh; Alberta Health Services*
Issue: Movies are an engaging and fun way to educate frontline staff. Today's society is exposed to different types of media. People can be influenced by television, the Internet, and movies. As a result, using traditional lectures to educate staff is not as effective as using multi-media presentations. To compete with these presentations, IPC principles can be incorporated into movies. Utilizing this method will make a lasting impact on staff who are required to undergo training or orientation through educational sessions. IPC movies can make these sessions interesting and appealing. When an IPC team goes through the production process of creating a movie, the focus is on IPC principles. Often when a hired camera crew and production team films an IPC movie, some of the messaging is lost as it is not filmed through the lens of an infection control perspective. It is often seen through the eyes of someone who does not have an understanding of IPC principles.
Project: An IPC team set out to create a movie where the actors, director and producer were amateurs. The movie provided an opportunity for IPC staff to be creative, incorporate IPC principles, and also to have fun during the filming of the movie. Pre-production, story development, casting, scene choices and costume design were planned by the director. Each scene was discussed thoroughly to ensure that IPC principles were accurate and consistent. A nearby university nursing lab was utilized to film the hospital scenes. As required, friends or family members of the actors were included as "Extras".
Results: The finished product resulted in a movie which showcased IPC principles. Feedback from staff who attended training or orientation sessions was positive. Some staff commented that the movie was engaging and memorable. Additionally, copies of the movie were requested by unit managers and Clinical Nurse Educators to use for their own staff education.
Lessons Learned: Any IPC team can create a movie. To complete this endeavour the IPC team will require a story line, a camera, editing software and people who are willing to act in the movie. An IPC movie has the power to reach audiences beyond the typical or regular in-service or teaching session. It makes learning appealing and enjoyable. Delivering training using a movie is also convenient as it can be watched at any time. IPC movies are informational, entertaining and most of all memorable. People easily remember the messaging of the IPC movie as opposed to having someone use the traditional PowerPoint presentation or a handout. Stories can be taken from experiences that the IPC team has encountered in the past. Movies that have a lasting impression are those that entertain using humor or action scenes, while exposing the staff to an unforgettable and meaningful story.

CONCURRENT SESSION 3
KEEP ON TREKKING (HAND HYGIENE, CLEANING AND DISINFECTION)

ROOM TBA

1:30 – 1:43 p.m.

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

SQUEAKY CLEAN: A HAND HYGIENE PROGRAM MAKE-OVER

Sibina Fisher, Melissa Kastelic, Elisa Ahn, A. Uma Chandran; Alberta Health Services*
Background/Objectives: With the launch of Hand Hygiene (HH) initiatives at the Glenrose Rehabilitation Hospital (GRH, Edmonton, Alberta) in 2011, hospital-wide HH compliance showed steady improvement. However, in 2015, HH compliance rates plateaued, and GRH Infection Prevention and Control (IPC) recognized the need to refresh and revitalize HH initiatives. A grant was received from the Hand Hygiene Initiative Fund for the GRH HH Revitalization Project to facilitate HH engagement strategies at the unit and site levels. Lasting cultural change requires

All presentations will be held at the Banff Centre for Arts & Creativity (rooms to be announced). Unless specifically named as a co-author, no reviewers were directly involved in the research or publications cited in any of the abstracts. Reviewers recuse themselves if they have co-authored an abstract.

the identification of local needs and site-based ownership of HH initiatives. This study will help to determine the longevity of locally-motivated change to provide guidance for future initiatives.
Methods: HH engagement strategies included the development of a site-specific HH logo and slogan to promote staff ownership, and to be used as branding for the campaign. These were featured on posters and life-size elevator door decals featuring site-based HH ambassadors (staff, physicians, and patients), and on promotional materials including t-shirts, mugs, temporary tattoos, pins, and lanyards. Hospital-wide events were also used as platforms for the campaign. Quantitative HH compliance reviews were ongoing. Qualitative staff survey data were collected pre-implementation, and post-implementation at three (campaign ongoing) and ten months (four months after the most recent event) using Likert scale-based responses to evaluate HH messaging, engagement, and site-specific material. Respondents were also asked to describe in ten words or less their feelings about HH and HH messaging.
Results: The GRH HH compliance rate was 69.6% (1,451/2,084) pre-implementation. Post-implementation, it was 75.5% (1,241/1,643) at 3 months and 80.9% (2,046/2,528) at 10 months. The post-implementation HH rates were statistically significant ($P<0.05$) compared to baseline and with each other. The highest interest in participating in HH activities occurred at three months. Engagement at 10 months had dropped to below pre-launch levels. However, the logo and promotional material still ranked more relevant than regional or provincial material.
Conclusion: Staff engagement peaked at three months and then returned to pre-implementation levels at 10 months; however, hospital-wide HH compliance rates showed a sustained and continuing improvement post-implementation. This indicates that sustained engagement requires regular promotional activities throughout the year with hospital-specific and relevant promotional materials. Though HH compliance continued to improve post-implementation, there is a concern that continued lack of engagement may eventually have a negative impact. These findings have, and will continue to, inform the structure and implementation of IPC initiatives at GRH.

1:48 – 2:01 p.m.

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

DECENTRALIZED MEDICAL DEVICE REPROCESSING – FRIEND OR FOE?

Candace A Fraser[1], Sharon Wilson[1], Catherine Williamson[1], A.Uma Chandran[2]*
1. Alberta Health Services; 2. Royal Alexandra Hospital and University of Alberta
Issue: In Alberta, Infection Prevention and Control (IPC) has been conducting periodic reviews of Reprocessing of Reusable Critical and Semi-Critical Devices within AHS facilities. This review is multi-disciplinary in nature with a Medical Device Reprocessing (MDR) expert, assigned IPC reviewer, and a site-based IPC liaison. Deficiencies are listed as per criticality with the highest risk being identified as a red risk, requiring a stop in practice or immediate correction. Within the Royal Alexandra Hospital, the majority of reprocessing is conducted in a centralized medical device reprocessing (CMDR) area. However, there are additional satellite reprocessing rooms within clinical program areas. These areas are not under the supervision of the CMDR, but rather are the responsibility of the designated clinic. As a result, clinical service workers preform the reprocessing rather than certified medical device reprocessing technicians (CMDRT). The reviews consistently identified a large disparity with the ability to achieve compliance outside of CMDR umbrella. During the 2017 reviews, risks were identified within these satellite areas, but of significance was a critical failure observed in the manual cleaning process for transesophageal echocardiogram (TEE) probes.
Project: The team implemented immediate corrective measures which included: a stop in practice, recall of all TEE probes for repeat reprocessing, change in cleaning procedure, collaboration with MDR educator for training and support, patient exposure risk assessment, post evaluation of change in practice, and transfer of the service workers to report to CMDR department for continued support, training and accountability.
Results: A risk assessment was conducted and based on the risk calculations, the transmission of bloodborne pathogens was negligible due to reduction of bioburden through the combined reprocessing steps. As a result, no look back or disclosure was required. This case was presented to the provincial risk assessment panel as a learning opportunity, but also to reinforce the importance of reprocessing reviews for safer practice.
Lessons Learned: Working in a collaborative multi-disciplinary team to conduct reviews provides the required expertise to effectively identify issues and facilitate change. When deficiencies are identified and approached as a learning opportunity rather than punitively, ownership and change in practice are better facilitated. Reprocessing areas not under direct supervision of MDRD, have a greater potential for process errors due to limitations in: knowledge, training, support, supervision and accountability. It is essential for patient safety, that reprocessors are supported with ongoing mentorship, education, and supervision from MDR experts. Further, periodic audits of MDR areas have proven beneficial to promote safer practice and compliance with the required standards.

2:06 – 2:19 p.m.

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

HAND HYGIENE REVIEW: BEHAVIOURAL MODIFICATION TO IMPROVE COMPLIANCE AND OVERALL CULTURAL SHIFT

Joyce O. Erebor, MSc, MLT, BSc (MLS), Kathryn Linton MSc, CIC, Blair McFerran BSc, BEH(AD),CPHI(C); Alberta Health Services, Infection Prevention and Control, Rockyview General Hospital, Calgary, Alberta, Canada*
Issue: Hand hygiene compliance (HHC) greater than 80% is an accepted principal that is known to prevent the transmission of microorganisms in the healthcare setting and to decrease health care associated infections. As part of Alberta Health Services (AHS) performance measures and in recognizing the international target, AHS set a provincial goal at 90%. However, despite multimodal promotion, HHC rates either remain below the provincial target or are not sustained. To combat the decline in Hand Hygiene (HH) engagement and sustainability, evidence for the efficacy of novel interventions is urgently needed. The aim of this project was to evaluate the success of behavior modification strategies to improve and sustain HH compliance rates above the target provincial goal of 90%.
Project: AHS has adopted a *4 Moments for HH* strategy from the internationally recognized five moments developed by the World Health Organization 2007. AHS has developed a policy, procedure and robust training program to observe and record the HH practices among health care providers and students as recommended by international bodies. Trends of compliance rates were used to evaluate programs success at a variety of acute and community care sites within Calgary, Alberta. At the end of each HH audit session engagement was initiated at three stakeholder points; immediate verbal and written feedback to reviewed staff; unit specific electronic reports; and summarized report and trends to site administration. All of the sites involved also participate in Peer-to-Peer programs that promote reminders and personal accountability.
Results: The physical presence of HH reviewers on the unit as well as immediate verbal and written feedback has resulted in improved acceptance and integration of HH reviewers in unit-based initiatives. This has also lead to increased occasions for discussion and education among healthcare providers and students regarding all aspects of HH. Units that actively participated in Peer-to-Peer programs were able to not only improve but sustain HHC rates while increasing the knowledge and understand of HH policy among healthcare providers and students. Most notably, Rocky view General Hospital, which utilizes a universal peer-to-peer program, has increased compliance rates of 80%-90% in all units and clinics; and have sustained them for the past fiscal year.
Lessons Learned: Peer-to-peer programs used as in combination with timely reporting and an established data feedback structure, is an effective way to disseminate immediate compliance information which results in improved and sustained HHC rates. As established by the HH literature. Peer-to-peer programs continue to be one of the most efficacious methodologies in behavioral and cultural shift. Utilizing an instantaneous peer-to-peer program that does not require training, is 100% transparent and promotes an amicable learning environment will successfully result in changing behaviors and sustaining target compliance rates.

2:24 – 2:37 p.m.

FREQUENCY OF HAND HYGIENE OPPORTUNITIES IN ACUTE CARE SETTINGS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Laurie J Conway[1], Matthew Muller[2]*
1. Kingston, Frontenac, Lennox & Addington Public Health;
2. St. Michael's Hospital, Toronto
Background/Objectives: Hand hygiene is critical to protect patients from infection. Increasingly, electronic systems are being used to monitor hand hygiene but validating these systems requires an independent understanding of how much hand hygiene is enough. Accurate benchmarks of the number of hand hygiene (HH) opportunities occurring per patient per day in different settings are needed.

We conducted a systematic review and meta-analysis to establish benchmarks for hand hygiene opportunity rates in different acute care settings.
Methods: We searched Medline, Embase, the Cumulative Index of Nursing and Allied Health Literature, and the Cochrane Library to identify peer-reviewed research that examined the frequency of HH opportunities or compliance in acute care populations. Two researchers independently screened titles and abstracts, and full texts for inclusion. Study quality was evaluated based on the potential for sampling and observer bias. The results of studies that were sufficiently homogenous were pooled, and the mean number of HH opportunities per patient day was computed, weighted by the number of hours of observation. Confidence intervals (CIs) were computed using Student's t distribution and alpha of 0.05.
Results: Thirteen studies, comprised of 28 inpatient units were included. With one exception, all studies were conducted in large teaching hospitals. Methods of sampling patients and collecting data differed across studies. Reported rates of HH opportunities for some units may have been distorted by non-random sampling, omitting night shift or weekend observations, preferentially monitoring activity over inactivity, using study-specific definitions of opportunities, or failing to train and validate observers. HH was observed for a total of 3892 hours; 2426 hours were included in meta-analysis. Observations conducted in large teaching hospitals on all shifts using the methodology of the World Health Organization, suggest that the number of HH opportunities in adult intensive care units (ICUs) is 180 per patient day (95% CI 137 - 224), and in adult medical units is 74 per patient day (95% CI 67 - 80). In emergency departments in large teaching hospitals, opportunities occur at a rate of 5.1 per patient hour (95% CI 4.9 - 5.3). Results suggest there are fewer opportunities overnight compared to daytime on the same unit; however, weekend and weekday opportunity counts are similar.
Conclusion: This systematic review establishes benchmark numbers of HH opportunities per patient day. When paired with counts of HH events from electronic dispensers, these benchmarks can provide clinicians with HH performance feedback that is simple to understand and less biased than direct observation and can also be used to validate electronic systems that use a variety of different indirect strategies to estimate hand hygiene opportunities.

2:42 – 2:55 p.m.

AS THE HOSPITAL TURNS: THE CONTINUING SAGA OF ENVIRONMENTAL CLEANING AND DISINFECTION

Meredith C Faires, Terrence Shaw, Corey Weisgerber, Terri Carlson, Kateri Singer; Saskatchewan Health Authority, Regina*
Issue: There is increasing evidence that the environment may play a significant role in the transmission of healthcare-associated pathogens. In 2013, a medical inpatient unit at Regina General Hospital (RGH) experienced an 8-month vancomycin-resistant Enterococcus (VRE) outbreak. During the outbreak, environmental sampling was conducted to identify surfaces contaminated with VRE and results indicated extensive contamination throughout the unit. Following this outbreak, the Environmental Services (EVS) Department re-examined their policies and procedures and embarked on an improvement program to upgrade and enhance their cleaning and disinfection (C&D) protocols.
Project: In 2014, the EVS Department in conjunction with Infection Prevention and Control analyzed the current state of practices, procedures, and products for C&D at RGH and identified gaps for improvement projects. Patient and staff surveys were also conducted to determine EVS performance. In addition, to enhance patient safety, best evidence-based practices were evaluated.
Results: Analysis of the C&D protocols and patient and staff surveys revealed several key areas for improvement including standardizing cleaning procedures, changing cleaning products, incorporating technological tools, increasing accountability of staff and focusing C&D procedures in patient care areas. As a result, between 2015-2017, several improvement projects were implemented including updating work standards (e.g., C&D patient rooms and showers and tubs, communicating with patients during room cleaning and auditing), developing dedicated healthcare provider cleaning locations and schedules, replacing cotton cleaning cloths and quaternary cleaning products with microfiber cloths and an accelerated hydrogen peroxide product, conducting audits (i.e., ultraviolet marking and self and peer audits of cleaning practices) and purchasing a portable hydrogen peroxide disinfection system to be utilized during outbreaks. In 2017, a spring cleaning program was introduced for all inpatient units. This program consisted of a patient room being shut down for 24 hours. During this time, the room was decanted, C&D, repairs were completed by the Facilities Department and the Clinical Engineering Department performed preventative maintenance of equipment.
Lesson Learned: Understanding the current processes and activities of the EVS Department, opportunities for improving C&D practices and patient safety within an acute-care hospital were identified. By engaging and involving patients and staff throughout the improvement process, C&D initiatives were successfully introduced and implemented in patient care areas. Finally, the EVS Department plans to implement strategies for 2018 which includes: updating their orientation manual for new staff, enhancing training methods for staff and supervisors and purchasing wipeable privacy curtains for patient rooms.

CONCURRENT SESSION 4
FROM THE VALLEYS TO THE PEAKS (ANTIBIOCROBIAL STEWARDSHIP, EMERGING PATHOGENS, CAPACITY BUILDING, EMERGENCY DISASTER MANAGEMENT)

ROOM TBA

1:30 – 1:43 p.m.

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

ANTIMICROBIAL STEWARDSHIP INTERVENTIONS IN LONG-TERM CARE HOMES – A SYSTEMATIC REVIEW

Julie Hui-Chih Wu, Bradley Langford, Nick Daneman, Gary Garber; Public Health Ontario*
Background: Antimicrobial stewardship programs (ASPs) are well established in hospitals, but less studied in long-term care homes (LTCHs). Hospital-based ASPs cannot always be implemented in the same way in LTCHs as the associated challenges are distinctly different, such as, patient population and available resources. Identifying feasible and effective interventions for long-term care is therefore crucial particularly given the increasing need to combat antimicrobial resistance. This systematic review provides an overview of ASP interventions that have been implemented in LTCHs.
Methods: Literature searches of English-language articles published since 1990 were conducted using four databases on August 11, 2016, to include any antimicrobial stewardship interventions in long-term care (LTC) settings. There was no restriction on patient population or study design. Interventions in a LTC ward within a hospital were excluded. Titles, abstracts, full text screening and quality appraisal were done individually in duplicate by two reviewers. Data extraction against pre-defined extraction variables was done by one reviewer with 20% verified by a second reviewer. Intervention components were categorized by the Cochrane Effective Practice and Organisation of Care (EPOC) taxonomy on implementation strategies. Any disagreements were resolved by consensus.
Results: The search identified 2701 unique citations, 16 met the inclusion criteria. The study design included pre and post (n=7), controlled pre and post (n=4), cluster randomised controlled trial (n= 4) and randomised controlled trial (n=1). Thirteen intervention strategies according to EPOC taxonomy were used; three studies were single-faceted interventions while the rest were multifaceted with up to seven strategies and a median of four strategies overall. Top three strategies used were educational material (n=11), educational meeting (n=10) and guideline implementation (n=7). Labour intensity and resource requirements varied considerably among interventions (ranging from a one-time session to 72 weekly visits). Outcomes reported were also highly variable among studies. All studies reported prescribing outcomes, but in different forms (e.g., antimicrobial use, acceptance of recommendations, appropriateness of prescribing, length of antibiotic therapy), five studies reported clinical outcomes (e.g., adverse events, mortality, hospital admission, infection rates), and only two reported outcomes relating to utilization (e.g., rate of urine cultures sent).
Conclusions: The findings suggest great variability in ASP strategies implemented to improve patient outcome, antibiotic prescribing practice and cost utilization in LTCHs. This systematic review found that most interventions were multi-faceted and many required considerable resources to implement. More high quality randomized controlled trials are required to further understand the impact of the ASP and identify sustainable ASP interventions in LTCHs.

1:48 – 2:01 p.m.

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

ACCIDENTAL TOURISTS: THE DETECTION OF CPO IN PATIENTS HOSPITALIZED ABROAD

Sharla Manca[1], Audrey Groeneveld[2], Melody Cordoviz[2], A. Uma Chandran[3]*
1. Alberta Health Services - Royal Alexandra Hospital; 2. Alberta Health Services; 3. Royal Alexandra Hospital, University of Alberta

Background: Carbapenemase-producing organisms (CPO) are an emerging public health threat. Hospitalization abroad poses an increased risk for CPO acquisition depending on the destination and the type of care received. There are multiple strategies to prevent transmission upon subsequent admission in Canada. After a hospital-wide CPO outbreak at our institution in 2012, a comprehensive review was performed which included process changes related to targeted admission screening and preemptive Contact Precautions within the context of an aging facility with mostly multi-bed rooms (two and four) and over-capacity challenges. Data were reviewed to determine the incidence of CPO colonization in patients who met out-of-country hospitalization criteria, and to assess the impact on the use of private rooms.
Methods: Data from January 2015 to December 2017 were reviewed for all patients admitted to the Royal Alexandra Hospital, an 800-bed, tertiary acute care hospital in Edmonton, Alberta. All admitted patients were screened with a standardized antibiotic-resistant organism (ARO) admission screening tool. Patients hospitalized for more than 24 hours or dialyzed outside of Canada in the previous 12 months were placed on Contact Precautions in a private room, and a rectal swab collected. All swabs were processed at a centralized microbiology laboratory using chromogenic agar to detect carbapenemase production. Precautions were discontinued if no CPO was detected and the patient could be moved to a multi-bed room. Hospital and Infection Prevention and Control program databases were used to determine patient-days and days on precautions.
Results: During the study period, 162 patients were screened for CPO out of 84,639 total hospital admissions (0.19%). A total of 10 patients were identified as CPO carriers (6.2%; 10/162). Nine of the 10 CPO-positive patients were hospitalized abroad within the previous 30 days; four of the 10 were hospitalized in India. There were 15 CPO isolated from the ten patients, of which eight were NDM producing Gram-negative bacilli. Overall, there were 859 precaution days due to preemptive Contact Precautions for CPO, which was 0.10% (859/865,050) of the total hospital patient-days, and 0.77% (859/110,957) of the total "patients on precautions" days. On average, patients were screened 1.3 days from the time of admission, and CPO screen results were available 5.3 days after admission.
Conclusions: Hospitalization abroad may increase a patient's risk for CPO colonization. Targeted admission screening is a vital component for identifying AROs of interest, including CPO. Preemptive Contact Precautions with patient placement in a private room until CPO screens are negative is not only an important prevention strategy, but is achievable. Even in a healthcare facility with a limited number of private rooms, preemptive isolation has minimal impact and is possible, thus helping to prevent transmission of "the accidental tourist".

2:06 – 2:19 P.M.

IMPROVING PATIENT SAFETY: DEVELOPMENT AND IMPLEMENTATION OF A CAESAREAN SECTION DELIVERY SURGICAL SITE INFECTION SURVEILLANCE PROGRAM FOR URBAN AND REMOTE RURAL NORTHERN ALBERTA HEALTHCARE FACILITIES

Kaitlin Hearn, Terry Lauriks, Kaitlin Hearn, Mohey Alawa, Janet Barclay, Brenda Jenkins, Cecil Lebbi, Kimberly Miller, Blair Ranns, Sebora Turay; Alberta Health Services*

Issue: Alberta Health Services (AHS) operates 34 sites in Northern Alberta, 21 of which have less than 25 beds. Of the 13 facilities performing surgical procedures in North Zone, only three had Infection Prevention & Control (IPC) surgical site infection (SSI) surveillance programs. With the multitude of services offered, the IPC program needed to select a surgical procedure that was performed at as many sites as possible. This would allow for greater recruitment of sites, greater monitoring of patient outcomes and to report from the largest geographical area of Northern Alberta.
Project: Caesarean section deliveries (CSD) were chosen for SSI monitoring as these procedures are performed at all 13 sites with surgical programs. A surveillance protocol was developed that used administrative data to track CSD procedures, emergency department (ED) visits, and readmissions to all Alberta healthcare facilities. An infection control professional reviewed each patient with an ED visit or readmission to determine if they developed an SSI within 30 days as per the NHSN guidelines. Following a three-month trial at five facilities, the surveillance program was implemented at all AHS surgical facilities in Northern Alberta performing CSD procedures.
Results: From April 2016 - March 2017 a total of 1481 CSD procedures occurred at the 13 sites, of which 26% (379/1481) of the patients returned to an emergency department and 3% (49/1481) were re-admitted. Of the 1481 CSD procedures, 16 (1%) patients that returned to an acute care facility were classified as having a superficial surgical site infection. No complex CSD surgical site infections were reported during this time.
Lessons learned: The successful trial allowed for the creation of a SSI program following CSD, including determination of rates and over time the development of benchmarks for individual sites and a North Zone benchmark. The goal of the protocol was to capture the most severe infections following a CSD and identify any opportunities for process improvement to limit further adverse outcomes for patients. This has been accomplished through the development of a CSD SSI program using administrative data and through the improved relationships with surgical programs due to an increased opportunity to work together to improve patient care. Some limitations of the protocol exist as patients are only captured if presenting back to an acute care facility, thus the results may not capture patients with infections diagnosed during home care visits, at a walk-in clinic, or by their family physician. The team has identified further opportunities for improvement within IPC with next steps focusing on data quality and case review.

2:24 – 2:37 p.m.

BREAKING DOWN SILOS AND BUILDING CAPACITY: IPAC AUDITS IN AN ONTARIO PUBLIC HEALTH UNIT

Jennifer Snow*, Crystal Hendry, Jane Lee; City of Hamilton

Issue: In the fall of 2015, the Ontario Ministry of Health and Long-Term Care (MOHLTC) introduced a new protocol for Infection Prevention and Control (IPAC) lapse complaints. Public health units were mandated to investigate IPAC complaints launched against regulated health professionals. In addition, identified lapses required public disclosure. The challenge lied in the fact that this work had never been undertaken by local public health units. This presentation will describe the experience of the City of Hamilton's public health unit in undertaking this new program direction, how IPAC knowledge capacity was built in health unit staff, including an internal audit of our own clinics.
Project: Health unit clinics were also subject to this program. To reduce risk to the corporation from the potential identification of an IPAC lapse and to build IPAC capacity in health unit staff we undertook a project to: (1) conduct an internal audit of all clinical settings within the health unit; (2) train the public health inspectors in IPAC investigations and (3) build IPAC knowledge in clinic staff. The audits provided a mutually beneficial education for clinic staff and public health inspectors around clinical practices and IPAC. Inspectors conducting the audit based the context on evidence and applicable documents from the Provincial Infectious Diseases Advisory Committee (PIDAC). In addition, Hamilton used the IPAC Canada Infection Control Audit Toolkit as well as the IPAC Checklists for Clinical Office Settings provided by Public Health Ontario.
Results: The audits were completed by the end of 2016. Departmental policies were put in place to determine how the health unit would move forward in ensuring IPAC best practice was being followed. Education initiatives are also being put in place to ensure that all health unit staff are aware of best practice and are able to apply it to their everyday work. The audits provided a collaborative and mutually beneficial learning experience. Inspectors conducting the audit assisted and educated clinical staff on IPAC best practice and clinical staff provided greater context to clinical and dental services to inspectors who will conduct investigations in the community.
Lessons Learned: We learned that significant silos had developed amongst teams across the department, especially around IPAC. Clinical staff were not aware of the work of public health inspectors around IPAC, lacked some knowledge around current IPAC best practice or at least the ability of how to apply it to their work. We learned that this new program required significant IPAC knowledge capacity building in health unit staff, specifically inspectors, in addressing clinical IPAC issues. Lastly, we realized the importance of setting internal goals and expectations around IPAC and resource demand for conducting comprehensive audits that have defined future directions in IPAC within the health unit.

2:42 – 2:55 p.m.

IPC RESPONSE TO THE FORT MCMURRAY WILDFIRE DISASTER

Kimberly Miller, Janet Barclay, Debra Doe, Kaitlin Hearn, Terry Lauriks, Lacey Jacobson, Tiffany Herrick, Leanne Dekker; Alberta Health Services*

The Northern Lights Regional Health Centre (NLRHC) in Fort McMurray, Alberta services a large geographical area with the nearest hospital 250 KM away. The facility has 103 acute care beds, 31 continuing care beds, and offers comprehensive healthcare services including intensive care, oncology and hemodialysis. On May 1, 2016, a wildfire was identified near Fort McMurray which was subsequently declared out of control requiring a mandatory evacuation order for the city on May 3, 2016. Eighty-four acute care inpatients (six from intensive care) and 31 continuing care residents were transported to a large oil sands facility north of the city and then flown to hospitals in Edmonton. Because the hospital Information Technology systems were disabled early, outside air was not fully excluded from entering the air circulation system, resulting in significant smoke damage to the facility.

Project: Infection Prevention and Control (IPC) staff were intimately involved in recovery efforts on site in Fort McMurray from May 16 – June 30, 2016 and at evacuation centers across the province. Activities at the evacuation centers included consultation for hand hygiene infrastructure, linen and waste management, and assistance with a gastrointestinal outbreak. Early efforts in Ft. McMurray involved the deployment of Portable Isolation Containment Systems from Edmonton and Calgary to serve as an Urgent Care Center (UCC) for first responders. These units were assembled prior to IPC staff being on site, and reconfiguration was needed to establish appropriate patient flow, hand hygiene infrastructure, isolation, supply storage and a functional operating room. After establishing the UCC, remediation of the NLRHC began. IPC worked closely with a specialized remediation crew of approximately 500 brought in to repair damage, remove waste, and clean the facility. As every ceiling tile in the facility sustained smoke damage, the remediation and reopening were sequenced in three phases based on service requirements, HVAC design, and hoarding set-up. IPC was consulted on multiple equipment and supply issues (pharmaceuticals, sterile items, etc.) NLRHC reopened in a limited capacity for the return of city residents on June 1, 2016. The facility resumed all services and fully reopened on June 14th.

Lessons Learned: In the event of a disaster, it is critical that IPC is on site early in the recovery process. With extensive multi-disciplinary and system knowledge ICPs are essential in the safe remediation and efficient reopening of an affected healthcare facility. Incident Command System training is essential for ICPs. Research identified no comprehensive IPC checklists or guidance documents which incorporate all aspects of disaster management. As a result, a provincial IPC working group developed a series of checklists for ICPs to aid in recovery after future natural disasters.

All presentations will be held at the Banff Centre for Arts & Creativity (Floors 2 and 3).
POSTER PRESENTATIONS WILL HELD MONDAY, MAY 28 AND TUESDAY, MAY 29, 2018
12:30 – 1:30 p.m.

POSTER PRESENTATIONS

MONDAY POSTERS WILL BE REMOVED MONDAY AFTERNOON TO BE REPLACED WITH THE TUESDAY POSTERS.
Unless specifically named as a co-author, no reviewers were directly involved in the research or publications cited in any of the abstracts. Reviewers recuse themselves if they have co-authored an abstract.

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, May 30.
2. The three (3) top oral presentations as chosen by attendees will be repeated on Wednesday, May 30 (8:45 a.m. – 9:30 a.m.). One oral presentation will be announced as Best Oral Presentation and receive an award of $500 sponsored by 3M Canada. Award to be announced at the Closing Ceremonies, May 30.
3. Best Poster Presentation as chosen by attendees will receive an award of $500 sponsored by 3M Canada. Award to be announced at the Closing Ceremonies, May 30.

CONFERENCE ATTENDEES WILL VOTE FOR BEST ORAL PRESENTATION AND BEST POSTER PRESENTATION THROUGH THE CONFERENCE APP.
DEADLINE FOR SUBMISSION: 4:00 p.m., Tuesday, May 29.

MONDAY, MAY 28, 2018

MONDAY POSTER BOARD 1

OUTBREAK PREVENTION: BUNDLE APPROACH IN A REHABILITATION SETTING

Carla Corpus, Sonja Cobjam, Lorraine Maze dit Mieusement, Tanya Agnihotri, Natasha Salt, Jerome Leis; Sunnybrook Health Sciences Centre, Toronto

Background: Healthcare associated outbreaks of influenza and other respiratory viruses in rehabilitation centres interfere with patient rehabilitation, jeopardize patient safety and lead to unit closures that impede patient flow. From August 2016 to April 2017, St. John's Rehab (SJR), a 154-bed facility in Toronto Ontario, had 7 viral respiratory outbreaks causing 738 bed closure days, affecting 57 cases of staff and patients. A quality improvement outbreak prevention project was launched with the goal of reducing the number of outbreaks and bed closure days by half during the 2017/18 viral respiratory season.
Methods: A comprehensive Infection Prevention and Control (IP&C) outbreak analysis was completed using pareto diagrams, root cause analysis and facilitated discussions with staff using ishikawa diagrams. The results were used to inform key initiatives that would be undertaken to prevent outbreaks in 2017/18. Several stakeholders were engaged including Occupational Health and Safety (OHS), Human Resources, Communications, Media Arts and a Software Design company.
Results: Two main areas contributing to outbreaks were identified including staff working while ill and delays in initiating additional precautions for symptomatic patients. Barriers were identified including lack of access to OHS, perceived concern about missed work on attendance management, lack of knowledge about criteria that warrant initiation of additional precautions, and limited availability of private rooms. System changes included exemption of infectious illness in attendance management, development of online tool for receiving real-time OHS guidance about whether to be excluded from work for infectious reasons, revision to policies to free up private rooms, re-training of staff to improve early recognition and initiation of additional precautions, and clear signage to visitors/staff entering the unit along with telephone messaging asking visitors and staff not to visit or work when ill. Interventions were implemented between September-December 2017. Early improvement noted on reduction in the proportion of patients requiring additional precautions associated with a 24-hour delay from symptom onset (24% in October-April 2017 vs. 12% in December 2017, $p=0.364$). Preliminary results suggest fewer outbreaks with 1 outbreak (41 bed closure days) in January 18 compared to 5 outbreaks during the same period last season (485 bed closure days).
Conclusion: Though community levels of influenza activity are slightly lower compared to last season, these system changes appear to be preventing the development of institutional outbreak in our rehabilitation hospital. Longer follow up and monitoring will be required to determine sustainability of this improvement.

MONDAY POSTER BOARD 2

FILLING THE GAP BETWEEN ORIENTATION AND MENTORSHIP OF INFECTION CONTROL PROFESSIONALS USING A PROVINCIAL PRECEPTORSHIP PROGRAM

Alison Devine, Kathryn Bush, Gwyneth Meyers, Alyshah Lalany; Alberta Health Services

Issue: Given the diverse responsibilities and knowledge in the field of Infection Prevention and Control (IPC), it often takes years for new Infection Control Professionals (ICP) to achieve fluency in practice. While the Alberta Health Services (AHS) IPC program provides an orientation manual and Infection Prevention and Control (IPAC) Canada offers a mentorship program supporting ICP connection with professional development mentors nationally, there is still a need to support local ICP core competency development. Therefore, an AHS IPC preceptorship program was developed capitalizing on the expertise of local experienced ICP. Preceptorship programs in other healthcare professions, like nursing, are common in healthcare literature. No articles were found referring to an IPC preceptorship program.
Project: A six-month AHS IPC preceptorship program aimed at enhancing IPC core competencies was trialed in 2016. IPC program coordinators built the process and tools, selected participants and supported them through the program. Preceptors and preceptees took part in training sessions that covered expectations, development of objectives, learning plans, and evaluation processes. The preceptor/preceptee pairs worked together over the next six months, with guidance from three program coordinators, to complete preceptee driven learning objectives. After the six months, a qualitative evaluation was conducted. Individual and focus-group interviews with a common set of questions were carried out with the preceptorship pairs. Program coordinators coded responses into common themes.
Results: Five of six preceptorship pairs completed the program. Common themes from the evaluation interviews included: 1) preceptors and preceptees enhanced their IPC knowledge and skills; 2) preceptors felt revitalized by teaching; 3) participants had positive interpersonal experiences of connecting and learning; 4) dedicating time for learning was challenging; 5) objectives needed to be related to current priority work; and 6) expectations of the preceptorship program required modification (i.e. requirement to journal, evaluation form length).
Lesson Learned: This preceptorship program opportunity supported ICP enhancement of their knowledge and competencies in IPC, and built upon their orientation. Plans for future offerings of the program are in progress. However, greater protection and dedication of time is required to support future success of the preceptorship program. Aligning learning objectives with current work responsibilities is important to meeting those objectives. The evaluation also supported the scaling up of the preceptorship program to include more participants. Additional review with future participants is required to continue evaluation of these and other themes. Integrating the benefits of the AHS orientation and preceptorship program, and IPAC Canada's mentorship program is a key objective going forward in this work.

POSTER PRESENTATIONS

All presentations will be held at the Banff Centre for Arts & Creativity (Floors 2 and 3).
POSTER PRESENTATIONS WILL BE HELD MONDAY, MAY 28 AND TUESDAY, MAY 29, 2018
12:30 – 1:30 p.m.

MONDAY POSTER BOARD 3

BUILDING IT CORRECTLY: ADDRESSING THE CHALLENGES OF HEALTHCARE FACILITY DESIGN IN FIRST NATIONS COMMUNITIES IN NORTHERN SASKATCHEWAN

Adeshola Abati, Northern Inter-Tribal Health Authority, Prince Albert

Issue: A hierarchy of control measure is the recommended approach to reduce the transmission of microorganisms in the healthcare settings, where the first and most effective tier is engineering and structural controls. The second and third tiers are the administrative controls and the personal protective equipment which are most prone to error. In First Nations Communities in Northern Saskatchewan, engineering and structural controls are not consistently given the consideration necessary to design and build facilities where it is easy for staff and clients to follow routine practices. When engineering and structural controls are not considered, healthcare providers are often required to follow complex processes with multiple steps to provide safe care. Such is the case when a dental therapist has access to one sink and must determine the best way to dispose of waste, perform hand hygiene, and reprocess instruments. When processes are complex, omission errors that threaten the safety of the clients are more likely.
Project: The consideration of the engineering and structural controls in the healthcare facility design and building processes was promoted in two ways. First a template based on the Canadian Standards Association Z8000-11 Canadian Healthcare Facilities was developed to inform input from Nurse Managers and Health Directors in First Nations Communities into facility design. The template included all possible services that may be provided, the population served, and an estimate of future demand for the service, the recommended space and structural requirements cited the standard and additional considerations such as the location of services to minimize the movement exposure and transmission. Nurse Managers provided input into the template development and received a training session on its use. The second strategy employed was to promote the involvement of Infection Prevention and Control Advisor in healthcare facility design. This was achieved by raising awareness of the benefits of the involvement of infection prevention and control in the project teams for healthcare facilities.
Results: Although this project was only recently initiated, nurse managers are more knowledgeable about the engineering and structural control measures to reduce the transmission of microorganism and also promote the consistent application of routine practice.
Lesson Learned: Providing resources – It is essential to provide nurse managers the opportunity to participate in healthcare facility design. Their participation is more meaningful when they have access to easy to use resources to guide their input. Participating in a project team can be intimidating when the jargon is new, and design plan is difficult to interpret. Also including the Infection Prevention and Control Advisor to promote the consideration of engineering and structural controls in the design phase of facilities development.

