

Vol. 20 No. 1
Spring 2005



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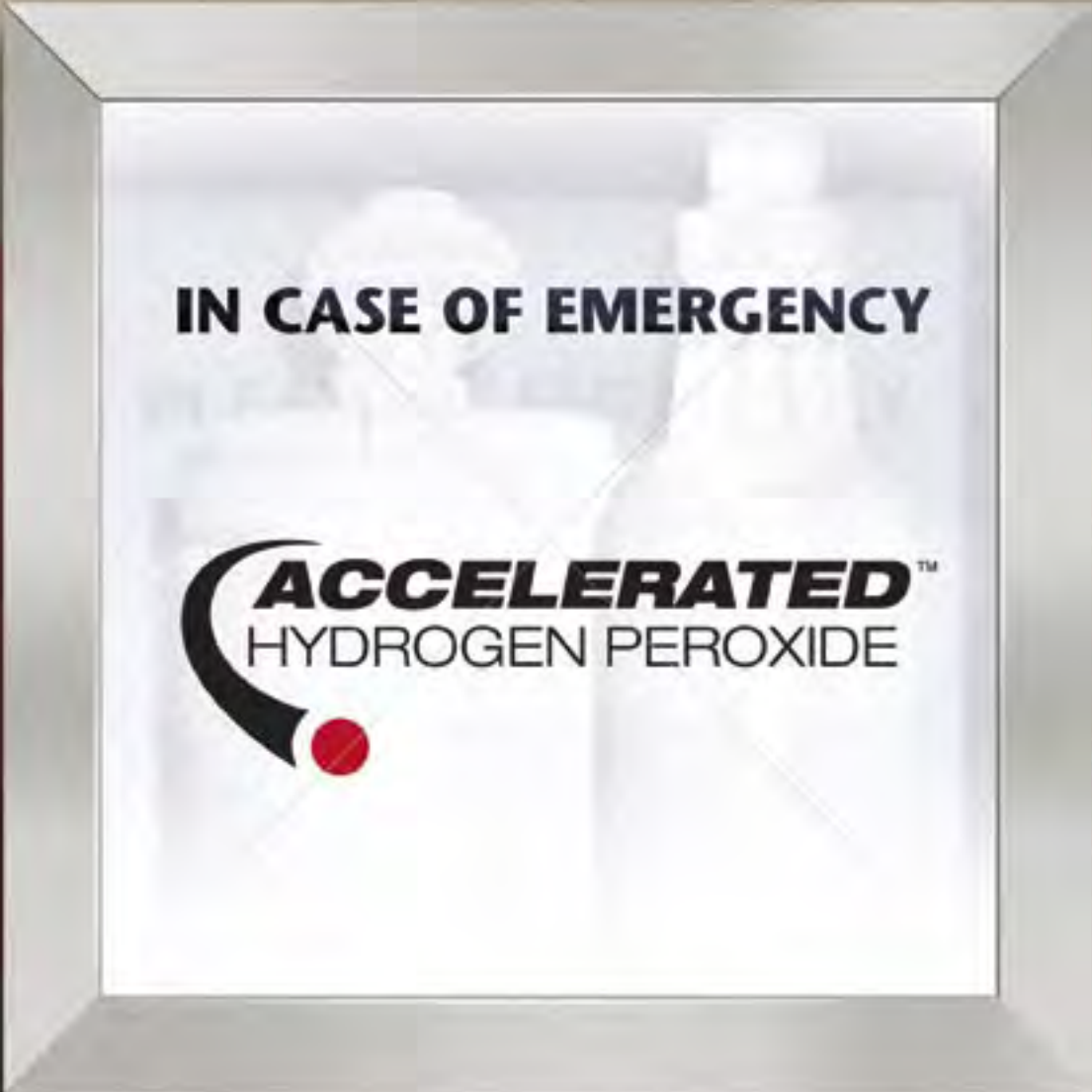
The relationship between
hospital infection and
control activities and
antibiotic-resistant
pathogen rates

The Canadian Journal of Infection Control

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prévention des infections**

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VISION

CHICA-Canada will lead in the promotion of excellence in the practice of infection prevention and control.

