



Champlain Infection Control Network



Happy Holidays

Colette

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From our Staff to you!

Hello to all

It is our pleasure to present you with our double-issue newsletter which is packed with information to share with you in your Infection Prevention and Control efforts. We have been very busy in moving forward with programs and projects in Champlain. The CICN has passed its one-year anniversary, and although we are still in our infancy, we have been receiving a lot of positive

feedback from you. It is heartening to hear that we are meeting some of your needs and we hope not only to continue to do so, but to expand our capacity in 2007. In the spirit of the season, we wish you all health and happiness throughout the holidays and in the coming year.

All the best

Infection Control Week Winners

The Regional Infection Control Networks held a contest celebrating infection control week. The CICN received 8 submissions; here are our winners.

1st - Cathy Levoy, Infection Control Nurse for Pembroke Regional Hospital, will receive "Hospital Epidemiology and Infection Control, 3rd ed" text by Mayhall.

2nd - Colette Desrochers from Centre de Soins de Longue Durée, Montfort; will receive a Glitterbug Starter kit with Glowgerm and black light.

3rd - Jennifer Archambeault from Glen-Stor-Dun Longe Home for the Aged; will receive \$100 towards a CHICA membership.



1st place winner - Cathy Levoy



Raymonde Hickey



Raymonde Hickey is a public health nurse who has worked in the field of communicable disease prevention and control for over 16 years.

She has obtained her nursing degree at the University of Ottawa in 1986 and started working in public health field in 1988.

Raymonde's first 12 years in the field of communicable disease prevention and control were as an employee of the City of Ottawa. She is currently employed with Health Canada under the First Nations and Inuit Health - Ontario Region as the Regional Communicable Disease Control Manager.

Her existing role is to Review and build a team to assist in the enhancement of the existing communicable disease control programs for the on-reserve population of Ontario.

Previous to the regional position, Raymonde was a national federal employee with Health Canada holding the immunization and tuberculosis files.

The role in that position was to review and look at means of enhancing existing relevant programs or related activities taking place across the provinces for the on-reserve population.

Dr. Baldwin Toye



Dr. Baldwin Toye is head of the Division of Microbiology and an Infectious Diseases consultant at The Ottawa Hospital and an Associate Professor in the Department of Pathology & Laboratory Medicine and Medicine at the University of Ottawa.

He is also a microbiology consultant for the Hawkesbury & District General Hospital and the Ottawa Regional Public Health Laboratory.

Dr. Toye obtained his medical degree from the University of Toronto and received postgraduate training in Internal Medicine at the University of Ottawa, Infectious Diseases at the University of Manitoba and Medical Microbiology at the University of Toronto.

He and his team have been very active in enhancing and delivering the microbiology laboratory support required by infection control professionals in our region. He is a recognized leader in microbiology consolidation regionally.

He currently chairs the Microbiology Committee and the Mycology Advisory Committee of the Ontario Quality Management Program-Laboratory Services. He has been active as a member of the OHA/OMA Communicable Disease Surveillance Protocols Committee and of the Laboratory Working Group for the Ontario Health Pandemic Influenza Plan.

Infection Prevention and Control continues to be his "professional hobby" but in his free time he prefers to do woodworking.



Educational Events

January 24-26, 2007

Infection Control Today (ICT)
Conference on Professional
Development

Hampton Inn Tropicana, Las Vegas
www.ictconference.com

February 15, 2007

The 2nd Annual Symposium on
Infection Control in Healthcare
Facility Design and Construction

Vaughan Estate, Estates of
Sunnybrook

April 14 - 17, 2007

17th Annual SHEA Scientific
Meeting

Baltimore Marriott Waterfront
www.shea-online.org

The Pestilence Of Artificial Nails In Healthcare

An excerpt from an essay submitted to Centennial College by
Gail Schryer, MLT
Laboratory Quality Manager, Pembroke Regional Hospital