MONDAY POSTER BOARD 4

UTILIZING INFECTION PREVENTION AND CONTROL COMMUNITY SUPPORT VISITS TO PROMOTE INFECTION PREVENTION AND CONTROL (IPC) PRACTICES IN FIRST NATIONS COMMUNITIES IN NORTHERN SASKATCHEWAN

Adeshola Abati, Northern Inter-Tribal Health Authority, Prince Albert

Issue: The incidence of Healthcare-Associated Infections (HAIs) such as Methicillin-resistant Staphylococcus aureus (MRSA) has been increasing gradually over the years in First Nations Communities in Northern Saskatchewan. The result of surveillance done in three remote northern communities in Saskatchewan between January 2006 – March 2008 show that the rates of MRSA infections were extremely high (146-482/10,000 population). The rate is more than the benchmark hospital rates provided by the Canadian Nosocomial Infection Surveillance Program (3.43 cases/10,000 patient days). The consistent application of routine practices is recommended to prevent the spread of infection in the healthcare settings. Yet, implementing many of the components of routine practices in many Saskatchewan First Nations communities presents a challenge. Access to supplies, concerns about the potential misuse of alcohol-based hand rubs, competing priorities, and limited educational opportunities are factors that contribute to this challenge.
Project: The infection prevention and control (IPC) working group examined some ways to improve IPC practices in our communities within current resources. IPC community support visits with an educational session were identified as the most appropriate intervention. The expectation was that a support visit, as opposed to a more formal audit process, would foster a cooperative working relationship between the IPC program and the healthcare professionals in communities.
To guide these visits, a checklist was developed to assess IPC practices in four major areas, namely; Policy and surveillance, Environment of care, Hand hygiene practices, Reprocessing of medical equipment. Currently, we have visited twenty First Nations communities in Northern Saskatchewan. During each visit, the checklist was used to invite discussion and identify areas for improvement. Each visit concluded with an educational session that was tailored to match the areas for improvement that were identified. The Health Directors and Nurses Manager of each facility also received a written summary of the visit.
Results: Relationships between the IPC program and health services in the communities have been enhanced. The number of consults or request to the IPC program for information or resources has increased. Additionally, healthcare personnel appear to recognize the importance of the elements of routine practices. A number of nurse managers have or are implementing hand hygiene monitoring and report improvements. It is expected that in time and with continued improvements that this will contribute to reducing the incidence of MRSA in First Nations communities in Northern Saskatchewan. A tool has been developed to monitor improvements in IPC practices and continue to build on the Infection Prevention and Control Supportive Visits Initiative.
Lesson Learned: IPC community support visits are an effective way to improve IPC practices within existing resource levels.

MONDAY POSTER BOARD 6

STAYING ON THE CURVE: THE LIFECYCLE OF A HEALTHCARE DISINFECTION PROGRAM

Heather Candon[1], David Chris[2], Robert J Footwinkler[1]
1. *Mackenzie Health, Toronto; 2. Clorox Healthcare*

Issue: Hospital cleaning and disinfectant changes are often made without proper qualitative and quantitative evaluation or stakeholder engagement. Instead, contractual obligations coupled with equipment manufacturer guidelines are often the impetus for product selection. Operating this way leads to unforeseen consequences to infrastructure, costing, safety issues for patient and staff. A request to environmental services and infection control was made to assess trial and evaluate an all-encompassing disinfection selection program.
Project: We created a quality performance improvement life cycle, whereby a planned sequence of structured and documented activities was objectively used to assess, manage and deploy a healthcare disinfection program at our hospital.
Results: Important phases were identified in the process of our disinfectant review and eventual transition. Firstly, we surmised disinfectant reviews are often requested by availability of new innovations, need for cost containment, availability of a superior product(s), staff/patient satisfaction, new contracts, and/or efforts to standardize. This input is required when moving into the first phase of the disinfectant life cycle, which is planning; this phase encompasses the initial disinfectant needs assessment (GAP analysis, Technical Evaluation, Contract Review), stakeholder engagement (roles and responsibilities, transparency), and evaluation (product assortment, outcome, process and balancing measures).
The bridge between planning management is deployment (installation, training, monitoring and acceptance), which is governed by an ad hoc disinfectant committee. The final phase is management of the newly transitioned disinfection process through education, compliance, maintenance and safety review.
Outcomes naturally bridge back to the planning phase.
Lessons Learned: In conclusion, there is a dearth of evidence or guidance related to disinfectant transitioning in health care facilities. We describe the development of an evidence-based disinfectant life cycle – a standardized and practical guide which facilitates appropriate product selection and implementation.

MONDAY POSTER BOARD 7

DEVELOPMENT OF A LOCAL SPINAL SURGICAL SITE INFECTION (SSI) SURVEILLANCE PROTOCOL AND PROGRAM AT FOOTHILLS MEDICAL CENTRE (FMC)

Kristine Cannon, Alberta Health Services

Issue: SSI rates for spinal surgeries are amongst the highest for what are considered clean surgeries. Spinal surveillance in Calgary between 2005-2011 was done by Infection Prevention and Control Professionals (ICPs) at FMC in Calgary and was based on crude denominator data, CDC/NHSN definition, NNISS scores and lacked a written surveillance protocol. A number of other surveillance programs existed at this time and each used a separate database. These databases,

maintained by the individual ICPs, were not robust and were easily corrupted. Between 2012-2016, this basic surveillance was stopped due to workload and resources. ICPs still investigated and maintained a line list, but SSI rates were no longer calculated. Potential issues with spinal surgeries were identified by perceived increases in cases and/or clusters of microorganisms cultured post spinal surgery. This was dependent on the ICP and was subjective. In Alberta, we are very fortunate to have a surveillance program that supports the IPC program in maintaining a surveillance database, collecting denominator data, data cleaning and reporting out to AHS stakeholders on MRSA, CDI, CLABSI and SSI rates for THK and Cardiac. Because of their own work demands, IPC surveillance cannot support all local surveillance by ICPs.
Project: In early 2016, ICPs identified a weakness and inconsistency in SSI case identification and tracking. A group of ICPs decided that a basic FMC surveillance protocol needed to be written so that case identification was consistent and saved in a common database. As the protocol was being written up, IPC identified an increase in spinal SSI cases over a 3-month period. Following an investigation by IPC, and support from site IPC leadership and the medical lead, it progressed into developing both, protocol and local surveillance program.
Results: The protocol is consistent with other AHS SSI surveillance including total knee and hip arthroplasty, cardiac and vascular, and contains the necessary elements including (1) case identification, (2) inclusion and exclusion criteria, (3) surveillance period, (4) source of the denominator data and (5) data quality. Going forward this protocol will result in consistent case finding, relatively robust data and valuable SSI rates for stakeholders. This work provides a template for setting up other SSI surveillance work at a local level by ICPs without additional support from a separate surveillance group.
Lessons Learned: SSI surveillance is a vital part of an Infection Prevention and Control program but it also requires a lot time and resources. Developing a surveillance protocol is not as simple as it sounds. Having an established and adaptable protocol for ICPs to follow allows for consistent surveillance and reporting to AHS stakeholders.

MONDAY POSTER BOARD 8

EFFECTIVE ONBOARDING – DISCOVERING A NEW ROUTE TOWARDS SUCCESS

Sheila Le-Abuyen, AnnMarie Tyson, Kimberly Smith, Sheila Le-Abuyen, Shirin Amir Yeganeh; University Health Network, Toronto
Issue: The Infection Prevention and Control (IPAC) department at the University Health Network is a dynamic and fast-paced environment with a large team of Infection Control Practitioners (ICPs) providing oversight and consultation in acute care, oncology and rehabilitation settings. Because of the sheer size of the team; unique patient care settings; and numerous information technology systems that are utilized in daily work, staff turnover and training needs are an ongoing challenge. It is thus critical that there be a structured, consistent and comprehensive training program for new ICPs.
Project: After a few years of implementation and revision, the onboarding program now encompasses a comprehensive checklist. This ensures that all administrative tasks are completed prior to the employee's start date; and that orientation, training and introductory meetings are executed during the first work week. The onboarding program is also enhanced by: Peer-to-peer training modules on specialized IPAC topics (e.g., managing emerging infectious diseases, quality improvement). An ICP Primer, an evergreen document that provides guidance on isolation reassessments; electronic documentation; organism-specific nuances; historical unit/organism concerns; etc. Tours of IPAC-related departments (e.g., laboratory services, medical device reprocessing department, tuberculosis clinic, etc.). Completion of regular evaluation assessments.
Results: IPAC management have noted a marked improvement in employee morale and satisfaction; ICP competency and performance; and consistency of risk assessments and ICP actions. There is also a decrease in preventable errors for the organization. ICPs have reported satisfaction in better anticipating and effectively navigating challenges, particularly with political acuity. External departments have reported less errors and improved satisfaction with relationships and performance.
Lessons Learned: A formalized onboarding program sets the tone and culture of the department, ensuring that expectations are set and new employees effectively acclimate. Having a checklist ensures consistency in delivery of training to all new employees, regardless of facilitator. Being cognizant of all learning styles and its incorporation via use of visual aids, presentations, self-learning, group learning sessions and field training ensures an inclusive learning process. Having a structured program prompts regular review of training procedures and aids in facilitating systematic quality improvement. Incorporation of a document management system has improved consistency and efficiency in implementing updated training.

MONDAY POSTER BOARD 9

SUSTAINING STEWARDSHIP SUPPORT IN THE ICU: INFECTIOUS DISEASES AND ANTIMICROBIAL STEWARDSHIP WEEKLY ROUNDS

Christina Murphy[1], Dan Ricciuto[2], Jamie Brown[1], Laura Golloher[1], Sonya Mackay[1]
1. Peterborough Regional Health Centre; 2. Lakeridge Health, Oshawa
Issue: Peterborough Regional Health Centre began its first Antimicrobial Stewardship Program (ASP) in 2013. Championed by the Physician Lead for Infection Prevention and Control, the cornerstone of the program is a collaborative model of pharmacist-led prospective audit and feedback. In its first two years, the program focused its efforts in the medicine and surgery programs and achieved its target of reducing overall antibiotic use by >15%. The program also helped to minimize unintended consequences of antibiotic use by contributing to a > 30% reduction in nosocomial CDI. The initial scope of PRHC's ASP program did not include the ICU because of the already existing ASP demands in other areas, and the lack of on-site Infectious Disease (ID) physician at PRHC.
Project: To help spread antimicrobial stewardship into the ICU setting, PRHC participated in a provincial Adopting Research to Improve Care (ARTIC) program in 2015/16. The initiative facilitated a hub and spoke model, connecting community hospitals with larger centres with well-developed ASP programs and ID expertise. PRHC's intervention was weekly telemedicine rounds with the ID physician at Lakeridge Health, focusing on capacity-building and real-time antimicrobial stewardship interventions through case reviews of current ICU patients with ICU physicians, Pharmacists and IPAC. During the 6-month initiative, the ICU experienced a 22% reduction in antimicrobial utilization and a 42% reduction in anti-infective drug costs. PRHC's ASP and ICU teams were eager to sustain the momentum and gains made through the hub and spoke initiative. As part of the sustainability plan, the team continues weekly ASP/ID case reviews with the ID physician through telemedicine. Changes to antibiotics and decisions regarding clinical management are made collaboratively and in real-time, and a tool to document and track the interventions has been developed. The IPAC team's analyst has continued to monitor key measures to evaluate progress and impact. The initiative has built capacity for daily antimicrobial stewardship with the ICU Pharmacist(s), and has established essential ID support for the team. There are also requests and plans to replicate the model in other areas including the Hospitalist and Nephrology services.
Results: Sustaining the ASP/ID rounds in ICU has led to several ongoing improvements, including:
- A decrease in Antimicrobial utilization (Days of Therapy) by 18% from baseline;
- An increase in Antimicrobial free days by 11% from baseline;
- A decrease in Anti-infective costs in the ICU by 26% from baseline.

The ICU has not seen a parallel reduction in their rate of CDI.
Lessons Learned: Leverage technology and relationships to help build capacity and spread antimicrobial stewardship. Plan for and invest in local sustainability of improvement initiatives after formal provincial or regional initiatives come to an end. Monitor progress over time using a few meaningful measures.

MONDAY POSTER BOARD 10

ROOT CAUSE ANALYSIS AND SUGGESTED CORRECTIVE ACTIONS FOR INCREASED PERIPHERAL LINE INFECTIONS ON A MEDICAL/SURGICAL UNIT

Heidi O'Grady, Heather McCauley; Alberta Health Services
Issue: Peripheral vascular access devices (PVAD) are the most commonly used invasive device in hospitals with 60-90% of patients (in the US) having an IV placed during their hospitalization. Insertion of PVADs are considered a routine nursing practice and because recent attention has predominantly focused on the risk of infection related to central venous access, the hazards associated with PVADs have largely been overlooked. In the summer of 2017 an increase in the number of infections, localized and/or bloodstream, associated with peripheral lines was identified on a medical/surgical unit at Foothills Medical Centre, Calgary, Alberta. From June 1 to September 1 2017 five PVAD-associated infections were identified compared to zero infections in the preceding four months (February to May) of that same year.
Project: Root Cause Analysis (RCA), including the analysis methods of (1)

change analysis and (2) cause mapping was used to identify the causes of increased PVAD-associated infections on this unit. RCA is a widely used quality improvement method to improve patient safety. In the cause mapping method of RCA the word root refers to causes that are beneath the surface. The cause mapping approach defines a problem as a deviation from the ideal and assumes no singular root cause for an incident. Rather, cause mapping assumes an incident is a product of multiple causes and hence can be prevented by multiple solutions.
Results: Change analysis of 5 cases studies revealed 8 major deviations which were mapped to 6 root causes and 9 corresponding corrective actions. The root causes included absence of standardization for charting and documentation, lack of awareness around our guiding documents and risks associated with PVADs, changes in policy and how policy changes are communicated and inadequate assessment of PVAD-insertion sites. Corrective actions focus on optimizing work flow, education on policies, procedures and risks associated with PVADs, including catheter dwell times, standardization of documentation, policy changes and improving communication.
Lesson Learned: RCA is a very useful tool for incident investigation and quality improvement initiatives. It was successful in identifying 8 deviations from the ideal which contributed to an increase in PVAD-associated infections. Increased surveillance of other units at Foothills Medical Center and other hospitals in the Calgary Zone indicated that this was not a unit-specific issue. A multi-disciplinary team is currently working on bundled interventions to reduce PVAD-associated infections.

MONDAY POSTER BOARD 11

REVITALIZATION OF A REGIONAL HAND HYGIENE PROGRAM FROM TOP TO BOTTOM

Meredith C Faires, Kristen Florizone, Kateri Singer; Saskatchewan Health Authority
Issue: Hand hygiene (HH) is considered to be the most important and effective infection prevention and control measure to prevent the spread of infections and antimicrobial-resistant organisms within healthcare facilities. However, HH compliance among healthcare workers (HCWs) has been unacceptably low within the Regina Qu'Appelle Health Region (RQHR). In 2013, board members identified HH as an essential component of RQHR's Business and Strategy Plan. To increase HH compliance, the Infection Prevention and Control (IPAC) Department launched a region-wide, multifaceted program aimed at all employees from the Senior Leadership Team to direct care health providers.
Project: In 2014, the IPAC Department, in conjunction with Quality Improvement, Human Resources, Communication, Information Technology and Patient Advocacy Departments identified several initiatives to increase HH compliance among HCWs including: establishing a HH policy, developing an on-line HH auditing application, creating new signage, instituting Train-the-Trainer methodology, performing staff surveys (e.g., identify gaps in knowledge), conducting blind audits and organizing education sessions for HCWs.
Results: The HH policy developed by RQHR applied to 100% of staff and prohibited the wearing of jewellery and artificial nails/nail polish. The development of an on-line auditing tool subsequently resulted in monthly HH auditing of patient care areas as well as corporate areas. Through discussion with staff, HH dispensers were placed throughout all RQHR facilities for ease of access. Survey results indicated that staff believed wearing gloves replaced the need for HH. Although blind HH audits indicated that the number of staff wearing prohibited jewellery or identified with artificial nails/nail polish was <1%, HH compliance remained inadequately low (30%). To address poor HH rates, a Rapid Process Improvement Workshop (RPIW) was performed on an inpatient medical unit at Regina General Hospital in October 2017. Results from the RPIW included instituting Stop the Line principles for both staff and patients, creation of HH standards for specialty departments (i.e., Portering, Nutrition and Food Services, Environmental Services) and embedding Quality Improvement specialists on the unit.
Lesson Learned: Improving HH compliance within the RQHR continues to be a dynamic process and a priority at the leadership level. The creation of a cross-functional group and the introduction of a RPIW to address HH resulted in the identification and application of several strategies to increase compliance at the healthcare provider level. Conversations with staff identified confusion regarding glove use and HH; which is currently being addressed within the health region. The adoption of a strict HH policy that applies to 100% of staff is a novel approach and encourages everyone in the healthcare system, regardless of their role, to protect patients and residents.

MONDAY POSTER BOARD 12

IN THE CLEAR: AN EVALUATION OF A PROVINCIAL IPC PROTOCOL TO CLEAR PATIENTS OF THEIR ARO ACTIVE STATUS/REMOVE THEIR ARO FLAG IN CLINICAL INFORMATION SYSTEMS

Kaitlin E Hearn, Jennifer Ellison, Kaitlin Hearn, Kathryn Bush, Blanda Chow, Andrea Howatt, Jenine Leal, Ye Shen; Alberta Health Services
Background: Alberta Health Services (AHS) and Covenant Health (COV) Infection Prevention and Control (IPC) implemented a provincial Antibiotic Resistant Organism (ARO) flag clearing protocol on April 1, 2016. This protocol provided Infection Control Professionals (ICPs) with a standardized province-wide process to determine ARO clearing eligibility for patients who were positive with Methicillin resistant Staphylococcus aureus (MRSA) or Vancomycin resistant enterococci (VRE) for the purpose of clearing and removing isolation precautions. An evaluation of the ARO flag clearing protocol was developed and results were reported including preliminary information about patients who were cleared or who had clearing attempted through this process between July 1, 2016 and March 31, 2017.
Methods: A prospective cohort study evaluating the implementation and adherence to the ARO flag clearing protocol was conducted which included all hospitalized patients previously positive who were flagged with MRSA or VRE in an AHS/COV clinical information system. Eligible patients were identified by ICPs in the clinical information system according to the IPC ARO flag clearing protocol: patients were not on ARO effective antibiotics, were cleared with three sets of negative swabs, and the clearing process started at least 90 days after the patient was identified as positive. Each valid ARO negative culture result was entered into an online provincial surveillance system.
Results: Between July 1, 2016 and March 31, 2017, 822 patients were cleared for MRSA or VRE (MRSA: 573 patients, VRE: 249). This represented, an average of 132 patients per month (MRSA: 89, VRE: 43). Sixty-one percent of Alberta acute care or acute rehabilitation facilities had at least one attempt at MRSA flag clearing (68/112 sites) while there were only 33% (37/112 sites) of facilities with a VRE clearing attempt. Most sets were taken in an inpatient setting, with only 15% (88/573 patients) of MRSA sets and 14% of VRE sets (35/249 patients) taken partially or completely in the outpatient setting.
Conclusion: The data presented here represent the first attempt at evaluating a standardized protocol for ARO flag clearing. There are many patient management and process related questions that will continue to be evaluated in further phases of the project. Next steps will include assessing if any patients became positive with an ARO following clearing and how many patients had an unsuccessful attempt at clearing. The project team will continue to examine clearing records entered into the online provincial surveillance system prior to July 1, 2016 and compare previously extracted ARO clearing records to electronic laboratory data with final results further informing improved clinical practice.

MONDAY POSTER BOARD 13

PATIENTS' FOUR MOMENTS FOR HAND HYGIENE IN A REHABILITATION CARE SETTING

Silvana Perna, Rose Exantus, Sabine Cainer, D Ndahaayo, Yves Longtin; Integrated Health and Social Services University Network, Montreal
Issue: The focus of hand hygiene (HH), including monitoring of HH compliance, is traditionally towards healthcare workers (HCW). This is a challenge in rehabilitation settings because of the patients' extended environment, community living, and shared therapeutic equipment, which can act as fomites. In addition, patients' isolation can be a barrier to the therapeutic goal and might increase length of stay of patients.
Project: A project was initiated in two rehabilitation institutions of an Integrated Health and Social Services University Network to empower patients with HH. Indications of patient HH moments were established based on literature review that identified high-risk transmission activities for patients. Four moments of patient HH were: before contact with environment of care [M1], before eating [M2], after exposure to any body fluids [M3] and after contact with environment of care [M4]. Education sessions were provided to HCWs, patients and families, and are now integrated into their welcoming session. To measure efficacy of the intervention, a pre and post auditing of the four-moments for patient HH was performed. A questionnaire was also developed to explore HCWs' perceptions towards patient HH, determine HCW barriers to support patients, and assess the need for additional education and strategies. Finally, posters on HH moments were displayed in patient's area.

Results: During a three-month pre-education phase, 146 patients participated in the project, and 634 HH opportunities were observed. The pre-education compliance rates per moment are between 10% and 38%. Compliance rates post-education are in progress, but significant improvement is foreseen. The 91 HCW who answered the questionnaire identified several barriers to patients HH, such as: inaccessibility to alcohol-based hand-rub solutions in patient's common areas, cognitive and mobility impairment, lack of knowledge regarding HH, and their own increased workload.
Lesson Learned: Clear tools and strategies are required for HCW engagement in empowering patients to perform hand hygiene.

MONDAY POSTER BOARD 14

FINDINGS FROM THE EVALUATION OF A MEDICAL RESIDENT INFECTION CONTROL EDUCATION PROGRAM

Corrinne Pidhorney, Joseph Kim, Ghazwan Altabbaa, Josephine Kalunga, Ruziyya Ramazanova, Jason Morris, Kathryn Linton, Nisha Punja, Dione Kolodka; Alberta Health Services
Issue: The Infection Prevention and Control (IP&C) Department provides an education program for medical residents on the two Internal Medicine Teaching Units at the Rockyview General Hospital (RGH). A one-hour session is provided on the first day of their four-week rotation combining basic infection control information with practice in using gown, gloves, mask and eye protection as personal protective equipment (PPE). Infection Control Professionals also provide feedback and education after two of the simulation exercises that the residents participate in during their rotation. In order to ensure that the program is effective and that it addresses any gaps in basic infection control knowledge among these residents it is necessary to evaluate the provided program.
Project: In 2017, the RGH IP&C Department initiated an evaluation of the education program provided for these medical residents. The evaluation consisted of a pre-test administered prior to the education session on the first day of the rotation and a post-test after a simulation exercise during the third week of the rotation. The pre and post-tests consisted of the same fifteen questions eliciting knowledge about basic infection control principles including hospital acquired infections, hand hygiene, modes of transmission and the type of transmission-based precautions and PPE required for several organisms. Volunteered qualitative feedback was also recorded. Results were collected then analyzed for six rotations.
Results: Analysis of the pre-tests consistently showed a lack of knowledge of basic infection control principles. The average pre-test score during the six rotations included in the evaluation was 40% ranging from 13% - 80% (n=44). A universal lack of understanding of the correlation between mode of pathogen transmission and the type of additional precautions and PPE required was noted. Post tests were implemented for three of the six rotations. Among this group a 20% increase was noted in the average post-test scores (average 60%, range 33% - 87%, n=21). Qualitative feedback about the program was positive, indicated that these topics were new information to students and that it would be beneficial to include this information earlier in the medical program.
Lesson Learned: There is an existing gap in knowledge of basic infection control principles among RGH Internal Medicine residents. Providing basic infection control education is appropriate and valuable to this group. Understanding the correlation between mode of pathogen transmission and the type of additional precautions and PPE required is essential in a basic infection control education program and will be a focus going forward.

MONDAY POSTER BOARD 15

ORGANIZATION-WIDE ENVIRONMENTAL SERVICES CART STANDARDIZATION TO IMPROVE HAND HYGIENE AUDITING ACCURACY

Erin Roberts, Kathryn Wyndham; Covenant Health, Edmonton
Issue: Throughout 17 healthcare (acute and continuing care) sites in Alberta, the environmental service (EVS) carts contained a mix of dirty and clean objects (i.e., dust pans, brooms, mops, mop pads, microfibre cloths, garbage bags, disinfectants, etc.) with no physical separation of same. This mix of dirty and clean objects is a potential cross-contamination transmission risk. Furthermore, it was difficult to determine when hand hygiene should be performed because it was not always clear when the healthcare worker may have touched a clean or a dirty object before touching the patient/patient environment. This lack of clarity made it difficult to calculate accurate hand hygiene compliance rates.
Project: To improve hand hygiene auditing accuracy, an EVS working group that included all 17 sites and representation from Infection Prevention & Control was established. The group created a standardized, organizational EVS cart layout that clearly defined clean and dirty sections. To replicate the cart layout and ensure consistency, photographic reference materials were disseminated throughout the organization. Following full implementation of the standardized cart layout, process was translated into appropriate hand hygiene moments and practice examples in order to achieve further understanding and consistency in performing EVS hand hygiene audits. Reference materials were created for hand hygiene auditors to refer to. Hand hygiene was monitored using an electronic tool. The hand hygiene auditors utilize "clean" and "dirty object" buttons when observing EVS staff accessing certain sections of the EVS cart. The hand hygiene software used automatically interprets this marker as "complied" or "missed" based on the circumstances and according to the 4 Moments for Hand Hygiene standard.
Results: 1) A standard EVS cart layout and process was achieved and implemented throughout the sites. This structure was shared with hand hygiene auditors in order to simplify the hand hygiene auditing process. 2) During subsequent organization-wide hand hygiene audits, EVS hand hygiene compliance rates related to moment 2 (before aseptic procedures) and 3 (after potential body fluid exposure) saw increases in compliance by 40% and 11% respectively.
Lessons Learned: This initiative identified key gaps in the organization of the EVS carts which impacted the hand hygiene auditing process resulting in potential hand hygiene compliance inaccuracies. The EVS working group collaborative approach resulted in consistent expectations and ownership among relevant stakeholders. We believe standardizing the EVS cart and hand hygiene definitions and expectations contributed to the increase in hand hygiene compliance. We believe many facilities could benefit from an initiative similar to the one described here.

MONDAY POSTER BOARD 16

WALKING INFECTION PREVENTION AND CONTROL ORIENTATION – A CHANGE OF PACE

Natasha D Usher-Hameluck, Lisa Acorn; Alberta Health Services
Issue: The need to take IPC orientation out of the physical and online classroom was identified when new front-line clinical staff was unsure of how to contact their site ICP and how to identify IPC practices and concerns on their unit. When asked about any questions or concerns on regular unit IPC walking rounds, new staff would state that they were unsure what to ask about and asked for some examples. A disconnect between IPC knowledge and the working environment for new staff was noted. Gap in knowledge transfer from traditional orientation and in staff IPC practices when caring for patients.
Project: A new approach was developed to change the strategy in acquisition of staff IPC awareness and knowledge as a result of a staff identified gap. The new method was tailored to meet the needs of individual staff. Unit managers were approached with the idea of the ICP walking around the unit with of a small staff group. The ICP would lead the walk, reviewing key IPC practice areas using a checklist guide, while encouraging participation with specific questions. An evaluation for the walk was developed to determine staff view point, engagement, understanding and practicality of this approach to orientation.
Results: This form of orientation increased staff engagement with IPC, compliance with IPC practices and recognition of IPC concerns by staff who completed the walking orientation. Staff sought out answers, were comfortable in contacting the site ICP and showed confidence in applying IPC knowledge on their unit. This type of orientation also opened communication between the site ICP and staff, which improved discussions through increased communication and rapport.
Lessons Learned: Through the walking orientation process, CZ (Central Zone) ICPs have learned that traditional delivery methods had to change in order to obtain the awareness, knowledge and connection desired. Changing the IPC education strategy resulted in small groups, which were more effective for discussion, knowledge transfer and rapport with staff. Staff who completed this type of orientation were noted to take ownership and manage IPC practices adhering to IPC best practice policy. Units and ICP staff have experienced some challenges with this change of strategy such as scheduling large numbers of new staff to attend.

POSTER PRESENTATIONS

All presentations will be held at the Banff Centre for Arts & Creativity (Floors 2 and 3).
POSTER PRESENTATIONS WILL BE HELD MONDAY, MAY 28 AND TUESDAY, MAY 29, 2018
12:30 – 1:30 p.m.

MONDAY POSTER BOARD 17

EXPLORING PATHWAYS TO ENHANCE ENGAGEMENT OF INFECTION PREVENTION AND CONTROL PROFESSIONALS IN NORTHERN ONTARIO

Vicky Willet[1], Ryan MacDougall[1], Peyman Sharifi-Tehran[2], Omar Sharif[1], Lori Schatzler[1], Amanda Brizard[1]
1. Public Health Ontario; 2. Lakehead University, Thunder Bay

Background: Public Health Ontario´s Infection Prevention and Control (IPAC) Regional Support Teams assist infection control professionals (ICPs) in implementing best practices in IPAC. The IPAC North Team serves a large region with a geographically dispersed population. There are approximately 105 hospital and long-term care sites within seven public health units across the region. Our objective was to understand the needs of ICPs given the complexity of their roles and challenges of working in this geography. The results were used to identify strategies for enhancing engagement with the ICPs to support the adoption of IPAC best practices.
Methods: The initiative included a literature search and survey of stakeholders involved in IPAC activities. The literature review assessed existing evidence on effective strategies for engaging with stakeholders who are geographically dispersed and have multiple roles and/or responsibilities in their respective organizations. Literature focusing on health care was limited; however, themes emerged related to engagement strategies including values of the organization and communication design and community conversations. Results of the literature review were used to create two separate surveys; one for ICPs in acute and long-term care and one for public health unit (PHU) staff. Semi-structured individual or group interviews were completed by IPAC North staff using an interview guide. Responses were documented, coded for anonymity, and reported in aggregate form. The initiative underwent privacy and ethics review prior to commencement.
Results: Seventy-six ICPs across 62 organizations were interviewed. Of the ICPs interviewed 89% hold multiple roles and are responsible for multiple programs in their organization with 15% having achieved Certification in Infection Control (CIC®). The most common roles performed with IPAC included: Occupational Health and Safety, Director/Assistant Director of Care, and Staff Educator. Over half of interviewees responded they are solely responsible for the IPAC program in their organization with 52% reporting they dedicate casual hours to IPAC activities. IPAC Canada was identified by 31% of ICPs as a network they access for support. PHU staff working in IPAC also have multiple roles however 31% of those interviewed held CIC®. PHUs indicated they respond to stakeholder IPAC inquiries by prioritizing and allocating resources accordingly. ICPs and PHU staff reported strong relationships with one another.
Conclusion: ICPs in the north are connecting through existing networks and relationships. Education and discussions related to IPAC take place when needed and may not be the primary focus due to competing priorities and roles. Addressing the IPAC education and support needs of ICP´s with multiple roles and leveraging existing relationships or networks rather than creating new ones may be promising strategies to enhance engagement. Engaging champions to shift culture to proactive could be a long-term strategy.

MONDAY POSTER BOARD 18

A GENERIC BARRIER DEVICE TO REDUCE ON-SITE SPREAD OF PATHOGENS DURING PATIENT CARE: TESTING WITH STAPHYLOCOCCUS AUREUS AS THE CHALLENGE

Bahram Zargar[1], Al Wickheim[2], Laura Barker[2], Saeideh Naderi[1], Syed A Sattar[3]
1. CREM Co. Labs; 2. Prodaptive Medical Innovations; 3. University of Ottawa

Background/Objectives: While healthcare providers wear protective gear for their own safety, pathogen-containing body fluids from patients in healthcare and emergency medical services (EMS) often contaminate personnel as well as the environment by splashing and aerosolization.
Methods: We tested a simple plastic barrier designed to reduce such spread inside an aerobiology chamber using flushing of Foley catheters (FC) and irrigation of incisions made on pieces of fresh chicken meat to simulate wounds. The suspension of Staphylococcus aureus (ATCC 6538) for contaminating FC contained 3x109 CFU and that for wound irrigation had 1.2x109 CFU. FC and the wounds were separately flushed with the barrier mounted on a 60 mL irrigation syringe. Culture plates were strategically placed on the floor to detect contamination from splashes and a slit-to-agar sampler was run for two hours (@28 L/minute) to assess aerial spread. After incubation, bacterial colonies were counted and percent reductions in contamination calculated. For both scenarios, three tests were conducted without and with the barrier in place.
Results: Reductions of 99.2±1.15% on surfaces and 99.54±0.73% in air during FC flushing were achieved. The reductions obtained in wound irrigation testing were 90.44±2.11% for surface contamination and 95.82±4.87 for airborne levels. These findings show that the barrier can reduce the environmental dissemination of pathogens by substantial levels in healthcare settings and in EMS.
Conclusion: The device is simple, inexpensive, easy-to-use and readily applicable in other procedures. Thus, its wide-spread use could significantly reduce on-site pathogen dissemination for better infection prevention and control.

MONDAY POSTER BOARD 19

PATIENT SAFETY BEHIND CLOSED DOORS: MEDICAL DEVICE REPROCESSING (MDR) REVIEWS

Mark Scott, Sharon Wilson, Karin Fluet; Alberta Health Services

Issue: Medical device reprocessing (MDR) is critically important in prevention of the spread of pathogenic micro-organisms in health care settings. Monitoring MDR practices to verify that the cleaning, disinfection and sterilization of reusable medical devices in health care meets national and provincial standards is essential to patient safety.
Project: In 2010, Alberta Health Services (AHS) Infection Prevention and Control, in collaboration with Medical Device Reprocessing experts, commenced regular province-wide quality reviews of reprocessing practices in all AHS and Covenant Health facilities as well as within non-hospital surgical facilities that perform procedures under contract to AHS. Scheduled on a three-year cycle, Cycle 3 reviews were completed in 2017. Between November 2016 and July 2017, teams consisting of a lead reviewer, an MDR expert, and a site Infection Control Professional, used standardized tools to measure compliance with Canadian Standards Association, Alberta Health and other applicable standards. Reports were generated for the MDR areas, sites, zones and provincial programs. A system for tracking corrective actions undertaken by MDR areas to resolve deficiencies identified during the reviews was implemented during this third review cycle.
Results: In Cycle 3, 193 reviews were performed in 73 facilities. Notably, improvement opportunities identified in Cycle 2 enhanced communication and streamlined scheduling and reporting processes in Cycle 3. Compliance to review criteria improved in cycle 3, with the majority of areas having addressed deficiencies previously identified. Deficiencies identified in Cycle 3 largely related to incomplete documentation and facility infrastructure. The addition of a corrective action follow-up tracking system will support management's engagement and support towards addressing remaining deficiencies. A standardized set of provincial policies and standard operating procedures is nearing completion, which will further reduce the number of documentation-related deficiencies repeating in future reviews.
Lessons Learned: Systematic reviews are crucial in assuring confidence that the reusable medical devices are effectively reprocessed, ultimately contributing to quality patient care. The addition of an MDR expert to the team brought MDR knowledge and experience and strengthened networking and collegiality with staff in the MDR areas. Communication is critical – having a multidisciplinary team that includes partnership with Alberta Health, is paramount to engaging stakeholders and influencing practice change. Short meetings with MDR area management several weeks before the scheduled review was also a crucial communication component, as the meetings provided opportunities to discuss pre-review preparations and the agenda for the review day.

MONDAY POSTER BOARD 20

IS FEVER A RELIABLE INDICATOR OF INFLUENZA IN ADULTS?

Mark Jefferson, Cindy O'Neill, Dominik Mertz, Patty Peltsch, Jessa Craig, Gail Fisher; Hamilton Health Sciences

Background/Objectives: Ontario's Provincial guidelines for screening patients for Acute Respiratory Illness (ARI) rely on questions about the presence of fever for case finding. Infection Prevention and Control (IPAC) staff frequently encounter significant resistance to testing patients for influenza when patients present with "apparently non-infectious cardiopulmonary illnesses" and no fever. Existing practices beg the question: are current ARI screening criteria reliable enough to trigger appropriate testing by frontline staff and implementation of additional infection control precautions? The primary objective of this study was to determine whether the presence of fever is a sensitive indicator of influenza A in adults presenting to the emergency department.
Methods: This was a retrospective chart review of adult cases of influenza A at

Hamilton General Hospital for the 2014–15 and 2015–16 influenza seasons. A retrospective review of laboratory confirmed cases of influenza A was conducted to identify specific symptoms and admitting diagnoses that resulted in patients being tested for influenza A. Influenza A was reviewed, as it is the most common cause of acute viral respiratory illness in the adult inpatient population, according to positive laboratory test results.
Results: A total of 2071 nasopharyngeal swabs were obtained, resulting in 213 (10%) cases of influenza A. Out of these cases, fever was documented in 49% (n = 104) of cases; shortness of breath was observed or reported in 57% (n = 122) of cases; cough was observed or reported in 68% (n = 146) of cases. Of patients positive for influenza A: 24% were admitted for pneumonia; 15% were admitted for chronic obstructive pulmonary disease (COPD) (including acute exacerbations of COPD); 10% were admitted for upper respiratory tract infection, influenza/influenza-like illness, cough and/or shortness of breath; 7% were admitted for congestive heart failure (CHF).
Conclusion: Only 41% of influenza A positive patients presented with a fever and cough and/or shortness of breath. Patients who tested positive for influenza A were most frequently admitted with a diagnosis of pneumonia, COPD or CHF. Only 10% of patients who tested positive for influenza A had an admitting diagnosis of an upper respiratory tract infection, influenza-like illness, cough and/or shortness of breath. In order to ensure that patients receive appropriate care, and to help ensure the safety of other patients, staff and visitors, it is important to ensure, especially during influenza season, that patients presenting with new or worsening cough and/or shortness of breath are tested for influenza and other viral respiratory illnesses, regardless of whether or not patients are reporting or presenting with fever.

