Vol. 26 No. 1 Spring 2011

The Canadian Journal of INFECTION CONTROL

Revue canadienne de PRÉVENTION DES INFECTIONS

The official journal of the Community and Hospital Infection Control Association – Canada • Association pour la prévention des infections à l'hôpital et dans la communauté – Canada

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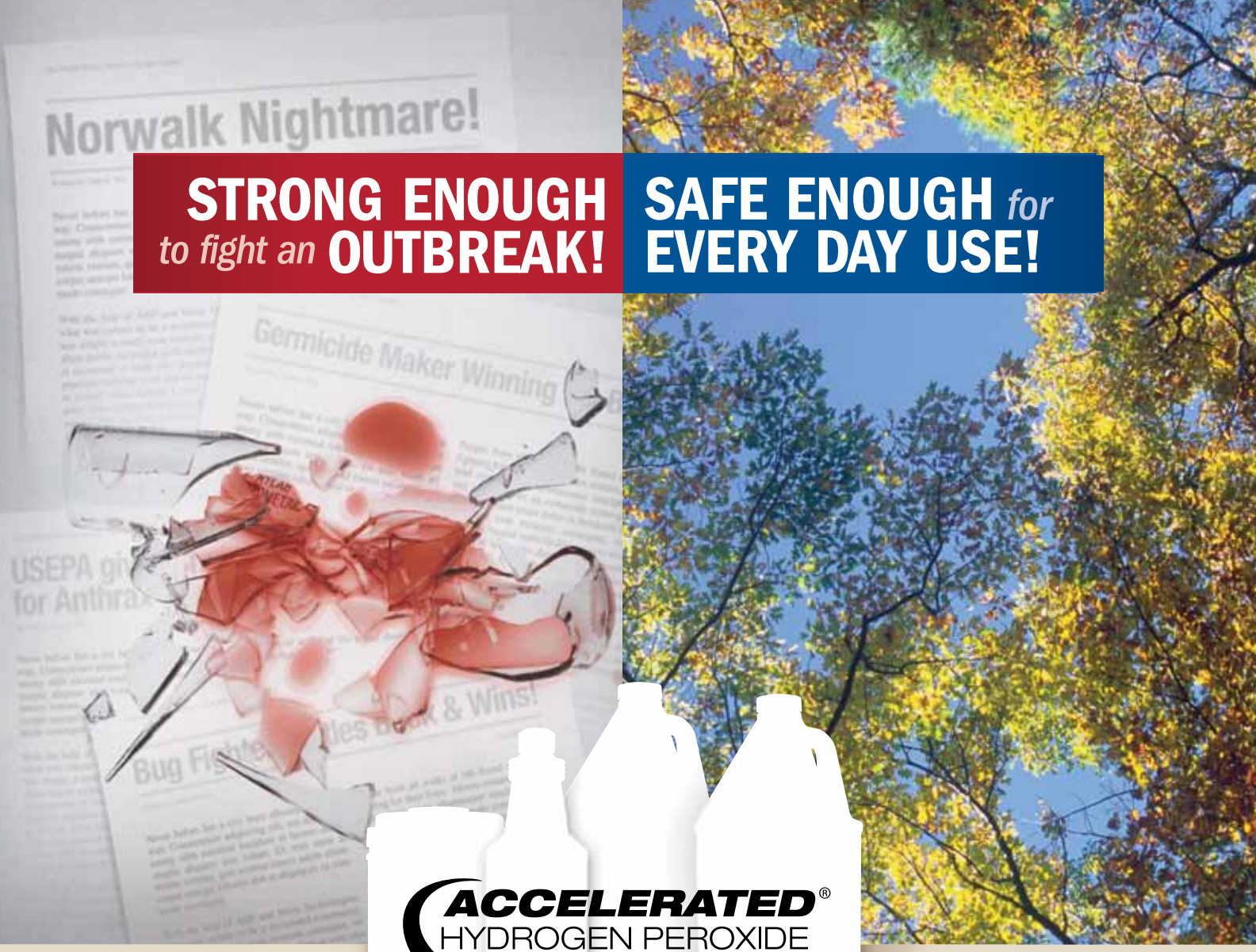
CHICA-CANADA

CHICA NEWS: Shirley McDonald receives honourary membership



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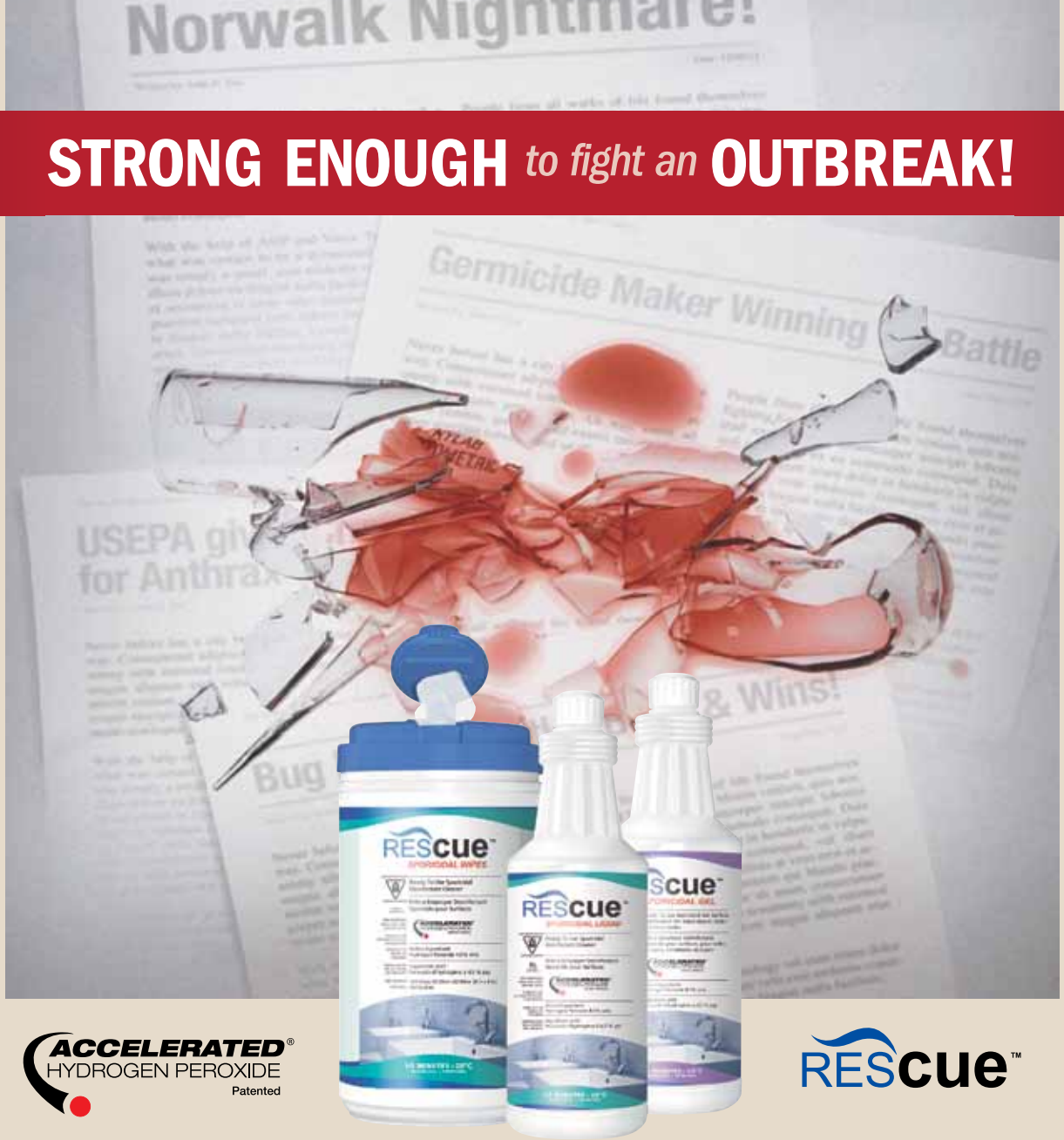

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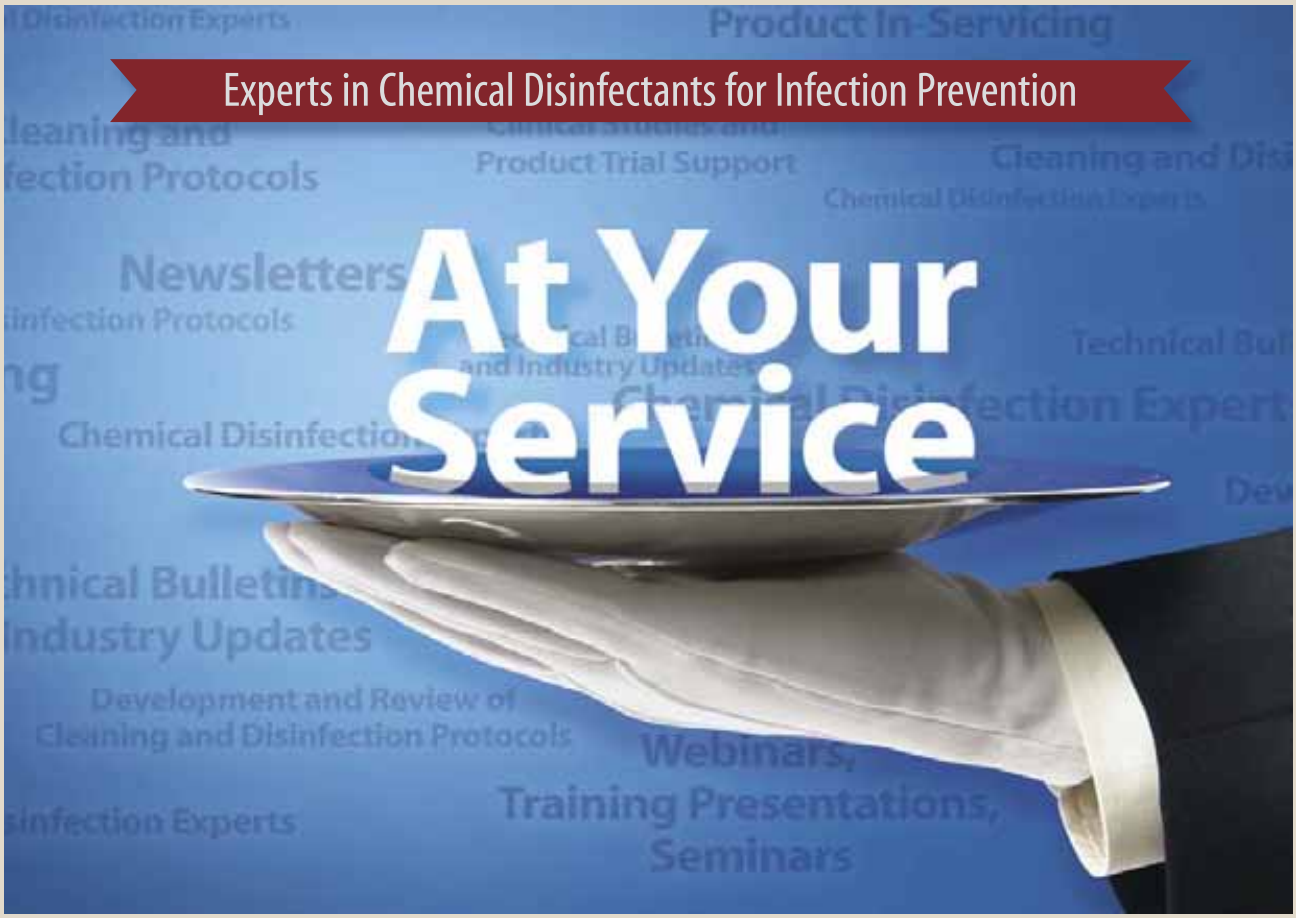

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Publications Mail Agreement #**40065075**
Return undeliverable Canadian addresses to: Kelly@Kelman.ca

SUBSCRIPTIONS
Subscriptions are available from the publisher at the following rates: All Canadian prices include GST.
Prices are listed as personal/institutional.
Canada: $30/$38 (GST # 100761253); USA (in US funds): $28/$36; Other countries: $45/$60.

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CHICA-Canada will be a major national and international leader and thet recognized resource in Canada for the promotiton of best practice in infection prevention and control.

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CHICA-Canada is a national, multidisciplinary association committed to the wellness and safety of Canadians by promoting best practice in infection prevention and control through education, standards, advocacy and consumer awareness.

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FEATURES

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CHICA News

The Canadian Journal of Infection Control is the official publication of the Community and Hospital Infection Control Association (CHICA)-Canada. The Journal is published four times a year by Craig Kelman & Associates, Ltd. and is printed in Canada on recycled paper. Circulation 3000.

ISSN - 1183 - 5702

Indexed/abstracted by the Cumulative Index to Nursing and Allied Health Literature, SilverPlatter Information Inc. and EBSCO.

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Walking the walk and talking the talk for hand hygiene compliance in Canada

Pat Piaskowski, RN, HBScN, CIC
Clinical Editor, *Canadian Journal of Infection Control*

In 2009, The World Health Organization (WHO) launched the *SAVE LIVES: Clean Your Hands* annual global campaign as part of massive effort to improve hand hygiene in healthcare. The aim of this campaign is to demonstrate that hand hygiene is a critical element in reducing healthcare-associated infections (HAIs) around the globe. So far, over 12,000 organizations have made a commitment to this program.

There are currently 39 countries or areas actively involved in this initiative, which has been embraced across Canada.

As with any campaign of this size and magnitude, there is still more to be done.

One year ago, in May 2010, the WHO conducted a global observation survey of healthcare worker compliance with Moment 1 (before touching a patient). Overall, more than 300 facilities from 47 countries submitted data to WHO. From these, over 76,000 opportunities were included in the analysis. **Overall compliance with Moment 1 was 51%**, which leaves much room for continued improvement.

The Canadian Patient Safety Institute, Accreditation Canada, and CHICA-Canada are actively promoting participation in the May 2011 **Tracking your progress, planning your actions and aiming for hand hygiene sustainability**, which is the focus for *SAVE LIVES: Clean Your Hands*.

Knowing where your healthcare facility or agency stands on ensuring that hand hygiene is sustainable in the longer term is important to ensuring improvement in hand hygiene compliance.

One small way we can all support this effort to improve hand hygiene in healthcare in Canada is to adopt the same terminology when we "talk the talk." Modeling the language of hand hygiene sends a consistent message to all we are trying to reach.

Infection control professionals (ICPs) need to be clear when using the term "hand hygiene" and ensure that the terminology and teaching echo the CHICA-Canada position statement on hand hygiene, which states: "CHICA-Canada recommends alcohol-based hand rubs (ABHR) as the preferred method of hand hygiene unless hands are visibly soiled. If hands are visibly soiled, wash hands with soap and warm, running water." (*www.chica.org*)

By using the same consistent terminology, ICPs can take another step to ensuring that the message and methods for hand hygiene are clear.

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Prevalence of nasal carriage of Methicillin-resistant *Staphylococcus aureus (MRSA)* in healthcare workers of the intensive care unit at Dos de Mayo Hospital, Lima, Peru

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ABSTRACT

Objective
To determine the prevalence of nasal colonization of MRSA in health personnel of the intensive care unit at the Dos de Mayo Hospital.

Design
A cross-sectional surveillance of hospital staff in the intensive care unit (ICU) was performed to identify and classify isolated strains of *Staphylococcus aureus* (*S. aureus*) using traditional culture from nasal swabs and subsequent antibiotic susceptibility methods.

Results
A total of 41 participants were recruited for the study and seven were positive for *S. aureus* (17.1%). Of these, three workers were positive for MRSA.

Conclusions
The percentage of nasal carriers of MRSA found in this study was lower than reported in similar studies; however, the identification and management of such cases may be warranted to reduce the risk of hospital acquired MRSA infections.

KEY WORDS
Carrier state, *S. aureus,* methicillin resistance, management of hospital-acquired infections

INTRODUCTION

S. aureus is one of the most significant human pathogens causing a variety of clinical conditions from superficial skin lesions to invasive infections associated with high mortality (1). *S. aureus* is ubiquitous and may easily colonize individuals leading to the potential for widespread transmission (2). Antibiotic resistance is also a concern with this bacterium, particularly against the antibiotic methicillin. Approximately 60% of all infections caused by *S. aureus* in patients admitted to intensive care units (ICU) are caused by MRSA (3,4). The primary ecological niche of *S. aureus* spread in humans is characterized through skin or respiratory transmission. While skin spread can be effectively reduced through proper handwashing practices, the management and control of respiratory spread offers a greater challenge (5). Colonization of *S. aureus* in the nostrils has been associated with infection spread and is recognized as a risk factor for the development of invasive infection (6,7). In the healthcare environment, colonization is a serious concern for both hospital-acquired and iatrogenic infections. Kluytmans et al. in 1997 (8) demonstrate that the prevalence of colonization in healthcare workers ranged from 16.8% to 56.1%. In concurrence, Mainous et al. reported a high percentage of isolates of *S. aureus* in the nostrils of the staff of intensive care unit (85%) (9). This high rate of colonization would thus lead to not only a potential for nosocomial and iatrogenic spread but also mandates that control and management of these personnel should be considered a priority.

At the Dos de Mayo Hospital in Lima, hospital acquired infections are a serious concern. In a recent study (10), the overall infection rate was 26.18 per 100 patients and of these infections; the prevalence rate of MRSA was 43%. The high rate of MRSA infection suggests that compliance to infection control may be hindered by either a lack of compliance or respiratory colonization. This study aimed to determine the potential contribution of nasal colonization of MRSA in health personnel working in the ICU of Hospital Nacional Dos de Mayo, to the overall rate of hospital acquired

Table 1 Distribution of the results of Gram stain among workers in the ICU, Hospital Nacional Dos de Mayo, Lima, Peru, 2009

Group work	Coccus Gram(+)	Cocccus Gram(-)	Yeast
Doctor (n=8)	87.5%	12.5%	0%
Nurse (n=16)	81.3%	6.3%	6.3%
Nursing technician (n=17)	76.5%	0%	5.9%
Overall (n=41)	80.5%	4.9%	4.9%

"While handwashing and other methods of skin decolonization may be effective in preventing skin transfer, there are few to no routine activities that can reduce the respiratory spread of MRSA."

infections. A positive result would be considered a breach of current infection control practice that would require the introduction of a screening management practice in order to stop the spread of MRSA through the respiratory route.

DESIGN

A descriptive, blind, cross-sectional study was carried out between the months of May and June 2009. The study subjects were health care workers from the ICU of Hospital Nacional Dos de Mayo, Lima, Peru. The hospital has a staff of 1120 employees, 52 of them dedicated to the ICU. All employees who spend time in the ICU were invited to participate in the study, and those who accepted signed an informed consent, according to ethics board.

Each subject was asked to fill in a questionnaire that addressed personal, professional and medical information such as age, sex, occupation, working time in the ICU, history of disease (hypertension, Type 2 diabetes mellitus, heart disease, kidney disease, cancer, etc.), skin lesions, hospitalization and antimicrobial therapy after the last six months. Subsequent to this step, nasal samples were obtained from each nostril using sterile cotton swabs. The swabbing procedure consisted of rotating a swab three turns clockwise and three turns counterclockwise (11). One swab (Sample #1) was spread onto a glass slide for Gram staining. The other swab (Sample #2) was placed in Stuart transport medium (Oxoid, England), and taken immediately to the laboratory of Microbiology of the Hospital Nacional Dos de Mayo. An aliquot of 20 mL of the transport medium was then placed onto mannitol salt agar plates (Becton, USA) and blood agar and incubated at 37°C for 48 hours. Colonies were examined by microscopy for morphology, Gram stained and tested for catalase and tube coagulase (BBL Coagulase Rabbit Plasma, Becton, USA). Those matching the criteria for *S. aureus* were logged and the sample donor and listed as a carrier.

The sensitivity of nine isolated colonies of *S. aureus* (methicillin sensitive and methicillin resistant) was performed using disk diffusion method of Kirby Bauer according to CLSI standards (12). The antibiotics evaluated were: rifampicin (5μg), clindamycin (2μg), erythromycin (15μg), vancomycin (30μg), oxacillin (1μg), penicillin (10 IU), chloramphenicol (30ug), tetracycline (30ug), cotrimoxazole (1.25/23.75 ug TSX), linezolid (30ug), teicoplanin (30ug) (BBL, USA). Halos of inhibition were measured and antibiotic resistance calculated according to CLSI standards (13). Statistical analysis consisted of calculation of proportions and summary measures for quantitative variables, using SPSS 13.0 for Windows (SPSS Inc., Chicago, IL).

RESULTS

This study comprised a total of 41 individuals who work in the ICU representing 78.8% of the ICU staff. Of these participants, 11 (26.8%) were male and 30 (73.2%) were female. Of the participants, eight were physicians (19.5%), 16 nurses (39.0%) and 17 practical nurses (41.5%). The average working time in ICU was (7.3 years), with nursing technicians working group having the highest average length of work in the area (9.5 years), followed by nurses (8.3 years), while doctors only had an average of (4.3 years) working in the ICU.

The results of Gram stains from Sample #1 indicated that 33 samples (80.5%) showed only Gram positive bacteria while two samples (4.9%) showed evidence of Gram negative bacteria. Another two samples (4.9%) were positive for yeast. Table 1 shows the distribution of the results of the Gram stain according to occupational group.

From Sample #2, seven isolates (17.1%) were positive for *S. aureus*. Two of these positive isolates samples were from doctors, three from nurses and two from nursing technicians. Susceptibility tests indicated that three workers (7.3%) were carriers of MRSA. Table 1 shows the distribution of positive cultures according to occupational group. The three cases of MRSA carriers included a 45-year-old nurse with seven years' working in the ICU and history of rhinitis treated with chlorpheniramine sporadically in the last two years; a 33-year-old nurse with three years' working in the ICU and a history of hypothyroidism, and a 38-year-old nurse technician with eight years of working in ICU and no medical history.

The susceptibility of seven isolates yielded the following results: 42.9% were oxacillin resistant, 100% to erythromycin and penicillin, 4.9% to clindamycin. They were all sensitive to rifampicin, vancomycin, linezolid, and

chloramphenicol teicoplamina, while 85.7% were sensitive to trimethoprim/sulfamethoxazole. The results of the sensitivity in the three MRSA isolates are shown in Table 2. Unfortunately, no molecular study was done to determine the genetic similarity of the strains identified and compared with those circulating among patients.

Table 2 Antibiotic sensitivity in cases of MRSA nasal colonization in workers in the ICU, Hospital Nacional Dos de Mayo, Lima, Peru, 2009

Group work	Coccus Gram(+)	Coccus Gram(-)	Yeast
Doctor (n=8)	87.5%	12.5%	0%
Nurse (n=16)	81.3%	6.3%	6.3%
Nursing technician (n=17)	76.5%	0%	5.9%
Overall (n=41)	80.5%	4.9%	4.9%

(+/++/+++): Resistance based on halo size.
(-): sensitivity.

DISCUSSION

The observed prevalence of MRSA nasal colonization in health personnel of the ICU of Hospital Dos de Mayo (7.3%) was among the values reported in the literature (0.8% to 20%) (8,9,11). Yet the presence of colonized health workers demonstrates the risk associated with working in a healthcare facility. Individuals may be colonized through a number of routes specific to their occupation, including contact with an infected individual or contaminated material (14). Upon colonization, these individuals may then spread the bacteria and potentially cause outbreaks (14,15). Interestingly, of the three individuals who were colonized with MRSA, one reported rhinitis, a potential confounding factor in respiratory spread, and was under treatment with antihistamine.

Of the MRSA isolates, we found no reduced susceptibility to vancomycin and or cotrimoxazole. The three isolates were resistant to erythromycin and clindamycin, demonstrating the potential for increased resistance *in vivo* (16). However, this should be further explored at the genetic level to determine any historical lineages with other strains of MRSA.

Although the MRSA prevalence in ICU workers was not as high as some reported values (8, 9), there is significant concern for the breach in infection control practice observed. While handwashing and other methods of skin decolonization may be effective in preventing skin transfer, there are few to no routine activities that can reduce the respiratory spread of MRSA. We thus propose that there is justification for the routine screening of health workers for MRSA colonization and subsequent treatment. Doebbeling et al. (17) have shown that the application of mupirocin twice daily for five consecutive days for health workers was successful in 91% of nasal carriers, and after four weeks, 87% of them remained free of *S. aureus*. This group was followed and at six and 12 months from the application of mupirocin and 48% and 53% respectively remained negative. As a complementary treatment, the use of antihistamines in the event of allergic rhinitis or other respiratory symptoms may also be considered. The use of masks and/or respirators at work during treatment may offer additional prevention of MRSA spread (18).

In conclusion, the prevalence of MRSA (7.3%) found in workers in the ICU may indicate the need for regular screening of healthcare workers in this setting and the development of control measures to mitigate any colonization. These solutions may require both short- and long-term planning and implementation, however, the reduction of hospital-acquired and iatrogenic infection spread, particularly in the ICU, may well be worth the effort.

ACKNOWLEDGEMENTS

At the Doctors: Jose Lopez, Gonzalo Chavez, Marco Ñavincopa, Victor Chavez, Ruben Vasquez, Jaime Soria and Humberto Lira, Service of Infectious Diseases and Intensive Care and the staff of Microbiology of the Hospital Dos de Mayo, for their support.

The authors declare no conflicts of interest receive.

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Sharp injury and healthcare workers: an experience from a tertiary care hospital in India

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ABSTRACT

A cross-sectional study of sharp injuries (SI) was carried out at a tertiary care hospital in New Delhi, India. Objectives were to identify the incidence and reporting of SI as well as the awareness and treatment seeking behaviour of healthcare workers (HCWs) who sustain a SI. Questionnaires and interviews of the HCWs were carried out. Results were analyzed in terms of category of HCW, reporting and treatment seeking behaviour. Results showed a 26% incidence of SI in HCWs. Incidence was highest in medical and nursing interns. Association between years of job, use of standard precautions, type of procedure, devices and immunization status were also noted and analyzed. Awareness remains a key parameter in prevention of SIs. A major outcome of the study was initiation of targeted interventions based on needs assessment.

KEY WORDS
Sharp injuries (SIs), healthcare worker (HCW), tertiary care hospital, prevention

INTRODUCTION

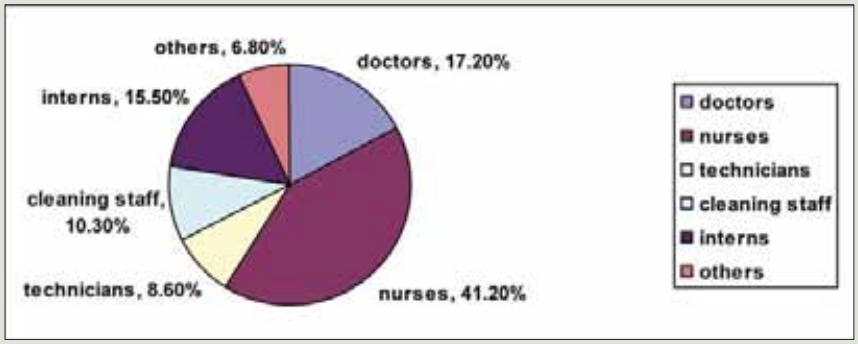
The use of injections has brought much public health benefit in the 20th century, particularly by providing a method for administering life-saving vaccines. However, healthcare injections have also become a health hazard. Injection is one of the most common healthcare procedures. Injection safety should be assessed using standardized and representative methods to allow for a reliable assessment of the situation in the country and for comparisons with other countries. Because of the nature of their occupation, healthcare workers (HCWs) are especially exposed to blood-borne infections, including HIV, due to injury through SI, such as needle-sticks. Additionally, if the assessment is done before the introduction of changes, a repeated assessment can then measure achievements consistently.

Every year a large number of injections are administered in developing and transitional countries. The vast majority (around 95%) are given for curative care. Immunization accounts for around 3% of all injections, with the remainder for other indications, including use of injections for transfusion of blood and blood products and contraceptive medications. According to the Centers for Disease Control and Prevention, approximately 384,000 percutaneous injuries occur annually in US hospitals, with about 236,000 of these resulting from needle-sticks involving hollow-bore needles. EPInet data for 2003 reports a rate of approximately 27 SIs per 100 beds in teaching hospitals (1). There are few reports on SIs from India (2,3,4,5) and with limited data, it is not possible to estimate an annual incidence.

In India the use of injections has overtaken the real need, reaching proportions no longer based on rational medical practice. In some situations, as many as nine out of 10 patients presenting to a primary healthcare provider receive an injection, over 70% of which are unnecessary, or could be given in an oral formulation. Patients tend to prefer injections because they believe them to be stronger and faster.

India is a developing country with its unique set of problems especially in preventive aspects where little has been done for prevention for HCWs. SIs are a very common yet dreaded aspect of HCWs' occupational hazards. India has a large number (second only to South African countries) of HIV/AIDS cases; hence

FIGURE 1 Distribution of SI in various categories of healthcare workers



"It would be interesting to analyze data on BBV infections on a hospital-wide basis because it is unlikely that the general patient population would have such a high proportion of positivity for these viruses."

there is a fear psychosis in HCWs whenever there is any SI. No reliable base line data is available on this so far. Therefore, the present study was carried out to estimate the prevalence of SI among HCWs, in a tertiary care hospital in New Delhi, India. We also studied the knowledge and attitude of HCWs towards SI.

OBJECTIVES

- To estimate the baseline data of SI in HCWs in ICU and at other sites of our hospital.
- To identify the unsafe practices that may lead to infections and that should be targeted by interventions to improve injection safety and occupational health.
- To determine the proportion of SI which are not reported.

MATERIALS AND METHOD

Study site and procedures

The study hospital, one of the largest hospitals in Asia, is a 1650-bed tertiary care hospital that also serves as the teaching hospital for colleges of medicine and nursing. The hospital's waste management and patient safety committee has maintained an SI register since 2009. Protocols for management and follow-up of SI have been established. As soon as a HCW sustains a SI, he/she is instructed to induce bleeding from the wound and wash with soap and water and to report to the casualty duty doctor immediately. The duty doctor collects information regarding the index patient/source and records information of (i) the source, including diagnosis, Hepatitis B surface antigen (HBsAg), and HIV and HCV antibody status before and after the SI. If these have not been tested earlier, the investigations are sent and followed-up within six hours, (ii) the HCW position, work experience, previous history of SIs or blood transfusions, (iii) vaccination status, including anti-HBs titre, HIV, HBsAg, anti-HCV of the HCW and (iv) details of the incident, time of incident, time of reporting, place of incident, description of the incident, type of first aid given and whether Standard precautions were followed by the HCW.

The Hepatitis B and HIV follow-up protocol are as follows: in case of a SI from a HBsAg-positive patient, the anti-HBs titre is checked, and if < 10mIU/mL, a full course of vaccination is given and if between 10 and 100 mIU/mL, a booster dose is given and if more than 100mIU/mL, the HCW is reassured. HIV testing and post exposure prophylaxis is offered as per National AIDS Control Organization's guidelines (6). HCWs are followed-up at six weeks, three months and six months for HIV by enzyme-linked immunosorbent assay (ELISA).

A questionnaire was prepared and distributed among various HCWs (i.e., doctors, nurses, laboratory technicians, supportive staff and sweepers) prone to SI, at various sites such as intensive care units (ICUs), blood bank, central collection center, casualty, injection room, and operating theaters. The questionnaire contained information on demographics, vaccination status of the HCW, nature of job, injury from sharps, knowledge regarding prevention of a sharp injuries and what actions to take in case of an exposure. The questionnaire also included a section to document the practice and attitude of HCW while at work. Observations were recorded but not disclosed to HCWs.

RESULTS

During the period from July 2009 to September 2009, 220 HCWs were interviewed. 58 (26 %) sustained an SI. Of these, 24 were nurses, 16 (27.5%) were trained nurses and 8 (13.7%) were student/intern nurses), 6 (10.3%) were cleaning staff (sweepers), 10 (17.2%) were doctors, 9 (15.5%) were interns, 5

TABLE 1 Devices responsible for sharp injuries

Hollow bore needles	Solid needles	Solid needles	others
45	11	2	0

(8.6%) were technicians and 4 (6.8 %) were other categories of HCW, (Figure 1). Nursing and medical interns constituted a significantly larger proportion of HCW sustaining SI ($p < 0.001$).

Among the HCW with SI, 109 (49.7%) were those who had a work experience of less than one year. It is important to note that the Safdarjang Hospital and VMMC has approximately 5000 HCW, of which approximately 8% are in their first year of service at any given time. Based on this, the proportion of SI among those with a work experience of less than one year is significantly higher.

The majority of the devices responsible for the SI were hollow-bore needles 45 (77.58%), with solid needles accounting for 11 (18.9%) and scalpel blades for 2 (3.4%) (Table 1).

Evaluation of the type of activity during which the SI occurred showed that most occurred during procedures 38 (65.5%). The most common procedure was blood collection 20 (52.6%), followed by surgical procedures 10 (26.3%). Approximately 5 (13.5%) were during checking blood sugar and 3 (7.8 %) were contributed by each of injection administration, intravenous cannulation and others.

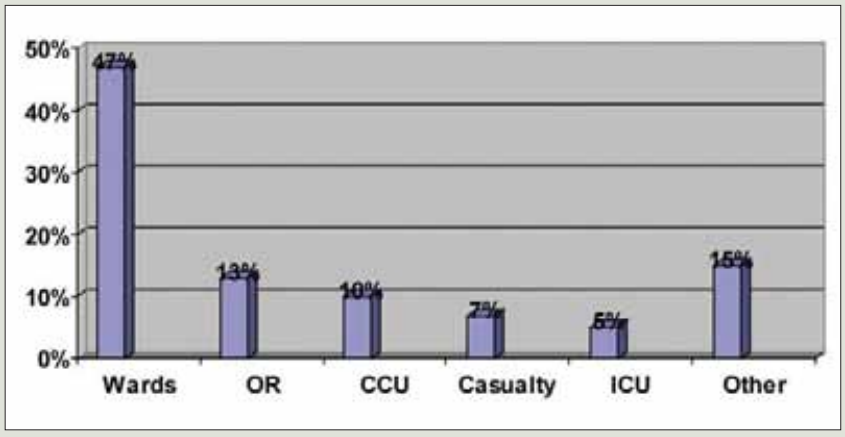
A large proportion occurred because of incorrect handling such as recapping 18 (47.3%), improper disposal of the sharps 12 (31.5%) and overflowing containers, passing of the device, etc., which accounted for 8 (21 %) of the SI (Table 2).

Most SIs occurred when standard precautions were not followed 29 (76%), while a much smaller proportion, 9 (23.6%) had a SI despite following adequate precautions.

Most SIs occurred in the wards 18 (47%), followed by operating rooms 5 (13%), central collection center 4 (10%) in accident and emergency/casualty 3 (7%), intensive care units 2 (5%) and at other sites 6 (15%) (Figure 2).

Twenty-six (68.4%) of HCWs who sustained a SI were not adequately immunized for Hepatitis B, while 12 (31.5%) had received three doses of the vaccine and a booster within the last five years.

FIGURE 2 Site distribution (percentages) of sharp injuries in hospital



There was no association between incidence of SI and the shift/time of work.

Known sources accounted for 44 (75.8%) of SIs and unknown sources accounted for the remainder of the injuries. Of the known sources, 7 (9.0%) were positive for HBsAg, none for HIV (to date, they have been followed up at three months and at six months) and one (2.2%) were positive for HCV.

DISCUSSION

In our study, the majority of the HCWs who sustained SI were nurses and doctors (44.8%), followed by interns, technicians and sweepers (29%, 8.6% and 6.8% respectively). Interns form a small proportion of the medical or nursing staff in a teaching hospital, but accounted for a large proportion of the injuries. This may be a reflection of the larger number of exposure-prone procedures conducted by these categories, or by their inexperience, a finding also supported by the fact that almost half the SIs involved HCWs who had less than one year of work experience.