Introduction

Healthcare workers' [HCWs] hands have been implicated in a wide variety of nosocomial outbreaks, particularly when hand hygiene practices are not as rigorous as they ought to be. To complicate this picture, we are now dealing with clinical staff who wear artificial nails in the workplace. Artificial nails are frequently long in length, more difficult to clean, and provide more space for debris, dirt, and micro-organisms to remain, the latter being a great concern within the hospital setting (Infection Control Professionals Associates, 2004). The recommended length for natural fingernails tips worn by HCWs should be kept to ¼ inch (CDC, 2002). Long, sharp fingernails (artificial or natural) can puncture gloves more easily, providing a pathway for the transmission of micro-organisms.

The micro-organisms most commonly associated with nosocomial infections due to artificial nails include gram-negative bacilli such as *Pseudomonas aeruginosa*, *Serratia marcescens*, *Klebsiella pneumoniae*, and yeast such as *Candida albicans* (Saiman, 2002). All of these can be found in increased numbers on hands with artificial nails. The most effective way to prevent nosocomial infections by artificial nails is to prohibit artificial nails within the healthcare workplace. This will not only increase patient comfort and level of safety, but will also decrease the unnecessary costs for treatment of preventable nosocomial infections.

Risks of Artificial Nails

In the past several years the use of artificial nails and nail enhancements has become increasingly popular. The term "artificial nails" may include overlays, wraps, tips, acrylics, silks, fibreglass, bonding, gels and nail art-jewellery (ICPA, 2004). The fingernail area of the hand is most associated with hand flora (Health Canada, 1998), and artificial nails can increase opportunities to harbour pathogenic flora in the following ways (The Aurora Group Inc., 2005):

1. An artificial nail can separate from the natural nail base if bumped or snagged leaving an opening.
2. An opening between the natural nail and the artificial nail occurs as the natural nail grows.

The opening, resulting from the presence of the artificial nail, is an invitation for moisture, dirt and micro-organisms. Since the natural nail plate is composed of keratin, a perfect media for the development of bacterial and fungal growth is available. The majority of bacterial growth occurs along the proximal 1millimeter of the nail adjacent to the subungual area (CDC, 2002). The most common bacteria in the subungual area include the coagulase-negative staphylococci, gram-negative bacilli (including *Pseudomonas spp.*), Corynebacteria, and yeasts (CDC, 2002). Gupta et al (2004) determined that the numbers of gram-negative organisms are greater among the hands of artificial nails wearers than among non wearers.

Artificial nails worn by HCWs have been epidemiologically linked to a number of outbreaks within the hospital setting. In an interesting study by Passaro et al (1997), a nosocomial *Serratia marcescens* outbreak was traced to an out of hospital source. They found that 13% of 55 patients who underwent cardiovascular surgery acquired a post operative *S. marcescens* infection (1997). An investigation that took place after the death of one of these patients concluded that an exfoliant cream, used in the home of an OR scrub nurse with artificial nails, carried the *S. marcescens* organism. The removal of the nurse's artificial nails and the cream ended the outbreak within the hospital.

Post-operative patients are not the only ones at risk for infections caused by artificial nails. Bacterial outbreaks linked to artificial nails have also been documented in neonatal units. An outbreak of an extended-spectrum beta-lactamase producing *Klebsiella pneumoniae* infection in a neonatal intensive care unit was associated with the infants' exposure to a nurse wearing artificial nails.

Continued on page 4

The Pestilence Of Artificial Nails In Healthcare (continued from page 3)

The overall attack rate for the outbreak strain was 45%, with 9 of 19 infants presenting with invasive disease or developing invasive disease after colonization was detected (Grupta et al., 2004). Although no deaths occurred during the outbreak, the impact of artificial nails in this case cannot be underestimated.