MONDAY POSTER BOARD 21

INFECTION PREVENTION AND CONTROL LESSONS LEARNED FROM CANADA'S FIRST REPORTED CASE OF MULTIDRUG RESISTANT

Jen Tomlinson, Molly Blake, Myrna Dyck, Andrew Walkty, Greg Hammond, John Embil; Winnipeg Regional Health Authority
Issue: Candida auris is a fungal pathogen that can cause invasive healthcare-associated infections with high mortality. The first Canadian identification of a multi-antifungal resistant strain C. auris from a clinical specimen was from Winnipeg, Manitoba in a 64-year old female with recent hospitalization in India for elective oral surgery. Her case was complicated by a brain abscess of presumed odontogenic origin. Upon her return to Winnipeg, she initially presented to a community hospital, and then transferred to a tertiary care centre, where she tested positive for a carbapenemase producing Enterobacteriaceae (CPE) during her hospitalization. After discharge, during an outpatient follow up appointment, a swab of ongoing ear drainage was sent for bacterial and fungal culture yielding C. auris. Due to its relative novelty, local protocols did not outline specific control measures to prevent transmission. Unlike most other Candida spp., C. auris can persist on environmental surfaces and is easily spread between patients. Reports of outbreaks suggest C. auris may substantially contaminate the environment of persons who are colonized or infected. Indirect contact transmission from contaminated equipment, and direct contact transmission from the hands of healthcare workers are particular risks. Strict adherence to hand hygiene, appropriate infection prevention and control (IP&C) practices and environmental cleaning are key to helping prevent transmission in healthcare.
Project: An expedited literature review to develop a specific disease protocol was undertaken. The objective was to provide direction regarding isolation precautions, management of the equipment and environment, and contact identification and follow-up.
Results: Key findings for inclusion in the IP&C Specific Disease Protocol included the use of Contact Precautions in addition to Routine Practices for both confirmed and suspect cases (i.e., contacts). As heightened awareness is required for this pathogen, the idea to implement an elevated form of Contact Precautions was proposed (Containment Precautions). This would address pathogens such as CPE, C. auris, and other emerging multi-drug resistant, high-risk organisms. These precautions include increased cleaning and disinfection of the patient's room, including the use of a sporicidal disinfectant. A region wide policy and management strategy has been formulated. Additional contact screening did not result in transmission to other patients.
Lessons Learned: There will always be "new" pathogens presenting to our local healthcare facilities and rapid identification of those infected or colonized with these pathogens is essential to prevent transmission. IP&C plays a critical role in protecting the healthcare setting by keeping policies and procedures updated to contain new emerging pathogens as they arise. The introduction of Containment Precautions will allow for sounder management of these emerging pathogens.

MONDAY POSTER BOARD 22

PRIMARY CARE PROVIDERS AND NIAGARA REGION PUBLIC HEALTH (NRPH) UNITE THROUGH EDUCATION AND CONSULTATION TO IMPROVE INFECTION PREVENTION AND CONTROL (IPAC) IN COMMUNITY PRACTICES

Carolyn Whiting, Ryan VanMeer, Mustafa M Hirji, Valerie Jaeger, Peter Samuels, Maureen Cividino, Donna Moore, Carolyn Dyer, Tracy Haley, Lorrie Ross, Diana Teng, Gillian Dilts; Niagara Region Public Health
Issue: The College of Physicians and Surgeons of Ontario (CPSO) does not currently require a physician to demonstrate competency in IPAC before granting a license to practice medicine in Ontario. As a result, it was identified that many primary care providers across the Niagara Region receive limited IPAC training during the course of their medical training. Despite the release of several Provincial Infectious Diseases Advisory Committee best practice documents and modules, primary care providers communicated to NRPH that they were unaware of these resources and any changes to IPAC standards of practice. Primary care providers linked to IPAC complaints, had never evaluated their own practices for IPAC risks. These perceived needs by primary care providers were identified by findings during IPAC complaint investigations of their practices.
Project: NRPH developed a two-pronged approach, which included an interactive IPAC educational event connected to Continued Medical Education (CME) credits, with the option of having an on-site IPAC consultation with NRPH staff at their clinic for further CME credits. The process supported primary care providers through the integration of knowledge gained from the education event into practice. The educational event focused on a review of Public Health Ontario's checklists for clinical office settings. The on-site visits to their practice supported consultation, promoted a collaborative approach, and were non-punitive. Feedback provided by NRPH staff assessed post-event knowledge, and evaluated the extent to which participant's integrated best practice from the educational event into day-to-day practice.
Results: The CME event had 98 people in attendance; with 9 on-site consultations. Target Audience - Primary care providers, family physicians and interprofessional teams.
Evaluation:
- 98% of participants agreed the program content met the objective of recognizing and discussing commonly observed risks for the preventable transmission of infection in a clinical office setting;
- 96% of participants agreed the program content met the objective of explaining how IPAC practices commonly observed in Ontario can result in preventable transmission of disease;
- 92% of participants agreed the program content met the objectives of applying IPAC standards of practice to modify risks for transmission of infections in a clinical office setting;
- 82% of participants agreed the program content met the objective of using IPAC standards to develop IPAC policies and procedures for clinical office practice.

Lessons Learned:
- Significant need for IPAC education identified through a literature review and needs assessment; Importance of putting knowledge into practice, and for on-going education, communication, support and consultation between NRPH, CPSO and local health care providers; and
- Promotion of practice sustainability through understanding the importance of policies and procedures and engagement through monthly newsletter.

MONDAY POSTER BOARD 23

A SURGICAL SITE INFECTION PREVENTION BUNDLE FOR CEREBROSPINAL FLUID SHUNT INSERTIONS AND REVISIONS: TOWARDS SHUNT-RELATED SURGICAL SITE INFECTION REDUCTION AND COST AVOIDANCE

Annie Fong, Elissa Rennert-May, Debbie Lam-Li, John M Conly, Mark Hamilton, Albert Isaacs; Alberta Health Services
Issue: Insertion of cerebrospinal fluid (CSF) shunts is often necessary for hydrocephalus. CSF shunt related surgical site infections (SRSSI) can cause significant morbidity including shunt malfunction, cognitive impairment, and require antibiotic therapy and surgical replacement. A SRSSI rate of 3.24% in adults was reported by the Canadian Nosocomial Infection Surveillance Program (CNISP) in 2013. These infections are also costly, with an average in-hospital cost of $50,000 USD, making it one of the most financially costly

implant-related infections in the United States.
Project: A Surgical Site Infection Prevention Bundle (SSIPB) with a 9-point checklist addressing pre- and peri- operative care was developed by Neurosurgery and Infection Prevention and Control and then evaluated using an uncontrolled before-after design. A prospective surveillance system for SRSSI was designed based upon the CNISP protocol. SRSSI was defined as having a microbe isolated from CSF with a shunt in situ and associated with at least one of: fever (> 38° C); neurological signs or symptoms; abdominal signs or symptoms or; signs or symptoms of shunt malfunction/obstruction. Denominator data was provided via an Operating Room database. Pre- and post-bundle differences were assessed using a x^2 or Fisher exact test. Cost of SRSSI was also estimated through the use of the Patient Cost Estimator (Canadian Institute of Health Information (CIHI)) and physician billing codes.
Results: The implementation of the bundle occurred over a 24-month period to achieve complete compliance. The SRSSI for insertion and revision procedures decreased from 3.94% (17/431) in the pre-bundle period to 0.63% (1/160) in the post-bundle period (p=0.055, two tailed). The SRSSI for insertion procedures decreased from 5.9% (12/205) pre-bundle to 0% (0/66) post-bundle (p=0.04, two tailed). The SSIPB has no notable upfront costs. The cost of a single SRSSI was estimated to be $49,279 - $52,582 CAD. A potential cost avoidance for SRSSI of $788,464 - $841,312 CAD over five years was realized with the use of the SSIPB, equating to $157,692 - $168,262 CAD per year.
Lesson Learned: A 6.3 fold reduction in infection was observed overall and there was a significant decrease of SRSSI for shunt insertions post-implementation of the SSIPB, without the use of antibiotic-impregnated catheters. Changes in the operating room culture took time and were challenging, however, this bundle has achieved significant infection reduction. This quality improvement initiative highlights an opportunity for expansion of similar SSIPB to other neurosurgeries. The cost estimates were based on general average Canadian in-hospital costs but the use of micro-costing for detailed analyses to illustrate cost savings may be more accurate. The demonstration of improved patient health outcomes and improved economic efficiency can help promote sustainability and expansion of the SSIPB.

MONDAY POSTER BOARD 24

IMPROVING STAFF INFLUENZA VACCINATION RATES USING COMPETITIVE INCENTIVE-BASED ACTIVITIES

James Wong, The Influenza Campaign Committee; Sinai Health System, Toronto
Issue: Hospital staff influenza vaccination rates in Ontario are not ideal and present an opportunity for improvement. Publicly reported staff vaccination rates in acute care facilities during the 2016/17 influenza season ranged from 30-68%. At our hospital, the average vaccination rate from 2011/12-2016/17 has been 58%. Identifying initiatives to increase awareness around staff influenza vaccination and the influenza campaign have been challenging.
Project: Our hospital has had site-wide staff and patient influenza vaccination campaign for many years. It includes a two-week long lobby clinic, traveling vaccination cart, Q&A in the hospital newsletter, flu season updates in the hospital newsletter, and other activities that change from year to year. One of the most successful long-standing activities has been coffee card days. Staff that received their vaccine on designated days would receive a coupon for a free coffee. Using an incentive-based approach to behaviour change, the influenza planning committee added two novel activities for the 2017/18 influenza campaign: Fantasy Flu Vaccine Team Challenge and Influenza Quizzes. The Fantasy Flu Team Challenge was an activity that took place two weeks before the launch of the influenza campaign. Staff were asked to create "teams" of 10 staff that they believed would get vaccinated and also provide their guess for the staff vaccination rate on a particular date. Prizes were either a $25 or $50 voucher. The Influenza Quizzes were developed for use with a tablet, and offered to staff at a Patient Safety week booth, and by program staff offering vaccine via the travelling cart. At the end of the day, staff that completed a quiz had a chance to win a $5 voucher. Funding for these activities was provided by GSK and AstraZeneca.
Results: Our hospital's vaccination rate increased from 58% in 2016/17 to 63% in 2017/18. The most noted change of this influenza campaign was the addition of the two incentive-based activities. Staff were pleased to see a unique approach was taken to promote vaccination and also enjoyed the chance to win a prize. Furthermore, the vaccinator assigned to the travelling cart also felt it was easier to approach people about getting their influenza vaccine.
Lesson Learned: Using unique competitive incentive-based activities to promote the influenza campaign led to discussion about influenza and influenza vaccine. Whether it directly led to the increase in vaccination rate this year is unknown, but staff appreciated the chance at winning prizes and the opportunity to participate in some unique activities while learning about the influenza and influenza vaccination during our annual campaign.

MONDAY POSTER BOARD 25

VISUAL FEEDBACK AS A BEHAVIOURAL SCIENCE TOOL TO IMPROVE CLEANING OUTCOMES

Mark McInnes, Natalie Ambler; Charlotte Products Ltd.
Issue: Issues associated with standard manual environmental cleaning and disinfection can be frequently related to process and by consequence the behaviours of those performing the processes. One challenge associated with improving these behaviours is the lack of visual feedback associated with disinfection as reported by Sax et al in 2015. Multiple frameworks for modeling and modifying behaviours have been published in the literature. For the purpose of this work we use The Behaviour Change Wheel as proposed in Atkins 2016. As noted by Atkins, the process of behavioural modification is often approached from the viewpoint that immediate intervention is the best tool to achieve the desired outcomes while quite often ignoring the fundamental reasons for the initial behaviour.
Project: This work involved a consultative process using innovative surface imaging technology along with other traditional environmental sampling methods to achieve multiple intervention functions for addressing issues related to sources of behaviour. Case studies were conducted at facilities including hospital, clinic and long-term care facilities. With the direct involvement of cleaning staff, results of adenosine triphosphate swabs (ATP) and microbiological swabs were collected on surfaces throughout the facility. Simultaneously, imaging spatially specific surface contamination data was also captured. This process was also used as an opportunity for immediate intervention through real-time education and training as well as an opportunity to understand if the current tools and processes provided the staff with the opportunity to complete tasks to satisfaction. After compiling, a report was presented to the staff and management including recommendations.
Results: The results are primarily qualitative based on feedback from the case studies. Improvements where observed in cleaning technique and outcomes both during the consultation process and upon follow up. Staff and management reported surface imaging as an essential component for understanding process issues allowing for improved training, cleaning techniques and availability of tools to complete tasks. Related to The Behaviour Change Wheel, this exemplifies both psychological and physical improvements in the capability and opportunity sources of behaviour. Furthermore, both the immediate visceral response to the images and the clear memory of the results on follow up visits indicates that the training had behavioural depth to affect both the automatic and reflective motivations of the worker. Finally, as the cleaners were part of the process, the projects were not seen punitive but rather increased buy in from the staff.
Lessons Learned: Visual feedback is a powerful tool when considering behavioural modification for improved cleaning outcomes. Consideration should be given to increased use of visual tools for auditing training and processes development.
Funding: NSERC, OCE, EODP, Charlotte Products Ltd.

MONDAY POSTER BOARD 26

SPECIAL WEAPONS AND TACTICS (SWATS): A GREAT ARSENAL AGAINST CLOSTRIDIUM DIFFICILE INFECTIONS (CDI)

Natalie Bruce, TOH IPAC Program on behalf of all SWAT Team Members, Kathryn Suh; The Ottawa Hospital
Issue: In September 2012 the Ottawa Hospital (TOH) experienced a rise in hospital-acquired (HA) CDI rates. In response, TOH implemented a multidisciplinary pre-outbreak (SWAT) team made up of Housekeeping, Infection Prevention and Control (IPAC), Logistical Services and Nursing. The SWAT team's goal was to address all immediate issues related to CDI when 2 or more HA cases were identified in a unit within 2 weeks.
Project: Feedback from SWAT team members led to several modifications over the last 5 years. In 2014 expected response time for SWATs was extended from 48 hours to 5 days, and pharmacists and physicians were added to the team. In 2016 a reporting process to the hospital executive was implemented.
Results: Since the implementation of SWATs, annual HA CDI cases have decreased from 208 to 134. The number of outbreaks has decreased from 5 to 3

per year, and the number of CDI outbreak-days annually has decreased from 266 to 78.
Lessons Learned: Ongoing evaluation is important for all quality initiatives (QI) to maximize their potential. It sometimes requires prolonged periods to see the benefits of QI programs. Incorporating feedback and regularly fine tuning the process contribute to success and sustainability.

MONDAY POSTER BOARD 27

CLEAN HANDS AT EVERY MEAL: PROVIDING HAND HYGIENE OPPORTUNITIES TO IN-PATIENTS

Cameron Thomas, Hibak Mahamed, Safiyya Nazarali, Florentina Belu, Michael Rotstein, Stefania Cloutier, Jennie Johnstone; St. Joseph's Healthcare, Toronto
Issue: Despite extensive approaches to improve healthcare provider hand hygiene, few studies have investigated the optimal approach to patient hand hygiene. Studies have shown that patient hand hygiene before meals can reduce health care-associated infections. To successfully encourage patients to perform hand hygiene there are many factors that should be considered, such as: ease of product use, a product that patients enjoy using and targeting specific moments that require hand hygiene.
Project: To identify how to implement a sustainable Patient Hand Hygiene program in an acute-care hospital setting, two different methods of hand hygiene were trialed for a period of 2 months (October 2 to November 30 2017) on two inpatient medicine units. One unit was provided individually packaged alcohol wipes on each meal tray; while the second unit had alcohol-based hand rub (ABHR) dispensers mounted on the over-bed tables. A multimodal approach was used to provide reminders to all patients on the unit to perform hand hygiene at each mealtime. This included an overhead announcement, printed reminder cards delivered on the trays, and in-person reminders from front-line staff. A survey was conducted to evaluate patient product preference as well as the preferred methods of communicating the importance of hand hygiene. Volunteers were engaged to collect daily surveys from patients and their visitors.
Results: In total, 200 patient surveys were collected and analyzed. Patients preferred the ABHR dispensers; patients reported a higher satisfaction with the ABHR product (84%) than the wipes (61%) (P=0.0003), and required less assistance to use the ABHR (7%) than the wipes (24%) (P=0.0008). The surveys also provided insight into the optimal method of reminding and educating patients about hand hygiene at mealtime. Of the patients who indicated they had received a reminder to clean their hands before eating, 65.6% indicated that the reminder came from the card provided on the meal tray, 21.9% from the overhead announcement and 12.6% were reminded in person.
Lessons Learned: This project highlights the need to include the patient perspective when introducing a patient hand hygiene program. Given that patients are the ones that will be using the product, it is imperative to incorporate their preferences. Through patient feedback we identified ABHR as the preferred product. The surveys also indicated the use of reminder cards on the meal tray as the most effective method to remind patients of the importance of hand hygiene at meal times.

MONDAY POSTER BOARD 28

ASB! . . . DON'T TREAT ME!

Paula C Stagg, Betty Anne Elford; Western Health, Corner Brook, NL
Background: Asymptomatic Bacteriuria (ASB) is a common challenge in the Long-Term Care population. By definition, ASB is the presence of bacteria in the urine without signs or symptoms of an infection. In long term care facilities, asymptomatic bacteriuria (ASB) prevalence is 40-50% (Leduc, 2014). Inappropriate treatment of ASB with antibiotics can contribute to adverse outcomes, including antimicrobial resistance and Clostridium difficile infections. Within Western Health Long Term Care facilities, Infection Prevention and Control (IPAC) staff noted a large proportion of residents were being treated for ASB. Chart reviews identified ineffective charting by nursing staff; significant inappropriate testing of urine cultures on residents on admission and post treatment; and lack of knowledge of front line staff related to true sign and symptom, appropriate urine collection techniques, fever in the elderly, and dehydration.
Project: IPAC practitioners developed an education plan based on a combination of the AMMI "symptom free pee, let it be" and Public Health Ontario's (PHO) Urinary Tract Infection (UTI) program for Long Term Care. One-hour education sessions were scheduled with registered nurses (RN), licensed practical nurses (LPN), and personal care attendants (PCA) at the facilities emphasizing: 1) signs and symptoms of a UTI and catheter associated urinary tract infection (CAUTI); 2) proper urine collection and storage; 3) fever in ages 65 and older; 4) causes of delirium; 5) signs of dehydration; and 6) reinforcement of previous CAUTI prevention education. The education was offered to physicians and nurse practitioners and was supplemented with an informative letter of the program. A special edition of the resident and family newsletter was issued specific to the program. Posters from the AMMI and PHO programs were used to facilitate behavior change and to reinforce best practices. Outcome measures included: 1) targeted surveillance of UTI, CAUTI and residents inappropriately treated with antibiotics who did not meet criteria in LTC facilities; 2) pre and posttest for knowledge transfer; and 3) number of urines ordered for culture pre and post intervention.
Results: Outcome measures to date include increase in staff knowledge from 48% to 92%; decrease of overall urines sent by 50% from pre-intervention to post intervention; and 3) a decrease in inappropriate treatment from 10.4 per 10,000 resident care days (RCD) quarters 1 to 3 in 2016-2017 to 8.2 per 10,000 RCD quarters 1 to 3 2017-2018.
Lessons Learned: Education and empowerment of the front-line staff is important for behavior change, however it is equally important to engage prescribers and families to aid front line staff with implementation of new processes. The best improvements in inappropriate treatment occurred when biweekly UTI rounds occurred.

MONDAY POSTER BOARD 29

TO VRE OR NOT TO VRE

Colette D Ouellet, Gregory W Rose; Queensway Carleton Hospital, Ottawa
ISSUE: Queensway Carleton Hospital (QCH) is a large community hospital in the Champlain LHIN. We have approximately 280 beds and provide Emergency, Medical, Surgical, Mental Health, Obstetrics, Intensive Care and Peri-operative inpatient services. On April 1, 2015, 3 years after four large tertiary centers in Ontario, including our main hospital in Ottawa, decided to stop screening and isolating patients with Vancomycin Resistant Enterococcus (VRE), a decision was taken at all hospitals within our region to follow suit. Prior to this decision, QCH had dedicated three years of work toward improving our "4 pillars" of infection control (hand hygiene, environmental cleaning, decluttering and management of human waste) to reduce the likelihood of transmission of microorganisms within the hospital. Recently, increased rates of VRE bacteremia in some of the large hospitals that stopped managing VRE in 2012 have been identified through Public Health Ontario, resulting in questions about returning to screening and isolating VRE positive patients.
PROJECT: A review was undertaken of both regional data on VRE bacteremia, and our internal data for VRE infections and identified colonization, comparing rates prior and subsequent to April 1, 2015.
RESULTS: From January 2013 to March 2015, QCH had 20 patients with nosocomial VRE infections: 16 urinary tract infections (UTI), 2 other infections and 2 bacteremias. From April 1, 2015 to December 31, 2017, QCH has had 19 patients identified with VRE infections: 12 UTI, 6 other infections and 1 bacteremia. Nine of these are considered nosocomial to our hospital. No increase in nosocomial VRE infections has been identified to date. However, the number of cases of VRE colonization in the urinary tract in the same period has increased from 1 to 13. Regionally, there appears to have been a large increase in VRE bacteremias in the Champlain LHIN. An increase which begins following the dissolution of VRE management interventions by the large tertiary centre in 2012, and which continues to increase after the remainder of hospitals in the LHIN stopped managing VRE, in April 2015. However, when the influence of the large tertiary care centres are removed, there has been no change in the rate of VRE bacteremias for the period prior to and since these smaller hospitals stopped management of VRE.
LESSONS LEARNED: Outside of the large tertiary care centre, which houses our regional bone marrow transplant unit and provides active oncology services to in- and out-patients, there has been no noted increase in VRE bacteremia in the region. Although rates of community acquired genitourinary VRE have increased at QCH, we have not seen an increase in VRE bacteremia in the 33 months since changing our approach to VRE management. Attention must be continued to ensure we limit opportunities for transmission of all organisms through the 4 pillars of infection control. This will continue to be monitored.

POSTER PRESENTATIONS

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POSTER PRESENTATIONS WILL BE HELD MONDAY, MAY 28 AND TUESDAY, MAY 29, 2018
12:30 – 1:30 p.m.

MONDAY POSTER BOARD 30

THE UTILITY OF IN-HOUSE GENOTYPING ASSAY FOR MEASLES VIRUS: A CASE OF VACCINE-ASSOCIATED MEASLES AND INFECTION PREVENTION AND CONTROL RESPONSE

Lucas Churchill[1], Francesco A Rizzuti[1], Kevin Fonseca[2], Raymond Tellier[1], Judy MacDonald[3], Joseph Kim[1]
1. University of Calgary; 2. Provincial Laboratory for Public Health, Alberta; 3. Alberta Health Services

Issue: Measles is a highly contagious viral infection. Contact investigation following a case of measles can be resource-intensive. While endemic transmission of measles has ceased in Canada since the implementation of two-dose measles-mumps-rubella (MMR) vaccine, sporadic imported cases occur among those under-immunized. Complications from measles vaccination are uncommon but can rarely present with clinical illness that is indistinguishable from wild-type measles infection. Discriminating between wild-type and vaccine-associated measles is important in guiding Infection Prevention and Control (IPC) and Public Health (PH) response. Although vaccine-associated measles is generally considered to be poorly transmissible, there is uncertainty around its communicability to immune-compromised close contacts.
Project: We present a case of a 40-year-old female who was admitted to our hospital with fever, cough, and rash resembling a classic measles infection. She was 2 months post-partum and non-immune to measles given her lack of childhood immunization. She had received an MMR vaccine 10 days prior to presentation. An acute respiratory viral infection including measles was suspected. Nasopharyngeal and urine samples confirmed infection with measles virus by real-time polymerase chain reaction (RT-PCR), which targets the hemagglutinin (H) and nucleotide (N) gene of the virus. Although there were no known local cases of measles at that time, imported wild-type measles could not be ruled out. Differentiation between a wild-type and vaccine strain was performed by genotyping. This in-house assay targets a small nucleotide polymorphism (SNP) in the H gene and detects a SNP that is unique to Schwarz and Moraten vaccine strains used in North America. Patient was placed on airborne-precautions pending confirmation. Immediate contact investigation was not initiated. A review of literature was conducted to determine the communicability of vaccine-associated measles.
Results: Genotyping result was available within 24 hours and showed that the virus was a vaccine strain. Subsequently, the isolate was sent to the national reference laboratory, which confirmed it belonged to genotype A, a vaccine strain. After the review of literature and expert consultation we did not initiate a contact investigation and immunoprophylaxis was not offered to her two-month old infant. The patient improved with resolution of fever, and rash. A telephone interview at three months revealed that both the patient and her infant were doing well.
Lesson Learned: This case illustrates the utility of rapid genotyping of measles virus in directing IPC and PH response. We were able to circumvent a potentially extensive contact investigation based on the availability of local genotyping assay. Our case outcome also corroborates the understanding that vaccine-associated measles is considered poorly transmissible with minimal risk to close contacts, regardless of their immune status or age.

MONDAY POSTER BOARD 31

CLOSTRIDIUM DIFFICILE REMOVAL EFFICACY OF A NOVEL NON-ANTIMICROBIAL HAND WASH

Sarah L Wilson[1], Kendra Drake[2]
1. GOJO Industries; 2. BioScience Laboratories

Background/Objectives: Clostridium difficile has been the most frequent cause of infectious diarrhea in Canadian healthcare facilities. It can cause life-threatening complications, and is particularly serious in long-term care facilities where residents are of advanced age. It is known that hand hygiene is important for reducing transmission of C. difficile spores, and the Public Health Agency of Canada recommends frequent handwashing with soap and water. The objective of this study was to determine the efficacy of a novel non-antimicrobial hand wash for removal of C. difficile spores from hands.
Methods: A novel hand wash with improved interfacial tension properties, a measure of the interaction of the soap with skin, was tested with 12 participants using a modification of ASTM E 1174. Hands were contaminated with 150 ul (~1 x 109 CFU/ml) non-toxigenic C. difficile spores (ATCC #700057) applied to the palmar surface of each hand and rubbed together. Five ml of the test product was applied to dry hands, lathered for 30 seconds and rinsed for 30 seconds. Log10 reductions from baseline were calculated.
Results: The baseline log10 recovery was 7.40, and the log10 reduction from baseline was 1.43±0.25. Conclusion: This study indicates that a novel hand wash has efficacy for removal of C. difficile spores on hands (96.3% reduction). This data supports current recommendations for use of soap and water for reduction of C. difficile spores on hands.

MONDAY POSTER BOARD 32

ASSESSING WHAT STAKEHOLDERS NEED IS KEY (ASK): EMBEDDING EVALUATIVE THINKING EARLY IN THE DEVELOPMENT OF AN ONLINE LEARNING RESOURCE

Risa L Cashmore, Esther Chan, Laura Farrell, Laurie Rodnick, Omar Sharif, Eva Skiba; Public Health Ontario

Issue: The design and development of interactive, engaging online learning modules requires considerable time and effort. It may be discovered after project completion that the intended outcomes were not achieved due to factors within and/or external to the organization. Therefore, applying early and ongoing evaluative thinking to obtain stakeholder input is essential for the development of any modules. This approach was applied to the design and development of an infection prevention and control Personal Risk Assessment online learning module by Public Health Ontario (PHO).
Project: Recognizing that the closer the learning context replicates elements of authentic clinical settings, the easier it is for the learners to transfer their learning to application, the project team employed a four-pronged approach to ensure early and ongoing stakeholder and peer engagement. 1. External stakeholders were involved early to suggest tasks which were then used to develop scenarios that mirror daily practice in acute care. 2. Internal peers reviewed the acute care (AC) prototype to ensure content accuracy and adherence to current best practice guidelines. 3. Feedback to the prototype was sought from external stakeholders through survey and focus group as per our organization's ethics and privacy guidelines. The project team concurrently developed content unique to other healthcare sectors (long-term care and community care). 4.The acute care prototype and the unique content related to other sectors were presented in person or by webinar at existing external stakeholder communities of practice (CoP) sessions.
Results: External stakeholder feedback about a change in terminology and practices in one of the sectors was surprising to the project team. Content resonated with stakeholders in all but one of the CoP sessions. The intended audience needed to be re-defined since a single online learning resource could not address the needs of all the different audience groups.
Lessons Learned: 1. Engaging stakeholders early and throughout the process of developing online learning resources can have considerable value by addressing trends in language and evolving practice change as well as ensuring that content resonates with stakeholders. 2. When stakeholders share differing perspectives or opinions, it is helpful to explore the rationale for such divergent views (e.g., whether the difference is due to subjective preference or dissimilar work settings, work roles, regions). 3. The use of multiple CoP sessions enabled the project team to present and validate stakeholder feedback which helped in determining if, and how, their feedback should be incorporated into the online learning resource. 4. Going forward, a process will be created to ensure stakeholder consultation during different stages of online learning resource design and development.

MONDAY POSTER BOARD 33

THE KEY TO SUCCESS: A COLLABORATIVE APPROACH TO PATIENT AND FAMILY CENTERED HAND HYGIENE

Ronny Leung, Katherine Perkin, Vydia Nankoosingh; The Scarborough and Rouge Hospital

ISSUE: Hand hygiene has been recognized as one of the most important ways to stop the spread of infections in health care settings. Historically, emphasis has been placed on health care worker (HCP) hand hygiene compliance, yet limited resources have been directed at patient's hand hygiene habits.
PROJECT: In an effort to identify ways to promote patient and family hand hygiene, the Infection Prevention and Control Department and the Patient and Family Advisory Council at Scarborough and Rouge Hospital (SRH) collaborated to create and distribute two surveys: one for patients and one for HCPs. The survey for patients and families assessed knowledge of basic infection prevention including hand hygiene. The survey for HCPs assessed HCP readiness for patient engagement in hand hygiene.

RESULTS: Of the 139 patients surveyed, 36% did not believe that staying in hospital increased their risk of getting infections. In addition, 45% of patients thought all infections can be treated with antibiotics. Almost all (99%) of patients are aware that HCPs should perform hand hygiene prior to providing care, however only three quarters of them would speak up to remind HCPs if they forgot to clean their hands. Over 600 HCPs were surveyed. 70% of HCPs have engaged in conversations with their patients regarding hand hygiene. In addition, 80% of HCPs felt that patients are playing an active role in their health care when they ask HCPs to clean their hands. 94% of HCPs felt strongly that prevention of health care associated infections is the main reason for hand hygiene.
LESSON LEARNED: The majority of patients and HCPs agree patients can play an active role in their care by performing hand hygiene and by asking staff to clean their hands prior to care delivery. The HCP survey confirmed that HCPs at SRH are ready to engage patients in the promotion of patient hand hygiene. The patient survey identified that there is opportunity to address misconceptions in the area of infection prevention, specifically with regards to the risk of infection while in hospital and the use of antibiotics to treat infections. This will be important information to include in future patient education at SRH.

MONDAY POSTER BOARD 34

PRACTICE REVIEW – REVIEWING OUR ANTIBIOTIC RESISTANT ORGANISM (ARO) SCREENING PRACTICES

Safiyya Nazarali[1], Michael Rotstein[1], Jennie Johnstone[1], Hibak Mahamed[1], Florentina Belu[1], Cameron Thomas[1], Stefania Cloutier[2]
1. St. Joseph's Healthcare, Toronto; 2. Halton Healthcare, Burlington
Issue: Admission screening practices for antibiotic resistant organisms (ARO's) such as Methicillin-resistant Staphylococcus aureus (MRSA) and Vancomycin-resistant Enterococci (VRE) vary between health care facilities. Approaches include targeted (risk based), universal or a combination, depending on unit type. Currently, St. Joseph's Health Centre, Toronto, conducts universal screening of all patients admitted to Medicine and Surgery and targeted screening for patients admitted to Paediatrics.
Project: The purpose of this study was to review the ARO admission screening practices at St. Joseph's Health Centre with the goal of determining the most appropriate screening practice for each in-patient population studied. To this end, a chart review was conducted of medical, surgical and paediatric patients admitted between September 1st and October 31st 2017. A data collection tool was created to document risk factors including previous history of MRSA/VRE. Patients at risk for ARO colonization were identified through the Provincial Infectious Diseases Advisory Committee's (PIDAC), screening, testing and surveillance for AROs best practice guideline. Descriptive statistics were used to calculate the following: 1) The proportion of patients who meet the criteria of being at risk for an ARO. 2) The proportion of ARO positive patients who would be missed through targeted (risk based) screening. 3) The proportion of patients that ought to be swabbed and were not.
Results: Over the course of the study period, 578 charts were reviewed; 288 medical, 232 surgical and 58 paediatric. The proportion of patients who met the criteria to be considered at risk for an ARO was 54% medical, 43% surgical and 33% paediatric. The proportion of ARO positive patients who would be missed through risk-based screening is 1% medical, 0.4% surgical and 0% paediatric. The proportion of patients that ought to have been swabbed but were missed was 4% medical, 25% surgical and 89% paediatric.
Lesson Learned: Results of the review have helped to identify gaps in current practice with respect to varying admission screening practices between the Medical, Surgical and Paediatric Departments. Future steps include reviewing how risk-based screening can be implemented within targeted areas of the hospital, reducing the number of missed swabs in risk-based screening areas, as well as updating internal policies and procedures.

MONDAY POSTER BOARD 35

PARAMEDICS' CONFIDENCES AND CONCERNS ABOUT INFECTIOUS DISEASE PANDEMIC PREPAREDNESS

Lisa Young, BC Emergency Health Services, Victoria
Background/Objectives: Pandemics occur when a new or unfamiliar type or strain of infection is introduced, causing widespread illness globally (Coppola, 2011). The unpredictable nature and impact of pandemics require healthcare systems to prepare for likely surges in sick patients, increased staff exposure to the infection (Barbisch & Koenig, 2006), and possible absenteeism of staff (Dewar, Barr, & Robinson, 2014). Qualitative research on pandemic preparedness in pre-hospital care is sparse. The purpose of this research study was to gain a deeper understanding of the confidences and concerns paramedics have about working during a pandemic. The research study sought to explore (a) the confidences and concerns held by paramedics regarding pandemics, and why they hold these beliefs; and (b) how paramedics could feel more confident about working during a pandemic?
Methods: A qualitative comparative case study approach was employed for this study to explore, compare, and contrast the views of paramedics working in two distinct geographical areas: one urban and rural community context in British Columbia, Canada. Convenience and nominated sampling was used to select participants based on geographic location and experiences in pre-hospital care. 13 paramedics participated in the study through semi-structured interviews and a focus group discussion. To analyze research data, thematic analysis was used and similarities and differences were explored within and across the two geographically bounded cases.
Results: Few distinct differences were found across the two geographically bounded cases; confidences and concerns were similar for all participants. Research findings suggested that confidences and concerns are not two separate categories; rather they are inextricably related for the paramedics involved in this study. Education, availability of effective equipment, robust communication, and personal and family well-being were identified as important considerations to develop confidence amongst paramedics in pandemic planning.
Conclusion: Concerns and confidences raised in this study are consistent with existing literature on pandemic preparedness; however, this study explores the perspectives of paramedics specifically. This research suggests paramedics play a vital role in understanding pandemic preparedness and can offer contextualized solutions and possibilities to improve confidence and allay concerns. Future research in pandemic planning, preparedness, and response may benefit from exploring the insights and perspectives from paramedics and other healthcare providers in the field of prehospital care.

