

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 will be a major national and international leader and the recognized resource in Canada for the promotion 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

- Universal versus targeted surveillance for MRSA..... 105
- Healthcare worker knowledge of immunization status.....113
- Auditing hand hygiene compliance.....119

DEPARTMENTS

- Editorial102



CHICA News

- President's Message 131
- Message de la Présidente 132
- From the Executive Desk 135
- Developing Position Statements 137
- CBIC..... 139
- CHICA-HANDIC 143
- CHICA NB/PEI 144
- PHAC Update..... 145
- 2011 National Education Conference Review 147
- Reach our advertisers..... 156

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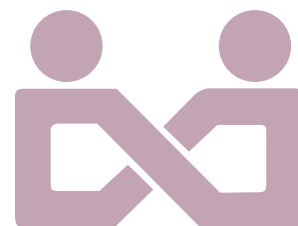
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Happy 35th anniversary CHICA-Canada

What a fitting way to celebrate 35 years! Another CHICA annual conference is now over and was, once again, a resounding success. The attendance goal of 1000 attendees was met due in part to the CHICA Designates Day, which was held prior to the conference. At least 300 participants from many health-care fields attended this educational and entertaining boot camp-themed day which was co-sponsored and organized by the Ontario Regional Infection Control Networks. What a tremendous way to support and recognize those who fill in and back up infection prevention and control activities when the infection control professional is not available or is not in place. This group of attendees surely gained knowledge and information that they can put into action on a day-to-day basis.

As always, new and interesting topics were presented at the conference and the handouts to some of these sessions are found on the CHICA website. Abstracts for the conference were published in the Spring 2011 issue of *CJIC*.

Congratulations to the Conference Chair, Cathy Munford, and the Scientific Program Chair and co-chair, Zahir Hirji, and Molly Blake and their Scientific Program Committee members for an interesting, fun and thought-provoking educational event.

Besides new and exciting education, there were also many other meetings and events which show the diverse nature and work of CHICA-Canada. At




least 12 interest groups met during the conference along with numerous CHICA standing committees. All of these activities help to keep CHICA Canada at the forefront of infection prevention and control in Canada and internationally.


International speakers such as Professor Didier Pittet provided attendees with valuable views from afar. Dr. Pittet's presentation on *Hand Hygiene Promotion and Evidence for Success: Worldwide Perspectives* informed and entertained attendees with a hand hygiene video and colourful presentation.

Exhibit halls were full to capacity with our valued corporate partners presenting

the newest in products, technologies, tools and resources.

Although topics change from year to year, each annual conference provides CHICA-Canada members and other conference attendees from Canada and abroad with a valuable opportunity to come together to learn, discuss, collaborate and participate. Attendance at the annual conference is a major way to invigorate one's practice and stay current.

Start making plans now to head to Saskatoon, Saskatchewan next June 16-21, 2012 for the next conference. You won't be disappointed. 



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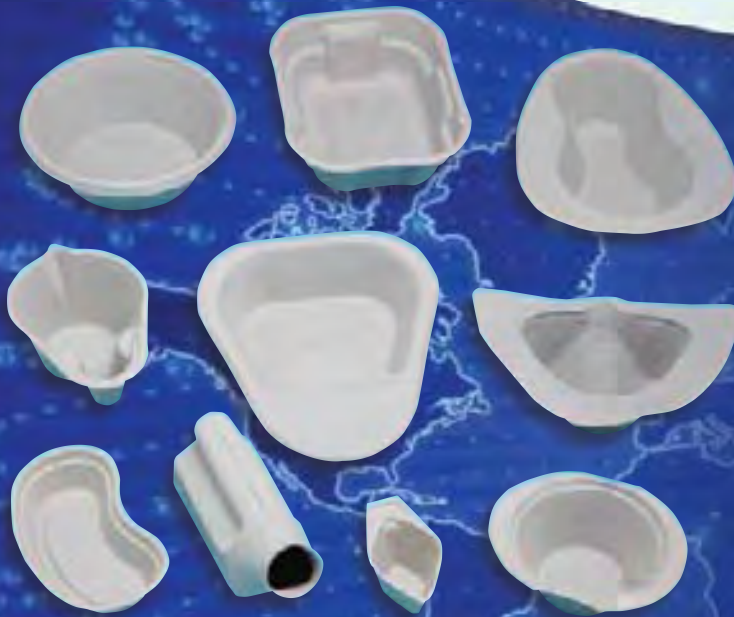
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Universal versus targeted active surveillance for Methicillin-resistant *Staphylococcus aureus* in medical patients

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ABSTRACT

Background

Early identification of patients colonized or infected with methicillin-resistant *Staphylococcus aureus* (MRSA) is important in limiting transmission of the organism within healthcare facilities. The use of active surveillance cultures is recommended to control the spread of MRSA in conjunction with basic infection prevention and control practices.

Objective

To compare the impact of universal admission screening for MRSA with that of a targeted, risk-factor based approach utilized at our facility. To identify risk factors associated with MRSA carriage on hospital admission.

Methods

From January 21, 2008 to July 31, 2008, universal admission screening for MRSA carriage was performed on all patients admitted to two acute care inpatient units (general medicine/nephrology and cardiology). Specimens for MRSA were obtained within 72 hours of admission from the nares, perianal, wounds, and the exit site of indwelling devices where present. The presence or absence of documented risk factors for MRSA colonization and/or infection was ascertained through review of patient records and patient interviews.

Results

Universal admission screening identified MRSA carriage in 33/1910 (1.7%) of eligible patient admissions. One or more of the risk factors included in the targeted MRSA surveillance strategy were reported for 70.3% of patient admissions and limiting screening to these patients would have detected 29/33 (87.9%) of MRSA carriers. Risk factors that were significantly associated with MRSA carriage at admission included: direct transfer from

or residence in a long-term care home (LTCH) within the preceding 12 months, history of surgery in the last year, previous colonization/infection with, or exposure to an antibiotic-resistant organism (ARO), living in a communal living environment, or the presence of skin lesions, infection or receipt of antibiotics at the time of admission. Only direct transfer from a LTCH remained significant after adjusting for variables found to be significant in simple logistic regression (Odds Ratio=9.98, 95% Confidence Interval 3.84-25.96; $p < 0.001$).

Conclusion

Targeted, risk-factor based surveillance for MRSA had a high sensitivity in the detection of colonized and infected patients while limiting the number of patients that required screening.

INTRODUCTION

Methicillin-resistant *Staphylococcus aureus* (MRSA) is an important nosocomial pathogen and the incidence of both healthcare and community-associated infection and colonization has increased over time in Canada and worldwide (1-4). Carriers of MRSA are a potential reservoir for nosocomial transmission of MRSA which occurs primarily patient-to-patient via transiently colonized healthcare worker hands. To control transmission of MRSA in the healthcare setting, contact precautions are recommended for patients known or suspected to be colonized or infected (5,6). A previous study reported a 15.6-fold decrease (95% Confidence Interval [CI], 5.3-45.6; $P < .0001$) in transmission associated with MRSA-colonized patients being cared for using contact precautions compared to those cared for using standard precautions (7). In order to institute contact precautions appropriately and limit dissemination, carriers of MRSA must be quickly and accurately identified. The

passive surveillance approach to detecting patients infected with MRSA through clinical specimens has proven to be inadequate in limiting the spread of MRSA. Previous studies have demonstrated that reliance on this strategy failed to identify the majority of MRSA carriers (8-10). The use of active surveillance cultures is recommended in current guidelines to control the spread of MRSA in conjunction with basic infection prevention and control practices (5,6,11).

The extent to which active surveillance should be carried out to achieve measurable benefits has been controversial. Active surveillance cultures have been associated with decreases in the transmission of and infection with MRSA in high risk units and populations (12-16). The Netherlands' national "search and destroy" policy has prevented MRSA from becoming endemic and controlled transmission in their healthcare facilities (17-19). Mathematical models also predict a role for active surveillance cultures in the control of MRSA transmission and the reduction of the prevalence of MRSA carriage among lower-risk individuals when used in conjunction with contact precautions and treatment (20,21). In comparisons of active surveillance cultures obtained from all admissions (universal surveillance) versus screening only high-risk patients (targeted surveillance), conclusions differ as to which is the most effective control strategy in terms of identifying new MRSA carriers while minimizing adverse consequences such as fewer patient-healthcare worker contacts, medical errors, decreased satisfaction and symptoms of depression and anxiety among patients placed in contact precautions (22-26).

The objective of this pilot study was to compare the impact of universal admission screening for MRSA with that of a targeted, risk-factor based approach utilized at our facility. A secondary objective was to identify risk factors associated with MRSA carriage in our patient population.

METHODS

Setting and study population

This prospective cross-sectional pilot study was conducted at Sunnybrook Health Sciences Centre, a 1,200-bed tertiary-care university affiliated teaching

hospital located in Toronto, Canada. Two acute care inpatient units were included in the study, a 38-bed general medicine/nephrology unit, and a 36-bed cardiology unit considered to be "high" and "low" risk for MRSA, respectively. The study population consisted of all admissions to the study units from January 21 to July 31, 2008, and included unit transfers within the facility. Repeated admissions by an individual patient were included. Patients from whom specimens for MRSA were not obtained within 72 hours after admission were excluded.

Detection of MRSA

All patients admitted or transferred to one of the study units were to be screened for MRSA carriage within 72 hours of arrival. Admission screening involved systematic sampling of the anterior nares and perianal region as well as skin lesions and the exit site of indwelling devices where present. Specimens were collected with a sterile Dacron-tipped swab premoistened with sterile saline solution. MRSA was identified using selective chromogenic agar (MRSAScreen, Bio-Rad Laboratories, Inc.) incubated at 37°C for up to 48 hours

FIGURE 1: Eligibility of patient admissions, risk factor based targeted screening coverage and prevalence of colonization/infection with methicillin-resistant *Staphylococcus aureus*.

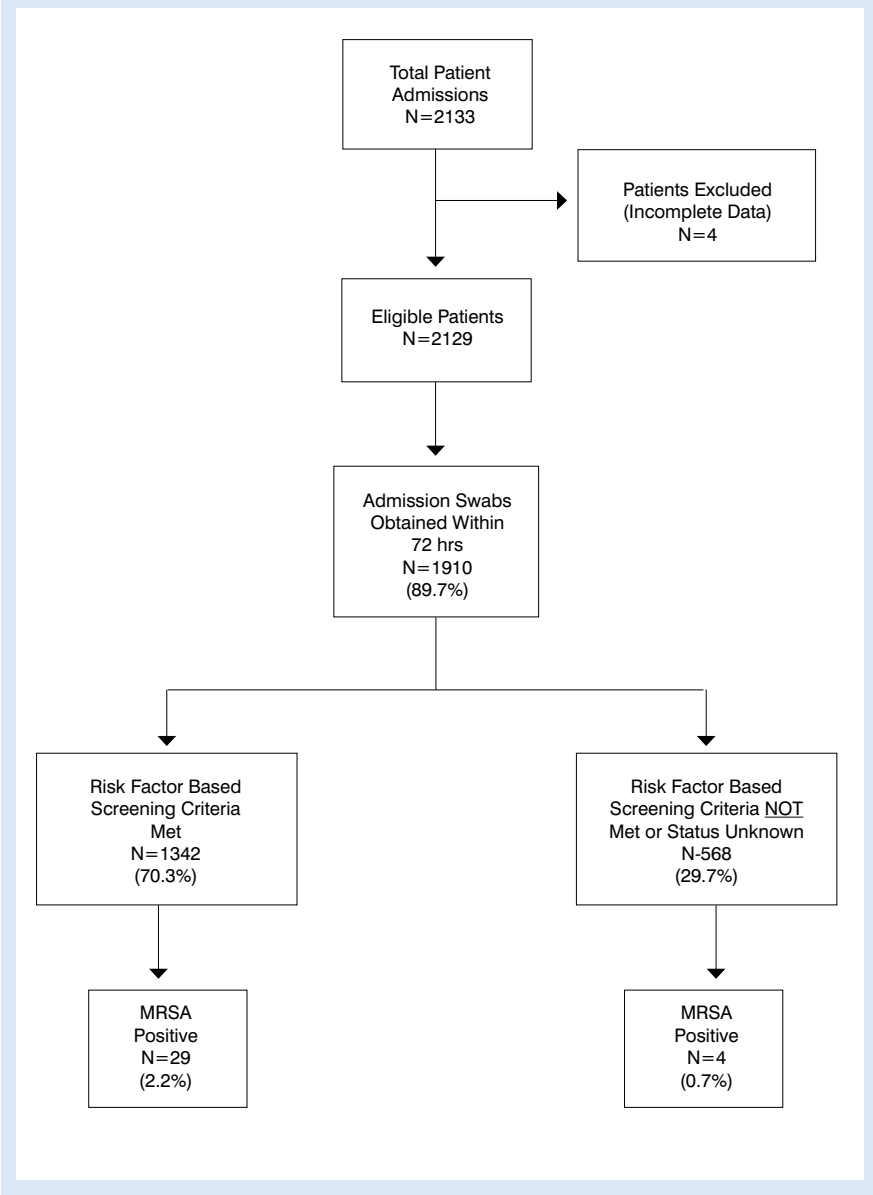


TABLE 1: Characteristics of patient admissions to two medical units at Sunnybrook Health Sciences Centre by MRSA carriage status

| Characteristic | | Total population (n=1910) | MRSA carrier (n=33) | MRSA non-carrier (n=1877) | p-value |
|---------------------------|------------|---------------------------|---------------------|---------------------------|--------------|
| Mean age (yr [SD]) | | 70.2 (15.4) | 76.2 (17) | 70.1 (15.4) | 0.024 |
| Male (%) | | 1158 (60.6) | 18 (54.5) | 1140 (60.7) | 0.477 |
| Admitting Service (%) | Cardiology | 987 (51.7) | 9 (27.3) | 978 (52.1) | 0.761 |
| | Medicine | 695 (36.4) | 22 (66.7) | 673 (35.9) | |
| | Nephrology | 115 (6.0) | 2 (6.1) | 113 (6.0) | |
| | Other | 113 (5.9) | - | 113 (6.0) | |
| Admitted via the ED (yes) | | 969 (50.7) | 19 (57.6) | 950 (50.6) | 0.485 |

ED=Emergency Department
SD=Standard Deviation

which was examined for growth at 24 and 48 hours.

Data collection

Data were collected on each patient by review of patient records and patient interview where necessary to obtain missing information. Data collected included patient demographics (age, sex), details of current hospitalization (date of admission to study unit, admitting service), and the presence or absence of recognized risk factors for MRSA colonization/infection. Risk factors included as part of the existing targeted MRSA surveillance approach were: direct transfer from or inpatient admission at a healthcare facility, receipt of home healthcare and residence in a communal living environment within the last year and a previous history of infection/colonization with an antibiotic-resistant organism (ARO). Additional risk factors investigated included: outpatient clinic visit, or surgical procedure within the previous year, presence of skin lesions, documented infection and/or antibiotic use upon admission, and high risk behaviours (presence of tattoos, intravenous drug use, incarceration within the previous 12 months, residence in a communal living environment, university or high school student, participation in contact sports, military staff, healthcare worker, HIV positive patients).