Another interesting finding was the relationship between the number of SI and use of standard precautions. We have noted that they are inversely related, in other words, episodes of SIs can be decreased if standard precautions are followed. It also implies the need for greater and continuing education on the use of standard precautions or standard procedures in all categories of the HCW because most SIs occurred in HCW that did not follow the sharp injury prevention protocol. It is estimated that approximately three million HCW experience percutaneous exposure to blood borne viruses (BBVs) each year. This results in an estimated 16,000 Hepatitis C, 66,000 Hepatitis B and 200-5000 HIV infections annually (6). However, at least 11% of the SIs that were contributed by blood sugar monitoring and intravenous cannulation could potentially have been prevented by the use of safety devices such as special cannulae and lancet pens for sugar estimation. Hollow bore needles were the most common and scalpel blades were the least common sharp devices responsible for injuries. This could be

TABLE 2 Type of procedures associated with sharp injuries

Recapping	Improper disposal	Passing the devices
18	12	8

because scalpel blades were used in limited number of cases whereas hollow bore needles were used extensively, especially in the areas selected for study.

Our findings showed that 13% of source patients were known to be infected with a BBV. It would be interesting to analyze data on BBV infections on a hospital-wide basis because it is unlikely that the general patient population would have such a high proportion of positivity for these viruses. In this situation, it is important to consider that there may be significant under-reporting of sharp injuries, with reports being made more often if the index patient is a known positive, but less often if the index patient is not known to be positive.

Six-month follow-up for HIV ELISA has been done. None was found positive for HIV. Worldwide, there are 296 cases of HIV seroconversion after occupational exposure, of which 56 are documented while 138 are possibly occupationally acquired (1). In India, two possible cases of occupationally acquired HIV infection have been reported from Chandigarh (7).

There is a paucity of data on sharp injuries in India. While we appear to have lower levels of sharp injuries than expected, this may be due to under reporting. Improper handling and disposal and a lack of adherence to standard precautions and standard procedures may be responsible for the majority of sharp injuries, indicating that there is an opportunity for significant reduction of SI through training, education and other interventional strategies. Entry-level training would be beneficial and it would not only reduce the incidence of SI in future but the burden of BBV would also come down significantly, provided interventions are implemented properly.

One limitation of the study was the recall bias, where participants could not recall exactly the mode or number of SI they have had in the past.

CONCLUSION

This study highlights the fact that a large number of HCW are exposed to an SI from needle-stick or other sharps and thus are susceptible to blood-borne infections. Reporting of SIs must be encouraged as, in all categories of HCWs, it was uniformly lacking as was treatment-seeking behaviour. It was ironic to note that HCWs were callous in their own safety and treatment-seeking behaviour. An awareness program regarding the hazards associated with SI and prevention of SI has been started at our hospital. A needs-based awareness program has resulted in formulating targeted interventions in the form of regular and continuous training of all categories of HCWs. Induction training has also been started since June 2010 for all new medical and nursing interns, resident doctors and post graduate students. Any new employee in hospital must undergo mandatory SI prevention and biomedical waste disposal training. These programs have been designed to suit the HCW population at our institute. Systematic and continuous education and training should be useful in reducing the SI. As well, awareness and provision of care and free treatment would motivate HCWs to report SIs.

ACKNOWLEDGEMENTS

We thank the Safe Hands Organization, Australia for the Financial support. Administration & Infection Control Nurses of VMMC and SJH, New Delhi, India, for their facilitation and coordination during the phase of data collection.

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A scientific study that proves alcohol hand sanitiser is more efficacious when dispensed onto the hands as foam rather than as gel

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ABSTRACT

The purpose of this study was to test the hypothesis that alcohol-based hand sanitisers delivered in a non-aerosol foam format have greater bactericidal efficacy than alcohol-based hand sanitisers delivered in thickened gel format.

The determination of antimicrobial efficacy was measured using an adapted version of the internationally recognised EN1500 test, an *in vivo* test for evaluating bactericidal reduction rates obtained with alcohol-based hand rubs.

Test formulations of alcohol-based hand sanitiser included *Deb Instant-FOAM® Foaming Alcohol Hand Sanitizer* [Product A], a thickened gel version of the same formulation [Product B] and a market alcohol gel [Product C] were compared. Final test data was evaluated utilising the Wilcoxon signed-rank test for comparing two related samples.

The results of the tests have led us to conclude that, according to our test-conditions, the bactericidal efficacy on *Escherichia coli* of alcohol-based hand sanitisers [Product A] are significantly superior when the same formulation is delivered in foam format compared to thickened gel [Product B] and market alcohol gel [Product C].

INTRODUCTION

Alcohol-based hand sanitisers have been in use for decades in various formats. Originally provided as a viscous liquid used primarily in healthcare settings, more recent developments produced alcohol-based gels in the 1980s and non-aerosol alcohol-based foam in 2006. With the advent of more user-friendly formats, the use of alcohol-based skin sanitisers has expanded from healthcare to included widespread personal use, whether at home, in the workplace or in the community.

FIGURE 1

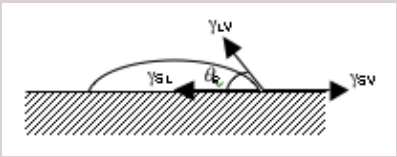


FIGURE 2 Product A

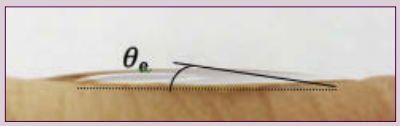
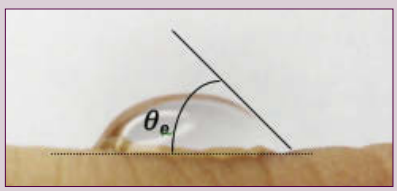


FIGURE 3 Product B



Both thickened gel and thickener-free foam format products are easy-to-use, safe (5), do not require water or wiping and are not susceptible to induce bacterial resistance (1). Alcohol-based hand sanitisers are also known for being effective on most pathogenic micro-organisms including Gram positive and Gram negative bacteria, yeasts, moulds and viruses (2,3,7).

Alcohols have a non-specific mode of antimicrobial action; they denature proteins, inhibit enzymes and induce lysis of the cytoplasmic membrane. They have no sporicidal activity but they inhibit the spore germination (6,8). In addition, because alcohols are characterised by a high exponent value ($\eta > 4$) efficacy can be dramatically affected by the concentration of alcohol in the formulation (1).

For a given format of alcohol-based hand sanitisers (liquid, gel, foam), some variations of efficacy level have been observed from format to format. In 2002, Prof A. Kramer et al (6) identified the "limited efficacy of alcohol-based hand gels" when compared to alcohol-based hand sanitisers in the traditional liquid format.

Our hypothesis relates to the fact that thickening agents used in gel products (cellulose ethers, acrylic acid-based polymers) affect the microbial killing kinetics, by slowing down the diffusion of the alcohols through the cell membranes. Further, because the non-aerosol foam format of alcohol-based skin sanitisers does not include thickening agents, these products should wet and spread better and the efficacy for the foaming product is expected to be better than comparable gels.

To test our hypothesis, simply stated as "foam is better than gel", this study compared the *in vivo* bactericidal activity of *Deb InstantFoam*® Foaming Alcohol Hand Sanitiser [Product A] versus a thickened gel version of the same formulation [Product B] and another market alcohol gel [Product C]. The compositions of the various test-products are given in Table 1.

Prior to doing this, we also experimentally compared the spreadability of the alcohol foam [Product A] to its thickened gel version [Product B]. This experiment was conducted in order to reinforce our hypothesis that foam spreads better than gel; because of this, foam should also be more effective at covering a larger surface of skin and, therefore, at sanitising the skin better within a given length of time.

EQUATION 1

$$\cos \theta_{ev} = \frac{\Upsilon sv - \Upsilon sl}{\Upsilon lv}$$

Where θ_e = contact angle ($0° \leq \theta_e < 180°$)
Υsv = interfacial tension Solid-Vapour (mN/m^{-1})
Υsl = interfacial tension Solid-Liquid (mN/m^{-1})
Υlv = interfacial tension Liquid-Vapour (mN/m^{-1})

EXPERIMENTAL COMPARATIVE EVALUATION OF THE SPREADABILITY

The spreadability approach by measurement of the contact angle method

In order to obtain the highest possible level of antimicrobial efficacy, important parameters seem to be the wettability of the treated surface (the skin), and the wetting power as well as the spreadability, of the fluid (the skin sanitiser). We assumed that, for all these parameters, the higher the better.

The wetting and the spreading of a liquid on a solid surface are governed by a thermodynamic-related process (4,10). One criterion, which allows differentiating complete from partial wetting, is the contact angle (Fig.1).

Perfect wetting is obtained if the contact angle qe = 0°, but this is pure theory as, in reality, only partial wetting (defined by qe > 0°) may be obtained. That said, three interfaces are involved in this process; the liquid, the surface and the air. Therefore, their respective interfacial tensions must be taken into account in the Young's equation, which describes the wetting behaviour (Equation 1).

EQUATION 2

$$S = \Upsilon lv(\cos \theta_{ev} - 1)$$

However, because gSL and gLV cannot be measured, some empirical extrapolations were made in order to calculate the spreadability coefficient "S" (Equation 2).

The mean contact angles of foam [product A] and the alcohol gel [product B] were measured on the skin of the index finger of 20 subjects (males and females, aged 20 to 60), without taking into account the natural roughness of the skin. The values were obtained from close-up pictures of the sanitiser drops.

Four hours before the test, hands were washed for one minute with an alkaline liquid soap, and dried with disposable paper towels. Subjects were asked not to wear gloves and not to wet their hands with any kind of liquid during this period of time. Then, 50 µl of test-product was put on the dorsal surface of the middle phalanx of the left index finger, and close-up pictures were immediately taken using a digital camera.

Contact angles were measured directly on the 20 pictures taken for each product (Fig. 2, Fig. 3). Then, spreadability could be calculated (Table 2) using equation Eq2.

Although the surface tensions of the test products were quite similar, the spreadability of the foam was much higher ($S \geq 0$, spontaneous spreading occurs and the equilibrium is obtained when the liquid spreads onto the solid) than that of the gel ($S < 0$, the solid-vapour interface has the lower free energy and the liquid does not spread spontaneously).

This may contribute to ability of foam to spread spontaneously, without

Examples of typical initial value

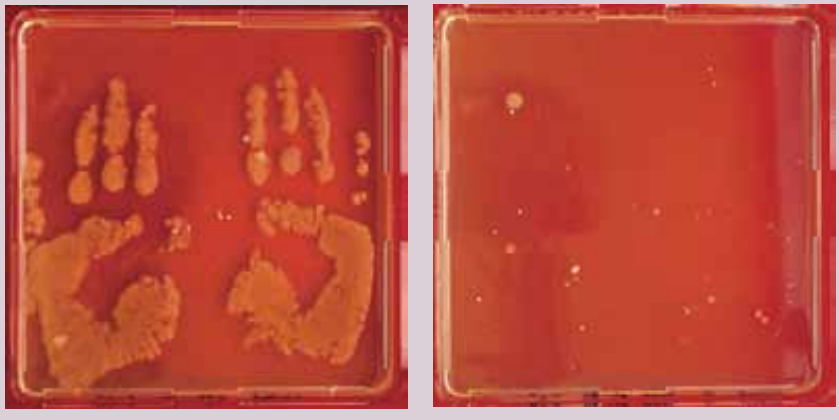
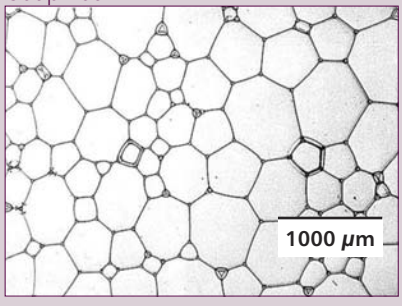


TABLE 1

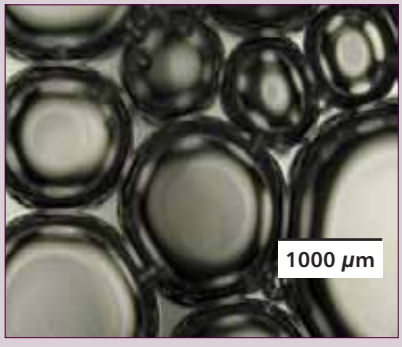
Test-products	Foam A	Gel B	Gel C
Active ingredients	Ethanol 65% w/w N-Propanol 10% w/w	Ethanol 65% w/w N-Propanol 10% w/w	Ethanol 85% w/w
Non-active ingredients	Purified water Non-ionic surfactants Skin conditioning agent Glycerin	Purified water Non-ionic surfactants Skin conditioning agent Glycerin Thickener: Acrylates/C10-30 Alkyl Acrylate Crosspolymer	Purified water Glycerin Thickener: Acrylates/C10-30 Alkyl Acrylate Crosspolymer
Characteristics: Viscosity at 20°C (Brookfield LVII)	< 100 cP	3540 cPo	4400 cPo
Surface tension at 20°C (Tensiometer Du Nouy)	22 mN/m^{-1}	24 mN/m^{-1}	24 mN/m^{-1}

Figure 4

Soap Foam



Alcohol Foam



the need of extra mechanical energy, whereas gel cannot. When observing foam on the hand prior to rubbing, it is noticeable that it simply spreads due to its own weight and as a consequence of the shape of the bubbles and the wettability of the liquid.

The microscopic structure approach

Soap foam is a polyhedric 3D network system (Fig. 4) of liquid and gas characterised by developed internal surface. The general physical characteristics of the foam (drainage, spreadability, durability, are related to the fact that bubbles are inter-connected.

To illustrate the increased spreadability of foam, a simple observation through the microscope (Olympus with apochromatic objectives) revealed that the structure of alcohol foam [Product A] was very different from the structure of soap foam (Fig. 4). The observed marble-like structures of alcohol foam might also explain the greater spreadability, with the possibility of the microscopic bubbles rolling on each other with low mechanical constraint.

EXPERIMENTAL COMPARATIVE EVALUATION OF THE BACTERICIDAL EFFICACY

Principle: The study was based on the comparison, using an adapted EN1500 test-method (11), of the bactericidal efficacy of three different doses of products A, B and C on 15 subjects (male and female, aged 20 to 50), with hands artificially contaminated with a calibrated suspension of *Escherichia coli* CIP 54.117 (*E. coli* K12 NCTC 10538).

Product A was tested as a foam and each dose (corresponding to respectively 0.7ml, 1.4ml and 2.1ml of liquid formulation) was dispensed from a 1L sealed cartridge.

Products B and C were tested as gel and each dose (respectively 0.7ml, 1.4ml and 2.1ml of gel) was pipeted onto hands using disposable sterile 1ml pipets (Sarstedt).

The results were calculated by comparing the level of initial hand contamination (initial value) with the level of residual contamination after all three sanitisations (final value). All results were expressed in terms of Log_{10} reductions and compared using the Wilcoxon statistical test.

No biocide-neutraliser was required for this test because the actives (alcohols only) evaporate without leaving any inhibitory residue on the skin after application.

TABLE 2 Summary Calculations

	Average contact angles (θ_e)	$Cos\theta_e$	Surface tensions (ΥLV)	Spreadability 'S' $\Upsilon LV\ (cos\theta_e - 1)$
Alcohol foam [Product A]	9.05° (0.16 RAD)	0.99	22 mN/m^{-1}	21.73
Alcohol gel [Product B]	49.20° (0.86 RAD)	0.65	24 mN/m^{-1}	-8.32

TABLE 3

Wilcoxon matrix n = 15 testers Significance p = 0.1			Foam A		Gel B		Gel C		A versus B				A versus C			
Test area	Doses x 0.7ml	Before sanitisation values	After sanitisation values	Log_{10} reduction	After sanitisation values	Log_{10} reduction	After sanitisation values	Log_{10} reduction	Ranking A vs B Σ(-)	Ranking A vs B Σ(+)	Additional log reductions A vs B		Ranking A vs C Σ(-)	Ranking A vs C Σ(+)	Additional log reductions A vs C	
Palm	1	6.381	0.975	*5.406*	2.241	*4.139*	2.318	*4.063*	-110	1	1.267	average	-116	7	1.343	average
	2		0.368	*6.013*	2.051	*4.329*	2.192	*4.189*	-110	0	1.684	**1.437**	-106	0	1.824	**1.584**
	3		0.442	*5.939*	1.803	*4.578*	2.027	*4.354*	-90	1	1.361		-103	2	1.585	
Back	1	5.663	1.959	*3.705*	2.335	*3.328*	2.378	*3.286*	-117	3	0.377	average	-105	15	0.419	average
	2		1.459	*4.204*	2.123	*3.540*	2.228	*3.435*	-97	1	0.664	**0.591**	-111	9	0.769	**0.715**
	3		1.067	*4.596*	1.800	*3.863*	2.027	*3.637*	-110	3	0.733		-112	0	0.959	
Palm + Back	1	6.457	1.998	*4.459*	2.581	*3.876*	2.641	*3.816*	-110	1	0.583	average	-109	7	0.643	average
	2		1.482	*4.974*	2.377	*4 .080*	2.509	*3.948*	-101	0	0.894	**0.803**	-106	0	1.026	**0.943**
	3		1.157	*5.299*	2.090	*4.367*	2.319	*4.138*	-90	1	0.932		-102	2	1.161	

DETERMINATION OF INITIAL AND FINAL VALUES OF EACH DOSAGE

For each individual test-dose, and prior to the test, all subjects were asked to wash their hands with an alkaline soap, without any further instructions, hands were dried with disposable paper. Hands were then sanitised by rubbing both sides of the hands with 3ml of propanol 60 % v/v for one minute.

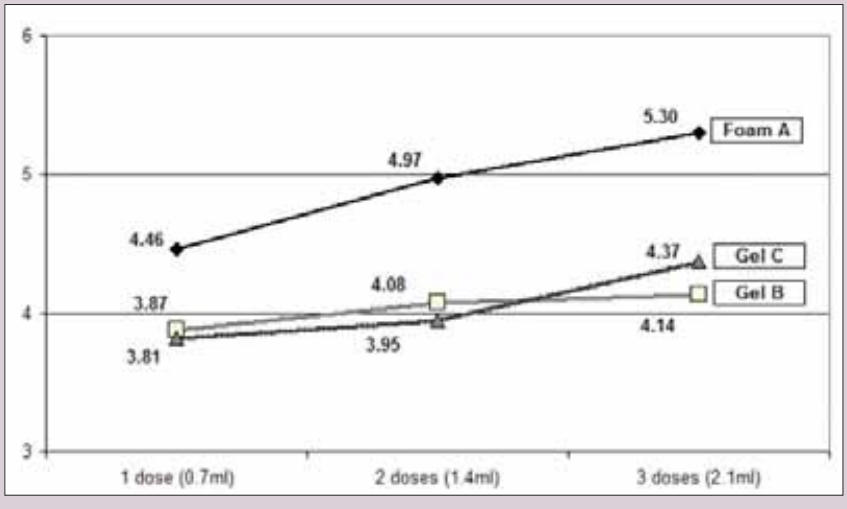
Immediately afterwards, hands were contaminated by rubbing both sides with 1ml of a calibrated suspension of *Escherichia coli* adjusted at 1.10^8 to 3.10^8 cfu/ml and then applied onto large Petri dishes containing TSA medium. Both sides of each hand were applied for five seconds on separate sets of Petri dishes (initial values).

Then, for each test involving one, two or three doses, hands were sanitised by rubbing both sides and then both sides were again applied for five seconds onto separate sets large Petri dishes containing TSA (Tryptophe-Soy-Agar).

Hands were washed and sanitised with isopropyl alcohol before each test.

Petri dishes were incubated at 37°C for 24 hours, and colonies were counted directly on the Petri dishes. The Petri dishes were each photographed (see typical examples of initial value on page 22).

GRAPH 2 Average Log_{10} reductions



TEST RESULTS

Comparative log reductions for one, two and three doses are shown in Graph 2. Summary of the Wilcoxon results are given in Table 3.

As shown in Graph 2 and Table 3, with one, two and three doses, the bactericidal efficacy (log reductions) of product A (alcohol foam) superior to the efficacy of product B (alcohol gel) and product C (alcohol gel).

Furthermore, the Wilcoxon statistics prove also that the differences between A and B and C are significant (for n = 15 and a level of significance p = 0.1).

It can also be noted that the tested products were generally more effective when applied onto the palm of the hands. The authors believe this is likely to be due to the fact that it is easier to rub the products on the palms (more strength and better homogeneity of the application) and/or to the presence of hairs (complex structures) on the back of the hands.

CONCLUSION

This study suggests that foam [Product A], spreads much better than that of thickened gel [Product B] and that of the market gel [Product C]. We also observed that the marble-like microscopic structure of the foamed product was different from that of soap as the bubbles were not interconnected.

This first part of the study, the spreadablity test, reinforced our hypothesis that a foam-

ing alcohol-based hand sanitiser should have higher bactericidal power than that of thickened equivalent gel products but does not prove it. This is due to the involved gel thickener that is supposed to slow down the diffusion of the alcohols into the bacterial cells, Therefore, an in vivo antimicrobial study was necessary. A modified EN1500 test-method allowed us to demonstrate that Product A (applied as foam) onto the hands, has significantly higher (for n=15 testers and level of significance p=0.1) log reduction when applied in consecutive doses on hands than that of the same formulation (Product B) with thickener (average additional log reductions for the palm and for the back of the hands were respectively 1.437 and 0.591), and than that of the market alcohol gel C (average additional log reductions for the palm and for the back of the hands were respectively 1.584 and 0.715).

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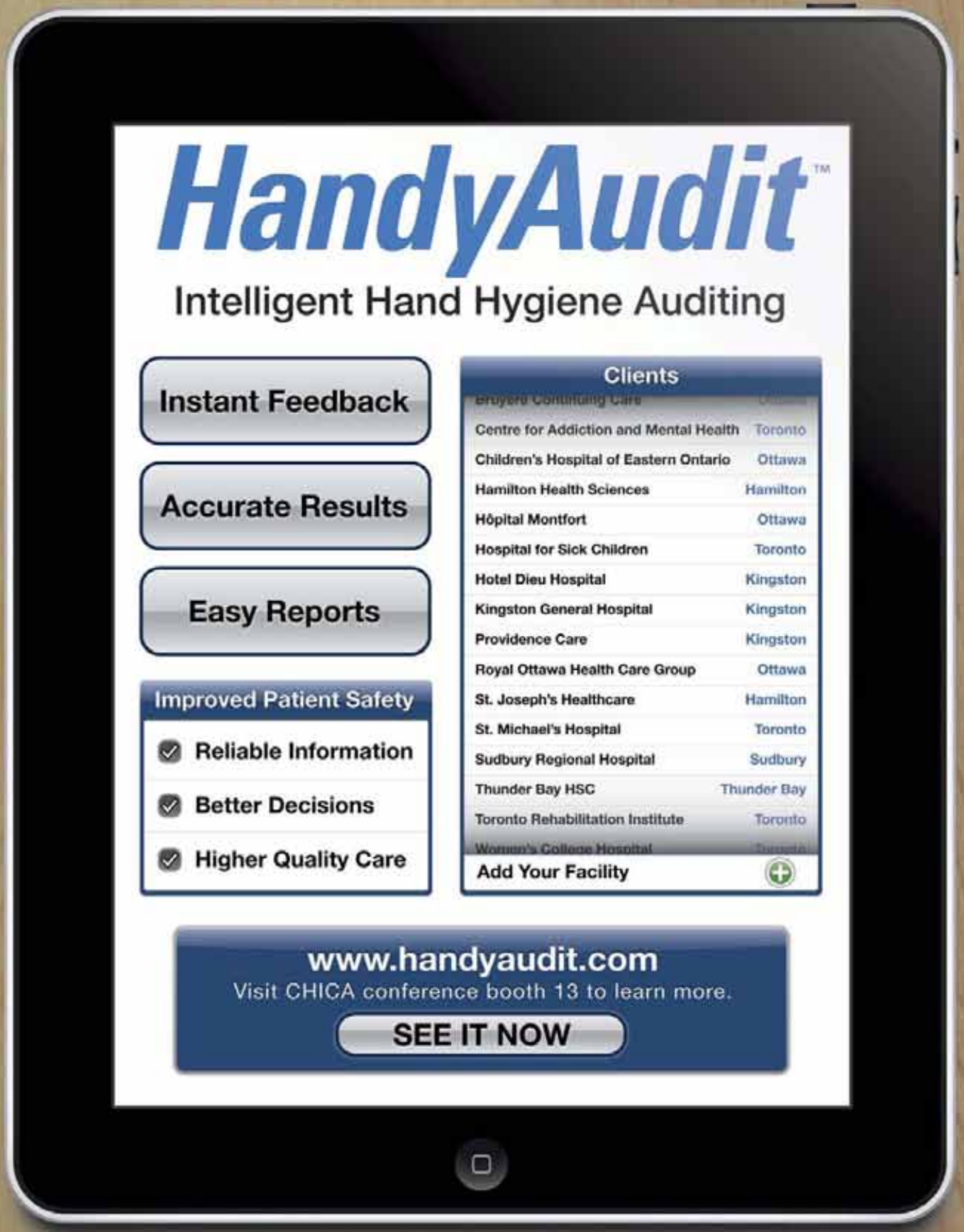
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Got books? Giving back: The Cameroon book drive

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ABSTRACT

This report highlights the Cameroon book drive that was held in Ontario in 2008 and which reached completion at the end of 2009. The report describes the process to collect used infection prevention and control books as well as other medical texts, ship them to Cameroon in West Africa, and finally reach the intended users – infection control practitioners in Cameroon. Suggestions are made for improvements which might shorten the delay in getting much-needed resource materials to developing countries.

KEY WORDS
Infection prevention and control, education, library, Cameroon, book drive

INTRODUCTION

Between 1971 and 1973 I spent an unforgettable period of my life in Nigeria, West Africa, immediately following the Biafran War. My assigned task was to develop laboratory services for a hospital which had been bombed in the war and which had recently been re-built. I arrived full of youthful energy, ready to bring this laboratory up to western standards. Reality hit me on the day I arrived, when I found no electricity in the hospital, no running water (water was brought by buckets from the river) and no support resources such as educational programs or a library. Over the course of two years, many of the services improved, and in my second year I became involved with a U.S. program that provided used medical books to developing countries. I was able to convince the hospital's chief administrator that a medical library would be a good addition to the hospital, and an unused room was made available for the books that were to be sent. By the time I left Nigeria there was electricity, running water and a full library of resource materials for staff.

In November 2007 I received an e-mail from Paul Webber (Webber Training), requesting assistance to support infection prevention (IP) nurses in Cameroon, West Africa. My first thought was to send books and other educational materials. Paul put me in touch with Edith Welty, an amazing physician who is involved with the Cameroon Baptist Convention Health Board (CBCHB), where 10 IP nurses are involved in improving infection prevention and control (IPAC) practices in 67 health facilities in the region. Edith indicated that books were in short supply and would be very welcomed by the IP nurses and others in their medical facilities. The idea for the Cameroon book drive was born.

BACKGROUND

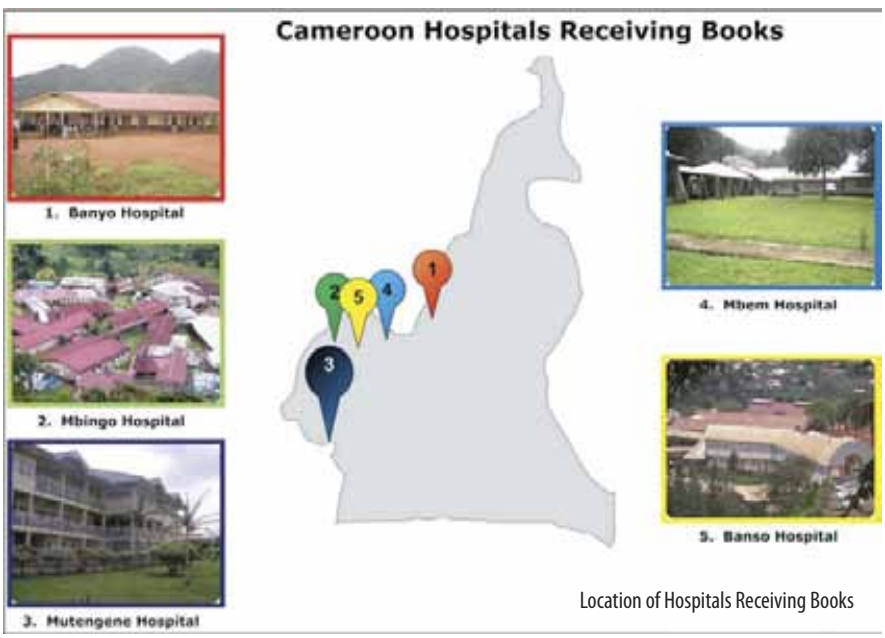
Cameroon is a country in West Africa that shares borders with Nigeria, Gabon, Congo, Central African Republic and Chad and has a population of 18 million (1). The CBCHB is a non-profit healthcare organization that started over 50 years ago and has expanded into six of Cameroon's 10 provinces. The services of the CBCHB range from village primary healthcare to highly specialized hospital-based care with an integration of other social services. It comprises five hospitals, 24 integrated health centers, 43 primary health centers, pharmaceutical procurement and distribution, a private training school for health personnel, and other critical health services for a population base of six million people. The CBCHB works in partnership with national and international governmental and non-governmental health care organizations in Africa and the rest of the world and with funding agencies (2).

Whereas in the past health workers from the CBCHB had to go abroad for

TABLE 1 Infection control/infectious diseases materials received

Books/Manuals	Journals
Control of Communicable Diseases (Heymann)	Canadian Journal of Infection Control
Hospital Epidemiology and Infection Control (Mayhall)	American Journal of Infection Control
Prevention and Control of Nosocomial Infections (Wenzel)	British Journal of Infection Control
Control of Communicable Diseases Manual (Chin)	Canadian Journal of Infectious Diseases
Hospital Infections (Bennett)	Emerging Infectious Diseases
Disinfection, Sterilization and Antisepsis in Health Care (Rutala)	Journal of Infectious Diseases
Infection Control Manual for Long-Term Care Facilities (APIC*)	Clinical Infectious Diseases
APIC Text of Infection Control and Epidemiology	
CBIC** Study Guide	
Canadian Immunization Guide	
Canadian Tuberculosis Standards	
Best Practices for Infection Prevention & Control of Resistant Staphylococcus aureus and Enterococci (PIDAC***)	
Best Practices for Cleaning, Disinfection and Sterilization (PIDAC)	
Best Practices for the Management of Clostridium difficile (PIDAC)	
APIC Conference Abstracts	

*APIC = Association for Professionals in Infection Control and Epidemiology
**CBIC = Certification Board for Infection Control
***PIDAC = Provincial Infectious Diseases Advisory Committee (Ontario)



Location of Hospitals Receiving Books

training, the CBCHB now offers certified training for workers such as nurses, midwives, dental, laboratory, pharmacy, X-ray, physiotherapy and primary health care technicians.

HIV & AIDS activities

In 1999, the board created a community-based Acquired Immune Deficiency Syndrome (AIDS) education program called AIDS Care and Prevention Program (ACP). Today the program is a huge and comprehensive one with 11 components. In 2004, the United States Agency for International Development (USAID) named the CBCHB as a "best and promising practice" in the Prevention of Mother-to-Child Transmission (PMTCT) of Human Immunodeficiency Virus (HIV) in the Central and West African sub-regions. Because of the results it yielded, the CBCHB was empowered to become the regional training center in PMTCT and reproductive health for 18 countries in West and Central Africa with support from Action for West Africa Region (AWARE). Since then, the CBCHB has trained health personnel from 15 African countries and helped them to start or strengthen PMTCT services back in their own home countries (3).

Tuberculosis (TB) control program

The CBCHB started a tuberculosis (TB) control program in 1999 in response to the growing TB epidemic. Over 60% of TB patients treated at the CBCHB facilities are HIV-positive. Under the supervision of the CBCHB-physicians trained in TB management, the three nurses assigned to this program accept referrals from other healthcare workers, prescribe TB medications, see returning patients and provide tracking and follow-up care. From 1999-2004, Banso Baptist Hospital diagnosed 1,465 patients with TB.

Infection prevention (IP) nurses

Jacob Gobte Nkwan was the IP nurse for Banso Baptist Hospital and is currently attending university. He plans to return to the CBCHB after he graduates to expand the IPAC program to include training of more IP nurses, with the aim of eventually developing a national IPAC program. Amos

TABLE 2 Timeline of significant events

Date	Event
Nov/07	Request for assistance for IP* nurses in Cameroon
Nov/07	Made contact with Dr. Edith Welty, volunteer working with Cameroon IP nurses
Dec/07	Permission given for Ontario's Regional Infection Control Networks to act as regional collection points, coordinating collection of books and forwarding on to central collection point
Dec/07	Project C.U.R.E. set up as shipping agency to Cameroon from the U.S.
Feb/08	Permission given from CHICA-Canada to approach Ontario chapter presidents for donations of educational materials
Feb/08	Got Books? posters and information sent to Ontario CHICA-Canada chapter presidents and Regional Infection Control Network coordinators
Mar/08	Eastern Ontario hospital libraries contacted to donate used books
Jul/08	61 boxes of books collected
Jul/08 to Mar/09	Budgetary constraints result in requirement for fundraising before Project C.U.R.E. can send more shipments to Cameroon
Mar/09	Books shipped from central collection point to Project C.U.R.E. warehouse in Houston
Apr/09	Container ship carrying books left Houston, bound for Cameroon
May/09	Shipment cleared port in Cameroon and moved to temporary warehouse in Mutengene, Cameroon
Sep/09	Whereabouts of books uncertain, but they left Mutengene
Nov/09	Books located and dispersed; most medical and nursing materials went to training school in Banso
Nov/09	All CBCHB** centres receive books, including IP nurses

*IP = Infection Prevention
**CBCHB = Cameroon Baptist Convention Health Board

Ndichia is the IP nurse at Mbingo Baptist Hospital. Amos and Jacob received IPAC training from the AWARE Project of USAID. One of their many tasks is to inspect satellite CBCHB clinics for IPAC practices. Jacob recently collaborated with the administrator of CBCHB's Life Abundant Primary Health Care Program (LAP) to train LAP nurse field supervisors and health promoters and trained birth attendants in remote villages in principles of IP, especially as related to obstetric delivery and newborn care, which are done in these primary health centers. They gave pre- and post-tests in IP to these staff and documented that many staff improved in knowledge after completing the curriculum. Training included production and use of alcohol-based hand rub, 0.5% chlorine bleach, and many other critical IP practices.

METHODS

Following the initial decision to collect used medical books for IP nurses and staff in Cameroon hospitals, a plan was formulated to obtain used books over a period of two months and have them delivered to a central collection point (*Collection*), collate the books by publication year and inspect them for damage (*Sorting and Cataloguing*) and, finally, to ship the books on to Cameroon (*Distribution*).

Collection

Collection involved advertising and promotion of the project within Ontario, designating regional collection points for books and resource materials, and arranging shipment of items to a central collection point (CCP) in South Eastern Ontario. It was decided to focus collection efforts in Ontario, as that province has the highest number of hospitals and medical schools in the country that would be a source for used medical/IPAC books, as well as lower shipping costs to the CCP. With the province-wide distribution of the Regional Infection Control Networks (RICNs) in Ontario, it seemed logical to use the RICNs as regional collection points and have materials shipped from there to the CCP. Contact was made with the acting provincial coordinator for the RICNs and permission was given for the RICNs to act as drop-off points around the province. Shipping costs from the RICNs to the CCP were generously donated by the RICNs, as well as support in the form of new educational materials purchased by each RICN, which was added to their shipment. Permission was also given by the Community and Hospital Infection Control Association – Canada (CHICA-Canada) board to promote the project via Ontario chapter presidents and to use the CHICA-Canada logo on promotional materials.