MONDAY POSTER BOARD 36

ANTIMICROBIAL EFFICACY IMPLICATIONS OF PAIRING DIFFERENT WIPE SUBSTRATES WITH LIQUID DISINFECTANTS

Guianeya Perez Hernandez, Sean Van Den Berg, Faraz Ahmadpour; Virox Technologies
Background/Objectives: Pre-saturated disinfectant wipes play an important role in minimizing the spread of pathogens in health care facilities. However, there are no guidelines on the proper pairing of wipes with disinfectants. This study assessed the physical interactions between three wipe substrates: melt-blown polypropylene (MP), looped microfiber (MF), and cotton terry cloth (TC) and five types of cleaner-disinfectants: 0.5 % Accelerated Hydrogen Peroxide®(A), 0.8 % quat/20 % alcohol (B), 0.08 % phenol (C), 0.07 % quat (D), and 0.65 % bleach (E). Secondly, we studied the correlation between liquid release, drying pattern and the efficacy of two of these products when paired with MP and MF substrates.
Methods: Each wipe substrate was tested for its minimum and maximum disinfectant saturation load. Liquid release was tested during application on a hard, non-porous surface. For the microbial phase of this study, MP and MF were saturated with products A or B and challenged against Staphylococcus aureus. Bacterial cells remaining on the surface were recovered using a quantitative method of swabbing. Wipes were sized to equalize the liquid released. Six representative samples were taken from two different zones (first and last zones wiped) of the test area, and three samples per zone were processed to recover surviving cells.
Results: Only products A and B were able to completely saturate MP wipes due to their sufficient wetting capabilities. MF and TC released liquid early during the wiping application, causing an uneven drying pattern, while MP covered the surface area homogeneously and had a consistent contact time. In terms of antimicrobial efficacy, only one product was able to achieve ≥ 6 logs reduction with both wipes and in both sample zones of the wiped test area. The other product with MP wipes produced 3 logs reduction in both sample zones, while MF wipes achieved ≥ 6 logs in the first zone wiped versus 4 logs in the last zone.
Conclusions: Overall, the wipe substrate had a higher impact on the general physical dynamics between disinfectant and surface than the disinfectant chemistry. Antimicrobial efficacy was directly affected by the observed drying pattern that each product–substrate combination produced. Our findings reinforce that achieving optimal surface disinfection requires a calculative process to pair proper wipe substrate(s) with liquid disinfectants.

POSTER PRESENTATIONS

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12:30 – 1:30 p.m.

MONDAY POSTER BOARD 37

DESCENDING THE SUMMIT OF VRE TRANSMISSION: DRASTIC REDUCTION OF VRE NOSOCOMIAL CASES AND OUTBREAKS ON ACUTE MEDICAL UNITS

Kim A Hobbs, Sonalben B Shah, Jaime Lynn Cornelius, Jessica Kooger, Shelby Ludington; Woodstock Hospital, Woodstock ON

Background: Since 2014, the total numbers of Vancomycin Resistant Enterococcus (VRE) nosocomial cases and outbreaks have steadily increased. In the fiscal year 2016-2017, nosocomial VRE transmission rose dramatically from a baseline of 31 nosocomial VRE cases and 3 outbreaks in 2015, to 89 and 6, respectively. Seventy-two percent (64 cases) of the facilities total VRE nosocomial cases and all of the VRE outbreaks originated from two acute medical units. Additionally, the critical care unit (CCU) had a 900% increase of VRE transmission in February from the previous monthly average. The cause of transmission across all units was determined to be twofold; quaternary ammonium cation binding with microfiber clothes and an increase in avoidable patient bed moves.
Method: In February 2017, two acute medical units and the CCU were selected as trial units for the implementation of the accelerated hydrogen peroxide (H202) wipes as the daily cleaner. In May 2017, a substantial bed realignment project occurred with one of the goals to decrease the transmission of antibiotic resistant organisms through the reduction of avoidable patient bed moves.
Results: The first three quarters of 2016/2017 showed 45 cases and 4 outbreaks facility-wide, with 82% of cases and all of the outbreaks on the trial units. For the same period in 2017/2018, there were 23 VRE nosocomial cases and zero outbreaks facility-wide, with 56% of those cases on the trial units. VRE transmission decreased by 48% facility-wide and 64% on the trial units. Bed realignment results for the current year indicate a 29% reduction in avoidable bed movement which was a contributing factor in reducing VRE transmission. More significantly, all VRE outbreaks were eliminated throughout the facility.
Conclusion: A change in cleaning products and the bed realignment project were successful strategies in reducing VRE transmission. As of February 1, 2018, accelerated hydrogen peroxide is the standard cleaning product facility wide. The projections for the remainder of the current year are close to a 60% facility-wide reduction in nosocomial VRE transmission.

MONDAY POSTER BOARD 38

RISK FACTORS FOR HOSPITAL ACQUIRED CLOSTRIDIUM DIFFICILE INFECTION IN AN ADULT ONCOLOGY POPULATION

Maureen Buchanan-Chell[1], Frederick W Cundict[1], Stephanie W Smith[2]
1. Cross Cancer Institute, Edmonton; 2. University of Alberta Hospital, Edmonton

Background: Clostridium difficile infection (CDI) is the most frequently identified cause of hospital acquired (HA) diarrhea. Several factors, such as antimicrobial use, prolonged hospitalization, advanced age and underlying health status are known to influence Clostridium difficile acquisition, infection and outcome. CDI cases are documented and reported provincially at all acute care facilities in Alberta Health Services (AHS). For several years the Cross Cancer Institute (CCI) has had HA CDI rates higher than provincial and national comparators. It is likely that the CCI patient population is at higher risk for CDI due to underlying illness and treatment but there may be modifiable factors contributing to this increased incidence. A literature review revealed limited information about specific CDI risk factors for oncology patients. The objective of this study is to identify unique elements that contribute to development of CDI in the oncology population.
Methods: This is a retrospective case control study undertaken, in two phases, with review of HA CDI cases and matched controls at the CCI for a three-year period. Cases include all patients admitted to the CCI who had an initial positive Clostridium difficile test meeting AHS Infection Prevention and Control surveillance HA CDI case definition between 2015 and 2017. Analysis of preliminary case information has been completed. Phase two will include selection of two patient controls without CDI, admitted within one month of the case, who match on cancer diagnosis, age, and length of hospital exposure prior to CDI onset in the case. Case and control charts will be reviewed to identify the presence or absence of specific factors including: neutropenia; antimicrobial, corticosteroid and proton pump inhibitor exposure; and chemotherapy and/or radiation treatment. Categorical variables will be summarized using proportions; continuous variables will be summarized using measures of central tendency. Univariate analysis will be conducted on all variables to determine unconditional association between the factors and HA CDI occurrence. Multivariate logistic regression will be conducted to determine overall relationship between risk factors and outcome.
Results: A total of 54 CDI cases were identified: 18 in 2015, 11 in 2016 and 25 in 2018. Average age was 56 with equal distribution between males and females. The length of time from admission to positive Clostridium difficile test ranged from 4-121 days with an average of 24 days. Overall, 35 (65%) of the cases had a hematologic cancer diagnosis with 7 cases in 2015, 9 in 2016, and 19 in 2017. Risk factors will be assessed and compared for cases and matched controls.
Conclusion: The intent of the review is to identify factors associated with CDI that will lead to practice changes that reduce the incidence of CDI in the adult oncology patient population.

MONDAY POSTER BOARD 39

UNIFICATION OF THE INFECTION PREVENTION AND CONTROL PRACTICES TO IMPROVE PATIENT FLOW WITHIN THE LOCAL HEALTH INTEGRATED NETWORK: FIVE ACUTE CARE HOSPITALS WORKING COLLABORATIVELY WITHIN ONE FACILITY

Seema Boodoosingh, Abraham Charummoottil, Joan Osbourne-Townsend, Nataly Farshait; Humber River Hospital, Toronto

Issue: Limited acute care beds in health care facilities generate long wait times for patients in need of acute medical attention; as a result, many patients are kept in the Emergency department until a bed is available on an inpatient unit. Our Central Local Health Integrated Network (CLHIN) reported an Alternative Level of Care (ALC) rate of 16.2%. The Ministry of Health and Long-Term Care (MOHLTC) provided funding to create a Reactivation Care Centre (RCC) in order to improve care for ALC patients in acute care hospitals; and to reduce wait times for patients requiring acute care services.
Background/Objective: Refurbishing a previously abandoned Humber River Hospital (HRH) site and developing a RCC, focused on transitioning patients out of acute hospital setting provides a patient centered approach. This was an innovative solution to alleviate wait time pressures and create capacity for patients requiring the best care in the most appropriate setting. HRH, MOHLTC, and five CLHIN hospital partners worked collaboratively to lead the development of this innovative idea to make it a reality. Under this model, each of the five facilities provides an independent management, staffing, and patient care within a designated unit. HRH (the landlord) is providing coordination and building related services including process surveillance for Infection Prevention and Control (IPAC), environmental services, dietary, waste management, reprocessing, transportation, supply management, biomedical services and maintenance. While each hospital maintaining their patient specific IPAC program, HRH IPAC is serving as a site coordinator, building support, collaboration IPAC leaders from all the facilities in order to maintain some consistency in all areas of the RCC.
Methods: Many face-to-face meetings, and several core specific sub groups to work out details of memorandum of understanding. IPAC leaders from each hospital site met to review and establish some common principles with respect to IPAC additional precautions signage, policies and procedures. Renovated rooms were designed for double occupancy with approximately 10% private rooms. IPAC-HRH supports system wide best practices across all units including routine practices and additional precautions audits, construction and renovation processes, education and monitoring of HRH support staff with respect to adherence of IPAC best practices.
Results: Four acute care facilities occupied one unit each as of December 10, 2017. The remaining hospital will move in at a later date but was crucial to the ongoing discussion. Currently each facility is managing independently yet maintaining ongoing collaboration to work out any issues identified post occupancy phase. To maintain a level of IPAC auditing processes, IPAC-HRH is responsible for their HRH staff on other hospital units without overstepping their role with other facility IPAC program.
Conclusion: The innovative approach was successful.

MONDAY POSTER BOARD 40

THE HUNTING GAME: A TOOL FOR LONG DISTANCE EDUCATION

Yvette B Gable, Nicole Henderson, Sibina Fisher, Jennifer Driscoll, Mandeep Atwal, Bonnie Thurston, Justyna Augustyn; Alberta Health Services

Issue: Infection Prevention and Control (IPC) is a provincial program within Alberta Health Services (AHS) that supports healthcare practice. Two aspects of improving patient outcomes are frontline engagement and education. With staff busy providing care, it is challenging for Infection Control Professionals (ICPs) to capture attention and provide interesting education across distances for end users ranging from physicians, nurses, emergency medical providers, healthcare

aides, to volunteers. Furthermore, contracted partners or agencies may have educational, cultural, and organizational differences impacting awareness and access to infection control resources. In the Edmonton Zone, diverse AHS ICPs in Continuing Care, Suburban Rural Hospitals, Corrections, and Emergency Medical Services came together to develop an engaging and meaningful educational activity for National Infection Prevention and Control Week.
Project: AHS has a publicly accessible IPC website with extensive resources. In order to engage participants at multiple sites in learning activities, an on-line knowledge scavenger hunt was developed to provide repetitive opportunities to navigate the website and gain familiarity, comfort and knowledge about IPC information and resources. The IPCs developed promotional posters and divided web-based information into themes with three questions emailed out daily during the week. Questions were tailored to the individual areas and as such varied in level of difficulty. Responses were accepted electronically and at the end of the contest results were tallied with a participant from each portfolio awarded a certificate of accomplishment and a Pandemic board game prize.
Results: The level of engagement exceeded expectations in each of the portfolios. In some areas, staff were discussing answers or collegially competing to submit responses. ICPs from each of the portfolios reported verbal or written feedback thanking IPC for this interesting and fun activity. With 3 questions posed per day over 5 days, many participants navigated through the website and reviewed information on 15 IPC topics during the event. The practice improved familiarity and knowledge of front-line workers from diverse environments in accessing on-line IPC resources. This format for providing education was successful in engaging health-care workers in areas often less involved in large scale educational/promotional activities.
Lessons Learned: Coming together to troubleshoot challenges, the ICPs overcame obstacles, divided workload and fostered synergy. By providing posters prior to and during the event, managers posted information and promoted the event. One area for improvement was determining the difficulty level of questions. The group felt having an IPC themed board game as a reward, motivated participants. The game format did not require additional equipment and was easy to fit into the ICPs schedule and workload.

MONDAY POSTER BOARD 41

EVALUATION OF ANTIBIOTIC RESISTANT ORGANISMS SCREENING PROCESS COMPLIANCE PRE AND POST INTERVENTION

Nana Asante, Jennifer Happe, Jenean Johnson, Jennifer McMullen, Lorinda Stuber; Alberta Health Services
Issue: Screening for Methicillin-resistant Staphylococcus aureus (MRSA) and carbapenemase-producing organisms (CPOs) is required on admission to acute care facilities in Alberta. Screening includes conducting a risk assessment for carriage and, if warranted, collecting specimens for testing. Based on spot quality audits at a central Alberta hospital, compliance with the screening process was less than 75%. Failure to properly assess every patient for MRSA and CPOs interferes with appropriate placement on Additional Precautions and jeopardizes patient and staff safety.
Project: An iterative improvement project was carried out beginning with retrospective screening-process audits on 14 in-patient units. Compliance was measured for completion of the screening tool and performance of follow-up actions such as appropriate collection of swabs and implementation of Additional Precautions. Patients admitted between 24 hours and 1 month were included. Compliance results were reported to unit and facility leaders. Nursing staff and clinical educators were consulted to develop targeted and meaningful strategies aimed at improving screening process compliance. Interventions were implemented on units with less than 80% compliance with the completion of the risk-assessment tool. Some facility-wide interventions were also employed. Interventions included removing previous versions of the screening tool from unit stock, posting compliance results on quality improvement boards and discussing compliance results at unit council and staff meetings, providing just-in-time teaching and education at new staff orientation and annual continuing education through scenario-based activities and email reminders. Follow-up audits were conducted three months post interventions.
Results: Pre-intervention overall facility compliance with completion of the risk-assessment tool was 46.2%, with 89.7% compliance for follow-up actions. The majority of risk-assessment compliance errors involved the use of an outdated tool and the tool checkboxes left blank. Compliance errors for follow-up actions included incidents where specimens were required but not collected and specimens were not collected as per protocol. Post-intervention overall facility compliance with completion of the risk-assessment tool was 80.2% with 97.1% compliance for follow-up actions. Some individual units did not achieve 80% compliance with the risk-assessment tool even after interventions.
Lessons Learned: The audit-intervention cycle will repeat until individual unit compliance with the risk-assessment tool exceeds 80%. Achieving compliance with the screening process is a complex process that requires creative solutions, teamwork and sustained effort to address deficiencies.

MONDAY POSTER BOARD 43

INVESTIGATION OF LARGE SCALE SCABIES OUTBREAK IN LONG TERM CARE

Amber L Linkenheld-Struk, Alex Kusiewicz, Chingiz Amirov, Orah Rosenberg; Baycrest Health Sciences, Toronto
Background: Between early October 2017 and mid-February 2018 Baycrest Health Sciences, a geriatric healthcare system located in Toronto, experienced a large outbreak of scabies. It affected clients and staff in our Hospital, Nursing Home, and Retirement Home. A total of 152 suspected and 5 lab-confirmed cases were detected. The large caseload was attributed primarily to initial misdiagnosis of the condition, leading to subsequent spread between multiple people in multiple buildings.
Methods: After initially targeting individual units/floors for scabicide treatment/prophylaxis, the decision was made to institute campus-wide head-to-toe patient assessments with subsequent treatment/prophylaxis with topical scabicide. To coordinate campus-wide outbreak response, a Steering Group was formed. Although clinical management of scabies is relatively straightforward, there is no immunity conferred, and re-infestation can readily occur after re-exposure. For this reason, outbreak management required a synchronized implementation of diagnosis, treatment/prophylaxis, and environmental control measures on multiple units across the campus. Residents and staff from all three facilities were treated over a three-day period in November, with multiple environmental strategies being employed to avoid re-infestation by fomites such as towels, bedding or personal clothing. Further strategies were extended to deal with wheelchairs, slings, support devices and other equipment for line listed cases. Efforts were made to cohort treated and untreated staff, distribute scabicide to all non-patient populations at Baycrest, and inform all visitors to the facility so they could be treated in the same time frame.
Results: Case Load Client cases 105 Staff cases 41 Other (volunteers/private companions) 6 Total cases 152 Attack Rates All clients 105/882=12% All staff 41/1,701=2% 5W clients *crusted scabies case 10/33=30% 5W staff *crusted scabies case 18/40=45%.
Conclusion: Multiple previously unconsidered issues arose in the practical execution of campus wide treatment and in the subsequent strategies for follow-up. Following a campus-wide intervention, complex surveillance measures were implemented to detect any newly emerging cases in clients and staff.

MONDAY POSTER BOARD 44

ENVIRONMENTAL SCAN OF CORRECTIONS IPC PROGRAMS IN CANADA

Mandeep Atwal, Jamal Khan, Melissa Beck, Renate Braul, Jenean Johnson; Alberta Health Services
Issue: Incarcerated populations have an increased prevalence of blood-borne pathogens in comparison with the general population and are often admitted with a range of communicable diseases (eg. viral respiratory illnesses, skin and soft tissue infections, ectoparasite infestations). Overcrowding, poor environmental cleaning, high inmate turnover, and limited access to personal hygiene products increase the risk for disease transmission. The frequent movement of inmates within and between correctional facilities often disrupts treatment and complicates the recognition of disease and outbreaks. These compounding factors highlight the need for a strong Infection Prevention and Control (IPC) program to support patient care practices that minimize disease transmission. However, research and resources providing guidance for the development of such programs are limited. The IPC resources and initiatives implemented across the ten Albertan provincial correctional centers have been adapted from existing acute care resources. Components of the Alberta Health Services Corrections IPC program include: process and outcome surveillance, practice support guidelines (wound care management, outbreak management, environmental cleaning and disinfection), and ongoing staff education to support safe patient care. However, there remains an opportunity to improve corrections IPC service delivery.
Project: An environmental scan was initiated in fall 2017 to examine IPC service delivery in Canadian correctional centers. In January 2018, an online survey was

distributed to IPC representatives at provincial and federal corrections facilities across Canada to identify IPC strategies and tools to address shared challenges.
Results: Responses from 18 corrections IPC designates covering a total of 38 facilities were received across 9 Canadian provinces and territories. Corrections IPC representatives reported that they are most often consulted for placement of patients, outbreak management, exposure follow-up, and education delivery.
Common Program Strengths:
- On-site staff member designated to provide IPC services;
- Dedicated infectious disease physician;
- Private space available for patients requiring additional precautions;
- Admission screening for various communicable diseases and conditions
- Common Program Challenges:
- Lack of 24-hour healthcare staffing
- Environmental cleaning conducted by inmate cleaners rather than cleaning professionals;
- Availability of alcohol-based hand rub

Lessons Learned: IPC services and support are available in some Canadian corrections facilities. Some sites have an individual assigned to complete IPC related duties, however, the specific type of IPC service delivery varies. The sharing of IPC program information across corrections centers would strengthen and standardize IPC services across Canadian correctional facilities.

MONDAY POSTER BOARD 45

DISJOINTED SURVEILLANCE: CONNECTING PROSTHETIC JOINT INFECTION SURVEILLANCE PROVINCIALLY, 2012 TO 2017

William Banh, Andrea E Howatt, Kathryn Bush, Melody Cordoviz, A. Uma Chandran; Alberta Health Services

Background: Successful joint arthroplasties are life-enhancing for patients; however, they may be complicated by prosthetic joint infections (PJIs). PJIs are associated with significant morbidity and cost due to repeat surgical procedures, prolonged antibiotic therapy, and prolonged hospital admissions, in addition to a significant impact on patients' health and well-being. Prior to 2012, PJI surveillance rates were site-based, and the National Healthcare Safety Network (NHSN) rate was the comparator against which hospitals benchmarked. To give a rich conspectus of PJI epidemiology, surgical site infection (SSI) surveillance for hip and knee arthroplasty was standardized provincially. Ideas for PJI prevention and process improvement transpire from provincial SSI surveillance; these are shared and acted on locally.
Methods: Patients requiring elective primary hip or knee arthroplasty are managed pre- and post-operatively through the Alberta Bone and Joint Health Institute (ABJHI). ABJHI provides patient-level, identified data of all patients with an eligible procedure which is matched to entered cases. Patients are followed for 90 days from the primary procedure to detect a complex PJI (deep incision or organ space infection). PJIs may be detected at any acute care facility, and must comply with the provincial case definition. Cases are investigated at the acute care site where the primary surgery was completed to identify infecting organisms, surgical procedures, antimicrobial therapy and management/outcomes of each suspected PJI. Data were collected from April 2012 to March 2017.
Results: A total of 18,588 total hip arthroplasty and 28,297 total knee arthroplasty procedures were completed in Alberta from April 2012 to March 2017. There were 260 complex hip PJIs (1.40%) and 236 complex knee PJIs (0.83%) identified during this period. Provincial hip and knee rates both trended downwards. Edmonton Zone had the highest overall complex hip PJI rate (2.57%; 170/6,622), and South Zone had the highest overall complex knee PJI rate (1.07%; 39/3,639). Staphylococcus aureus was the most common infecting organism cultured for both hip (34.5%; 71/206) and knee (48.1%; 87/181) complex PJIs. The proportion of PJIs due to methicillin-resistant S. aureus did not increase over time.
Conclusions: This study provides evidence that PJI surveillance can be managed at a provincial level with the appropriate structure, and a well-defined standardized protocol. After collecting several years of provincial data, acute care sites no longer need to compare to NHSN as provincial data became more robust. Utilizing a provincial database and protocol allows for a more accurate comparison than using the NHSN benchmark. Future studies will focus on prospectively identifying specific risk factors that contribute to complex hip and knee PJIs, and further developing targeted prevention strategies and interventions.

MONDAY POSTER BOARD 46

CONTINUING CARE EXTENDED SPECTRUM BETA-LACTAMASE (ESBL) GRAM NEGATIVE BACILLI SURVEILLANCE PROJECT

Natasha D Usher-Hameluck, Jennifer Happe, Karen Cargill, Lisa Acorn, Betty Soanes, Marie Judd, Jeremy Jamilano; Alberta Health Services

Issue: Communal living, catheterization, and mature age are risk factors for the acquisition of Extended Spectrum Beta-Lactamase (ESBL) producing organisms. These organisms cause urinary tract infections (UTI) and wound infections that cannot be treated with first-line antibiotics resulting in increased morbidity and mortality. Alberta Health Services provincial ESBL surveillance ended in 2016 and Central Zone Infection Control Professionals (ICP) were interested in tracking ESBL transmission in Continuing Care facilities to gain an understanding of the related risks. The Alberta Health Services (AHS) CZ IPC program launched a 6-month surveillance project to explore ESBL transmission in AHS CZ Continuing Care (CC) facilities.
Project: ESBL carriage data was gathered from residents at 44 Continuing Care facilities over six months who tested ESBL positive from physician directed laboratory tests. Case severity was determined using National Healthcare Safety Network infection criteria. ESBL case classification followed current provincial Methicillin Resistant Staphylococcus aureus (MRSA) criteria for hospital-acquired, healthcare- associated, and community- acquired cases. Healthcare-associated cases capture transmission that cannot be allocated to a specific facility. Cases were entered into an MS Excel database on a secure AHS computer drive.
Results: Fourteen ESBL cases were identified from 12 continuing care facilities. Four hospital-acquired cases were identified, each attributed to a different facility. Four healthcare-associated cases were identified. Each of these residents spent time in different facilities is the past 12 months. There was no crossover in the attribution of healthcare acquired and healthcare-associated cases. All positive specimens were from urine. From the analysis of the surveillance project, ICPs recognized the need to reinforce with staff and physicians the use of UTI best practice tools developed by CZ IPC and the Antimicrobial Stewardship working group. Resources were designed to align urine collection practices and urinary tract infection identification and treatment with best practices. These included a Do Bugs Need Drugs UTI assessment tool, Myths & Facts information and a DELIRIUMS tool. Tools continue to be reinforced with front-line staff during site visits.
Lessons Learned: Low level ESBL transmission in residents' urine is occurring in Central Zone AHS CC facilities, but it is not localized to any specific facility or area. As a result of this project, staff identified the need for further education about proper urine collection, testing and treatment practices for staff and physicians in CC facilities.

MONDAY POSTER BOARD 47

STATUS OF ANTIMICROBIAL RESISTANCE AMONG WHO PRIORITIZED CRITICAL PATHOGENIC MICROBES IN NEPAL

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2. Tribhuvan University, Khatmandu, Nepal

Background: Antimicrobial resistance has become a grave threat in the face of survival for humanity. World Health Organization has come up with a list of bacteria against which there is urgency for new antibiotics. Among them, the critical microbes listed include carbapenem-resistant Acinetobacter baumanii, Pseudomonas aeruginosa and ESBL producing Enterobacteriaceae. An appropriate and efficient diagnosis regarding the cause of resistance in the pathogen could help in the prescription of the proper drug and dosage.
Methods: A total 128 Pseudomonas aeruginosa (=67) and Klebsiella pneumonia (=61) were collected from different hospitals of Kathmandu between the months of March and May, 2016. Biochemical tests were performed to confirm the bacterium. Antibiogram assay was carried by disk diffusion method to determine the antimicrobial resistance pattern. The microbes were also tested for carbapenem resistance. ESBL producers were tested by double disk synergy test while MBL producers were screened out using EDTA combined disk test. Furthermore, genomic DNA was extracted from the carbapenem resistant microbes and PCR was performed using various gene specific primers (blaNDM, blaOXA, blaKPC, blaIMP, BlaVIM). The amplicons thus obtained were then sequenced at Xcelris Labs Limited, Ahmedabad, India. Sequences were assembled in CodonCOde Aligner and multiple sequence alignment and phylogenetic tree analysis was performed in MEGA software version 6.06.
Results: Among the microbes collected, 52 Pseudomonas aeruginosa and 45

Klebsiella pneumoniae were multi-drug resistant respectively. Out of these, 30 P. aeruginosa and 25 K. pneumoniae were MBL producer and carbapenem resistant. Three isolates of K. pneumonia produced ESBL as well. blaNDM gene (869 bp) was amplified from 15 P. aeruginosa and 6 K. pneumoniae isolates while blaOXA (192 bp) was amplified from 3 K. pneumoniae. Sequence analysis for blaNDM showed 3 new variants in P. aeruginosa and K. pneumoniae respectively while no change could be seen in blaOXA when compared with the existing database.
Conclusion: It has become imperative to understand the pathogen genetics so as to cure if not prevent the rising incidences of multidrug resistant bacteria. In-depth knowledge about the evolutionary pattern of the bacteria can pave way for development of novel strategies to overcome the threat.

MONDAY POSTER BOARD 48

SUCCESSFUL STRATEGIC APPROACH TO PREVENT HEALTHCARE ASSOCIATED INFECTIONS AT A NATIONAL BURN CENTER

Moi Lin Ling, Kwee Yuen Tan, Jiahua Seah, Si Jack Chong, Bien Kim Tan; Singapore General Hospital
Issue: Burns patients are highly susceptible to healthcare associated infections. Preventing and treating infections are integral to the successful management of severe burns. Acquiring multidrug resistant (MDR) bacterial infections have been associated with increased risk of patient mortality, and outbreaks resulting in closure of the ward may occur. MDR organisms of concern at the Singapore General Hospital (SGH) National Burns Center, a tertiary referral center for burns, are namely methicillin resistant Staphylococcus aureus (MRSA) and MDR-Acinetobacter baumannii (MDR-AB).
Project: Active MDRO prevention program was implemented from 2013 involving active surveillance, contact precautions, and promoting hand hygiene compliance in accordance to WHO guidelines. The use of hydrogen peroxide vapor (HPV) was introduced as an adjunct agent in the discharge cleaning protocol from April 2015. This also included weekly HPV decontamination of the operating theatre in the centre. MRSA decolonization was conducted for all known MRSA patients from June 2016 where octenidine nasal gel and throat wash are used together with octenidine bath/wipes. Changes were made to wound dressing protocols in early 2016 whereby all major dressing changes are to be done in the operating theatre.
Results: The incidence of healthcare onset MRSA (HO-MRSA) decreased from 17.3 per 10,000 patient days (Jan 2015-May 2016) to 2.3 per 10,000 patient days (Jun 2016 - Oct 2017) [p: 0.073; Student's t-test]. The incidence of HO-MDR-ACBA was also reduced from 26.0 per 10,000 patient days to 11.4 per 10,000 patient days (p: 0.139, Student's t-test). Hand hygiene compliance was noted to improve from 84.3% to 93.2% (p: 0.476, Student's t-test) during the periods analyzed. Environment hygiene audit using Glo-germ marker also improved from 88.2% to 92.5% (p: 0.09, Student's t-test). There had been no outbreak experienced at the center since Mar 2016.
Lessons Learned: Implementing appropriate horizontal measures helped to reduce MDRO incidence significantly. Sustainable improvement is achieved with a stronger infection prevention and control culture at the Burns Centre. This was fostered by good support from senior management and collaborative effort amongst staff in the centre towards a common goal of keeping the patient infection free.

MONDAY POSTER BOARD 49

ASSESSING CHANGES TO ANTIMICROBIAL RESISTANT ORGANISM (ARO) ADMISSION SCREENING PROTOCOLS IN CALGARY ZONE

Seungwon Lee[1], Joseph Kim[1], Karen Hope[2], Kathryn Bush[2], Nancy Alfieri[2], Blanda Chow[2], Shuo Liu[3], Michael Li[3], Elizabeth Henderson[2]
1.University of Calgary; 2. Alberta Health Services; 3. University of Alberta
Backgrounds/Objectives: There is no consensus on the most effective strategy for ARO screening. Following a province-wide implementation of ARO (Methicillin Resistant Staphylococcus aureus and Vancomycin resistant enterococcus) screening in 2016, acute care facilities in the Calgary Zone transitioned from unit-based universal MRSA screening to patient-risk factor based screening protocol. VRE screening changed only on specific unit types. The objective of this study was to assess the impact of this change in ARO screening protocol including screening yield and the incidence of hospital-acquired MRSA and VRE.
Methods: All microbiology results for MRSA and VRE screens for all in-patient at the five acute care facilities in Calgary zone from April 2015 to March 2017 was provided by the AHS Laboratory Process Excellence team. Yield and utilization between these two years (unit-based universal vs. risk factor based admission screening respectively) were compared. Data were stratified down to unit level and units were further identified as high or low risk based on prior ARO prevalence rates. A follow-up qualitative analysis was conducted by contacting site Infection Control Professionals (ICPs) on units that showed unexpected increase in total number of screenings done. SAS 9.5 was used for analysis in this study.
Results: A total of 130,179 screening encounters were analyzed. The total number of MRSA screens did not change between the fiscal years. A reduction in the total number of MRSA screens in high risk units was offset by increased screening on other units. VRE screening was reduced by 12,000 at the zone level. All areas showed similar yield of positive MRSA and VRE screens between the two fiscal years. The incidence of hospital-acquired MRSA and VRE decreased in 2016-2017. The follow-up analysis revealed the changing awareness to AROs among the frontline staff responsible for the unexpected increase.
Conclusions/Significance: This was the first detailed comparison of different ARO screening strategies in the Calgary Zone utilizing multiple data sources. Following a change in protocol, there was a reduction in the total number of ARO screens with no change in overall ARO positive patients detected during screening. Ongoing evaluation of the current screening protocol is required to confirm the trends observed in this study. Data linkage between surveillance, discharge abstract, and laboratory data may help differentiate between screening types and to understand the patient comorbidities and outcomes of those undergoing screening.

MONDAY POSTER BOARD 50

SIGNAGE: A GREAT PROJECT FOR THE NEW NOVA SCOTIA HEALTH AUTHORITY

Katherine A Ellis, Suzanne Hennessey, Elizabeth Watson, Lynn Boutilier, Kelly Halsall; Nova Scotia Health Authority
Issue: In 2015 the Province of Nova Scotia merged 9 district health authorities (DHAs) into one large provincial entity called the Nova Scotia Health Authority (NSHA). All previous Infection Prevention and Control (IPAC) programs were amalgamated under one leadership structure. The vision of the NSHA IPAC program is to develop universal policies and procedures based on best practice evidence and national standards and to ensure consistency and continuity of care across the province.
Project: Standardization of Routine Practices & Additional Precautions (RPAP), the lifeblood of most IPAC programs, was identified as a priority item. Representatives from each Zone were identified and tasked with developing a draft RPAP provincial policy, including a review of all existing DHA RPAP policies and current national guidelines. Various subgroups were also developed to address other required pieces such as: education tools for staff, patient education, and additional precaution (AP) signage. One set of standardized AP signs was identified as a priority. This would ensure consistency for patients and families travelling to multiple facilities in the zones for care, as well as for staff working throughout the various zones. The working group gathered signs from all previous DHAs and reviewed them for readability, color, clarity and content. Essential contents for each sign was identified by the group. A unique set of signs were developed by the group, including essential components from all areas. Drafts were circulated to the large IPAC group and leadership for feedback. With feedback reviewed and incorporated into the signs, they were then sent back out to other stake holders from various disciplines across the province. Relevant feedback was incorporated as appropriate.
Results: In total, 3 double sided signs were developed: droplet, droplet/contact; airborne, airborne/contact; contact & contact plus (one type of precaution on each side). The contact plus was developed to assist health care staff to easily identify rooms where soap & water was recommended for hand hygiene on room exit, as well to assist in communication with environmental services regarding the need for a sporicidal cleaning agent. The work designing the signage was done concurrently with the other aspects of the RPAP policy to enable a simultaneous roll out. To help facilitate the roll out, tools were designed including: online learning modules, "cheat sheet" posters, visitor information posters, pocket cards. Educational staff huddles on the unit level were provided in the three weeks prior to the roll out date. ICPs continued to huddle with staff in the weeks following roll out as well as "Just in Time education" to provide clarity and support as needed.
Lessons Learned: Multimodal education approaches are very beneficial when making significant changes. It was very valuable.

POSTER PRESENTATIONS

All presentations will be held at the Banff Centre for Arts & Creativity (Floors 2 and 3).
POSTER PRESENTATIONS WILL BE HELD MONDAY, MAY 28 AND TUESDAY, MAY 29, 2018
12:30 – 1:30 p.m.

MONDAY POSTER BOARD 51

THE PROPORTION OF ANTIBIOTIC-RESISTANT KLEBSIELLA PNEUMONIAE AND ACINETOBACTER BAUMANNII DECREASED AFTER IMPLEMENTING INFECTION PREVENTION AND CONTROL PROGRAM IN THE ICU

Ksenia Ershova[1], Olga Ershova[2], Ivan Savin[2], Nataliya Kurduymova[2], Irina Alexandrova[2], Nadezhda Fursova [2]
1. Los Angeles, California; 2. Moscow, Russia

Background: Antibiotic-resistant Gram-negative bacteria were named by WHO an international threat due to their increasing role in healthcare-associated infections (HAIs). Infection prevention and control (IPC) program is a well-recognized tool to prevent the spread of such pathogens. The goal of this study was to evaluate the effect of first-introduced IPC program to the antibiotic resistance in initially highly-resistant strains of Klebsiella pneumoniae and Acinetobacter baumannii in Russia.
Materials and Methods: An IPC program was implemented in neuro-ICU first in 2010 and included hand hygiene, surveillance, contact precautions, patient isolation, and environmental cleaning. From 2011 to 2016, 1,022 ICU patients with five types of HAIs (respiratory infections, bloodstream infections, healthcare-associated ventriculitis/meningitis, urinary-tract infections, and surgical site infections) were prospectively included in this observational cohort study. To identify the case of HAI we used the 2008 CDC definition. Bacterial cultures from clinical samples were identified and tested for drug resistance.
Results: In 2011, the majority of K. pneumoniae isolates were resistant to ampicillin/sulbactam (84.9% [95% CI 77.3-92.5]), cefepime (90.3%, [95% CI 87.4-93.1]), cefoperazon/sulbactam (66.5% [95% CI 61.9-71.1]), ceftazidime (90.5% [95% CI 87.6-93.3]), and ciprofloxacin (82.2% [95% CI 78.5-85.9]). By 2016 the proportion of resistant isolates decreased significantly for cefepime (45.6% [95% CI 39.9-51.4], p-value <0.0001), cefoperazon/sulbactam (41.4% [95% CI 35.6-47.2], p-value=0.0002), ceftazidime (52.3% [95% CI 46.5-58.0], p-value <0.0001), and ciprofloxacin (52.6% [95% CI 46.8-58.4], p-value=0.002). There was no increase in the resistance to any tested antibiotics. In A. baumannii isolates, there was the increase in the number of ampicillin/sulbactam-resistant isolates (48.1% [95% CI 34.8-61.5] in 2011 vs. 82% [95% CI 76.2-87.8] in 2016, p-value <0.0001), the increasing trend for amikacin and colistin, and the declining tendency for cefepime and gentamicin resistance. The substantial result was achieved in imipenem resistance prevention: the number of resistant isolates decreased from 34.5% [95% CI 29.9-39.1] in 2011 to 20.2% [95% CI 15.6-24.8] in 2016 (p-value < 0.0001) in K. pneumoniae, and from 77.7% [95% CI 72.3-83.0] to 38% [95% CI 30.9-45.1] (p-value < 0.0001) in A. baumannii.
Conclusions: After the six years of ongoing IPC program, the proportion of invasive isolates of K. pneumoniae and A. baumannii resistant to carbapenems decreased by 1.7-2 times. Also, by 2016 K. pneumoniae became more susceptible to the most-tested antibiotics without showing the increase in the resistance. Thus, the implementation of an evidence-based IPC program can effectively decrease the antibiotic resistance in the ICU.