MISSION

CHICA-Canada is a national, multidisciplinary, voluntary association of professionals. CHICA-Canada is committed to improving the health of Canadians by promoting excellence in the practice of infection prevention and control by employing evidence-based practice and application of epidemiological principles. This is accomplished through education, communication, standards, research and consumer awareness.

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

Conference location significant

The annual CHICA–Canada conference is once again here. It will be held in Winnipeg, Manitoba from May 7-11, 2005. The Scientific Program Committee for the Winnipeg conference led by Ilana Warner as Conference Chair and John Embil as Scientific Chair is to be congratulated for planning an extremely timely and exciting program. They have chosen topics ranging from a pre-conference day for the Novice ICP to current and important infection prevention and control topics such as construction, *C. difficile*, West Nile Virus and infections in immunocompromised host. It promises to be a very informative four and half days of education, networking and opportunities to socialize and revitalize.

The location for this year's conference takes on an additional significance as Winnipeg is now the home of the new Public Health Agency of Canada. Dr. David Butler-Jones heads this agency. A press release issued by the Government of Canada on September 24, 2004 stated that the creation of the Public Health Agency "is another step in ensuring we have the best possible system for ensuring the health and safety of Canadians."

Infection prevention and control professionals are at the forefront of the global effort to prevent and control emerging infections such as Avian flu and SARS. We look forward to continue working with the Public Health Agency of Canada to improve the health of Canadians. ●

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Rick Wrey, RN, BA, CIC

Under the microscope

Over the past months Infection Prevention and Control has been under the microscope. There has been intense public interest fueled by the not so distant SARS outbreak, the anticipation of an influenza pandemic and, more recently, the focus on *C-difficile* and antimicrobial resistant organisms.

CHICA-Canada and its members have been increasingly positioned to provide clarity to the issues under scrutiny and have been invited to contribute to the development of prevention and control strategies. While this isn't always the case, there has been a noticeable trend toward recognizing the body of knowledge and expertise that CHICA-Canada can contribute by various levels of government, profes-

sional associations, the media, and educational institutions. I'd like to acknowledge the hard work and contributions of the Government and Public Affairs committee, under the leadership of Dr. Dick Zoutman, CHICA-Canada Physician Director, which has surely had an influence on this positive trend.

The CHICA-Canada board remains committed to several strategic projects that will support both new and experienced ICPs to develop the skills and knowledge needed to meet the challenges we all face. We continue to focus on the entry to practice online Infection Control educational program, on the verge of being launched. In addition to this program, there are several exciting programs under develop-

ment in Ontario that will be endorsed by CHICA-Canada and will become available to ICPs across the country.

Educational opportunities have been planned to help chapter presidents develop skills for the new experiences that they are likely to encounter. Last year, the focus was on developing key messages for the media and this year, a program has been planned to develop government lobbying skills.

I am anticipating an extraordinary conference this year. *Charting New Horizons*, in Winnipeg, May 7-11 will live up to its name. The program has been developed to provide learning opportunities for ICPs at all levels of experience. Thank you to Ilana Warner, Conference Chair, Dr. John Embil, Scientific Program Chair, the members of the Scientific Program Committee, and Gerry Hansen, Conference Planner. In addition, thanks are due to the speakers and to the exhibitors and sponsors who support the conference. I hope to see many CHICA-Canada members at the conference and look forward to attending as many of the presentations as possible.

The work of the CHICA-Canada interest groups contributes tremendously toward meeting the specialized needs of our members. There has been interest in creating two or more new interest groups in addition to Long Term Care, Dialysis, Oncology, and Paediatrics. Each of the groups is doing impressive work and both the Chairs and members of the interest groups deserve our sincere thanks.