The target date for completion of the project was set as April 30, 2008. A campaign theme was chosen (*Got Books?*) and a poster and information flyer were developed. On February 22, 2008 all RICN coordinators and Ontario CHICA chapter presidents were sent an e-mail introducing the *Got Books?* project, with the promotional flyer and poster attached for wider distribution. Many of the RICNs also advertised the project in their regional newsletters. Two weeks later, information e-mails were also sent to local libraries in hospitals, universities and colleges, asking for used medical books and arranging for pick-up.

Sorting and cataloguing

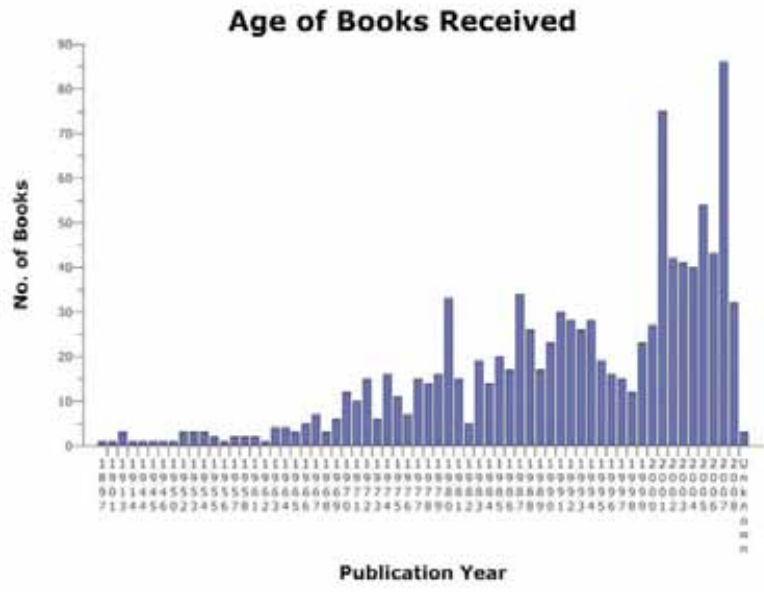
After discussion with Dr. Welty, it was agreed that books more than 10 years old would not be shipped to Cameroon. Sorting and cataloguing involved creating an Excel spreadsheet listing all resource materials with publication date, name of the book/journal, author and condition of the item (Table 1). Books were rejected if they had tears, large marks or extensive highlighting, or broken spines. Books were also reviewed for content and rejected if the content was not felt to be appropriate or applicable to West African hospitals (e.g., books about nursing homes).

Distribution

Distribution involved packing the items to be transported and shipping them to the Texas storehouse of Project C.U.R.E. (Commission on Urgent Relief & Equipment), where they would be added to a container ship bound for Cameroon. Contact was made in March, 2008 with Project C.U.R.E., a U.S. organization that collects and distributes medical supplies and services worldwide (4) that had worked with Dr. Welty in the past to ship medical supplies to the CBCHB. Project C.U.R.E. agreed to ship the books to Cameroon at no extra charge as part of an existing shipment bound for the CBCHB.

Books and journals to be shipped were boxed and labelled according to subject matter (e.g., medical, nursing, IPAC). Boxes were then weighed, wrapped onto a skid and labelled. Books were picked up at the CCP and transported to the Project C.U.R.E. warehouse in Houston by Journey Freight International, an independent trucking company. In Cameroon, Dr. Welty coordinated the receipt of the books and their subsequent distribution among the CBCHB hospitals, Regional Training Centre at Mutengene and Buea University. The remaining books were stored and an attempt to sell them via internet distributors will be made, with proceeds going to the CBCHB.

Books ready for transport to Houston warehouse



Date range of all books received

RESULTS

Between February 26 and July 1, 2008 a total of 61 boxes containing 1046 books and other educational materials were received. Books ranged in publication date from 1897 to 2008. There were 12 boxes containing 425 books that were less than 10 years old, which accounted for 41% of the total. Only 37 (19%) of the books that were shipped were directly related to IPAC.

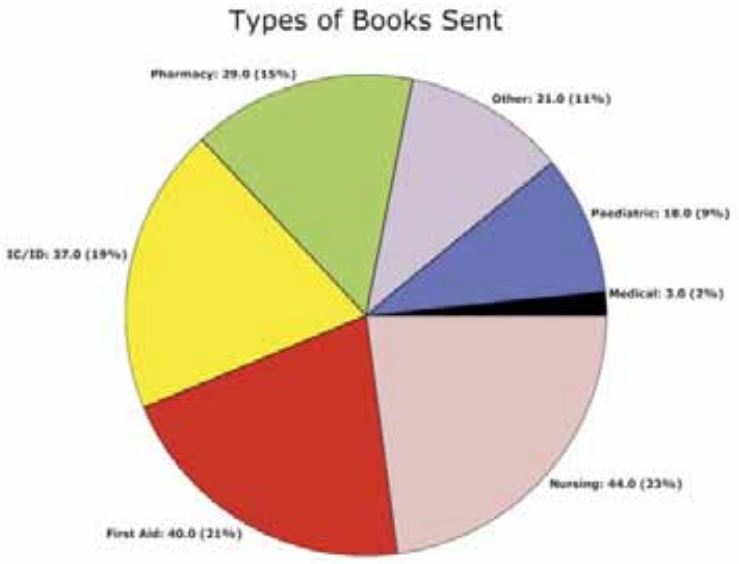
Books were transported from the CCP to Project C.U.R.E. March 13, 2009 and arrived at the CBCHB by November, 2009. This represented a time span of 24 months between the first request for assistance and the final destination of the books. The main delay in getting the books to the CBCHB was related to shipping. Project C.U.R.E. sent containers to Cameroon as they became filled. A ship left for Cameroon in March/2008, too soon to include the books that were still being collected at that time. As the last books arrived at the CCP at the end of June, it was not possible to get them to Houston in time for the container scheduled to leave in early July. Unfortunately, further shipments were cancelled due to budgetary constraints, requiring the CBCHB to raise funds for additional shipments. It was not until March/2009 that a new container bound for Cameroon was ready and the books were able to be added to the shipment. The books arrived in Cameroon in May/2009 and by November/2009 had been widely distributed between all CBCHB health centres, the training school in Banso and the local university (Table 2).

Lessons learned

The Cameroon book drive was a successful campaign that provided IP nurses and other health professionals in Cameroon with valuable resources. This campaign was a good example of cooperation between multiple organizations and individuals committed to achieving a worthy goal.

Ask and it shall be given to you

People are remarkably generous when asked. The collection of over 1000 books and journals in a period of four months was far beyond the number expected. Having a clear plan, contacting key individuals and/or organizations for support and effective messaging were significant in achieving the success of this project.



Distribution of book types shipped to Cameroon

Be careful what you wish for

It was anticipated that this book drive would be completed within two months (March-April), but books continued to arrive up to four months later (March-June). In order to be able to provide the best assortment of books possible, the decision was made to delay shipment until no more books were being received. Unfortunately, this decision resulted in missing the last shipment of the year and delayed transportation by eight months. In retrospect, adherence to the target date for receipt of items that was printed on posters and flyers would have shortened the book drive and allowed books to be shipped in July/08, much earlier than the actual shipping date.

Many books were received that were not shipped due to age, wear and/or subject material. The number of books received that were directly related to IPAC was disappointing. Communication regarding what age and types of books were expected would have resulted in more relevant materials being received.

Many hands make light work

Obtaining the support and assistance of the Regional Infection Control Networks of Ontario and CHICA-Canada was a tremendous asset to the success of this project, broadening the scope of the project and reducing costs considerably.

In a letter received from IP nurse Justin Fombe on February 27, 2010, the impact of the Cameroon book drive is clear: "We hope the zeal to prevent infection will remain in all the staff. There has been a lot of effort by many in impacting a lasting message of preventing infection in not only the clinical staff, but [also] the administrative personnel. The Nursing and Midwifery training school in Banso received a good portion of the Infection Prevention books so that at the level of the training school, students will not only be introduced to it, they can look up in those IP reference books for additional information. Infection Prevention has also been made a part of the training of all clinical, laundry and housekeeping staff. We need people committed to IP who will at all times ensure that IP is in practice as much as it is in theory."

Our own IPAC goals in Canada are not much different from those of our Cameroon colleagues, but we have the advantage of many and varied health system supports and resources. The opportunity to give back to those for whom infection prevention and control is still in its infancy is a reward beyond measure.

ACKNOWLEDGEMENTS

The author would like to thank CHICA-Canada and chapter presidents, the Regional Infection Control Networks of Ontario and Dr. Edith Welty of the Cameroon Baptist Convention Health Board for supporting and assisting with this project. Thanks also to all who donated books and educational materials to the Cameroon book drive. Finally, thanks to Paul Webber for the opportunity to give back.

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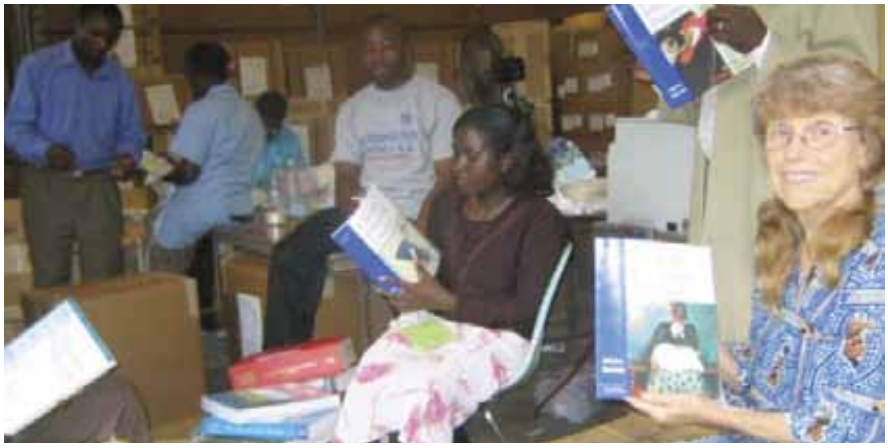

Arrival of books in Cameroon (Dr. Edith Welty pictured on right)

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RETURN to Index

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AGM

NOTICE

Notice is hereby served that the Annual General Meeting of the Community and Hospital Infection Control Association – Canada will be held Thursday, June 2, 2011 at the Sheraton Centre Toronto, 0700 hrs. CHICA-Canada members must register and pick up a voting card before entering the AGM.

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- Medical Devices Tracking Systems to Enhance Patient Safety and Improve Patient Care – **Sunnybrook Health Sciences Centre**
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SCHOLARSHIP WINNERS

Through the financial support of the Virox Technologies Partnership, 19 CHICA-Canada members have been awarded scholarships to attend the 2011 National Education Conference in Toronto. This year the scholarship became more accessible to the new infection prevention and control practitioner who would benefit from the education and networking available at the annual CHICA-Canada conference. CHICA-Canada and its members thank Virox Technologies and their partners Deb Canada, JohnsonDiversey, Steris Corporation, and Webber Training for their initiative to make the education conference accessible to those whose accomplishments should be recognized and who may not have otherwise been able to attend.

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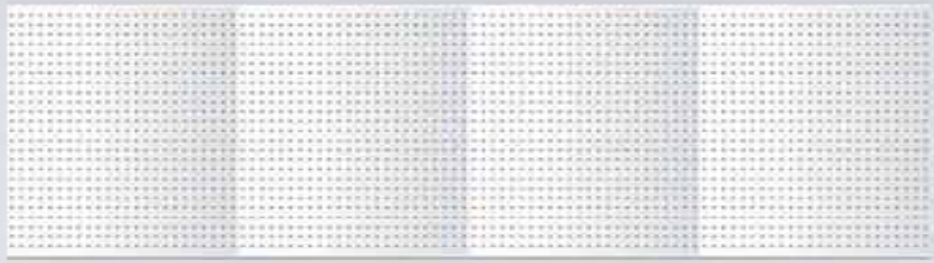

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ORAL PRESENTATIONS

TUESDAY, MAY 31

2:00-3:00 P.M.

ANTIMICROBIAL RESISTANCE AND OTHER PATHOGENS

2:00-2:15 p.m.

VANCOMYCIN RESISTANT ENTEROCOCCUS IN A NICU, AS A RESULT OF FAMILIAL TRANSMISSION IN THE COMMUNITY

Laura Oberholzer[1], Amal Al-Maani[2], Paul MacPherson[3], Peter Jessamine[3], Salena Mohammed[1], Yenge Diambomba[1], Mount Sinai Hospital Infection Control Team[1]
[1]Mount Sinai Hospital, Toronto, Ontario, Canada, [2]The Hospital for Sick Children, Toronto, Ontario, Canada, [3]The Ottawa Hospital, Ottawa, Ontario, Canada

Background: Vancomycin resistant enterococci (VRE) are rarely reported in neonatal intensive care units (NICU), and seldom community acquired. A full-term infant discharged on day two post-delivery was admitted four days later to our open, 37-bed NICU from home with hyperbilirubinemia. The infant's admission rectal swab grew vancomycin resistant *E. faecium*. The infant had a 3 day stay in the unit, and was discharged before the culture result was available.
Methods: Infection Control responded to the NICU exposure by initiating VRE point prevalence screening of all NICU infants. A "bucket clean" of high-touch surfaces in the NICU, and the space occupied by the colonized infant was completed. Follow up point prevalence screening in NICU was performed at day 3, 7 and 12 post-cleaning. Rectal swabs were obtained from the infant and family members. VRE isolates were analyzed by pulsed field gel electrophoresis (PFGE).
Results: We did not detect transmission of VRE in NICU. Investigation of the family's history revealed the infant's grandmother was known to be colonized with VRE and visited the family's home the month before the infant was born, but had no contact with infant or family after the birth. VRE was isolated from rectal swabs from baby, mother and grandmother. The isolates were found to be indistinguishable by PFGE.
Conclusions: The apparent combination of household and vertical transmission of VRE has not previously been described. As the incidence of VRE increases, NICUs will need to be alert to potential exposures from community admissions.

2:15-2:30 p.m.

CLOSTRIDIUM DIFFICILE: MORE AGGRESSIVE AND MORE FATAL

Mitra Arjang, Andrew Simor, Andy Smith, Mary Vearncombe, Ruxandra Pinto, Sandro Rizoli, *Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada*

Background: *Clostridium difficile* Infection (CDI) incidence and severity has increased in the last decade. The strain designated as NAP1/BI/027, has caused many outbreaks since 2000. Even though Community-acquired CDI has been reported since CDI was first described in the 1970s, more cases of community-acquired CDI are reported lately and the number of fulminant CDI has risen. We investigated the CDI case and fatality rates in our centre.
Methods: We performed a retrospective analysis of patients with positive clostridium toxin test at admission or during hospital stay, in a large university hospital, Jan.2005 to Aug.2009. Demographic information, risk factors, hospital-acquired versus community-acquired CDI was collected. Severity of the CDI was assessed by need for ICU admission or surgery, recurrence and mortality.
Results: 502 patients were reviewed with the average age of 70 (SD=16). 95(18.9%) patients were admitted to the hospital with CDI, 18 (3.6%) admitted to the ICU with fulminant CDI and 7 (1.6%) required coloctomy. 88 (17.5%) had recurrence and 20 (3.99%) expired with CDI as the main or contributing cause of death. Comparing data from first and last 12 months of the study shows the recurrence rate was 9.9% versus 25.2% (P=0.0037), the ICU admission 1.0% versus 7.2% (P=0.037), coloctomy 0% versus 5.4%(P=0.0301) and the mortality due to CDI was 2% versus 5.4% (P=0.2841).
Conclusions: The preliminary results show that CDI has become more aggressive and with more recurrences from 2005 to 2009, possibly due to the NAP1/BI/027 strain. New strategies for prevention and management of CDI are required.

2:30-2:45 p.m.

MRSA AND VRE: GET TO KNOW YOUR ENEMIES SOONER THAN LATER!

Natasha Vrhovnik, Bronwen Edgar, Sandra Callery,
Sunnybrook Health Sciences Centre, Toronto, Canada

Background: Early screening, identification and implementation of Additional Precautions for patients with methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococci (VRE) is important for preventing transmission in the health care setting. Sunnybrook Health Sciences Centre (SHSC) developed a process to improve screening for MRSA and VRE thereby minimizing exposures and bed closures.
Purpose: To determine the benefits of an early screening process.
Method: The total number of new MRSA cases from December 1, 2008 to March 21, 2009 was identified. A random sample of new cases was reviewed to determine the number of contacts and bed closures associated with the precautionary measures. Time variances were calculated between early screening and specimen collection in ED versus in the admitting unit. Information collected was presented to Stakeholders.
Results: During the 4 month time period, 80 new MRSA positive patients were identified. 46 (57.5%) were identified through admission swabs. 5 cases were randomly selected and MRSA exposures caused a cumulative total of 27 bed closure days. 3 of the 5 patients would have been identified at 5,38 and 42 hours earlier respectively, if swabs were collected in the ED. ED practices were modified to include screening for MRSA and VRE for admitted patients.
Conclusions: Early identification of MRSA and VRE positive patients can eliminate or decrease the amount of secondary exposures and bed closures through prompt implementation of Additional Precautions. Subsequent follow-up has demonstrated increased compliance with new screening practices and a significant decrease in the length of time to MRSA patient identification.

HAND HYGIENE

2:00-2:15 p.m.

DEVELOPMENT OF AN ALTERNATIVE METHOD TO PUBLICLY REPORT HAND HYGIENE COMPLIANCE RATES USING DATA FROM THE ACUTE CARE HOSPITALS IN THE NORTH SIMOCE MUSKOKA LHIN

Giulio DiDiodato, *Royal Victoria Hospital, Barrie, Canada*

Background: The Ontario MOHLTC's Patient Safety Initiative requires the public reporting of hand hygiene compliance rates for every acute care hospital. The current metric underestimates the clinical implications of the differences in compliance between hospitals. An alternative display of hand hygiene compliance is provided.
Methods: The new metric is the probability that at least 75% of all patients experience 100% hand hygiene compliance both before and after their visit. The probability distribution is divided into the following categories: Excellent (>80% probability), Better than Average (> provincial average), Average (=provincial average ± 5%), Below Average (< provincial average). The number of patient visits by a healthcare provider was assumed to be 20/day (for doctors) and 60/shift (for nurses). The hand hygiene compliance rates from the NSM LHIN hospitals from fiscal 2009/2010 were used in the calculations. The probability was calculated using the binomial probability distribution equation.
Results: The provincial probability ranged from 6.5% (nurses) to 20% (doctors). The hospital probabilities ranged from 0% to 86%. According to the alternative categorization for hand hygiene compliance, 1 hospital would be Excellent, 1 Better than Average, 1 Average, and 2 Below Average.
Conclusions: The current method of reporting hand hygiene compliance lacks sensitivity for identifying differences between hospitals and fails to describe the non-linear association between hand hygiene compliance rates and the probability of patients being exposed to best-practices by their healthcare providers. An alternative method to publicly report this data may improve the utility of the information to the public and healthcare providers.

2:15-2:30 p.m.

HAND HYGIENE REVIEWS USING AN IPAD TABLET

Kimberley Simmonds[1,2], Elizabeth Henderson[1,2], Jennifer Pougnet[1], Nancy Alfieri[1]
[1]Alberta Health Services, Alberta, Canada, [2]University of Calgary, Calgary, Alberta, Canada

A recent provincial hand hygiene policy indicates that: All staff must ensure that their Hand Hygiene practices (the application of alcohol-based Hand rub or the use of soap and water) are consistently and appropriately applied. Staff compliance with this policy is mandatory. Monitoring of compliance with hand hygiene policy is required. A province wide hand hygiene review tool is required. The purpose of the project was to determine the usability of a tablet (iPad) to collect data for hand hygiene reviews by infection control professionals (ICPs) in acute care facilities in Alberta.
Project: Four pilot locations in Alberta were selected to represent rural, regional and urban facilities. Two ICPs at each site were selected. The iScrub lite application for the iPad was selected to determine if it could accurately capture the required data for hand hygiene (HH) reviews. Participating ICPs were required to do a minimum number of observations, in a various locations, observing a numerous types of healthcare worker's hand hygiene compliance. They were required to attempt to modify the iScrub lite to suit their needs for auditing and upload/extract the collected data to their computer.
Results: Ten iPads were purchased and distributed to urban and rural facilities. Participants were able to use the application to meet the project requirements. Varying degrees of technical support was required for the ICPs.
Lessons Learned: Technology can be introduced to collect surveillance data and to perform reviews. It requires both ICP and IT support for a successful program.

2:30-2:45 p.m.

ALL HAND HYGIENE PRACTICES ARE BUILT ON T.R.U.S.T. IN OUR NEONATAL INTENSIVE CARE UNIT

Shannon Woolcock, Darlene Rojek, Lucia St. Aubin,
Windsor Regional Hospital, Windsor, Ontario, Canada

Issue: The Neonatal Intensive Care Unit (NICU) at Windsor Regional Hospital is a 20-bed modified Level III unit. High-risk infants are immune-compromised and require unique hand hygiene practices to prevent hospital acquired infections. Our

team recognized an increased number of infants requiring treatment for infections. We initiated a multi discipline committee to investigate current infection prevention practices and determined changes needed to enhance hand hygiene performance. We recognized that our population and environment face unique challenges. All staff members inclusive of other departments would need additional education on preventative practices in the NICU. We engaged our colleagues and with a collaborative approach build an infection prevention program that is NICU focused and recognized corporately.
Project: Each letter in "T.R.U.S.T" represents various aspects of hand hygiene practices. Example: the U represents "up to the elbow" wash. Neonates TRUST us to perform hand hygiene. Posters detailing the program were displayed in the unit and appropriate departments outlining what each letter represented in relation to strict hand hygiene practices.
Results: The T.R.U.S.T program has heightened awareness of hand hygiene practices within our NICU. The heightened awareness crosses many disciplines and even engages families and visitors. The program has been a positive behavioural shift that has been well received, cost effective and sustainable.
Lessons Learned: Involving all departments in developing a unit specific program has strengthened communication of expected hand hygiene practices upon entering and within our NICU. Educational presentations delivered to ancillary staff increased organizational awareness.

2:45-3:00 p.m.

GLOVE CONTAMINATION AS A MODE OF TRANSMISSION OF NOSOCOMIAL PATHOGENS. SANCHIA WARREN, LINDA WARD*, JENNIFER HAPPE, KAREN HOPE, JULIA BOWES AND THOMAS LOUIE.INFECTION PREVENTION & CONTROL PROGRAM, CALGARY ZONE OF ALBERTA HEALTH SERVICES & DEPARTMENT OF MEDICINE, UNIVERSITY OF CALGARY.

Linda Ward[1], Sanchia Warren[1,2], Jennifer Happe[2], Julia Bowes[2], Thomas Louie[1,2], Karen Hope[1]
[1]Alberta Health Services, Calgary, Alberta, Canada, [2] University of Calgary, Calgary, Alberta, Canada

Background: Infection control guidelines indicate that hand hygiene should be performed before and after donning gloves for patient contact. During the conduct of hand hygiene (HH) audits it was observed that care providers did not perform HH before or after glove use. There are few studies of glove contamination in the anti-transmission practices of health care delivery. Opened boxes of gloves, more than half used, of all sizes on the medical and surgical wards (PCU) of the Foothills Medical Center were cultured to determine the extent of human flora contamination.
Methods: The oval opening of the glove box was swabbed and placed into 2 ml Tryptic Soy Broth (TSB), following which 3 gloves were extracted using a sterile forcep and placed into sterile 1L wide mouth screw top jars. In the biosafety cabinet, 250 ml of TSB was added, vortexed. Jars were incubated for 24 -48 h and subbed onto BAP, PEA, m-Enterococcus, Oxoid Denim Blue, MacConkey without and with ceftriaxone 2 ug/ml. Controls were gloves from the same lot in unopened boxes from the warehouse.
Results: Control boxes and gloves (n=40) had a high background of Bacillus spp (57% and 75%, respectively) and environmental GNBs (30%), but no MSSA, MRSA, VRE and few enterococcus (5%). Of 305 ward boxes/glove sets, MRSA (3.0%/3.9%), MSSA (5.6%/3.9%), VRE (1.6%/4.9%), enterococcus (11.1%/20.1%), skin flora (71%/57%) were observed.
Conclusions: Gloves in boxes, as currently available, are prone to hand inoculation of nosocomial pathogens and constitutes a major break in infection control.

OUTBREAK MANAGEMENT

2:00-2:15 p.m.

OUTBREAK CHALLENGE: GROUP A STREPTOCOCCAL DISEASE IN A LONG-TERM CARE HOME

Victoria Keegan[1], Debbie Valickis[2], Danielle Steinman[2], Nancy Stevens[2]
[1]Canadian Field Epidemiology Program, Public Health Agency of Canada, Ottawa, Ontario, Canada, [2]Region of Peel Public Health, Mississauga, Ontario, Canada

Background: Group A Streptococcal (GAS) disease can be a serious health risk to Long Term Care Home (LTCH) residents, particularly the morbidity and mortality associated with invasive cases (iGAS). When Peel Public Health was notified of an excess of GAS cases in a LTCH including one invasive case, an immediate investigation ensued to determine the presence of an outbreak, analyze cases epidemiologically, and initiate infection prevention and control (IPAC) measures.
Methods: The investigation included a literature search of LTCH Group A Streptococcal baseline rates, a retrospective case review, screening residents and staff (throat, nose, wounds), *emm* typing to determine transmission patterns, and an IPAC audit of the LTCH.
Results: An outbreak was declared based on CCDR 2006 Guidelines. Of 79 residents in the LTCH, 15 (19%) tested positive for GAS, of which two were invasive cases. Of the six residents with *emm* typing results available, all were *emm* 89. Five staff (6%) were colonized (one matched the resident strain). An IPAC audit of the LTCH identified challenges related to multi-bed rooms, facility layout, multi-use equipment, pets, and an under-resourced hand hygiene program. A GAS LTCH outbreak (*emm* 89) in a neighbouring health unit was a hypothesized link.
Conclusions: Declaring a GAS outbreak is challenging as non-iGAS cases are not reportable and baseline rates are not available. Specimen typing was essential to identify propagation in this outbreak. Ongoing surveillance for GAS infections among LTCH residents and staff is warranted. The role of pets in outbreaks also requires further investigation.

2:15-2:30 p.m.

A BUNDLE APPROACH FOR THE MANAGEMENT OF VANCOMYCIN RESISTANT ENTEROCOCCUS (VRE).

France Hamel, Ramona Rodrigues, Charles Frenette, *The McGill Univeristy Health Center, Montreal, Quebec, Canada*

Issue: A medical unit with a capacity of 52 beds had the highest VRE rate (90/10,000 patient days) for the first 6 months of 2010. Major efforts to establish patient and staff cohorts including education, bi-weekly prevalence screening and daily environmental cleaning failed to address the problem of transmission. The burden of cases severely hindered bed management within the organisation.
Project: To contain transmission a bundle approach of core preventative measures was initiated in July 2010. It encompassed several audit of compliance and strategic meetings. Compliance audits included biweekly prevalence screening, hand hygiene, additional precautions, environmental cleaning and antibiotic reviews. Weekly meetings were held with managers and administrators and monthly follow-up with front line staff applying behavioural concepts. The period of analysis was defined as 6 months pre and post bundle implementation.
Results: Six months post bundle implementation, the incidence rate dropped to 50/10,000 patient day (a 56 % rate reduction). Compliance with bundle interventions showed significant improvements in the following areas: screening practices, environmental cleanliness and hand hygiene compliance. Efficient laboratory turn around time and administrative support strongly influenced the positive outcome. Frontline staff compliance with infection prevention and control measures were significantly enhanced when key team players supported the action plans. Hurdles continue to be lack of human resources, limitation of physical space and dedicated equipment.
Lessons Learned: The success of implementing a bundle approach to contain transmission of VRE requires the involvement of all stakeholders in the prevention activities; recognition of their contribution and development of a scientific culture with frontline staff.

2:30-2:45 p.m.

APPLYING LEAN METHODOLOGY TO REDUCE CLOSTRIDUM DIFFICLE INFECTION (CDI) RATES

Leanne Harding, Sharon Connell, *Ross Memorial Hospital, Lindsay, Ontario, Canada*

Issue: During December 2008, five months after Ontario Hospitals began publicly reporting CDI rates using standardized case definitions for surveillance and reporting; the first CDI outbreak was declared at our hospital.
Project: In response to the dramatic rise of infections, a multidisciplinary Working Group was established with active, voluntary participation from front line staff. Using Lean methodology to motivate and engage the members; one technique called "point kaizen event" was conducted, during which the members mapped out the process steps required after identifying a symptomatic patient. The members were able to developed process improvements for: early recognition/patient placement in private room accommodation, documentation, environmental cleaning using a sporacidal agent, and standardized treatment protocols. The 5S principles consisting of: 1. **S**ort: needed and unneeded items, 2. **S**tore: closest to point of use, 3. **S**hine: cleanliness of the workplace, 4. **S**tandardize; equipment and processes through visual methods, and 5. **S**ustain: conduct regular audits and provide immediate feedback were applied to standardize a bowel movement charting tool using consistent definitions, the Isolation Personal Protective Equipment (PPE) carts, and commode cleaning. Communication strategies were enhanced with revised, easy-to-read Additional Precaution signs, and colour coded magnets for patient room cleaning.
Results: By breaking down barriers, and empowering front line staff to take action; standards of work were developed, including visual cues to optimize communication. As of January 2011, the Lean process improvements have had a positive impact in reducing the CDI rate from 0.87 to 0.20 per 1000 patient days.

2:45-3:00 p.m.

THE ROLE OF THE CONTAMINATED ENVIRONMENT IN THE TRANSMISSION OF VANCOMYCIN-RESISTANT ENTEROCOCCUS IN AN OUTBREAK SETTING

Carla Corpus, Victoria Williams, Sandra Callery, Mary Vearncombe
Sunnybrook Health Sciences Centre, Toronto, ON, Canada

Background: Patients who are colonized/infected with Vancomycin-resistant *enterococci* (VRE) frequently contaminate their environment. Studies have shown that VRE can survive for weeks on surfaces and the environment can contribute to the spread of VRE.
Objective: To describe transmission of VRE on a 26-bed respiratory medicine unit.
Methods: Patients exposed to VRE during an outbreak were identified through contact tracing. Laboratory confirmation of VRE was obtained by rectal swabs, during prevalence and discharge/transfer screening. Rectal swabs were obtained on days 0, 5 and 10 after the last documented exposure. Positive cases were categorized as either direct contacts (current or previous roommates) or environmental contacts (exposed only to the room of a previous VRE case). Enhanced environmental cleaning of rooms occupied by a VRE positive patient was implemented and consisted of a 2-stage cleaning, followed by visual inspection by the environmental services supervisor and collection of

environmental specimens. The room remained closed to admissions until all environmental specimens tested negative.
Results: 64 patients were identified as exposed to VRE. 16 of the 64 contacts (25%) subsequently tested positive for VRE: 3 direct contacts, 3 environmental contacts, 9 with both direct and environmental contact, and 1 unknown. 3 patient rooms initially yielded environmental specimens positive for VRE and required additional cleaning prior to occupancy.
Conclusion: Prior occupancy of a room by a patient positive for VRE and environmental contamination is associated with transmission of VRE during an outbreak. Increased attention to environmental cleaning and disinfection is necessary to control transmission.

POTPOURRI #1

2:00-2:15 p.m.

LESSONS FROM AUDITING ADHERENCE TO ADDITIONAL PRECAUTIONS AMONG HEALTHCARE WORKERS

Nermin Gergis[1], Kristen Brown[2], Christine Moore[1], Liz McCreight[1], Allison McGger[1], Mount Sinai Hospital Infection Control Team[1]
[1]Mount Sinai Hospital, Toronto, Canada, [2]University of Calgary, Calgary, Canada
Background: Few studies have assessed adherence to additional precautions in healthcare. We report the results of two annual audits in a 472-bed acute care teaching hospital.
Methods: Auditing was conducted weekdays in May, 2009 and May-August, 2010 by direct observation.
Results: A total 492 health care providers (HCPs) were observed in 468 donning and 404 doffing occasions: 53 physicians (MD), 306 nurses (RN) and 133 other HCPs. Precautions required were contact (202 donning/194 doffing), MRSA (208/193), VRE/CD (57/59), droplet/contact (34/29), airborne (22/18). Donning was completely correct in 218/468 episodes (47%). Only 35% (23/65) HCPs donned N95 and 59% (275/468) performed hand hygiene (HH) compared to 157/217 (72%) surgical mask, 423/479(88%) gown, and 442/480(92%) gloves (P = 0.0001). RNs (149/287, 52%) outperformed MDs (23/53, 43%), and others (46/133, 35%) (P= 0.001). There were no differences in adherence rates by ward, but overall adherence was lower for airborne (3/22,14%), droplet/contact (9/34,26%) and VRE/CD (23/57,40%) than for Contact (105/202,52%), MRSA(94/208,45%) (P=0.001). The most common donning errors were not donning 2 pairs of gloves for VRE/CD (45%), not performing HH (41%) and not using facial protection when indicated (28%). Overall, 60% (238/397) HCPs doffed equipment correctly: 68% (170/248) RNs, 48% (24/50) MDs, 44% (44/99) others (P=0.01). The most common error was failure to perform HH before removing a surgical mask/N95.
Conclusions: The most common identified errors in using additional precautions were HH and use of facial protection. These results will be used to improve HCP education, and as part of unit-based infection control scorecards.

2:15-2:30 p.m.

REDUCTIONS IN RATES OF NOSOCOMIALLY ACQUIRED C.DIFFICILE AFTER INTRODUCTION OF AN ANTIMICROBIAL STEWARDSHIP PROGRAM IN A LARGE, URBAN COMMUNITY HOSPITAL

Jeff Powis[1,2], Sue Gill[1], Yves Crehore[1]
[1]Toronto East General Hospital, Toronto, Ontario, Canada, [2]Department of Medicine, University of Toronto, Toronto, Ontario, Canada
Issue: Antimicrobial stewardship programs (ASP) have the potential to decrease *C. difficile* rates through reductions in antimicrobial use.
Project: The Toronto East General (TEGH) Antimicrobial Stewardship Program (ASP) utilized a process of prospective audit and feedback. Specially trained pharmacists collected information on patients receiving antimicrobial agents and reviewed cases with an Infectious Diseases (ID) physician. Recommendations to optimize antimicrobial utilization were feedback to the care team allowing for ongoing and continuous individualized education. The program was implemented in the ICU, on the surgical wards and on the respiratory ward in April, July and October 2010 respectively.
Results: Introduction of the ASP lead to a reduction in antimicrobial use and costs by 42.6% to 46.5%. Without any other change in infection control procedures the rates of nosocomially acquired *C.difficile* decreased on all wards. In the ICU rates have decreased in the 9 months post intervention by 26.1% from a baseline rate of 1.49 cases/1000 patient days (pd). On the surgical wards rates have decreased to 0.14 cases/1000pd (88.5% decrease) in the 6 months after introduction. On the respiratory ward baseline rates were 2.02 cases/1000pd with no cases seen 3 months after ASP introduction. Rates of nosocomially acquired *C.difficile* on floors without stewardship have remained stable at approximately 1.00 to 1.20 cases/1000pd.
Lessons Learned: Optimizing antimicrobial use can lead to substantial reductions in nosocomially acquired *C.difficile*..

2:30-2:45 p.m.