MONDAY POSTER BOARD 52

NEW KIDS ON THE BLOCK: CREATION OF A NOVICE INFECTION CONTROL PROFESSIONAL SUPPORT GROUP

Jennifer L Parsonage, Melody Cordoviz, Elisa Ahn, Mandeep Atwal, Justyna Augustyn, William Banh, Sibina Fisher, Candace Fraser, Yvette Gable, Bonny Granfield, Kathy Jarema, Melissa Kastelic, Vivian Lee, Aimee MacCallum, Kate Mombourquette, Megan Oppel, Bonnie Thurston, Cheryl Watson, Michelle Zwicker; Alberta Health Services

Issue: From 2014-2016 sixteen novice Infection Control Professionals (ICPs) were hired within the Edmonton Zone (EZ) of Alberta Health Services with no previous Infection Prevention and Control (IPC) experience. Orientation for ICPs consisted of a self-study online manual and on the job training/learning opportunities at each site. Because ICP roles differ depending on the health care environment ICPs cover, learning opportunities could be limited by the ICP's setting. As a result, this contributed to inconsistencies in skill development, variability of site dependent learning opportunities, practice gaps, and feelings of isolation coupled with a lack of confidence in decision making skills.
Project: To bridge these gaps, a novice ICP support group was initiated by the EZ clinical practice lead. The group provided an encouraging environment to foster professional development, offered networking opportunities with other novice ICPs via face to face monthly meetings, and provided education about IPC concepts. Presentations by experienced ICPs covered various IPC educational topics. The novice ICPs were educated on skills that might not be experienced at their site. During implementation of this project, a travel restriction was imposed and online meetings replaced the face to face meetings.
Results: The Novice ICP Support Group offered a coordinated approach to learning, created a sense of community, provided a safe place to ask questions, and fostered professional collaboration. After participation in the group, novice ICPs reported higher confidence in their ability to perform the tasks required in their roles as a result of the educational opportunities. As well, they expressed increased knowledge of other areas due to the opportunity to network with colleagues covering diverse portfolios. Experienced ICPs were given the opportunity to share their knowledge while interacting with the novice ICPs during educational sessions. This was significant for ICPs in settings, like Emergency Medical Services where one ICP covers the program and works in isolation. When novice ICPs were unable to meet face to face, the group felt increased isolation and diminished support.
Lesson Learned: Novice ICPs benefit from a coordinated and peer supported orientation process. A Novice ICP Support Group has been valuable in providing training and education to novice ICPs through a variety of different professional development opportunities. By experiencing a variety of systematic educational opportunities in the context of a supportive group, novice ICPs reported improved role satisfaction and increased professional development. Successful orientation for novice ICPs includes more than an orientation manual. Face to face meetings with other ICPs, education from experienced ICPs, and shadowing at other sites has resulted in Novice ICPs reporting a more positive experience with orientation while contributing to a more comprehensive and successful orientation.

MONDAY POSTER BOARD 53

A FRAMEWORK FOR EXAMINING THE CLINICAL AND ECONOMIC IMPACT OF ANTIMICROBIAL RESISTANCE AT ACUTE CARE FACILITIES AND BEYOND

Chelsea Smallwood[1], Caitlin Asjes[1], Arthi Chandran[1], Yoshiko Nakamachi [2], Andrew Morris[3]
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Issue: Antimicrobial resistance (AMR) is projected to cause 10 million deaths annually, and cost up to $100 trillion globally by 2050. Data demonstrating the clinical and economic impact of AMR at local levels is not well captured and analyzed. Even fewer tools present this data in an actionable manner. Translating the complexity of AMR to resonate with financial stakeholders requires negotiating pragmatism with academic rigour. The aim of this study was to develop a framework for evaluating the clinical and economic burden of AMR within the acute care setting.
Project: We performed a targeted literature review of the clinical and economic burden of AMR, developed a model framework, and tested the framework using data from the literature.
Results: We identified a number of parametric decision points. Data availability and data type were notable influencing factors. A budget impact analysis was used to evaluate the financial consequences of not addressing AMR. Population: Five organisms were chosen from the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) top AMR threats as the primary input: Klebsiella pneumonia, Escherichia coli, Enterococcus, Pseudomonas aeruginosa, and Staphylococcus aureus. Perspective: Acute care facilities, societal perspective Comparators: Resistant infections: multidrug resistance or resistance to a drug with clinically and economically meaningful outcomes, as indicated by the WHO and CDC. Susceptible infections: All other infections caused by the same species Outputs: Clinical outcomes: mortality Economic outcomes: annual direct and indirect healthcare costs (CAD). Future estimates: the incremental cost of resistance assuming delivery of care remains constant. The model evaluates three user-defined future resistance scenarios. Model drivers: The main factor influencing outcomes is prevalence of resistance infections. Inappropriate or overuse of antimicrobials, for example, is accounted for in the prevalence of resistance.
Lessons Learned: Estimating the clinical and economic impact of AMR in a format with applicability to institutions, regions and countries requires evaluating tradeoffs on a number of parameters. To maximize adaptability, the established framework represents an increase in scope on some parameters, and a simplification of others compared to previously published models, while maintaining accuracy.

MONDAY POSTER BOARD 54

UPDATING THE ALBERTA HEALTH SERVICES INFECTION PREVENTION AND CONTROL ORIENTATION MANUAL

Bernice Heinrichs, Maureen Buchanan-Chell, Nancy Walter, Blair McFerran, Sharon Wilson, Mark Scott, Linda Siminoski, Jennifer Ellison, Jennifer Happe, Working Group Document Revision; Alberta Health Services

Issue: The Infection Control Professional (ICP) Orientation Manual for Alberta Health Services and Covenant Health Infection Prevention and Control (IPC) staff provides an overview of IPC including an orientation checklist, IPC office resource list, and sections on key topics with hyperlinks to content materials and online resources such as standards and guidelines. The Manual aligns with the Alberta Health IPC Strategy and Standards and is a valued resource for new and experienced ICPs as well as other members of the IPC team. The Manual, created in 2011 and updated in 2014, was updated in 2017 as part of a regular three-year document review cycle.

Project: A program working group revised the Manual under guidance from an IPC Director. IPC staff engaged in focus groups to identify content gaps and required revisions. From this work, subject matter experts were assigned sections to update: Orientation Checklist, Routine Practices and Additional Precautions, Medical Device Reprocessing, Construction, Microbiology, Antibiotic Resistant Organisms, Surveillance, and Documentation.

Results: Two new sections were developed; Hand Hygiene providing an overview of the Clean Hands hand hygiene compliance monitoring and reporting program and Education containing resources and strategies for effective adult education. Other sections were refreshed to provide:

- Consistent, current, evidence-based provincial information for new and experienced ICPs;
- Core competencies for ICPs;
- Information to support and ground the new ICP in their role;
- Access to Canadian Standards Association (CSA) standards through the AHS Techstreet subscription; Roles and responsibilities as an IPC representative on program or organizational working groups and committees;
- Highlights of the AHS ICP preceptorship program;
- Guidelines on Routine Practices and Additional Precautions including Point of Care Risk Assessment, source control, exposure to blood and body fluids (including patient exposure) and implementation challenges in settings such as Corrections and Continuing Care;
- Education about AHS IPC policies for Single-Use Medical Devices and Hand Hygiene;
- Content supporting the ICP's role in design and construction (e.g. Infection Control Risk Assessment); Resources on Medical Device Reprocessing, Microbiology, Antibiotic Resistant Organisms, and Surveillance;
- Working relationships with Workplace Health and Safety, including shared job shadowing opportunities;
- Hyperlinks connecting ICPs with on-line resources.

Lessons Learned: The AHS IPC program facilitates the development, accessibility, implementation and update of provincial resources for ICPs in an ever-changing field to support continuous learning and improvement opportunities. IPC experts summarize key information in the Orientation Manual to support the development of our staff. Feedback from users is important and comments received will be used to refresh the Manual in 2020.

MONDAY POSTER BOARD 55

BUILDING AND SUSTAINING AN INFECTION CONTROL PROGRAM IN THE INTENSIVE CARE UNIT: RESULTS OF 10 YEAR SURVEILLANCE.

Connie Patterson, Ramona Rodrigues, Charles Frenette; MUHC – Royal Victoria Hospital, Montreal

Issue: Patients of the intensive care unit (ICU) are at high risk of acquiring a nosocomial infection (NI). These patients are vulnerable, often immunocompromised and commonly have invasive devices such as central venous lines, endotracheal tubes and urinary catheters. In addition, antibiotic usage is highly prevalent and leads to an elevated incidence of antibiotic resistant organisms. Surveillance for nosocomial infections in ICU is essential to identify most frequent infections and monitor effectiveness of infection control (IC) measures. We report the results of a systematic surveillance of nosocomial infections in a tertiary care mixed medical-surgical -cardiac surgery ICU. And the impact of targeted infection control measures to reduce them.

Project: We carry daily surveillance for the occurrence of nosocomial infections in the ICU by reviewing microbiological reports, antibiotic usage and medical notes. NHSN definitions are used to define nosocomial infections. Yearly reports are produced and targets for prevention are introduced periodically. Nosocomial infection rates are reported periodically to all stakeholders. Evidence based bundle of interventions have been implemented to reduce central line associated bacteremia (CLABSI in 2009) and ventilator associated pneumonia (VAP in 2013). A screening protocol on admission and on a weekly basis helps to detect and contain MDROs (MRSA, VRE and lately CPE). In addition, audits of IC measures and practices are monitored regularly.

Results: Over the ten years there has been an overall decrease of nosocomial infections in the ICU. CLABSI rates decreased 72 % (from 2.76 to 0.77/1000 catheter days), VAP decreased 62 % (from 16.8 to 6.3/1000 ventilator days). C.difficile Infections (CDI) decreased 51% (from 13.1 to 6.4/1000 patient days). Vancomycin resistant enterococcus (VRE) acquisition decreased 40% (from 10.7 to 6.4/10000 patient days) and MRSA decreased 48% (from 8.3 to 4.3/10000 patient days).

Lesson Learned: A structured surveillance system for outcomes and processes provides invaluable information. The data helps to determine objectives and targeted interventions to reduce NI. A strong infection control program with a systematic, ongoing collection, collation, analysis and feedback of surveillance data ensures continuous improvement of patient care through application of evidence-based practices and through bundles of interventions to reduce central venous line associated bacteremia and ventilator associated pneumonia. A systematic screening protocol in ICU helps identify MDRO early and prevents transmission of multi-drug resistant organisms (MDRO). This infection control program resulted in sustained decrease in rates of NI and improvement in quality of care.

MONDAY POSTER BOARD 56

TOO MANY PATIENTS, NOT ENOUGH SPACE: REDUCING THE RISK OF TRANSMISSION IN UNCONVENTIONAL SPACES

Lorraine Maze dit Mieusement, Dariusz Pajak, Natasha Salt, Jerome Leis, Bronwen Edgar; Sunnybrook Health Sciences Centre, Toronto

Issue: With increasing occupancy pressures in acute care hospitals, admissions to unconventional spaces such as hallways, lounges, classrooms, and even storage spaces is on the upswing. Critical examination of these unconventional spaces is needed to mitigate the risk of transmission of infectious pathogens between patients, staff and visitors.

Project: At our acute care teaching hospital, to date in the 2017/18 fiscal year, occupancy has been less than 100% only 6% of the time, resulting in routine use of unconventional spaces to admit patients from the Emergency Department (ED). Despite guidelines suggesting that patients on Additional Precautions (AP) be excluded from these unconventional spaces, reports of patients with infectious symptoms in these spaces are becoming increasingly common. We set out to identify a process for determining patient eligibility for transfer to unconventional spaces that could be incorporated into ED practice.

Results: The Clinical Care Leader (CCL) in the ED is responsible for deciding which patients are eligible for hallway admission. A brief checklist was developed to provide guidance to the CCL to identify patients who are eligible for admission to unconventional spaces. This tool incorporates information from syndromic and antibiotic-resistant organism (ARO) screening, and the mobility and continence of the patient, before transfer to an unconventional space. The tool can also be used to ensure accountability of the CCL regarding decisions made.

Lessons Learned: Development and implementation of a checklist for confirming eligibility of patients for admission to unconventional spaces has not been without challenges. The CCL is frequently dealing with multiple competing demands and is under significant pressure to ensure patient flow from the ED onto inpatient units. This checklist is the necessary first step in clarifying the criteria for admission to unconventional spaces, but better accountability is needed along with integration into decisions regarding patient flow. Senior leadership and risk management support are required to ensure compliance.

POSTER PRESENTATIONS

All presentations will be held at the Banff Centre for Arts & Creativity (Floors 2 and 3).
POSTER PRESENTATIONS WILL BE HELD MONDAY, MAY 28 AND TUESDAY, MAY 29, 2018
12:30 – 1:30 p.m.

MONDAY POSTER BOARD 58

WORKING TOGETHER: A SUCCESSFUL MULTIDISCIPLINARY TEAM APPROACH IN CONSTRUCTION AND RENOVATION

Richard Clayton, Jordon Currie, Linda Kamhuka, Mireille LeMay, Leeanne VanRootselaar; Alberta Health Services

Navigating construction and renovation projects can be challenging when trying to balance CSA standards, project constraints and department dynamics with stakeholder budgets and expectations. A successful approach at an acute care pediatric facility within Alberta Health Services highlights the strength of using a multidisciplinary team approach. The Project Management(PM) team has worked to ensure that all key players (PM, Infection Prevention and Control(IPC), Facilities Maintenance and Engineering(FM&E), Environmental Services, clinical end users, Protective Services, Information Technology, contractors and architecture consultants and various specialty consultants are engaged throughout each project. When each stakeholder is included from the beginning of a project, a dialogue that contains clarification and negotiation evolves as the project progresses. By focusing on patient safety for each project, the team works to ensure strategies within a project always center on risk mitigation. Other strategies include a monthly team meeting between PM, FM&E and IPC. This meeting initially served as an informal discussion of ongoing and upcoming projects to update participating departments. However, the meeting has grown, providing a forum to identify potential barriers in upcoming projects, educate each other on different perspectives, anticipate downstream consequences, and discuss positive and negative lessons learned. The PM team has advocated to include key IPC elements in the scope of projects to better serve the pediatric population seen in this facility (for example: recently high efficiency particulate air (HEPA) filters were added to a fan wall project in air handler units that supply the Medical Device Reprocessing Department, Pharmacy and Diagnostic Imaging). A project life cycle was created by PM illustrating swim lanes of the users, PM and IPC. It identifies key milestones where IPC should be engaged in the project. This multidisciplinary team has created a unique culture built on trust and respect for each other's knowledge and perspectives. Strong leadership from the PM team ensures that projects run as smoothly as possible while not compromising patient safety. The IPC department at this site has confidence that IPC principles are adequately represented even when they are unable to be present for a meeting or hoarding inspection. The creation of this multidisciplinary team has also shown various stakeholders the protocols required to be in place to minimize risk to numerous patient populations. The team problem solves not only through conceptual design but through the life of each project with regular project meetings and site visits as required to mitigate risks. The culture and perceptions of the various departments have evolved through the collaboration of knowledge and experiences to a level of confidence and trust as a unified team to create successful projects and learning experiences.

MONDAY POSTER BOARD 59

QUALITY TOOLS USED TO JUSTIFY A NOVEL FAST BLOOD CULTURE IDENTIFICATION AND SENSITIVITY SYSTEM FOR INFECTION PREVENTION

Maureen P. Spencer; Accelerate Diagnostics, Tucson, Arizona

Background: A novel fast blood culture diagnostics platform provides ID and sensitivities an average of 40 hours faster to clinicians than current laboratory methodologies. The delay in standard blood culture lab procedures of 48-72 hours results in overuse of empiric antibiotics that can result in inadequate treatment and development of adverse outcomes, such as potential development of multiple drug resistant organisms and Clostridium difficile. Clinical laboratories want to adopt new life-saving technologies but they have to go through a timely process of justifying the purchase or convincing its value to the C Suite of its value. Therefore, in order to evaluate the usefulness of fast ID/AST technology, the antimicrobial stewardship team can use quality tools in their efforts to adopt this new device. One of the tools that is useful in teamwork is a mind-map – a diagram used to visually organize information to which associated representations of ideas and processes. This quality tool can be effectively used in clinical settings to enhance team work and present information to the C Suite for clinical adoption. In addition, information outlining delays in standard procedures can be presented in a process pathway and fishbone diagram. After the brainstorming session is completed, a gap analysis can be completed for future action plans.
Methods: The Agency for Healthcare Research and Quality (AHRQ), the National Quality Forum, the Joint Commission, and many other national organizations endorse the use of valid and reliable measures and tools of quality and patient safety to improve health care. The use of quality tools during clinical implementation and adoption foster teamwork and enhanced communication among diverse members. A team of 10 key opinion leaders (KOLs) that included pharmacists, infection preventionists, microbiologists, and infectious disease physicians were introduced to the use of mind-mapping, process pathways, gap analysis, and fishbone diagrams as useful tools to engage staff and obtain input into clinical implementation.
Results: The KOL team developed an extensive list of cost avoidance and return on investment opportunities. The list included items that could be measured after clinical adoption of a fast ID/AST blood culture system. The attendees used the quality tools to identify potential for reduced morbidity and mortality, enhanced patient and family satisfaction, enhanced bed utilization, reduction in MDROs, reduced pharmacy costs and standardization.
Conclusion: The use of quality tools is an effective method to engage KOLs and hospital staff when implementing a multi-disciplinary approach to patient care, including adoption of new technology. In the exercise presented here, attendees were able to identify items that would be important when considering implementing a new system.

MONDAY POSTER BOARD 60

PLANTS IN THE OUTPATIENT SETTING PLANTS IN THE OUTPATIENT ONCOLOGY SETTING: ENHANCING PATIENT SAFETY IN A HEALING ENVIRONMENT

Judy F Tearoe[1], Ghada Al-Rawahi [2], Alison Chant[1], Adriana Ezelyk[1]
1. BC Cancer, Vancouver; 2. Provincial Health Services Authority, Vancouver

Issue: Plants, considered by some as an essential component of a therapeutic, healing environment, are a controversial topic in the healthcare setting. Balancing ambience against the risk of exposure to seemingly every day infectious organisms is a delicate matter – after all, most people are exposed to plants and soil in their homes, parks and gardens. Yet how does this translate to a facility designed to care for potentially immunocompromised individuals?
Project: In an effort to address the dilemma of ensuring patient safety in an oncology setting while maintaining the healing environment, a literature review was conducted to assess the risk of nosocomial infections associated with plants. In addition, we sent an inquiry to other oncology facilities to examine current practices related to plants.
Results: There is evidence that plants can cause nosocomial infections such as aspergillosis and Pseudomonas aeruginosa infections. Furthermore, the current practice in several oncology settings is to exclude plants and cut flowers although it's unclear how this policy is being enforced. Based on this evidence, a plan to eliminate plants in clinical areas was introduced in our oncology setting. However, in order to address some of the operational challenges, a priority action approach was developed to assist with implementation. This helped to address resistance related to ambience and the consideration to remove planters that were built into the facility design.
Lesson Learned: It is difficult to change policies when there are competing priorities. We also found that operations linkage and collaborative approach with all stakeholders are critical to ensure compliance.

PUBLISHED BUT NOT PRESENTING

THE HIERARCHY OF EFFECTIVENESS IN SUPPORTING IPAC IN THE COMMUNITY: CLOSING THE GAP FOR ONTARIO MIDWIVES

Cara Wilkie, Association of Ontario Midwives, Toronto

In risk management and patient safety theory, the hierarchy of effectiveness recognizes that different interventions have different degrees of effectiveness. Interventions aimed at individuals, such as training and policies, are the least effective whereas those aimed at systems, such as automation and simplification, are the most effective. Strategies for infection prevention and control in the community (e.g., doctors, dentists, midwives) have largely focused on education and the promulgation of guidelines. Yet serious IPAC lapses in the community sector continue to occur. It is time to pause and ask why healthcare providers are not implementing the guidance that exists. In 2015, the Association of Ontario Midwives (AOM) identified a gap in knowledge and implementation as few of these regulated healthcare providers were aware of IPAC guidelines. Drawing from the hierarchy of effectiveness, the AOM implemented an IPAC improvement intervention to make the guidelines that already existed easier to implement through simplification and standardization. The AOM developed:
Simplified guidelines that reflected midwives' context, such as a one-page

reprocessing checklist, which removed all extraneous information (e.g., Bowie Dick tests); Specific and actionable lists of equipment that midwifery practices needed to own; Logs with clear prompts and reminders; Videos that demonstrated simple and practical means of implementation; Relationships to support centralized reprocessing.

Prior to this 18-month reprocessing improvement initiative, midwives were nearly universally unaware of provincial and national guidelines and were reprocessing independently. After the intervention, surveyed midwives reported near universal awareness of and compliance with guidelines. 66% of midwifery practice respondents reported using simpler alternatives to reprocessing (i.e., disposables or out-sourcing); and of those reprocessing, 92% of respondents report compliance with standards. The AOM continues to work with hospitals, reprocessing professionals, and insurers to further simplify IPAC and centralize midwives' reprocessing. In the contest for the attention of community healthcare providers, IPAC is on a long list of demands, along with practice finances, privacy, human resources and clinical care. The pressing demands of individual patients will typically be prioritized over the need to implement processes to support the patient population as a whole. Large healthcare organizations and provincial organizations can learn from this experience and the hierarchy of effectiveness to reconsider the best approach to support the implementation of IPAC standards in the community. In the experience of the AOM, the problem is not a lack of guidelines, but rather a lack of adequate support (i.e., time, capacity, expertise) to bring those guidelines to life. That is where larger healthcare organizations can step in.

TUESDAY, MAY 29, 2018

TUESDAY POSTER BOARD 1

CPE: ENVIRONMENTAL AND SINK CLEANING PROTOCOL FROM SEVEN ACUTE CARE FACILITIES IN GTA

Carla Corpus[1], Natasha Salt[1], James Wong[2], Kornelija Delibasic[3], Tiberius Stanescu[4], Rajni Pantelidis[5], Heather Candon[6], Michael Rotstein[7], Jerome Leis[1]
Sunnybrook Health Sciences Centre, Toronto; 2. Sinai Health Sytems, Toronto; 3. Markham Stouffville Hospital, Markham; 4. The Scarborough and Rouge Hospital, Toronto; 5. William Oslter Health System, Brampton; 6. Mackenzie Health, Richmond Hill; 7. St. Joseph's Healthcare, Toronto

Background: Carbapenemase-producing Enterobacteriaceae (CPE) are emerging pathogens that pose a major threat to patient safety with high morbidity and mortality associated with infection. Several studies have noted transmission and outbreaks of CPE due to contaminated environment, hand hygiene sinks and plumbing. However, there remains lack of consistent guidelines for daily and terminal cleaning required for CPE rooms, sinks and plumbing.

Methods: In September 2017, seven acute care facilities were surveyed on the following: CPE daily and terminal cleaning protocols for rooms, hand hygiene sinks and drains; procedures for environmental swabbing; actions pre and post swab result availability; and variability of sink management in different areas (ICU versus wards), if any.

Results: The majority of the facilities (86% (6/7)) surveyed performed twice daily cleaning while the room is occupied by a CPE positive patient. Upon discharge, all facilities implemented double cleaning using sporicidal bleach or accelerated hydrogen peroxide (AHP) disinfectant in the bathroom (3 and 4 facilities, respectively). Drain management varied in 2 facilities wherein steam was used while the remaining facilities relied on disinfectant dwell times. To mitigate risk of contamination, one facility closes the hand hygiene sink for the duration of the patients stay in ICU if the patient was known to be positive for CPE. Most facilities (86% (6/7)) collected environmental swabs but varied in swabbing procedures. 57% (4/7) of the facilities kept their sinks closed pending the swab results and 43% (3/7) repeated swabs between 1-6 weeks. Positive environmental results typically required the re-cleaning of sinks but also included the removal of plumbing and sinks if swabs remained positive. Data does not include the management of sinks and drains other than hand hygiene sinks.

Conclusion: Given the disparity in CPE environmental cleaning and management among surveyed facilities, this highlights the need for evidence based best practice guidance documents. Further research in this area is needed to inform cleaning strategies, prevent sinks and drains from becoming contaminated and review ideas/technologies that mitigate the risk of contamination.

TUESDAY POSTER BOARD 2

EVALUATING THE USE OF A TOOLKIT TO GUIDE FRONT LINE HEALTHCARE PROVIDERS IN USING STANDARDIZED GUIDELINES WHEN CARING FOR THE PATIENT WITH CLOSTRIDIUM DIFFICILE INFECTION

Alison M Devine, Darren Pasay; Alberta Health Services

Background: Alberta Health Services Central Zone launched a Clostridium difficile Infection (CDI) Toolkit in 2015 to address increases in the incidence of hospital-acquired CDI. The use of standardized guidelines for classification and treatment of CDI is known to improve associated morbidity and mortality. The Toolkit consists of pre-printed care orders (PPCO) to assist prescribers in identifying and treating CDI according to clinical guidelines, as well as patient care flow maps and sporicidal cleaning signs to post at patient rooms. As of February 2016, all CDI cases were evaluated for toolkit use.

Project: All adult inpatient cases in acute care meeting criteria for hospital and community-acquired CDI (3 or more type 6/7 stools in 24 hours or 6 or more type 6/7 stools in 36 hours, positive C. difficile toxin) are evaluated by Infection Control Professionals (ICP) and pharmacists for adherence to Toolkit components and concordance to guidelines. As of September 2017, cases in AHS continuing care sites are also reviewed and included in results. At the conclusion of each case, summaries are provided to the attending physician and unit manager.

Results: From February 2016 to December 2017, 180 CDI cases were reviewed. Overall PPCO use was 44%. Empiric CDI therapy was concordant in 66% of cases. When there was evidence of PPCO use, CDI therapy was concordant 76% of the time. When there was no evidence of PPCO use, CDI therapy concordance was 67%. For severe cases of CDI, the gap in concordance increased when the PPCO was not used. Guideline non-concordance was attributed to: misclassification of CDI severity, over treatment (e.g. vancomycin used for the first occurrence of mild/moderate CDI), under treatment (e.g. metronidazole used for a severe case), and use of non-standard doses of metronidazole or oral vancomycin. Contact precautions with sporicidal cleaning signs were in place for 89% of CDI cases. The patient care flow map was available to nursing staff for 90% of the cases. Site specific analysis demonstrated a wide variance in the uptake of the CDI Toolkit and PPCO therapy concordance.

Lesson Learned: Adherence with sporicidal precautions signs, additional precautions and patient care flow map use are consistently high. These components are well established in the facilities. However, overall PPCO utilization is poor in specific areas. CDI therapy concordance increased when the PPCO was used. Targeted intervention on low compliance units, including engagement of medical and nursing staff will be required to understand barriers and increase uptake of the PPCO tool and adherence to treatment recommendations.

TUESDAY POSTER BOARD 3

HEPATITIS C VIRUS TESTING AND TREATMENT AMONG PERSONS RECEIVING BUPRENORPHINE IN AN OFFICE-BASED PROGRAM FOR OPIOID USE DISORDERS IN NIGERIA

Adeyemi A Abati, Lagos University Teaching Hospital, Lagos, Nigeria

Aims in Nigeria, Hepatitis C virus (HCV) infection is primarily spread through injection drug use. There is an urgent need to improve access to care for HCV among persons with opioid use disorders who inject drugs. The purpose of our study was to determine the prevalence of HCV, patient characteristics, and receipt of appropriate care in a sample of patients treated with buprenorphine for their opioid use disorders in a primary care setting. Methods this study used retrospective clinical data from the electronic medical record. The study population included patients receiving buprenorphine in the office based opioid treatment (obot) clinic within the adult primary medicine clinic at Lagos Medical Center between October 2008 and August 2015 who received a conclusive HCV antibody ab test within a year of clinic entry. We compared characteristics by HCV serostatus using Pearson's chi-square and provided numbers/percentages receiving appropriate care. Results the sample comprised 300 patients. Slightly less than half of all patients (n = 134, 27.7%) were HCV ab positive, and were significantly more likely to be older Hausas and Yorubas, have diagnoses of post-traumatic stress disorder (ptsd) and bipolar disorder, have prior heroin or cocaine use, and be HIV- infected. Among the 134 HCV ab positive patients, 126 (67.7%) had detectable HCV ribonucleic acid (rna) indicating chronic HCV infection; only 8 patients (2.21%) with chronic HCV infection ever initiated treatment. Conclusions nearly half of patients (47.7%) receiving office-based treatment with buprenorphine for their opioid use disorder had a positive Hepatitis C virus antibody screening test, although initiation of HCV treatment was nearly non-existent (2.21%).

TUESDAY POSTER BOARD 4

CHOOSING WISELY – IPAC AND NURSING TOGETHER

Madeleine Ashcroft RN BScN MHS CIC[1], Vi Burton RN MN CIC[2], Alisa Cuff RN CIC[3], Karen Pardy BN RN CIC[4], Craig Pienkowski RN BN BSc CIC[5], Patricia Rawding RN BScN CIC[6], Ramona Rodrigues RN BSc MSc(A) CIC ICS-PCI[7], Samantha Stewart RN BScN OHN(C)[8], Karey Shuhendler RN CCHN(C) MN[9]
1. Public Health Ontario, Toronto; 2. Kelsey Trail Health Region, Nipawin; 3. Central Health, Lewisporte; 4. Stanton Territorial Health Authority, Yellowknife; 5. Vancouver General Hospital, Vancouver; 6. Nova Scotia Health Authority, Wolfville; 7. McGill University Health Centre and RI-MUHC; 8. Yukon Hospital Corporation, Whitehorse; 9. Canadian Nurses Association, Ottawa

Issue: Choosing Wisely is an international initiative begun in 2012 by doctors to help their patients understand that too much of a good thing (i.e., tests, treatments, and procedures) can be a bad thing. Microbiology, infectious disease, and public health associations have contributed to the more than 500 US and 250 Canadian specialty society recommendations. Realizing the potential impact of a list for nursing, the largest group of health care providers, the Canadian Nurses Association (CNA) produced the first Canadian nursing list in 2016. CNA then asked Infection Prevention and Control Canada (IPAC Canada) to create the first Canadian nursing specialty list, recognizing that infection prevention and control is an integral part of all that nurses do.

Project: The CNA and IPAC Canada established its list by convening an eight-member working group of IPAC experts from a broad range of geographical regions and practice settings across Canada. Working with a CNA policy advisor, the group reviewed existing recommendations from Choosing Wisely Canada's specialty societies and the American Choosing Wisely lists, including the Academy of Nursing list. In addition, the group created novel evidence-based items specific to IPAC. The relevance to nursing of 298 items was appraised using a CNA-developed structured process. Using a modified Delphi process for the next two rounds of revision, the group refined and adapted 30 items, reaching consensus on an eight-item list. A literature review confirmed the evidence for these items, and supporting research was added where appropriate.

Following subsequent extensive consultation, with input from experts in patient safety, members of the Canadian Network of Nursing Specialties, patient advocates, CNA jurisdictional members and nurses, the Canadian Association for Drugs and Technologies in Health, and Choosing Wisely Canada's internal clinician reviewers, the Choosing Wisely Canada IPAC nursing list was fully approved by both IPAC Canada and CNA boards in September 2017.

Results: At the request of the Choosing Wisely Canada internal clinical reviewers, two items were combined to form a final seven item list that is now posted on the Choosing Wisely Canada website along with rationales and references. It is being widely disseminated by IPAC and nursing organizations and members. The document is available at *https://ipac-canada.org/other-ipac-resource-links.php.*

Lesson Learned: IPAC Professionals may know what should be done but we frequently must rely on nurses to do it. The health of Canadians is hugely at risk if nurses do not know and use IPAC best practices. As we worked to create our specific list, we came to understand the value of this creative initiative for IPAC Professionals, nurses, and patients/residents/clients. Through simple statements, the status quo is challenged and we think more about what we are doing and what we are recommending. Please help spread the word!

TUESDAY POSTER BOARD 5

COMPARISON OF TALC AND TALC-FREE GLOVES IN AN INTENSIVE CARE UNIT ON THE COMPLIANCE WITH BEST PRACTICES FOR HAND HYGIENE

Mayra G Menegueti[1], Márcia A Ciol[2], Thamiris R Araújo[3], Fernando Bellissimo-Rodrigues[1], Maria Auxiliadora-Martins[1], Anibal Basile-Filho[1], Elizabeth Papathanassoglou[3], Ana Maria Laus[1]
1. University of Sao Paulo, Robeirao Preto, Brazil; 2. University of Washington, Seattle; 3. University of Alberta, Edmonton

Background / Objectives: The use of talc gloves may make the use alcoholic solution for hand hygiene challenging, which may compromise compliance with this practice. In intensive care units (ICUs) hand hygiene with soap and water at all times becomes impractical, given the frequency of required hand hygiene. The objective of this study was to compare the compliance with hand hygiene of staff of an adult ICU when wearing talc latex gloves or talc-free nitrile gloves.

Methods: We conducted a quasi-experimental study at a nine-bed ICU of a Brazilian tertiary university hospital. The participants were all ICU healthcare professionals (HCP). Hand hygiene practices were assessed using the World Health Organization' checklist. HCP were observed in the morning, afternoon, and night shifts, by a single specially-trained observer. Talc latex gloves were used in the ICU during June, 2017, while in the talc-free gloves were used during August 2017. Data analysis was performed using STATA SE® version 14. Compliance was measured by percentage of times a HCP performed hand hygiene respective to the number of opportunities for hand hygiene. The student's test for paired samples was used to compare the mean of percentages between talc latex gloves or talc-free nitrile gloves.

Results: Forty professionals were assessed during the study. Each professional had at least 17 opportunities (maximum of 41) for hand hygiene while wearing talc gloves, and at least 19 opportunities (maximum of 37) while wearing talc-free gloves. The mean percentage of compliance with hand hygiene was 55% (95% Confidence Interval (CI): 51-59%) with talc glove and 60% (95% CI: 57-63%) with talc-free glove). The mean difference between the compliance to hand hygiene for the two types of gloves was 5.1% (CI 95%: 2.5-7.6%, $p<0.001$ for testing if difference was zero), with higher compliance for the talc-free gloves. Figure 1 shows the compliance to hand hygiene of individual professionals with each type of glove.

Conclusion: Although a few individuals had no better compliance with one glove or another, on average the compliance with hand hygiene was higher when using talc-free gloves. The effect of different types of glove materials on hand hygiene practices needs to be further studied. Those studies would allow institutions to implement evidence-based policies regarding everyday consumables, such as gloves, and which could potentially impact on the care of patients.

TUESDAY POSTER BOARD 5A

PILOT COST ANALYSIS OF INTENSIVE CARE UNIT HOSPITALIZATION FOR PATIENTS WITH AND WITHOUT SEPSIS/SEPTIC SHOCK IN BRAZIL

Thamiris R Araújo[1], Elizabeth Papathanassoglou[1], Mayra G Menegueti[2], Francine S Gulin[2], Maria Auxiliadora-Martins[2], Anibal Basile-Filho[2], Carlos Alberto G Bonacim[2], Ana Maria Laus[2]
1. University of Alberta, Edmonton; 2. University of Sao Paulo, Robeirao Preto, Brazil

Background/Objective: Knowing the healthcare costs attributed to sepsis is important for healthcare planning and for reinforcing the importance of preventive measures. Our objective was to estimate the intensive care unit (ICU) cost for patients with sepsis /septic shock compared to sepsis-free ICU patients.

Method: This is a descriptive, retrospective study employing a case study analysis method, conducted in an adult ICU in a large teaching hospital in the State of São Paulo, Brazil. The study population was comprised of ICU patients, over 18 years, regardless of sex, diagnosis or type of treatment. Data collection took place during December 2017, and involved: a) demographic and clinical characteristics; b) identification of resources consumed; c) estimated patient cost with a mixed microcosting approach. Nursing costs were assessed through a bottom-up approach by employing the Nursing Activities Score (NAS) to quantify hours of work. Costs related to physicians and physiotherapists, and consumables were assessed through a top-down approach (average cost/day x length of stay); and drugs and diagnostics tests through a bottom-up approach (Unit prices x quantity per patient). Indirect costs were assessed as average bed-day cost. Data collection was performed through medical records, and data from the hospital financial services. We used descriptive statistics and groups were compared by the Mann Whitney test by the STATA SE® version 14.

Results: The sample comprised 20 patients, 60% of which were male and with an age range of 18-74 years, (mean: 49; SD-18). The average length of ICU stay was 7.5 days (SD:6.5) ranging between 2-28 days. Overall, 08 (40%) patients with sepsis/septic shock were identified, with an average Simplified Acute Physiology Score III (SAPS): 72 (probability of death: 57%), average length stay 7 days resulting in an average total cost of ICU hospitalization $7.297,97 CAD (median $ 5.074,03 CAD) and mortality 75%. The 12 (60%) non-septic patients, had an average SAPS: 51 (probability of death: 30%), average length stay 8 days, resulting in average ICU cost of $5.592,72 CAD (median $4.384,89 CAD), and mortality 50%. The p value by comparison total cost was 0.64. The cost category significantly differentiating between sepsis and non-sepsis patients was the drugs, with an average $ 2.213,20 CAD (median 1.257,86) and $483,30 CAD (median 235,49), respectively, however were not statistically significant ($p=0.11$). Although we provide indication of an association between the sepsis/septic shock group and higher incidence of death and ICU costs, these differences were not statistically significant probably owing to the small sample size.