Outcome

The primary outcome measure was MRSA carriage as detected through universal admission screening. MRSA carriage was defined as the isolation of MRSA from a

specimen taken within 72 hours of admission to one of the study units, with or without symptomatic infection.

Statistical analysis

All statistical analyses were conducted using SPSS Version 16.0 (SPSS Inc, Chicago, IL, USA). Continuous measures were summarized using means and standard deviations; categorical measures were summarized using counts and percentages.

Simple logistic regression analysis was used to determine the association between individual documented risk factors and detection of MRSA carriage on hospital admission. The association was considered to be significant in all analyses if the two-sided *p*-value was less than 0.05. Those risk factors determined to be significantly associated with MRSA carriage through simple logistic regression were included in the multivariate logistic regression model.

The proportion of MRSA carriers that would have been detected at inpatient admission by targeted screening strategies that included different combinations of risk factors was compared using universal screening as the baseline.

RESULTS

Description of case patients

From January 21 to July 31 2008, there were 2133 patient admissions to the two study units. Four admissions were excluded due to incomplete data collection, and a failure to obtain specimens for detection of MRSA within 72 hours led to the exclusion of an additional 219

admissions (Figure 1). Among the remaining 1910 eligible admissions (by 1736 patients) 61% were male and the mean age was 70.2 \pm 15.4 years, with MRSA carriers being significantly older than non-carriers (76.2 \pm 17 vs. 70.1 \pm 15.4; *p*=0.024) (Table 1). Fifty-one percent of admissions to the study units occurred via the emergency department (Table 1). Patient admissions occurred most frequently to the cardiology service (51.7%) followed by medicine (36.4%) (Table 1).

MRSA surveillance

Of the 1910 eligible patient admissions, MRSA carriage was detected in 33 (1.7%) when universal screening for MRSA was performed within 72 hours of admission to the study units. 23/33 (70%) had no previous history of MRSA at our facility.

1342 (70.3%) of patient admissions reported one or more of the risk factors for MRSA carriage currently included in the screening criteria utilized by our facility (Figure 1). Adherence to this targeted surveillance strategy would have detected 29 of the total 33 MRSA carriers for a sensitivity of 87.9%. The prevalence of MRSA carriage was 2.2% among patients reporting at least one of the risk factors included in the targeted surveillance strategy while only 0.7% of patient admissions not meeting the criteria of the risk factor based surveillance protocol were identified as colonized or infected with MRSA (Figure 1). Detection of MRSA carriage on hospital admission was approximately three times as likely among patients reporting one or more of the risk factors included in our targeted surveillance

TABLE 2: Results of univariate analysis of risk factors for colonization and/or infection with MRSA at admission to two medical units (n=1910)

| Risk factor | MRSA carrier (n=33) | MRSA non-carrier (n=1877) | OR | 95% CI | p-value |
|------------------------------------------------|---------------------|---------------------------|-------|-------------|------------------|
| Any risk factor in targeted surveillance | 29 (87.9) | 1313 (70) | 2.95 | 1.03-8.43 | 0.044 |
| Direct transfer | | | | | |
| Within SHSC | 8 (24.2) | 297 (15.8) | 1.70 | 0.76-3.81 | 0.196 |
| From an external facility | 7 (21.2) | 313 (16.7) | 1.35 | 0.58-3.13 | 0.491 |
| Acute care | 1 (3.0) | 274 (14.6) | 0.18 | 0.025-1.34 | 0.095 |
| LTCH | 6 (18.2) | 39 (2.1) | 10.47 | 4.09-26.80 | <0.001 |
| Hospitalization within the past year | 25 (75.8) | 1135 (60.5) | 1.96 | 0.88-4.36 | 0.101 |
| Acute care facility | 22 (66.7) | 1065 (56.7) | 1.46 | 0.70-3.03 | 0.308 |
| SHSC | 14 (42.4) | 534 (28.4) | 1.85 | 0.92-3.72 | 0.083 |
| Other acute care | 14 (42.4) | 659 (35.1) | 1.30 | 0.65-2.62 | 0.457 |
| LTCH | 10 (30.3) | 139 (7.4) | 5.43 | 2.53-11.63 | <0.001 |
| Home healthcare | 8 (24.2) | 246 (13.1) | 2.11 | 0.94-4.73 | 0.070 |
| Communal living situation | 2 (6.1) | 12 (0.6) | 9.99 | 2.15-46.55 | 0.003 |
| History of ARO | 11 (33.3) | 32 (1.7) | 29.76 | 13.25-66.82 | <0.001 |
| Indwelling medical device | 11 (33.3) | 370 (19.7) | 2.02 | 0.97-4.21 | 0.059 |
| Outpatient healthcare visits | 22 (66.7) | 1367 (72.8) | 0.78 | 0.37-1.65 | 0.513 |
| History of surgery | 10 (30.3) | 213 (11.3) | 3.38 | 1.59-7.19 | 0.002 |
| Presence of skin lesions | 10 (30.3) | 194 (10.3) | 3.76 | 1.76-8.01 | 0.001 |
| ARO contact | 2 (6.1) | 15 (0.8) | 7.93 | 1.62-38.92 | 0.011 |
| Admitted with an infection | 15 (45.5) | 392 (20.9) | 3.13 | 1.56-6.27 | 0.001 |
| Receiving antibiotics at the time of screening | 12 (36.4) | 308 (16.4) | 2.89 | 1.41-5.94 | 0.004 |

ARO=Antibiotic Resistant Organism
 CI=Confidence Interval
 LTCH=Long-Term Care Home
 OR=Odds Ratio
 SHSC=Sunnybrook Health Sciences Centre

approach (Odds Ratio [OR]=2.95, 95%CI 1.03-8.43;p=0.044) (Table 2).

Of the four patients not captured via the current surveillance protocol, three reported an outpatient healthcare exposure within the last year. If visits to an outpatient healthcare clinic were added to the current screening criteria, it would increase the number of patients tested for MRSA carriage by 334 such that 87.7% of patient admissions would be tested and 32/33 (97%) of carriers detected.

Risk factors for MRSA carriage

Individual risk factors that were signifi-

cantly associated with MRSA carriage at admission included: direct transfer from or residency in a long-term care home (LTCH) within the preceding 12 months, documented history of surgery in the last year, previous colonization/infection with or exposure to an ARO, living in a communal living environment, or the presence of skin lesions, infection or receipt of antibiotics at the time of admission (Table 2). Only direct transfer from a LTCH remained significant after adjusting for variables found to be significant in simple logistic regression (OR=9.98, 95%CI 3.84-25.96; p<0.001) (Table 3).

DISCUSSION

Patients colonized or infected with MRSA on admission are a major reservoir for the introduction and dissemination of the organism within healthcare facilities. In order to limit MRSA transmission carriers need to be promptly identified to allow for the initiation of contact precautions. The use of active surveillance cultures for high-risk patients at hospital admission is recommended as part of a multi-faceted infection prevention and control strategy to limit transmission of MRSA (5,6). The results of our study support the use of

TABLE 3: Multivariate analysis of risk factors associated with MRSA colonization and/or infection in patients admitted to two medical units (n=1910)

| Risk factor | OR | 95% CI | p-value |
|----------------------------|-------|------------|---------|
| LTCH transfer | 9.98 | 3.84-25.96 | <0.001 |
| Communal living situation | 0.98 | 0.83-1.17 | 0.839 |
| History of surgery | 0.99 | 0.92-1.08 | 0.884 |
| Presence of skin lesions | 0.999 | 0.92-1.09 | 0.972 |
| Home healthcare | 0.98 | 0.88-1.10 | 0.744 |
| History of ARO | 1.01 | 0.99-1.03 | 0.551 |
| ARO contact | 0.998 | 0.99-1.01 | 0.623 |
| Admitted with an infection | 0.99 | 0.92-1.07 | 0.865 |

ARO=Antibiotic Resistant Organism
 CI=Confidence Interval
 LTCH=Long-Term Care Home
 OR=Odds Ratio

targeted MRSA surveillance at hospital admission and identified those risk factors most frequently associated with MRSA carriage in our patient population.

MRSA prevalence at admission to our facility was 1.7% overall. MRSA colonization and/or infection was detected in 2.2% of admissions where the patient reported one or more of the risk factors included in the targeted surveillance strategy while only 0.7% of patient admissions without a documented risk factor were determined to be MRSA carriers. With the exception of the Netherlands, which reported MRSA colonization rates of only 0.03% among patients without risk factors for carriage at hospital admission, our prevalence was below those measured at other facilities in the United States and Europe which ranged from 2.5% to greater than 10% (19, 22, 27-31). While the prevalence rates reported in these studies were based on acquisition of only nasal swabs at hospital admission, our active surveillance protocol for MRSA requires screening from multiple sites including the nares, perianal region, skin wounds and/or the exit site of any indwelling device. The sensitivity of active surveillance for MRSA has been shown to be dependant on the body sites sampled with a substantial number of carriers being missed if only the nares and/or skin wounds are included when testing

patients for MRSA colonization (32,33). Our results support an increased yield by sampling multiple body sites.

Risk factors that were significantly associated with MRSA carriage at admission included: previous colonization/infection with or exposure to an ARO, documented history of surgery in the last year, residence in a communal living environment, the presence of skin lesions, infection or receipt of antibiotics at the time of admission or direct transfer from or admission to a LTCH within the preceding 12 months. After adjusting for variables found to be significant in simple logistic regression only direct transfer from a LTCH remained significant (OR=9.98, 95%CI 3.84-25.96; $p<0.001$). These findings are in agreement with previous reports of risk factors for MRSA colonization particularly exposure to and/or colonization/infection with an ARO and a history of residence in a LTCH (22,25,28-30,34-36). High risk behaviours or populations more often reported as risk factors for community-associated as opposed to healthcare-associated MRSA such as the presence of tattoos, intravenous drug use, incarceration, participation in contact sports, HIV infection, and being a student or member of the military were not significantly associated with MRSA carriage in our patient population (37-42).

The targeted, active MRSA surveillance strategy at our healthcare facility is designed to identify patients at high risk for MRSA colonization/infection at hospital admission based on the following risk factors: direct transfer from or inpatient admission at a healthcare facility, receipt of home healthcare and residence in a communal living environment within the last year and a previous history of infection/colonization with an ARO. Colonization and/or infection with MRSA at hospital admission was significantly associated with the presence of one or more of the targeted risk factors collectively (OR=2.95, $p=0.044$) while direct transfer from (OR=10.47, $p<0.001$) or residency in a LTCH (OR=5.43, $p<0.001$) were the only individual risk factors from the surveillance strategy significantly associated with MRSA carriage. This protocol identified 70.1% of all patient admissions to our facility as high risk and requiring screening and was 87.9% sensitive in detecting patients colonized/infection with MRSA. If the findings of this pilot study were extrapolated to the entire healthcare facility, universal MRSA surveillance at hospital admission would require screening approximately 8000 more patient admissions per year as compared to the current targeted surveillance strategy (based on a total of 26208 admissions in 2009-10). In our facility, the increase in workload and cost would be associated with a minimal increase in yield and likely limited impact on MRSA transmission. Previous studies comparing targeted versus universal surveillance strategies have reported widely varying numbers for the sensitivity of their targeted surveillance and the proportion of patients meeting the surveillance criteria due to differing patient populations and the inclusion of different risk factors (25,28,30,43). In their study of an internal medical unit Eveillard et al. reported that patients at risk of MRSA carriage, defined as those with a history of MRSA, hospitalization or institutionalization within the preceding year, intra- or inter-hospital transfer or chronic skin lesions only identified 10/22 (45%) of patients colonized with MRSA on admission (30). In a burn step-down unit, Wibbenmeyer et al. found that screen-

ing patients with a prior hospitalization of greater than or equal to seven days or surgery within the last six months was 59.3% sensitive (43). Rao et al found that 61% of emergency admissions reported previous hospitalization within a year, residence in a care home, and/or a history MRSA carriage and a target surveillance approached based on these risk factors would have a sensitivity of 84.5% (25). Among admissions to a general internal medicine Haley et al. reported that sensitivity of detecting MRSA increased with a use of multivariate models (78 to 90%) while the number of admissions requiring cultures would simultaneously increase (46 to 58%) (28).

There are a number of limitations to our study. The data were collected on two acute care inpatient units (general medicine/nephrology and cardiology) at a single tertiary care facility and therefore may not be representative of other inpatient areas or healthcare facilities serving a different patient population. Although an attempt was made to collect data on a wide variety of risk factors for MRSA carriage the number of responses for some risk factors was limited due to patient refusal to answer and/or limited documentation in the patient chart. Among those patients who did not get cultured for MRSA, 63% reported one or more of the risk factors included in the targeted surveillance strategy and 90% were admitted to the cardiology unit, which may have biased the results. The outcomes measured were limited to the association of selected risk factors with MRSA carriage at admission and the sensitivity of different surveillance strategies in detecting colonization and/or infection so investigation into the impact of universal surveillance on MRSA transmission within our facility and the development of infection was not performed. Our study also assumes that compliance with targeted and universal screening would be equivalent.

In conclusion, we found that our targeted surveillance strategy identified 88% of patients colonized or infected with MRSA at admission to two acute care inpatient units. Although broadening the criteria to include additional risk factors or implementing universal MRSA surveillance would increase sensitivity, the corresponding increase in the number

of patients requiring cultures suggests that maintaining the current targeted surveillance strategy is the most efficient approach at this time.