2009 PANDEMIC H1N1 INFLUENZA PREPAREDNESS IN CANADIAN HEALTHCARE ORGANIZATIONS AND PRIMARY CARE OFFICES: GAP ANALYSIS SURVEY

Christine Weir[1], Lynn Johnston[2], Lee Donohue[3], Charles Frenette[4], Colette Ouellet[5], Kathryn N Suh[6], Kristalyn Laryea[1], Kathleen Dunn[1]
[1]Public Health Agency of Canada, Ottawa, Ontario, Canada, [2]QEII Health Sciences Centre, Halifax, Nova Scotia, Canada, [3]Family Physician, Ottawa, Ontario, Canada, [4]Montreal General Hospital, Montreal, Quebec, Canada, [5]Champlain Infection Control Network, Ottawa, Ontario, Canada, [6]The Ottawa Hospital, Ottawa, Ontario, Canada
Background/Objectives: During the 2009 pandemic H1N1 influenza, Canadian healthcare organizations (HCOs) and primary care offices (PCOs) had to use infection prevention and control (IPC) measures to prevent transmission. The Public Health Agency of Canada (PHAC) conducted a survey to assess IPC preparedness and management of pandemic H1N1.
Methods: The survey was administered in September 2009 to infection control professionals (ICPs), infectious diseases physicians/medical microbiologists (ID/MMs), and family physicians (FPs).
Results: Of the 189 ICPs, 26 ID/MMs and 563 FPs who responded, 37% reported their HCOs and 29% reported their PCOs had designated areas for patients with influenza-like illness (ILI). The majority of HCOs (98.5%) and PCOs (78%) had visitor signage at entrances. More HCOs (96.5%) than FPs (43%) offered formal education to staff on IPC measures. Variations existed between HCOs and PCOs in applying IPC measures for patients with ILI. The PHAC's pandemic H1N1 guidance documents were accessed by more ID/MMs (100%) and ICPs (87%) than FPs (32%). Staff education was available in 39.5% of HCOs on potential benefits/risks of antivirals and in 52% on potential benefits/risks of interventions, such as staying home with symptoms and work re-assignments. Major concerns in HCOs and PCOs were availability/access to personal protective equipment (PPE), sufficient staffing, education/training and management support. Of concern in PCOs was access to laboratory testing.
Conclusions: FPs had little knowledge of PHAC H1N1 guidance documents. Both HCOs and PCOs identified concerns about availability of resources to manage the pandemic. These results will inform future IPC planning for pandemic influenza.

2:45-3:00 p.m.

DESIGNING *WITH* PEOPLE NOT *FOR* PEOPLE: COLLABORATION EQUALS SUCCESS IN THE DEVELOPMENT OF AN EDUCATIONAL TOOLKIT BASED ON ENVIRONMENTAL CLEANING BEST PRACTICES

Grace Volkening[1,5], Brenda Smith[2,5], Nora Boyd[3,5], Keith Sopha[4,11], Liz van Horne[5], Glennda Kaufmann[6,12], Matthew Hall[7], Debbie Richarz[8], Ray Iredale[9], Geoffrey Holt[10]
[1]Central Region Infection Control Network, Toronto, Ontario, Canada, [2]Central West Infection Control Network, Brampton, Ontario, Canada, [3]Erie St-Clair Infection Control Network, Windsor, Ontario, Canada, [4]Homewood Health Centre, Guelph, Ontario, Canada, [5]Ontario Agency for Health protection and Promotion, Toronto, Ontario, Canada, [6]peopleCare, Tavistock, Ontario, Canada, [7]Macassa Lodge, Hamilton, Ontario, Canada, [8]Grand River Regional Hospital, Kitchener, Ontario, Canada, [9]Wildwood Care Centre, St. Mary's, Ontario, Canada, [10]St. Joseph's Health Centre, London, Ontario, Canada, [11]Canadian Association of Environmental Management, Guelph, Ontario, Canada, [12]Ontario Healthcare Housekeepers Association, Bath, Ontario, Canada
Issue: The need for a standardized approach to environmental cleaning in healthcare led to the development of a best practice document on *Environmental Cleaning* by Ontario's Provincial Infectious Diseases Advisory Committee (PIDAC). Ontario's Regional Infection Control Networks (RICNs) identified the need for an educational toolkit to help translate this best practices document into practice changes in our healthcare facilities.
Project: The RICNs collaborated with the Canadian Association of Environmental Management and the Ontario Healthcare Housekeepers Association, to understand the unique culture and learning needs of environmental services (ES) staff and with the assistance of the Ontario Agency for Health Protection and Promotion and ES representatives, developed a training toolkit based on cleaning best practices. The toolkit was created using several approaches including: a survey and gap analysis, face-to-face workshop to determine content, working group to develop modules, and pilot testing of modules in the field.
Results: Three thousand toolkits were compiled and widely distributed through the RICNs to all healthcare facilities and public health units. The toolkit is comprised of six educational modules on elements of cleaning best practices, a video on seven common cleaning procedures plus enhancements of learning with posters, post tests and a certificate of completion. Toolkit components have been posted to the RICN website at www.ricn.on.ca. Initial feedback is positive and further evaluation is in progress.
Lessons Learned: Using a process that allowed designing *with* people not *for* people and a multi-disciplinary team, resulted in an effective toolkit. This is not an off-the-shelf solution but rather focused on the learning needs of ES to standardize cleaning in Ontario's healthcare facilities.

ORAL PRESENTATIONS
WEDNESDAY, JUNE 1
2:00-3:00 p.m.

SURVEILLANCE

2:00-2:15 p.m.

CHALLENGES OF BUILDING A REGIONAL INFECTION CONTROL SYSTEM

Susan Schaub[2], Pam Burns[6], Sheila Chartrand[3], Lisa Triemstra[3], Tracey Spencer[4], Lisa Hope[5], Susan Cooper[1], Janet Allen[1]
[1]OAHPP-South Eastern Ontario Infection Control Network, Kingston, Ontario, Canada,

[2]Brockville General Hospital, Brockville, Ontario, Canada, [3]Quinte HealthCare Corporation, Belleville, Ontario, Canada, [4]Kingston General Hospital, Kingston, Ontario, Canada, [5]Providence Care, Kingston, Ontario, Canada, [6]Perth- Smiths Falls District Hospital, Smiths Falls, Ontario, Canada

Issue: Regional initiative to improve the ability to track patients with healthcare acquired infections (HAIs) within its' seven hospitals.

Project: Create a single database linking 4 hospital information systems (HIS). With commitment from senior leaders a request for proposal was issued. An extensive evaluation and contract negotiation process, executed by Shared Support Services of Southeastern Ontario, resulted in final software vendor selection. Expert users, identified by hospital Infection Control Managers, developed standard libraries, definitions and reporting formats. Hospital Information Technology staff , the vendor, and a third-party IT specialist developed solutions for many complex challenges of interfacing different HIS.

Results: An automated system collecting data from admitting, microbiology and operating room has been established in southeastern Ontario. This system will increase the ability to track patients within the region; to detect infection/organism clusters, enable standardized HAI reporting and to support consistent surveillance methods.

Lessons Learned: Senior leadership support, early end user involvement, a dedicated project manager and committed IT staff are all crucial factors for successful deployment of a regional surveillance system. Significant collaboration amongst a working group comprised of individuals with varied expertise is also vital to a positive outcome.

2:15-2:30 p.m.

EFFECTIVENESS OF UNIVERSAL ADMISSION SCREENING FOR VANCOMYCIN-RESISTANT ENTEROCOCCI AT THE OTTAWA HOSPITAL

Krista Wilkinson[1], Virginia Roth[2], Natalie Bruce[2], Manal Gethamy[2], Baldwin Toye[2], Kathryn Suh[2]
[1]Public Health Agency of Canada, Ottawa, ON, Canada,
[2]The Ottawa Hospital, Ottawa, ON, Canada

Background/Objectives: Targeted admission screening of patients at increased risk of colonization with vancomycin-resistant enterococci (VRE) may reduce nosocomial transmission. It is unclear whether additional cases of VRE could be identified using universal admission screening. The objective of this study was to explore whether universal admission screening (UAS) for VRE improved case finding over targeted admission screening for VRE at The Ottawa Hospital (TOH).

Methods: A chart review was performed for all patients with laboratory-confirmed VRE identified in the pre-UAS period (July 2006-December 2007) and in the UAS period (January 2008-June 2009). Information on VRE risk factors and indications for VRE screening were collected. The additional yield of UAS compared with targeted screening was determined.

Results: 123 patients with VRE were identified; 56 in the pre-UAS period, and 67 in the UAS period. 38 were nosocomially acquired, and one was a clinical specimen from an outpatient. Of the 84 patients with VRE identified on admission, targeted screening identified 41, including four without apparent VRE risk factors who may have been screened in error; UAS identified 43, including seven without VRE risk factors. VRE was identified in 0.59/1000 admissions in the pre-UAS period and 0.64/1000 admissions in the UAS period (p=0.84). Use of targeted screening alone would have identified 77/84 (92%) of cases on admission.

Conclusions: UAS did not improve VRE case finding at TOH. VRE colonization on admission is rare, and targeted admission screening of high-risk patients captures the majority of VRE cases.

2:30-2:45 p.m.

SURGICAL SITE INFECTION INCIDENCE DIFFERS IN ELECTIVE COLON AND RECTAL SURGERY

Fatema Jinnah, Sandra Callery, Mary Vearncombe,
Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

Background: Surgical site infections (SSIs) are a frequent complication after elective colorectal resection. The National Healthcare Safety Network (NHSN) categorizes all colorectal surgeries into the same group coded as COLO without differentiating between the two types of colorectal surgery, colon and rectal. Some studies suggest that the SSI rates in these two surgeries may differ with rectal surgery having a higher risk for SSIs.

Objective: To clarify the incidence of SSIs in both colon and rectal surgery.

Methods: Prospective SSI surveillance was conducted for all elective colon and rectal surgeries performed at Sunnybrook Health Sciences Centre from Jan 2007 to Dec 2010. Patients were followed post-operatively for up to 30 days. Post discharge surveillance was carried out at an outpatient clinic. The diagnosis of SSI was based on CDC definitions and confirmed by the surgeons. Additional data collected include those for the NHSN risk index and those for process indicators. The incidence of SSI was calculated as the number of infections/ per 100 surgeries.

Result: 589 colon and 428 rectal surgeries were performed by the program for a total of 1017 colorectal surgeries. The incidence of SSI in colon and rectal surgeries was 9.16% and 17.28%; P<0.001 respectively.

Conclusion: The SSI rate is significantly higher in rectal surgery as compared to colon surgery. SSI surveillance should be performed separately for these two surgeries and should have separate benchmarks. This will allow for more efficient identification of the risk factors associated with each of the surgeries.

2:45-3:00 p.m.

EMERGENCY DEPARTMENT SCREENING TOOL: SCREEN AND DETAIN RAPIDLY AND EFFECTIVELY

Natasha Vrhovnik, Bronwen Edgar, Barbara Catt, Sandra Callery,
Sunnybrook Health Sciences Centre, Ontario, Canada

Background: Syndromic surveillance for respiratory and gastrointestinal illnesses was implemented in 2003. The Emergency Department (ED) is most often the first point of entry for patients. It was identified that the existing syndromic surveillance tool should be more comprehensive; provide prompt screening and serve as a robust communication tool.

Method: A multidisciplinary team of staff came together and using Lean- Kaizen Methods, discussed ways to improve patient flow and communication. The IP&C ED screening tool was reviewed and redeveloped to meet current needs. Final changes to the tool were confirmed after a pilot run with staff.

Results: ED Screening tool was reconstructed and included several new components. First, the respiratory and gastrointestinal illnesses checklist was enhanced from its original version. Second, a new Antibiotic Resistant Organisms (ARO) screening tool was incorporated for admitted patients and the ED was to initiate collection of specimens for AROs. Third, a new section for specimens collected and sent to Microbiology was added. And finally, a section for progress notes charted by the IP&C coordinator was established. Subsequent audits demonstrated a completion rate of 83% for respiratory and gastrointestinal screening and 70% for admitted patients eligible for ARO screening.

Conclusions: Through collaboration, ED surveillance and IP&C communication was enhanced with the new charting procedure that consolidated information into one area. The successful integration of ARO screening in the ED proved to substantially decrease the amount of time admitted patients waited before swabs were collected and precautionary measures implemented.

QUALITY/PROCESS IMPROVEMENT

2:00-2:15 p.m.

FRONTLINE STAFF: TAPPING INTO OUR GREATEST RESOURCE THROUGH A UNIT-BASED INFECTION PREVENTION AND CONTROL TASK FORCE

Kimberley Allain[1], Angela Thomas[1] and the NICU/IPCS Task Force
[1]IWK Health Centre, Halifax, Nova Scotia, Canada,
[2]University Health Network, Toronto, Ontario, Canada

Background: At the IWK Health Centre, infections within the vulnerable population of the Neonatal Intensive Care Unit (NICU) have been the most challenging to prevent. Historically, Infection Prevention & Control Services (IPCS) have been utilized in NICU as a consult service; meaning as NICU identified infection prevention and control (IPC) issues, Infection Control Practitioners were called to the table for instruction and solutions. However, over time healthcare-associated infections (HAI) within the NICU began to increase.

Methods: The concept for a NICU/IPCS Task Force originated from dedicated frontline NICU staff eager to decrease HAIs. Through a collaborative model, the Task Force with 16 committed members including frontline nursing staff, management, clinical leaders, respiratory therapy, neonatology, clinical educator, unit aides and quality/patient safety met monthly to identify IPC strategies and priorities.

Results: The Task Force created a forum that empowered frontline staff to plan and prioritize IPC quality improvement and change. Through numerous initiatives, the Task Force was recognized as a respected team ultimately successful in reducing HAIs. NICU have taken charge of infection control in their unit.

Lessons Learned: Who better understands the IPC issues within their unique work environment than frontline staff? Allowing the emergence of unit-generated improvements led to a greater satisfaction with changes for staff. The Task Force was also successful in strengthening the collaborative relationship between IPCS and NICU. This model sparked the attention of senior leadership and led to the formation of two additional unit-based infection prevention and control "task forces" within our organization.

2:15-2:30 p.m.

THE IMPACT OF A STANDARDIZED PROTOCOL ON THE QUALITY OF WOUND DRESSING PROCEDURES IN HOSPITALIZED PATIENTS

Terry Wuerz[1], Marilyn Hanley[2], Robert Shaw[2], Bernadette DeMone[2], Rebecca Close[2], Gordon Dow[2]
[1]University of Manitoba, Manitoba, Canada, [2]The Moncton Hospital, Horizon Health Network-Zone 1, New Brunswick, Canada

Study Purpose: A standardized wound dressing protocol was developed in order to reduce procedural inconsistency and improve infection control practice during dressing changes.

Sample/setting: Forty dressing procedures (20 surgical wounds plus 20 chronic wounds) were audited on adult acute care wards before and after institution of a standardized wound dressing protocol in a 400 bed tertiary care teaching hospital.

Methods: Sequential pre- and post- intervention audit.

Results: The implementation of a standardized wound dressing protocol was associated with a significant improvement in subsequent procedural consistency. Utilization of a sterile forceps technique increased from 22.5% (9/40) to 45% (18/40) p=0.033. This was associated with a significant improvement in hand hygiene which increased from 60% (21/35) to 91% (31/34) p=0.0027. Observed post-interventional trends

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included more consistent use of sterile saline/water for wound cleansing, less jewellery on the hands of the caregiver and less contamination events. The intervention was not associated with a change in the duration or cost of wound dressing performance. Implications for practice: The adoption of a standardized wound dressing procedure was associated with improvement in both technical consistency and infection control practice without increasing cost or procedure duration.

2:30-2:45 p.m.

ELECTRONIC PATIENT TRACKING TOOL- EFFECTIVE AND EFFICIENT

Judy McCarten, Lyn Bowen, Alice Brink, Chris Brown, Elise Haley, Darlene Heslop, B.J. Macdonald, Teri Murduff, Nicki Saunders, Helen Gibson,
Lakeridge Health, Oshawa, Ontario, Canada

Issue: The Infection Prevention and Control (IPAC) surveillance line list is an essential tool shared by multiple ICPs (Infection Control Professionals). There were barriers to simultaneous access, editing, timely and safe dissemination of the list and associated information. ICPs felt chained to their office and computer.
Project: To develop an electronic patient surveillance tracking tool that could: be accessed at any time by multiple users on our team; reduce duplication and eliminate transcription errors; provide real time updates; share information with health care partners; be accessible from all hospital computers; have potential to create reports.
Results: IPAC and "in-house" Information Technology team developed a tracking tool that: utilizes electronic patient demographics; reduces time spent in data entry; auto prints specific information to essential healthcare partners; can be used for inpatient and outpatient tracking; is accessible from any computer within the hospital; serves as a communication tool to front line staff.
Lessons Learned: The IPAC tracking tool: allowed ICPs to be more visible on units; reduced data entry and transcription errors using electronic patient information; forced us to use standard terms and approved abbreviations; provided real-time information even if patient was in a temporary location; requires commitment by the Information Technology department for development of the tracker and reports; should utilize drop down menu selections to improve reporting capabilities.

2:45-3:00 p.m.

DESIGNING AN INFECTION CONTROL INTERVENTION USING PHOTOGRAPHIC RESEARCH METHODS: A RESTORATIVE APPROACH

Tricia Marck[1,2], Samantha Woolsey[2], Georgia Davis[2], A. Mark Joffe[2,1], Marisa Howell[1], Sherri Lupul[2], Susie Marano[2]
[1]University of Alberta Faculty of Nursing, Edmonton, Alberta, Canada, [2]Royal Alexandra Hospital, Alberta Health Services, Edmonton, Alberta, Canada

Background/Objectives: Our key research objective was to actively engage hospital workers in exploring facilitators and barriers to infection control on an acute care medical unit.
Methods: We adapted methods from the field of ecological restoration, which is the interdisciplinary study and repair of ecosystems that have been degraded, damaged, or destroyed. Building on the use of restorative visual research methods in previous medication safety research, we conducted practitioner-led unit photo walkabouts, photo narration, and photo elicitation focus groups to examine infection control issues with unit staff and leaders. Visual and textual data were first independently, then jointly analyzed in an iterative manner for key themes by the PI, Co-PI, and a student co-investigator and subsequently reviewed and finalized by the entire research team.
Results: Key findings included problematic work processes with equipment cleaning, linen services, and storage of supplies; lack of appropriate isolation carts; over-crowded hallways and confusing signage; insufficient standardization of isolation set ups; lack of clarity on cleaning protocols and accountabilities; and a variety of staff workarounds to deal with system constraints.
Conclusions: Every photograph contains many stories. By combining unit walkabouts with practitioner participation and the power of visual narratives, we learned a lot about infection control challenges at the point of care. We are using our findings to work with decision-makers to raise infection control awareness, advocate for specific equipment modifications, redesign several problem processes and practices, incorporate regular photo walkabouts with feedback into quarterly workplace safety inspections, and design future intervention research.

EDUCATION

2:00-2:15 p.m.

POSITIVELY INFLUENCING INFECTION PREVENTION AND CONTROL PRACTICES OF PERSONAL SERVICE SETTING WORKERS

Tara Cretney, Barb Cheung, Selina Nazim,
Regional Municipality of York, Newmarket, ON, Canada

Personal service setting workers (PSSW) participate in activities in the workplace that put themselves and their clients at risk of infectious diseases. It was hypothesized that PSSW's knowledge and skills related to infection prevention and control (IPAC) practices could be improved. An assessment of PSSW knowledge of IPAC practices was needed to determine if IPAC education would be beneficial for this group. Data was gathered through various activities. Survey results indicated a lack of knowledge among PSSW related to cleaning and disinfection, glove use and hand washing and risk of infection related to delivering or receiving services. An environmental scan indicated that most health units in Ontario do not offer formal, standardized education on IPAC to PSSW. A literature review highlighted the need for standardized IPAC guidelines for PSS and education strategies to improve IPAC knowledge of PSSW. The results from key informant interviews supported the proposal to offer a workshop to PSSW on IPAC practices. Pilot workshops were offered during the spring of 2010. Participants were given pre-test and post-test questions and participated in focus groups to provide an overall evaluation of the workshop. Evaluation results showed an increase in participant knowledge related to IPAC practices and an overall satisfaction with the workshop. Focus group discussions determined that future workshops could be improved by offering workshops targeted to specific services. At the present time, workshops are being planned for 2011 and it is anticipated that this will be a sustainable and successful initiative for many years to come.

2:15-2:30 p.m.

INFECTION CONTROL FOR FAMILIES AND VISITORS - DEVELOPMENT AND EVALUATION OF A KNOWLEDGE TRANSFER TOOL

Marina Salvadori[1], Abdul Chagla[1], Carla Cormack[2], Laura Farrell[1], Norma Reese[1], Christine Moussa[1], Tim Cronsberry[1]
[1]South Western Ontario Infection Control Network, Ontario, Canada, [2]London Health Sciences Center, London, Ontario, Canada

Issue: Visitors are not primarily responsible for transmitting infections in healthcare settings, though they are engaged in patient care and have close contact. Stakeholders identified a need for resources to educate visitors about infection control. Challenges associated with educating visitors include a significant time commitment from staff and inconsistent messaging.
Project: Staff at a tertiary care hospital, in collaboration with the South Western Ontario Infection Control Network developed a video to address this challenge. The resulting eight minute video outlines proper hand cleaning technique, donning/doffing of personal protective equipment, and the role of visitors in preventing infections. The video was piloted and then distributed to acute care hospitals and long term care homes throughout South Western Ontario. An evaluation to assess transfer of knowledge and attitudes of those viewers was done
Results: 61 people completed pre- and post- test surveys. Baseline knowledge of concepts ranged from 64% - 100%, and improved to 85-100%. Notably post-test 85% agreed that alcohol based hand rubs were as good as soap and water for hand cleaning compared to 64% pre-test. The number of respondents afraid of bringing or acquiring a germ from their loved one stayed about the same. 98% of viewers found the video helpful, and 17% felt more afraid of infections.
Lessons: Nurses with access to this educational tool appreciated that visitors were educated in a consistent and comprehensive manner. Visitor knowledge improved, at least in the short run, and all but one visitor found the video helpful.

2:30-2:45 p.m.

INSPIRATION, INNOVATIVE, & INFLUENCING: A NATIONAL ICP ORIENTATION PROGRAM

Marion Yetman[1], Donna Moralejo[2], Sharon O'Rielly[3], Alisa Cuff[4], Betty Anne Elford[5], Cindy Williams[6], Joanne Archer[7], Stacey Burns[8]
[1]Department of Health & Community Services, Newfoundland Labrador, Canada, [2]Memorial University of Newfoundland, Newfoundland Labrador, Canada, [3]Eastern Health, Newfoundland Labrador, Canada, [4]Central Health, Newfoundland Labrador, Canada, [5]Western Health, Newfoundland Labrador, Canada, [6]Labrador Grenfell Health, Newfoundland Labrador, Canada, [7]PICNet, British Columbia, Canada, [8]Department of Health and Wellness, Prince Edward Island, Canada

Issue: Orientating Infection Control Practitioners (ICPs) to their workplace and job is often one of the most neglected functions in many organizations. An infection control manual, checklists and piles of paper are not sufficient to prevent the novice ICPs from being overwhelmed, confused, non productive and likely to leave the organization within a short time. This project focused on developing a practice based orientation program for ICPs.
Project: The inspiration for the project came from the Provincial Infection Control Newfoundland Labrador (PIC-NL) group who identified a need to have a structured orientation program. A national assessment of current orientation programs was done and during the process a representative from PICNet BC and a representative from Department of Health and Wellness PEI asked to join our committee, giving it a national flavour.
Results: Multiple national/provincial programs were identified but no single comprehensive program was available for adoption. The committee identified twenty topics to be developed into self-learning modules which would be facilitated by an ICP mentor during the orientation period. Each module has five sections; i) Overview: description of why the content is important ii) Key Components: information that an ICP must know iii) Methods: how the ICP would use the information in everyday practice with practice scenarios iv) Documentation/Reporting: requirements and v) Other Identified Issues. A pilot project is planned for February 2011.
Lessons Learned: An innovative national orientation program focused on practice can influence engagement of novice practitioners and prevent premature burnout.

2:45-3:00 p.m.

AN INFECTION CONTROL INTER-PROFESSIONAL SIMULATION LAB

Jim Gauthier[1,3], Janet Allen[2], Dick Zoutman[1,2]
[1]Providence Care, Kingston Ontario, Canada, [2]South Eastern Ontario Infection Control Network, Kingston Ontario, Canada, [3]Queen's University, Kingston Ontario, Canada

Issue: Infection control education is usually done in a classroom setting, but retention is not tested in a simulated practice setting.

Project: A grant from the Ontario Inter-professional Health Education Innovation Funding - Ministry of Training, Colleges and Universities and Ministry of Health and Long-Term Care was received by the Faculty of Health Sciences, Queen's University to fund a research project involving students from nursing, medicine and physiotherapy. One module was designed to incorporate Infection Control issues during scenarios. Infection Control Practitioners were consulted to identify infection control events and appropriate equipment that could be assimilated into the scenarios.

Results: 3 scenarios were designed which introduced either Methicillin resistant *Staphylococcus aureus* isolate from endotracheal secretions in a Surgical Intensive Care Unit, a positive Acid Fast Bacilli smear from an intubated ICU patient, or a patient with a presumptive diagnosis of meningococcal meningitis. Students, who have had Infection Control education as part of their training, acted as practicing medical professionals or as observers. Clinical teaching staff and an Infection Control Practitioner also acted as observers.

Lessons Learned: Breaches in Infection Control practices were numerous when students were faced with simulated patients. The ICP observer noted poor glove use, extensive environmental contact with contaminated gloves and a lack of understanding of appropriate PPE required for the different scenarios. Students indicated the sessions were valuable, and recommended that this exercise be a mandatory component of Health Science education in the future.

POTPOURRI #2

2:00-2:15 p.m.

INTERACTIVE INFECTION CONTROL EDUCATION:
LEARNING BY GETTING YOUR HANDS DIRTY

Dick Zoutman[1,2], Jim Gauthier[1,3], Sheila Pinchin[1]
[1]Queen's University, Kingston Ontario, Canada, [2]Kingston General Hospital, Kingston Ontario, Canada, [3]Providence Care, Kingston Ontario, Canada

Issue: The Queen's University School of Medicine is using new methods of teaching to limit the amount of time spent lecturing to no more than 50%. The challenge is to ensure that students successfully learn the same content of routine infection control practices in a manner that is active, relevant, and allows for the application of the material presented.

Project: A former 3-hour lecture on infection control history, blood borne pathogens, operating room asepsis, and basic sterilization and disinfection was modified to a hands-on, interactive session. Several tasks were developed to enable students to learn experientially about key concepts and selected readings were given to students during an independent study time. One hundred first year medical students worked in learning groups of 7-8 to simulate different actions of the application of routine practices for infection control. An interprofessional team of a Medical Microbiologist, an Infection Control Practitioner, an Operating Room Manager and an Educational Developer facilitated through demonstration, coached as students practiced, and debriefed with the class.

Results: All students were actively engaged and concerned with the learning and "getting it right." They consulted each other, the facilitators, and their reference materials to reinforce correct practice. Positive comments from students support the innovation and future directions.

Lessons Learned: An interprofessional team allows for a variety of perspectives. The active learning methods reinforce foundational concepts and provides more involvement of students with better learning outcomes.

2:15-2:30 p.m.

CAN PROFESSIONAL AND PUBLIC AWARENESS PROMOTE
THE PRUDENT USE OF ANTIBIOTICS? ANTIBIOTIC AWARENESS
DAY CANADA 2010 AND WORLD HEALTH DAY 2011

Kelly Bunzeluk[1], Lynora Saxinger[2], Kristalyn Laryea[3], Gwen Lovagi[4], Gerry Hansen[5], Renée Barclay[1], Tracey Donaldson[3], Margaret Fast[1], Ashley Fagan[3], Elizabeth Hydesmith[1]
[1]National Collaborating Centre for Infectious Diseases, Winnipeg, Manitoba, Canada, [2]AMMI Stewardship And Resistance Committee/University of Alberta, Edmonton, Alberta, Canada, [3]Public Health Agency of Canada, Ottawa, Ontario, Canada, [4]Association of Medical Microbiology and Infectious Disease (AMMI) Canada, Ottawa, Ontario, Canada, [5]Community and Hospital Infection Control Association, Winnipeg, Manitoba, Canada

Issue: Antimicrobial resistance (AMR) is a complex issue that involves not only human health, but also those who work as animal health experts, environmental scientists, and policy makers. Despite ongoing efforts to prevent the emergence of antimicrobial resistant bacteria, resistance appears to be spreading.

Project: In November 2010, six Canadian health organizations partnered to recognize Antibiotic Awareness Day in Canada, coinciding with similar events in Europe and the US. The purpose of the one-day campaign was to help combat the emergence and spread of antibiotic-resistant bacteria by promoting prudent antibiotics use, increasing awareness, and providing tools for health practitioners and patients. Building on the lessons learned from Antibiotic Awareness Day, the partners formalized their communications and education role, expanded membership, and began planning professional and public awareness activities for World Health Day (April 2011).

Results: A number of tools were developed for Antibiotic Awareness Day including: "prescription pad" for symptomatic treatment of viral illnesses, sample dialogue for doctors, FAQs, information for patients, a webinar series and colloquium, and a bilingual website. Numerous communication methods were also used. As intended, this "pilot" campaign was recognized mostly by health professionals, with the webinars deemed particularly valuable.

Similar activities are being planned for World Health Day in Canada, and include website material, a media conference/release, a poster, and factsheets outlining AMR issues as they impact various sectors.

Lessons Learned: Awareness and education programs must be integrated, collaborative, and ongoing. The impact of these educational and awareness days will be reviewed and built upon in upcoming years.

2:30-2:45 p.m.

MOVING FROM A RULES-BASED TO RISK-BASED MODEL FOR
INFECTION PREVENTION AND CONTROL: OUTBREAK AS OPPORTUNITY

Martin Wale, Lisa Young, Bev Dobbyn, *Vancouver Island HA, BC, Canada*

Working at a small test site, Vancouver Island Health Authority developed and validated a bundle of new policy approaches to the management of MRSA, VRE and C difficile. The approach used risk assessment to guide proportionate response and ensured that effort to prevent transmission was focused on those cases posing the greatest risk. Meanwhile, a protracted outbreak of C difficile at a tertiary hospital persisted despite apparently adequate infection control management and housekeeping measures being implemented. In-depth investigation revealed some unexpected features of the outbreak and how control measures were being applied. Seizing the opportunity, the whole bundle of new policy approaches was applied within three days, both in the outbreak environment and across the whole health authority. The effect in the outbreak hospital was truly remarkable, particularly in terms of staff morale and confidence, and news of the changes spread virally through the facility, outpacing our attempts to get information out. The outbreak came to a rapid conclusion, without recurrence, and the changes have been sustained since then. The new policy bundle resulted in an estimated $1.4million cost avoidance in the small test site alone. Focusing on a risk-based approach has allowed us to achieve much more by doing much less, and allowed infection control to become much more strategic. The presentation will include the co-production methodology used to develop the bundle, the analysis of the outbreak, and the impact of the changes we have made.

2:45-3:00 p.m.

IMPLEMENTATION OF *SAFER HEALTHCARE NOW!* MRSA REDUCTION
BUNDLE IN TWO ACUTE CARE GENERAL SURGERY CLINICAL UNITS

Alice Newman, Mary Lou Card, Michael John, Barb Nancekivell,
London Health Sciences Centre, London, Ontario, Canada

Issue: A MRSA reduction strategy was identified to reduce MRSA transmission rates in the London hospitals. The hypothesis was that MRSA transmission rates would decrease if all initiatives were implemented and successfully sustained in unison.

Project: A program of MRSA reduction based on the five evidence based Interventions of the Safer Healthcare Now! Campaign was developed. Two general surgery units in two separate acute care facilities were chosen to pilot the program. Results of this pilot would guide the implementation of a standardized system across the entire health care facility. Work teams were formed to plan and implement each of the five targeted interventions.

A unit based hand hygiene program
Defined cleaning and storage of patient care equipment
Mupirocin/ CHG bathing protocol for positive patients
Universal screening of all admissions at point of entry
A review of Hospital Acquired MRSA bacteremias

Results: The bundle approach provided a framework that allowed for work teams to focus on each component of the project. Each of the five interventions required a review of the current processes and subsequent development of new procedures for the unit staff to follow. Once each work group had decided on the target strategies, the entire team met to review the project and develop the plans for implementation.

Lessons Learned: Targeting a specific pilot area within a large facility allowed for more intensive and dedicated implementation processes. Strengths and weaknesses in the plan were easily recognized and tactics to improve the project before a facility-wide release could be developed.

POSTER PRESENTATIONS
TUESDAY, MAY 31, 12:30-1:30 p.m.
SHERATON CENTRE TORONTO
(GRAND BALLROOM FOYER)
VIEWING: Monday 8:30 a.m.-Wednesday 3:30 p.m.

Poster Board #1

VIEWS AND EXPERIENCES OF INFECTION CONTROL NURSES IN KARACHI, PAKISTAN (THIRD-WORLD COUNTRY)

Shaheen Asif Samnani; Fatima Noman; Shireen Lalani,
Tabba Heart Institute, Sindh, Pakistan

Aim: This is a report of study to explore the Views and experiences of infection control nurse in Karachi, Pakistan.

Background: In last decades the concept of infection control nurse in hospital setting is not popular, but due to raise infections rate the situation is change and hospital higher a infection control nurse in hospitals, but on the other hand the purpose of infection control nurses in Pakistan is only to take sessions, and doing some sort of surveillance according to their Max (RN or Microbiologist) qualification. There is no such diploma or degree based qualification in Pakistan especially for INFECTION PREVENTION.

Method: Questionnaire was used to explore the experiences of 7 infection control nurses, from different hospitals, some were interviewed in focus group and they all were analyzed.

Findings: Infection control nurses who are practicing their knowledge and skills in different hospitals explore their views:
Facing problems while doing surveillance of different nosocomial infection. **6/7** RN with no previous background from Infection Control, hired as ICN .**7/7** Facing problem with dealing with non-medical persons. **5/7** Want their proper identity or have a specialized degree/certificate course (identified by Govt. of Pakistan) **7/7.**

Conclusion: Infection Control is a rapidly developing specialized field within nursing. In the third world they face many problems, due to the absence of specialized diploma from Pakistan Nursing Council, hinders in generating proper measures and giving their views to other HCW. If properly and uniformly trained, they could be a backbone in providing infection control in healthcare setting.

Poster Board #3

INFLUENZA-LIKE ILLNESS (ILI) SURVEILLANCE IN EMERGENCY DEPARTMENTS: THE PROVINCIAL/ICP PARTNERSHIP IN NOVA SCOTIA

Suzanne Rhodenizer Rose[1], Jennifer Cutler[2,3], Patsy Rawding[1], Bev Billard[2], Emily Schleihauf[4,2], Maureen Baikie[2], Nova Scotia Acute Care ICPs[5]
[1]Nova Scotia Department of Health, IPCNS, Halifax, Nova Scotia, Canada, [2]Nova Scotia Department of Health Promotion & Protection, Halifax, Nova Scotia, Canada, [3]Canadian Field Epidemiology Program, Ottawa, Ontario, Canada, [4]Canadian Public Health Service, Ottawa, Ontario, Canada, [5]District Health Authorities/ IWK Health Centre, Nova Scotia, Canada

Issue: In response to the first cases of influenza A H1N1 in April 2009, Nova Scotia Health Promotion and Protection (NS HPP) sought to enhance existing influenza surveillance systems. Emergency Departments (EDs) were targeted for surveillance, as a source of timely and representative data. The surveillance system was implemented through Provincial Infection Control Consultants and acute care Infection Control Practitioners (ICPs).

Project: ICPs in 41 EDs and outpatient centres across the province report ILI data weekly to NS HPP. The ILI case definition and reporting tools are provided by NS HPP. Data are submitted either electronically (via email) or via fax by ICP staff.