Continued on page 10

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Rick Wrey, RN, BA, CIC

Sous le microscope

Par moments ces derniers mois, il semblait que la prévention des infections était elle-même sous le microscope. Les médias ont suscité beaucoup d'intérêt avec la crise du SRAS, la menace d'une épidémie d'influenza et plus récemment, la flambée du C-difficile et d'autres organismes résistants aux antimicrobiens.

CHICA-Canada et ses membres ont été bien placés pour clarifier certaines questions et ont été invités à participer à la mise au point de stratégies de prévention et de contrôle. Quoique cela ne soit pas toujours le cas, nous avons remarqué une nette tendance à reconnaître les connaissances et l'expertise que CHICA-Canada peut apporter aux divers niveaux de gouvernement, aux associations professionnelles, aux médias et aux établissements d'enseignement. J'aimerais souligner l'excellent travail du comité des relations avec le gouvernement et des affaires publiques, sous la direction du Dr Dick Zoutman, médecin directeur à CHICA-Canada, qui a sûrement influencé cette tendance.

Le conseil d'administration de CHICA-Canada concentre toujours ses efforts sur plusieurs projets stratégiques qui permettront aux nouveaux ICP et à ceux d'expérience d'acquérir les habiletés et les connaissances dont ils ont besoin pour relever les défis qui s'annoncent. Nous poursuivons le travail sur le programme d'accès à la pratique en ligne qui devrait être lancé sous peu. D'autres programmes fort intéressants sont aussi en cours d'élaboration en Ontario; ils seront

endossés par CHICA-Canada et offerts aux ICP à travers le Canada.

Des formations sont prévues afin d'aider les présidents de sections à acquérir les aptitudes dont ils ont besoin. L'année dernière, nous avons mis l'accent sur les messages à transmettre aux médias et cette année, un programme est prévu sur la représentation auprès des gouvernements.

Je m'attends à un congrès extraordinaire cette année. *Charting New Horizons*, tenu à Winnipeg du 7 au 11 mai, explorera justement de nouvelles avenues. Il a été conçu de façon à offrir des occasions d'apprentissage aux ICP de tous les niveaux d'expérience. Remerciements à Ilana Warner, présidente du congrès, au Dr John Embil, président du programme scientifique,

aux membres du comité du programme scientifique et à Gerry Hansen, organisatrice. Merci aussi aux conférenciers et aux exposants et commanditaires qui appuient ce congrès. J'espère rencontrer bon nombre de membres CHICA-Canada sur place et pouvoir participer au plus grand nombre de présentations possible.

Le travail des groupes d'intérêt spécialisé de CHICA-Canada contribue énormément à répondre aux besoins particuliers de nos membres. Deux groupes d'intérêt ou plus devraient s'ajouter aux Soins de longue durée, à la Dialyse, à l'Oncologie et à la Pédiatrie. Chacun de ces groupes fait de l'excellent travail et je tiens à

Continue à la page 10

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Continued from page 8

Karen Hope, President Elect will act as their liaison to the Board and to provide support to help them to meet their goals.

Having attended my first CBIC (Certification Board of Infection Control and Epidemiology Inc.), Board meeting as the CHICA-Canada Liaison, I have a renewed commitment to the certification process. Their standards are extraordinarily high. We need to continue to encourage and sup-

port our members to become certified as a demonstrable symbol of knowledge mastery in infection control and applied epidemiology.

I have to admit that I feel somewhat under the microscope myself. I am preceded by highly respected individuals who have led the association to its current position of increasingly recognized authority. I have been reminded several times that I am the first male president and so I have that added challenge! I'd like to specifically thank Adrienne Brown, Past President and

Gerry Hansen, Administrator, and Kelli Wagner of the Membership Services Office for their guidance and support. I know that it will be noted that they are all women! ●

Continued from page 9

remercier tant les présidents que les membres de ces groupes d'intérêt. La présidente désignée, Karen Hope, agira à titre de liaison entre le conseil et ces groupes afin de leur fournir l'appui dont ils ont besoin pour atteindre leurs objectifs.