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REFERENCES

1. Simor AE, Gilbert NL, Gravel D, et al. Methicillin-resistant *Staphylococcus aureus* colonization or infection in Canada: National surveillance and changing epidemiology, 1995-2007. *Infect Control Hosp Epidemiol* 2010;31:348-56.
2. Klevens RM, Morrison MA, Nadle J, et al. Invasive methicillin-resistant *Staphylococcus aureus* infections in the United States. *JAMA* 2007;298:1763-71.
3. Klevens RM, Edwards JR, Tenover FC, et al. Changes in the epidemiology of methicillin-resistant *Staphylococcus aureus* in intensive care units in US hospitals, 1992-2003. *Clin Infect Dis* 2006;42:389-91.
4. Rossolini GM, Mantengoli E. Antimicrobial resistance in Europe and its potential impact on empirical therapy. *Clin Microbiol Infect* 2008;14:2-8.
5. Siegel JD, Rhinehart E, Jackson M, Chiarello L, Health Care Infection Control Practices Advisory Committee. Management of multidrug-resistant organisms in healthcare settings, 2006. *Am J Infect Control* 2007;35S:S165-93.
6. Provincial Infectious Diseases Advisory Committee. Routine Practices and Additional Precautions Annex A: Screening, testing and surveillance for antibiotic-resistant organisms (AROs). Ontario Ministry of Health and Long-Term Care. March, 2010.
7. Jernigan JA, Titus MG, Grbschel DHM, Getchell-White SI, Farr BM. Effectiveness of contact isolation during a hospital outbreak of methicillin resistant *Staphylococcus aureus*. *Am J Epidemiol* 1996;143:496-504.
8. Lucet JC, Chevret S, Durand-Zaleski I, Chastang C, Régnier B. for the Multicenter Study Group. Prevalence and risk factors for carriage of methicillin-resistant *Staphylococcus aureus* at admission to the intensive care unit. *Arch Intern Med* 2003;163:181-8.
9. Girou E, Pujade G, Legrand P, Cizeau F, Brun-Buisson C. Selective screening of carriers for control of methicillin-resistant *Staphylococcus aureus* (MRSA) in high-risk hospital areas with a high level of endemic MRSA. *Clin Infect Dis* 1998;27:543-50.
10. Salgado CD, Farr BM. What proportion of hospital patients colonized with methicillin-resistant *Staphylococcus aureus* are identified by clinical microbiological cultures? *Infect Control Hosp Epidemiol* 2006;27:116-21.
11. Coia JE, Duckworth GJ, Edwards DI, et al. Guidelines for the control and prevention of methicillin-resistant *Staphylococcus aureus* (MRSA) in healthcare facilities. *J Hosp Infect* 2006;63S:S1-44.
12. Clancy C, Graepler A, Wilson M, Douglas I, Johnson J, Price CS. Active screening in high-risk units is an effective and cost-avoidant method to reduce the rate of methicillin-resistant *Staphylococcus aureus* infection in the hospital. *Infect Control Hosp Epidemiol* 2006;27:1009-17.
13. Harbath S, Fankhauser C, Schrenzel J, et al. Universal screening for methicillin-resistant *Staphylococcus aureus* at hospital admission and nosocomial infection in surgical patients. *JAMA* 2008;299:1149-57.
14. Jernigan JA, Clemence MA, Stott GA, et al. Control of methicillin resistant *Staphylococcus aureus* at a university hospital: one decade later. *Infect Control Hosp Epidemiol* 1995;16:686-96.
15. Huang SS, Yokoe DS, Hinrichsen VL, et al. Impact of routine intensive care unit surveillance cultures and resultant barrier precautions on hospital-wide methicillin-resistant *Staphylococcus aureus* bacteremia. *Clin Infect Dis* 2006;3:971-8.
16. Papia G, Louie M, Tralla A, Johnson C, Collins V, Simor AE. Screening high-risk patients for methicillin-resistant *Staphylococcus aureus* on

- admission to the hospital: is it cost effective? *Infect Control Hosp Epidemiol* 1999;20:473-7.
17. Verhoef J, Beaujean D, Blok H, et al. A Dutch approach to methicillin resistant *Staphylococcus aureus*. *Eur J Clin Microbiol Infect Dis* 1999;18:461-6.
 18. Vandenbroucke-Grauls CM. Methicillin-resistant *Staphylococcus aureus* control in hospitals: the Dutch experience. *Infect Control Hosp Epidemiol* 1996;17:512-3.
 19. Wertheim HF, Vos MC, Boelens HA, et al. Low prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA) at hospital admission in the Netherlands: the value of search and destroy and restrictive antibiotic use. *J Hosp Infect* 2004;56:321-5.
 20. Cooper BS, Medley GF, Stone SP, et al. Methicillin-resistant *Staphylococcus aureus* in hospitals and the community: stealth dynamics and control catastrophes. *Proc Natl Acad Sci USA* 2004; 101:10223-8.
 21. Bootsma MC, Diekmann O, Bonten MJ. Controlling methicillin-resistant *Staphylococcus aureus*: quantifying the effects of interventions and rapid diagnostic testing. *Proc Natl Acad Sci USA* 2006;103:5620-5.
 22. Jernigan JA, Pullen AL, Flowers L, Bell M, Jarvis WR. Prevalence of and risk factors for colonization with methicillin-resistant *Staphylococcus aureus* at the time of hospital admission. *Infect Control Hosp Epidemiol* 2003;24:409-14.
 23. Harbarth S, Sax H, Fankhauser-Rodriguez C, Schrenzel J, Agostinho A, Pittet D. Evaluating the probability of previously unknown carriage of MRSA at hospital admission. *Am J Med* 2006; 119:275e15-23.
 24. Hidron AI, Kourbatova EV, Halvosa JS, et al. Risk factors for colonization with methicillin-resistant *Staphylococcus aureus* (MRSA) in patients admitted to an urban hospital: emergence of community-associated MRSA nasal carriage. *Clin Infect Dis* 2005;41:159-66.
 25. Rao GG, Michalczyk P, Nayeem N, Walker G, Wigmore L. Prevalence and risk factors for methicillin-resistant *Staphylococcus aureus* in adult emergency admissions – a case for screening all patients? *J Hosp Infect* 2007;66:15-21.
 26. Morgan DJ, Diekema DJ, Sepkowitz K, Perencevich EN. Adverse outcomes associated with Contact Precautions: a review of the literature. *Am J Infect Control* 2009;37:85-93.
 27. Davis KA, Stewart JJ, Crouch HK, Florez CE, Hospenthal DR. Methicillin-resistant *Staphylococcus aureus* (MRSA) nares colonization at hospital admission and its effect on subsequent MRSA infection. *Clin Infect Dis* 2004;39:776-82.
 28. Haley CC, Mittal D, Laviolette A, Janapureddy S, Parvez N, Haley RW. Methicillin-resistant *Staphylococcus aureus* infection or colonization present at hospital admission: multivariable risk factor screening to increase efficiency of surveillance culturing. *J Clin Microbiol* 2007;45:3031-8.
 29. Lucet JC, Grenet K, Armand-Lefevre L, et al. High prevalence of carriage of methicillin-resistant *Staphylococcus aureus* at hospital admission in elderly patients: implications for infection control strategies. *Infect Control Hosp Epidemiol* 2005;26:121-6.
 30. Eveillard M, Mortier E, Lancien E, et al. Consideration of age at admission for selective screening to identify methicillin-resistant *Staphylococcus aureus* carriers to control dissemination in a medical ward. *Am J Infect Control* 2006;34:108-13.
 31. Troillet N, Carmeli Y, Samore MH, et al. Carriage of methicillin-resistant *Staphylococcus aureus* at hospital admission. *Infect Control Hosp Epidemiol* 1998;19:181-5.
 32. Currie A, Davis L, Odrobina E, et al. Sensitivities of nasal and rectal swabs for detection of methicillin-resistant *Staphylococcus aureus* colonization in an active surveillance program. *J Clin Microbiol* 2008;46:3101-3.
 33. Meurman O, Routamaa M, Peltonen R. Screening for methicillin-resistant *Staphylococcus aureus*: which anatomical sites to culture? *J Hosp Infect* 2005;61:351-3.
 34. Moore C, Dhaliwal J, Tong A, et al. Risk factors for methicillin-resistant *Staphylococcus aureus* (MRSA) acquisition in roommate contacts of patients colonized or infected with MRSA in an acute-care hospital. *Infect Control Hosp Epidemiol* 2008;29:600-6.
 35. Garazi M, Edwards B, Caccavale D, Auerbach C, Wolf-Klein G. Nursing homes as reservoirs of MRSA: myth or reality? *J Am Med Dir Assoc* 2009;10:414-8.
 36. Furuno JP, Hebden JN, Standiford HC, et al. Prevalence of methicillin-resistant *Staphylococcus aureus* and *Acinetobacter baumannii* in a long-term acute care facility. *Am J Infect Control* 2008;36:468-71.
 37. Bassetti S, Battagay M. *Staphylococcus aureus* infections in injection drug users: risk factors and prevention strategies. *Infection* 2004;32:163-9.
 38. Methicillin-resistant *Staphylococcus aureus* infections in correctional facilities – Georgia, California, and Texas, 2001-2003. *MMWR Morb Mortal Wkly Rep* 2003;52:992-6.
 39. Aiello AE, Lowy FD, Wright LN, Larson EL. Methicillin-resistant *Staphylococcus aureus* among US prisoners and military personnel: review and recommendations for future studies. *Lancet Infect Dis* 2006;6:335-41.
 40. Nguyen DM, Mascola L, Brancoff E. Recurring methicillin-resistant *Staphylococcus aureus* infections in a football team. *Emerg Infect Dis* 2005;11:526-32.
 41. Methicillin-resistant *Staphylococcus aureus* infections among competitive sports participants--Colorado, Indiana, Pennsylvania, and Los Angeles County, 2000-2003. *MMWR Morb Mortal Wkly Rep* 2003;52:793-5
 42. Mathews WC, Caperna JC, Barber RE, et al. Incidence of and risk factors for clinically significant methicillin-resistant *Staphylococcus aureus* infection in a cohort of HIV-infected adults. *J Acquir Immune Defic Syndr* 2005;40:155-60.
 43. Wibbenmeyer L, Appelgate D, Williams I, et al. Effectiveness of universal screening for vancomycin-resistant enterococcus and methicillin-resistant *Staphylococcus aureus* on admission to a burn-trauma step-down unit. *J Burn Care Res* 2009;30:648-56. 

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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. WHR13107 MA106. May 8 2008. Data on file, ConvaTec.

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Healthcare worker (HCW) knowledge about their immunization status in a tertiary women and children's healthcare centre during a targeted mumps immunization campaign

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ABSTRACT

Background

Healthcare workers (HCW) are expected to have immunity against infectious diseases important in the healthcare setting, such as measles, mumps, and hepatitis B. Because of an ongoing community mumps outbreak in our province, the province offered a single dose measles-mumps-rubella vaccine program to healthcare workers in the spring of 2007. We used this opportunity to survey HCWs about their knowledge of their own immune status.

Methods

A cross-sectional paper-based survey of HCWs presenting for MMR vaccine at a single healthcare centre was conducted.

Results

Of 3000 HCWs in the facility, 1691 (56%) were immunized during the MMR vaccination program. Of these, 930 (55%) completed the survey. Only 36.7% recalled any prior receipt of MMR vaccine. Seventy percent (70%) of staff were born after 1957, and therefore would not have been considered immune based on natural exposure to mumps. About 24% gave a history of previous mumps illness. About 80% of persons reported past chickenpox infection, however, reporting of previous infection or immunization against other infections that can be prevented by immunization and transmitted in the health care setting was low.

Conclusions

Accurate, easily accessible documentation of HCW immune status is essential if infection control and occupational

health programs are to fulfill their mandate to prevent infectious disease transmission in the healthcare setting.

INTRODUCTION

In the spring of 2007, mumps outbreaks in young adults occurred in the Halifax Regional Municipality. The community spread of mumps posed particular difficulties for healthcare settings, where exposed healthcare workers (HCWs) without proof of mumps immunity (receipt of two doses of MMR, or a protective mumps titer) during the period of communicability were put on paid administrative leave. Unintended community exposures, with subsequent furlough of HCWs whose mumps immune status was not known, led to staff shortages and threatened the delivery of healthcare.

Management of HCWs thought to be exposed to mumps, whether in the community or in the healthcare setting, was made more difficult because complete records of immunization status and immunity were not generally available. Records of HCW immunity status are ideally held in the occupational health department and such records are crucially important during disease outbreaks. In most hospitals in Nova Scotia, electronic databases of records of HCW vaccination history are not established.

On 14 May 2007, the Nova Scotia Department of Health (NSDOH) announced it would offer a single dose of MMR to all HCWs and to university and grade twelve students. Delivery of the MMR vaccine program provided an opportunity to determine HCW knowledge about their immune status. We hypothesized that a significant propor-

tion of healthcare workers were not aware of their immunization status with certainty, had no documentation of their immunization, and that the majority would be considered susceptible to mumps infection. We therefore did a cross-sectional survey of HCWs presenting for MMR vaccine to test HCW knowledge and availability of personally held records.

METHODS

The MMR immunization program was delivered by Occupational Health Safety and Wellness (OHSW) of the IWK Health Centre (IWK), Halifax, Canada in collaboration with the Clinical Trials Research Center (CTRC) of the Canadian Center for Vaccinology. The IWK is a university-affiliated, 180-bed, pediatric and maternity care institution in Halifax, Nova Scotia, and serves as a primary, secondary, and tertiary care pediatric and maternal referral centre for the Maritime provinces of Canada (population ~2 million). There are approximately 3000 employees, 400 associated physicians, and 800 volunteers. The study protocol was approved by the Research Ethics Board of the IWK Health Centre. Written consent was obtained from each participant prior to administration of vaccine.

Upon hiring, staff history of immune status and/or vaccine receipt (Hepatitis B, tetanus, diphtheriae, pertussis, influenza, measles, mumps, rubella) is reviewed. These records were paper-based and filed in each staff member's confidential health file. No aggregate data collection system existed.

MMR vaccine was supplied in single dose vials by the Department of Health

Promotion and Protection of Nova Scotia; provision of manpower to deliver the program and material supplies were the responsibility of the hospital. An immunization clinic with six stations was set up at the main campus of the IWK. There was no requirement for pre-booking appointments. Clinic times were announced through internal communication mechanisms, including the hospital intranet, email, posters, and through managers to employees. When the clinic opened on May 18, the vaccine was first offered to HCWs in the emergency department, microbiology laboratory, blood collection unit, OHSW, Infection Prevention and Control Service (IPCS) and to any contacts of mumps cases. On May 23 the program was opened to all employees, trainees, contract workers and volunteers.

Vaccination was voluntary. HCWs were not required to attend the clinic for education about the vaccine prior to making a decision about being vaccinated. At the time of MMR vaccination, the HCW was asked to complete a standard data collection form designed by members of the (IPCS) team and OHSW in order to determine the eligibility of staff for vaccine. The form also determined whether staff were aware of their immune status for occupational health recommended or required vaccines, and included other basic non-identifying demographic data.

Vaccinees were asked to stay in the clinic for 15 minutes after immunization to monitor for possible reactions.

RESULTS

Of 3000 HCWs in our facility, 1691 (56.3%) received a single dose of MMR

vaccine. Most (53%; 900/1691) were immunized in the first few weeks that vaccine became available (from 17-31 May); in the month of June 40% (673/1691) received vaccine and in July 7% (118/1691) were immunized. Of these HCWs, 930 (54.9%) completed the survey. The age range of respondents was 16 to 93 years (mean 41.8 years). National MMR immunization programs were introduced in 1969 in Canada; 60% of respondent HCWs were born before this date. Ninety percent of HCWs were born in Canada; two percent were born in each of the USA and United Kingdom respectively. Previous diagnosis of mumps infection was reported by 24.4% of respondents (95% CI 21.7, 27.3), 57% denied previous mumps infection and 18.6% did not know. Previous mumps infection was more common in older than younger persons: 43% of those over 55 years of age, 38.6% of those 46 to 55 years of age, 25.5% of those 36 to 45 and 5.5% of those 26 to 35 reported a prior mumps infection ($p < 0.0001$). Only 1 of 129 HCWs 16 to 25 years of age reported a prior history of mumps infection.