Results: ED ILI surveillance was a reliable indicator of community influenza activity during the 2009-2010 influenza season. Weekly reporting rates averaged 79.5% (range 39% to 98%). ILI data are summarized and reported in Respiratory Watch, a comprehensive report published weekly, which is distributed to a large group of stakeholders and posted to the NS HPP website.

Lessons Learned: ICPs across Nova Scotia were responsive and supportive of a key surveillance initiative. ED data are an important contribution to influenza surveillance in Nova Scotia. Collaboration between acute care ICP staff, provincial ICP consultants, and NS HPP epidemiologists led to the successful implementation of ILI surveillance in EDs and outpatient centres. Continued partnership between these groups will allow ongoing ILI surveillance, and will facilitate new linkages for additional enhanced surveillance initiatives.

Poster Board #7

DELIVERING DIRECT OBSERVED THERAPY FOR TUBERCULOSIS BY LONG DISTANCE

Cathie Walker[1], Sarah Dekay[2]
[1]Middlesex-London Health Unit, London, Ontario, Canada,
[2]University of Western Ontario, London, Ontario, Canada

Directly Observed Therapy (DOT) for TB treatment traditionally involves a trained observer watching a client take medications at a predetermined frequency for a predetermined time period. The TB Prevention and Control protocol requires a minimum of 8 weeks of DOT for cases of respiratory TB as an effective way to monitor drug regime compliance. Because DOT is labour-intensive, some public health services are considering alternatives to in-home visits including the use of video and internet technology. Given that many of these options require lending clients expensive equipment, the Middlesex-London Health Unit decided to pursue the option of using Skype to monitor therapy compliance. Skype-DOT was trialed with one client after informed consent was obtained and appropriate safeguards were put in place regarding privacy and confidentiality. To date, both the client and the nurse deem the "experiment" to be a success. Draft guidelines have been developed to support future efforts.

Poster Board #9

SEXUALLY TRANSMITTED INFECTIONS: NOVEL PREVENTION AND CONTROL STRATEGIES GET TESTED. WHY NOT?

Suzanne Rowland, Zhaida Uddin, Christiane Bouchard,
Ottawa Public Health, Ottawa, ON, Canada

Issue: Sexually transmitted infections (STIs) continue to be a significant and increasing public health concern in Canada. Reported rates of chlamydia, gonorrhea and syphilis have been rising since 1997, and this upward trend is continuing unabated. In 2008, the majority of reported chlamydia infections (82.6%) were among the young population under 30 years of age. People under 30 years of age accounted for the majority (71.5%) of reported gonorrhea cases in 2008. (Report on STIs in Canada: 2008, PHAC).

Project: Ottawa Public Health (OPH) is the first Health Unit in Canada to develop a website that offers an online access point for lab requisitions to test for chlamydia and gonorrhea. The results of this campaign may be of particular interest to health service providers in Canada who are interested in adopting new technologies to offer an alternative option to youth to get tested for STIs.
"Get Tested. Why Not?" The campaign goal is to increase public awareness and promote regular testing for STIs as part of a routine health check-up for sexually active people.

Results: The audience will be provided with information on the multi-stakeholder strategy OPH developed to implement this campaign, and a description of why we chose to focus on SMS Texting, on-line screening, a social media presence and a new website. Detail of promotional communications campaign will be shared as well as preliminary findings of the campaign and lessons learned so far.

Poster Board #11

CREATING A USER FRIENDLY MANUAL FOR SURVEILLANCE SOFTWARE

Susan Cooper, Janet Allen,
OAHPP- South Eastern Ontario Infection Control Network, Kingston, Ontario, Canada

Issue: Introduction of new software, for a regional surveillance project resulted in the need to provide end users with simple, basic, step by step software instructions, conveying only information they needed to know, presented in a logical, practical, understandable manner.

Project: To develop a basic, user friendly instruction manual. First steps included the author becoming experienced using the software. Use of screen shots of each feature provided clear visual directions. Indications on how to navigate through the screen or move to the next step were added. Each facet of the software was highlighted independently, pages numbered and added to an index making it easily accessible. Prior to distribution, a group of users tested the instructions, using them to effectively work their way through the applications.

Results: A simple, easy to use manual, with clear visual instructions, was created and distributed to all users of the new software system. This allows them to readily navigate the software using straightforward, user friendly, step by step instructions.

Lesson learned: An uncomplicated, practical and logical instruction manual is essential when introducing a new software application. A good understanding of the functionality of the software and a commonsense, step by step approach to its use are necessary for manual creation. Translation of this to a comprehensive yet simple instruction manual will reduce frustration and anxiety as users' implementation of the new software begins.

Poster Board #13

DECREASING CENTRAL LINE INFECTION RATES: THE COMBINATION OF BEST PRACTICE AND THE INTRODUCTION OF AN ANTIMICROBIAL IV CONNECTOR

Karen Charron, *Ottawa Heart Institute, Ottawa, Ontario, Canada*

Safer Health Care Now (SHN) rolled out 10 initiatives targeted at addressing a number of preventable deaths and adverse events that occur due to Hospital Acquired Infections (HAIs). Central Line Infections (CLIs) are one of the HAIs focused on by SHN. They account for 90 per cent of catheter related infections, and contribute to a 20 per cent mortality rate for central line associated-blood stream infections (Canadian Patient Safety Institute, 2010).
In 2006, an Ontario cardiac facility (in partnership with SHN) committed to addressing HAIs. The intention was not only to monitor and report infection rates, but to eliminate such infections from occurring. This was done through the implementation of a SHN CLI intervention.

Implementation results showed a reduction in CLI rates to below the provicial average. With a goal of eliminating CLIs, staff felt that there was an opportunity to further improve.

An audit of best practice and equipment utilized was completed. This was done to determine what other resources would be available to the healthcare worker to further improve their ability to deliver patient care and decrease CLI risk. It was decided that an antimicrobial IV connector (V-Link) would be introduced. Upon implementation of the IV connector, CLI rates were further decreased.

This presentation will show how the combination of best practice and the introduction of an antimicrobial IV connector (V-Link) decreased CLI rates.

Poster Board #15

CRACK-COCAINE USE AND SAFER CRACK USE INITIATIVES IN DOWNTOWN KELOWNA, BRITISH COLUMBIA

Frances Beswick[1], Alison McEachern[1], Lisa Soleski[1], Wilda Watts[1], Adam Wylie[2], Shirley Chau[1]

[1]University of British Columbia Okanagan, Kelowna, BC, Canada, [2]Interior Health Authority, Kelowna, BC, Canada

Background: Disease transmission through crack-pipe sharing has been identified as an infection control concern, thought to occur through open sores in and around the mouths of those who smoke crack. The study was designed to assess the knowledge, practices, and needs of individuals who use or have previously used crack, as well as participants' perceptions of a recently introduced safer crack use (SCU) mouthpiece distribution program, which had been poorly utilized since its inception**.**

Method: Fifty-five individuals, self-identifying as either currently or previously having used crack, were surveyed at an outreach clinic in a mid-sized city in the southern interior of British Columbia, Canada. Data collection was performed using a 46-item questionnaire, adapted with permission from The SCORE Project Team, UBC Vancouver School of Nursing/NEXUS (Johnson et al., 2008).

Results: Results indicate that a majority of participants were supportive of the mouthpiece program, although only two participants had used the service. Identified barriers were: being unaware of the program and being identified as a crack user through the process of obtaining a mouthpiece. Additional comments included not liking the mouthpieces, preferring other mouthpieces, not sharing pipes, or being in the process of stopping crack use.

Conclusions: The need for additional program advertising is apparent through participant reports. Additional information on SCU may be successfully received during client interactions with clinic staff should the client self-disclose crack use. Finally, issues of accessibility may be of further interest, as participants mentioned the process of accessing mouthpieces was a barrier to program utilization.

Poster Board #17

ROLL OUT OF MATERNAL NEWBORN IPAC RECOMMENDATIONS IN ONTARIO

Isabelle Langman[1], Anne Bialachowski[1], Colette Ouellet[1], Nora Boyd[1], Madeleine Ashcroft[1], Janet Allen[1], Tim Cronsberry[1], Sarah Eden[1], Clare Barry[2], Mary Vearncombe[1,4], Brigitte Lemyre[3]

[1]OAHPP/RICN, Toronto, Canada, [2]IPAC Consultant, Toronto, Canada, [3]The Ottawa Hospital, Ottawa, Canada, [4]Sunnybrook Hospital, Toronto, Canada

The purpose of this Maternal Newborn Project was to enhance current Infection Prevention and Control (IPAC) practices in Ontario's maternal newborn programs by adequately delivering and providing resources and education sessions to these programs on the *Provincial Council for Maternal and Child Health's* IPAC recommendations. The provincial goals were to decrease health care associated infections leading to a reduction of bed closures and increase client satisfaction with the maternal/newborn experience.

Given the vulnerability of the newborn population, the importance of high quality, evidence-based infection prevention and control (IPAC) in maternal and newborn care is of critical importance.

The RICNs were asked to develop a dissemination plan that would reach all programs in Ontario. Connection was made with each program and champions were identified. A pre-survey was sent to ascertain the current needs within these programs. Education sessions were then developed and offered that also included an education session for physicians. Following the education sessions, we felt a need to allow fulsome discussion between programs. As a result, we organized Community of Practice sessions and invited both ICPs and front-line staff from those programs to join us for open discussions on various related topics. A series of sessions were held and well-attended. To complete this project, a Resource Kit was developed and sent to all Champions from each program. A post project survey revealed that the material offered was well-received and participants wanted more. A detailed report was completed that clearly demonstrated additional support is needed out there in the future.

Poster Board #19

PROPYLACTIC ANTIBIOTIC (PAB) TIMING AND HIP AND KNEE JOINT REPLACEMENT SURGICAL SITE INFECTIONS (SSI) PLUS ACCREDITATION CANADA'S (AC) MANDATORY REPORTING

Diane Weinwurm, Krystyna Ostrowska, Filomena Travassos, *Trillium Health Centre, Mississauga, Ontario, Canada*

Objectives: To demonstrate that prophylactic antibiotic (PAB) administration is an important component of perioperative care by decreasing the rates of elective hip and knee SSIs. To fulfill AC's PAB and SSI mandatory reporting.

Methods: AICE (Automated Infection Control Expert) is interfaced with the operating room's Surgical Information System to download data which the Infection Control Practitioner (ICP) uses to generate a record on *every patient*. The record includes patient and surgical information, wound classification, surgery start and stop times, American Society of Anaesthesiology (ASA) score, prophylactic antibiotics and timing. AICE calculates the composite index (0, 1, 2, 3) for predicting the risk of the patient developing a SSI. Centre for Disease Control definitions for SSIs are followed and rates are compared to the National Healthcare Safety Network Report 2009. Surveillance includes *30* days post-op for superficial SSIs and *one year* for deep, organ/space SSIs. The ICP reviews microbiology reports, emergency/urgent care visits, re-admissions, consultation notes, antibiotic prescribing and surgeon post-discharge feedback. The ICP presents an annual SSI report to the Orthopaedic Team. Decision Supports submits percent correct PAB timing and the ICP submits 30-day superficial hip plus knee SSI rates quarterly to AC.

Results: Comparing in-hospital plus post-discharge SSIs from 2004-2009, hip SSI rates were 3.9%, 0.5%, 3.0%, 2.4%, 1.1% and knee SSI rates were 2.8%, 2.8%, 2.4%, 2.6%, 2.0%. Correct annual PAB timing was 90%, 92%, 96%, 97%, and 98% respectively. AC's 30 day superficial hip plus knee SSI quarterly rates were: 1.7%, 1.5%, 1.4%, 1.2%, 1.5% and percent correct PAB timing was: 99%, 99%, 100%, 99%, 99% respectively.

Conclusions: As PAB timing improved, hip and knee SSI rates decreased.

Poster Board #21

ALBERTA STOP ORDER ON REUSE OF INTRAMUSCULAR STIMULATION (IMS) PLUNGERS

Bernice Heinrichs, Dawn Friesen, Martin Lavoie, *Alberta Health and Wellness, Edmonton, Alberta, Canada*

Issue: In March 2008 a concern was raised about manufacturers' instructions for the cleaning and sterilization of IMS plungers. The IMS plunger is a critical medical device designed to hold a sterile needle while the needle is repeatedly plunged through skin and into muscle.

Project: Alberta Health and Wellness (AHW) is responsible for setting direction and standards for the provincial health care system and monitoring compliance with standards. The Chief Medical Officer of Health directed that where clear manufacturers' instruction are not available or sufficiently detailed to enable users to correctly reprocess these products, reusable IMS plungers must not be reprocessed; in these cases, the IMS plungers may only be used as a single-use device.

Results: All regional infection prevention and control (IPC) executives, medical officers of health and registrars of all health professional regulatory bodies in Alberta were informed of the stop order. AHW communicated with Health Canada about this issue and the need for pre-market validation of reprocessing processes for all classes of medical devices. An expert Alberta advisory committee recommended that the stop order remain until the users' instructions and third-party validation of the cleaning and sterilization instructions for the IMS plunger are received. Manufacturers/distributors of the IMS plunger device have been notified of this decision.

Lessons Learned: Inconsistencies exist in interpretation and application of Health Canada's *Medical Device Regulations* requirements for validated reprocessing instructions and the *Medical Device Classification System* that categorizes medical devices as to their potential risk. Potentially, this issue has relevance across Canada.

Poster Board #23

MULTIPRONG APPROACH TO IMPROVING HAND HYGIENE COMPLIANCE IN A SMALL COMMUNITY HOSPITAL

Anne Augustin, *Headwaters Health Care Centre, Orangeville, ON, Canada*

Issue: April 2009, the province of Ontario required all hospitals to publicly report compliance to hand hygiene (HH). At that time our organization reported an overall compliance of 64.7% which was unacceptable understanding that, "adherence to hand hygeine recommendations is the single most important practice for preventing the transmission of pathogens in health care and directly contributes to patient safety" (PIDAC 2009).

Project: Increase HH compliance by 10% per year for the next two years. To support health care workers' (HCW) compliance, hand hygiene products were installed at point-of-care and were standardized across the facility to ensure compatibility. An Occupational Health physician was available to HCW with skin integrity concerns. HH education was provided (face-to-face, self learning package, chocolate pudding challenge). Two HH audits were done per unit per month. Immediate feedback was provided to HCW regarding practice. Written HH audit reports were provided to managers of all units/HCW observed. Senior management and hospital board support was provided through participation in HH audits and reporting of HH compliance to the Board Quality Committee monthly. Good practice by individuals/units/departments was publicly acknowledged and the monthly HH compliance award was implemented in 2010. Award culminates in the HH High Point award at the end of the year.

Results: April 2010 overall HH compliance was 72.%. To date for the 2010/2011 fiscal year, overall HH compliance is 85.3%.

Lessons Learned: Make it easy, never let up, celebrate success! Point-of-care HH

product was essential. Immediate feedback and ongoing audits promoted a learning culture. Celebrating success provided recognition and allowed HCW and the organization to be proud of accomplishments.

Poster Board #25

GET TOUGH, CLEAN YOUR STUFF!

Jenette Schoon, Cara Sudoma, Kathy Maxwell,
Holland Bloorview Kids Rehabilitation Hospital, Toronto, Canada

Issue: The literature tells us that failure to clean/disinfect non-critical items between patients can be a significant source for the transmission of HAIs. IPAC needed to meet the standards for Accreditation on cleaning/disinfecting non-critical equipment and a staff nurse needed to meet the CNO's reflective practice requirements in IPAC. IPAC was consulted and the nurse developed a project plan that met both requirements.
Project: A survey asking nursing staff what their practices of cleaning equipment between patients was undertaken. The majority did not clean/disinfect non-critical items such as the portable BP machines. Most were aware that they should clean/disinfect but they did not have access to disinfectant wipes. An education plan was developed and the tag line "Get tough, clean your stuff!" caught the attention of staff. Other departments and services were enlisted to help in the project. Brackets were installed on all portable monitoring devices for the disinfectant wipes. ATP testing was done on the portable equipment pre/post disinfection.
Results: Audit results pre/post cleaning/disinfection were shared with staff. Nursing received the presentation well and felt that the point of care access to the disinfectant wipes was not only a good reminder but also provided the necessary tools to do the job. A post audit was carried out and even though the results were not 100% they were significantly better than before.
Lessons Learned: Having nurse leaders provide IPAC education to their peers and finding solutions helped to make this project a success. It is hoped that others will use positive deviance to make change happen.

Poster Board #27

AN ACCOUNTABILITY MODEL FOR A HAND HYGIENE PROGRAM

Diane White[1], Christine Hutchinson[1], Alfred Ng[1],
Lorraine Carrington[1], Ivan DeSouza[2], Kevin Katz[1]
[1]North York General Hospital, Toronto, Ontario, Canada,
[2]3M Canada, London, Ontario, Canada

Issue: Hospital associated infections (HAIs) contribute to increased patient morbidity and mortality. Improvements in hand hygiene compliance may positively impact on HAIs by up to 50%. Despite aggressive hand hygiene campaigns, hand hygiene compliance remains suboptimal at many institutions. Many campaigns fail due to lack of the appropriate accountability structure and hospital leadership culture.
Project: In partnership with 3M Canada, a hand hygiene campaign based on a Lean improvement approach with an emphasis on culture change, intensive data collection/feedback, and accountability was implemented. A project management team was struck, co-chaired by a Program Director and the Medical Director, Infection Prevention and Control and reporting to a Vice President Executive project sponsor. Project management support was provided by the Quality, Utilization and Risk Management Program. An interim target of 80% compliance was set and control plans were devised and implemented to achieve and sustain results. Accountabilities were defined for front line staff, managers, directors and vice presidents.
Results: Unit managers are accountable to ensure audits are completed and compliance levels maintained. Performance evaluations for managers incorporated data on hand hygiene program components. Control plans defined steps to be taken for various project thresholds, and which individuals are to be informed when success is not achieved. Hand hygiene compliance rates of 80% have been achieved in all units and maintained over eighteen months in most units.
Lessons Learned: A defined control plan which includes clear accountabilities along the lines of reporting authority will ensure better success for hand hygiene campaigns.

Poster Board #29

MEETING HEALTH CANADA STANDARDS FOR ALCOHOL
BASED HAND RUB EFFICACY: FORMULATION MATTERS

Sarah Edmonds, David Macinga, *GOJO Industries, Akron, Ohio, USA*

Background/Objectives: Alcohol-based hand rubs (ABHR) are an important intervention for preventing illness. The objective of this study was to determine the relative influence of alcohol concentration and product formulation on the efficacy of ABHR using Health Canada recommended methods.
Methods: Test products included 4 ABHR: A (novel 70% ethanol gel), B (novel 70% ethanol foam), C (80% ethanol gel), and D (85% ethanol gel). WHO-recommended hand rub formulations were included as benchmarks: WHO-EtOH (80% ethanol) and WHO-IPA (75% isopropanol). Test products A, B, and C were evaluated by EN 1500 at a volume of 3 ml rubbed for 30 seconds. Additionally, products A, B, D, and WHO benchmarks were evaluated at a volume of 2 ml using ASTM E 1174.
Results: Products A, B, and C each met EN 1500 requirements, demonstrating non-inferiority to the 60% isopropanol reference product. When evaluated by E 1174, log reductions for Products A, B, D, WHO-EtOH, and WHO-IPA were 3.58, 3.55, 3.12, 3.07, and 3.12, respectively after one application; and 3.50, 4.00, 1.80, 2.39, and 2.04, respectively after the tenth application. Only A and B met Health Canada requirements for ≥3 log reduction using EN and ASTM methods.
Conclusions: Product formulation was found to have a greater influence over efficacy than alcohol concentration as well formulated products containing 70% ethanol were more efficacious than products with higher alcohol levels. These results demonstrate that alcohol concentrations in excess of 70% are neither necessary nor sufficient for efficacy.

Poster Board #32

SAY GOODBYE TO CLI: REDUCING CENTRAL LINE
INFECTIONS IN A COMMUNITY HOSPITAL 12 BED CLOSED ICU

Kristine Desjardine, Holly Koss, *Queensway Carleton Hospital, Ottawa, ON, Canada*

Central Line Infections increase patient length of stay and cost to the health care system and can be prevented by implementing the SHN Central Line Bundles. There are 2 components: a maintenance bundle and an insertion bundle. By implementing the Central line Insertion bundle and Maintenance Bundles we were able to decrease our central line infection rate to Zero for greater than two years. The campaign was implemented in September 2008, staff were educated and checklists were created to collect data. Data is collected and audited on a monthly basis with feedback given to the ICU to ensure a 95% compliance rate and that interventions are being maintained.
Conclusion: By the implementation of the Central line Insertion and Maintenance Bundles in the ICU we have decreased our infection rate below the NNIS 25th percentile and maintained a Zero Central Line Infection rate in the UCU for to years. The Intensive Care Unit has achieved their goal of a 95% bundle compliance rate and the campaign is ongoing.

Poster Board #33

SURGICAL SITE SURVEILLANCE: A SPIKE IN TOTAL
JOINT ARTHROPLASTY SSIS. WHAT'S THAT ABOUT?

Gail Barwise, *Queen Elizabeth Hospital, Charlottetown, Canada*

Setting: A 274-bed, acute care, referral hospital offering total joint arthroplasty surgical services to residents of PE .
Issue: The overall rate of Class 1 surgical site infections (SSIs), including total joint arthroplasty, from April, 2008-March, 2009 was 0.44%. A spike of 11 total joint hip arthroplasty infections was identified. In response to a perceived increase in SSIs following Class 1 hip arthroplasty, specific rates of infection were calculated for total primary and revision hip arthroplasty with results: 6% (8/145) and 18% (3/17). Primary and revision of knee arthroplasty SSI rates were 1% (1/187) and 0% (0/11).
Project: An intensive quality improvement (QI) project was initiated focusing on prevention strategies: active surveillance, risk stratification, bench marking and auditing. The Infection Control Practitioner (ICP) audited infection control (IC) practices in the OR with recommendations regarding best practice to the OR staff. These recommendations included: correct timing of prophylactic antibiotics (PA), change in skin prep, modification of OR attire and decreased OR traffic. The ICP provided education and feedback to the surgical staff on the QI initiatives that had occurred.
Results: Between April 2009-March 2010, SSI rates for primary total hip arthroplasty decreased to 3% (4/113); revision total hip arthroplasty decreased to 0% (0/14). SSI rates for primary total knee 2% (4/212) and revision of total knee 0% (0/7) are within acceptable ranges**.**
Lessons Learned: Active procedure specific surveillance, use of benchmarks, combined with IC interventions including education and feedback to the surgical team, has resulted in lowered SSI rates following total joint arthroplasty.

Poster Board #39

INFECTION CONTROL: A STANDING AGENDA ITEM IN LONG TERM CARE

Elizabeth Palmateer, *Pine Meadow, Northbrook, Canada*

Issue: Communication of the evolving changes in infection prevention and control in the healthcare sector has always been a challenge. Infection Control in long-term care has been overshadowed by other pressing issues. In addition to in service education, presentations, posters, Wellness Boards, videos, pamphlets and newsletters something different was needed to increase the profile and importance of infection control issues.
Project: Infection Control was added as a standing agenda item to nursing practice meetings at a long term care facility. The meetings were held monthly and consisted of the attendance of the hands-on workers, the personal support workers and registered staff. This offered an opportunity for one-on-one education, review of policies and statistics and the status of current infections within the facility. New initiatives were also introduced. Examples of discussions include: Just Clean Your Hands Campaign, influenza vaccines, linking resident care to infection control, reviewing resident placement and appropriate personal protective equipment.
Summary: Infection Control has become a welcomed member of nursing practice meetings. It is also a standing agenda item on Professional Advisory Committee, Continuous Quality Improvement Meetings (management) and Occupational Health

and Safety. There is a separate Infection Control Committee and a Communication Board dedicated to Infection Control. Infection Control is also becoming a regular topic at General Staff, Family Council and Resident's Council meetings. This has brought Infection Prevention and Control into the forefront of everyday practice at this long term care facility.

Poster Board #43

NURSE JACKSON

Tricia Hutton, Jackie Nugent, Louise Koyanagi,
Trillium Health Center, Mississauga ON, Canada

Nurse Jackson is an improvisation conducted on a long term care unit thru the method of Positive Deviance. It has been an outstanding revelation for the reduction in transmission of Antibiotic Resistant Organisms and has created a totally new and open communication system on the unit. Nurse Jackson is someone who shows how easy transmission can occur. The character also shows how it is not always done intentionally. The beauty of this improvisation is that it is conducted in a non-threatening, light hearted, humorous way. The improvisation included staff members from the unit, a physician, senior management and family members. (The improv has been done more than once and has become know hospital wide). The term "Nurse Jackson" is used regularly on the long term care unit to let someone know (may it be a nurse, physician, environmental services, etc.) that they are doing something that breaches good infection control practices. Staff and students were surveyed. 97% stated they are aware of what Nurse Jackson represents. High percentages were also recording reflecting that staff were comfortable using the term towards another individual. Statistics also have shown that since positive deviance and the Nurse Jackson improvisation were introduced to the long term care unit that they have maintained a zero transmission rate of Antibiotic Resistant Organisms. And the best thing about this whole process is that it was fun for everyone involved. The window for communication has opened and staff feel engaged, empowered as they have made the difference.

Poster Board #45

SURVEY ON THE USE OF THE PUBLIC HEALTH AGENCY OF CANADA'S INFECTION PREVENTION AND CONTROL GUIDANCE DOCUMENTS FOR THE 2009 PANDEMIC H1N1 INFLUENZA BY CANADIAN HEALTHCARE ORGANIZATIONS

Christine Weir[1], Lynn Johnston[2], Robyn Mitchell[1], Mary Vearncombe[3], Kathleen Dunn[1], Robert Gervais[1]
[1]Public Health Agency of Canada, Ottawa, Ontario, Canada, [2]QEII Health Sciences Centre, Halifax, Nova Scotia, Canada, [3]Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada

Background/Objectives: In response to the 2009 pandemic H1N1 influenza, the Public Health Agency of Canada (PHAC) developed infection prevention and control (IPC) guidance documents to assist healthcare organizations manage H1N1. The PHAC conducted a survey to determine the use of these guidance documents in Canadian acute, long-term, prehospital and home care settings.
Methods: A survey was distributed in August 2010 by email/web-posting to members of CHICA-Canada, Canadian Home Care Association, Canadian Healthcare Association, Council of Chief Medical Officers of Health, and Prehospital Care group.
Results: Of the 421 respondents, the majority were from long-term care (70%), resided in Ontario (31.4%), were IPC professionals (32.4%) and reported using the PHAC H1N1 guidance documents (80.7%). The documents were easy to understand (60.6%), consistent with local/provincial guidelines (56.5%), and comprehensive (56.3%). Specific measures (source control, respiratory hygiene, hand hygiene, contact/droplet precautions, respiratory protection) were often/always used ≥ 75% of the time. Reasons the documents were not used included the lack of awareness of their existence (37.5%), timely availability (26.8%), and difficulty finding the documents on the internet (23.8%). The major areas where PHAC could improve included earlier notification that new/updated documents are available (53.7%), providing tools and resources (45.8%), ensuring documents are available sooner (36.8%), informing organizations that guidance documents exist (32.5%), and making documents easier to find on the internet (22.8%).
Conclusions: Most healthcare organizations used the PHAC H1N1 guidance documents, and implemented most components of practice. Knowledge about their availability and their timeliness were suboptimal and highlight areas for improvement.

Poster Board #47

SOCIAL MESSAGING PROVES USEFUL AND YES, THERE CAN BE A DIFFERENCE BETWEEN NIGHT AND DAY

Lindsay Whitmore, Leslie Sharkey, Mark Anderson, Nancy Todd-Giordano,
Ottawa Public Health, Ottawa, ON, Canada

Background: In June 2010, there was a significant increase in the number of reports of *Salmonella Typhimurium* in the Ottawa area among 20-24 year olds. Investigations of nine lab-confirmed cases revealed a probable source of illness. All cases frequented the restaurant in the late evening on the same dates after bars nearby.
Methods: Cases had difficulty recalling where they may have been exposed. Investigators used email to contact cases. Investigators encouraged individuals to use their cell phones or other devices to assist recall of where they had been that specific weekend. Confirmed cases provided a detailed food history using an online questionnaire. The cases were asked to also e-mail the questionnaire link to friends who were with them that weekend. Several food premise inspections were completed at different times of the day and night.
Results: Nine lab-confirmed cases and four suspect cases ranging from 19 to 26 years of age identified an exposure to the same shawarma restaurant. Food safety inspections identified that standards and practices were different during the daytime than in the evening when the premise was busier.
Conclusions: Social messaging tools can be used to assist in identification of health risk exposure. E-mail and online surveys tools can be effective for collecting data in this population. Restaurants should be inspected at peak times rather than slow times when food handling regulations are more likely to be followed.

Poster Board #53

ENGAGING PATIENTS IN HAND HYGIENE PROMOTION

Sandina Noble, Carlos Bautista, Donna Renzetti, *West Park Healthcare Centre, Toronto, Ontario, Canada*

Issue: Visitors to a complex continuing care and rehabilitation facility did not use hand sanitizers when entering or exiting the facility. Consequently, there was a potential for increased transmission of infections. The project examined if hand hygiene compliance could be increased by engaging patients as hand hygiene promoters.
Project: During periods of high traffic, staff counted the number of visitors to the facility and the number of visitors using the hand sanitizers. Lack of knowledge about the importance of hand hygiene was a pervasive barrier to utilization based on random visitor polls. Many patients reside at the facility for an extended period of time and are frequently visited by the same individuals. This provided ample opportunities for patients to educate visitors. After receiving training on the importance of hand hygiene, patients approached visitors and provided reminders about hand hygiene. Patients communicated key messages prepared by Infection Control to visitors and distributed small bottles of hand sanitizers to them. The improvement project was initiated over a 90-day period and evaluated monthly for 9 months to ensure improvements were sustained.
Results: Usage of hand sanitizer before implementation: 15.7%; Usage of hand sanitizer during implementation: 78.5%; Usage of hand sanitizer at 9 months: 61.8%.
Lessons Learned: Patient involvement made a significant improvement in visitor hand hygiene and contributed to patient satisfaction. However, it was difficult for patients to greet all visitors due to weather and scheduling factors. Recruiting a larger number of patients from the onset would have helped overcome these issues.

Poster Board #55

INVESTIGATION OF A SERRATIA MARCESCENS CLUSTER IN A TERTIARY HOSPITAL IN BRITISH COLUMBIA

Michael Arget, Rebecca Countess, Dale Purych, *Royal Columbian Hospital, Fraser Health Authority, New Westminster, British Columbia, Canada*

Background/Objectives: *Serratia marcescens* is a well known cause of hospital-acquired infections. Since many people are colonized with *S. marcescens*, it can easily spread throughout a hospital when infection control measures are not followed. The purpose of this study is to describe a cluster of nosocomial *S. marcescens* infections between June 1 and September 30, 2010 at Royal Columbian Hospital (RCH).
Methods: A review of laboratory data was conducted to determine cases of *S. marcescens* during the time period in question. Retrospective chart reviews were conducted to determine case specific variables such as age, sex, surgery, location of infection/colonization. Both environmental and clinical samples were collected and typed using the Vitek 2.0 system. A subset of clinical samples (6) was sent for Pulsed Field Gel Electrophoresis (PFGE) to investigate genetic relationship.
Results: 41 clinical samples of *S. marcescens* were resulted with 25 cases identified as nosocomial to RCH.16 cases underwent cardiac surgery; 6 underwent other surgery, and 2 remaining cases were related to time spent in the Intensive Care Unit (ICU). *S. marcescens* was isolated from a variety of sites: blood (3), sputum(7), leg incisions (5), urine (5), other wounds (5). One environmental culture yielded colonies of Gram negative bacilli in a sink, but no samples grew *S. marcescens*. Both typing and PFGE showed a variety of *S. marcescens* strains with two cases sharing identical PFGE patterns.
Conclusions: These findings suggest that infection control measures related to surgery need to be reviewed to identify potential sources of contamination.

Poster Board #57

CHICA-MONTREAL EDUCATION HALF DAYS: AN INNOVATIVE FORMAT FOR PROMOTING PARTICIPATION

Guylaine Morin, Silvana Perna, Anne Desmarais, Connie Forget Falciccio, Caroline Duchesne, Josiane Létourneau, Leila Ramman-Haddad, Josette Charles, Johanne Gagné, Pearl Orenstein, Fernanda Cordeiro, Lucie Boudreau, Mélanie Lecours Frédérica Gaspard, *CHICA Montreal, Montreal, Quebec, Canada*

Issue: CHICA-Montreal is the chapter in the province of Quebec. The majority of the members are nurses, namely IPC professionals from the Greater Montreal area. One of the Chapter's main goals is to expand the education initiatives in an effort to

meet the member's needs, promote up to date best practice in IPC and provide an opportunity for networking.
Project: The results of a member survey guided us in choosing topics, speakers, and format of future educational events. Our members indicated that they would appreciate half education days. Our education committee members implemented the following strategies: inviting out of town experts, no charge for members, giving door prizes, offering lunch, extending our invitation to long term care and community health groups, nearby sister chapters and groups outside of the IPC domain e.g. environmental services, administration. We had active support from the Montreal Public Health Department in coordinating some of these events and the cooperation of the Association des Infirmières en Prevention des Infections (AIPI) to post our event on their website.
Results: Although not all attendees were CHICA members, there was up to a five-fold increase in attendance. Feedback from evaluation forms was very positive.
Lessons Learned: The half-day format proved to be convenient. A multitude of strategies may be necessary in promoting participation in education events and support from key groups in the community is essential. Offering lunch is an enticement and an opportunity to network with colleagues.

Poster Board #58

AN INNOVATIVE MULTICENTER APPROACH TO STANDARDIZED ISOLATION SIGNS:THE JEWISH GENERAL HOSPITAL (JGH) EXPERIENCE

Silvana Perna, Pearl Orenstein, Barbara Amihod, Anne Desmarais, Mark Miller, *Jewish General Hospital, Montreal, Quebec, Canada*

Issue: The JGH is a 637-bed tertiary care McGill-affiliated hospital that serves a multicultural population. Hospital employees speak English or French, but their literacy levels vary. Many medical personnel rotate between institutions. The current JGH isolation sign (IS) relies on accurate completion, is not easily seen when posted, and is not similar to other McGill hospitals.
Project: A multidisciplinary JGH committee was convened to create a simple, visible IS system. A need for standardization was also identified by other McGill Institutions and an interhospital committee was formed. An extensive review of IS was conducted. The focus was to have easily-understood, standardized pictographs, colors and messages based on Additional Precautions, as developed by Public Health Agency of Canada (PHAC.
Results: After two years of collaborative effort, an IS system was developed including color-coded pictograph signs, a summary sheet, and an alphabetical listing of infectious diseases. A pilot project was undertaken on two units using an evaluation form for HCWs and families. The IS system was very well received and fulfilled all of the essential criteria.
Lessons Learned: Standardization of an IS system can be achieved, with production of easy-to-use, language-independent, highly visible signs. However, the collaborative effort to create such a system can take a long time to reach consensus and to overcome logistic barriers. Such an IS system, if successfully implemented, may lead to improvement in the practice of IPC by all hospital employees and a reduction in the incidence of healthcare associated infections.