Je ressors de ma première réunion du conseil de CBIC (Certification Board of Infection Control and Epidemiology Inc.) en qualité de liaison CHICA-Canada avec un engagement renouvelé envers le processus d'agrément. Leurs normes sont très élevées. Nous devons continuer à encourager et appuyer nos membres à obtenir l'agrément comme signe de maîtrise des connaissances en prévention des infections et en épidémiologie appliquée.

Pour conclure ce premier message en tant que président, je dois admettre que je me sens moi-même sous le microscope. Des personnes très respectées qui ont mené l'association à une position d'autorité de plus en plus reconnue m'ont précédé. On m'a souligné à plusieurs reprises que je suis le premier président masculin, ce qui ajoute au défi! Je tiens donc à remercier Adrienne Brown, ancienne présidente, Gerry Hansen, administratrice et Kelli Wagner des Services aux membres pour leurs conseils et leur appui. Oui, je sais, ce sont toutes des femmes! ●

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CHICA-Canada's 2005 National Education Conference will focus on infection prevention and control issues facing practitioners in all health care settings. By calling on the expertise of local and national professionals, organizers have created a dynamic forum for learning and discussion. This conference will provide a unique opportunity for the dissemination of information and networking with peers in practice and industry to enhance the practice of both the novice and experienced infection control professional.

This educational event is approved as an Accredited Group Learning Activity as defined by the Maintenance of Certification program of the Royal College of Physicians and Surgeons of Canada (approval pending).

WINNIPEG – THE HEART OF THE NATION

Join us in Winnipeg, the capital of glorious "Friendly Manitoba" – the heart of Canada and the centre of North America! It has been ten years since we have had the pleasure of meeting in this great city, and much has changed. You may not even recognize "downtown" anymore, for the city has been undergoing a 21st century rebirth, with dozens of new businesses capitalizing on the energy, enthusiasm and visionary leadership the city has enjoyed in recent years. You'll be awestruck at the sight of our new sports/entertainment complex, MTS Centre. You'll be impressed by the commercial and culinary choices available to you at Winnipeg's meeting place "The Forks", and Portage Place, the indoor shopping mall, all within a short walk of the Delta Winnipeg.

Winnipeg is the home of the National Microbiology Laboratory, Canada's only Level Four lab. For this reason, conference organizers have been fortunate to be able to call upon many local colleagues of significant expertise.

Come, enjoy and have some fun! Get a taste of Winnipeg's world-renowned Folklorama festival, as CHICA-Canada hosts a Mini Folklorama for you to savour and enjoy. Winnipeg's multicultural communities will be highlighted throughout the conference week. Come and enjoy!

DELTA WINNIPEG AND WINNIPEG CONVENTION CENTRE

We're going home to the Delta Winnipeg, and we've both grown! Since CHICA-Canada's 1995 conference, the Delta Winnipeg has undergone an \$8.5 million renovation. The renovated Delta Winnipeg is located in the heart of downtown and is conveniently connected to the Winnipeg Convention Centre. CHICA-Canada's own growth as a primary

infection prevention and control conference requires an expansion of education and exhibit space. The Winnipeg Convention Centre will be the setting for both education and exhibits, with a contemporary atmosphere, state of the art technology, and all with a Friendly Manitoba attitude.

The central location of both the Delta Winnipeg and the Winnipeg Convention Centre provide easy access to shopping, sports activities, and sightseeing: the new MTS Centre, Portage Place, Forks Market, Winnipeg Art Gallery, Royal Winnipeg Ballet, Centennial Concert Hall, Assiniboine Park, CanWest Global Park, and much, much more.