Only 341 HCWs (36.7%) recalled receiving any dose of MMR vaccine at any point in the past. Receipt of MMR vaccine was more common in younger HCWs than older HCWs ($p = 0.0002$), (Table 1).

Although most HCWs recalled a history of chickenpox infection (80.9%, 95% CI 78.2, 83.3), fewer reported a history of shingles, measles or rubella. The majority did not know about, or did not report, their previous other immunizations including tetanus-diphtheria (Td), tetanus-diphtheria-pertussis (Tdap), varicella, hepatitis A, hepatitis B, hepatitis A/B and influenza vaccines (Figure 1). The most common vaccine that HCWs reported receiving was influenza immunization (38.5%) followed by MMR (36.7%), hepatitis B (31.3%) and tetanus-diphtheria (27.2%).

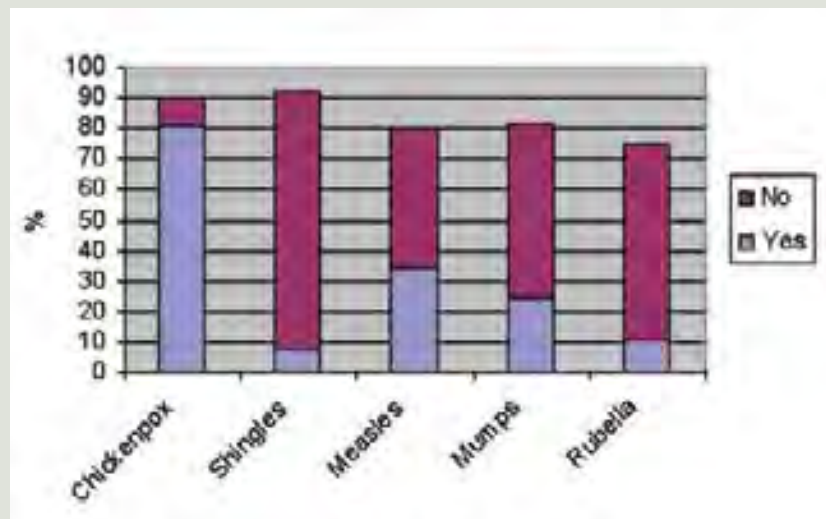
DISCUSSION

Preventing transmission of infectious diseases in the healthcare setting is a critical function of both Infection Control and Occupational Health programs

TABLE 1: Percentage of healthcare workers with previous receipt of MMR vaccine, by age group

| Age of healthcare worker (years) | Percentage with previous receipt of any MMR vaccine | 95% Confidence interval |
|----------------------------------|-----------------------------------------------------|-------------------------|
| 16 - 25 | 47.3 | 38.4, 56.3 |
| 26 - 35 | 41.4 | 34.2, 49.0 |
| 36 - 45 | 36.3 | 29.8, 43.2 |
| 45 - 55 | 33.6 | 27.7, 40.0 |
| > 55 | 25.4 | 18.3, 33.6 |

FIGURE 1: Percentage of healthcare workers reporting previous infection with selected vaccine-preventable diseases



[1]. Assessment of immunization status is critical so that appropriate vaccines can be administered to protect the HCW as well as patients and their families. Timely access to records of HCW immunization and immune status is essential if appropriate decisions are to be made during exposure management. During recent community mumps outbreaks in Nova Scotia, the inability, in many cases, to locate accurate, timely information about HCW immune status led to fur- lough of healthcare workers, increased need for laboratory testing for immunity, as well as time-consuming and often futile searches by HCWs to find vac- cine records or chart documentation of physician-diagnosed illness. After the MMR vaccine was made available to all staff, mumps-exposed staff who refused vaccine (other than for medical reasons) no longer qualified for paid administra- tive leave.

In this survey of knowledge of immune status at the time of a com- munity outbreak, most HCWs could not recall or provide documentation about receipt of common occupational health vaccines or previous infection. This find- ing was not unexpected, and reinforces the argument for immunization and immune status records that are available when unintended exposures occur. Our health centre has now implemented record storage using a turnkey software program. If complete and accurate rec- ords are kept, pre-placement screening


at the time of hire would be facilitated, and as a result, required vaccinations would be offered.

In North America it is accepted that healthcare workers should have immunity to measles, mumps, rubella, varicella, pertussis and, hepatitis B, have completed their childhood or catch-up immunization schedules, and receive annual influenza immunization [1, 2]. Based on personal report in this study, this standard is not being met in our setting. Since OHSW records were not complete and HCWs frequently could not provide documentation, it was not possible to determine the true immun- ization status of our staff. Similar results have been reported elsewhere [3]. Even with accurate record keeping, innova- tive methods are needed to motivate staff to be immunized [4], and to record ongoing immune status, such as badge scanning and bar code data entry [5].

Mumps vaccine was authorized for use in Canada in 1969, and in 1971 became available as a MMR vaccine [6]. In Nova Scotia MMR was intro- duced as a single dose to children aged 12-15 months in 1975, with a two- dose schedule introduced in 1996 for prevention of measles [7]. Less than two cases of mumps were reported annu- ally in the province until 2005, when a series of mumps outbreaks occurred that lasted until the spring of 2007. In 2008, the National Advisory Committee on Immunization revised its recommen-

datations to advise a two-dose mumps vaccine schedule for healthcare workers if immunity was not confirmed based on either laboratory confirmed immunity or disease or birth before 1970 and receipt of a single dose of MMR [8]. It is not known what role the provincially spon- sored single-dose MMR vaccine program offered to healthcare workers, university and grade twelve students played in control of the outbreak. However, it is worth noting that at least half of HCWs in our healthcare centre presented voluntar- ily to be immunized. This suggests that a substantial percentage of HCWs may respond promptly to such mass immun- ization programs. The resulting high coverage of protection against measles, mumps and rubella in our health care setting, combined with timely access to accurate occupational health records, will facilitate efficient post-exposure manage- ment should future community mumps outbreaks occur.

REFERENCES

1. Health Canada: Prevention and control of occupational infections in health care. An infection control guideline. In: *Canada Communicable Disease Report*, vol. 28S1; 2002: 1-264.
2. Immunization of health-care workers: recom- mendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC). *MMWR Recomm Rep* 1997, 46(RR- 18):1-42.
3. Dinelli MI, Moreira TN, Paulino ER, da Rocha MC, Graciani FB, de Moraes-Pinto MI: Immune status and risk perception of acquisition of vac- cine preventable diseases among health care workers. *American journal of infection control* 2009, 37(10):858-860.
4. Hood J, Smith A: Developing a "best practice" influenza vaccination program for health care workers--an evidence-based, leadership-mo- deled program. *Aaohn J* 2009, 57(8):308-312.
5. Palmore TN, Vandersluis JP, Morris J, Michelin A, Ruprecht LM, Schmitt JM, Henderson DK: A successful mandatory influenza vaccina- tion campaign using an innovative electronic tracking system. *Infect Control Hosp Epidemiol* 2009, 30(12):1137-1142.
6. Mumps and rubella consensus conference. *Canada communicable disease report = Releve des maladies transmissibles au Canada* 1994, 20(19):165-176.
7. Watson-Creed G, Saunders A, Scott J, Lowe L, Pettipas J, Hatchette TF: Two successive outbreaks of mumps in Nova Scotia among vaccinated adolescents and young adults. *Cmaj* 2006, 175(5):483-488.
8. Statement on Mumps Vaccine. An Advisory Committee Statement (ACS). *Canada commu- nicable disease report = Releve des maladies transmissibles au Canada* 2007, 33(ACS-8):1- 10. 



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1. Statistics Canada. The Daily. 2008 Jan 14. [cited 20 May 2011]; Available from: <http://www.statcan.gc.ca/daily-quotidien/080114/dq080114b-eng.htm>
2. Sankaran K, Chien LY, Walker R, et al. Variations in mortality rates among Canadian neonatal intensive care units. CMAJ. 2002 Jan 22;166(2):173-8.
3. Handling of expressed breast milk (EBM) in acute care facilities. CHICA-Canada Position Statement. 2006 October.

Validation of a novel electronic auditing tool for hand hygiene activity

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ABSTRACT

Background

Monitoring hand hygiene practices of healthcare workers is essential in assessing baseline compliance rates, identifying areas for improvement and evaluating educational interventions. This study evaluated HandyAudit™, a novel hand hygiene compliance measurement system, against the standardized observation tool currently used by the Ministry of Health in Long-Term Care in Ontario, Canada.

Methods

Hand hygiene activities of the unit staff were collected using both the standardized paper tool and HandyAudit™. Compliance rates using both tools and the interrater reliability between the tools were calculated.

Results

A total of 13 hours of observations of hand hygiene activities were collected using both tools. The interrater reliability between the two tools was calculated to be 0.89.

Conclusion

Given the high interrater reliability, it can be concluded that the tools have a high degree of agreement. HandyAudit™ holds significant advantages over the standardized paper tool by simplifying the auditing process. Auditors need only to focus on recording actions, and are not required to simultaneously decide on compliance. HandyAudit™ removes the potential for subjective interpretation when recording actions; auditors record what they see, and the system automatically determines the compliance. Additionally, HandyAudit™ eliminates the need for transcription, thereby eliminating the associated transcription errors as well as saving time. It also provides a number of tools to aggregate and report compliance rates. This new hand hygiene compliance measure-

ment system could therefore improve the accuracy and efficiency of measuring hand hygiene compliance among health care workers.

KEY WORDS:

Hand hygiene; electronic measurement system; compliance; observational study; nosocomial infection.

INTRODUCTION

Healthcare-associated infections (HAIs) are a serious threat to patients and staff and are an increasing safety concern. It is estimated that 250,000 people in Canada acquire these infections in the healthcare setting annually and more than 8,000 of these patients die as a result of HAIs each year (1-2). The direct and indirect costs associated with treating and managing HAIs puts a considerable strain on an already overextended healthcare budget (3-6).

Hand hygiene (HH) remains the single most effective strategy in preventing the spread of HAIs (7). While the importance of HH has been known for decades, compliance rates remain low across healthcare settings; some reporting less than 50% compliance (8, 9). It is also estimated that compliance among healthcare workers (HCW) in Ontario remains less than 32% (10).

To enhance HH among HCW, several educational and promotional strategies have been implemented. The most common way to measure the effect of these interventions is through monitoring HH practices (11). HH monitoring serves a number of crucial functions such as assessing baseline compliance by HCW, evaluation of HH promotion strategies, and assessing the potential role of ongoing HH practices (11). Approaches to monitor HH practices include direct observation, self-reporting by HCW, measurement of HH product and electronic methods (12). Direct observation of HCW is currently considered the gold standard and most reliable method for monitoring HH (7, 12). Further development of standardized data record-

ing tools can enhance this process. Several of these tools have been developed and tested for the use in clinical settings (14-16).

However, two important disadvantages of both current standardized observation tools recommended by the World Health Organization (WHO) and the province of Ontario Ministry of Health and Long Term Care, Canada (MOHLTC) are that, 1) they do not directly capture all activities relevant for HH – rather they capture only the indications resulting from these activities, and 2) they require the transcription of recorded actions into an electronic format in order to conduct the analysis. The transcription process takes a significant amount of time and can result in errors, decreasing the accuracy of compiled results and increasing the cost of the auditing process. This paper will report on a novel technology to record and measure HH compliance and compare it against the standardized paper form currently being used.

BACKGROUND

Monitoring and reporting of HH behaviours is crucial to improve HH compliance among HCW (11, 13). HH is currently audited through direct observation of HCW with an observer manually recording and calculating HH opportunities and adherence using a pencil and paper form. The recorded information is then transcribed into a computer program where compliance rates are calculated. Numerous jurisdictions around the world have adopted the paper-based HH audit tool produced by the WHO (14) or have developed their own (15, 16).

In the Canadian healthcare system, HH audits are considered Required Organizational Practices to achieve patient safety goals developed by the Canadian Council

on Health Services Accreditation (CCHSA). Since April of 2009, all hospitals in the province of Ontario, Canada, have been mandated by the province of Ontario MOHLTC to publicly report HH compliance rates (see http://www.health.gov.on.ca/patient_safety/public/hh/hh_pub.html#). This requirement has led to infection control departments of hospitals adopting the *Hand Hygiene Observation Tool*, a paper tool designed by the province of Ontario MOHLTC to record HH compliance (http://www.health.gov.on.ca/en/ms/handhygiene/docs/9_5_Observation_Tool_19Feb08.pdf). However, there have been concerns about the use of the province of Ontario MOHLTC tool with regards to reliability of the collected data and the resources required to aggregate compliance results (17). In response to these concerns, the iDAPT Technology Research and Development Team at Toronto Rehab designed a new HH measurement system, HandyAudit™, to allow recording of HH activities using a handheld electronic device that calculates the compliance rates through the evidential sequence of caregiver actions.

HANDYAUDIT™

HandyAudit™ is a novel system to measure HH compliance. It allows auditors to record actions of HCW using a hand held personal digital assistant (PDA). The system analyzes recorded actions and automatically calculates HH opportunities and compliance following province of Ontario MOHLTC guidelines. Figure 1 shows an example of information recorded using the paper tool in comparison to HandyAudit™. Figure 2 shows the resulting indication recorded on the paper tool using the same scenario as Figure 1.

The novelty of this new HH compli-

ance measurement system is twofold. First, HandyAudit™ allows the observer to accurately collect rapid sequences of actions relevant to HH. In contrast, the standardized paper tool captures the indications but does not capture the timeline of the activities relevant to HH. For example, as shown in Figure 1, the paper tool captures “After body fluid exposure, MISSED”, while HandyAudit™ captures additional information: “Enter patient environment, Touch patient, Body fluid exposure, Touch patient, Touch Patient environment, Leave patient environment.” This provides a much richer source of data and provides evidence that practitioners may find useful in motivating change in clinical practice.

Second, HandyAudit™ simplifies the auditing process. Auditors need only to focus on recording actions, and are not required to simultaneously decide on compliance. HandyAudit™ removes the potential for subjective interpretation when recording actions; auditors record what they see, and the system automatically determines the compliance.

Additionally, the system eliminates the time and cost of transcription and associated errors, while providing tools to report compliance rates across different units and professions. These features can improve the accuracy and ease of measuring and reporting HH compliance.

Because HandyAudit™ is a novel technology to record and report HH compliance, the initial step is to measure its accuracy compared to the currently used tool. This paper will therefore report on HH compliance measured using HandyAudit™ as compared to the data recorded using the standardized paper form currently used.