Neonate bacterial outbreaks of *Pseudomonas aeruginosa* associated with artificial nails have been documented in two studies, one by Moolenaar et al (2000) and the other by Foca et al (2000). Moolenaar et al (2000) found that 10.5% of the 439 neonates admitted during the study period acquired *P. aeruginosa*, 16 of whom died due to infection. Of the 20 neonates for whom isolates were genotyped, 75% had genotype A and 15% had genotype B. Genotype A was associated with a HCW who wore long natural nails, while a HCW who grew genotype B wore artificial fingernails.

Bacteria are not the only micro-organisms associated with artificial nails. Strausbaugh et al (1994) have found that 75% of nurses harboured yeast on their hands, and more than 60% of the yeast were *Candida* species. In a study by Parry et al (2001) 11% of spinal surgery patients were confirmed to have deep wound infections due to the yeast species *Candida albicans*. The wearing of artificial fingernails by an operating room technician colonized with the yeast was epidemiologically implicated as the primary contributing factor to the post surgical infections (Parry et al, 2001).

Even after performing hand hygiene with soap or gel, artificial nails harbour more harmful bacteria than natural nails. A study performed by McNeil, Foster, Hedderwick, and Kauffman (2001) found that before hand cleansing with soap, 86% of HCWs wearing artificial nails had a pathogenic micro-organisms isolated (*S. aureus*, gram-negative bacilli, enterococci or yeasts), compared with only 35% of HCWs not wearing artificial nails. After hand cleansing with soap, 81% of HCWs with artificial nails had pathogens remaining, compared with 35% of those without artificial nails. McNeil et al obtained similar values with the use of hand cleansing gel (2001). Before using the cleansing gel, 68% of HCWs wearing artificial nails carried pathogenic bacteria versus 28% of HCWs that did not wear artificial nails. After the use of cleansing gel, approximately 50% of HCWs with artificial nails maintained pathogenic bacteria versus 10% of the HCWs with natural nails.

All of these studies provide substantial evidence that artificial nails carry increased numbers of pathogenic micro-organisms. There is no doubt that patients in weakened states are at greater risk for acquiring nosocomial infections from these pathogens. Breaking the chain of infection at the mode of transmission requires not only effective hand hygiene, but also the banning of artificial nails. Standards, recommended practices and guidelines on prohibiting artificial fingernails in the health care setting have been developed by organizations world wide, including Canada and the United States.

Conclusion

Hand hygiene is still the most effective and least expensive measure to prevent the transmission of pathogens. However even after thorough hand cleansing, artificial fingernails contain more pathogenic micro-organisms than natural fingernails (McNeil, Foster, Hedderwick & Kauffman, 2001). The tendency of artificial fingernails to harbour pathogens is likely the result of a combination of factors such as increased length, nail polish, acrylic material, build up of moisture between the nails and less effective hand cleansing because of the desire to protect their appearance (McNeil, Foster, Hedderwick & Kauffman, 2001).

Artificial nails worn by HCWs have been epidemiologically linked to various outbreaks of nosocomial infections. The case studies described in this paper provide evidence that HCWs wearing artificial nails pose an infection prevention and control hazard in health care facilities. To prevent transmission of infections to patients and co-workers, all staff providing direct patient care in our facility must be compliant with the hospital policy

By using the epidemiologic triangle as a model, an interruption in the transmission of micro-organisms causing infections will change the equilibrium. Reducing the number of nosocomial infections would significantly reduce the cost afflicted to the health care facility, decrease the excess administration of antibiotics prescribed and decrease the spread

2006 CICN ACTIVITIES



Strategic Planning Retreat - Sept, 2006



Beyond Infection Control
Videoconference - Nov, 2006

Educational Events

(continued)