SPECIAL EVENTS

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Manitoba Chapter Hosts a Traditional Social
Delta Winnipeg: 4:00 pm – 6:00 pm
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Sunday, May 8, 2005

CHICA-Canada Opening Ceremonies and Awards
Delta Winnipeg: 5:00 pm – 6:30 pm

President's Reception
Delta Winnipeg: 6:30 pm – 8:30 pm
Cash Bar – Hors d'oeuvre

Tuesday, May 10, 2005

Strut Your Stuff! Breakfast
With Dr. Dick Zoutman
Winnipeg Convention Centre: Breakfast 7:00 am- 8:15 am

Mini Folklorama!
Delta Winnipeg: 7:00 pm – 10:00 pm
\$60 per person, not included in registration

Silent Auction
Hosted by Manitoba Chapter
Bidding: 6:30 pm – 8:30 pm

Wednesday, May 11, 2005

CHICA-Canada Annual General Meeting
and Town Hall
Delta Winnipeg: Breakfast 7:00 am – 8:45 am



2005 Conference Highlights Winnipeg Convention Centre

Monday, May 9 – Winnipeg Convention Centre

- 8:00-8:30 am Welcome from Conference Chairs
Greetings from Dr. Joel Kettner, Chief Medical Officer of Health, Province of Manitoba
Greetings from Mayor Sam Katz, City of Winnipeg
Greetings from Dr. Brian Postl, Winnipeg Regional Health Authority
- 8:30-9:00 am **KEYNOTE SPEAKER**
– **Infection Control: A Global Perspective**
Frank Plummer MD FRCPC, Scientific Director General, National Microbiology Laboratory
- 9:00-9:30 am **What's New at Health Canada?**
Shirley Paton MN, Centre for Infectious Disease Prevention & Control, Ottawa
- Identify what is on the horizon at Health Canada
 - Identify resources available to infection Prevention and Control
 - Professionals through Health Canada
- 10:00-10:30 am **From Jungle to City:
Viral Hemorrhagic Fever Virus Infections**
Heinz Feldmann PhD, National Microbiology Laboratory
- Review the responsible agents
 - Identify the clinical manifestations
 - Discuss prevention of transmission of viral hemorrhagic fever viruses
- 10:30-11:00 am **A Virtual Tour of the
National Microbiology Laboratory**
- 11:15-12 noon Oral Presentations
- 12:00-2:00 pm Lunch in Exhibit Hall
Exhibits, Poster Presentations
- 2:00-2:45 pm **Here Today, Gone Tomorrow: West Nile Virus**
Michael Drebot, PhD, Chief, Viral Zoonoses, National Microbiology Laboratory
Pierre Plourde MD FRCPC, Winnipeg Regional Health Authority
- Review the epidemiology of West Nile Virus infections in Canada
 - Identify the clinical manifestations of West Nile Virus infection
 - Discuss prevention strategies for West Nile Virus infection

- 2:45-3:30 pm **Of Mice and Men: Hanta Virus Infections**
Robbin Lindsay PhD, Head Field Studies, Zoonotics, National Microbiology Laboratory
Elise Weiss MD CCFP MSc, Brandon and Assiniboine Regional Health Authorities, Brandon

- Review the epidemiology of Hanta Virus infections in Canada
- Identify the clinical manifestations of Hanta Virus infections
- Discuss prevention strategies for Hanta Virus infections

- 4:00-4:45 pm **Are We Going Mad? Prion Disease**
Michael Coulthart PhD, National Microbiology Laboratory

- Review the history of Prion Disease
- Discuss the different types of Prion Disease
- Identify why Prion Disease is important in healthcare

- 4:45-5:30 pm **How Mad is Mad? Creutzfeldt-Jacob Disease (CJD)**
Lynn Johnston MD FRCPC, Queen Elizabeth II Health Sciences Centre, Halifax

- Identify risk factors for acquisition of CJD
- Discuss infection prevention and control issues for CJD
- Review latest recommendations for management of CJD

Tuesday, May 10 – Winnipeg Convention Centre

- 7:00-8:15 am **Strut Your Stuff! Breakfast**
Dick Zoutman MD FRCPC, Kingston General Hospital, Kingston
CHICA-Canada Physician Director