FIGURE 1: Information content for an indication using the standard paper tool compared to HandyAudit™

| PAPER TOOL | HANDYAUDIT™ |
|----------------------------------|----------------------------------|
| | Enter patient environment |
| | Contact with body fluid |
| | Touch patient |
| AFTER BODY FLUID - MISSED | AFTER BODY FLUID - MISSED |
| | Touch patient environment |
| | Leave patient environment |

FIGURE 2: A hand hygiene indication recorded using the paper tool

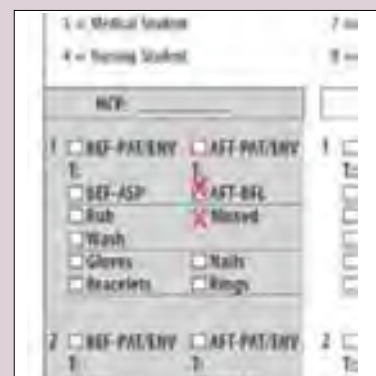


TABLE 1: Hand hygiene compliance rates per hand hygiene moment recorded with the MOHLTC Paper Tool and HandyAudit™

| Moments for hand hygiene | # of opportunities | | # of complied opportunities | | Compliance rate (%) | |
|---------------------------------------------------------|--------------------|-------------|-----------------------------|-------------|---------------------|-------------|
| | Paper Tool | HandyAudit™ | Paper Tool | HandyAudit™ | Paper Tool | HandyAudit™ |
| Before initial patient/patient environment contact (M1) | 27 | 25 | 6 | 7 | 22 | 28 |
| Before aseptic procedure (M2) | 1 | 5 | 0 | 0 | 0 | 0 |
| After body fluid exposure risk (M3) | 7 | 7 | 5 | 4 | 71 | 57 |
| After patient/patient environment contact (M4) | 41 | 34 | 23 | 11 | 56 | 32 |

METHODS

Design

An observational study was conducted in order to test the accuracy of HandyAudit™. The HH practices of nurses and allied health care professionals were observed and recorded by two teams of trained observers. Within each team, two auditors observed the same clinical situation. One observer recorded information using the paper form and the other observer used HandyAudit™. HH compliance rates measured with HandyAudit™ were compared with rates measured using the Hand Hygiene Observation Tool produced by the province of Ontario MOHLTC to determine the degree of agreement between the two.

Setting

The data was collected at a large university affiliated rehabilitation hospital in Ontario, Canada. A list of clinical areas for observation was made, including nursing units (inside and outside patient rooms), HH areas (sinks and wall units), patient lounges and therapy areas. A random selection from this list was made for daily observation areas until each area had been observed. A record of locations observed was kept to ensure that no location was over-observed.

Participants

The unit managers of the participating units were contacted by the researcher to arrange an introduction to the project at a staff meeting and/or through the accepted communication channels on the unit. Information letters were distributed to individual HCW and posters were put up throughout the facility to

notify staff, patients, volunteers and visitors about the study. All nurses and allied health care professionals employed on the unit were eligible to participate.

Training and interrater reliability (IRR) testing

Each observer dyad was trained by the researcher using the MOHLTC training scenarios on the units with both audit tools (paper and HandyAudit™). The HH guidelines set by the MOHLTC were used to determine HH opportunities and compliance. Observers were trained with HandyAudit™ using a Microsoft PowerPoint presentation, a movie introducing the use of HandyAudit™, and DVD video to allow practicing the use of HandyAudit™. Prior to data collection, IRR was conducted to measure the observers' agreement within each tool. An average IRR of 0.87 (0.75 and 0.98 respectively per observation dyad) using Cohen's Kappa was achieved for the two observers within each team, indicating acceptable IRR.

Data collection

Two trained observers simultaneously recorded HH activities according to the province of Ontario MOHLTC guidelines, each of the two trained observers used different audit tools (paper tool or HandyAudit™) to observe the same HCW. Up to four HCW were observed simultaneously in the selected area of the unit or area. Time-sampled observation of one work shift consisted of a total of 2 hours and 40 minutes of observation in the eight-hour shift (day or evening shift), structured to encompass the peak caregiving activities in the morning and late afternoon/evening.

As suggested by the province of Ontario MOHLTC, individual observation periods of 20 minutes were carried out for each location. The observers downloaded the data upon completion of the observations. This process of paired observations for two hours and 40 minutes of the same HCW in one area was repeated for a total sample of 60 areas so that each audit tool (paper and HandyAudit™) was used for 30 observation sessions by each observer. Strict adherence to the province of Ontario MOHLTC *4 Moments for Hand Hygiene* was used for reporting HH indications, opportunities and compliance.

Analysis

The IRR was determined using the two trained observers per observer team. Paper observation forms were entered into an electronic database manually; observational data from HandyAudit™ was downloaded directly to the database using a USB connection. Descriptive statistics were used to examine the overall rates of HH opportunities and actual events. Comparisons between the paper tool and HandyAudit™ were made both for the data in aggregate, and for each of the four moments of HH: before initial patient/patient environment contact (Moment 1); before aseptic procedure (Moment 2); after body fluid exposure risk (Moment 3); after patient/patient environment contact (Moment 4).

Ethics

No personal or identifying information was recorded and an individual's performance could not be identified. The HH performance of any individual was not and could not have been determined.

FIGURE 3: Agreement between HH opportunities for the province of Ontario MOHLTC Paper Tool and HandyAudit™

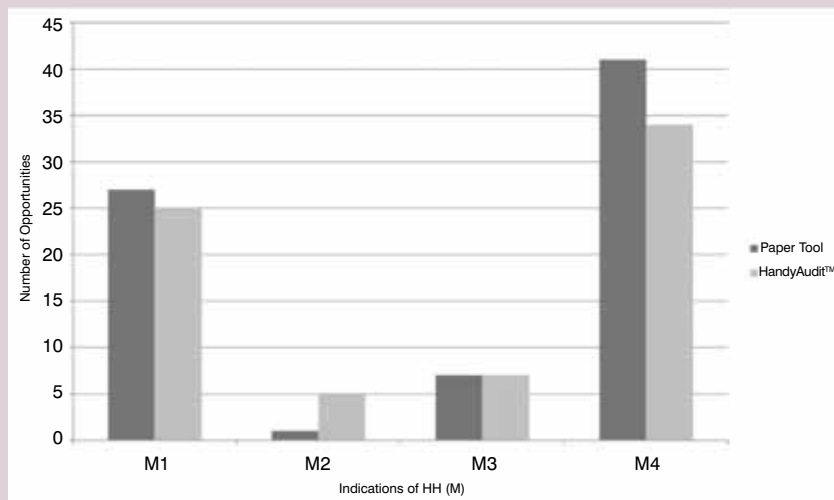
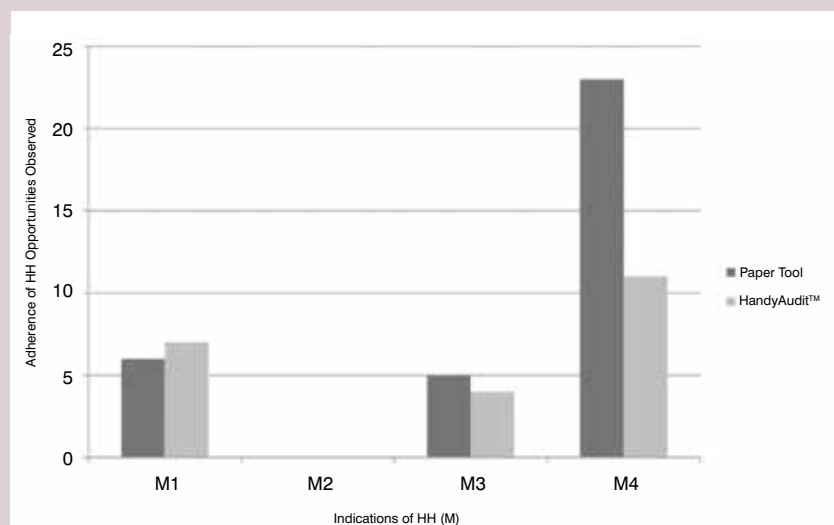


FIGURE 4: Summary of agreement between adherence using the province of Ontario MOHLTC Paper Tool



Only the researchers had access to the data. All data collection procedures were approved by the facility's Research Ethics Board prior to the start of the study.

RESULTS

Demographics

Two teams comprising two individual observers each observed a total of 28 HCW over a period of 13 hours in the selected areas.

Results reported by moment

The overall data recorded were sorted by HH moment and are presented in Table 1. The recorded opportunities (categorized by moment) were similar for Moment 1 and 3, however, there was a noticeable higher number of opportunities recorded for Moment 4 with the paper tool, compared to HandyAudit™ (41 and 34 respectively) (Figure 3).

The recorded number of HH actions performed that complied with the presented opportunity is similar for Moment 1 to 3 between the two tools. However, a difference is noted for Moment 4, with the HandyAudit™ recording half the HH actions compared to the paper tool (11 and 23 respectively) (Figure 4).

The compliance rates between the two tools were similar across Moment 1 to 3 (Figure 5). The largest differences fell under Moment 4 with a difference of 24% in compliance. While Moment 3 shows a noticeable difference between the two tools, this was not significant because of the low number of recorded opportunities that fell under this category.

TABLE 2: Identified differences and examples categorized by type between the paper tool and HandyAudit™

| Categories | Example |
|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type I: Differences resulting from data input errors using the MOHLTC Paper Tool | Observation Tool indicated an opportunity, but no action was recorded. |
| Type II: Differences resulting from potential logic mistakes using the MOHLTC Paper Tool | Incorrect number of indications and opportunities recorded on the Observation Tool due to confusion caused by multiple, alternating, and rapid contacts inside and outside of the patient's environment. |
| Type III: Differences due to HandyAudit™ logic error | HandyAudit indicated one opportunity, when two opportunities should have been indicated. |
| Type IV: Differences due to auditors not observing or recording the same actions | Observation Tool recorded a BEF-PAT/ENV opportunity, but HandyAudit™ did not as the recorded sequence of actions could not lead to this result. |

Interrater reliability (IRR) results

Based on the data above, the IRR was calculated to be 0.89. Analysis of results revealed differences in the number of opportunities reported using the province of Ontario MOHLTC paper tool and HandyAudit™.

Analysis of differences

The next step in the analysis focused on the differences between the recorded data. All differences were identified, analyzed and catalogued into four categories: I. Differences resulting from transcribing errors using the province of Ontario MOHLTC Paper Tool; II. Differences resulting from potential logic mistakes using the MOHLTC Paper Tool; III. Differences due to Handy-Audit™ logic error; and IV. Differences due to auditors not observing or recording the same actions. Examples of each type are provided in Table 2.

For each type of difference, a percentage of occurrence was calculated. Figure 6 indicates that most of the errors were due to Type IV difference, thereby indicating that both HandyAudit™ and the paper tool are accurate tools to record data, yet auditors themselves are not.

Qualitative comparisons

Auditors felt that the small size of Handy-Audit™ made it portable and convenient to use. They also found certain options extremely useful such as being able to make distinctions between the patient and the hospital environment, the ability to record when the care provider is visible or invisible within the patient environment and the option to add additional notes during their observations. Additionally, they found that capturing up to four HCW simultaneously was easier with HandyAudit™, even if they moved in and out of environments constantly, compared to the province of Ontario MOHLTC Paper Tool.

DISCUSSION

This is a first study comparing a new audit tool to record and measure HH compliance with a standardized paper form developed by the province of Ontario MOHLTC. Several findings in this study are worth pursuing.

The main purpose of the paper was to compare two HH compliance mea-

FIGURE 5: Summary of agreement between compliance rates using the province of Ontario MOHLTC Observation Tool and HandyAudit™

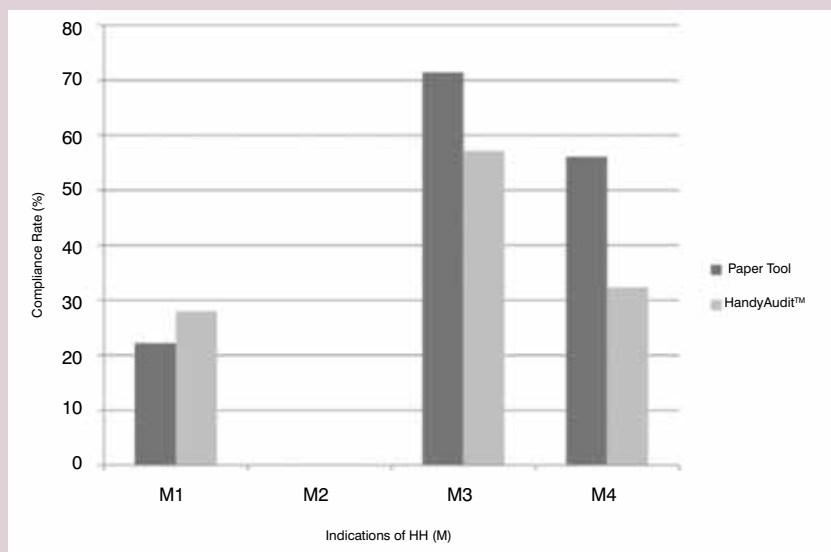
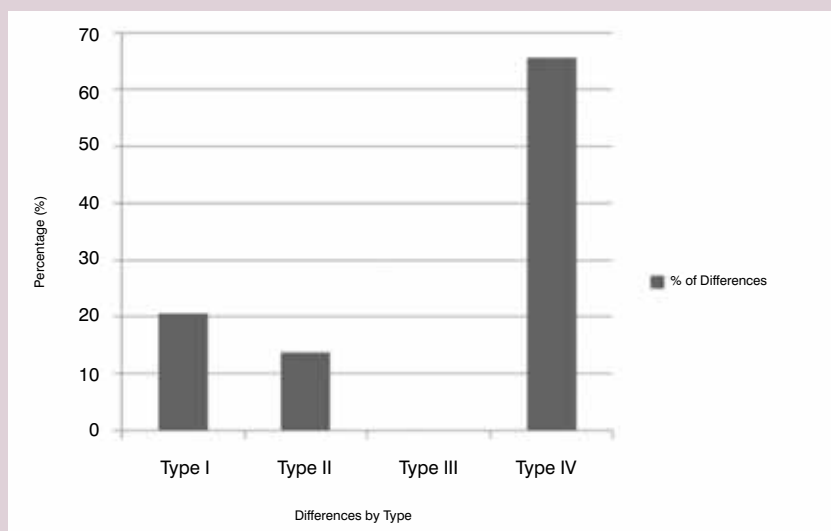


FIGURE 6: Percentage of differences identified by error type



surement tools. The authors identified a discrepancy between the recorded opportunities, adherence and non-adherence rates and overall compliance rates between the paper tool and the HandyAudit™.

The recorded opportunities (divided per moment) were similar for Moment 1 to 3, yet the paper tool recorded a higher number of Moment 4 opportunities, that is HH opportunities after patient/patient environment contact. In regards to the number of complied HH actions, a similar trend is noted. The agreement of compliance rates between the two tools is similar across Moment

1 to 3, yet a difference is noted in Moment 4 compliance, due to the fact that more opportunities were observed and less HH actions were recorded for Moment 4.