Conclusion: These results provide preliminary evidence for the cost of sepsis in ICUs in Brazil. The results may also imply that other variables are involved in the high cost of patients, such as baseline diagnosis, which was not considered in this analysis.

TUESDAY POSTER BOARD 6

TRACKING SURGICAL SITE INFECTIONS IS A CLIMB BUT THE VIEW IS GREAT!

Charmaine M D'Souza, Danny L Chen, Heather L Candon; Mackenzie Health, Toronto

Issue: Infection Prevention and Control noted an increased incidence of Staphylococcus epidermidis deep surgical site infections (SSI) associated with hip replacement surgeries. The two detected cases were concerning as these infections occurred in patients who had surgeries that were performed back-to-back in the same operating theatre, and were the only infections in the past 100 surgeries.
Project: A retrospective chart review of both cases was completed, along with pulse field gel electrophoresis (PFGE) typing to identify clonality of isolates. Utilizing the Safer Health Care Now Practice Tool Kit, IPAC Canada OR checklist, along with other best practice guidelines, an intensive practice audit of the OR was completed. OR practices potentially affecting infection rates were mapped using an Ishikawa diagram to identify areas for improvement and to help formulate recommendations. The administration of perioperative antibiotic prophylaxis was reviewed for all patients receiving hip and knee replacements over a 4-month period.
Results: A specific breakdown in the perioperative and OR procedures for these two patients was not identified in our review. PFGE analysis of the two Staphylococcus epidermidis isolates confirmed there was no point source. In both cases, cefazolin was appropriately administered less than an hour prior to procedure start time. Practice audits revealed the following areas for improvement: implementation of pre-operative patient bathing the night before surgery using 2% chlorohexidine gluconate (CHG); moving from 10% povidone iodine with isopropyl alcohol for skin antisepsis to 2% CHG/70% isopropyl alcohol; clipping hair within 2-hours of surgery ideally outside the OR, where possible. Moreover, as part of practice audits, 186 charts of patients receiving hip or knee replacements were reviewed and 91.9% of patient were found to have received timely perioperative antibiotic coverage prior to incision.
Lessons Learned: Performing practice audits in the OR did not identify a breach in practice that directly led to two deep surgical hip infections; however, we did identify factors that could have contributed to these infections. The use of the Ishikawa quality tool was useful in facilitating the identification, sorting, and displaying of areas for improvement in preventing SSIs. Using such a tool is helpful when engaging the OR team and in making recommendations.

TUESDAY POSTER BOARD 7

COMPARING TWO DIFFERENT METHODS FOR OBTAINING DENOMINATOR DATA FOR A LOCAL SPINAL SURGICAL SITE INFECTION (SSI) SURVEILLANCE PROGRAM AT FOOTHILLS MEDICAL CENTRE (FMC)

Kristine Cannon, Heidi O'Grady; Alberta Health Services

Issue: Obtaining accurate denominator data for SSI surveillance is the most difficult aspect of a surveillance program. Providing rates vs case numbers is much more valuable to stakeholders and ultimately, achieving improved outcome for patients. Denominator data can be provided from multiple sources including operating room (OR) data systems, surgical department/surgical clinical network (SCN) or from hospital administrative data. In 2016, Infection Control Professionals (ICPs) investigated the possibility of developing a spinal surveillance protocol for SSIs following fusions, laminectomies and discectomies. Due to limited resources in our surveillance partnership group, this data collection and work would be left to the ICPs.
Project: After investigating possible sources for denominator data it was determined that the two most accurate and accessible sources would be the Operating Room Information Systems (ORIS) and Data Integration, Measurement and Reporting (DIMR). SSI rates, data retrieval, data cleaning, data quality and ICP workload were compared using each denominator methodology to determine if there was a difference and if so, which to use.
Results: Both methods provided acceptable denominator data. Where they differed was: data quality, cleaning and ICP workload. DIMR data was superior in providing cleaner data, was easier to manipulate and the data included patient identifiers so we were able to ensure an SSI case was included for an easy data quality check. ICP workload for the ORIS data was heavier because it required more data cleaning by the ICP. DIMR is an AHS service that supports healthcare providers and staff, including other IPC Surveillance initiatives by pulling and integrating data from multiple sources. Surgical data from January 1 2015-December 31 2017 was obtained from AHS Discharge Abstract Database (DAD), AHS National Ambulatory Care Reporting System (NACRS) and ORIS. ORIS is Calgary Zone specific and data was pulled from the FMC OR data system. DIMR uses CCI codes while ORIS uses ORIS specific codes. Limitations for the ORIS data included data quality, distinguishing primary from revision procedures and elective vs urgent/emergent procedures. Setting up data pulls from ORIS and DIMR required the same amount of time and logistics.
Lessons Learned: Depending on the expectations of your surveillance program and stakeholders both methods could be used to calculate SSI rates. Crude data from OR sources like ORIS can still be used to compare and detect changes in rates if compared to itself. Having a provincial service like DIMR in Alberta makes it very feasible to establish a robust local surveillance program with limited workload on the ICP. In addition, the DIMR data makes it feasible to expand this to provincial surveillance.

TUESDAY POSTER BOARD 8

SYNERGISTIC EFFECT OF ADDITIVE IN THE ACTION OF PERACETIC ACID AGAINST BIOFILM

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Background/Objective: In the past few years, numerous studies have shown a strong correlation between nosocomial infections and contaminated drains. This contamination is directly caused by biofilms, which shield dangerous pathogens from common disinfectants. In a recent publication, we presented a comparative study of the different technologies that can be used to attack biofilms. In this publication, we suggest that adding a surfactant can make removing the biofilm matrix more efficient. More specifically, we show how inert components like acids and surfactants can have a synergistic effect on the efficacy of peracetic acid (PAA) as an anti-biofilm agent. We also present a new way to study the removal of biofilms specifically in a drain with an apparatus that allows us to control the flow of water and chemicals in contact with the biofilm.
Methods: Biofilms were grown on borosilicate coupons in a biological reactor according to the ASTM standard test method E2562-12. Product efficacy was then observed in two ways; first, by measuring disinfection efficacy using the ASTM standard test method E2871-12, and second, by observing biofilm removal under static conditions using microscopy coupled with safranin staining.
Results: Using these methods, we saw that adding a surfactant allowed us to reduce the concentration of PAA used by 25%. In another experiment, we observed that adding acid allowed us to lower the concentration of PAA used to about 30%. We also observed that these two effects are additive. Microscopic observation allowed us to show that increasing acid seems to increase biofilm density under static conditions. Under dynamic conditions, however, removal is still effective as the water flow removes the biofilm in large chunks.
Conclusion: Following the results obtained from this study we can confirm that adding some inert ingredient in a disinfecting solution enhance greatly the efficiency in killing and removing biofilm present in drain or any enclosed circuit.

TUESDAY POSTER BOARD 9

COLLABORATING THROUGH CRISIS: INFLUENZA A OUTBREAK

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Issue: In April 2017, 17 residents from a local unlicensed Retirement Home (RH) were admitted to Peterborough Regional Health Centre (PRHC) with influenza-like illness over a 5-day period. Peterborough Public Health (PPH) visited the RH to recommend control measures but faced challenges as there are typically no nursing staff on site and no pre-existing protocols in place. Hospitalizations from the RH increased over the weekend with many residents transferred to PRHC Emergency Department (ED) by ambulance resulting in significant offload delays. EMS reported inconsistencies in the use of Infection Control practices at RH. PRHC ran out of Influenza test kits and requested a supply from a partner hospital. There were delays and confusion in Tamiflu administration for both residents and staff at RH. PRHC IPAC notified the Public Health Inspector (PHI) on-call and Medical Officer of Health (MOH) to request urgent assistance.
Project/Initiative: Immediate responses included: On-call Infection Control Practitioner (ICP) provided support with PRHC ED situation as overcrowding increased over the weekend – 20 isolated patients (many admitted, in ED hallways). ICP coordinated cohorting of patients. ICP collected and delivered supplies (PPE) and educational materials to RH. PPH contacted Public Health Ontario to request access to provincial stock of Tamiflu – supply arrived within

24 hours. On-call PHI and MOH went door to door at RH to dispense first dose of Tamiflu. Prophylaxis offered to all residents. Treatment doses of Tamiflu were prescribed by the residents personal Healthcare Provider. Emergency supply of Influenza tests arrived, ICP coordinated prioritization of testing. PRHC gathered Incident Management System Team to review situation. PRHC opened 12 additional beds to assist with surge. PPH alerted all community Healthcare providers of outbreak and recommendations. PRHC began enhanced surveillance to identify further increases in flu-like illness in inpatients and any increased staff absenteeism.
Long-term responses included: Debriefing sessions held with key stakeholders and with RH residents. PPH developed a strategy to support and prevent outbreaks at all unlicensed facilities in the region, including patient and staff education, proactive outbreak preparations and policy development before the next Influenza season. PRHC developed cohorting guidelines, and a comprehensive plan for rapidly opening and staffing beds during surge.
Outbreak summary: Influenza A outbreak declared April 27, 2017 and declared over May 9, 2017. 43 people were affected – 35 residents, 8 staff, attack rate 25%. 17 hospitalizations and many more ED visits.
Lessons Learned: Crisis in one part of the system or community home requires a rapid system-wide response. Timely access to antivirals is essential and effective in controlling outbreaks. Good communication between all stakeholders and a debriefing process is key in outbreak management.

TUESDAY POSTER BOARD 10

REVISITING THE SYSTEMATIC REVIEWS ON PREOPERATIVE BATHING WITH CHLORHEXIDINE, WITH A FOCUS ON CLEAN SURGERIES, DEMONSTRATES A REDUCTION IN SURGICAL SITE INFECTIONS

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Background/Objectives: The CDC guidelines (2017), the WHO guidelines (2016), and a Cochrane review (2015) which reviewed the use of pre-operative chlorhexidine (CHG) washes suggested there was no clear evidence of benefit for this practice to reduce surgical site infection (SSI) rates although it was noted that the studies included all classes of surgeries. Regardless of the findings, surgical teams at Foothills Medical Centre (FMC) in Calgary, Alberta were interested in incorporating CHG bathing into preoperative practice and consulted our Infection Prevention and Control team at FMC for assistance. We sought to review and update the systematic review evidence which was used to build the current guidelines with a focus on only clean surgeries as opposed to all classes of surgeries.
Methods: Our primary objective was to review the previous systematic reviews conducted by the Cochrane Collaboration, the WHO and the CDC and conduct an analysis only on clean surgeries with the following inclusion criteria: studies with randomized controlled designs, comparison of CHG baths or wipes to either of placebo, soap or no washes, adult patients only, and a definition of SSI which included purulent discharge. We also conducted a semi-structured literature review using key terms from the WHO, CDC and Cochrane systematic reviews to identify any new studies which met our criteria. Numerator and denominator data were extracted and analysis was done using Chi-squared test or Fisher's exact test as appropriate with 95% CI for relative risk, comparing SSI rates with CHG use to SSI rates with the use of the non-CHG options.
Results: Results are summarized in Table 1. There was a total of 7 RCTs within the systematic reviews from which data could be extracted for clean procedures only and 1 additional RCT was found in the search of the literature. Results from the RCTs were pooled and are demonstrated in the table 1.
Conclusion: Preoperative bathing with CHG demonstrated a significant reduction in SSIs in our analysis. Our results support the application of 2 total CHG body washes or 2 total body applications of CHG-impregnated wipes in adult patients undergoing clean surgeries to reduce SSIs. Previous studies found no difference and this may have been due to the inclusion of all classes of surgeries which created too much heterogeneity.

TUESDAY POSTER BOARD 11

FOLLOWING 100% OF SURGICAL PATIENTS FROM PREVENTION TO INFECTION: A HEALTH REGION'S JOURNEY

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Issue: Surgical site infections (SSIs) are the most common healthcare-associated infection in hospitalized patients and can result in increased mortality rates, length of stays and healthcare costs. To determine infection rates and identify quality improvement programs to reduce SSIs in the Regina Qu'Appelle Health Region (RQHR), two surveillance systems were developed to capture relevant data on all surgical patients undergoing the following procedures: coronary artery bypass grafts and valves, total hips and knees, colorectals, neurosurgeries, hysterectomies and C-sections.
Project: In 2013, a multi-disciplinary SSI Committee was established to identify and initiate strategies to collect information on surgical site infection prevention (SSIP) bundle components and SSIs utilizing the Plan-Do-Check-Act (PDCA) model for continuous improvement. For SSIP bundle components, Safer Healthcare Now guidelines were followed (i.e., antibiotics, skin preparation, hair removal, post-operative temperature and blood glucose levels in diabetic patients). As operating rooms (OR) did not have access to computer programs to record SSIP information, data collection forms were created for OR staff to complete. For SSIs, prior to 2014, surveillance was conducted using admission lists and forms mailed to patients. However, monthly response rates (RR) were <10%. To increase RR, telephone surveillance was initiated by nursing personnel. In addition, Infection Control Practitioners (ICPs) requested access to patient's electronic health records (eHR) to view laboratory results, medical imaging reports, clinical encounters, and medication information.
Results: During the initial phase of SSIP surveillance, two major issues were noted: 1) data collection forms were not routinely being used, and 2) data captured on the form was incomplete. Therefore, a new operative case report was created which included fields to capture SSIP information. This change resulted in 100% of surgeries having SSIP data recorded and indicated that opportunities for improvement with respect to pre-operative hair removal and diabetes management is required for RQHR's surgical population. In January 2014, SSI surveillance via telephone was initiated. From January 2014 - August 2015, the monthly RR increased to 75%. Once ICPs were granted access to the province's eHR application in September 2015, the monthly RR increased to ≥99%; resulting in 58 additional SSI cases that would not have been captured by telephone surveillance alone.
Lesson Learned: Using the PDCA cycle, healthcare providers were able to create sustainable surveillance systems to capture vital data on surgical patients both pre-operatively and post-operatively. By collecting SSIP and SSI information on 100% of surgical patients, RQHR is able to provide robust and accurate results to stakeholders for trending and monitoring purposes, identifying deficiencies and conducting interventions in order to decrease the number of SSIs.

TUESDAY POSTER BOARD 14

ALBERTA HEALTH SERVICES – CALGARY ZONE PROSTATE BIOPSY RELATED BLOOD STREAM INFECTION SURVEILLANCE

Corrinne Pidhorney, Joseph Kim, Kathryn Linton; Alberta Health Services
Background/Objectives: Trans-rectal ultrasound guided prostate biopsy (TRUS-PB) is a procedure used to obtain tissue samples from the prostate gland which are then examined for cancer cells. There are complications associated with this procedure including blood stream infections (BSI). In April 2014, Alberta Health Services (AHS), Infection Prevention and Control (IP&C) began surveillance for blood stream infections following TRUS-PB performed at the Southern Alberta Institute of Urology (SAIU) in order to provide feedback of incidence and antimicrobial resistance. The purpose of this report is to describe data for the period of January 1, 2016 – June 31, 2017.
Methods: Numerator data was accumulated through surveillance by the AHS IP&C Department. Cases were identified based on microbiological records, inpatient admissions, Home Parenteral Therapy Programs (HPTP) reports, and Emergency Department visits. All patients who had a new onset BSI within seven days of the procedure were considered a case. Additional information, including basic demographic data, preceding prostate-specific antigen (PSA) values, antibiotic prophylaxis, microbiological results and patient outcomes was obtained from sources including procedure and laboratory reports, medication profiles, and visit notes. This information was used to further classify the data for reporting purposes. All patients who underwent a TRUS-PB procedure completed by EFW Radiology at SAIU were included in the denominator data provided by EFW Radiology.
Results: For the reporting period, 34 cases of TRUS-PB related BSI were identified out of 2554 patients for an incidence rate of 1.33%. Ciprofloxacin was provided as prophylaxis in 30 of the 31 cases for which prophylaxis information was available. All but 3 of the 34 organisms causing the BSIs were resistant to ciprofloxacin and 47% (n=16) were caused by an extended spectrum beta lactamase producing E. coli. All 34 cases experienced a healthcare encounter for treatment of the BSI with

31 (91%) requiring hospital admission and 2 (6%) requiring ICU admission.
Lesson Learned: The incidence of TRUS-PB related BSI and antibiotic resistance of the pathogens causing these infections remains a concern and is associated with significant morbidity There are future studies planned to examine the local epidemiology of rectal coliforms among men presenting for TRUS-PB and the need to modify antibiotic prophylaxis.

TUESDAY POSTER BOARD 15

THE IMPACT OF STANDARDIZATING BLOOD COLLECTION PROCESSES ON HAND HYGIENE AUDITING PRACTICES

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Issue: The steps related to collecting blood and when to perform hand hygiene varied from site to site within Alberta. Laboratory staff followed their own site or zone-specific procedures. Even within such site-specific procedures, there seemed to be lack of consistency. Due to the variations in the process of blood collection, hand hygiene was performed at inconsistent times and therefore, it was very difficult for the hand hygiene auditor to determine compliance.
Project: A multi-disciplinary province-wide working group developed a clear and consistent process for blood collection. This process was used to determine appropriate hand hygiene moments related to blood collection. Blood collection process consistencies were shared with laboratory staff as well as hand hygiene auditors throughout 17 healthcare sites within the organization. Hand hygiene was monitored using an electronic tool. In order to accurately monitor the use of the new process, a "clean object" button was implemented within the tool. The "clean object" button is used when laboratory staff access clean supplies with clean hands. The hand hygiene software used automatically interprets this marker as "complied" or "missed" based on the circumstances and according to the 4 Moments for Hand Hygiene standard.
Results: The addition of this new "clean object" marker as part of our auditing workflow has allowed for more consistent hand hygiene data collection processes during blood collection. Laboratory hand hygiene organization-wide compliance rates subsequently increased by 8.9%, as did laboratory moment 2 (before aseptic procedures) by 33%.
Lessons Learned: This initiative identified hand hygiene gaps within the blood collection process that could lead to transmission and hand hygiene compliance rate inconsistencies. The provincial working group approach resulted in clear blood collection processes among relevant stakeholders. We believe standardized processes and expectations contributed to the increase in laboratory hand hygiene compliance. We believe many facilities could benefit from an initiative similar to the one described here.

TUESDAY POSTER BOARD 16

ALBERTA HEALTH SERVICES CENTRAL ZONE INFECTION CONTROL PRACTICE REVIEWS – PARTNERSHIP FOR PATIENT SAFETY

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Issue: The Infection Prevention and Control (IPC) program, Alberta Health Services Central Zone, facility leadership and frontline staff require a consistent approach to evaluate IPC practices in acute and continuing care clinical areas. IPC is a component of many external audits (e.g. provincial Continuing Care audits) and has required organizational requirements for Accreditation Canada. These IPC site practice reviews are a proactive internal audit of the current state of compliance with general IPC practices. The review process is a partnership opportunity between frontline and IPC staff to improve IPC practices and advance patient safety.
Project: The transition from discrete health regions to the large single organization of Alberta Health Service's in 2009, provided an opportunity to standardize IPC practices and protocols in the newly formed AHS Central Zone. One of the opportunities for standardization was the Site Practice Review Tool It is used to monitor compliance with IPC guidelines, standards, and regulations. Additionally, this tool enables Infection Control Professionals to become familiar with a facility or department and staff. The review tool is revised annually to incorporate system and organizational changes, as well as risk stratification to assist IPC and facility leadership to prioritize issues. References for recommendations are included in the tool to provide users with rationale for the evidence-informed best practices.
Results: Application of the IPC site practice review tool has resulted in: consistent processes for IPC review and follow-up action recommendations; manager accountability for follow-up within a specified timeframe; improved compliance with IPC practices; identification of deficiencies that are addressed at the local or zone-wide level; opportunities for "just-in-time" education with staff; external and internal partnership development.
Lessons Learned: The site practice review process provides increased opportunity for a multidisciplinary approach to address IPC deficiencies, as well as improve IPC practices and patient safety. Use of the tool has reduced the number of deficiencies identified by external reviews (e.g. accreditation), identified practices requiring improvement during outbreaks, and provided a means of orientating new IPC staff to units or facilities. By completing a site practice review, unit staff became more aware of their role in current IPC practices and are able to identify compliance challenges (e.g. infrastructure issues).

TUESDAY POSTER BOARD 18

A CARRIER PLATFORM FOR FIELD-RELEVANT ASSESSMENT OF WIPING TO DECONTAMINATE HIGH-TOUCH ENVIRONMENTAL SURFACE IN HEALTHCARE: TESTING WITH MURINE NOROVIRUS

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Background/Objectives: Assessment of decontamination of high-touch environmental surfaces (HITES) by wiping rarely reflects field-use. We developed a carrier platform (30 cm x 60 cm) made of Teflon to quantitatively assess such wiping using murine norovirus (MNV; Strain S99) as the challenge.
Methods: Two platforms, with nine perforations to embed in each a stainless steel disk (1 cm diam.; 0.7 mm thick), were used in each test. All disks in the first platform received 10 μL of MNV in a soil load, and the inocula dried; the second platform remained uncontaminated to assess any transfer of contamination during wiping. The first platform was wiped in two steps with a microbicide-dampened test fabric. The second platform was wiped with the used fabric and the disks from both were retrieved simultaneously into separate vials with an eluent/neutralizer. The eluates were assayed for PFU and percentage reductions calculated.
Results: The commercial fabrics tested contained either 250 ppm of hypochlorous acid or accelerated H2O2. In two separate tests with each, both fabrics reduced the virus levels by nearly 99.9% upon wiping with virtually no contamination transferred.
Conclusion: The device and the protocol described can quantitatively determine HITES decontamination in a field-relevant manner. The platform is potentially applicable to other kinds of carrier materials, and also to assess HITES decontamination using other classes of pathogens. It can also be applied to train healthcare personnel in optimal means of HITES decontamination.

TUESDAY POSTER BOARD 19

CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE (CPE): DRAIN COLONIZATION AND REMEDIATION MANAGEMENT IN AN ACUTE CARE FACILITY

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Issue: CPE are a major threat to hospitalized patients. Hospital sinks and drains are reservoirs for gram-negative pathogens, and CPE transmission from drains to patients has been reported. No standardized protocol exists for remediating drain contamination. Developing a coordinated approach for drain testing and remediation is a key component of control efforts.
Project: From January 2010 to September 2017, we identified all rooms occupied by admitted CPE patients at North York General Hospital. Swabs from hand hygiene sink, bathroom sink, and shower drains in these patient rooms and from communal shower drains were tested for meropenem resistance and screened for carbapenemases with confirmation by PCR at the National Microbiology Laboratory. Drain and patient CPE isolates were compared by PFGE and WGS. Drain cleaning and disinfection strategy was developed. For CPE+ drains, we utilized a drain remediation protocol (developed by St. Joseph's Health Centre, Toronto), which included chemical and enzymatic solutions, manual, and steam cleaning via an external, accredited plumbing company. Post-remediation swabs were performed at day 0, 1, 4, 11 post-treatment, and 2 additional monthly swabs thereafter. Preventative maintenance steam cleaning of sink and shower drains of admitted CPE+ patients was also implemented in August 2017. CPE+ patients were bathed using disposable wipes in bed and not in communal showers.
Results: We identified 18 patients with CPE who exposed 40 patient rooms and 5 communal showers. The average number of rooms exposed per CPE patient was 2.4 (range 1 to 6). 58 drains were cultured: 4 (6.9%) yielded CPE (0 sinks, 4 shower

drains from 3 separate communal showers). Three of the CPE+ drains had gene/species matched to the CPE patients and 1 matched the gene only. Application of the drain remediation protocol on the 4 contaminated shower drains and subsequent post-remediation swabs after approximately 70 days resulted in no additional positive drain swabs.
Lessons Learned: Drains may become colonized with CPE from patients. We successfully applied a remediation and post-cleaning surveillance protocol to control further CPE colonization of hospital drains. Establishing a coordinated strategy involving drain management, surveillance, and basic infection control measures is essential to control the spread of CPE. Subsequent surveillance targets could include other potential aqueous reservoirs, such as floor drains of environmental services closets.

TUESDAY POSTER BOARD 20

GUIDANCE DOCUMENT FOR SHELTERS: INFECTION PREVENTION AND CONTROL IN SHELTER SETTINGS

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Issue: Creating and implementing infection prevention and control (IPAC) recommendations for homeless shelter settings is challenging. Shelter settings vary in size, services provided and capacity to implement IPAC practices. These settings can range from drop-ins, transitional shelters, or part-time shelters such as winter respite sites which operate in non-shelter facilities. Shelters do not typically offer healthcare on-site (although some do) nor do they have an IPAC point-person to ensure that IPAC practices are being implemented/audited. As a result of the limitations of on-site healthcare, following-up with reports of communicable diseases for shelter clients (e.g. getting contacts tested, providing prophylaxis), accessing healthcare-related resources (e.g. sharps containers, personal protective equipment), and implementing outbreak control measures is difficult for shelter providers and workers. Additionally, there are minimal shelter specific IPAC resources.
Project: In response to the expressed need for IPAC in Toronto shelters resulting from the provision of healthcare-related harm reduction strategies and recent disease outbreaks in the homeless population, Toronto Public Health created a comprehensive guidance document which provides IPAC recommendations for shelter providers and practical IPAC information for shelter workers to utilize in their daily operations.
Results: Through a literature review and external/internal consultation, topics incorporated into the document include routine practices (e.g. risk assessment, hand hygiene), client hygiene (e.g. respiratory etiquette, skin infestations), food safety, environmental guidelines (e.g. cleaning/ disinfecting, cleaning of blood/ body fluids), outbreak management, and occupational health and safety (e.g. sharps safety, exposure to blood/body fluids). The document also contains fact sheets and a wide range of practical tools. IPAC recommendations used were primarily adapted from the Provincial Infectious Diseases Advisory Committee, the Toronto Shelter Standards and other best practice documents. The document was shared with shelter settings in February 2018 and the roll-out process is currently underway.
Lesson Learned: Stakeholder consultation was essential to gain insight into the different types of shelter environments and the limitations associated with different settings in implementing IPAC practices. Stakeholder feedback was instrumental in understanding what tools would be most useful and to produce the practical examples used in the document to show how IPAC can fit into daily shelter operations. Including all stakeholders during the review process was challenging due to the short turnaround time for the project and competing priorities. Additionally, when producing IPAC recommendations for a community setting such as a shelter, factors such as how realistic the IPAC recommendation is for a non-healthcare setting, as well as feasibility had to be considered.

TUESDAY POSTER BOARD 21

THE IMPACT OF INFECTION CONTROL INTERVENTIONS ON THE RATE OF HOSPITAL ACQUIRED CLOSTRIDIUM DIFFICILE INFECTION IN THE NORTH ZONE OF ALBERTA HEALTH SERVICES

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Background/Objective: The North Zone of Alberta Health Services (AHS) experienced an increase in the rate of Hospital Acquired (HA) Clostridium difficile infection (CDI) in the fall of 2015. In light of that, the Infection Prevention and Control (IPC) program at AHS developed new tools and strategies including; a CDI Patient Follow up Algorithm, Pre-Printed Care Order Set (PPCO) and Tiered Management Documents. The CDI Patient Follow up Algorithm, unique to the North Zone of AHS, outlines the process used by IPC to engage with the care team and to provide guidance on patient management according to the PPCO and Tiered Management Documents. The aim of this study was to examine the impact of the new tools and strategies on the rate of HA CDI in the North Zone of AHS.
Methods: AHS IPC uses a provincially standardized CDI protocol for surveillance at all acute care facilities. Cases were identified as Community Acquired (CA) or HA based on the timing of CDI diagnoses being before or after 72 hours of admission, respectively. For CA cases, no history of admission in the last 4 weeks is required. The North Zone HA CDI rates in the 12 months before and after the implementation of the new tools were compared. The CA CDI rates were compared for the same interval and used as a control group. The denominators used were 10,000 inpatient days and 1,000 inpatient admissions for HA and CA CDI rates respectively. The HA CDI attributable mortality, which combined CDI directly related and CDI contributed mortality, was also examined for the same intervals. The Z-Score test with two-tailed hypothesis was used for statistical calculation. The significance level was predetermined at the 0.05 level.
Results: The HA CDI rates were 2.61 and 1.51 per 10,000 inpatient days for the pre and post implementation periods respectively. The rate decline was statistically significant (p value < 0.05). CA CDI rates were 1.12 and 0.96 per 1,000 inpatient admissions for the pre and post implementation period respectively. The rate difference was not statistically significant (p value = 0.52). The HA CDI attributable mortality was 9.52% and 2.56% for the pre and post implementation periods respectively. However, the decline in attributable mortality wasn't statistically significant (p value = 0.18).
Conclusion: The interventions may have had a positive impact on the HA CDI rate but a neutral impact on the CA CDI rate. A decline in the CA CDI rate was not anticipated. Adopting an interactive approach for HA CDI cases may promote patient safety, improve outcome and reduce transmission.

TUESDAY POSTER BOARD 22

PARTNERING TO IMPROVE IP&C! INFECTION PREVENTION AND CONTROL EDUCATIONAL NEEDS ASSESSMENT FOR MIDWIVES

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Issue: Midwives are regulated health-care professionals who provide primary care to women through pregnancy, labour, birth and to the woman and baby for six weeks after birth. Approximately 740 active Ontario midwives have privileges in 93 Ontario hospitals. In 2015/2016, midwives attended nearly 38,500 births nationally. In Ontario, midwives attended 22,443 births; 81% (approx. 18,000 births) were in hospitals. Despite frequent presence on labour and delivery (L&D) units, midwives are often overlooked when ICPs provide Infection Prevention and Control (IP&C) education as midwives are not hospital employees. The aim of this study was to identify and prioritize IP&C educational needs of midwives and understand how best to provide education to midwives with hospital privileges.
Project: A self-reported survey, adapted from the Hennessy Hicks Training Needs Analysis for Health Care Professionals, was used to determine the IP&C educational needs of Ontario midwives. The survey is designed with a customized set of items pertaining specifically to IP&C. Training needs were identified where the largest gaps exist between the importance attributed to an item (1= not at all important, 7= very important) and how well the midwife believes they perform this task (1=not well, 7= very well). The biggest numerical gaps indicate the greatest training need. Additional demographic and preferred training method questions were added. Electronic surveys were distributed by the Association of Ontario Midwives (AOM) through their weekly newsletters and promoted on social media. Reminders were also sent to midwifery clinics across Ontario via email.
Results: 132 survey responses, representing approximately 18% of active Ontario Midwives (95% confidence level, 8% margin of error), were collected and analyzed. Understanding how to access assistance from an ICP was the highest priority training need. Followed by: 1) knowledge of communicable diseases; 2) accessing hospital policies and procedures and; 3) understanding additional precautions. Maintaining sterility of equipment and understanding the four moments of hand hygiene were found to be lowest IP&C training priority for this group. The most preferred method of IPAC training was web-based (72.4%), followed by training on inpatient units (18%) and lastly classroom training (12%). In total, 70% of midwives reported they have never met the ICP at their healthcare center and 38% have not received infection control training of any kind in the last 12 months.

Lessons Learned: The educational needs assessment survey identified the need for ICP accessibility and other priority educational needs in IP&C for Ontario midwives. ICPs can build on these identified needs and create programs that will better support the needs of our midwife partners and promote IP&C principles on L&D units.

TUESDAY POSTER BOARD 23

OZONE EFFICIENCY FOR THE CONTROL OF AIRBORNE MURINE NOROVIRUS

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Background/Objectives: Human norovirus, gastroenteritis causative agent, is found in the air surrounding infected patients and could use aerosols as transmission route. We recently showed that murine norovirus (MNV-1), a human norovirus surrogate, resists aerosolization and that around 80% of the viruses are still infectious after aerosolization, desiccation and sampling (Bonifait et al. 2015). Strict disinfection protocols are used in hospitals for surface decontamination during norovirus and other viral outbreaks. Unfortunately, no protocols are established for air treatment. This means that aerosols could remain in the health care facility even after cleaning, leading to subsequent patient and workers exposure. In addition to direct aerosol exposure, contaminated airborne particles can deposit and lead to fomite contamination. Since the infectious dose for Norovirus can be as low as 10 virions, it is crucial to develop air treatment that will complement cleaning procedures in order to reduce exposure to infectious airborne norovirus, as well as limiting cross contamination and nosocomial transmission. Ozone has a great disinfection power in water. Ozone molecules react with water to form free radicals, which are powerful to destroy the membrane of microorganisms. Ozone has also been used at high concentrations to treat surfaces, but airborne viruses' response to ozone has not been examined yet. This study documents the infectivity of airborne MNV-1 after an ozone treatment.
Methods: MNV-1 (CW1 (PTA-5935)) was nebulized in an environmental rotating aerosol chamber (Verreault et al. 2014) for 10 minutes using the 6-jet Collison at a pressure of 20 psi. The relative humidity (RH) inside the chamber was 85%. Aerosols were stabilized for another 10 minutes before sending an ozone puff to the chamber. A concentration of 0.5 ppm of ozone was reached for each experiment. Aerosols were exposed to ozone for 0, 30 or 60 minutes. The chamber was then emptied at a flowrate of 12,5 L/min for 20 minutes using the SKC BioSampler. Plaque assay using RAW 264.7 cell line was used for the quantification of infectious viruses. Viral RNA was also extracted from the samples and then quantified using RT-qPCR.
Results: A decrease of infectivity of airborne MNV-1 is observed when exposed to 0.5 ppm of ozone at 85% RH. This decrease is also seen throughout time, with a drop of 2 orders of magnitude between exposure times of 0 and 60 minutes.
Conclusion: Ozone, at a concentration of 0.5 ppm, has a great disinfection power when used with MNV-1. Because norovirus is highly resistant to disinfectants, these results suggest that ozone could be used for air treatment in hospital settings and other infected environments (retirement home, daycare, cruise ship, etc.) to complement surface disinfection protocols.
Sources of funding: Natural Sciences and Engineering Research Council of Canada (NSERC) discovery grant.

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OH, THE PLACES YOU WILL GO...

Jason Morris, Heather MacLaurin, Zaheeda Jessani, Tamalee Andersen, Renate Braul, Lori Pohl, Melissa Eyben, Grant Moir; Alberta Health Services

Issue: Alberta Health Services (AHS) Calgary zone encompasses a large geographic region and provides a wide range of services including; acute care, continuing care, urgent care, mental health, long term care, corrections, emergency medical services, home care outpatient clinics and laboratories. The Infection Prevention and Control (IPC) program within Calgary zone has 7.1 FTE Infection Control Professionals (ICPs) that are dedicated specifically to supporting community and rural facilities/programs. ICPs are always required to adapt to diverse situations, tailoring their problem-solving approaches to the unique populations they support. While the challenges of providing IPC service in acute care facilities are well documented, there is less written about IPC practice in community and rural health care settings.
Project: The Community/Rural IPC team decided it was important to collectively share anecdotes that highlight the unique challenges and rewards of practicing in this environment. The goal would be to provide information for other IPC's who may be wondering what is involved and what it is like to work in a non-urban acute care portfolio.
Results: The different situations that arise can be separated into three categories; 1) Increased distance. Where the distance can act as a barrier to having a physical presence at the site. In some instances, the ICP can be responsible for sites that are a great distance from each other. This can be challenging when dealing with issues. Challenges can be minimized through the use of communication tools (skype, email and phone) and setting priorities. ICP's end up relying more on the stakeholders at their sites which requires building a strong foundation with each facility. 2) Different type of site. Sites can be based on the patient population, services provided, and ownership. Not all facilities are retained by Alberta Health Services (AHS), some are contracted to provide services. Sites that are not owned by AHS are not obligated to follow IPC guidelines. Competing priorities and low staffing levels can prevent meeting recommendations. This demonstrates the importance of understanding the site and building relationships. 3) Diverse communities. The type and lifestyle of a community can start to impact IPC practice. Rural communities can have stronger community connections than urban settings. Illness outbreaks can affect the whole community and require community education about illness and how it is spread. This requires a strong understanding of relationships with the community.
Lesson Learned: Working in a community/rural setting has a number of unique challenges when compared to an urban acute care site. This further shows the importance of trust and communication when interacting with the stakeholders as well as other ICP's on the team. The consistency of messaging throughout the coverage area is a major factor to consider.