Poster Board #59

GUIDELINES AND STANDARDS HELP IMPROVE PRACTICE (SURVEYS BEDPAN MANAGEMENT IN THE NETHERLANDS (1990 & 2010)

Gertie van Knippenberg-Gordebeke, *KNIP consultancy infection prevention, Venlo, The Netherlands*

In the Netherlands infection control teams followed the Spauldings scheme (1968) for cleaning, disinfection and sterilization This was recognized as not sufficient for bedpans because of the multiple risks of contamination and transmission by manual handling. Since 1970 Dutch hospitals use Washer disinfectors (WD) which reduce these risks. However, the survey 1990 showed poor quality and maintenance in WD, poor practice and lack of knowledge. Guidelines did not exist yet. Awareness about the risk of manual handling bedpans and the use of validated and maintained WD improved in the Netherlands since 1995. One of the reasons for improving was implementing the Dutch guidelines for WD of the Working Party Infection Prevention (WIP) which where developed and published after the 1st survey episode. The WIP guidelines (*http://www.wip.nl/UK*) is declared by the Minister of Health as professional standard and can be controlled by thematic monitoring by the Health Care Inspectorate. Other reasons of improvement came from Industry by building effective machines. And finally the Netherlands adopted in 2006 the ISO 15883 Standard for WD. The Survey 2010 showed better results in awareness, knowledge and practical behaviour in handling bedpans and urinals.

Poster Board #61

VANCOMYCIN RESISTANT ENTEROCOCCUS (VRE) OUTBREAK: I T CAN BE TERMINATED

Dana Finnegan-Yee, Catherine Thorp, Susan Pugh, Janet Allen, *Brockville General Hospital, Brockville, ON, Canada*

Background: Brockville General Hospital is a two-site facility with historic baseline VRE incidence rate of 0.00 to 0.50 per 1000 patient days. Following identification of a cluster of three epidemiologically linked VRE cases, an Outbreak Management Committee (OMC) was struck and a communication strategy developed. When two additional cases were identified, an outbreak was declared and OMC accessed expert opinion from the Regional Infection Control Network.
Methods: OMC issued a number of stringent directives for implementation at both hospital sites. The Communication Officer circulated memos describing intervention measures. Education sessions were offered to staff. Specific interventions included twice daily cleaning of all rooms occupied by VRE patients and thorough cleaning of every inpatient room and outpatient areas. Regular screening of patients identified with risk factors for Antibiotic Resistant Organisms was changed to universal screening of all admitted patients. Weekly point prevalence screening was initiated on all inpatient units and continued until the outbreak was declared over. Every patient, regardless of ARO status was subjected to a 2% chlorhexidine bath.
Results: The outbreak was terminated in six weeks. Expeditious application of aggressive protocols resulted in decreasing the outbreak incidence rate from 5.74 to 1.71 per 1000 patient days in April with further decrease to 0.00 in May.
Conclusion: No single intervention is adequate to resolve an outbreak. With Senior Leadership supporting hospital-wide implementation of aggressive interventions and adoption of multiple communication strategies, hospital staff acknowledged the potential significance of this outbreak and demonstrated excellent compliance to outbreak protocols.

Poster Board #63

IPAC FOR YOU AND ME: SELF MANAGEMENT OF INFECTION PREVENTION AND CONTROL IN THE CONTINUUM OF CARE FOR THE PATIENT ON PRECAUTIONS.

Maureen Acomb, Lucia Cook; *Southlake Regional Health Centre, Newmarket*

Patients make decisions regarding self management of their care throughout their lifespan. One important element that may produce positive patient outcomes in self management is the education of hand hygiene and the use of personal protective equipment while in an acute care setting. Providing the patient and their families with tools to succeed includes not only traditional methods such as paper-based materials, but also the practice of patient education at the bedside. Patient-centred care in infection prevention and control is a unique partnership which includes demonstration of principles while enabling the patient through education to achieve best outcomes of their stay. In this educational endeavor over 30 patients and families were educated on hand hygiene and the use of personal protective equipment during their hospitalization. The main theme that was evident in this educational endeavor was the confidence in the ability to choose behaviour that led to a desired result. When surveyed on their response to the education on self management the overwhelming theme was that the patient and family were empowered as they understood the need for hand hygiene and proper use of personal protective equipment. They became an integral member of the healthcare team through empowerment of their participation in their overall care. The concepts of education and self management had an overwhelming response because education developed personal confidence and motivation for patients and families resulting in a positive acute care stay.

Poster Board #65

A PRACTICAL CONCISE TEACHING TOOL FOR PREVENTING URINARY TRACT INFECTIONS (UTI) IN NEUROLOGY PATIENTS

Susan Rachel, Ramona Rodrigues, Charles Frenette, *The McGill University Health Centre, Montral, Canada*

Issue: Neurology patients often have alterations in sensory motor function and diminished communication abilities creating challenges in assess UTI. This difficulty contributes to an increase in urine sent for cultures and inappropriate antibiotic prescribing. A pilot study performed in 2008, found a high incidence of UTI with higher than average usage of indwelling (Foley) catheters. The essential elements and criteria for surveillance of UTI were found in only 50% of the cases.
Project: A teaching tool was developed that focused on concise practical interventions to decrease CAUTI. The tool included appropriate indications for Foley catheters, removal and alternatives for Foleys, daily assessment, identifying clinical symptoms suggestive of UTI and diagnostic criteria for UTI. An algorithm was incorporated to help decrease the likelihood of inappropriate antibiotic use.
Results: The teaching tool was successful in increasing the utilization of urinalysis for appropriate surveillance monitoring and reducing the number of urine cultures sent for testing. There was a 50% reduction in asymptomatic UTI. The mean Foley use dropped from 27.3 days to 12.1 days post education. The incidence of Foley associated UTI and duration of Foley use decreased. However, there was no impact on the antibiotic prescribing of physicians as inappropriate treatment of positive urine cultures continued.
Lessons Learned: Close monitoring of neurological patients with unmodifiable risk factors for UTI using a practical teaching tool can decrease the frequency of UTI and Foley use, however it must be accompanied with a targeted antibiotic stewardship program to help reduce inappropriate antibiotic prescribing behaviour.

POSTER PRESENTATIONS
WEDNESDAY, JUNE 1, 12:30-1:30 p.m.

Poster Board# 2

THE PATIENT'S VOICE HAS BEEN HEARD:
THE QCH HH PROGRAM IMPROVES THROUGH PATIENT FEEDBACK

Donna Perron, Inez Landry, Hand Hygiene Task Team Queensway Carleton Hospital, *Queensway Carleton Hospital, Ottawa, Canada*

Issue: The "Just Clean Your Hands" Task Team was asked to test the Hand Hygiene Culture Change Practices at QCH as well as to assess the value of the team's current strategies before rolling out additional strategies.
Project: A multidisciplinary task team developed a Patient Interview Tool on Hand Hygiene. Using the Patient Interview Tool, the team conducted interviews with patients and families during National Infection Prevention and Control Week (October 2010). The three objectives of the interviews were as follows: to validate the positive hand hygiene results obtained from the Observational Hand Hygiene Audits; to confirm that the Hand Hygiene Buttons and Posters were noticed by QCH's patient and visitor population; to determine how QCH was doing in regards to assisting its patients practice good hand hygiene techniques.
Results: 1. 125 patients were interviewed. 2. Results did validate improved Hand Hygiene culture at QCH and also confirmed that QCH needs to help make hand hygiene more accessible for all patients.
Just Clean Your Hands Task Team Lessons Learned: Multiple strategies are important to change hand hygiene culture. It is important to pilot some strategies before implementing them hospital wide. Our patients/ families provide QCH with an excellent opportunity to see if some of our strategies are working. QCH staff was also interested in what our patients had to tell us about Hand Hygiene at QCH. Just Clean Your Hands Task Team had validation that QCH strategies were on the right track.

Poster Board #4

THE USE OF POOLED SWABBING AS A
COST EFFECTIVE MEANS OF SCREENING FOR MRSA

Jane E Van Toen, Heather Candon, Latha Jacob, Chinqiz Amirov,
Baycrest, Toronto, ON, Canada

Issue: Baycrest is a geriatric centre in Toronto comprised of outpatient clinics, research, senior's apartment complex, 472-bed nursing home and 300-bed continuing care hospital. Methicillin-Resistant *Staphylococcus aureus* (MRSA) screening swabs are collected on new admissions to the nursing home and hospital and on readmissions from medical leave. Our MRSA screening procedure requires swabs from nasal, perianal and from the site of any wounds or devices. MRSA cultured from any site would flag a patient as MRSA positive. Like many healthcare facilities and specifically geriatric centres, Baycrest does not have an onsite microbiology laboratory. All microbiology testing is contracted out. Our culture and sensitivity cost is $10.77 per swab. This is comparable to the average cost in the Toronto area. At least two swabs are collected on each patient and often more depending on the number of devices and wounds. Therefore, each MRSA screen was costing a minimum of $21.54.
Project: Conduct a literature review, compare MRSA yield from pooled vs. non-pooled swabs and implement pooled swabbing.
Results: Without changing our ability to detect and manage MRSA, implementation of pooled swabbing saved, on average, $30,000 a year.
Lessons Learned: Information Management collaboration was required for system modifications and to provide instructions for ordering, labelling and submitting samples for testing. Education was necessary to assist with interpretation of pooled swab results.

Poster Board #5

CHECKING THE DASHBOARD: REFLECTING INFECTION
CONTROL PERFORMANCE BACK TO THE FRONT LINE

Lesley Kowalchuk, Sabrina Mastronardi, Liz McCreight, Mount Sinai Hospital Infection Control Team, *Mount Sinai Hospital, Toronto, ON, Canada*

Issue: Managers and clinicians need valid information to combat healthcare-acquired infections. At one hospital, several performance indicators were measured by the IC department but were disseminated in a fractured manner. Frontline unit leaders, responsible for executing many IC-related initiatives, requested clearer, timelier, and more unit-specific feedback on their IC performance.
Project: Dashboard reports were created to provide each nursing unit with an overall representation of its IC standing. Routinely collected metrics are presented in a concise grid, according to a quarterly distribution schedule. Included are a range of IC practices and outcomes: hand hygiene compliance, screening swab completion, environmental cleaning performance, PPE compliance, IC education participation, influenza immunization, healthcare-associated ARO acquisition, and IC-related incidents reported. Statistics are expressed at the single-unit level and relevant comparators provide context.
Results: The inaugural set of dashboards was distributed to all inpatient units. Feedback from unit leaders has been largely positive and some have requested further specialization and expansion of their dashboards. New interest was also expressed by diverse stakeholders in departments and management echelons beyond those targeted. The dashboards have informed a recent round of goal-setting and initiative-planning by units and broader hospital departments. Inquiries have also prompted the IC department to internally re-evaluate and formalize some established processes in order to improve data reliability.
Lessons Learned: Routinely gathered IC data is of great interest and use to a wide range of hospital departments. Usefulness of this data is enhanced by delivery in a clear format and according to a predetermined schedule.

Poster Board #6

CONNECTING THE DOTS: COLLABORATING TO AUDIT
THE ROUTINE CLEANING OF THE PATIENT ENVIRONMENT

Lesley Kowalchuk, Lorraine Dales, Liz McCreight, Christine Moore, Sheena Schuck, Mount Sinai Hosptial Infection Control and Support Services Teams, *Mount Sinai Hospital, Toronto, Canada*

Issue: The cleanliness of patient environments impacts the risk of acquiring healthcare-associated infections. Changes in one hospital's organizational structure, weakened relationships between IC, housekeeping, and nursing departments, and the publication of provincial best practice guidelines led to an increased concern with environmental cleaning quality. The IC Committee passed a policy incorporating a commitment to audit routine cleaning of the patient environment, with subsequent feedback and education.
Project: IC, housekeeping, and nursing stakeholders were engaged to develop tools and procedures for two complementary components of auditing: Visual Assessment (the housekeeping supervisor visually inspects 37 criteria for cleanliness in a patient environment) and Environmental Marking (a nursing representative uses ultraviolet-reflective gel to mark a patient environment and after it has been cleaned, the nurse and housekeeping supervisor assess whether the marks have been cleaned away). After piloting the process, packages were distributed to housekeeping supervisors to implement four audits using *each* method, *per* inpatient unit, quarterly.
Results: Housekeeping supervisors are able to provide immediate post-audit feedback to cleaning staff. IC collates and analyses the data; the inaugural quarters of auditing indicating compliance between 70-100%. Results of the Visual Assessments are used primarily by the housekeeping department to inform focused training initiatives while nursing units and management receive Environmental Marking results quarterly.
Lessons Learned: Working relationships have improved between IC and housekeeping, and between housekeeping and some nursing units. The project has established a performance baseline and has advanced engagement in the continuous quality improvement of patient environment cleaning

Poster Board #8

CLOSTRIDIUM DIFFICILE OUTBREAK, OR NOT?

Pam Siddall[1], Ruth Collins[1], Diane Weinwurm[1]
[1]*Trillium Health Centre, Mississauga On, Canada,*
[2]*Peel Public Health, Mississauga On, Canada*

Background: On November 1, 2010, Public Health declared a Clostridium *difficile* (C.*difficile*) outbreak at an 800-bed two-site tertiary care community hospital. Infection rates exceeded two standard deviations above the established baseline. The Microbiology Laboratory uses a Rapid Immuno Assay (Rapid IA) commercial test kit. The outbreak investigation revealed discrepancies in test results and a higher than expected weak positive rate for the Rapid IA test.
Methods: Investigation of the outbreak and discrepant test results included additional testing at Provincial Laboratory for culture, pulse field electrophoresis, polymerase chain reaction (PCR) from culture and antibiogram patterns, and PCR testing at another acute care hospital.
Results: The Provincial Laboratory reported 31 of 56 (55%) Rapid IA positive samples sent for C. *difficile* culture were negative. Additional PCR testing completed at another community hospital in our region reported 16 of 19 (84%) Rapid IA positive results as PCR negative. The investigation also revealed an increase in weak positive Rapid IA results from 10.5% in September 2010 to 62.5% in November of 2010.
Conclusion: Public Health declared the outbreak over on December 21, 2010. The hospital executed full disclosure for 23 patients with discrepant results. Laboratory processes have been amended to support the challenges of Rapid IA testing. The Microbiology Laboratory is pursuing the feasibility of on site PCR testing. Strong partnerships between Infection Prevention and Control microbiology laboratories and regional health units are required for thorough investigations of outbreaks.

Poster Board #10

DECREASING SURGICAL SITE INFECTION WITH TWO
PERCENT CHLORHEXIDINE: A PRACTICE CHANGE STRATEGY

Alyson McQueen, Cathy Wood,
Southlake Regional Health Centre, Newmarket, ON, Canada

Issue: The Cardiac Surgery Program at Southlake Regional experienced an increased incidence of surgical site infection (SSI).
Project: Based on current evidence regarding SSI, nursing presented a strategy that included a practice change in the Cardiovascular Intensive Care Unit (CVICU) to

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overcome the current challenge of increasing SSI incidence. The proposal addressed a trial practice change of bathing pre and post-operative patients; simultaneously, a second strategy was introduced to trial the use of the chlorhexidine (CHG) two percent impregnated cloths for the cardiac surgery patient population to decrease the incidence of SSI. The evidence-based, six month practice evaluation began in June, 2010 which captured 471 cardiac surgery patients. Compliance to the protocol was strictly monitored for adherence and outcomes.
Results: The incidence of SSI decreased by 50 percent from the previous six months.
Lessons Learned: The implication of this two-pronged quality improvement strategy proved that the incidence of SSI had considerably decreased in the cardiac surgery program during the trial period. During the same period it was also observed that there was a zero observation of blood stream infections in the CVICU. Acknowledging the associated financial costs ($25,546)(Douglas, R. II, 2009) of treating a SSI, a cost benefit analysis of this practice change was easily justified with a reduction incidence of SSI.

Poster Board #12

IMPLEMENTATION CHALLENGES OF A BASIC RESPONSE TO RESPIRATORY AND GASTROINTESTINAL SYMPTOMS IN A MULTI-SITE AMBULATORY CANCER AGENCY

A. Chant[1], K. Peel[1], K. Harding[1], L. Nicholson[1], J. Tearoe[1], R. Hunter[1], E. Thomas[2], G.N. Al-Rawahi[1]
[1]BC Cancer Agency, Vancouver, British Columbia, Canada, [2]Provincial Health Services Authority, Vancouver, British Columbia, Canada

Issue: Infectious disease outbreaks due to gastrointestinal (GI) or respiratory pathogens occur year round, in different settings. The ambulatory oncology setting presents unique challenges to the management of infectious illness symptoms due to: the similarities between infectious symptoms and treatment side effects, the ambulatory nature of the clinics, and the vulnerable patient population. Therefore, early recognition of, and swift response to, cases of infectious disease are essential in preventing outbreaks. Pandemic preparedness plans highlight the importance of appropriate signage, policies, and education for frontline staff. Infection Prevention and Control must work collaboratively with administrators and clinical and non-clinical staff to facilitate prompt response through the development of a Basic Response Plan.
Project: The purpose of this poster is to describe challenges in the implementation of a basic response plan for the management of GI and respiratory symptoms across a multi-site Cancer Agency.
Results: Challenges were identified in the following areas: the creation of cohesive signage in multiple translations, the development of administrative directives to support the signage, as well as the identification and education of stakeholders.
Lessons Learned: The implementation time was longer than expected. Issues around semantics, dissemination, and defining roles/responsibilities were prominent. Each site of the Cancer Agency had different challenges that prevented a standardized approach. Future directions regarding this project will be focused on the evaluation of the basic response plan, the reinforcement of staff education, and the development and streamlining of future implementations.

Poster Board #14

VARIABLE RESPONSE TO STRICT VRE CONTROL MEASURES

Jillian Low, Kaylene Styles, Ann Gray, Lorraine Wilson, Linda Gleave, Jill Lamb-Jenkins, N Deborah Friedman, Eugene Athan
Barwon Health, Geelong, Victoria, Australia

Issue: Vancomycin Resistant Enterococcus faecium (VRE) Van B has been endemic at Geelong Hospital (GH) since January 2007. From 2007-2010 526 patients were newly identified with VRE, 92 % were colonized. VRE colonization is detected by routine screening of inpatients from high risk areas (Intensive Care Unit (ICU), Haemotology and Oncology unit (Haem/Onc)) and patients being transferred from other acute care facilities. All colonized or infected patients with VRE were placed in contact precautions. GH revised internal guidelines in 2008 based on risk assessment. Early in 2010 despite all precautionary measures and specialist cleaning there was little impact on reducing VRE in the high risk inpatient areas.
Project: A new approach to VRE was introduced into these areas with the phrase *make it routine*. This consisted of (1) promotion of hand hygiene, (2) bare below the elbow and (3) "gowning up when close." ICU implemented this approach in February 2010 and Haem/Onc in April 2010. ICU introduced chlorhexidine bed baths with *make it routine* and Haem/Onc unit introduced other strategies including cleaning bathrooms three times daily.
Results: Following the introduction of *make it routine* there were 26 new isolates of VRE in ICU compared to 33 for the same period in 2009 The annual incidence of VRE in Haem/Onc increased by 30 cases from the previous year.
Lessons Learned: The impact of *make it routine* is time consuming, expensive, requires education of visiting staff and visitors, impacts on waste management and has not achieved the same outcome both areas.

Poster Board #16

IMPACT OF *CLOSTRIDIUM DIFFICILE* INFECTION GUIDELINES ON CLINICAL PRACTICE

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[1]Royal Victoria Hospital, Barrie, Canada, [2]North Simcoe Muskoka Infection Control Network, Orillia, Canada

Background/Objectives: The Provincial Infectious Diseases Advisory Committee (PIDAC) guidelines for the management of *Clostridium difficile* infection (CDI) were initially published in 2006. This study measures the potential impact of the guidelines on treatment of CDI.
Methods: This is a descriptive study of adults (>18 yrs) with a diagnosis of nosocomial CDI who were hospitalized in any one of the 5 hospital corporations in the North Simcoe Muskoka Local Health Integration Network from January 1, 2006 to December 31, 2008. The duration of antimicrobial therapy for patients with CDI in 2006 (baseline year) was compared to calendar years 2007 and 2008. All continuous data was compared using analysis of variance (ANOVA). All categorical data was compared using chi^2.
Results: Over the entire study period, the mean duration of treatment ranged from 8.3 to 10.9 days, with no significant differences observed between hospitals ($p=0.7$). The proportion of patients with CDI treated for a minimum of 10 days as recommended by the PIDAC guidelines ranged from 43% to 61% ($p=0.11$). Compared to 2006, the mean duration of treatment increased by 1.7 days (95% CI 0.2, 3.1) to 11.5 days in 2007 and by 2.0 days (95% CI 0.5, 3.5) to 11.8 days in 2008. The proportion of patients with CDI who received the recommended duration of treatment increased from 46% (2006) to 57% ($p=0.07$) in 2007 to 64% ($p<0.04$) in 2008.
Conclusions: This study suggests a temporal association exists between improved compliance for CDI treatment and the publication of the PIDAC guidelines.

Poster Board #18

IMPACT OF DESIGN ON EMERGENCY DEPARTMENT MEASLES (RUBEOLA) EXPOSURE

Maja McGuire, Barbara Catt, Olivia Yow, Sandra Callery, *Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada*

Issue: Sunnybrook Health Sciences Centre is a regional tertiary care centre. The Emergency Department (ED) receives over 49,000 visits per year. The small open concept ED was completely redesigned in 2009. On October 30, 2010, Patient A was admitted for an undiagnosed infection that later tested IgM positive for Measles. The patient was not on airborne precautions in the ED for 65 hours. Our goal is to review the impact of ED design on airborne infection exposures.
Project: The ED design has separate treatment areas with four self-sufficient pods. Each pod contains its own central nursing station, patient rooms/bays, negative pressure room with ante room, support areas and hands-free foot operated hand wash sinks. Each pod has a dedicated air handling unit, thus not re-circulating air between other pods or the triage/waiting room.
Results: During the exposure period 553 patients were assessed in the ED. Patient A remained in a pod containing 15 patient rooms/bays. There were 88 patients admitted into this pod during Patient A's stay and were considered exposed. In addition, 31 staff were either not immune or did not know their immunity status.
Lessons Learned: The pod design limited the number of exposures to one zone thus reducing the number of patients requiring follow up by the facility and Toronto Public Health. This incident demonstrates the value of physical separation and dedicated air handing units in a busy ED. The separation allowed for easy identification of patient and staff exposures and reduced the risk of airborne spread in the department.

Poster Board #20

RE-USE OF SINGLE USE INJECTION DEVICES PART I: AN ALBERTA HEALTH SERVICES (AHS)-WIDE SURVEY OF FRONT-LINE HEALTH CARE PROFESSIONALS ON SAFE INJECTION PRACTICE

Nancy Alfiers[1], Elizabeth Henderson[1,2], Karin Fluet[1], Sue Lafferty[1], Janet Barclay[1], Karen Hope[1], Debra Doe[1], Dan Woods[1], Leanne Dekker[1], Mark Joffe[1,2], Infection Prevention and Control[1]
[1]Alberta Health Services, Alberta, Canada,
[2]Universities of Alberta/Calgary, Alberta, Canada

Issue: Re-use of single use syringes or contamination of multi-dose vials is a significant patient safety risk across North America. Recent events in Alberta Health Services (AHS) led Infection Prevention and Control (IPC) to launch a multi-faceted initiative on safe injection practice.
Project: This report focuses on a comprehensive anonymous survey conducted using a web-based tool called Zoomerang to address practice related to re-use of injection devices (i.e, syringes, needles/cannulae and multi-dose vials). The survey was done to determine current practices and to set content and direction for education.
Results: The survey was open for 3 months. It was widely advertised through newsletters, emails and internal webpage. Respondents came from all 5 provincial zones. Of the estimated 60,000 staff/physicians involved in direct patient care, 2450 (4.1%) completed the questionnaire. Largest groups were: nurses (66.4%); physicians (9%), and paramedics (4.4%). Of these, 1956 (86.4%) administered injection medications.

Of the respondents, 20% failed to recognize contamination of a injection device when presented with a common clinical scenario; 17% reported they did not perform hand hygiene or use proper aseptic technique when administering injectable medications; and up to 11 % reported that they have or they have observed someone else perform a high risk injection practice once or more in the past 30 days.
Lessons Learned: Inappropriate use of injection devices is an identified risk to patient safety. Although infrequent, reports of ongoing re-use of single-use injection devices highlight knowledge or behavioural gaps. AHS IPC is developing a learning format for health professionals to enhance a sustained focus on safe injection practice.

Poster Board #22

RE-USE OF SINGLE USE INJECTION DEVICES PART II: OBSERVATIONS OF SAFE INJECTION PRACTICE - THE DEVIL IS IN THE DETAILS

Sue Lafferty[1], Elizabeth Henderson[1,2], Karen Fluet[1], Janet Barclay[1], Karen Hope[1], Debra Doe[1], Dan Woods[1], Nancy Alfieri[1], Leanne Dekker[1], Mark Joffe[1,2], Infection Prevention and Control[1]
[1]*Alberta Health Services, Alberta, Canada,*
[2]*Universities of Alberta/Calgary, Alberta, Canada*

Issue: Re-use of single use syringes or contamination of multi-dose vials is a significant patient safety risk across North America. Recent events in Alberta Health Services (AHS) led Infection Prevention and Control (IPC) to launch a multi-faceted initiative on safe injection practice.
Project: This report focuses on direct observational reviews and teaching opportunities conducted by IPC. A risk matrix was developed to prioritize review areas by estimating the number of injections and the likelihood that a patient would receive an injection. Individual areas identified as high volume and/or high likelihood were identified as a cluster. Quota sampling was applied to determine a representative number of observations. A standardized tool was employed by observers. A breach in technique was defined as either major**,** an event that posed a risk for transmitting a bloodborne virus, or minor**,** a deviation from safe injection practice.
Results: Observations were performed by Infection Control Professionals (ICPs) over 6 weeks across Alberta acute care urban and rural facilities. Over 900 observations were captured in high risk areas (Emergency, O.R, Endoscopy). Observations required 364 hours of ICPs time (excluding travel). No major breaches were observed; Minor breaches in aseptic technique or hand hygiene were noted in >90% of the observations. Limitations included: the length of time to complete an observation and significant geography resulting in lengthy travel time.
Lessons Learned: This review presented opportunities to highlight safe injection practice but is, at best, a representative sample of current practice. Ongoing reinforcement and education about correct technique is required to reduce risk to patients.

Poster Board #24

MEASURING COMPLIANCE WITH OUTBREAK MANAGEMENT RECOMMENDATIONS

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[1]*The Hosptial for Sick Children, Toronto, Ontario, Canada,*
[2]*The Hospital for Sick Children, Toronto, Ontario, Canada,*
[3]*The Hospital for Sick Children, Toronto, Ontario, Canada*

Issue: In response to a *Serratia marcescens* outbreak in our NICU, outbreak management recommendations were made. Despite these recommendations, the outbreak continued. Observations of gaps in recommended practices prompted the development of an audit tool, a modified version of the Routine Practices audit tool template from the CHICA-Canada website.
Project: Daily auditing, using the audit tool, included participants from the NICU leadership team and an infection control practitioner. Each patient room was audited and compliance rates were calculated based on the practices observed in the entire room for the duration of the observation period. Rooms were categorized as either compliant or non-compliant. Audits were performed from October 9, 2010 to December 3, 2010.
Results: From October 9, 2010 to December 3, 2010, 121 audits were performed. Compliance to recommended practices increased from 48% (Oct-Nov) to 70% (Nov-Dec).
Lessons Learned: Engagement of the unit leadership to participate in the audit process was essential. Interdisciplinary communication and real-time feedback were valued by staff. Auditing processes for non-outbreak settings may contribute to outbreak prevention

Poster Board #26

MOBILIZE AND IMMUNIZE

Lorraine Campbell, Jeff Chan, Debbie Babiak,
Thunder Bay Regional Health Sciences Centre, Thunder Bay, Ontario, Canada

Issue: Each year, Influenza and its complications lead to significant morbidity and mortality. It is recommended that all persons providing essential community services, including healthcare workers (HCW) receive the Influenza vaccine. However, uptake of the Influenza vaccination is highly variable and often falls short of targets. Various methodologies have been described to increase the vaccination rates of HCW. However, despite use of these programs, vaccination rates remained low. Vaccination programs directed at going to the frontline worker have been reported to increase vaccination rates. We sought to determine whether implementation of such a program would increase vaccination rates at our institution.
Project: In addition to regularly scheduled flu clinics for hospital staff and volunteers, Occupational Health and Safety staff brought a mobile cart to individual departments to provide influenza vaccination in an attempt to increase vaccination rates and improve staff satisfaction.
Results: The vaccination rate for 2010/2011 was 48.7%. This was lower than the vaccination rate of 51.3% for the pandemic H1N1 in 2009/2010, but higher than the vaccination rate for the seasonal influenza in previous years.
Lessons Learned: Despite campaigns that included education sessions, multiple clinics, posters and draw prize inducements, vaccination rates for HCW remained low. Vaccination rates increased to 48.7% for 2010/11 following the use of mobile carts to bring the vaccination program directly to individual departments and nursing units. There was also an increase in staff satisfaction.

Poster Board #28

MANAGING INVASIVE GROUP A STREPTOCOCCAL DISEASE IN A LONG-TERM CARE FACILITY

Kyla Cullain, *Ottawa Public Health, Ottawa, ON, Canada*

Background: On December 15, 2010, Ottawa Public Health received laboratory confirmation of an invasive Group A streptococcal (GAS) infection in a resident in a long-term care facility (LTCF).
Importance: Elderly residents in LTCFs are at an increased risk of morbidity and mortality from invasive GAS due to higher prevalence of underlying conditions. "There is 38% likelihood that a second case of iGAS will be detected in a LTCF within 6 weeks" (*Guideline for the Prevention and Control of Invasive Group A Streptococcal Disease*). Unlike community cases of iGAS, provision of chemoprophylaxis to close contacts is not the recommended approach.
Methods: A site inspection was conducted to ensure infection control practices were being upheld. A 6-week retrospective chart review was completed on all residents and staff to determine if any cases, confirmed or suggestive, of GAS were documented. Swabs were collected on all residents residing on the same floor as the index case, and on 10% of residents from remaining floors. Staff known to have recent GAS infections were screened. Active surveillance continued for 2 months; any staff or residents exhibiting symptoms compatible with GAS were swabbed; any individual positive for GAS was placed on chemoprophylaxis and re-screened at pre-determined intervals.
Results: Adherence to the MOHLTC guidelines, and implementation of strict infection control practices and active surveillance, mitigated the spread of this disease in this facility. The outbreak was declared over February 18, 2011.

Poster Board #30

TEMPORAL ASSOCIATION BETWEEN INCREASED INFLUENZA BURDEN AND INCREASED NOSOCOMIAL ANTIBIOTIC-RESISTANT ORGANISM CASES IN A TEACHING HOSPITAL

Carly Rebelo, Jayvee Guerrero, Shaunattonie Hudson-Henry, Camille Lemieux, Michael Gardam, *University Health Network, Toronto, ON, Canada*

Background: The 2010/11 influenza season resulted in a markedly increased hospitalization rate for influenza cases at Toronto General Hospital (TGH) as compared to previous seasons. An increased number of nosocomially acquired antibiotic-resistant organisms (AROs) was also noted during the late fall and winter of 2010/11. It was hypothesized that the two events may be linked.
Methods: A Laboratory Information System search was conducted for all positive influenza (A and B) and ARO (MRSA, VRE and *C. difficile*) cases between November and January of each of 2008/09, 2009/10 and 2010/11. Infection Control surveillance line lists were reviewed to identify ARO cases that were nosocomial. The weekly incidence of influenza cases was compared to the weekly incidence of nosocomial ARO cases for each of the three seasons.
Results: There was an anecdotal association between increased inpatient influenza burden and increased nosocomial ARO rates. From November 2010 to January 2011, there were 77 influenza cases and 126 nosocomially acquired AROs, which was far greater than comparison years.
Conclusions: An increase in inpatient influenza cases can be temporally associated with an increase in nosocomial ARO cases at a large teaching hospital. We hypothesize that the increased number of ARO cases was related to: widespread staff febrile respiratory illness with resulting staff shortages; "isolation fatigue" amongst staff resulting in poor compliance with routine practices and additional precautions; lack of isolation rooms; and widespread bed spacing of patients. Subsequently, there has been an increase in environmental services staffing and changes made to policy/practice.

Poster Board #32

SAFER "PAN HANDLING" TO REDUCE THE RATES OF VANCOMYCIN RESISTANT ENTEROCOCCI

Erika Vitale, *Chatham-Kent Health Alliance, Chatham, Ontario, Canada*

Issue: Chatham-Kent Health Alliance continued to have high rates of VRE acquisition

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resulting in multiple outbreaks. During staff focus groups used for implementing the Just Clean Your Hands program, frontline staff indicated that equipment could also contribute to the spread of infection – particularly bedpans. The infection control team was rather puzzled by this discovery because the unit had been accommodated with a bedpan flusher that could safely decontaminate this equipment. It was obvious that there were barriers preventing staff from managing bedpans safely.
Project: An inter-professional team worked on this problem of managing bedpan safely, through the use of videos to reveal the current practices, a staff survey on infection prevention practices involved with bedpan management, research into current literature, environmental changes, cost-benefit analysis, support for capital equipment, and education. Staff were engaged and developed safer methods for bedpan management.
Results: Staff actively participated in the development of two safe methods of bedpan management, the rates of healthcare associated VRE dropped drastically (indicating a reduction in fecal contamination of the environment), and frontline staff spent fewer steps on "pan handling."
Lessons Learned: A team approach was successful in understanding and addressing the cultural, behavioural and environmental barriers that prevent the transition to safer practices. Infection Control Practitioners can act as facilitators to address issues that would typically be seen as a nursing issue, to enhance safety for staff and patients. This project emphasized the importance of rounding and building trust with staff in order to discover infection prevention issues.

Poster Board #34

FEBRILE RESPIRATORY ILLNESS SURVEILLANCE TAILORED FOR THE BONE MARROW TRANSPLANT POPULATION

Jo Anne Janigan[1], Natalie Bruce[1], Virginia Roth[1], Suzanne Madore[1], Timothy Karnauchow[2], Kathryn Suh[1]
[1]The Ottawa Hospital, Ottawa, ON, Canada, [2]Children's Hospital of Eastern Ontario, Ottawa, ON, Canada

Issue: Viral respiratory infections in bone marrow transplant (BMT) patients are associated with increased morbidity and mortality. Outbreaks in this population are well described, and viral shedding can be prolonged. During a parainfluenza virus (PIV) outbreak on our BMT unit in 2008, our febrile respiratory illness (FRI) screening tool failed to identify several PIV-infected patients. Management of the outbreak was also hindered by reliance on viral culture for diagnosis.
Project: Chart reviews of all BMT patients with PIV infection during the outbreak were performed. During the outbreak, polymerase chain reaction (PCR) testing for PIV was implemented both for diagnosis in symptomatic patients, and as an aide to deciding when isolation precautions could be terminated in PIV-infected patients. A new algorithm for screening BMT patients for respiratory infection was developed.
Results: Of 15 infected patients, 14 were symptomatic; one patient was identified during a prevalence screen. All 14 symptomatic patients had at least one respiratory symptom, but only 6 (43%) had fever. Six patients had documented viral shedding (positive PIV PCR) after resolution of all symptoms.
Lessons Learned: Conventional FRI screening is insensitive in the BMT population. BMT patients with any respiratory symptoms (regardless of fever) are now placed on Droplet Precautions and tested for viral pathogens. Due to prolonged viral shedding, a negative follow-up PCR and viral culture must be reported before isolation is discontinued. There have been no further cases of nosocomial PIV infection in our BMT population since these measures were implemented.