Closer inspection of the compliance differences found was conducted. The majority of compliance discrepancies were the result of the auditors not recording contact with the hospital environment after making contact with patients or their environment (36%) when using the new audit tool. Two additional important findings included 1) not recording or observing contact with the patient environment prior to touch-

ing the hospital environment (9.1% and 2) not recording the same cleaning actions upon leaving a patient area (after making contact with patients or their environments) (18%). All of these reasons directly affect the compliance rates for Moment 4 and should be addressed specifically during training to minimize discrepancies.

It is also important to mention that, when using the new audit tool, one auditor consistently recorded contact with the hospital environment after touching the patient/patient environment followed by a cleaning action, suggesting that this individual recorded contact with the actual alcohol dispenser or sink located outside of the patient's environment as part of the hospital environment.

Despite the seemingly different data recorded with both tools, the IRR between the group of paper tool recorders and the HandyAudit™ recorders was 0.89; indicating a high degree of agreement among raters. This high IRR confirms that, in this study, the trained observers using a paper tool or HandyAudit™ recorded very similar, or homogenous HH data. The small percentage of differences between the recorded data with the two tools, were mostly due to auditors not observing or recording the same actions, a risk of any observation study that is well described in the literature (15). Furthermore, these differences would have also occurred if two observers would have both used the paper tool or both have used HandyAudit™. Considering the high IRR between the observers, the authors are confident to state that the data recorded with the paper tool and HandyAudit™ have a high degree of agreement.

Feedback from the observers described the significant advantages of HandyAudit™ over the standardized paper tool. Not only was the data collection procedure faster, HandyAudit™ also eliminates the need for transcription, thereby eliminating the associated transcription errors, as well as saving time and money. No studies have been conducted on the risk of transcription errors for HH compliance data, however recent research calculated transcription errors when entering data from surveys

into an electronic database, could be as high as 6.5% (650 per 10,000 entries) (19). In addition, HandyAudit™ is able to aggregate and report compliance rates, thereby improving the efficiency of measuring HH compliance among HCW.

As with all studies involving direct observation, a Hawthorne effect is to be expected, not only with the staff being observed, but also between the two observers as they were aware that they were testing for the degree of agreement between the two tools. To address this potential bias, it was emphasized that the observers were not to communicate during their observations and they were not involved in the analysis or interpretation of the findings.

Although not the main focus of this study, compliance rates recorded for this comparisons study were unacceptably low as reported in the literature (20). It is distressing to note that in this sample, HCW had, on average, a compliance rate of 38.1%. It is the authors' belief that different methods are necessary beyond educational strategies and surveillance measures to address HCWs' compliance behavior (21).

CONCLUSIONS


It has been shown that a new electronic tool (HandyAudit™) can be substituted for the paper-based tool currently used to capture HH opportunities and hand hygiene compliance. Of the few discrepancies found between tools, most would be eliminated with appropriate training. The electronic tool was found to be more convenient to use and eliminated the cost of transcribing paper records as well as any transcription errors. HandyAudit™ produces a record of actions that is analyzed automatically, allowing auditors to focus on recording the actions without the need to identify errors and eliminating subjectivity in interpretation of the hand hygiene rules.

REFERENCES

1. Zoutman ED, Ford BD, Bryce E, et al. The state of infection control in Canadian acute care hospitals. *Am J Infect Control* 2003; 31(5):266-73.
2. Salaripour M, McKernan P, Devlin R, the Infection Prevention and Control

Team. A Multidisciplinary Approach to Reducing Outbreaks and Nosocomial MRSA in a University-Affiliated Hospital. *Healthcare Quarterly* 2006; 9(Sp): 54-60.

3. Boscart VM, Levchenko A, Fernie G. Automated hand hygiene monitoring: Perspectives for healthcare staff, management, and infection control specialists. *Journal of European Association of Hospital Managers* 2009; 11(2): 15-16.
4. Maragakis LL, Perencevich EN, Cosgrove SE. Clinical and economic burden of antimicrobial resistance. *Expert Rev Anti Infect Ther* 2008; 6(5): 751-763.
5. Vonberg RP, Reichardt C, Benhke M, Schwab F, Zindler S, Gastmeier P. Costs of nosocomial *Clostridium difficile*-associated diarrhoea. *J Hosp Infect* 2008; 70(1): 15-20.
6. Stone PW, Larson E, Kawar LN. A systematic audit of economic evidence linking nosocomial infections and infection control interventions: 1990-2000. *Am J Infect Control* 2002; 30(3): 145-52.
7. Sax H, Allegranzi B, Charaiti MN, Boyce J, Larson E, Pittet D. The World Health Organization hand hygiene observation method. *Am J Infect Control* 2009; 37(10): 827-834.
8. Pittet D, Mourouga P, Perneger TV. Compliance with handwashing in a teaching hospital. *Infection Control Program. Ann Intern Med* 1999;130(2):126-30.
9. Pittet D. Improving adherence to hand hygiene practice: a multidisciplinary approach. *Emerg Infect Dis* 2001;7(2): 234-40
10. Loeb M. Adherence to hand hygiene among healthcare workers in Ontario hospitals: results from a NET cohort study. Presented at the Hand Hygiene Consensus Building Workshop March 1, 2006.
11. World Health Organization. World alliance for patient safety: WHO guidelines on hand hygiene in health care (advanced draft): global patient safety challenge 2005-2006: "clean care is safer care". Geneva, Switzerland: WHO Press, World Health Organization. 2006: 103-110.

12. Eveillard M, Hitoto H, Raymond F, et al. Measurement and interpretation of hand hygiene compliance rates: importance of monitoring entire care episodes. *Journal of Hospital Infection* 2010; 72(3): 211-217.
13. Pittet D. Hand hygiene: it's all about when and how. *Infect Control Hosp Epidemiol* 2008; 29: 957-959.
14. World Health Organization. WHO guidelines on hand hygiene in health care: first global patient safety challenge: clean care is safer care. Geneva, Switzerland: WHO Press, World Health Organization. 2009:157-173.
15. McAteer J, Stone S, Fuller C, et al. Development of an observational measure of healthcare worker hand-hygiene behaviour: the hand-hygiene observation tool (HHOT). *Journal of Hospital Infection* 2008; 68: 222-229
16. Magiorakos AP, Leens E, Drouvot V, et al. Pathways to clean hands: highlights of successful hand hygiene implementation strategies in Europe. *Euro Surveill.* 2010;15(18):pii=19560. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19560>
17. Muller MP, Detsky, AS. Public reporting of hospital hand hygiene compliance helpful or harmful? *JAMA* 2010;304(10): 1116-1117.
18. Boscart VM, Levchenko AI, Fernie GR. Defining the configuration of a hand hygiene monitoring system. Submitted to the *American Journal of Infection Control* 2010.
19. Weber BA, Yarandi H, Rowe MA, Weber JP. A comparison study: paper-based versus web-based data collection and management. *Applied Nursing Research* 2005; 18(3): 182-185.
20. Duggan JM, Hensley S, Khuder S, Papadimos TJ, Jacobs L. Inverse correlation between level of professional education and rate of hand-washing compliance in a teaching hospital. *Infect Control Hosp Epidemiol* 2008;29: 534-538.
21. Boscart VM, Gorski S, Holliday P, et al. Advanced technologies to curb healthcare-associated infections. *HealthcarePapers* 2009; 9(3): 52-55. 



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Inside:

| | |
|-------------------------------------------|-----|
| President's Message | 131 |
| Message de la Présidente | 132 |
| From the Executive Desk | 135 |
| Developing Position Statements | 137 |
| CBIC | 139 |
| CHICA-HANDIC | 143 |
| CHICA NB/PEI | 144 |
| PHAC Update | 145 |
| 2011 National Education Conference Review | 147 |
| Reach our advertisers | 156 |



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

A tough act to follow


CHICA-TPIC, with contribution from CHICA-Eastern Ontario, hosted a landmark national conference May 28 to June 2, 2011 in Toronto. Close to a thousand participants took advantage of the inspiring program assembled by the 2011 Scientific Program Committee, led by Cathy Munford, Conference Chair, and Zahir Hirji, Scientific Program Chair. Thank you so much to all who worked so hard to make the event a resounding success.

Renowned speakers from Canada and abroad shared their stories, knowledge, and strategies. Some sessions made us laugh, some stories made us shake our heads; all were thought-provoking and gave us ideas to ponder or put into practice. The special events were very well attended and each was memorable in its own way (who can forget SPLASH! at the opening ceremony, Dr. Pittet's 5Moments dance, or the sound of poker chips disappearing at Casino Royale?). The Walk/Run for IFIC raised over \$3400. Over 300 designates attended a day especially designed for them by the Ontario Agency for Health Protection and Promotion/Regional Infection Control Network leaders. Everything ticked along on time. In fact, the biggest concern we heard was that there wasn't enough time to do everything. What a problem to have – too many good options!

The conference was not all fun though. The attendees at the annual general meeting (AGM) were presented with a difficult choice: approve a membership fee increase or see much of the work associated with achievement of CHICA-Canada's strategic plan cease due to lack

"Some sessions made us laugh, some stories made us shake our heads; all were thought-provoking and gave us ideas to ponder or put into practice."

of funding. Members heard about measures already taken to curtail expenses and to increase revenue, about the initiatives under way and others proposed for the future. They approved a \$70 membership fee increase effective January 1, 2012 as recommended by the board of directors. Watch for details of the fee change in upcoming communication from the director of finance.

The members present at the AGM recognized that as our association grows and changes, so the services and products needed by our members and chapters change. As the message of infection prevention spreads around the globe, international leadership is needed and CHICA-Canada plans to be a national and international leader. Let's be the best we can be – a tough act for other associations to follow. 

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

Un modèle difficile à suivre

Le congrès national organisé par CHICA-TPIC avec la collaboration de CHICA-Est de l'Ontario, qui s'est déroulé du 28 mai au 2 juin 2011, à Toronto, a été mémorable. Près de mille participants ont bénéficié du programme inspirant élaboré par le comité responsable du programme scientifique 2011, sous la direction de Cathy Munford, présidente du congrès, et de Zahir Hirji, président du programme scientifique. Grand merci à tous ceux et celles qui ont travaillé avec tant d'ardeur pour que ce congrès ait un succès retentissant.

Des conférenciers de marque du Canada et de l'étranger ont fait part de leurs expériences, de leurs connaissances et de leurs stratégies. Certaines séances nous ont fait rire, certains récits nous ont fait hocher la tête. Tous les exposés étaient inspirants et nous ont transmis

« Des conférenciers de marque du Canada et de l'étranger ont fait part de leurs expériences, de leurs connaissances et de leurs stratégies. »

des idées qui suscitent la réflexion ou que nous pouvons intégrer à notre pratique. Les activités spéciales ont connu une forte participation et chacune a été marquante à sa façon (qui pourrait oublier SPLASH! à la cérémonie d'ouverture, la danse 5Moments dirigée par Dr Pittet, ou le son des jetons qui disparaissent au Casino Royale?). La course et marche au bénéfice de l'IFIC a permis d'amasser plus de 3 400 \$. Plus de 300 personnes désignées ont assisté à une journée spécialement conçue à leur intention par des responsables de l'Agence ontarienne de protection et de promotion de la santé et des Réseaux régionaux de contrôle des infections.

Tout s'est bien déroulé, selon l'horaire prévu. Le plus gros problème dont on nous a fait part? Il n'y avait pas assez de temps pour tout faire. Quel heureux problème – trop de bonnes options!

Toutefois, tout n'était pas rose au congrès. Les participants à l'assemblée générale annuelle (AGA) avaient un choix difficile à faire : approuver une hausse des cotisations ou renoncer à de nombreuses activités associées à la concrétisation du plan stratégique de CHICA-Canada faute de financement. Les membres ont été renseignés sur les mesures déjà prises pour restreindre les dépenses et accroître les revenus, ainsi que sur les initiatives en cours et proposées. Ils ont approuvé une hausse des cotisations de 70 \$, qui entre en vigueur le 1er janvier 2012, tel que recommandé par le conseil d'administration. Vous obtiendrez d'autres détails sur les nouvelles cotisations dans une prochaine communication de la part de notre directrice des finances.

Les membres présents à l'AGA ont reconnu que notre association change, évolue, et que les produits et services dont nos membres et les sections régionales ont besoin changent aussi. À cette époque où l'idée de la prévention des infections se répand sur la planète, il faut un leadership international et CHICA-Canada entend agir comme un leader sur la scène nationale et internationale. Visons l'excellence – soyons un modèle que les autres associations auront du mal à suivre. 

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Gerry Hansen, BA

Executive Director, CHICA-Canada

School's not out

Summer is a good time to reflect on professional learning needs and take advantage when they are offered.


CHICA-Canada offers many opportunities for continuing professional education, on several levels. Some of the programs have proven their success and some are in development.

Here is an overview:

1. Chapter Education Days offer creative presentations covering the many aspects of IP&C. You can find a listing of upcoming Chapter Education Days in the Canadian Calendar of Conferences and Events on our website, and in the calendar at the back of the *2011-2012 Member and Source Guide*.
2. The CHICA-Canada National Education Conference highlights sessions specific to either novice or advanced ICPs, full- and half-day intensive sessions that focus on one specific topic; a well-rounded schedule of plenary and concurrent sessions; and educational opportunities for ICPs and other disciplines from all healthcare sectors. For the past several years, our conference has received accreditation from the Royal College of Physicians and Surgeons. The preliminary program for the 2012 National Education Conference is available on our website. It will not disappoint.
3. The CHICA-Canada Novice IP&C course is an interactive, online course for the novice practitioner with less than two years' experience who is currently working in or exploring working in IP&C. Preference is given to individuals currently working in IP&C. The next course will run from September 2011 to June 2012. Students are expected to successfully complete all six modules and a 12-hour practi-

cum. Graduates receive a certificate of completion from CHICA-Canada on successful completion of the six modules plus the practicum. More information about the course can be found on our website.