June 9 - 14, 2007

CHICA-Canada National Education Conference

Shaw Conference Centre
The Westin Edmonton
www.chica.org

EPI Courses 2007

EPI 101: The fundamentals of Infection Surveillance, Prevention and Control

EPI 201: Advancing Practice using Epidemiologic Principles

EPI 202: The use of Technology in Data Analysis & Presentations

March 12-15, 2007

Westin Galleria, Dallas, TX

August 13-16, 2007

Renaissance Harbor place,
Baltimore, MD

November 5-8, 2007

Sheraton Clayton Plaza
St. Louis, MO

apicinfo@apic.org

Surveillance Fact Sheet

On October 19th, the OHA in conjunction with the Regional Infection Control Networks presented a teleconference entitled "Surveillance 101" During the teleconference key concepts related to developing a surveillance system in a healthcare setting were reviewed. The teleconference is now archived in the North Network webcasting center at <http://webcast.northnetwork.com/archive.php>. Many attendees expressed an interest in additional educational events related to surveillance particularly education that could be sector specific. The Regional Network Coordinators will review all of the feedback from the teleconference to develop strategies to meet these needs.

What is Surveillance?

"Surveillance is a systematic method of collecting, consolidating and analyzing data concerning the distribution and determinants of a given disease or event, followed by the dissemination of that information to those who can improve outcomes."¹

Collect data → Analyze data → Disseminate data → IMPROVE OUTCOMES

Why is having a surveillance program important?

The Study on the Efficacy of Nosocomial Infection Control (SENIC) Project provided evidence that hospitals that had infection control programs that included a strong surveillance component were able to reduce nosocomial infection rates and improve patient outcomes.²

What are the Goals of a Surveillance Program?

There are two major goals of a surveillance program in a healthcare facility and they are:

- To implement strategies to prevent and control adverse events
- To improve the quality of care

What can a surveillance program be used to monitor?

A surveillance program can be used to:

- Monitor adverse events to identify potential areas for improvement
- Monitor practices such as the use of routine practices and additional precautions
- Detect and investigate clusters of infection
- Assess the effectiveness of prevention and control measures
- Detect and report notifiable diseases to Public Health
- Identify organisms and diseases of epidemiological importance, such as antibiotic resistant organisms and tuberculosis, to prevent their spread
- Provide information for the education of healthcare personnel

When designing an effective surveillance system, what practices need to be included?

The following practices are recommended when designing a surveillance system.³

1. Assess the population your organization serves

- What are the most common diagnoses?
- What are the most common surgeries or procedures?
- Which services or treatments are used most frequently?
- Does your organizations strategic plan focus on a particular group of patients
- What health concerns exist in the community?
- What patients/clients are at increased risk for infection

¹ Lee, T.B., Baker-Montgomery O.G. Surveillance. In: *APIC Text of Infection Control and Epidemiology*. rev. ed. Washington, DC: Association for Professionals in Infection Control and Epidemiology, Inc., 2002

² Haley RW, et al. The efficacy of infection surveillance and control programs in preventing nosocomial infections in US hospitals. *American Journal of Epidemiology*. 1985; 121:182-205.

³ Lee, TB. Et al. Recommended practices for surveillance. *AJIC* 1998;26: 277-88.

Surveillance Fact Sheet (continued)

2. Select the outcome or process for surveillance

An outcome is the result of care and it can be positive or negative. Examples of outcome indicators include such things surgical site infections and newly diagnosed tuberculosis cases. A process is the series of steps taken to achieve an outcome.⁴ To find some excellent examples of process indicators go to the Safer Healthcare Now! Website @

<http://www.saferhealthcarenow.ca/Default.aspx?folderId=82> to review the SSI, BSI or VAP surveillance initiatives.

3. Use surveillance definitions

Valid definitions will enhance consistency, accuracy, and reproducibility of surveillance information. Where available and applicable use previously published definitions. Standardized definitions are available for Acute Care⁵ and Long-Term Care.⁶

4. Collect surveillance data

Trained professionals should collect and manage the data. A data collection form should be developed that has all the necessary data elements on it.

5. Calculate and analyze surveillance rates

Surveillance information is usually expressed in numerical measurements. It is important to present the data in a manner that is understandable to those who need to use the information.