TUESDAY POSTER BOARD 25

CALGARY SHUNT PROTOCOL REDUCES CEREBRAL SHUNT INFECTIONS IN CHILDREN

Michael M.H. Yang, Walter Hader, Kelly Bullivant, Mary Brindle, Jay Riva-Cambrin; University of Calgary, Alberta Children's Hospital, Calgary

Background: Cerebral shunt infections are common complication for children with hydrocephalus leading to significant morbidity. A shunt protocol developed by the international Hydrocephalus Clinical Research Network (HCRN) was shown to significantly reduce shunt infections in children in large academic tertiary care centers. However, its effectiveness has not been shown in non-HCRN affiliated, small to medium volume pediatric neurosurgery centers such as Alberta Children's Hospital (ACH). The goal of this study was to apply a closely adapted HCRN protocol termed Calgary Shunt Protocol (CSP) at ACH to evaluate its effectiveness in reducing shunt infections as part of a quality improvement initiative.
Methods: The 9-step CSP was applied in the operating room at ACH between May 23rd, 2013 to December 31st, 2017 for all children undergoing any shunt procedure. Children undergoing shunt surgery between January 1st, 2009 and implementation of the CSP was used as the control cohort. The HCRN definition of shunt infection was applied: 1) identification of organism on culture or gram stain from CSF, wound swab, or abdominal pseudocyst fluid, 2) shunt erosion with exposed hardware, 3) abdominal pseudocyst, or 4) positive blood culture in patients with a ventriculoatrial shunt. The primary outcome was the number of shunt infections. Univariate analyses of the protocol, individual elements within were performed using student t-test for measured variables and Chi-square for categorical variables. Variables that were significant on univariate analyses and those that demand adjustment were analyzed using stepwise multivariable logistic regression.
Results: A total of 268 shunt procedures were performed. The median age was 14 months (IQR 3-61). Following implementation of the CSP, there was a significant absolute risk reduction of 10.0% (12% to 2.7% [95%CI 3.9% to 15.9%], p=0.004) in shunt infections. In univariate analyses, chlorhexidine compared to povidone skin prep reduced shunt infection by 8.2% ([95%CI 1.84-14.6%], p=0.02) and waiting > 20 min between receiving preoperative antibiotics and skin incision reduced shunt infections by 9.6% ([95%CI 2.4%-16.9%], p=0.02). In multivariable analyses, only protocol implementation independently reduced shunt infections (odds ratio 0.19 [95%CI 0.056-0.66], p=0.009); while age, etiology, surgeon, procedure type, type of skin preparation, and time from preoperative antibiotics to skin incision were not significant. Compliance rate to the protocol was 70%.
Conclusions: The CSP was effective in reducing cerebral shunt infections in an

independent, non-HCRN affiliated, and small to medium volume neurosurgery center. Chlorhexidine skin prep and waiting > 20 min between preoperative antibiotic and skin incision may have contributed to the protocol's quality improvement success. Implementation of CSP independently reduced shunt infection risk.

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WHOSE LINE IS IT ANYWAY?

Samantha J Woolsey[1], Uma Chandran[1], Melody Cordoviz[2], Madelaine Anderson[1], Roxy Thomas[2]
1. Royal Alexandra Hospital, Edmonton; 2. Alberta Health Services

Issue: Unintentional patient exposure to the blood or body fluids of other patients while receiving care is an under-recognized adverse event that can result in a catastrophic outcome. Alberta Health Services Infection Prevention & Control (AHS IPAC) was tasked to ensure that these events were recognized, reported and disclosed in a timely manner, and that education and policies were developed to prevent further occurrences these unfortunate events.
Project: Our large 800 bed acute care facility undertook an intensive quality assurance review following the delayed recognition of an IV line mix up event wherein the used line of a patient with a confirmed blood borne pathogen was inadvertently connected to his roommate's IV site. AHS IPAC created an algorithm to help staff recognize significant blood and body fluid exposures in patients and to report them appropriately. Additionally, the AHS Quality and Healthcare Improvement program teamed up with AHS IPAC to create and disseminate a province wide Safer Practice Notice on recognition and reporting of blood and body fluid exposures in patients. Further work was done at the site of the IV line mix up to optimize IV line labeling and patient identification.
Results: These efforts resulted in improved recognition and reporting of these events as evidenced by an anecdotal decrease in reported patient BBFE events in AHS's Reporting and Learning System.
Lesson Learned: Staff nurses had not recognized or reported that IV line mix ups were occurring thereby preventing appropriate disclosure and follow up.

TUESDAY POSTER BOARD 27

IS YOUR ORGANIZATION READY FOR THE NEXT INFECTIOUS DISEASE THREAT?

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1. Public Services Health and Safety Association, North York;
2. Public Health Ontario, Toronto

Issue: Hospitals invest significant time and energy to prepare and respond to infectious disease (ID) threats. Sustaining these high levels of focus and effort is a challenge. In July 2016, the Ontario Ministry of Health and Long-Term Care (MOHLTC) released a step-down directive for Ebola Virus Disease (EVD) and a plan to build a more ready and resilient health system to respond to future ID threats. Phase one of their provincial baseline requirements is the completion of annual organizational risk assessments (ORA). All healthcare organizations in Ontario are expected to comply.
Project: This presentation will provide an overview of the multi-stakeholder, MOHLTC sponsored project, to develop an ID threat ORA tool for the acute care sector. Project goals and deliverables include: a) developing an ORA tool that can be used by acute care organizations to identify and quantify the risk of ID threat exposure and determine appropriate preventive and protective controls measures; and b) Piloting the ID ORA tool and conduct usability focus groups in a select number of Ontario hospitals. The ORA is not meant to duplicate the extensive knowledge, resources, and tools related to routine practices and well established IPAC program components. Likewise, the ORA is not meant to replace specific MOHLTC directives issued in the event of an infectious disease threat in the province. There were two major project assumptions. First, transmission can be prevented when hazards are identified and risks are managed and communicated. Second, risk assessment is a powerful process that can assist with decision making, priority setting, and the protection of worker health and safety.
Results: A draft organizational risk assessment tool has been developed for the acute care sector in Ontario. Development of the ORA and its recommended application is based on best available evidence, as well as industry best practices standards, and any legal requirements. The precautionary principle is to apply where there is a need to err on the side of caution because of scientific uncertainty. Furthermore, where there is an infectious disease threat, the advocated approach is that "safety comes first, and reasonable efforts to reduce risk need not await scientific proof"(Campbell, 2006).
Lesson Learned: First major lesson learned was a collaborative approach produces better outcomes. A collaborative approach requires strong leadership and focus to help navigate difficult subject matter and ensure positive outcomes. Second major lesson learned is that expert advisory / working groups are eager to share their knowledge, but finding time to contribute with competing demands is a challenge. Coming to the table with work product makes the meetings more productive and focused. Working groups should have a good blend of experts from both system partners and front line practitioners.

TUESDAY POSTER BOARD 28

ALGORITHM FOR SCREENING AND CLEANING HOSPITAL SINKS AND DRAINS COLONIZED WITH CARBAPENEMASE-PRODUCING ENTEROBACTERIACEAE

Catherine M Kerr, Carla Corpus, Andrew Simor, Jerome Leis, Natasha Salt; Sunnybrook Health Sciences Centre, Toronto

Issue: Carbapenemase-producing Enterobacteriaceae (CPE) are an increasing threat to public health. Several studies have implicated hospital sinks and drains in the nosocomial transmission of CPE yet limited data is available regarding the best method of environmental screening, cleaning and disinfection of hospital sinks and drains in rooms where patients known to be colonized with CPE are admitted. Sunnybrook Health Sciences Centre, in Toronto Ontario, attempted to develop an algorithm for sink management using a risk-based approach.
Project: An algorithm was developed for environmental screening, cleaning and disinfection of hand hygiene sinks and drains of rooms with patients colonized or infected with CPE. This was adapted for different types of inpatient units based on risk of transmission, patient acuity, alternative methods for bathing, disposal of waste and accessibility to alternative methods of hand hygiene, including other sinks.
Results: In critical care environments, the hand hygiene sinks in rooms with CPE-positive patients were closed for the duration of the patient's admission. Upon discharge, the sink remained closed until it was terminally cleaned using a sporicidal disinfectant and a negative environmental screening culture was obtained. Environmental swabs were collected at scheduled intervals thereafter to increase sensitivity (this was performed in all acute inpatient units). In non-critical care acute inpatient environments, the hand hygiene sinks remained open for the duration of admission, and were cleaned and disinfected a minimum of biweekly with a sporicidal gel disinfectant. Upon patient discharge, the hand hygiene sink was closed until terminally cleaned with sporicidal gel and a negative environmental screening culture was obtained. In non-acute inpatient units, the hand hygiene sinks remained open and were cleaned at a minimum of biweekly with a sporicidal gel disinfectant, terminally cleaned upon patient discharge but environmental swabs were not routinely obtained.
Lessons Learned: We successfully developed and implemented a standardized approach to managing hand hygiene sinks and drains in rooms known to be occupied by a patient colonized or infected with CPE. Closing hand hygiene sinks remains a controversial practice in specialized acute care environments such as a burn centre or where a sink may be the only alternative for dialysis effluent, but can be successfully implemented under most conditions when adequate alternatives for providing care are available. Further epidemiologic studies are needed to assess the impact of this algorithm on nosocomial transmission of CPE.

TUESDAY POSTER BOARD 29

PRELIMINARY FINDINGS OF THE 2017 ALBERTA ACUTE CARE POINT PREVALENCE STUDY

Jennifer J Ellison[1], Kathryn Bush[1], Ye Shen[1], Nancy Alfieri[1], Janet Barclay[1], Leanne Dekker[1], Debra Doe[1], Karin Fluet[1], Michelle Hart[1], Karen Hope[1], Kim Murch-Francis[1], Evelyn Myles[1], Geoffrey Taylor[2], Elizabeth A Henderson[1]
1. Alberta Health Services; University of Alberta, Edmonton;
2. University of Alberta, Edmonton

BACKGROUND: To understand antimicrobial resistance and the burden of illness related to healthcare-associated infections (HAIs) in Alberta, point prevalence surveys were performed at acute care facilities across the province using protocols developed by CNISP (Canadian Nosocomial Infection Surveillance Program) and CARSS (Canadian Antimicrobial Resistance Surveillance System).
METHODS: A 24-hour prospective point prevalence survey was conducted on patients admitted to 16 Alberta acute care facilities during February and March 2017. The CNISP protocol was used in 12 urban facilities, and the CARSS protocol was used in four regional facilities. Demographic data, use of additional precautions, specific HAIs, and antimicrobial agents were collected. The

information collected was compiled into one database, records from patients who were re-admitted to another facility were removed, and data were cleaned for missing or erroneous entries. A subset of patients from the CARSS study who were admitted for three or more calendar days were compared to those patients surveyed in the CNISP study. Differences in proportions among categorical data were assessed using a chi-squared test with a 95% confidence interval. For all statistical comparisons, a p-value <0.05 was considered significant.
RESULTS: Using the CNISP protocol, 77.2% (3,112/4,033) of total patient admissions were surveyed. Using the CARSS protocol, 74.3% (503/667) of patients admitted for three or more calendar days were surveyed. The mean age was 60 years (SD ±26.0) for CNISP patients and 65 years (SD ±25.3) for CARSS patients. Additional precautions were used for 14.3% (444/3,112) of CNISP patients and 10.5% (53/503) of CARSS patients (p<0.05). HAIs were identified in 6.1% (191/3,112) of CNISP patients and 3.8% (19/503) of CARSS patients (p<0.05). Antimicrobials were used by 37.0% (1152/3,112) of CNISP patients and 32.4% (163/503) of CARSS patients (p<0.05). The most common antimicrobial for both CNISP and CARSS patients was Ceftriaxone. Patients with HAIs were more likely to be receiving antibiotics in both CNISP (91.6% vs. 33.4%, p<0.05) and CARSS (84.2% vs. 30.4%, p<0.05). Urinary tract infections were the most common HAI found in both study populations (CNISP: 30%, CARSS: 31.6%).
CONCLUSION: In the spring of 2017, a province wide point prevalence survey of patients admitted to Alberta acute care facilities was conducted. This survey and subsequent analysis provided a snapshot of the burden of HAI in Alberta and can be used to inform future studies on antimicrobial resistance and HAIs. Further investigations are underway to examine specific patient populations including pediatrics, cancer care, and critical care.

TUESDAY POSTER BOARD 30

IMPLEMENTING A STANDARDIZED PROCEDURE OUTLINING DAILY TASKS TO IMPROVE OPERATIONAL EFFICIENCY AND PATIENT MANAGEMENT

Crystelle Ong, Alberta Health Services
Issue: Occasionally, experienced Infection Control Professionals (ICPs) may need to address multiple responsibilities within a short period of time. Likewise, novice ICPs may find executing required tasks to be overwhelming. In 2017, the Infection Prevention and Control (IPC) program in the North Zone of Alberta has moved from having five different laboratory systems to having a common way of accessing laboratory results and patient admission details. This harmonization presented an opportunity to standardize and systemize daily work. Following this change, the North Zone Daily Routine Working Group identified the benefits to develop a guideline focused on the essential elements of patient care and safety to streamline daily ICP duties and to improve the quality of care delivered.
Project: Several ICPs with various levels of experience formed a working group to: 1) examine the current processes of managing patients; 2) organize documents that outline IPC practice in managing antibiotic-resistant organisms and Clostridium difficile infections; 3) assess clinical information systems that keep track of samples and specimens with IPC significance; and 4) agree upon clinically significant organisms and infections that require surveillance follow up. After discussions in each domain, the working group elected to create an algorithm to guide ICPs with their daily tasks in a more standardized and sequential manner.
Results: Key issues identified by the working group were addressed through the development of an algorithm that provided a methodological approach to performing daily ICP tasks. ICPs have reported that the use of harmonized tools and processes improved efficiency and allowed for more streamlined and timely interventions.
Lessons Learned: Having a systematic method in performing daily ICP tasks is feasible and is a valuable addition to the IPC process to increase work efficiency, reduce variation, and ultimately improve the quality of care delivered. It should be noted that this algorithm is only meant to serve as a guide and not as a restrictive methodology. Every ICP is still required to do their own risk assessment and critical thinking skills to address infection control issues and manage patients appropriately.

TUESDAY POSTER BOARD 31

A BUNDLE APPROACH TO PROCESS SURVEILLANCE AND EDUCATION ON INFECTIOUS RESPIRATORY SYMPTOMS IN THE EMERGENCY DEPARTMENT: A WORK IN PROGRESS

Ramona Rodrigues, Charles Frenette, Caroline Lafleur; McGill University Health Centre – Glen Site, Montreal
Issue: Emergency Departments are high risk areas for disease transmission. The high paced and crowded setting combined with the frequent interfaces that occurs between patients with undifferentiated infectious illnesses creates the perfect storm for transmission in the ED. It is critical that the ED and infection control professionals collaborate on creating a manageable plan to reduce the risk of transmission. We describe an approach to optimize the practice of rapid identification, communication and precautions measures applied for patients presenting with suspected infectious respiratory symptoms in the ED.
Project: A bundle approach utilizing process surveillance, respiratory infectious symptoms educational sessions and follow-up with front-line staff was implemented in 2016.
Process surveillance
A series of audits were conducted and periodically reported in performance % for all three categories including:
1. Early identification of infectious respiratory symptoms audits
- # of FLS screening tool (questionnaire) completed at the point of the patient's arrival at triage over the number of FLS screening documents reviewed.
2. Communicating and alerting personnel of patients with suspected symptoms
- # of precaution alarms initiated on the ED computer information system over the number of triage documents reviewed.
3. The application of precaution measures
- # of adherence with the use of Personal Protective Equipment (PPE) over the number of observations.

Respiratory infectious symptoms education session
Educational sessions were offered periodically on symptoms, transmission and control measures for respiratory infections including seasonal viral respiratory tract infections, Novel viruses, Middle East Respiratory Syndrome Coronavirus, and tuberculosis.
Results: There was an immediately improvements observed with an increase screening performance from a baseline of 32% in February 2016 to 80% in March 2016. An incidental finding was that the triage FLS questionnaire was unclear in a define time line and range of flu symptoms to consider by the user. The FLS questionnaire was corrected as well as the criteria for including the travel history of the patient. Modest but sustained improvements were observed in the overall screening and communication performance (60%, 2016 to 73% 2017) and the application of isolation measures (72%, 2016 to 82%, 2017).
Lesson learned: The continued surveillance and feedback to the ED improved performance.

TUESDAY POSTER BOARD 32

HAND HYGIENE COMPLIANCE REVIEWS BY SITE-BASED REVIEWERS

Christopher Yuan, Heather Gagnon, Jennifer Ellison, Chad Herbers, Blair McFerran, Helen Popson, Tyler Tamayose, Glenda Walker, Venessa Dudenhoeffer, Courtney-Lynn Edwards, Joyce Erebor, Christine Finch, Tyler Kolodychuk, Denise Jorgensen, Kathryn Bush, Michelle Hart; Alberta Health Services
Issue: Hand hygiene is the single most effective way to reduce healthcare-associated infections. Healthcare organizations can improve healthcare providers' hand hygiene practices and provide effective education by performing hand hygiene reviews and measuring compliance. Healthcare provider compliance is monitored using the direct observation method according to the 4 Moments for Hand Hygiene. One of the challenges with any hand hygiene improvement initiative is to engaging frontline healthcare providers in an effort to increase accountability and ownership of hand hygiene practices.
Project: The Alberta Heath Services (AHS) Infection Prevention and Control (IPC) Hand Hygiene program supports recruitment, training, and retention of site-based reviewers (SBR) - frontline healthcare providers that are trained to perform hand hygiene reviews. In 2014/15, the IPC Hand Hygiene program started to recruit and train SBR across the province. Biweekly hand hygiene reviewer training sessions were provided through Microsoft Skype for Business and one on one competency checks are then performed. The numbers of SBR is monitored. Ongoing support and resources are offered and examples includes updates through forums and newsletters. This process establishes a direct connection between the IPC Hand

Hygiene program and SBR to increase engagement.
Results: The IPC Hand Hygiene program transitioned from periodic reviews to ongoing monitoring enabling quarterly reporting in 2015/16-Q1. At the provincial level, quarterly data demonstrates the growth in SBRs showing a steadily increasing trend: the number of active SBR increased from 222 in 2015/16-Q1 (52.6% of total hand hygiene observations) to 535 in 2017/18-Q1 (79.0% of total observations). From 2015/16-Q1 to 2017/18-Q1 the number of sites being reviewed by SBR increased from 77 to 148.
Lessons Learned: SBRs have played an important role in increasing awareness of the importance of hand hygiene and several lessons have been learned since the inception of the IPC Hand Hygiene program. The current training process is not as effective and efficient as it could be. The IPC Hand Hygiene program is currently in the process of updating the reviewer training to be more engaging and interactive with a focus on self-directed learning. It has been identified that there are a lack of provincial level documents that outline how hand hygiene concepts are evaluated. A provincial level process is being developed to evaluate the competency of SBR after the training has been completed. The updated competency checks will focus on delivering a single trainer's resource that will standardize the evaluation of a SBR competency in performing hand hygiene reviews.

TUESDAY POSTER BOARD 33

FREQUENCY OF POINT PREVALENCE TESTING FOR MRSA AND VRE

Cindy O'Neill Jessa Craig, Gail Fisher, Mark Jefferson, Patricia Peltsch, Suzanne Bakai-Anderson, Patricia Perry, Edwige DeSouza, Cheryl Bertrand, Dominik Mertz, Sarah Khan; Hamilton Health Sciences, Hamilton
Background: Active surveillance for patients colonized with methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin resistant enterococcus (VRE) may include universal monthly point prevalence studies (PPS). With the growing healthcare costs, hospitals and laboratories are struggling and questioning the need and frequency of routine PPS. We aimed to determine the value of universal once a month PPS, and how changes in screening frequency may impact the rate of outbreaks.
Methods: The study was conducted at two adult tertiary acute care teaching hospitals with 417 and 344 beds in Hamilton, Ontario, Canada. We first reviewed the results of monthly PPS from 01/2013 to 12/2014 of 30 acute care inpatient units (baseline). We then calculated the proportion of PPS with at least one new hospital-associated case of MRSA or VRE divided by the total number of PPS performed. We risk stratified based on these findings and changed the frequencies of PPS accordingly starting 01/2015 (Table 1). The pathogenicity of the organism was also taken into consideration and a lower tolerance limit for MRSA was established. This was followed by a 30-month validation period (01/2015 to 06/2017).
Results: At baseline, the percentage of PPS with at least one positive patient ranged from 0 to 55% for MRSA, with the medical units having the highest. Similar findings were noted for VRE, ranging from 0 to 60%. Based on these results, the frequency of PPS was reduced on 23 (76.6%) units (to bimonthly: 7 for MRSA, 8 for VRE; to quarterly: 8 for MRSA, 10 for VRE). Based on the findings during the validation period, adjustments to the frequency of testing for MRSA and or VRE were again required for 23 (76.6%) units. The frequency could be further decreased on 16 units (53.3%; 9 MRSA, 8 VRE), but needed to be increased on 12 units (40%; 6 MRSA, 8 VRE). Some of the necessary adjustments were attributed to modifications in patient populations. Importantly, we did not observe an increase in MRSA and VRE outbreaks on the units where monthly PPS had been discontinued with a total of 12 outbreaks annually of MRSA/VRE at baseline versus 7 annually in the validation phase. As a result of the initial decrease in the frequency of PPS, we reduced the number of swabs by an estimated 28.7% and annual savings of $10,638. The re-adjustment resulted in a further decrease (2%) in MRSA/VRE testing with estimated annual savings of $11,162.
Conclusion: We developed a risk stratified approach to PPS for healthcare associated MRSA and VRE surveillance. Testing was reduced to quarterly or bimonthly for units with low rates of transmission. A focused surveillance approach has reduced laboratory costs and unnecessary screening of patients without negatively impacting hospital MRSA and VRE healthcare associated transmission rates. Annual monitoring of data and necessary adjustments are recommended to account for changing patient populations and ongoing advances in infection prevention practices.

TUESDAY POSTER BOARD 34

WHAT'S OLD IS NEW AGAIN! INFECTION PREVENTION AND CONTROL (IPAC) CONSIDERATIONS WHEN RE-PURPOSING OLD INFRASTRUCTURE IN DIAGNOSTIC IMAGING (DI)

Karen Campbell, Jayvee Guerrero, Vydia Nankoosingh, Dechen Chhakpa, Murtuza Diwan, Ronny Leung, Zahir Hirji, Senthuri Paramalingam), Nelia Pena, Katherine Perkin, Tiberius Stanescu; Scarborough and Rouge Hospital, Scarborough
Issue: There are many challenges in transforming a pre-existing X-ray suite to a multi-purpose /special procedures room. Considerations include the intended purpose of the newly designed room, staff work flow, impact to infection control practices, the health care facility's infrastructure, and the facility's financial budget.
Project: In the summer of 2017, IPAC was approached by DI to participate in a project to convert an existing X-ray suite into a turnkey multi-purpose /special procedures room. IPAC reviewed several guidance documents to determine design requirements such as specifications with regards to ceilings, floors, plumbing, heating /ventilation / air conditioning, soiled/ clean utility rooms, and hand hygiene sinks. The following standards were used: CSA Z317.13- 07, CSA Z314.8-08, CSA Z317.1-09, CSA Z8000-11, and CSA Z317.2-10. The Request for Proposal for the project was reviewed by IPAC. This document assisted in determining the types of procedures planned for the new space, and the degree of invasiveness of those procedures. Front-line staff members were engaged in order to understand the work flow of the area and any special design needs that might impact infection control practices. IPAC consulted with our Facilities department to obtain an air balancing report. This report helped us assess the current air changes/hour (ACH) within the pre-renovated space and determine whether the required ACH could be obtained to allow all procedures, especially angiography procedures to be safely performed.
Results: After front-line engagement and a work flow assessment, we discovered that an additional sink was required for the purposes of patient prep activities. This sink was installed on entry to the control room to ensure separation from the scrub sink for hand hygiene purposes. We successfully achieved the required CSA standard of 20 ACH by re-balancing the airflow in the newly renovated space. This was accomplished by installing an additional air diffuser which had considerable financial impact as it was not part of the original scope of work for this project. The project was a success as all the proposed procedures can now safely be performed in the newly renovated space.
Lessons Learned: Early collaboration with key stakeholders is crucial to facilitate appropriate planning and financial resource allocation for the project. Engagement of front-line staff in workflow helped to identify IPAC needs. IPAC involvement throughout the project is required to make sure that recommendations are implemented and the current guidelines are met. Older facilities can be brought up to current standards with proper planning and collaboration.

TUESDAY POSTER BOARD 35

THE HEART OF THE MATTER: THE ROLE OF INFECTION CONTROL PROFESSIONALS (ICPS) IN A CARDIAC MYCOBACTERIUM CHIMAERA (M. CHIMAERA) INFECTION INVESTIGATION

Michelle M Zwicker, Rhoda Wiens, Melody Cordoviz, Isabelle Tremblay, Bonita Lee, Geoff Taylor, Stephanie Smith; Alberta Health Services
Issue: Since 2013 multiple centers in Europe and North America have reported infections due to Mycobacterium chimaera (M. chimaera) following cardiac surgery. Infections were attributed to heater-cooler units (HCU) contaminated at the factory prior to shipment worldwide. Provincial Infection Prevention and Control (IPC) was faced with the inability to remove culture positive HCUs from service without compromising the Cardiac Surgery program. IPC collaborated with cardiac sciences, biomedical engineering, and communications to provide recommendations on HCUs currently in use. Infection Control Professionals (ICPs) were instrumental in investigating, communicating with company representatives and Health Canada to provide recommendations for ongoing HCU use as well as with patient disclosure and infection identification.
Project: Following the global identification of M. chimaera infections, ICPs met with the operating room staff and reviewed processes to ensure cleaning, disinfection, and maintenance of the HCUs complied with the updated manufacturer's instructions for use (MIFU) cleaning guidelines. Recommendations from the manufacturer as well as recommendations from other cardiac centers with contaminated units suggested HCU exhaust should be directed toward room exhaust for risk mitigation. A variety of other risk mitigation strategies were evaluated and implemented when feasible. Meetings took place with IPC, clinical

staff, administration, and communications to ensure patient notification was made to those potentially exposed and active case finding strategies were developed both retrospectively and prospectively.
Results: In Calgary, 4 units were M. chimaera positive. In Edmonton, 5 units were positive for Mycobacterium; 4 were M. chimaera positive. All units were decontaminated according to manufacturer instructions. One unit tested positive after the first decontamination cycle and required repeat decontamination. Subsequent culturing of all the units were negative and units were returned to service. IPC did not recommend ongoing culturing as per subsequent CDC and PHAC recommendations. In Calgary, a cabinet to prevent air escape was installed which allowed for HCU exhaust to be directed to a nearby vent. The manufacturer subsequently developed a retrofit to seal off all HCU air exhaust from the contaminated HCU water tank thus eliminating the risk of infection. Patient disclosure occurred via letter. Notification was also made to all physicians in the province and a media release also occurred. Three patients in the Edmonton Zone have developed M. chimaera infections related to the HCUs.
Lesson Learned: A provincial approach to manage an emerging issue allowed for collaboration to provide the best possible recommendations while direction from the manufacturer was developing. Having all stakeholders on a single provincial call was beneficial in providing recommendations where there were no easy answers.

TUESDAY POSTER BOARD 36

INFECTIOUS COMPLICATIONS FOLLOWING TRANSRECTAL ULTRASONONGRAPHY (TRUS) GUIDED PROSTATE BIOPSY: TARGETED INTERVENTIONS GUIDED BY SURVEILLANCE

Stephanie W Smith, Joan C Durand, Jennifer L Parsonage, Jackie Reid; Alberta Health Services
Background: Prostate cancer accounts for a quarter of all male cancers diagnosed in Canada. TRUS guided biopsy is the standard technique used to obtain tissue for diagnosis of prostate cancer. However this procedure has a number of infectious complications. A review of the literature suggests rates of UTI following prostate biopsy range from 1-2% and the risk of bacteremia ranges from 0.2-1%. Bacteremia and sepsis are the most severe complications frequently requiring admission to hospital. To prevent these complications, patients are treated with prophylactic antibiotics, usually ciprofloxacin. With increasing rates of ciprofloxacin resistance in Enterobacteriacea, many centers have seen an increase in rates of infection post prostate biopsy.
Methodology: In 2016, Urologic Services in Edmonton, Alberta were centralized to the Northern Alberta Urology Clinic (NAUC). Infection prevention and control noted a higher than normal number of cases of sepsis related to prostate biopsies in early 2017. We undertook a surveillance project to determine rates of infection and factors contributing to infection to better determine appropriate interventions. Surveillance was performed retrospectively. All patients who underwent a TRUS guided prostate biopsy from January 1-December 1, 2017 were included. Patient demographic and clinic information was collected including age, date of procedure, diagnosis (cancer vs benign) and prophylaxis prescribed. Post procedure infection was identified through review of microbiology records. Any patient who had a positive blood or urine culture within 10 days of the procedure was included in the analysis. Data collected for the infected patients included date of infection, pathogen, susceptibility testing and outcomes including hospitalization, length of stay and mortality. These patients will be compared to those without infection to identify modifiable risk factors.
Results: In 2017, 1483 TRUS guided prostate biopsies were performed through radiology at NAUC over an 11-month period. Sixty-one patients developed post biopsy infections (4.1%). 22/61 patients had UTI (36%) giving a rate of 1.6% and 39 patients had bacteremia (rate 2.6%). Fifty-nine (96%) were prescribed ciprofloxacin for prophylaxis. Sixty two percent (38/61) had a diagnosis of prostate cancer. In the bacteremic cases, patients presented to hospital on average two days post biopsy (range 0-10 days). In the bacteremic group, all patients had E coli sepsis. Three had ESBL (7.7%) and 26/39 isolates were resistant to ciprofloxacin.
Conclusions: Rates of infections post TRUS guided biopsy are higher than reported in the literature. There was a high rate of E coli resistance to ciprofloxacin suggesting an alternative regimen may be necessary for prophylaxis. A detailed review of the processes involved undertaken to identify other gaps in appropriate care. Infected patients will be compared to non-infected patients to identify risk factors for bacteremia.

TUESDAY POSTER BOARD 37

OPTIMIZING CLEANING, DISINFECTION AND THE USE OF EQUIPMENT STATUS TAGS FOR REUSABLE NON-CRITICAL PATIENT CARE EQUIPMENT

Brenda Jenkins; Alberta Health Services
Issue: Proper cleaning and disinfection of reusable non-critical patient care equipment is of utmost importance for maintaining low environmental microbial counts and reducing pathogen transmission risk to patients. Unfortunately, proper process and system structure for cleaning and disinfection of reusable non-critical patient care equipment is plagued with complex issues. These difficulties include: Healthcare Workers (HCWs) being unclear of their individual roles and responsibilities; nursing staff not formally trained in proper technique; and absent tagging of reusable non-critical patient care equipment status to identify if clean, in-use or dirty.
Project: A three-month pilot project was implemented using qualitative interviews with HCWs (environmental services and nursing staff) and quantitative florescent marker testing to evaluate system and process issues related to the practice of cleaning, disinfection and equipment status (clean, in-use, or dirty) of reusable non-critical patient care equipment. The project began with a multidisciplinary team (MDT) meeting to clarify of the roles and responsibilities of HCWs for cleaning and disinfection of reusable non-critical medical devices; plan nursing staff training; initiate the three part equipment status tag created and used for visual identification to minimize assumptions as to whether the reusable non-critical medical equipment is clean, in-use, or dirty; use of random covert fluorescent marker tests to monitor the practice and effectiveness of the cleaning of reusable non-critical patient care equipment.
Results: The MDT was able to establish clear lines of accountability for the cleaning and disinfection of reusable non-critical patient care equipment. The equipment status (clean, in-use, or dirty) can now be easily identified with the use of the tags. The original three-month pilot project was extended to six months to allow for further exploration of the challenges found throughout the initial trial, including: training timeliness and methodology; cultural resistance to process change; and poor uptake in acceptable cleaning technique procedures.
Lessons Learned: Properly identifying, cleaning and disinfection of reusable non-critical patient care equipment as part of Routine Practices helps reduce infection-related risks. However, introducing a new product and processes to a healthcare site and expecting an immediate change in practice is not reasonable or realistic. More formalized education on the importance of cleaning, disinfection and equipment status (clean, in-use, or dirty) tagging of reusable non-critical patient care equipment may result in better outcomes.

TUESDAY POSTER BOARD 38

A HIDDEN SOURCE OF INFECTION: MEDICAL TAPES

Amy Yang, University Health Network, Toronto
Issue: Literature has shown that medical tapes can harbour infectious microorganisms such as Methicillin-resistance Staphylococcus aureus hence single-patient use tapes should be implemented as tapes cannot be cleaned like other medical equipment (1). The first issue is that traditional long rolls of tape that are shared between patients are being used in a cardiovascular intensive care unit, increasing the risk for infection transmission and cross contamination. The second issue is that using incorrect type of tape with improper application and removal techniques can cause skin injury, making patients vulnerable to skin breakdown and risk of infection (2).
Project: A multifaceted approach was created to improve patient care in the cardiovascular intensive care unit (CVICU). First, staff education on the appropriate selection, application, and removal techniques of tapes were conducted based on staff audits. Second, a new mix of tapes was trialed on the unit and introduced based on pilot trials on the unit with staff survey feedback. Lastly, to decrease cross contamination risk, traditional long roll tapes were removed and replaced with shorter rolls of tapes that is assigned to the same patient on admission and follows them throughout their stay until discharge. Microbial swabs were performed on clean tapes and used-tapes to compare growth. This quality improvement initiative is funded by University Health Network Collaborative Academic Practice Fellowship Program.
Results: First, an audit and survey conducted in CVICU indicated staff had 80% confidence in selecting the right tape however 20% chose the improper type of tape and commented dislike for particular tapes. Second, a new mix of tapes were trialed on the unit, resulting in 89% staff approval. Rolls of tapes were labelled and tracked for 19 days to estimate contact exposure between patients and

nurses, long tapes had six times more exposure. Various clean and used tapes were swabbed for microbial growth and indicated no growth for clean tapes and positive microbial growth for used tapes. In February 2018, single-patient use tapes are scheduled to be implemented on the unit. The projected additional cost for switching to new tapes is $1400 annually. Audits on staff knowledge. number of tape contacts, and incidence of skin injuries will be conducted.
Lesson learned: Other acute care units should consider the impact of using traditional long rolls of tapes and help improve patient care by switching to single-patient use tapes as decreasing patient contacts to tapes may help prevent infection transmission in a cost-effective manner.
Reference: 1. Love, K.L. (2013). Single-patient rolls of medical tapes reduce cross-contamination risk. Infection Control Today, 17(1).
2. McNichol, L., Lund. C., Rosen, T., & Gray, M. (2013). Medical adhesives and patient safety: State of the science. Journal of Wound Ostomy & Continence Nursing, 40(4).

TUESDAY POSTER BOARD 39

HOW TO AVOID A MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS-COV) OUTBREAK?

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Issue: The Middle Eastern Respiratory Syndrome Coronavirus (MERS-CoV) is a serious challenge in Saudi Arabia that has been linked to high morbidity (N=1059) and mortality (N=730) since 2012. In response, we developed an educational program for healthcare workers as part of MERS-CoV preparedness plans in our tertiary care hospital in Saudi Arabia.
Project: The formal educational program in 2017 focused on knowledge of MERS-CoV case definition, collection of specimens, appropriate donning and doffing of personal protective equipment (PPE), N-95 fit testing and use, hand hygiene, measures to apply following unprotected exposures and procedures for suspected/confirmed MERS-CoV patients including triage and isolation. It also included assessment of basic infection control supplies availability (PPE and disinfectant supplies) in addition to effective environmental cleaning procedures. The program targeted all healthcare workers in high risk areas and included demonstrations, hands-on sessions, group discussions, simulations, videos and competency tests and was ongoing activity all over the year.
Results: The MERS-CoV training activities covered 99% of doctors (N=245), 98% of nurses (N=597), and 98% of the other staff categories (N=359) who were front-liners in patient care in the emergency department, intensive care units, and hemodialysis. The training activities met the Saudi Ministry of Health criteria and our hospital maintained a consistent 97% compliance rate throughout regular assessment of our educational program by ministry auditing teams. Two MERS-CoV cases were reported in 2017 with no secondary cases proving that our education program was effective.
Lesson Learned: The application of multilevel educational program as an essential element of preparedness proves to be crucial to avoid any MERS-CoV outbreak. Determining the level of healthcare facility and healthcare workers' preparedness is important to direct interventions as MERS-CoV continues to be an endemic in Saudi Arabia with sporadic episodes.