4. The CHICA-Canada/BD Canada Roadshows have taken a full or half day of expert presentations on MRSA, *C. difficile*, AROs, and culture change to seven regions of Canada. These highly successful events are directed to the ICP in all sectors, as well as healthcare administrators and other disciplines interested in gaining a better understanding of the issues facing IP&C. We expect to announce upcoming Roadshows and/or webinars in the next several weeks.
5. The Routine Practices E-Learning Tool Working Group is in the final stages of developing an exciting and unique tool for teaching healthcare workers about when and how to implement all the various aspects of Routine Practices. Developed and delivered in collaboration with Georgian College Orillia Campus and Ycommunicate Inc., the Routine Practices educational tool is not only directed to ICPs but also to nurses, physicians, case managers, personal support workers, and other relevant healthcare organizations and professions. On successful completion of the six modules, the user will receive a certificate of completion co-signed by Georgian College and CHICA-Canada. It is anticipated that this e-learning tool will be launched in August 2011. Stay tuned.
6. The designation of CIC (Certificate in Infection Prevention and Control) is widely sought by both ICPs and their employers. This is assurance to the employer that the ICP has a standardized knowledge of IP&C practices. Many employers are requiring the designation to be obtained by incumbents within two years of their employment. CHICA-Canada has a liaison representative to the Certification Board of Infection Control (CBIC, <http://www.cbic.org>) and there are an additional two Canadian representatives to the CBIC Board and testing committee. The CIC designation is now offered internationally and continues to be a benchmark of practice knowledge. Many of CHICA-Canada's chapters and the OAHPP Regional Infection Control Networks of Ontario have CIC prep courses. In addition, the education offerings listed here will provide some key material in preparation for the CIC exam.
7. CHICA-Canada partners with both industry and other associations/agencies in the development of educational events and tools for ICPs. Among the corporate partnerships are the biannual Virox day at the national conference, and the Vernacare Hot Topics lecture. Our work with external stakeholders includes those with Accreditation Canada, the Canadian Standards Association, the Public Health Agency of Canada, the Canadian Patient Safety Institute, and the National Collaborating Centre on Infectious Diseases. We are very proud of the work that is being done to keep ICPs up-to-date and proficient in their responsibilities. You can find Corporate Member-sponsored education on our website under the Conferences and Education section.

In our profession, continuing professional education is especially important. The health of Canada is in your hands, and in the hands of those whom you will educate. 

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Developing CHICA-Canada position statements

Jennifer Grant, MD, CM, FRCP(S),
Director, Standards and Guidelines

It has been just over two years since I took over the Standards and Guidelines (S&G) portfolio at CHICA-Canada (CHICA), during which time I have learned a lot. My new role has had its challenges, all of which were welcomed.

We have been heavily involved in the audit toolkits, and more recently have started looking at how the S&G committee can best serve CHICA members. I would like to share some of our exciting new developments.

The S&G committee is responsible for reviewing and approving position statements. Over the past few months the S&G committee has spent time and effort to clarify and streamline the position statement process. We hope this will provide better service to CHICA members and more concrete guidance for anybody who wishes to prepare a position statement. We invite you to consult the newly posted guidelines on the CHICA-Canada website as to what a position statement should include, and the revised procedure for approval http://www.chica.org/Members/pdf/S&G_PS_guidance-10Dec21.pdf

http://www.chica.org/Members/pdf/S&G_Position_Statement_Process-11Jan04%20%5Bv%20%5D.pdf

Here are some highlights:

The first matter was to clarify the purpose of a position statement and how to distinguish them from other types of statement (e.g., practice guidelines). There has been such a proliferation of guidelines and practice documents that have been written by national and provincial organizations, we do not want to reproduce that work, but to provide clarity and insight into the implications of these documents. The main distinction is that a position statement is a concise summary aimed to identify a point of view on controversial topics or clarify CHICA's position where there are conflicting recommendations.

In terms of choosing a subject for a position statement, we previously suggested that interest groups consult a list of suggested position statements on the CHICA website. We found

“We invite you to consult the newly posted guidelines on the CHICA-Canada website as to what a position statement should include, and the revised procedure for approval.”

that there was little interest in this proposition and that interest groups were best situated to decide which issues required further clarification for their practice area. Therefore, we have left the choice of subject of position statement open to interest groups, but ask that they discuss the proposed statement with the chair of the S&G committee before starting work to assure that the subject is an appropriate choice – and to give the S&G committee time to prepare for review of the issue.

There are also a few minor procedural issues that have changed. Position statements will be reviewed at the next regularly scheduled S&G meeting, and all effort will be made to get reviews back to authors as quickly as possible. We cannot guarantee timelines, as there is great difficulty organizing ad hoc meetings for a group of people spread across the country.

I hope that these changes will be helpful to the community at large and we look forward to serving you in the coming years. ☺☺



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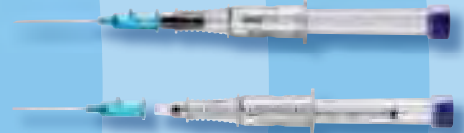
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Terrie B. Lee, RN, MS, MPH, CIC

2011 Certification Board of Infection Control and Epidemiology, Inc. (CBIC) President

Celebrating excellence

I was honored to attend the recent CHICA-Canada Conference, where members of the Certification Board of Infection Control and Epidemiology, Inc. (CBIC) and I had the opportunity to meet and speak with many CHICA members about certification in infection prevention and control. Many who have been certified came by the CBIC booth to pick up their CIC ribbon for their name badges, and to find out the latest information about taking an exam for maintaining certification. Others came by to discuss their plans to write the exam in the near future, and to ask for tips for successful completion. It was great to meet so many CHICA members and to encourage them to join the ranks of the Canadian ICPs who are board-certified. We also displayed a poster with the names of Canadians who had become certified or re-certified since the last CHICA conference. We are so grateful for the feedback about the certification process we received from conference participants and for the opportunity to celebrate practice excellence with many CHICA-Canada members!

Infection prevention and control professionals play an integral role in

the patient safety and performance improvement activities in healthcare organizations worldwide. A unique combination of knowledge and skills are required to be successful when planning and implementing infection prevention and control programs. It is important to remember that your role is unique and not everyone can do what you do.

The only professional method of demonstrating essential infection prevention and control knowledge is attaining the certification in infection control (CIC®) credential. Becoming certified isn't easy. If it was easy, *anybody* could do it. Studying for an examination is a challenging venture for anyone, but this helps strengthen our foundation of excellence in the practice of infection prevention and control.

I challenge you to work with CHICA-Canada to raise the number of certified infection prevention and control professionals. If you haven't taken the first step to certification, make 2011 the year you commit to your professional practice. Earning your CIC® establishes that you have gained the knowledge to demonstrate competence. Attaining your CIC® shows colleagues, superiors, and surveyors that you know what you

need to know to perform your job. However, this must be accompanied by evidence-based practice in the field.

In order to achieve your CIC®, you must be actively practicing infection prevention and control. This means that you have the primary responsibility for the infection prevention program within your organization or that the department in which you work is assigned the responsibility for infection prevention and control. Additional practice and educational requirements are outlined in the Candidate Handbook on the CBIC website: www.cbic.org. If you don't meet the educational requirements, but have met the practice requirements, you may still become certified if you have participated in adequate continuing education programs and complete an educational waiver to write the examination.

There is no prerequisite for the length of experience in the field prior to taking the CBIC exam. Keep in mind that the exam is written and geared toward professionals who have been in the field at least two years. However, if you feel ready before you have acquired two years experience, you may write the exam.

The *Candidate Handbook* includes a detailed outline of areas of knowledge covered in the exam. It is important to review and familiarize yourself with the list of exam references, as each exam question is derived from those references. References include texts as well as current guidelines and standards. Take note that the exam will test you on recommended guidelines and standards, not on "how you do it in your organization." Thus, the exam is applicable to all healthcare settings

"We are so grateful for the feedback about the certification process we received from conference participants and for the opportunity to celebrate practice excellence with many CHICA-Canada members!"

across the U.S. and Canada; however, many international professionals have also become certified.


Studying for the CBIC exam is a serious and worthwhile process. Your practice, your organization, and the patients you serve can only benefit as you engage in ensuring that you are meeting evidence-based standards of care required by certification. CHICA-Canada offers many educational opportunities and resources to assist you in your journey of becoming certified.

If you have your CIC® credential, encourage your non-certified colleagues to work toward this important goal. Through your mentorship, you will pass on the tradition of helping newer infection control professionals to learn the profession.

You will need to re-test every five years to maintain your certification. This establishes that you have maintained current essential knowledge of infection prevention and control and that you can demonstrate that knowledge by successful examination. For this certification maintenance, you have the option

“CHICA-Canada offers many educational opportunities and resources to assist you in your journey of becoming certified.”

of taking the timed, computerized, proctored exam, or the open-book, self-paced, web-based exam known as the Self-Achievement Recertification Exam (SARE).

I hope you will join your professional colleagues and embrace the challenge of certification. The CBIC Board and I can be reached by email: info@cbic.org. You can also email me directly at tlee@cbic.org. If you prefer, you can call our office at 414-918-9796. I look forward to your participation in the certification journey! 

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If you wish to contribute articles on research or general interest please contact the Clinical Editor:

PAT PIASKOWSKI

807-683-1747

pat.piaskowski@oahpp.ca

CIC Graduates JANUARY-JUNE 2011

CHICA-Canada and its members have long understood the value of certification in our special field of practice. Certification displays to our employers, co-workers and the public that we have attained a certain level of expertise, demonstrated our knowledge during the testing process and place importance on continued learning and skill enhancement. Certification increases our credibility and demonstrates our commitment to enhancing the profession to which we belong.

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

The following list, provided by the Certification Board of Infection Control, names those who have obtained or renewed their Board Certification in Infection Prevention and Control (CIC) since January 2011. Congratulations to all of you for taking this important step to further your careers – we celebrate your success!

Ruth Collins, CIC, Mississauga, ON
Clotilda D'Silva, CIC, Mississauga, ON
Dana Finnegan-Yee, CIC, Brockville, ON
Natalie Goertz, CIC, Woodstock, ON
Andrea Brietta Groff, CIC, Whitby, ON
Lillian Kariko, CIC, Toronto, ON
Shirley McDonald, CIC, Bath, ON
Shirley McLaren, CIC, Belleville, ON
Donna Moore, CIC, Caledon, ON
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Barbara Schmidt, CIC, Owen Sound, ON

Samantha Sherwood, CIC, Hamilton, ON
Tracey Spencer, CIC, Kingston, ON
Faith Stoll, CIC, Yarmouth, NS
Angela Thomas, CIC, Toronto, ON
Nicole Tittley, CIC, Thunder Bay, ON
Gemma Vena, CIC, Maple, ON
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Brenda Wehbe, CIC, Sudbury, ON
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CHICA-HANDIC

15th Annual Infection Control Educational Day

CHICA-HANDIC hosted their 15th Annual Infection Control Educational Day on May 5, 2011 at the Grand Olympia Banquet and Convention Centre in Stoney Creek. In celebration of World Hand Hygiene Day, the event was entitled *The Hands Down Hoedown*, and was registered with the *Canadian Stop! Clean Your Hands Day – 2011*. In keeping with the farm and country theme, CHICA-HANDIC President, Risa Cashmore (alias “Ma Kettle”) welcomed 305 attendees to the event.

The keynote speaker, Deb Loyd, began the day with a humorous and enlightening session. Deb Loyd is a professional speaker and educator who shared the power of storytelling in education and the power of laughter in a session entitled *Round the Ole Campfire*. See Deb’s website: www.debloyd.com

Other educational sessions featured timely topics and excellent speakers:

- Sexually transmitted infections in the elderly (*Romping in the Hay*) – Dr. Cheryl Main (ID Physician, Hamilton Health Sciences)
- Pets, Animals and IPAC issues (*Don’t Lick Your Lizard*) – Dr. Martha Fulford (ID Physician and Medical Coordinator for Waterloo Wellington



- Infection Control Network)
- New Onset Diarrhea (*Who’s in the Outhouse Now?*) – Anne Bialachowski (IPAC Manager, St. Joseph’s Healthcare, Hamilton and CHICA-Canada Past President)
- The History of Tuberculosis (*Gallop-ing Consumption*) – Stefanie Ralph (Network Coordinator, Central South Infection Control Network)
- Animal Contamination in Food Sources (*There’s a Fly in My Soup*) – Glynis Robinson (Hamilton Public Health)
- Environmental Cleaning – Auditing with ATP & UV Indicators (*Mucking Out the Stalls*) – Cindy O’Neill (IPAC Manager, Hamilton Health Sciences, Hamilton)

Attendees were encouraged to enter a singing contest with a song, related to infection prevention and control; the talent could have rivaled *Canada Sings*. One of the local long-term care facilities, Shalom Village, brought their resident

Glee Club, who sang about infection prevention and control and the importance of hand hygiene. They won first prize for their efforts. Honourable mentions go to Rachel Thiessen (Infection Control/Quality Management Coordinator, United Mennonite Home in Vineland, Ontario) who composed her own tune about the challenges in infection prevention and control, and Mark Jefferson (Infection Control Consultant, Hamilton Health Sciences Corporation-Henderson Site, President-Elect CHICA-HANDIC and “Pa Kettle”) whose song about *Clostridium difficile* was based on the Johnny Cash tune *Ring of Fire*.

Days like these would not be possible without a creative and hardworking Educational Committee and the support of all of our CHICA-HANDIC members. The Educational Committee for this year’s conference included: Tamara Johnson (Chair), Connie Gittens-Webber, May Griffiths-Turner, Cheryl Collins, Stefanie Ralph, Donna Lyle, Risa Cashmore, Mark Jefferson, Shasta Gibson, Gail Fisher, Patricia Peltsch, Mary Catherine Orvidas and Lois Lacroix.

To view the presentations from this conference, please visit the CHICA-HANDIC website: www.chica.org



Shalom Village Glee Club.



Participants put their hands up to start the hands up to start their Hands Down Hoedown. They agree they’d rather line dance than line-list!



Education Committee.

From back left: Cheryl Collins, Tamara Johnson, Connie Gittens-Webber, Mark Jefferson, May Griffiths-Turner. From front left: Stefanie Ralph, Risa Cashmore, Donna Lyle



Deb Loyd, storyteller.

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:
Membership Service office
67 Bergman Crescent
Winnipeg MB R3R 1Y9

Deadline for nominations: August 15, 2011.

CHICA NB/PEI meeting



CHICA NB/PEI held their semiannual meeting in Moncton on May 13, 2011. The business meeting and round table were held in the morning. Lunch was provided by Teresa MacKinnon from Systagenix, and she presented information on their antimicrobial wound dressings.

The afternoon consisted of education provided by Bernadette Demone, RN, MN. She gave an oral presentation titled "The Impact of a Standardized Protocol on the Quality of Wound Dressing Procedures in Hospitalized Patients" and this was followed by lively discussion. Bernadette also presented this topic as an oral presentation at the CHICA national conference in Toronto.

CPHO at CHICA-Canada: PHAC's role – infectious disease prevention and control

On June 2, 2011, Dr. David Butler-Jones, Chief Public Health Officer (CPHO) of the Public Health Agency of Canada (PHAC) provided a keynote address to CHICA members at the annual Educational Conference in Toronto. Dr. Butler-Jones spoke to the opportunities, challenges and issues of importance to the Agency, such as healthcare-associated infections (HAI) and antimicrobial resistance (AMR) as public health issues. Key points included:


- HAIs are the fourth leading cause of death in Canada. Each year in Canada over 220,000 HAIs result in 8,500-12,000 deaths. The European Union estimates approximately 20-30% of HAIs can be prevented.
- HAI rates are rising, with an estimated one in eight hospital patients in Canada acquiring a HAI.
- Trends for specific organisms indicate that the incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) in Canadian hospitals has increased 17-fold between 1995 and 2009. Deaths directly related to *Clostridium difficile* have increased by five-fold over the past decade.
- AMR is a global issue, with cases reported in 64 countries to date. Specific examples of global impact include 440,000 new cases of multidrug-resistant tuberculosis (MDR-TB) emerging annually, causing at least 150,000 deaths.
- The economic impact of emerging infectious disease is also a global issue; the economic burden of HAIs in Canada is estimated at \$1 billion annually.
- Lessons learned from the pH1N1 outbreak response.