Poster Board #35

AN OUTBREAK OF SERRATIA IN A LARGE CANADIAN CARDIAC CARE CENTRE

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[1]Public Health Agency of Canada, Ottawa, ON, Canada, [2]The Ottawa Hospital, Ottawa, ON, Canada, [3]The University of Ottawa Heart Institute, Ottawa, ON, Canada

Background/Objectives: *Serratia* outbreaks have been reported in cardiothoracic centers. An increase in *Serratia* cases was noted in 2008 at the University of Ottawa Heart Institute; clusters of cases continued to be identified through 2010. An investigation into this outbreak was initiated in order to identify risk factors for *Serratia* and to identify possible reservoirs of the bacteria.
Methods: A case control analysis of *Serratia* cases between January 1, 2008 and December 31, 2010 was performed. Each case was matched by date of surgery or admission to two controls. Data obtained from chart review included duration of mechanical ventilation, tube and parenteral feeding, and 30-day patient outcomes. Limited environmental sampling was performed, and process audits were conducted.
Results: Eighty-nine (88%) of the 101 cases were surgical patients. Most (60%) had at least one isolate collected from the respiratory tract. Cases were more likely to have been intubated > 72 hours compared to matched controls ($p<0.001$). Parenteral nutrition and tube feeding were independently associated with increased risk of *Serratia* ($p<0.001$), but only duration of intubation was associated with having *Serratia* in multivariate analysis. No environmental reservoirs were identified. Areas for improvement were identified through process audits, but none could be clearly linked with the increase in *Serratia* cases.
Conclusions: Intubation exceeding 72 hours was associated with an increased likelihood of having *Serratia*. No environmental reservoir was identified. Acquisition of *Serratia* is likely multifactorial. Determining the source of endemic pathogens and terminating transmission can be extremely challenging.

Poster Board #36

MANAGEMENT INFORMATION SYSTEMS (MIS) SERVICE CAN HAVE AN IMPORTANT ROLE TO PLAY IN CONTROLLING A METHICILICIN RESISTANT *STAPHOCOCCUS* AUREUS (MRSA) OUTBREAK

Inez Landry, Marlene Taylor, Darren Smytaniuk, Charles Dickey, Donna Perron, Kristine Desjardine, *Queensway Carleton Hospital, Ontario, Canada*

Issue: MRSA outbreak was declared in June 2010 at Queensway Carleton Hospital. One of the contributing factors identified in the outbreak was missed MRSA admission screens.
Project: MRSA outbreak control measures were put into place. A multidiscipline team was assembled to address one of the key causes of the outbreak; the missed MRSA admission screens. Three of the Healthcare Associated MRSA cases that were positive met the criteria for admission screening which was not performed. A task team met with the MIS staff to problem solve the issue of the "missed admission screens". An MIS professional was assigned to work with the Infection Prevention and Control (IPAC) team to develop a report that could be generated daily to alert staff of patients requiring MRSA/VRE screening. The IPAC team also worked with MIS to develop two other reports that assisted with additional MRSA screening practices that were implemented.
Results: The outbreak team recognized the role MIS can play in assisting in Controlling Outbreaks. Department Specific reports were developed listing patients who had been admitted for 12 hours and still had not been screened for MRSA.
Lessons Learned: Multiple strategies are important to control outbreaks. It is important to think outside the box and involve support departments. The Infection Prevention & Control and MIS Departments' expertise used the MRSA outbreak to collaboratively develop other helpful reports. The MIS team was interested in the project and recognized how their valued expertise can play a role in preventing an outbreak.

Poster Board #37

PREOP ANTIBIOTIC PROPHYLAXISTHE OR NURSES GET THE JOB DONE!

Marlene Taylor, Inez Landry, Holly Burns, Lilanne Marios, Greg Rose, Shelita Dattani, *Queensway Carleton Hospital, Ontario, Canada*

Issue: The "Safer Health Care Now- Surgical Site Infection" (SHN_SSI) Task Team has struggled to get the antibiotic surgical prophylaxis to the target of 95% or higher.
Project: The SHN-SSI team reviewed the current antibiotic prophylaxis strategies. The Patient Safety Objectives were: To provide correct antibiotic dosing. To provide the correct timing for antibiotic prophylaxis. To develop a consistent approach that supports all surgical procedures requiring antibiotic prophylaxis.
Results: The correct antibiotic dosing was achieved by changing pre op standing orders. The target for antibiotic prophylaxis timing of 95% or higher was exceeded once the OR Circulating Nurses took over the process of giving the pre-op antibiotics.
Lessons Learned: In the planning stages involve the front-line surgeons, anaesthetists and nurses; Providing the frontline OR team with our hospital antibiotic timing rates compared to our peers hospitals was key to creating a collaborative effort to improve; It is valuable to communicate with peer hospitals over 95% to learn what processes work for them; In depth chart reviews are necessary to know what the challenges to giving antibiotics are and what solutions might work; Regular debriefs to the OR Team and Surgical Medical Departments on how current strategies were working was vital to keep everyone on track and have the same goal: improved patient outcomes; Staff will come up with the best ideas and celebrate this success!

Poster Board #38

A BUNDLED APPROACH TO MANAGE *CLOSTRIDIUM DIFFICILE* ASSOCIATED DIARRHEA IN A GERIATRIC CARE SETTING

Latha Jacob, Jane E Van Toen, Heather Candon, Chingiz Amirov, *Baycrest Centre for geriatric care, Toronto,ON, Canada*

Issue: The risk for *Clostridium difficile* (C.difficile) colonisation and C.*difficile* associated diarrhea (CDAD) increases with age. Baycrest is a geriatric health centre and therefore many of our clients are at a high risk for CDAD. Prompt identification and initiation of control measures is essential for effective control of CDAD.
Project: A multidisciplinary bundled approach was used to improve identification, management and control of CDAD. Collaborated with nursing staff and laboratory services to improve laboratory turnaround time. Held unit based and interdisciplinary education sessions on CDAD management. Targeted education including checklists, visual aids and a cleaning audit process for the environmental services (ES) staff. Initiated on-going dialogue with physicians to improve treatment aspects of CDAD management. A comprehensive CDAD management policy was developed and made available to all staff. Unit based nosocomial *C.difficile* infection rates were made available to staff.
Results: Turnaround time for laboratory confirmation of CDAD was reduced to 24-48 hours. Cleaning staff have a greater appreciation of their role in CDAD management. Nurses and physicians have a heightened awareness about CDAD

management protocol.
Lessons Learned: There is need for an antibiotic stewardship program. Education needs to continue on an ongoing basis.

Poster Board #40

USING A 4TH YEAR STUDENT NURSING PROJECT TO ENHANCE INFECTION CONTROL EDUCATION TO PERSONAL SUPPORT WORKERS

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[1]Providence Care, Kingston Ontario, Canada,
[2]Queen's University, Kingston Ontario, Canada

Issue: An ICP was approached by two 4th year Queen's University nursing students for assistance on their Health Promotion project to enhance Infection Control education to Personal Support Workers (PSW).
Project: The nursing students wanted to design a workshop using adult learning principles and strategies that incorporated theory, practical applications, case scenarios, and demonstrations to improve learning outcomes. They were given the opportunity to provide an additional six hours of education to PSW students who would normally only receive a single three-hour classroom lecture. The nursing students utilized interactive exercises to demonstrate contact precautions and other additional practices around the use of personal protective equipment (PPE).
Results: 26 students participated in two three-hour workshops which included 5 stations that covered a variety of scenarios with discussion questions to answer. Pre-test and post test answers were evaluated which showed a 38% increase in knowledge of Infection Control precautions after the workshops.
Lessons Learned: The Infection Control Practitioner met with the nursing students for less than 3 hours to discuss strategies and formats that could be used for the workshops. This small time commitment of a 'train the trainer' format was used by willing nursing students to enhance Infection Control education for students. Interactive workshops received higher post-test scores and positive comments from participants over the traditional lecture format. Fluorescent powder and gel were utilized for a visual impact for the students.

Poster Board #41

WALKING THE WALK: HOUSEKEEPER FOR A DAY

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Issue: Infection Control is critically linked to the daily activities of environmental services staff. Effective and diligent cleaning and disinfection of the healthcare environment will limit the spread of microorganisms. Proposed changes, due to new provincial guidelines, were causing pushback from front line workers.
Project: A Medical Director of Infection Prevention and Control (MD) and an experienced Infection Prevention and Control Practitioner (ICP) spent time working as housekeepers in their respective facilities.
Results: The MD and ICP were orientated to cleaning routines (daily clean, thorough cleans, terminal cleans, washrooms). Daily cleans involve only high touch surfaces in patient's room (bedrails, knobs on cabinets or wardrobes, overbed tables if present, and a dry mop). A thorough (weekly) involved high dusting of room, full wipe of bed surfaces, spot cleaning of walls and a wet-mopping of the floor. Terminal clean would also include all surfaces in room, with curtain changing if patient was on isolation. Washroom cleaning included walls and fixtures.
Lessons Learned: This is hot, heavy work. There is no average room. Many rooms had clutter which impedes the cleaning process, or the degree of soiling (especially in washrooms) expanded the cleaning process. The new provincial standards which recommended changing of gloves between bed spaces in ward rooms (6 beds) was found to be impractical when performing a daily clean. Modifications to cleaning routines by Infection Prevention and Control can affect the amount of time the housekeeper has to complete all tasks, and may lead to cutting corners.

Poster Board #42

FRIDAY OUTBREAKS: FACT OR MYTH?

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Background: Healthcare institutions are rife with anecdotal information about the "Friday outbreaks" phenomenon: the notion that outbreaks are more likely to be reported on Fridays. However, there is a dearth of solid data to support or rule out this assumption.
Methods: To test this hypothesis we studied 4 years worth of data on institutional outbreaks reported in the Greater Toronto Area. These data were categorized in a database by type of outbreak (respiratory vs. enteric), by facility type (acute vs. long-term vs. chronic care) and by day of the week the outbreaks were reported.
Results: A total of 901 outbreaks were reported over the study period. The expected distribution would, therefore, be an average of 128.7 outbreaks (14.3%) reported on each of the 7 days of the week. We compared this expected value with the observed counts for each weekday. Our analysis shows that Mondays, not Fridays, account for the largest share of outbreak reports (23.1% for all outbreaks). Outbreaks are significantly more likely ($p < 0.05$) to be reported on Mondays. This remains true for aggregate data (all types of outbreaks in all facilities) and for stratified data subsets (by type of outbreak and by facility type).
Conclusions: However, Friday phenomenon cannot be completely dismissed. Although our analysis shows that Fridays do not account for the largest share of outbreak reports, they account for the second highest count (19.3%). From this perspective, the notion of "Friday outbreaks" may be partially true.

Poster Board #44

REPROCESSING AND STERILIZATION SERVICES IN ACCREDITATION CANADA'S PROGRAMS

Diana Sarakbi, Kieran Jordan, *Accreditation Canada*

In response to requests from health care organizations, regulators, and governments for national standards in the area of reprocessing and sterilization, Accreditation Canada collaborated with CSA to develop the reprocessing and sterilization services standards which were released as part of the Qmentum accreditation program in 2008. These standards represent one of the tools developed by Accreditation Canada to help health care organizations promote a culture of infection prevention and control by addressing key safety and quality issues in the area of reprocessing and sterilization.
The Qmentum reprocessing and sterilization services standards were developed based on an extensive literature review and environmental scan of best practices in reprocessing and sterilization, the guidance of the reprocessing and sterilization advisory committee, and evaluation results from national consultation and pilot testing of the standards in health care organizations across Canada.
As part of Accreditation Canada's ongoing commitment to sharing information with partners and stakeholders to help improve the safety and quality of reprocessing and sterilization services across Canada, results from 2010 surveys will be presented to highlight common strengths and areas for improvement in this area. This information will help support education and quality improvement initiatives in the area of reprocessing and sterilization.

Poster Board #46

COMMISSIONING A NEW HOSPITAL: A PATIENT-CENTRED APPROACH

Helen Shaw, *Bluewater Health, Sarnia, Ontario, Canada*

Issue: CSA's Guideline for Commissioning Health Care Facilities focuses on the physical building, but not on the process of moving the patients, particularly from an Infection Prevention and Control (IPAC) perspective. This is a retrospective review of a systematic approach to a patient move.
Project: A multidisciplinary team was formed one year in advance of a patient move to a new hospital building. IPAC joined the Occupancy Steering Committee. A systematic approach was developed to ensure IPAC input towards a safe patient move to a clean, functional space. A clear plan and schedule was developed with teams to address specific cleaning and transfer roles. Staff involved in the move received additional training on IPAC protocols, including knowledge of appropriate PPE and Additional Precautions.
Results: A practice run of the move was done to ensure planning was effective. Barriers to a successful move were; time constraints to ensure building was clean and for pretesting of all systems as recommended by CSA. All patients were efficiently and safely moved to their new space. Successes identified were: creating a separate staging area for patients and patient equipment; creating a "Clean Team" designated to cleaning patient equipment; consecutively moving all patients in additional precautions; and leaving a team behind to immediately clean vacated space.
Lessons Learned: The key to success was a multidisciplinary team who devised and tested an advanced plan and schedule for the move. Accessibility to the team on moving day facilitated communication.

Poster Board #48

POINT PREVALENCE SURVEY OF METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) AND VANCOMYCIN-RESISTANT ENTEROCOCCUS (VRE) IN CALGARY URBAN HOSPITALS

Karen Hope[1], Nancy Alfieri[1], Elizabeth Henderson[1,2], Joseph Kim[1,2], Joseph Vayalumkal[1,2], Thomas Louie[1,2], Infection Prevention and Control[1]
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Issue: Screening programs allow Infection Prevention and Control (IPC) to focus resources on preventing transmission of antimicrobial resistant organisms (ARO), however, constraints on laboratory resources in the Calgary Zone of Alberta Health Services (CZ-AHS) has hindered this ability in recent years.
Problem: Between 2002 and 2009, the annual incidence of vancomycin-resistant enterococcus (VRE) had been stable at about 25 cases in the CZ-AHS. By July, 2010 the incidence escalated to 206 cases despite intensive efforts aimed at curtailing increased activity.
Results: In August 2010, a point prevalence survey of 4 urban acute care hospitals was performed. All inpatients were screened except Mental Health and Ante/Post Partum. Screening consisted of a nasal swab for methicillin-resistant *Staphylococcus aureus (*MRSA) and a rectal swab for MRSA/VRE. Of the1694 patients were eligible

for screening, 100% were screened for MRSA and over 95% for VRE. Of these, 156 (9.2%) were positive for MRSA and 182 (10.8%) were positive for VRE. Prior to the survey, 121 inpatients were known positives. An additional 218 previously unidentified patients were found. For each known positive, 2 additional colonized persons were found which were unknown to IPC or staff. Results varied by site.
Lessons Learned: Risk of colonization in pediatric and neonatal patients remains low. MRSA Prevalence increased from 3% in 2002 to 9.2% in 2010. Increased incidence was highest on units with prolonged stay due to placement difficulties, thus creating a reservoir for colonization. Laboratory resources to support for screening activities are an essential component of ARO management.

Poster Board #49

INTRODUCTORY INFECTION CONTROL EDUCATION F
OR REHABILITATION MASTERS STUDENTS: KEEPING IT FUN

Lisa Hope[1], Jim Gauthier[1], Sue Cooper[2],
Allyson Davis[1], Kathleen Poole[1], Dick Zoutman[1,2]
[1]Providence Care, Kingston, Canada,
[2]SEO Regional Infection Control Network, Kingston, Canada

Issue: Didactic Infection Control education of University Students can be viewed as quite boring, and retention of this Infection Control information may be limited.
Project: All new students of the Occupational Therapist/Physiotherapist Master's Program at Queen's University were provided a one-hour lecture on Routine Practices. This was followed up by an interactive, station based education model. Three stations were used, and 30 minutes were allowed for presentations on Contact Precautions, Droplet and Airborne Precautions and Routine Practices. Participants were provided with the rationale, purpose and types of personal protective equipment available, and the given the opportunity to don a gown and gloves, demonstrate their hand washing techniques, and model a mask with visor, while conversing easily with Infection Control Practitioners in these smaller groups. This session was set up during their orientation week as part of a very interactive program, welcoming the students to the campus of the Rehabilitation Medicine program.
Results: Students were engaged. Feedback has been positive.
Lessons Learned: Providing only lecture based Infection Control education to university level students is not the most effective way of presenting new concepts. An initial lecture provides the fundamentals and allows for these interactive stations to be short, quick, and fun, while providing reinforcement of the concept and also good contact with the Infection Control Practitioners. Ensuring minimal redundancy between lecture and stand up sessions is essential in keeping students engaged while ensuring they understand the importance and rationale for compliance with current protocols in Infection Control.

Poster Board #50

CRYPTOSPORIDUM: THE PARASITE THAT
CHANGED INFECTION CONTROL PRACTICES

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[2]Seneca College, York Region, Ontario, Canada,[3]Ministry of Labour,
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Background: In late 2011, York Region investigated a large and unique *Cryptosporidum* outbreak at a Veterinary Techgnician Program teaching facility. Students at this facility provide hands on care and received training in medical procedures for small and large animals.
Methods: A multi-jurisdictional outbreak investigation was initiated, and involved representatives from the Ministry of Health and Long Term Care, Ministry of Labour, Canadian Food Inspection Agency, Ministry of Environment and local Public Health Units. Questionnaires were administered to all students and staff in the program to identify cases. Water and clinical samples were submitted for laboratory analysis. On site inspections and infection prevention and control recommendations were made to prevent further spread of the disease and prevent future outbreaks.
Results: Sixty-four of 176 students (36%) in the Veterinary Technician program met the case definition for this outbreak. Laboratory testing confirmed *Cryptosporidium parvum* among cases. Water sampling showed no fecal contamination
Conclusions: Traditional infection prevention and control practices must be versatile, innovative and adaptable to apply to the non-traditional health care settings.

Poster Board #51

USING AN ELECTRONIC DATABASE FOR PUBLIC HEALTH FOLLOWUP
OF ACTIVE TUBERCULOSIS (TB): LEAVING THE PAST (PAPER) BEHIND

Cathie Walker, Jill Ferguson, Jody Paget, Melanie Elms, Aaron Aitchison,
Middlesex-London Health Unit, London, Ontario, Canada

Issue: The Middlesex-London Health Unit and other Ontario health units routinely provide tuberculosis follow-up to three related groups of people: individuals with active TB and their contacts, individuals with latent TB infection and individuals who are flagged by the immigration process for being at increased risk of TB. Public health follow-up of individuals with active TB disease requires, at minimum, gathering evidence of disease status, providing direct observed medication therapy, and tracing and testing of contacts. As well as being case-specific, the volume and type of information gathered is nuanced making accurate documentation both a requirement and a challenge. Prior to the implementation of an electronic database, staff had developed their own approaches to documenting care (i.e. self-created paper forms, Excel spreadsheets). Although these approaches were compliant with agency standards, they created barriers in terms of measuring workload and providing consistent care.
Project: This presentation will focus on the design and implementation of an electronic database that supports public health care of individuals with active TB. A database designer was contracted to work with staff to understand the work processes involved in active TB care. A TB database was created that supported clinical case management, contact screening and government reporting. The database has different modules where information about client demographics, history, laboratory testing, diagnosis, contact tracing and skin-testing, medication administration, and communication (including client and physician letters) to be documented. **Results:** This has resulted in benefits in terms of consistency/accuracy of follow-up, work sharing and workload measurement. By improving documentation efficiencies, fewer administrative backlogs have been created.
Lessons Learned: Time is needed to review and update your work processes before incorporating them into a database. Designate one staff member as liaison with database designer. Plan for robust beta testing of "draft" database before going live. Develop strategies to address need for regular database updates.

Poster Board #52

STRATEGIES IN OBTAINING A PHYSICIAN ORDER
FOR TOPICAL MUPIROCIN NASAL OINTMENT

Alice Newman, Michael John, Mary Lou Card, *London Health Sciences Centre,*
London, Ontario, Canada

Background: A MRSA reduction strategy was identified to reduce MRSA transmission rates in the London hospitals. One of the identified strategies included a treatment protocol using 2% mupirocin nasal ointment to bilateral nares to a defined patient population.
Objective: To determine a reliable method to identify patients qualifying for a treatment protocol and to develop a dependable method to obtain the required physician order.
Methods: A three-month trial was designed on a 45-bed general surgery unit that involved the Infection Control medical director writing a "suggest order" for patients identified as requiring a treatment protocol using 2% mupirocin nasal ointment. Data was collected on compliance with this method and these results were compared with a subsequent three month trial where the same unit obtained a physician order using a pre-printed order sheet and a process map to determine which patients qualified for the treatment protocol.
Results: A total of 84 patients qualified for the mupirocin protocol during the 6-month trial period. In the first 3 months, methicillin-resistant *S. aureus* was identified in 50 patients and 47 patients received a signed physician order for mupirocin. In the second 3 month trial 34 patients qualified for the protocol and 20 patients were placed on treatment using the pre-printed order sheet ($p<0.001$).
Conclusions: Clinical units face challenges in following algorithms while providing direct care. Accountability in following the process map must be clearly delineated to front line staff and time given for this task. Alternative approaches, such as medical directives may help the clinical area.

Poster Board #54

A HAIRY TALE: SUCCESSFUL PATIENT EDUCATION STRATEGIES
TO REDUCE PRE-HOSPITAL HAIR REMOVAL BY PATIENTS WITH
PLANNED CAESAREAN SECTIONS

Wil Ng[1], Doreen Alexander[1], Bonnie Kerr[1], Man Fan Ho[1],
Michelle Amato[1], Paula Mendes[2], Kevin C. Katz[1]
[1]North York General Hospital, Toronto, ON, Canada,
[2]3M Canada Company, London, ON, Canada

Background: Our large community hospital performs ~1,800 C-sections annually. Surgical site infections (SSIs) are associated with increased morbidity, costs, and length of stay. Appropriate/no hair removal is one important aspect of preventing SSIs. A 2008 audit found 41% of patients self-removed hair prior to arrival; 83% of them shaved. A multi-faceted patient education strategy to reduce inappropriate hair removal within 1 month of term was implemented.
Methods: In January 2009, our hospital's prenatal books (given to all prenatal patients) were updated with statements discouraging hair removal, with further enhancements in March 2010 to 2-full pages of no hair removal messaging. During prenatal visits, obstetricians reinforced the messaging. No hair removal posters were developed with 3M and displayed in obstetricians' offices, waiting areas and throughout the Labour and Delivery floor (e.g. assessment/waiting areas, restrooms) beginning November 2010. Audits were conducted at various time points. Nursing staff conducted standard interviews for elective C/S patients.
Results: Hair self-removal rate decreased from 40% in 2009 to 27% in 2011 after the implementation of posters and enhanced prenatal education ($p=0.13$). In 2011, 14% shaved; a 20% point decrease from 34% in 2008 ($p=0.008$). Patients who had seen/heard no hair removal messages were significantly less likely to shave (8% versus 31%, $p=0.04$). 66% saw the posters; 9% of them shaved, versus 22% of patients who did not see the posters ($p=0.17$).

Conclusion: Our multi-faceted strategy of enhanced prenatal books, posters and physician prenatal education proved successful in reducing inappropriate hair self-removal by patients with planned C/S.

Poster Board #56

WE HAVE THE NUMBERS, NOW WHAT DO WE DO?
SURVEILLANCE INFORMATION DISSEMINATION PLAN FOR PEI

Stacey Burns, *Department of Health and Wellness, Charlottetown PE, Canada*

Issue: In PEI prior to January 2009 there was no consistent provincial infection prevention and control surveillance being done in the province. No information regarding infection/colonization rates was available to administrators or staff to be able to make informed decisions regarding care of patients in island facilities.
Project: In 2009 a surveillance database was created that could be used by ICPs in all parts of the province to track rates of MRSA, VRE and C.*diff* in all provincial facilities (acute care, long term care and community hospitals).
Results: PEI has counts and rates of HAIs ready to be reported to the staff via quarterly reports, (2 have been released so far) and to the general public via the department website which will be posted in March 2011.
Lessons Learned: There were many challenges in the creation of this project and there continues to be growing pains with the database. The biggest challenge continues to be the dissemination of the data to frontline staff and delivering it to the general public in a way that is meaningful. It is expected that there will be media interest in the numbers that are released to the public. The hope is that the information provided will instil confidence (not fear) in Islanders and give a greater understanding of the efforts that are being made to deal with HAIs.

Poster Board #62

THE DEVELOPMENT AND IMPLEMENTATION OF AN ONLINE
TRAINING MODULE FOR INFECTION PREVENTION AND CONTROL

Brenda Stiver, Vicki Gorman, Sherri Deamond, *The Regional Municipality of Durham Health Department, Whitby, Ontario, Canada*

After SARS, the Walker and Campbell report documented the gaps in Infection Prevention and Control (IPAC) training to frontline healthcare workers. Operation Health Protection identified that the front line worker has an important role in IPAC. The 2009 pandemic H1N1 reinforced the need for knowledge of IPAC principles for frontline workers which included Health Department staff. An accessible and interactive online training module was created to fill this gap. The online module was then made mandatory for all Durham Region Health Department staff to complete. This presentation will review the implementation process and the first year's evaluation results from Durham Region Health Department's internal online IPAC module.

Poster Board #64

EFFECTIVENESS OF A NOVEL OZONE AND HYDROGEN
PEROXIDE GAS-VAPOUR SYSTEM FOR THE RAPID HIGH
LEVEL DISINFECTION OF SURFACES AND HEALTHCARE SPACES

Dick Zoutman[1], Michael Shannon[2], Kelly Brown[2]
[1]*Queen's University, Kingston, Ontario, Canada,* [2]*MediZone International Inc, San Francisco, California, USA*

Background/Objectives: Vapour based fumigant systems for disinfection of healthcare surfaces and spaces is an evolving technology. A new system (AsepticSure™) that uses an ozone based process to create a highly reactive oxidative gas-vapour mixture that is noncorrosive was tested *in vitro* and *in vivo* for antimicrobial disinfection effectiveness.
Methods: Ozone gas at 80 parts per million (ppm) was combined with 1% stabilized hydrogen peroxide vapour at 80% relative humidity in a test chamber and upscaled to a 82 cubic meter room using 3.75% hydrogen peroxide at 30 minutes. Test organisms included methicillin resistant *S. aureus*, vancomycin resistant enterococcus, *E. coli*, *P. aeruginosa*, and *C. difficile* spores dried onto stainless steel discs.
Results: The combination of 80 ppm ozone with 1% hydrogen peroxide vapour in the test chamber achieved a very high level of disinfection of at least 6 $\log_{10}$ reduction of the bacteria and *C. difficile* spores tested on steel discs during a 15 minute exposure. The entire system was scalable such that it achieved the same high level of disinfection of an 81 cubic meter room in 30 minutes with 3.75% hydrogen peroxide and 80 PPM of ozone against MRSA and *C. difficile* spores.
Conclusions: The ozone and hydrogen peroxide gas-vapour mixture provides a significantly higher level of disinfection of steel surfaces against healthcare associated bacterial pathogens achieved to date. The system is an advanced oxidative process providing a rapid and effective means to disinfect healthcare surfaces and spaces to a very high level, particularly against *C. difficile* spores.

Poster Board #66

EVALUATION OF ATP BIOLUMINESCENCE TESTING FOR MONITORING
DISCHARGE CLEANING IN A HEALTHCARE FACILITY

Cindy O'Neill, Paul Speziale, Jennifer Blue, Lisa Ballantyne, David DiSimoni
Hamilton Health Sciences, Hamilton,Ontario, Canada

Background: Contamination of environmental surfaces in healthcare facilities can contribute to the transmission of healthcare associated infections. Monitoring adherence to protocols is an important component of an environmental cleaning program. The ATP monitoring system is based on the measurement of adenosine triphosphate (ATP), which is relative to the amount of bioburden present. The ATP system was evaluated as a tool to assess isolation and routine discharge cleaning at an acute care hospital.
Method: ATP swabs were used to test the cleanliness of six surfaces (bed rail, commode, bed table, grab-bar, and call bell and pressure cuff) following discharge cleaning of patient rooms on clinical units for 90 days. The self contained sampler was used to swab the surface and was placed in the ATP instrument to obtain numerical readings directly related to surface cleanliness. The value was interpreted as pass (<150), marginal (150-300) or fail (>300) based on the manufacturer's established thresholds. All results were uploaded to a software program for further analysis.
Results: A total of 229 targets were tested using ATP method following isolation (113 targets) and routine (116) discharge cleaning. Overall, 25 isolation room targets (25%) and 45 routine room targets (46%) failed ATP testing. Immediate feedback was provided to the cleaning team and cleaning was repeated.
Conclusion: Opportunities to improve discharge cleaning were identified. The ATP method was quick and easy to use and provided immediate results for feedback and corrective action. This method compliments our current Glitterbug™ fluorescent audit process which is ineffective for auditing discharge cleaning due to the bed occupancy pressures

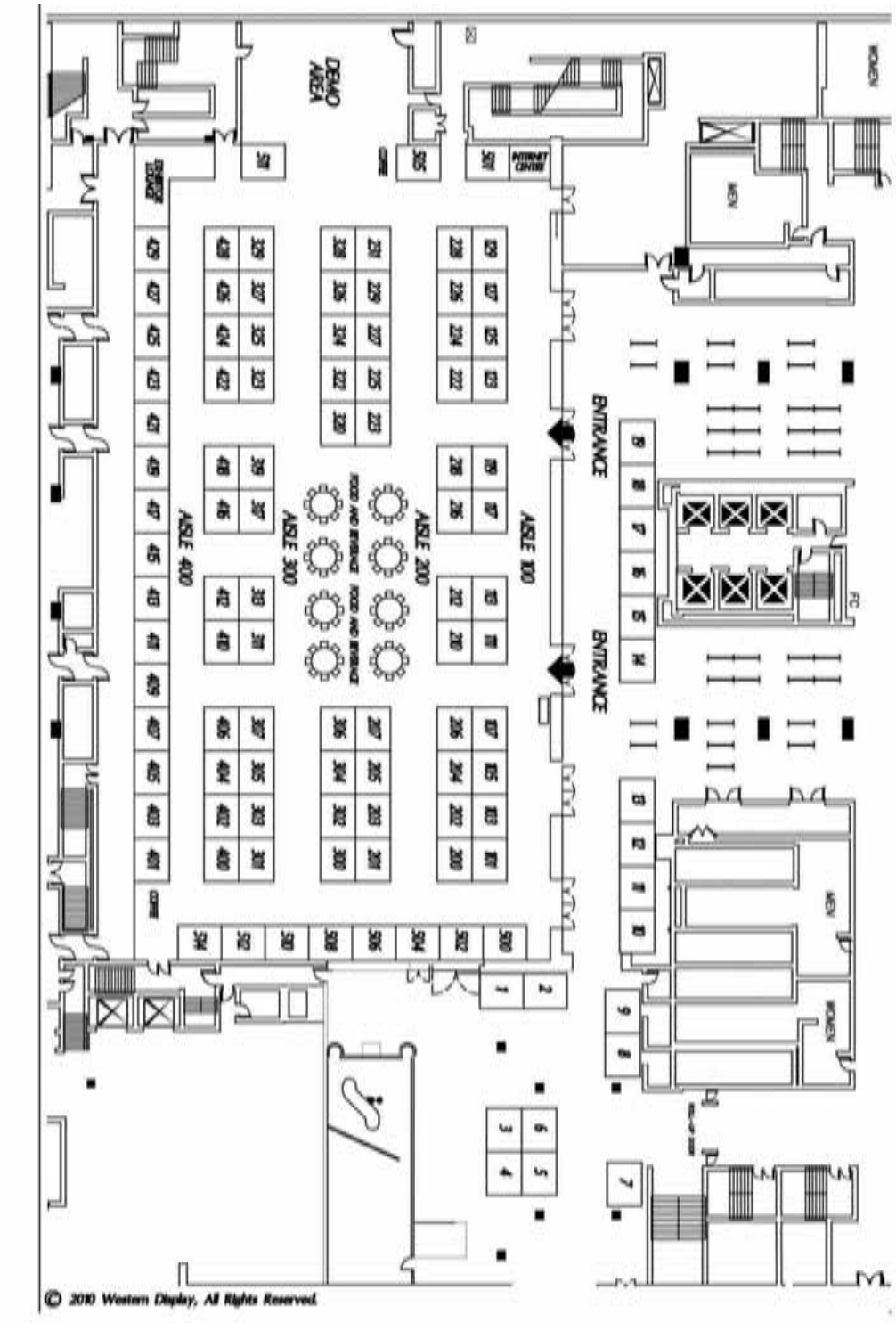
Poster Board #67

EVALUATION OF AN ELECTRONIC MEASURING
SYSTEM FOR HAND HYGIENE AUDITS

Cindy O'Neill MLT, ART, CIC, Cindy Rogers MLA,
Connie Pearson BSc, MLT, CTBS, Gail Fisher MLT,
Mark Jefferson RN, BScN, CIC, Mary-Catharine Orvidas MLT,CIC,
Gail Johnson RN, BScN, MSc

Background: An electronic measuring system for measuring hand hygiene compliance was evaluated and compared with the Ontario Ministry of Health and Long Term Care (MOHLTC) paper-based hand hygiene Observational Tool.
Method: The electronic hand hygiene tool and the MOHLTC paper tool were used in parallel to measure hand hygiene compliance. Two auditors, each using a different tool, simultaneously conducted 45 hand hygiene observation sessions, each averaging 20 minutes, across four hospital sites, over 60 days. Hand hygiene compliance was measured by direct observation of healthcare providers as per MOHLTC 4 Moments for Hand Hygiene.
Results: A total of 292 observed opportunities for hand hygiene were recorded during the audits. Overall, 136 observations were used in the evaluation. Data from the electronic tool was matched to the corresponding data from the MOHLTC paper tool. A 5% discrepancy was noted between data collected using the MOHLTC tool and the electronic tool.
Discussion: Analysis of hand hygiene data identified five types of errors between the two methods. The difference that could be explained by contradictory or incomplete recording of information by the auditors not viewing or documenting the same actions by the care provider were removed (156 observations) from the analysis. The other discrepancies were related to four types errors: three were auditor related and one was related to the electronic system's software.
Conclusion: The electronic hand hygiene audit system was easy to use and improved the data management and reporting process. The results of this evaluation showed that an electronic hand hygiene tool is an efficient and effective method for monitoring and calculating hand hygiene compliance rates.

EXHIBITOR FLOOR PLAN



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Sunday, May 29

CHICA TPIC Meet & Greet
Join friends and colleagues at the first social event of the conference. CHICA TPIC will host one drink per person and provide snacks before you go out for the evening. Jo'Ann Alderson will sign her book *Connecting in the Faceless World*. Discover techniques you need to transform your face-to-face communication skills to fit today's faceless world. (Purchase price $21.95, cash only.)

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Monday, May 30

Opening Ceremonies And Opening Reception – All Welcome!

Join attendees at the official Opening Ceremonies, Monday, May 30, 6:00 p.m.-7:30 p.m. Honour award winners and others who make CHICA a success. Honourary Membership will be bestowed on Shirley McDonald. See Shirley's bio on page 79.

Then meet in the Exhibit Hall for drinks and hors d'oeuvre, and celebrate CHICA's 35th anniversary with a delicious cake! Join our exhibitors in an informal, friendly night to renew acquaintances and meet some new folks as well! 7:30 p.m.-9:00 p.m.

Tuesday, May 31

Enjoy a wonderful dinner before hearing the presentation from Dr. Didier Pittet, worldwide expert in hand hygiene. Cash bar: 7:00 p.m.-7:30 p.m.; dinner and presentation: 7:30 p.m.- 9:30 p.m.

Wednesday, June 1

Don't miss Casino Royale and Club CHICA. The paparazzi will be looking for you so DRESS TO IMPRESS! Your winnings from the cashless casino will entitle you to tickets to win an iPad or a Kindle. CHICA TPIC will be holding a silent auction with contributions from CHICA's 21 chapters. Funds raised go to the TPIC Education Fund. Cash bar and casino/silent auction 6:30 p.m. - 7:00 p.m.; dinner 7:00 p.m.-8:30 p.m.; more fun at the tables 8:30 p.m.-9:30 p.m.; cashless casino and silent auction announcements – 9:45 p.m.