TUESDAY POSTER BOARD 40

THERE'S A CHECKLIST FOR THAT: SITE SPECIFIC ORIENTATION CHECKLISTS FOR NOVICE ICPS

Vivian Lee, Melody Cordoviz, Elisa Ahn, Mandeep Atwal, Justyna Augustyn, William Banh, Candace Fraser, Sibina Fisher, Yvette Gable, Bonny Granfield, Kathy Jarema, Melissa Kastelic, Aimee MacCallum), Kate Mombourquette, Megan Oppel, Jennifer Parsonage, Bonnie Thurston, Cheryl Watson, Michelle Zwicker; Alberta Health Services
Issue: From the experiences of Infection Control Professionals (ICPs) at various sites, it was found that many ICPs could benefit from a more thorough orientation during their first year in Infection Prevention and Control (IPC). The existing online orientation manual for newly hired Edmonton Zone (EZ) ICPs was found to be helpful by Novice ICPs since it highlighted underlying IPC principles. However, this learning could be enriched with the addition of an orientation that addressed site-specific processes. A site-specific checklist was created to address this gap in orientation. In addition, the orientation checklist also identified the Senior ICPs' roles during orientation.
Project: Once the need for a site-specific orientation was identified, Novice ICPs from different sites provided a list of their site-specific processes and daily tasks. The information was compiled and categorized into tasks, those common to all sites and those which were site-specific. A checklist format was chosen, which allowed for the ease of readability as well as areas to track progress and accountability. The revised checklist was available for novice ICPs to use at their home site and for use when they shadowed at another site.
Results: Site-specific orientation checklist evaluation forms were distributed and feedback was collected. The Novice ICPs agreed that the checklist assisted to focus and guide site-specific orientation, ensuring that nothing was missed. The checklist triggered questions and further discussion during site-specific orientation. Feedback indicated that the checklist format allowed for easy tracking of completed tasks, thus allowing for better site familiarity. Senior ICPs used the checklist as a guide for conducting orientation. The use of the checklist ensured that consistent orientation was provided at all sites. Novice ICPs who shadowed at other sites used the checklist to compare processes between the sites.
Lessons Learned: Novice ICPs reported that having a site-specific orientation checklist enhanced their orientation experience. The checklist has proven to be a valuable resource for ensuring complete and consistent orientation. The site-specific orientation checklist complements the IPC orientation manual, and allows for a more thorough and focused orientation. The checklist contributes to a well-rounded orientation and training for Novice ICPs. As the Novice ICPs shadow at other sites, they were able to complete multiple site checklists. This practice has expanded their experience and knowledge of not only their home site but of other sites in the Edmonton Zone.

TUESDAY POSTER BOARD 42

ADVERSE OUTCOMES FOLLOWING CLOSTRIDIUM DIFFICILE INFECTION IN CONTINUING CARE FACILITIES ACROSS ALBERTA

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Background: In continuing care facilities (CCFs), Clostridium difficile infection (CDI) is the most common cause of acute infectious healthcare-associated diarrhea. Continuing care residents often have advanced age, frequent hospitalizations, prolonged hospital stays, comorbidities, and exposure to antibiotics which increase the vulnerability to Clostridium difficile acquisition and infection. Adverse outcomes following CDI events focus on acute care facilities but less frequently on CCFs. Therefore, this study focuses on the adverse outcomes following CDI events detected in Alberta CCFs between April 2011 and March 2017.
Methods: All positive Clostridium difficile laboratory records in Alberta between April 1, 2011 and March 31, 2017 were used to detect CDI events across all Alberta CCFs using the Alberta Continuing Care Information System. A laboratory positive Clostridium difficile test (CDT) was considered to be an incident event with CCF-onset if it was the first positive CDT captured for the continuing care resident who was admitted to a CCF for over three days; or a subsequent positive CDT for the resident captured over eight weeks after a previous positive CDT. Adverse outcomes included all-cause acute care admission and all-cause mortality within 30 days of positive CDT. Laboratory records were linked to the Discharge Abstract Database and Vital Statistics Registry to detect acute care admissions and deaths, respectively. The age of residents was categorized into two groups, and the differences of adverse outcomes in residents less than or equal to 80 years of age and those over 80 years of age were tested using Chi-square test and 95% confidence interval with a p-value<0.05 considered statistically significant.
Results: There were 656 continuing care residents with 775 positive CDT events with CCF-onset. Eighty-nine (13.6%) of the residents with a positive CDT had at least one subsequent positive. In the 30 days following a positive CDT, 13.2% (102/775) of the residents had acute care admissions and there was a 16.1% (125/775) all-cause mortality rate. Compared to younger continuing care residents who had a positive CDT, those over 80 years had fewer all-cause acute care admissions within 30 days of a CDI event (11.3 vs. 15.8 per 100 cases, p<0.05) and higher all-cause mortality rate (20.2 vs 8.1 per 100 cases, p<0.05). For residents over 80 years who had a positive CDT, the mortality rate following CDI events was more than 15 per 100 cases over each study year.
Conclusion: The prevalence of adverse outcomes following CDI events is high in continuing care residents, especially in residents over 80 years of age. Therefore, maintaining an annual review of CDI events across all Alberta continuing care facilities, and understanding the adverse outcomes that these residents experience following CDI events can be used to help guide better prevention and management strategies.

TUESDAY POSTER BOARD 43

STAFF SCREENING FOR MRSA COLONIZATION DURING THE INVESTIGATION OF MRSA TRANSMISSION IN A TERTIARY CARE NICU

Eslyn Thomas, Nely Amaral, Elena Nikolsky, Judy Whitfield; Toronto

Issue: Methicillin- resistant Staphylococcus aureus (MRSA) is an increasingly important cause of nosocomial outbreaks in neonatal intensive care units (NICUs). Colonized parents, healthcare workers (HCWs) and patients are the main reservoirs. We describe staff screening initiated to identify the source of persistence of an MRSA strain affecting babies in our NICU over 13 months that could not be explained by infant or parent reservoirs.

Project: One component of the investigation involved screening NICU staff. Chart reviews were used to identify staff who had provided care to at least 2 of the 3 positive babies. These individuals were then contacted first via email or phone to complete nasal/rectal swabs for MRSA by the Infection Control Practitioner (ICP). The list was then expanded to include anyone who provided care for any of the positive babies. The unit manager also followed-up with staff over the next six months On May 31st 2017, six additional babies were identified as MRSA positive with an unrelated strain (strain B). A decision was then made by senior management in conjunction with unit leaders, the union, occupational health and infection control to have all staff in the NICU complete nasal and groin swabs for MRSA. Staff included nurses, physicians, residents, medical imaging, milk prep, dieticians, social workers, respiratory therapists, pharmacists, lactation consultants, support services, ward clerks, the infection control practitioner and all consulting services.

Results: The first investigation included 120 healthcare workers. Over 6 months, 68% of staff were screened. One MRSA colonized healthcare worker was identified; the strain was unrelated (strain C). On June 1st, 2017, a total of 420 healthcare workers were identified as needing to be screened. 64% of staff had completed testing for MRSA by July 13th, and 78% by August 4th. The unit manager continued to follow-up with staff with slow progress. On December 18th 2017, swab kits were delivered to the 9% of staff who had not completed screening, with a requirement that screening be complete in 2 weeks, or shifts would not be scheduled. Fewer than 2% of HCW have now not been tested. Three healthcare workers were found to be MRSA colonized; one with strain A. All positive HCW accepted decolonization and were followed-up through Occupational Health with support from infection control. The worker colonized with strain A relapsed, temporarily associated with the colonization of one additional baby.

Lessons Learned: From this experience we've learned: 1) The importance of using many forms of communication to contact staff; 2) the importance of addressing concerns about the consequences of screening in both management and staff; 3) The importance of working closely with Occupational Health to ensure that a treatment and follow-up plan is carefully laid out.

TUESDAY POSTER BOARD 44

CREATING SUSTAINABLE CHANGE: KEY COMPONENTS OF A SUCCESSFUL HAND HYGIENE PROGRAM

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Hand hygiene is a principal component of infection prevention and control (IPAC) programs. The hand hygiene before patient/patient environment contact is one of the Quality Improvement Plan (QIP) indicators to improve patient safety at a leading hospital encompassing 3 hospital sites.

The IPAC hand hygiene program was amalgamated in February 2015. This multifaceted program featured a standardized hand hygiene auditing and reporting system and a QIP HH work plan grounded in evidence-based interventions, designed to improve healthcare provider (HCP) adherence to recommended hand hygiene practices. Key program change concepts included leadership engagement, incentives/recognition, training & education, evaluation & feedback, communication and routine revitalization activities. The successful implementation of this multi-modal hand hygiene program over a 17-month period as well as plans for long-term sustainability are described for a tri-site tertiary care center in Ontario, Canada. Following standardization of auditing methodology in February 2015, the rate of compliance was reported significantly lower compared to previous years, a value of 65% for 15/16 Q1. This process highlighted many areas for improvement and a multi-modal evidence based QIP HH Work plan was developed. Sustainability was a key focus of this work plan and action plans were put in place to engage all levels of staff. Through determined efforts by the Infection Prevention & Control department, QIP working group, hospital leadership, and engagement of all staff, a 35 % increase in performance over a 17-month period was noted and the organization exceeded the 84% target set for the 2016/2017 Fiscal year. Furthermore, a compliance rate of 88% was achieved for the before moment in Q1 17/18 after a new target of 87% was set for 2017/2018. Implementation of a multimodal promotion campaign in the 3 hospital sites led to significant hand hygiene compliance improvement across all types of patient care areas and professional categories. This organizational case study corroborates the use of an evidence-based multi-pronged approach to create a robust and sustainable hand hygiene program. The QIP is implemented using a project management framework and includes a quality improvement team comprised of infection prevention and control leadership and senior management leadership, who are responsible for meeting monthly to develop, implement, monitor and measure each of the selected improvement activities for the coming fiscal year.

TUESDAY POSTER BOARD 45

MEDICAL THERAPIES THAT WILL MAKE YOU CRINGE!

Nisha H Punja; Alberta Health Services

The thought of having blood-sucking annelids squirming in a patient wound with the notion to heal is not a practice conceivable in modern medicine. As unusual as it sounds medicinal leech application is one of the therapies available to patients experiencing venous congestion following reconstructive surgery.

Background: Leeches secrete "hirudin" a therapeutic agent that assists in the process of blood-letting which reduces venous congestion. The procedure increases circulation to the affected site so as to avoid further damage and tissue loss. Health Canada considers hirudin a drug therefore leeches can only be accessed by physicians on a clinical trial basis under the Special Access Program (SAP). As part of the SAP patient information and therapy frequency as well as the number of leeches used must be tracked. Distributors must have approval from Health Canada and provide instructions for storage as well as proper management of leeches.

Project: With the understanding that leeches are directly applied on patient wounds following surgery there are certainly some key infection prevention and control (IP&C) practices that need to be considered. The Burns and Plastics Program (B&P) at the Foothills Medical Centre recently took on the responsibility of ordering, storing and maintaining leeches as part of the surgical interventions. Unfortunately, due to the limited information available through the distributor B&P worked in collaboration with IP&C to develop policies and procedures with regards to storage of leeches as well as cleaning and disinfecting of the equipment used.

Observations: For the purposes of policy development it was important to understand and observe the current practices. This included review of storage facilities, the quantity and frequency of leeches being ordered, the equipment cleaning and disinfection as well as the disposal process. During the review it was observed that the leeches were being stored at room temperature (20°Celsius) in the utility room. Information gathered around treatment indicated that there could be close to 40 leeches stored on the unit at any given point in time ready for use. Cleaning of the storage containers was done in the utility sink and equipment left to air dry. If cloudy water was observed than it was discarded and new water added. Dead and used leeches were discarded in biohazard containers.

Lessons Learned: From an IP&C perspective there were clearly some gaps in knowledge and practice. Areas of improvement included staff engagement and education as well as policy and procedure evaluation. Beyond the practices outlined above there were infrastructure issues that were identified and the need for sustainable systems especially when new interventions and therapies are being trialed.

TUESDAY POSTER BOARD 46

URINE COLLECTION PRACTICES IN A SMALL RURAL HOSPITAL: EVALUATION OF ALIGNMENT WITH *ANTIMICROBIAL STEWARDSHIP GUIDELINES*

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BACKGROUND: The diagnosis of a symptomatic urinary tract infections (UTI) can be challenging among elderly patients, resulting in an increased risk for specimen collection and treatment of asymptomatic patients. The Regional Health Authority's Antimicrobial Stewardship Guidelines provides a systematic approach to support clinicians in the assessment and treatment of urinary tract infections. The purpose of this study was to evaluate if current urine collection practices were in alignment with the guidelines. **METHODS:** The study involved a retrospective review of all urine specimens collected from medical surgical patients of a small

rural hospital from September 1, 2015 - August 31, 2016. An educational survey of staff was also conducted to evaluate the interdisciplinary teams' knowledge of urine collection and interpretation and to assess concordance with the guidelines.
RESULTS: Three hundred and eighteen (318) urine cultures were reviewed, of which only 78 (24.5%) met microbiologic criteria and were considered to be positive cultures. A large proportion of samples resulted in mixed organisms suggestive of contamination. There was a highly statistically significant relationship between urinalysis and clinical significance (Fisher's Exact Test P<0.0001). A positive urine culture (>100 million CFU/L) was statistically significantly more likely to be observed when there was a positive urinalysis.
CONCLUSIONS: Older adults represent a large and growing population of hospitalized patients. Diagnosis of a symptomatic UTI in the elderly can pose challenges. Urine cultures are frequently obtained with a high proportion sent for culturing with missing or negative urinalysis. Urinalysis results are pertinent in the diagnosis of a UTI as there is correlation between a positive urinalysis and a positive urine culture. It is recommended that a systematic approach in the management of UTI's be adopted to ensure consistent and appropriate assessment and treatment of urinary tract infections for elderly patients.

TUESDAY POSTER BOARD 47

LEND A HAND-INFECTION PREVENTION AND CONTROL (IPAC), MULTIDISCIPLINARY BRIDGING APPROACH, GIVING A VOICE TO PATIENTS

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Issue: Patient voice is integral to patient safety. Historically, patients have been the missing and silent partners in health and safety initiatives in health-care. The aim of this project was to give patients the active voice through collaboration and participation in reducing risks for transmission of infections. In 2013, IPAC, launched a multidisciplinary annual Patient Safety Week Fair within a Continuing-Complex-Care (CCC) and Rehab Healthcare Center to foster a safer environment. Patient engagement in support of leading best practices was the overarching theme of the event among internal and external stakeholders.
Project: IPAC conducted interviews through patient focus groups, to get their opinion on what message they would like to give staff and visitors on how to protect everyone at the Center as well as encourage active engagement during the 'Lend a Hand' event. Video clips of two patients verbalizing their messages were launched to promote a) importance of Influenza immunization b) importance of hand hygiene, appropriate use of Personal Protective Equipment and asking visitors not to visit if ill. Eight other patients and families present at the IPAC booth were encouraged to promote the aforementioned messages. The event passport, was an interactive activity whereby participants rotated between various educational booths, to get their passport stamped and entered for a prize draw. Display boards with educational messages were an integral aspect of the booth set-up. Promotion of IPAC best practices as part of the event were led by IPAC and supported by two hundred plus participants, including staff, physicians, volunteers, patients, and visitors. The event was promoted further with a musical twist by a drummer to accentuate the ambiance. Fun, food and prizes were bonus attractions.
Results: This educational strategy facilitates awareness to all participants on ways of protecting themselves from infections; an added value to a healthcare setting. The other booths from across different professional practices were informational, educational and engaging to the visitors. 80% of patients felt empowered to speak up and participate in future initiatives; 75% of staff have greater awareness of the importance of having patient involvement.
Lessons Learned: The event continues to be a greatly successful and transformative one, with a very positive experience for all stakeholders. As a collaboration of IPAC, patients and frontline staff, immunization rates increased to 81%. The videos involving the patients gave an opportunity to encourage the compliance of best routine practices for all staff and visitors to the Center. Giving patients the opportunity to voice their experiences and opinions empowers them to actively participate in initiatives that promote best and safe infection control practices.

TUESDAY POSTER BOARD 48

QUALITY IMPROVEMENT FOR PATIENT MANAGEMENT OF SHINGLES IN A RADIATION THERAPY DEPARTMENT

Ericka J Oates; Alberta Health Services
Issue: The incidence of herpes zoster/zoster, or shingles, in high risk populations as the elderly and the immunocompromised population combined has increased to as much as 50% compared to 10-20% of that of a normal host and has been linked to increased risk of secondary infections and increased morbidity. Radiation therapy has been known to reactivate latent varicella zoster virus (chicken pox) resulting in herpes zoster, as cancer and cancer therapy is an additional stressor to the body and can adversely affect immune function. As shingles may present differently in an immunocompromised host, shingles may be misdiagnosed for herpes simplex virus, dermatitis, and bacterial or other skin infection. Ineffective management of zoster can contribute to patient and staff exposures to the virus, thus resulting in additional costs related to time, workload, clinic flow, personal protective equipment resources as well as potential illness infection or complications.
Project: Zoster exposure within a radiation therapy vault can be quite extensive taking into consideration high patient turnover (one patient approximately every 15 minutes) and number of air changes per hour within a vault. After completing several zoster follow up exposures and recognizing the additional resources required for a single zoster follow up exposure, Infection Prevention and Control (IPC), used informal but ongoing surveillance and monitoring to notify the department of any case clusters, and provided ongoing education be it informal (telephone conversations) or formal (email/telephone communication or in services), and always attempted to maintain open communication with the multidisciplinary clinical team to facilitate a more efficient process.
Results: In recent years, the change in practice or management of patients with shingles and potential for exposure to other patients and staff from an IPC perspective has been quite positive. Effective patient management of shingles from the multidisciplinary team includes prompt prescription of antiviral therapy +/- pain management, segregation from other patient upon initial diagnosis and initiation of airborne and contact precautions for the duration of new or open lesions. Due to effective management of the patient with shingles within the radiation therapy department, the overall care of the index patient has become proficient and the number of patients exposed and requiring follow up (including possible questioning, serology and potential isolation) has been reduced.
Lessons Learned: As it is known that radiation therapy can reactivate latent Varicella Zoster Virus, shingles in will continually be seen in the context of treatment, however, through continuous and ongoing education, open communication and collaboration among the multidisciplinary team, safe and efficient patient management can be achieved.

TUESDAY POSTER BOARD 49

THREE SPUTUM SAMPLES AWAY FROM FREEDOM

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Issue: In most Southwestern Ontario health care facilities, induced sputum collection is not performed. Bronchoscopy is often used to determine the infectivity of a patient with active Tuberculosis (TB) when clients are unable to produce spontaneous sputum. Bronchoscopy, an invasive procedure with risk and discomfort to the patient, is expensive, and can contribute to nosocomial spread of TB if not performed in a controlled environment with properly trained staff and personal protective equipment (PPE). In 2016, a resident of a retirement home in rural SW Ontario was diagnosed with pulmonary TB after a bronchoscopy. After four months of treatment and two bronchoscopies, the client was deemed non-infectious with an induced sputum during a hospital admission at a TB hospital. Throughout treatment the client experienced multiple medication interruptions and changes due to side effects and illness. Nine months into treatment, the client began exhibiting new respiratory symptoms, hemoptysis, fever, significant weight loss and radiographic changes. Clinicians were unable to determine if the client was experiencing treatment failure or a new diagnosis (e.g., cancer). The client was re-hospitalized in an airborne infection isolation room (AIIR) in a rural hospital. The client was deemed palliative and wished to be discharged to a long-term care home (LTCH) to be reunited with spouse, but experienced difficulty producing sputum to rule out infectious TB. AIIRs were unavailable in the retirement home, hospice or LTCH. The client refused further bronchoscopies and TB resulting in the palliative client being kept in the AIIR indefinitely.

Project: To reunite a palliative patient with their spouse in a LTCH once confirmed non-infectious. After consulting with TB experts, reviewing external policies and procedures and collaborating with Public Health, physicians, and infection control practitioners, bedside sputum induction was performed 35 days after hospital admission.
Results: Three sputum samples were AFB negative and culture negative. The client was discharged to the LTCH as palliative and passed away with the family at bedside. A policy and procedure has been drafted for induced sputum collection as the rural, 26-bed hospital plans to continue to offer sputum induction. This project resulted in the safe delivery of a cost-effective, compassionate and client-centred approach to care, while minimizing risk and discomfort from invasive diagnostics.
Lesson Learned: Skilled and compassionate healthcare providers, innovative minds, and extensive communication and collaboration of experts in diverse settings can lead to positive and creative solutions in healthcare. Induced sputum may provide options for rural communities that see few cases of TB annually. Using the resources available in infection control made the "not possible", possible. Asking why, who and how questions, can improve patient care, be economical and lead to professional growth.

TUESDAY POSTER BOARD 50

PROMOTING SAFE INJECTION PRACTICES IN INJECTIONS AND TREATMENT ROOMS OF THE CAMEROON BAPTIST CONVENTION HEALTH SERVICES (CBCHS): CASE STUDY OF ETOUGEBE BAPTIST HOSPITAL YAOUNDÉ (EBHY)

Kongnyu Emmanuel Ringnyu[1], Nkwan Jacob Gobte[1], Wiysenyuy Gideon[1], Tih Pius Muffih[1], Thomas Welty[1], Paul Webber [2]
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2. Webber Training Inc., Belleville ON

Background: Improper use of sharps in injections has resulted in patient-to-patient transmission of bloodborne pathogens (Gina Pugliese et al., 2010). In low income settings, it is estimated that up to 160 000 human immunodeficiency virus (HIV), 4.7 million hepatitis C and 16 million hepatitis B infections each year are attributable to these practices (Michelle Kermode, 2004). EBHY is one of seven CBCHS hospitals (Faith based organization) that administers an estimated 40200 injections annually with 65% considered unsafe. Baseline studies in 2013 projected EBHY as one of the sites with a high degree of unsafe injection practices.
Method: Fourteen treatment room nurses who have as their primary role to administer injections, perform circumcisions and administer other treatments were trained in April 2014 on injection safety modules: vials/infusion bags and administration sets, needles/syringes, aseptic technique, hand hygiene and sharp containers for 17 hours. Supervision was intensified and regular weekly reminders on injection safety tips. The World Health Organization (WHO) monitoring checklist was adopted and used weekly for monitoring of injection practices from June to December 2015. The results were rated as satisfactory, needs improvement and unsatisfactory.
Results: Appropriate single use of vials improved from an estimated 37% in 2014 to 94.3%, (satisfactory), the use of IV bags to reconstitute medication reduced by 97%. Smaller volumes were used only during stock out of diluents (satisfactory), but a new syringe/needle was used each time to access it. Single use of needles and syringes improved from 68% to 92% (satisfactory), aseptic technique from 33% to 40% (needs improvement). The appropriate use of disposable sharps containers rose from 48% to 95%.
Conclusion: Safe injection practices require a multifaceted approach that focuses on surveillance, enforcement, and continuing education with emphasis on aseptic technique using standard guideline, videos from internationally recognized organizations as ICAN, IPAC, WHO and CDC.

TUESDAY POSTER BOARD 51

WHY ONLY AUDIT WHAT A PATIENT TOUCHES-WHY NOT AUDIT WHAT TOUCHES A PATIENT? IMPROVING THE CLEANLINESS OF NON-CRITICAL EQUIPMENT IN THE EMERGENCY DEPARTMENT

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Issue: Contaminated surfaces such as bed rails, can serve as reservoirs of pathogens in cross-patient contamination. Proper disinfection of common surfaces and hand hygiene procedures is critically important to reduce direct and indirect routes of transmission. Failing to disinfect non-critical shared patient care equipment in between use has been shown to be a major source of transmission of hospital-acquired infections such as Clostridium difficile, Methicillin-resistant Staphylococcus aureus, and Vancomycin-resistant Enterococcus.
Project: For a 7-month period, Plan-Do-Study-Act (PDSA) interventions were implemented to improve cleaning practices and better disinfect four targeted non-critical shared patient care equipment pieces: stethoscopes, thermometer probes, blood pressure cuffs, and pulse oximeters. The ultimate goal is to decrease the cross-transmission contact between patients and to reduce hospital-acquired infections. PDSA interventions conducted included: increasing the supply of sodium hypochlorite wipes (PDSA 1), sending out a nurse e-newsletter (PDSA 2), distributing safety posters in the nursing areas and patient rooms, along with showing both live and video cleaning demonstrations to staff during huddles numerous times a week for five weeks (PDSA 3), and introducing pulse oximeter covers at triage stations (PDSA 4). Next, there will be an expansion of the interventions to an inpatient unit in the hospital (PDSA 5). Cleanliness was assessed using an adenosine triphosphate (ATP) reader. According to hospital disinfection standards, patient equipment readings of less than 10 relative light units (RLUs) were considered a pass while readings of 10 RLU or above were considered a fail.
Results: Data findings showed an overall decrease in pass rates for combined PDSA cycle audits (N=742) in comparison to the baseline data. Blood pressure cuff passes overall decreased with a 35% pass in PDSA 1, 25% in PDSA 2, and 18% in PDSA 3." Similarity, the pulse oximeter covers had declined in their passes from 8% in PDSA 1, 6% in PDSA 2, and 3% in PDSA 3. The stethoscopes had a 15% pass rate in PDSA 1, decreased to 9% in PDSA 2 and then remained the same (9%) for PDSA 3. Thermometer probes had showed a 40% pass rate in PDSA 1, an increase to 64% pass rate in PDSA 2, but then a 56% pass rate in PDSA 3.
Lessons Learned: This project targeted changing nursing cleaning behaviors using a PDSA change intervention approach. The results show this can be challenging in complex healthcare environments. Despite the correct application of PDSA processes, outcomes may not always be as anticipated. Attention must be given to temporal, practical and cultural factors in practice settings. Knowledge generated from this project can be used to inform the design of future infection control PDSA intervention initiatives targeting systemic practice change related to infection control practices in the hospital.

TUESDAY POSTER BOARD 52

EFFICACY OF POVIDONE-IODINE PREPARATIONS AGAINST MRSA COLONIZATION OF EX VIVO MUCOSAL TISSUE IN SINGLE AND MULTI-DAY REGIMENS

Patrick Finnegan, Marnie Peterson; University of Wyoming, Jackson, Wyoming

Background: Mupirocin decolonization of nasal *Staphylococcus aureus* prior to surgery decreases surgical site infections (SSIs); however, treatment takes 5 days and resistance may occur. Nasal povidone-iodine (PVP-I) solutions have rapid, broad-spectrum antibacterial activity with low antimicrobial resistance and are an alternative to mupirocin in reducing SSIs. We analyzed the efficacy of three commercially available povidone-iodine products in the treatment of methicillin-resistant *S. aureus* (MRSA) colonization of ex vivo mucosal tissue.
Methods: Explants of porcine mucosa obtained from a slaughterhouse were infected with MRSA USA300 LAC or high-level mupirocin-resistant isolates (1 x 10^6 CFU/explants). Following infection, explants were treated with Product A (5% w/v PVP-I solution [0.5% available iodine] USP), Product B (10% w/v PVP-I solution USP), or Product C (10% PVP-I solution) or not treated. Explants were washed with PBS + 2% mucin to mimic mucociliary clearance and incubated for 1 h, 6 h, or 24 h. Alternatively, explants were retreated with PVP-I formulations and washed every 24 h for 3 days. Bacteria were enumerated by transferring explants to neutralization broth, vortexing, and plating. Data presented are mean ± SEM.
Results: A single application of Products A, B, or C resulted in 5.8 ± 0.26 $\log_{10}$, 4.1 ± 0.42 $\log_{10}$, or 4.8 ± 0.41 $\log_{10}$ (CFU/explants) reductions in MRSA (LAC and MRSA mupirocin-resistant isolates) at 1 h post-wash. All treatments were significantly different from untreated controls 1 h post-wash. Product A had significant persistence at 6 h (6.6 ± 0.47 $\log_{10}$ reduction). Products B and C were less effective at 6 h (3.5. ± 0.4 $\log_{10}$ and 4.1 ± 0.60 $\log_{10}$ reduction, respectively). The persistent effect of Product A at 24 h was significantly better than other treatments: 6.9 ± 0.41 $\log_{10}$ versus 2.4 ± 0.51 $\log_{10}$ and 1.9 ± 0.37 $\log_{10}$ reductions from controls for Products B and C, respectively. In the 3-day reapplication study, treatments performed similarly at 1 h and 72 h. At 24 h and 48 h, Product

A had sustained efficacy, with 6.4 ± 0.86 $\log_{10}$ and 8.1 ± 0.0 $\log_{10}$ reductions, respectively. Product B- and C-treated tissues had lower 24-h $\log_{10}$ reductions of 2.0 ± 0.26 and 1.8 ± 0.10, respectively, as well as lower 48-h $\log_{10}$ reductions of 1.9 ± 0.05 and 1.8 ± 0.10, respectively.
Conclusion: The tested PVP-I formulations significantly reduced MRSA colonization of ex vivo mucosal tissue at 1 h. Product A had persistent efficacy and was superior to Products B and C at reducing MRSA (including MRSA high-level mupirocin-resistant isolates) burden for both a single 24-h application and 48-h reapplication.

TUESDAY POSTER BOARD 54

IMPROVING HAND HYGIENE COMPLIANCE WITHIN SURGICAL SUITES (OPERATING ROOM AND POST ANESTHETICS CARE UNIT)

Corey D Dowler, Laura Slipp, Linda Kamhuka; Alberta Health Services
Identifying the Issue: Hand hygiene is an Alberta Health Services (AHS) performance measure with an identified performance target of 90%. AHS has a well-supported and defined Hand Hygiene program, generic and broad in nature for use across the province. Available resources consist of program managers, zone reviewers, supporting policy and education resources. Surgical Suites at the Alberta Children's Hospital began completing hand hygiene observations however initial compliance hovered around 60%. Training at this time consisted of utilizing the provincial training resources. Through informal staff feedback it was identified that there was a knowledge translation gap between the standardized education provided and applying it to the daily workflow of the Operating Room (OR) and Post Anesthetic Care Unit (PACU) environments. The restricted access environment made it difficult for IP&C reviewers to successfully complete hand hygiene reviews. Staff expressed that an outside reviewer was unaware of the unique workflow and patient care challenges that existed within Surgical Suites.
Project Summary: While staff could identify the 4 moments of hand hygiene, they struggled to put this knowledge into practice within the OR and PACU setting. Staff perception was that hand hygiene compliance added extra time to their already busy workflow and impeded patient care. Through staff engagement we worked to better define the patient and the health care environments in Surgical Suites and created specific education resources (i.e. posters and in-services). Members of the Surgical Suites team were trained as hand hygiene reviewers. This allowed for real time, peer to peer feedback and reinforced how hand hygiene fit within Surgical Suites. Unit based reviewers were able to identify that the physical location of Alcohol Based Hand Rub (ABHR) dispensers was a barrier to hand hygiene compliance. In an effort to improve this staff were provided with individual bottles of ABHR. To monitor the success of these initiatives, hand hygiene reviews continued on a monthly basis to track improvements in compliance.
Results: Prior to any intervention the compliance rate in October 2015 was 56%. Following the establishment of unit-based reviewers, compliance increased to 78%. These rates improved over the next few months however began to decline again. Following staff in-services and providing each staff member with personal ABHR dispensers, rates improved to 82%.
Lessons Learned: There is no 'one size fits all' approach to hand hygiene. Despite provincial resources, a unit specific education approach was required to increase and sustain compliance. Staff engagement allowed for identification of unit specific barriers and development of a tailored approach to hand hygiene. Utilizing unit-based reviewers familiar with workflow and existing rapport with clinical staff, allows for real-time feedback and discussion. This leads to the establishment of hand hygiene as a routine and unit expectation. Continual conversation, brainstorming and awareness around hand hygiene at the unit level is required for sustainability.

TUESDAY POSTER BOARD 55

INFECTION PREVENTION AND CONTROL IN THE DENTAL OFFICE SETTING

Jessica L. Kooger, Natalie J. Goertz; IPAC Consulting, Woodstock, ON
Issue: With the healthcare field changing, it is no wonder that dental offices have come under scrutiny in recent years. Dental procedures that once occurred in operating rooms of hospital facilities are now being performed down the street at our local dentists' office. The lack of an auditing program for these offices was identified and an electronic auditing tool was developed.
Project: The goal of this electronic auditing tool was to capture key elements that are required by both public health, including Public Health Ontario's Provincial Infectious Disease Advisory Committee (PIDAC) documents, and the Royal College of Dental Surgeons of Ontario (RCDSO). The audit takes into account required policies, procedures, and training, occupational health and safety and patient screening, hand hygiene, routine practices, environmental barriers, environmental cleaning and disinfection, waterlines and water quality, and all steps involved in reprocessing of dental devices
Results: With the close to 200 dental practices that were observed, not one was up to all the infection control standards. The electronic audit tool allowed us to give on the spot feedback to practices to help to change their behaviours.
Lessons Learned: Auditing practices of staff and the environment is an important part of Infection Prevention and Control in the dental office setting. Audits help to identify gaps in knowledge and practice by providing on-the-spot education to ensure staff and the dental practice are brought up to compliance.

TUESDAY POSTER BOARD 56

BEST PRACTICES IN HEALTH CARE FACILITIES: INFECTION CONTROL AND RISK ASSESSMENT (ICRA) IN CONSTRUCTION IN OCCUPIED HEALTHCARE FACILITIES

Colleen Dignam, Mike Yorke; Carpenters' District Council of Ontario, Woodbridge ON
Issue: Canada has the highest rate of all hospital acquired infection (HAI) rates in developed countries at 10.5% (WHO 2009). The Coalition for Healthcare Acquired Infection Reduction has stated that 1 in 10 Canadians acquires an infection from a hospital, totaling 200,000 Canadians each year. Five percent of people who acquire an infection from hospital will die. It costs Canadians 3 to 4 billion dollars each year to treat HAIs. Performing construction work in healthcare environments that are occupied and remain open poses risks to all stakeholders involved. Lethal pathogens trapped above ceilings, behind walls or under floors, can infiltrate patient and staff environments via heating and ventilation systems, foot traffic, and other conduits if the proper precautions are not taken.
Project: Delivery of Infection Control and Risk Assessment in Construction in Occupied Healthcare Facilities Awareness Training – The United Brotherhood of Carpenters and Allied Trades (UBC) have developed curriculum focused on 2 areas: bringing awareness to the challenges of performing construction work in occupied health care facilities and delivering intensive training to trades. Through attending the course, participants learn:

- Importance and types of Personal Protective Equipment
- Role of building and maintaining barriers during construction
- How to establish a negative pressure environment
- Facility awareness and how location of construction impacts infection
- Breaking the chain of infection

The risk associated with construction in occupied healthcare facilities has moved to the forefront when looking at strategies to reduce the number of HAIs. Perspective from Health Care Administration: Content delivered in the course can provide valuable knowledge to implement practices from pre-construction through project completion. Perspective from the Trades: Trades workers benefit from gaining the knowledge and awareness of the unique differences and challenges that working in occupied health care facility brings across Ontario. The College of Carpenters and Allied Trades have been delivering ICRA training to major contractors responsible for building significant healthcare projects including PCL, Ellis Don, Bonfield, Eastern Construction and Turner Construction.
Results: At the end of 2017, over 360 hospital facilities already require contractors to use ICRA certified workers when completing construction and renovation. Over 1,500 hospital staff have taken Best Practices in Health Care Construction.
Lessons Learned: Hospital administrators and staff gained significant knowledge about construction in occupied facilities. Incorporating requirements for specific job site training raises the standards and expectations of projects. Educating stakeholders enables better planning and scheduling of work.

TUESDAY POSTER BOARD 57

WASTE SEGREGATION: LINKING INFECTION PREVENTION AND CONTROL PROGRAMS TO PROJECT IMPLEMENTATIONS AND COMPLIANCE BY HEALTH CARE WORKERS

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Hypothesis: With a robust IPC program including curriculum on waste management, implementation of quality improvement in the area of waste segregation practices and compliance by HCW is expected to improve to >80% through small changes implemented with PDSA cycles.

Background and challenges to implementation: The increase of transmissible infections in health care facilities is an issue of great global concern. Liberia being no exception was just recently devastated by the unprecedented outbreak of the Ebola Virus Disease that killed over 4,500 people, including 8% of health workers. One major gap identified that led to this increased death rate was the poor Infection Prevention and Control (IPC) capacity to minimize the spread of health care-associated or community acquired infections to patients and other staff members. The response to gap included SQS training. The focus on IPC was inclusive of waste management. After the training, SQS follow-up and mentorship was needed. The quality improvement model was implemented to help support curriculum taught and initiate change.

Methods/Activity: QI was implemented through regional meetings (mentors, CHT representative, hospital admin, IPC focal people). The hospitals developed hospital QI teams as drivers of projects – each developed project. 14 public hospitals implemented QI projects, 10 of which involved improvement of waste segregation. The various changes were implemented by the QI teams of these hospitals.

Monitoring and Evaluation: ACCEL coaches oversaw process with main drivers being QI team and mentors. Baseline data was collected by the mentors. Subsequently the mentors did direct observation of waste segregation HCW practices. Weekly analysis and evaluation were done regularly and the Overall improvement was calculated.

Results: 6/10 hospitals achieved 80% or greater waste segregation practices. Specific changes such as effective three bin system, labelling of bins and diagrams of different types of waste were implemented.

Conclusion: QI helps sustain IPC practices, creates investment and ownership within facilities. These changes were noted to be related to hospitals that achieved >80% of waste segregation.

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* Frost & Sullivan report Strategic Analysis of World Retractable Syringes Markets, Report No. A576-54, September 2003, p. 40.

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[1] The PLASMAIR™ Decontamination System Is Protective Against Invasive Aspergillosis in Neutropenic Patients Fernandez-Gerlinger MP, et al. Infect Control & Hosp Epidemiol 2016, Vol 37, N°7. 845-851.