PHAC has a unique role to play in regards to HAIs, as the interface with health care and public health. PHAC provides guidance on infection prevention and control practices for use by provinces and territories, healthcare facilities and healthcare

personnel across Canada. These guidelines are designed to limit the spread of HAIs.

PHAC is also actively involved in HAI surveillance through the Canadian Nosocomial Infection Surveillance Program (CNISP). CNISP is a nationwide surveillance system involving more than 50 hospitals in nine provinces. CNISP operates through an agreement between these hospitals and PHAC. Through the CNISP program, PHAC and its partners work to detect and track HAI across Canada. Data from this surveillance system are used in the development of infection prevention and control guidelines for hospitals.

Ongoing partnership and collaboration between CHICA and PHAC on initiatives such as World Health Day (2011), Antibiotic Awareness Day (2010), PHAC/CHICA-Canada Collaboration in *Canadian Journal of Infection Control* and the collaborative relationship between surveillance (CNISP) and guideline development, have acted to address HAI in Canada.

PHAC will continue to provide leadership and collaborate with many partners to address these crucial issues. Public health is, at its heart, local – CHICA-Canada members can act as *change agents* who can help us move forward together. Strengthening connections is critical to success. 



CHICA-Canada is partnering for a one-year trial period with *posterdocuments.com* to provide an archival service for posters presented at

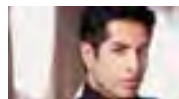
the 2011 National Education Conference, Toronto, May 30-June 1, 2011. The site extends the reach of poster presentations and allows those registrants who may not have had opportunity to view all the posters to do so following the conference. If you have any questions, or want to find out more about submitting your poster please contact staff@posterdocuments.com. There is a direct link to the posterdocuments webpage from www.chica.org.

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2011 NATIONAL EDUCATION CONFERENCE

REVIEW

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2011 HONOURARY MEMBER



Shirley McDonald accepts Honourary Membership in CHICA-Canada.

The following is Shirley McDonald's acceptance speech for her Honourary Member Award.

I would like to thank the CHICA-Canada board of directors and those who nominated me for this great honour. I have had the privilege to work with some amazing and talented people over the past few years since I started my "third" career, and I feel that this award should in many ways be a group award.

The CHICA-Canada website has been a labour of love for me since I started working on it in 2003, accepting the reins from the very capable Adrienne Brown, just as SARS was beginning to stir in the wind. But it is very easy to do a good job at something you have a passion for and enjoy doing. The challenge in one's career is doing a good job when the going gets tough, the hours are long, the stomach is empty, and the brain starts to sputter. I am sure all of you can relate to moments like these.

Having participated in two novice practitioner days, the most recent one yesterday, I would like to address some comments to new ICPs, but I hope that the "oldies" in the crowd will also relate to them.

The practice of infection prevention and control can be either a job or a profession. A job is the execution or performance of a task for the purpose of receiving **payment**. A profession is a

vocation or **calling**, requiring knowledge and learning. A job describes **what you do**; a profession defines **who you are**. You can turn a job on and off; a profession becomes part of your core. You put your skills and mind into a job; you put your heart and soul into a profession.

As you grow into this profession of infection prevention and control:

- **Seize** the day; use every opportunity that comes your way to do what you want to do; or the opportunities will stop coming.
- Maintain your sense of humour; it will hold you up when the going gets tough and will engage the cooperation of others.
- Invest your mind into **lifelong learning**; this will help you grow and blossom; you are never too old to learn new things (I am a perfect example of that!).
- Cultivate **passion**; this will **excite** you during the good times and **sustain** you during the bad times.
- Develop empathy.

And always remember, at the end of the day, no matter what kind of a day it was, why you are here: **IT'S ALL ABOUT THE PATIENT**; if you **never** lose this focus, you will rarely make a mistake and your efforts will always have purpose.

In closing, I would like to leave you with a thought:

Reach high, for stars lie hidden in your soul. Dream deep, for every worthwhile goal was preceded by a dream.

"It is very easy to do a good job at something you have a passion for and enjoy doing."

2011 CONFERENCE AWARD WINNERS

Congratulations to the following award winners at the 2011 National Education Conference.

2011 Ecolab Poster Contest (\$500): The Infection Control Team, Credit Valley Hospital, Mississauga.

2010 CIC Chapter Achievement Award (\$750): CHICA HANDIC



Marilyn Weinmaster presents the CIC Chapter Achievement Award to Risa Cashmore, President of CHICA HANDIC.

3M Chapter Achievement Award (\$1500): CHICA Eastern Ontario



Marilyn Weinmaster, Ginny Marshall and Sally McInnis, President of CHICA Eastern Ontario, winners of the 2011 3M Chapter Achievement Award.

2010 Editorial Award (\$750): Heather Candon, Chingiz Amirov, Jane Van Toen, Baycrest Geriatric Health Care System. *A multifaceted intervention to address a case cluster of cellulites associated with hypo-*

dermoclysis in a geriatric complex continuing care unit. (Summer 25(2), 2010).

Best First Time Abstract: Jeff Powis^{1,2}, Sue Gill¹, Yves Crehore¹

1. Toronto East General Hospital, Toronto, Ontario, Canada, 2. Department of Medicine, University of Toronto, Toronto, Ontario, Canada.

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

Best Poster (\$500, sponsored by 3M Canada): Brenda Stiver, Vicki Gorman, Sherri Deamond, The Regional Municipality of Durham Health Department, Whitby, Ontario, Canada. THE DEVELOPMENT AND IMPLEMENTATION OF AN ONLINE TRAINING MODULE FOR INFECTION PREVENTION AND CONTROL.

Best Oral Presentation (\$500, sponsored by 3M Canada): Jim Gauthier presenting INTERACTIVE INFECTION CONTROL EDUCATION: LEARNING BY GETTING YOUR HANDS DIRTY Dick Zoutman^{1,2}, Jim Gauthier^{1,3}, Sheila Pinchin¹

1. Queen's University, Kingston Ontario, Canada, 2. Kingston General Hospital, Kingston Ontario, Canada, 3. Providence Care, Kingston Ontario, Canada

Free stay at the Sheraton Centre Toronto: Myrna Dyck, Winnipeg

Early Bird Registration Draw: Brenda Smith, Brampton



CHICA-Canada would like to thank Virox Technologies Inc. and the Canadian Association of Environmental Management (CAEM) for their support of the CHICA-Canada Audit Toolkit. Their sponsorship in part of the audit toolkit helps CHICA-Canada with the development and maintenance of the audit tools. We are therefore extremely grateful for the volunteer assistance of the Audit Toolkit Working Group (Karen Clinker, Anne Bialachowski, Shirley McDonald), the Programs & Projects Committee and the Standards & Guidelines Committee. Without their dedication, the audit tools would not have become a significant benefit to members. We invite all our industry and association partners to join Virox and CAEM as sponsors of the audit tools. The audit toolkit is available to members at no cost at Non-Members are able to purchase a CD of non-interactive audit tools from CHICA-Canada.

Watch for the 2012 Virox Scholarship application at www.chica.org. Deadline for applications: January 31, 2012.



2011 Virox Scholarship Winners and Sponsors.



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2011 ECOLAB POSTER CONTEST

Congratulations to the Infection Control Team at Credit Valley Hospital for winning the 2011 Ecolab Poster Contest.

The theme for 2011 Infection Control Week is "Infection Control – Are you IN? Get INvolved, provide INput, INitiate Change." The winning poster can be viewed and downloaded from the CHICA-Canada website. http://www.chica.org/opps_poster.php



2011 RUN OR WALK FOR IFIC

The 47 participants in the 2011 5K Run/2.5K Walk for IFIC have generated over \$3400 in sponsorship.

In addition, the cigarette girl and guy at Casino Royale sold \$144.63 in candy cigars and cigarettes! Thank you to Barbara Catt for organizing the 2011 event and to Deb Canada for their sponsorship.

First male runner to cross the finish line: Jim Gauthier, CHICA-Eastern Ontario
 First female runner to cross the finish line: Celia Ambery, CHICA-British Columbia
 First walker to cross the finish line: Lisa Grodzinski, Saskatchewan
 Most funds raised by a single participant: Zahir Hirji, CHICA-TPIC
 New Award: Highest proportion of Chapter member participation: CHICA-SASKPIC

CHICA-TPIC CHAPTER CHALLENGE:

Reward to the runners who beat the fastest CHICA-TPIC runner (up to a max of four runners). These four members will each receive a paid 2012 CHICA-Canada Membership courtesy of CHICA-TPIC.

The top four runners who beat the fastest CHICA-TPIC runner are:

1. Celia Ambery, CHICA-British Columbia
2. Jim Gauthier, CHICA-Eastern Ontario
3. Quintin Hewlett, CHICA-Newfoundland-Labrador
4. Marie McCoy, CHICA-British Columbia

Photos of the 2011 Run for IFIC are available for viewing at <http://www.chica.org>.

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2011 National Education Conference Review

Conference photos by: @JPdL/Cliff Spicer



2011 CHICA-Canada Chapter Presidents.



Rebecca Yu (left) and Carol Goldman (right) were the Canadian hosts for Dr. Akeau Unahalekhaka of Thailand.



CHICA Eastern Ontario members celebrating their 25th anniversary and their 3M Chapter Achievement Award.



CHICA-Canada Board of Directors.
Back: Jennifer Grant, Marilyn Weinmaster, Judi Linden, Michael Gardam. Front: Anne Bialachowski, Donna Wiens, Jim Gauthier, Karen Clinker.



2011 Scientific Program Committee
Back: Marilyn Weinmaster, Sue Cooper, Amanda Knapp, Victoria Williams. Front: Colette Ouellet, Cathy Munford, Zahir Hirji, Molly Blake. Missing: Pamela Kibsey.



Donna Wiens presents Past President Anna Bialachowski with a commemorative Presidential pin.



Pat Piaskowski(L), Clinical Editor of CJIC and Donna Wiens(R), President of CHICA, present the 2010 Editorial Award to Jane Van Toen, Heather Candon, and Chigniz Amirov.

2011 National Education Conference Review

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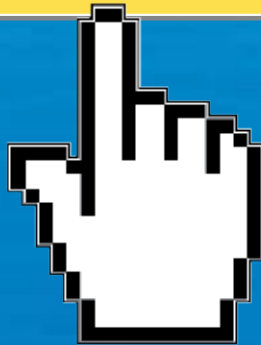


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2011 CHAMPIONS OF INFECTION PREVENTION AND CONTROL

In collaboration with 3M Canada, CHICA-Canada has launched the prestigious Champions of Infection Prevention and Control Award.

This award acknowledges the extraordinary accomplishments of the front line Champions of Infection Prevention and Control. The award recognizes CHICA-Canada members who work beyond what is expected as part of their employment, tirelessly and creatively, to reduce infection, raise awareness, and improve the health of Canadians.

The 2011 Champions of Infection Prevention and Control, Pat Piaskowski and Marion Yetman, were honoured at the Opening Ceremonies.

Pat Piaskowski, RN, HBScN, CIC is the current Clinical Editor of the *Canadian Journal of Infection Control* and has been an advocate for CHICA-Canada and infection prevention and control nationally and internationally. The award is based on her leadership and achievements associated with representing CHICA-Canada on the International Infection Control Council (I2C2). Pat was a founder of the Council in 1997 and took on a 10-year commitment to the organization and its initiatives. She coordinated its first effort, the successful 1999 Global Consensus Conference on Infection Control Issues Related to Antimicrobial Resistance. In addition, she was instrumental in

development of the Infection Control Toolkit on Strategies for Pandemics and Disasters (2002), the Infection Control Toolkit: Infection Control in Emergencies and Disasters (2007), and the ESBL Toolkit (2006). I2C2 initiatives reached infection prevention and control specialists throughout Canada and worldwide. The resources developed by I2C2 have assisted both novice and experienced individuals in their own facilities to reduce infections, raise awareness, and improve the health of patients. Pat has been the Network Coordinator for the OAHPP Northwestern Ontario Infection Control Network since 2005. Pat has served as a CHICA-Canada board member (1991-1998), including service as President of CHICA-Canada in 1997.

Marion Yetman, RN, BN, MN, CIC commenced her position as the first Provincial Infection Control Nurse Specialist in Newfoundland Labrador in October 2006. It was a trail-breaking initiative for infection prevention and control in Newfoundland Labrador. Marion's first task was to undertake a review of all provincial programs in Canada. Based on feedback, she implemented a Provincial Infection Control – Newfoundland Labrador (PIC-NL) network. The PIC-NL



2011 Champions of Infection Prevention and Control are honoured at the conference.
L-R: Donna Wiens, President, of CHICA-Canada, Marion Yetman, Pat Piaskowski, Ginny Marshall, 3M Canada.

initiative is well established and recognized in Newfoundland Labrador as the official infection prevention and control network. Through Marion's leadership, this organization provides guidance on provincial initiatives relating to infection control and represents all geographical areas across the continuum of care. Marion is a member of CHICA Newfoundland/Labrador and was President of CHICA-Canada in 2008.

CHICA SIMCOE-MUSKOKA: OUR 22ND CHAPTER!

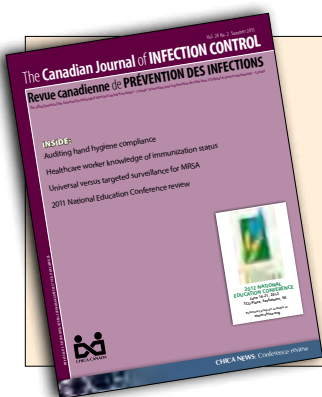


The Board of Directors of CHICA-Canada has endorsed the 22nd Chapter. CHICA Simcoe-Muskoka will serve the Simcoe-Muskoka area of Ontario as shown on the geographic map. Congratulations to Mandy Deeves and her colleagues for their initiative to develop the chapter. The chapter charter will be presented at the 2012 Conference.

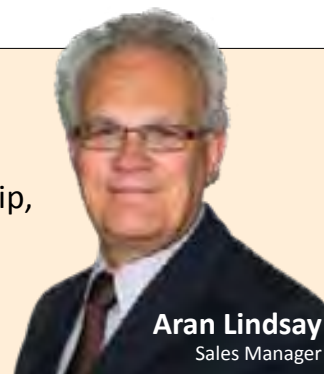
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