Then make your way past the bouncer to Club CHICA. Dance the night away to DJ Lexx – 10:00 p.m.-1:00 a.m. Cash bars.

Casino Royale and Club CHICA – $90 per person plus $11.70 HST.

Thursday, June 2

Postconference Harbour Dinner Cruise
Staying in Toronto overnight? Join us at the Post-Conference Harbour Dinner Cruise for dining and dancing. Buses or alternate transportation will leave the Sheraton Centre Toronto at 6:00 p.m., returning approximately 9:30 p.m. Tickets $78 per person plus $10.14 HST.

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CHICA-CANADA NEWS

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Innovation, inspiration, influence

Donna Wiens, RN, BN, CIC
President, CHICA-Canada

As I begin my term as CHICA-Canada president, I am humbled by the opportunity to serve the association and its members for the coming year. In her addresses to you in 2010, Anne Bialachowski emphasized our involvement at national and international events and the need to advance relationships with our Canadian partners.

I hope to build on the wonderful work done by CHICA presidents over the past 35 years (YES, it is our 35th anniversary). Since 1976 the association has grown from a fairly small, dedicated volunteer group to a much larger, influential team of chapters, interest groups, and members actively supported by the board of directors and the national office. 2011 also marks the 25th anniversary for two chapters – CHICA Nova Scotia and CHICA Eastern Ontario. Congratulations. What a demonstration of the lasting and important relationship of CHICA-Canada with its chapters and members.

This year the national education conference will be held in Toronto, May 28-June 2, with the theme *Leadership in Action – Innovation, Inspiration, Influence*. Leaders in infection prevention and control from across the country and outside Canada will stir us to action. We will learn about the latest innovations as we tour the exhibits and poster displays, speaking with our corporate partners and colleagues. Renowned speakers will inspire us and spur us to learn methods to influence best practice in all sectors of the healthcare system. Attendees will have the rare opportunity to hear an international leader in infection prevention and epidemiology, Professor Didier Pittet, Lead of the World Health Organization First Global Patient Safety Challenge, *Clean Care is Safe Care*. If you are not already registered, act now to join us in Toronto.

You may notice changes to the conference this year. In November the board of directors did a little belt tightening and made the decision to restrict some CHICA-sponsored travel in 2011 as well as to shorten the length of, and reschedule, the board meeting to save a couple of days of hotel and food expenses. The chapter presidents meeting has also been rescheduled. This means that some activities overlap and some of us miss out on pre-conference activities – for a good cause.

The national conference and other events offer the chance to renew acquaintances, advance alliances, and support our corporate sponsors. Nurturing these relationships is important to CHICA-Canada's mission as we all work together for the wellness and safety of Canadians. In the coming year, board members will attend and present at conferences and meetings and work with our Canadian and international partners. We will visit chapters and update you on our progress during the *Voices of CHICA* Webber teleclasses.

2011 promises to be an exciting, busy 35th year – let's fill it with Innovation, Inspiration and Influence!

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Innovation, inspiration, influence

Donna Wiens, RN, BN, CIC
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Alors que j'entame mon mandat de présidente de CHICA-Canada, c'est un sentiment d'humilité qui m'envahit devant l'occasion qui m'est offerte de servir l'Association et ses membres au cours de la prochaine année. Dans ses messages adressés aux membres en 2010, Anne Bialachowski a souligné notre participation à des activités nationales et internationales, ainsi que la nécessité de renforcer nos liens avec nos partenaires canadiens.

J'espère poursuivre l'excellent travail accompli par mes prédécesseurs au cours des 35 dernières années (OUI, nous en sommes à notre 35e anniversaire). Depuis 1976, notre association est passée d'un groupe relativement petit formé de bénévoles dévoués à une équipe beaucoup plus vaste et influente regroupant des sections régionales, des groupes d'intérêts et des membres soutenus activement par le conseil d'administration et le bureau national. L'année 2011 marque également le 25e anniversaire de deux sections régionales – CHICA Nouvelle-Écosse et CHICA Est de l'Ontario. Félicitations! Quel bel exemple de relation significative et durable de CHICA-Canada avec ses sections régionales et ses membres.

Cette année, le congrès national de formation aura lieu à Toronto, du 28 mai au 2 juin, sous le thème *Leadership in Action – Innovation, Inspiration, Influence* (Leadership en action – Innovation, Inspiration, Influence). Des chefs de file du milieu de la prévention et du contrôle des infections de partout au pays et même de l'extérieur du Canada nous pousseront à passer à l'action. Nous en apprendrons davantage sur les plus récentes innovations grâce au salon des exposants et aux présentations

sur affiche, tout comme dans nos discussions avec nos sociétés partenaires et nos collègues. Des conférenciers de renom nous inspireront et nous inciteront à apprendre des méthodes pour promouvoir l'adoption de pratiques exemplaires dans tous les secteurs du système de santé. Les participants auront l'occasion unique d'entendre un leader international en prévention des infections et épidémiologie, le professeur Didier Pittet, responsable du premier Défi mondial pour la sécurité des patients de l'Organisation mondiale de la Santé, dont le thème est *Un soin propre est un soin plus sûr*. Si vous n'êtes pas déjà inscrit, faites-le dès maintenant pour être des nôtres à Toronto.

Vous observerez peut-être des changements au congrès cette année. En novembre, le conseil d'administration a quelque peu resserré le budget et pris la décision de restreindre, en 2011, certains déplacements habituellement payés par CHICA. Il a aussi été décidé d'écourter et de déplacer la réunion du conseil pour économiser quelques jours d'hébergement et de frais de repas. La réunion des présidents des sections régionales a aussi changé de créneau horaire. Cela signifie que des activités se chevauchent et que certains d'entre nous manqueront les activités précongrès – c'est pour une bonne cause.

Le congrès national et diverses autres activités offrent la possibilité de renouer

avec de vieilles connaissances, de renforcer des alliances et d'encourager les sociétés qui nous commanditent. Il est crucial pour la mission de CHICA-Canada d'entretenir de telles relations; en effet, nous travaillons – tous ensemble – au bien-être et à la sécurité des Canadiens et des Canadiennes. Au cours de la prochaine année, les membres du conseil assisteront à des congrès et à des réunions, et donneront aussi des présentations à ces occasions. Ils travailleront avec nos partenaires ici au Canada et à l'international. Nous visiterons les sections régionales et vous informerons régulièrement de l'évolution des dossiers par l'entremise de séances virtuelles *Voices of CHICA*, organisées par Webber Training.

L'année 2011, la 35e de notre association, promet d'être stimulante et occupée – qu'elle soit pleine d'innovation, d'inspiration et d'influence!

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Happy **35th Anniversary**

Gerry Hansen, BA
Executive Director, CHICA-Canada

Spring is here at last! The tiny buds on the trees. The first flowers poking their little heads out of the ground. The flooding (it is a Manitoba thing). The taxes. The audits. The awards. The meetings. The conference planning. It is CHICA's busiest time of the year.

I wonder if the first board of CHICA ever imagined the busy-ness that CHICA would face 35 years later? Come to think of it, did anyone ever muse over the possibilities of e-learning, online registration, e-mail, and social marketing? It is not likely as, although the first publication of the possibilities of social marketing appeared in 1971, these were aspects of business that generally no association board dreamed of at the time.

It was in 1976 that our association was incorporated as a legal entity, standing on its own and with a big task ahead of it. It was a quorum of 39 members of CHICA who ratified our first name: Canadian Hospital Infection Control Association (CHICA). In 1986 the source of the acronym was changed to: Community and Hospital Infection Control Association (CHICA).

The original objectives of the new association were very similar to the goals of CHICA 35 years later.

1. The general purpose of the association is to improve patient care by serving the needs and aims common to all disciplines who are united by infection control activities.
2. To initiate and develop effective communication.
3. To support the development of effective and rational infection control programs in health-care agencies.
4. To encourage standardization and critical evaluation of infection control practices.

5. To promote quality research in practices and procedures related to infection control.
6. To publish or to facilitate the publication and/or distribution of such books, pamphlets and periodicals as may from time to time have reference to Association for Practitioners in Infection Control (Canada) and its work.
7. To receive donations and bequests to carry out the purposes of the Corporation.1

It appears then that the parents of our organization were indeed progressive in their thinking. They saw that the profession would become larger in numbers due to the new world of emerging and re-emerging viruses and antibiotic resistance. They did not anticipate SARS itself but undoubtedly saw the day when infection prevention and control professionals would be on the forefront of managing these outbreaks. They knew there had to be increased research in IP&C. They knew there had to be surveillance to produce the evidence and support the programs. And from the first day of their meetings, our association's originators knew the vast importance of continuing education and networking.

The first all-Canadian CHICA conference and inaugural business meeting was held in Jasper, Alberta in July 1978, hosted by the Calgary Infection Control Interest Group. (The first conference was *The First North American Eastern Conference on Infection Control*, a joint Canada/USA/UK event held in Toronto, Ontario in 1973.)[1]

In 2011 we not only celebrate the birth of CHICA-Canada but we celebrate and honour all those who have had a vision for CHICA and its membership. Join us in Toronto for the 2011 CHICA-Canada National Education Conference, CHICA's 33rd education conference, and our 35th anniversary.

Reference

1. LeBlanc, ME, Whyman CA, CHICA-Canada- An Historical Perspective: 1976 - 1994. Can J Infect Control, Vol 10 No 3 Autumn 1995, 83-88.

IN MEMORIAM

CHICA-Canada is saddened to hear of the sudden passing of Honourary Member Moira Walker on March 20, 2011. Moira was a pioneer of CHICA-Canada, a dedicated practitioner and educator, and a caring friend. A full tribute to Moira will appear in the summer issue.

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Reference: 1. Jarvis WR, Schlosser JA, Jarvis AA, Chinn RY. National point prevalence study of *Clostridium difficile* in US health care facility inpatients, 2008. The Association for Professionals in Infection Control and Epidemiology, Inc. (APIC). Am J Infect Control 2009;37:263-70 **2.** Containment of *Clostridium difficile* by the Flexi-Seal® Faecal Management System: an In Vitro Study. WHRI3107 MA106. May 8 2008. Data on file, ConvaTec.

2012 Board positions available for nomination

The Board of Directors of CHICA-Canada is seeking nominations for board positions that will be open in 2012. Being on the board of CHICA-Canada is an excellent way to participate at the national level. Personally and professionally, it offers the opportunity to meet a wide range of CHICA-Canada members, network with allied professional groups, and work with other motivated and experienced board members.

Nominations are invited for the following positions:

President Elect (1-year term)
Director of Finance (3-year term)
Physician Director (3-year term)

These terms commence January 1, 2012. Position descriptions and nomination forms are found in the CHICA-Canada Policy and Procedure Manual, or may be obtained from the Membership Service Office or downloaded from *www.chica.org* (Members Login).

Signatures of two active members are required for each nomination. If you know someone who would be qualified and interested in one of the above positions, send a completed nomination form to:

Marilyn Weinmaster, RN, BScN, CIC
c/o Membership Service office
PO Box 46125 RPO Westdale
Winnipeg MB R3R 3S3

Or by courier to:
Marilyn Weinmaster, RN, BScN, CIC
c/o Membership Service office
67 Bergman Crescent
Winnipeg MB R3R 1Y9

Deadline for nominations: August 15, 2011.

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Shirley McDonald named CHICA-Canada Honourary Member

CHICA-Canada is very pleased to announce that Shirley McDonald has been granted Honourary Membership.

Shirley is the CHICA-Canada Web Communications Manager and Webmaster for the CHICA-Canada website. Shirley began her career as a medical laboratory technologist in the microbiology laboratory of the Kingston General Hospital and moved into infection control in 1987, where she worked until 2005. Since 2005, Shirley has been working for Ontario's Ministry of Health and Long-Term Care as a scientific writer, to assist with the development of best practices documents for PIDAC (Provincial Infectious Diseases Advisory Committee).

In 1998 Shirley developed the Kingston General Hospital infection control website, which was the first infection control website in Canada. Shirley became the CHICA-Canada webmaster in 2003 and the CHICA-Canada Web Communications Manager in 2005.

Shirley has been an active member of CHICA-Canada, serving on many interest groups as well as the Standards and Guidelines Committee, the editorial board of the *CJIC*, and is currently the writer and graphic designer for CHICA-Canada's Audit Toolkit. To date, over 40 audit tools have been developed and posted to the audit toolkit website as a resource to CHICA members.

Shirley is currently president-elect for the CHICA Eastern Ontario chapter. She has been an enthusiastic and dedicated supporter of the chapter and is involved in many of the chapter's activities.

Shirley has a particular interest in infection prevention and control initiatives directed at the grassroots level. In 2008, Shirley initiated the Cameroon Book Drive, a successful campaign that provided ICPs in Cameroon with books and other valuable resources. Shirley is currently leading her chapter in a twinning project with the Cameroon ICPs.

Shirley will be honoured at the Opening Ceremonies of the 2011 National Education Conference (Monday, May 30, 2011).

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CHICA-Eastern Ontario Chapter
Celebrates 25 Years

CHICA-Eastern Ontario, formerly Eastern Ontario Practitioners in Infection Control (EOPIC), was founded in 1984 by Carol Whyman. Other founding members were Lois Rae, June Gorrell, Linda Coughlin, Kay Olmstead, Teresa Hamilton, Janet Allen, Marilyn Ottenhof, Katherine Wolsey, Sandra Connell and Betty Atkinson. Carol, Lois and Janet formed the first executive.

Chapter status was awarded at the SOPIC-CHICA Conference in London in June 1986 with seven EOPIC members present. Five of us shared a large hotel room – we still laugh at the fun we had.

On our return, June and Kathy proposed we host the 1990 annual CHICA-Canada conference in Kingston, which was met with enthusiasm and commitment. The offer was accepted by CHICA in 1987. Immediately, a committee was established and the venue booked for June 5-8, 1990 with the theme "Sailing into the '90s." The conference was both professionally and financially successful. Speakers included William Rutala, Martin Favero, and William Valenti.

Our chapter has always supported CHICA-Canada by reporting on the organization's activities at our meetings, making financial contributions, encouraging members to attend national conferences, and supporting members' participation at the national level.

The following chapter members have been involved and recognized at the national level.

- **Carol Whyman**
  President-elect (1991-92)
  President (1993-94)
  Past-president (1995)
  Award of Merit (2001)
- **Jim Gauthier**
  Technologist board member (1992-1994)
  Web discussion board coordinator (2005-present)
  Scientific Program Committee (2008-2010)
  President-elect (2011)
- **Dick Zoutman, MD**
  Physician director (1997-2009)
  Honourary life membership (2010)
- **Paul Webber**
  Infection Control Teleclasses partner with CHICA (2002) now worldwide
- **Shirley McDonald**
  Webmaster (2003-present)
  Award of Merit (2004)
  Honourary life membership (to be awarded 2011)
- **Amanda Knapp**
  Scientific Program Committee (2009-2011)
- **Sue Cooper**
  Scientific Program Committee (2011)

Support of education is also our mission.

- Education at each meeting.
- A workshop every 1-2 years.
- Education bursaries.
- 22 CIC certified; many supported by the Lois Rae Memorial Fund.
- Education of the public.
- Currently, CHICA-EO is developing a plan to twin with ICPs in Cameroon, West Africa.

Chapter membership has grown from one to nearly 100 as of November 2010.

Many members will attend the conference in Toronto to celebrate 25 active years, the friendships made, and the appointment of another of our members, Shirley McDonald, as an Honourary Life Member.

CHICA-Nova Scotia Chapter **Celebrates 25 Years**

This year marks the 25th anniversary of CHICA Nova Scotia (CHICA NS) formerly ICANS (Infection Control Association of Nova Scotia). From its humble beginnings when a handful of metro Halifax/Dartmouth infection control professionals held their first meetings in the 1980s, CHICA NS has grown into a dynamic and active chapter of CHICA-Canada. Members now come from all corners of the province and from Prince Edward Island, Newfoundland, Quebec, Ontario, Nunavut and even Nigeria. The membership (80 active members in 2010) includes infection control professionals from acute and long-term care settings; infectious disease physicians; industry partners; researchers; consultants from the Nova Scotia Centre for Infection Prevention and Control (IPCNS); community/public health practitioners, and practitioners from dentistry, rehabilitation centers, and the Canadian Forces. Talk about diversity!

Some chapter highlights include:

- Having a founding member of the chapter who was also a charter member of CHICA-Canada (Dr. Tom Marrie).
- Hosting a successful CHICA national conference in 1994.
- Having a member serve as CHICA-Canada President (Sheila MacDonald) in 2002.
- Having a member serve as president of the CBIC – Certification Board of Infection Control (Sheila MacDonald) in 2007.
- Hosting an educational symposium each fall since 1996. This year's conference has an environmental focus and will be held on November 3-4 in Halifax.

Our members have seen many changes over the years, including increasing global interest in the field of infection prevention and control. CHICA NS members have worked diligently to increase the visibility of the profession and to provide ongoing education. In honour of our silver anniversary, CHICA NS will be hosting a celebration and professional development day on April 1, 2011. Thanks to all the past (and current) members of CHICA NS for their contributions over the years. Congratulations, and here's to the next 25 years!

*Thanks to Mary LeBlanc and Sheila MacDonald for contributing to this article.

"Coming together is a beginning, staying together is progress, and working together is success."
– Henry Ford

The Chapter at work

Sheila Sheppard, Patsy Rawding, Cheryl Grosvold, Elizabeth Watson, Suzanne Rhodenizer-Rose, Faith Stoll

Laurel Nickerson, Kim Rafuse, Faith Stoll, Sheila Sheppard

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Molson Canada SARS Memorial Fund providing grants to ICPs

The SARS Memorial Fund for Infection Control Practitioners is a tuition/certification/professional development reimbursement program funded by Molson Canada SARS Concert (2003) and supported by the Ontario Ministry of Health and Long Term Care.

RNFOO manages the SARS Memorial Fund, initiated in January 2005. The fund provides grants to Infection Control Practitioners **from any discipline** to support them in advancing their knowledge to lead infection control practices within their healthcare settings. Grants can be applied to continuing education, certification/re-certification and professional development.

The fund allows allocation of approximately $58,000 per year in support of individual pursuing formal education and certification in the area of infection control.

See **www.rnfoo.org** for details.

CHICA-HANDIC **Out-Of-The-Box Award**

It has been said that in order to know where you are going, you need to know where you have been. In keeping with this notion, we recently had the opportunity to interview Diane Thornley, one of the founding members of our chapter. In her words, "The group was started in 1971 as an informal information-sharing mechanism for the practitioners in the Hamilton/Burlington hospitals. There was already a group of medical microbiologists, ID physicians and public health docs who met to discuss among other things, policies and procedures in infection control. As it was a Medical Advisory Subcommittee, the practitioners could not join at that time. (Happily, we were invited in 1972 to attend.) The original members were Mary Charlong (Hamilton General), Bernadette Kucera (Henderson General), Kay Towler (Chedoke), Marianne Mallia (St. Peter's) Florence Mellway (Hamilton Psychiatric Hospital), Marianne Baker (Joseph Brant) and me. This was even before the first APIC meeting which was held in Toronto in 1972. We rotated our meetings around each hospital. There was no formal structure at this time. When CHICA came on the scene in the mid '70s, the group extended an invitation to other hospitals in the Niagara and southern Ontario area and we formalized the meeting and had an executive and a name. The first president was Mary Charlong, and it seems that we all took turns. Kay Towler retired and was replaced by Lee Ramage, Florence Mellway retired and was replaced by Marie Wallace, and Marianne Baker left Canada and was replaced by Betty McLeod. As soon as CHICA started discussing 'chapters', we applied to become one and were one of the first."

Diane Thornley (L) presents Trish Hutton with the Out-Of-The-Box Award.

"Today, the CHICA-HANDIC chapter has more than 100 members, coming not only from acute and long-term care facilities, but also from public health, emergency services, and the commercial sector."

Today, the CHICA-HANDIC chapter has more than 100 members, coming not only from acute and long-term care facilities, but also from public health, emergency services, and the commercial sector. There are five meetings held annually that not only foster practice standardization within the region, but also allow for networking and education.

Carrying on the forward-thinking tradition established back in 1971, Diane Thornley, now retired, recently established an award to honour one CHICA-HANDIC member annually for their outstanding creativity in the management and resolution of a particular infection prevention and control issue or in the development and initiation of an innovative or ingenious educational project. In its inaugural offering, the Out-Of-The-Box Award competition attracted several top-notch applicants, each showcasing some of the outstanding work being done in the chapter. After a close vote, congratulations go to Trish Hutton for her award-winning submission. After noticing an increase in hospital-acquired infections on a particular unit within her facility, Trish, an ICP at Trillium Health Centre, implemented a positive deviance strategy to raise awareness amongst staff. Her approach brought together nursing staff, physicians, and administrators in a role-playing video that highlighted some of the contributory issues behind the rise in infections in a non-threatening, humorous skit that has empowered staff to recognize and employ successful behaviours. For more information about this project, please contact Trish at: *thutton@thc.on.ca*.

Check out the Safer Health Care Now! website to find out more about positive deviance: *www.saferhealthcarenow.ca/EN/events/VirtualPrograms/Superbugs/Pages/default.aspx*

Additional information about this award and other chapter initiatives can be found on the CHICA-HANDIC website.

CHICA-Newfoundland News

The new year stated with new executive members ready to embrace new ideas and build upon existing initiatives led by past president Merlee Rodway Steele. CHICA-NL members will have many opportunities to provide support for new members, progress towards excellence in infection prevention and control, become involved, build relationships and establish network opportunities within the chapter.

To date, CHICA-NL has formed several sub-committees to help achieve our identified objectives for 2011. They include a committee to develop a welcome package to provide support to new members entering the field of infection control, another committee to develop a process to honour members' dedication to CHICA-NL, and lastly, a committee to coordinate and make plans for the CHICA-NL provincial conference.

CHICA-NL is an active chapter and willing to work together as a team to promote the best practises in infection control and prevention for the safety of our people within Newfoundland and Labrador.

CHICA-NL President
Beverly Pittman

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[1]CDC. Guidelines for Environmental Infection Control in Healthcare Facilities, June 6, 2003/52 (RR 10): 1-42 II. Cleaning spills of blood and body substances

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Information for candidates seeking appointment to Editorial Board of *Canadian Journal Of Infection Control*

The *Canadian Journal of Infection Control (CJIC)* is seeking four candidates to complete the current *CJIC* Editorial Board. The responsibility of the Editorial Board is to critique submitted articles and return the evaluation to the Clinical Editor within the established time lines. There are usually four journal issues per year. It is anticipated that each Editorial Board member may review up to four submissions per year.

The term of the Editorial Board is five years. The four new candidates will have terms expiring June 1, 2015. A selection committee comprised of the Clinical Editor, CHICA-Canada President, and one other CHICA-Canada Board member will review each candidate's application using the CHICA-Canada Scoring Tool for the Editorial Board of *CJIC* (CHICA Policy Form 19). It is suggested that candidates review the foregoing policy before submitting their application. The appointment of candidates for *CJIC* Editorial Board is to be ratified by the Board of Directors. A Conflict of Interest Form must be signed by each successful candidate.

Qualifications:

Applicants must possess the following qualifications and agree to the following terms:

- Must be a current (2011) member of CHICA-Canada, having held membership for at least five years.
- Must have a Certification in Infection Control & Epidemiology (CIC) or specialty training in epidemiology, infectious diseases or community medicine.
- Must have a minimum of five years' experience in infection prevention and control and/or infectious diseases.
- Must have demonstrated strong organization and communication skills.
- Must have the time, personal commitment and support of their institution to serve CHICA-Canada through this position.

APPLICATION MUST INCLUDE:

- A letter from applicant demonstrating suitability for the position.
- A *curriculum vitae* that includes details as to the candidate's background in infection prevention and control/infectious diseases.

Applications must be received no later than **May 31, 2011**.

Application should be forwarded to:

Mail: PO Box 46125 RPO Westdale
Winnipeg, MB R3R 3S3

Courier: 67 Bergman Crescent
Winnipeg, MB R3R 1Y9

Fax: 1-204-895-9595

Email: *chicacanada@mts.net*

Call for applications
2013 Scientific Program Committee

Background

The CHICA-Canada 2013 Scientific Program Committee is a national committee whose mandate is to plan, develop and ensure completion of the scientific program for the 2013 National Education Conference. The 2013 National Education Conference will take place in Ottawa (June 1-6, 2013).

The 2013 committee is comprised of the following representatives of various practice settings:

- 2013 Conference Chair – Donna Wiens, RN, CIC
- 2013 Scientific Program Chair – Colette Ouellet, RN, BScN, CIC
- **2013 Scientific Program Co-Chair – Vacant**
- **2013/2014 Acute Care Representative – Vacant**
- **2013/2014 Long Term Care Representative – Vacant**
- 2012/2013 Community/Public Health Representative – Alexis Silverman, RN, BA, BScN, CIC
- **Medical Microbiology/Infectious Disease Physician – Vacant**
- 2013 CHICA Ottawa Region Representative **-** Josée Shymanski, RN, BScN, CIC
- 2013 Member-at-large - Stacey Burns, RN, BN, ET, CIC, CHICA NB/PEI

Call for Applications

CHICA-Canada is seeking candidates to fill the positions of:

- 2013 Scientific Program Chair (will become Scientific Chair in 2014)
- Acute Care Representative (for 2013 and 2014 conferences)
- Long Term Care Representative (for 2013 and 2014 conferences)
- Medical Microbiology/Infectious Disease Physician (2013 conference)

Meeting schedule and expenses

The Scientific Program Committee meets once in-person (for each conference) and then communicates through email or conference calls. The first meeting of the 2013 Scientific Program Committee is scheduled for November of 2011 (Toronto, November 20-21). The first meeting of the 2014 Scientific Program Committee will be scheduled for the fall of 2012 (location TBA).

CHICA-Canada pays the expenses of committee members to attend in-person meetings. CHICA-Canada pays the expenses of committee members to attend the conferences they have planned.

Qualifications

Applicants must possess the following qualifications and agree to the following terms:

- A current (2011) member of CHICA-Canada, having held membership for at least five years.
- Must have a Certification in Infection Control & Epidemiology (CIC) or specialty training in epidemiology, infectious diseases or community medicine.
- A minimum of five years' experience in infection prevention and control and/or infectious diseases with specific expertise in the setting for which a representative is sought.
- Good team participation as well as interpersonal and communication skills.
- Professional involvement with CHICA-Canada, for example in a board or Chapter executive role, as chair of an interest group, or on a CHICA-Canada committee.
- Fluency in French language would be an asset but is not mandatory.
- Experience in the planning of scientific programs for professional conferences (local, regional or national) would be an asset but is not mandatory.
- Has the time, personal commitment and support of their institution to serve CHICA-Canada through this position.

Application must include:

- A letter from applicant indicating the position of interest, and demonstrating suitability for the position.
- A *curriculum vitae* that includes details as to the candidate's background in infection prevention and control/infectious diseases.
- A summary of professional expertise and education, specialty training and expertise, and CHICA-Canada involvement such as service as a CHICA-Canada board member, as a Chapter executive, or on a CHICA-Canada standing committee, interest group or conference planning committee.

Applications must be received no later than **May 31, 2011.**

Applications should be forwarded to:

Executive Director/Conference Planner, CHICA-Canada

Mail:
PO Box 46125 RPO Westdale
Winnipeg, MB R3R 3S3

Courier:
67 Bergman Crescent
Winnipeg, MB R3R 1Y9

Fax: 1-204-895-9595
Email: *chicacanada@mts.net*

CHICA-Canada Novice Infection Prevention and Control Course
Position: Course Coordinator

CHICA-Canada is currently seeking an individual to coordinate the CHICA-Canada Novice Infection Prevention and Control (IP&C) online course. This course is comprised of six modules and a practicum, and runs from mid-September to the end of June. The work of the Course Coordinator will commence on June 1, 2011 in preparation for the delivery of the 2011 fall modules. The position will require 6-8 hours per week to a maximum of 40 hours per month. It should be anticipated that there will be variation in the amount of time required per week and that the workload will differ depending on the time of year and the session schedule.

Duties of position

- Assist with selection, orientation, and support of instructors with respect to content revision and online teaching.
- Assist with selection, orientation, and support of discussion facilitators.
- Act as practicum coordinator for students who complete the six modules outside of the regular schedule and are eligible for their practicum (2011-2012).
- Assist with selection of students for entry into the course, monitoring of student progress.
- Official correspondence with students about issues not addressed by instructors or the Course Administrator.
- Confer with instructors regarding course content revision and approve or refer to Course Advisory Committee as required.
- Coordinate evaluation of course content and faculty utilizing student evaluations and interaction with faculty.
- Annually review policies and processes relating to the course and recommend revision to the advisory committee as necessary.
- Coordinate regular meetings of the Course Advisory Committee (the functioning of this committee is under development).

Student registration and the technical aspects of maintaining the course website will be the responsibility of the Course Administrator.

Qualifications

The ideal candidate would be an IP&C professional with at least five years' experience in IP&C in the last eight years. Preference will be given to CHICA-Canada members who hold a current CIC and have experience in the education of ICPs. Experience in e-learning on *Blackboard* would be preferred; however, orientation and support will be provided by the Director of Education and the Course Administrator as required. The candidate will have significant communication and organizational skills, and be able to work with students, instructors and facilitators from diverse settings. In addition, the candidate must demonstrate they have the time and commitment as well as support of their employer to fulfill the responsibilities of the position. The position is supported by the Director of Education and Course Administrator and reports to the Director of Education.

More information: Additional information on the position may be obtained from the CHICA-Canada Director of Education, Dr. Donna Moralejo *moralejo@mun.ca*.

Remuneration: $30.00 per hour for a maximum of 40 hours per month. Consideration may be made for this to be a shared position.

Submission of application: Candidates must submit a letter detailing their qualifications, a resume and at least two current references by email by **May 15, 2011** to *chicacanada@mts.net*.

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- Patient and Family Hand Hygiene Guides (x10)
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- STOP! Clean Your Hands Day stickers (x200)
- Bookmarks from Accreditation Canada
- Instructions on how to complete the WHO's Hand Hygiene Self-Assessment Framework
- Information sheets with Hand Hygiene facts plus tools and resources

The Canadian Patient Safety Institute, Accreditation Canada and the Community and Hospital Infection Control Association-Canada (CHICA-Canada) invite you to participate in "STOP! Clean Your Hands Day."

For more information or to register for STOP! Clean Your Hands Day, please visit www.handhygiene.ca.

www.saferhealthcarenow.ca

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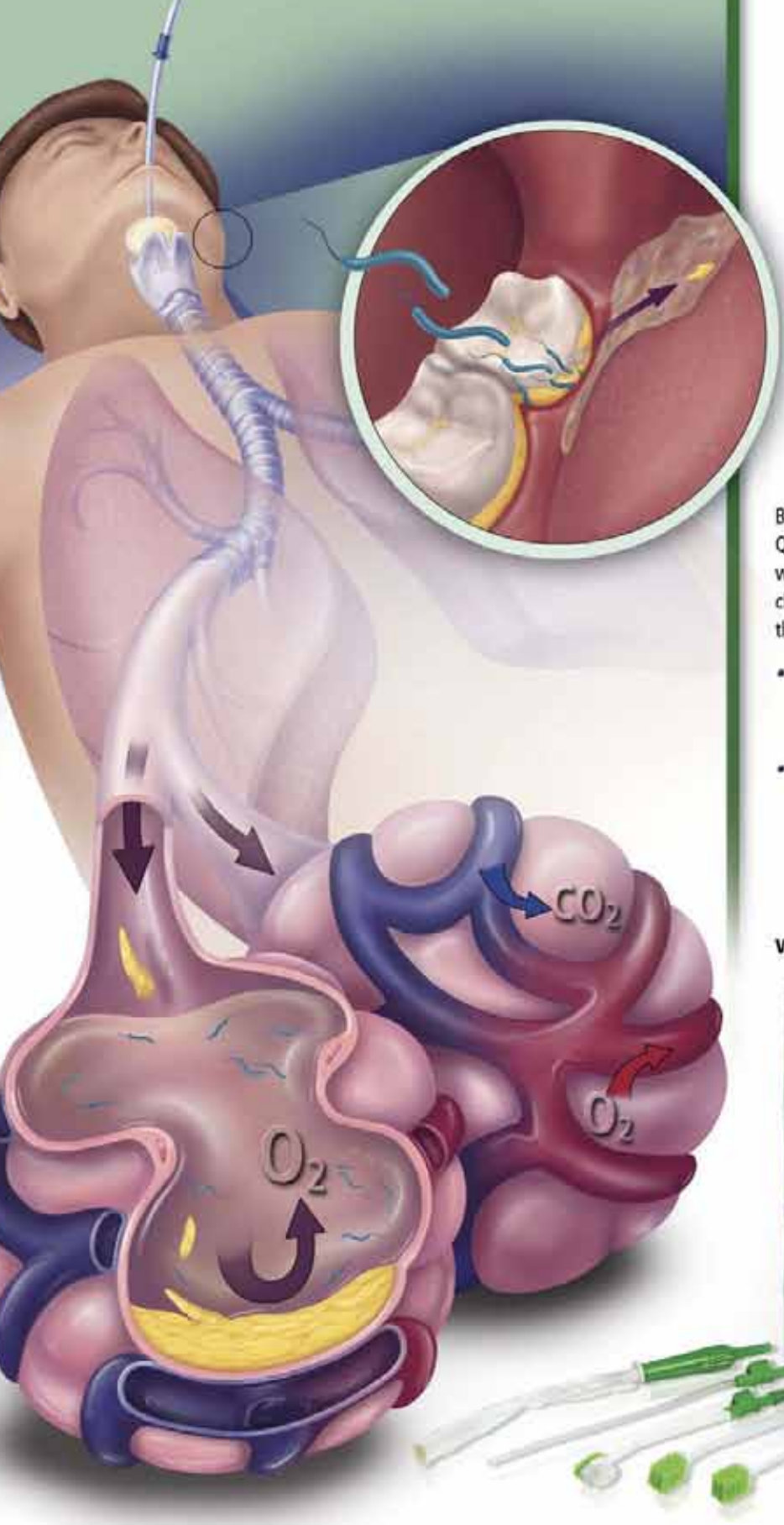

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1. GHX Trend Report (Dollars), 3rd Qtr, 2010 Hosp; Annualized markets based on last 4 quarters data.

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Syed A. Sattar, PhD[a], and Paul Webber[b]; University of Ottawa Faculty of Medicine[a]; Webber Training Inc.[b]

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January

20 – *Getting the Most Out of Our Frontal Lobes - What We Don't Know (or Forget) May Hurt Us*, Elaine Larson, USA
27 – *A Human Factors Approach to Hand Hygiene*, Anjum Chagpar, Canada

February

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10 – *Why Don't People Use PPE?*, David Dejoy, USA
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6 – WHO Teleclass - *Hand Hygiene Education and Monitoring: Returning to the WHO "My Five Moments" Concept*, Hugo Sax, Switzerland
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12 – *The Faecal Quandary - Bedpan Management in a Modern Age*, Gertie van Knippenberg-Gordebeke, Netherlands
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23 – *Ventilator-Associated Pneumonia: Epidemiology, Diagnosis, and Prevention*, Lennox Archibald

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14 – *Climate Change and Infectious Disease*, Andy Nichols, UK
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8 – *Practical Aspects of Hospital Infection Control for Influenza*, Fidelma Fitzpatrick, Ireland
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4 – WHO Teleclass – *MRSA: Is Search & Destroy the Way to Go?*, Andreas Voss, Netherlands
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13 – *Infection Prevention and Control in Long Term Care Facilities*, Bjørg Marit Andersen, Norway

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17 – *An Overview of the HICPAC Norovirus Guideline*, Taranisia MacCannell, USA

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1 – *Strategies for Improving Hand Hygiene Adherence in the ICU*, Alexandre Marra, Brazil
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