6. Apply risk stratification methodology

Using risk stratification helps to foster understanding and acceptance by recipients of the data and it allows comparisons to be made. Examples of risk stratification can be found in the National Nosocomial Infection Surveillance report at,

<http://www.cdc.gov/ncidod/dhqp/pdf/nnis/2004NNISreport.pdf>.

7. Report and use surveillance information

The results need to be reported to those healthcare providers who are able to impact on and improve care. Reports should be provided in a systematic manner to ensure that end-users have information in a timely manner.

⁴ Arias, K., *Quick Reference to Outbreak Investigation and Control in Healthcare Facilities*. Gaithersburg, MD: Aspen Publishers INC., 2000.

⁵ Garner JS et al. CDC definitions for nosocomial infections. In: Olmsted RN, ed.: *APIC Infection Control and Applied Epidemiology: Principles and Practice*. St Louis: Mosby; 1996: pp. A-1—A-20.

⁶ McGeer A, et al. Definitions of infection for surveillance in long-term care facilities. *American Journal of Infection Control*. 1991; 19:1:1-7.

**Comparison of the Febrile Respiratory Illness Document
Original April 2005 and revised August 2006 Editions of the PIDAC Document**

Page Number	Original 2005 Edition	Revised 2006 Edition
Cover Page		Addition - Tuberculosis is excluded from this document
Cover Page		Addition - Includes all Ontario Health Care Settings
ii		New Statement - This document has been written to address the continuum of care, INCLUDING acute care, long term care, complex continuing care and rehabilitation, physicians' offices, clinics, home health care and public health. Application of these guidelines may vary depending on the care setting.
iii	Old Statement - Procedures that are considered high risk and why	New Statement - Procedures that routinely require droplet precautions and why
iv	Old Statement - Assumptions and General Principles for Infection Prevention and Control point 4: All health care settings promote collaboration between occupational health and safety and infection prevention and control in implementing and maintaining appropriate infection prevention and control standards that protect workers. All infection prevention and control policies and protective practices comply with the Occupational Health and Safety Act, R.S.O. 1990, c.0.1. and regulations, and other legislated requirements.	New Statement - Assumptions and General Principles for Infection Prevention and Control Point 4 - this has been separated out into two points. Point 4 states: All health care settings promote collaboration between occupational health and safety and infection prevention and control in implementing and maintaining appropriate infection prevention and control standards that protect workers. Point 5 states: The facility is to be in compliance with the Occupational Health and Safety Act, R.S.O. 1990, c.0.1. and associated Regulations including the Health Care and Residential Facilities - O. Reg. 67/93.
iv	Old Statement - point 6 refers to health alert	New Statement - point 7 refers to health advisory
v	Old Statement - Glossary of Terms, Droplet/Contact Precautions, point 3 hand hygiene	New Statement -Glossary of Terms, Droplet Precautions - point 3 hand hygiene as per routine practices
v		Addition - Glossary of Terms, Exposure: In this document exposure is defined as the lack of PPE being worn within one meter of the patient
iv		Omission - Glossary of Terms, High Risk Procedure
ix		Omission - Sections 3.8, 3.9, 3.10, 3.11, 3.13, 3.18 have been omitted New Statement - Sections 3.7-3.12, 3.16 have been changed. This is related to the omission of high risk procedures from the document as well as droplet/contact precautions

1	Old Statement - Risk to Patients/Residents/Clients and Staff, fourth bullet: High Risk Procedures	New Statement - Risk to Patients/Residents/Clients and Staff, fourth bullet: staff are performing procedures that create sprays and splashes.
6	Old Statement - 2.5 Referred to appendix 1 and 3	New Statement - 2.5 Refers to appendix 2 and 4
6		Addition - 2.6: There must also be a consistent process to inform staff when, based on a subsequent reassessment, preventative practices are no longer necessary.
7	Old Statement - Terminology from droplet/contact precautions, primary care provider, additional precautions, and high risk procedures.	New Statement - Changes in terminology to droplet precautions, health care provider, droplet precautions, and routine practices.
7		Addition - A positive travel history to a country with a health alert and /or a possible FRI cluster at the end of the algorithm.
8	Old Statement - Preventative Practices 3.0 included droplet/contact precautions	New Statement - Preventative Practices 3.0 includes droplet precautions only
9-13	Old Statement - Symptomatic Patients Section included sections on high risk procedures	New Statement - Symptomatic Patients Section omit any section explaining high risk procedures and introduced new terminology sections 3.7-3.12. Addition of recommendations for removal of PPE. Omission - Section 3.13 from the old document omitted as it spoke about Tuberculosis
15		Addition - Institutions include: long term care facilities, supportive housing, children's residences, day nurseries, correction and detention facilities, hospitals, mental health facilities, and any other places of a similar nature.
17		Addition - Appendix 1 is new: Routine Practices for Respiratory Procedures Generating Droplets/Aerosols
19	Old Statement - Appendix 1 stated: If the response to both questions i and ii is "yes", initiate droplet/contact precautions, and notify Infection Prevention and Control	New Statement - Appendix 2 has been changed to include the statement: If the answer to both questions (i) and (ii) is "yes", or if the answer to question (i) is "yes" and the recorded temperature is >38 C, initiate droplet precautions, and notify Infection Prevention and Control.

Summary

- Most changes in the document occur around changing terminology from high risk procedures to procedures creating droplets/aerosols. Use of the phrase Droplet/Contact Precautions has changed to Droplet Precautions.
- Tuberculosis has been excluded from this document.
- One change to the screening tool.
- Addition of a recommendation on the process of removing PPE.

CIC Study Group

The CIC Study Group are half way through a 10 Session program. This program will allow the 20 member group to support each other in achieving their Certification in Infection Control and Epidemiology.

If you have any questions on the CIC Study Group or would like to add your name to the list of participants for the 2007/2008 Study Group please contact:

Lise Blanchard
CICN
Administrative Coordinator
lblanchard@cicn-rcic.on.ca or call at
613-761-4833

SARS Memorial Fund

Did you know that you can get financial support for infection prevention and control education from the SARS Memorial Fund.

The SARS Memorial Fund is a tuition/certification/professional development reimbursement program funded by the Molson Canada SARS concert (2003) and sponsored by the MOHLTC.

The fund provides grants for Infection Control Practitioners from any discipline to support continuing education, certification/recertification and professional development for individual Infection Control Practitioners so that they can improve their knowledge and lead Infection Control Practices within their health care settings.

Eligibility criteria include:

1. Successful completion of:

Funding Program A: a formal Infection Control Practitioner Education Program (up to \$2000)

Funding Program B: attendance and participation at the annual CHICA-Canada National Education Conference (up to \$700)

Funding Program C: successful Certification/Re-certification as Infection Control Practitioner (up to \$400)

Applications are reviewed quarterly.

For more information or an application form:

<http://www.rnfoo.org/AwardsScholarships/SARSMemorialFund.htm>

PIDAC Annual Report

The PIDAC Annual Report has been posted at:

http://www.health.gov.on.ca/english/providers/program/infectious/pidac/pidac_mn.html

Champlain Infection Control Network (CICN)

Office Hours

Monday to Friday

8:00 a.m. to 4:00 p.m.

New Network Coordinators

Central South

Anne Bialachowski

Central East

Joanne Habib

Central Region

Grace Volkening

Northeastern Ontario

Isabelle Langman

Infection Control Consultants

Central South

Joanne Laalo

Southeastern Ontario

Susan Cooper



CICN Lending Library

The CICN is proud to offer a wide variety of book, videos, DVD's and journals.

A list will be available in the next newsletter.