- 8:30-9:15 am **At Our Doorstep: Pandemic Influenza**
Greg Hammond MD FRCPC, Public Health Branch, Manitoba Health

- Discuss the concept of outbreak versus pandemic
- Identify key features of pandemic influenza prevention strategy
- Identify how to initiate pandemic influenza planning strategies in your jurisdiction

- 9:15-10:00 am **Does Avian Flu Have Wings?**
Fred Aoki MD FRCPC, University of Manitoba

- Discuss the emergence of Avian influenza
- Identify risk factors for acquisition of Avian influenza
- Discuss preventative strategies for Avian influenza

- 10:30-11:15 am **The Ghost of Severe Acute**

Respiratory Syndrome (SARS)

Lindsay Nicolle MD FRCPC,
University of Manitoba

- Discuss the chronology of SARS
- Identify how SARS was spread in the community and in health-care facilities
- Identify preventative strategies for SARS across the continuum of healthcare
- Identify the lessons learned

11:15-12 noon Demystifying IV Therapy

John Conly MD FRCPC, Foothills Medical
Centre and University of Calgary

- Identify risk factors for infections in infusion therapy
- Discuss how to identify a vascular access infection
- Discuss preventative strategies for infections in infusion therapy

12:00-2:00 pm Lunch in Exhibit Hall
Exhibits, Poster Presentations

2:00-2:45 pm Oral Presentations

2:45-3:30 pm Up to Our Ears in Construction

Elizabeth Bryce MD FRCPC,
Vancouver Hospital/HSC, Vancouver

- Identify risks associated with construction in healthcare facilities
- Identify the role of the Infection Prevention and Control Professional in planning of construction projects
- Review available construction guidelines and resources for infection control in healthcare construction projects

4:00-4:45 pm Clostridium difficile: The Epidemic? Fact or Fiction

Tom Louie MD FRCPC,
Foothills Medical Centre, Calgary

- Discuss the changing epidemiology of *C. difficile* disease
- Identify risk factors for acquisition of *C. difficile* disease
- Identify preventative strategies for minimizing acquisition of *C. difficile* disease

4:45-5:30 pm Are We Sharing Too Much in Our Facilities?

Jim Hutchinson MD FRCPC,
Health Care Corporation of St. John's

- Identify how nosocomial infections may be spread
- Identify strategies for preventing the spread of nosocomial infections, including Routine Practices
- Identify unusual spread of nosocomial infections.

Wednesday, May 11

All Sessions at the Delta Winnipeg

7:30-8:45 am CHICA-Canada Annual General
Meeting and Town Hall
Breakfast included – ALL WELCOME
CHICA-Canada Members must
pick up voting card at entrance

9:00 am **Introduction – Canadian Public Health Agency**
Paul Gully MB CHB FRCPC
Deputy Chief Public Health Officer,
Public Health Agency Canada

9:30-10:15 am Look What Came Through the Door

John Embil MD FRCPC,
Health Sciences Centre, Winnipeg

- This lighthearted overview will use cases to highlight the principles of Infection Prevention and Control.

10:15-11:15 am CLOSING ADDRESS

– **To Infinity and Beyond**
Dick Zoutman MD FRCPC,
Kingston General Hospital, Kingston

- Dr. Zoutman will summarize the new heights to which Infection Prevention and Control will take us in the future.

11:15-11:45 am CLOSING CEREMONIES

Notice is Hereby Served that the Annual General Meeting of the Community and Hospital Infection Control Association – Canada will be held on Wednesday, May 11, 2005 at the Delta Winnipeg at 0700hrs. A Town Hall Meeting will be held immediately following the Annual General Meeting CHICA-CANADA members must register and pick up voting card before entering the meeting.

Virox Technologies Partners 2005 Scholarship Winners Announced

Through the financial support of the Virox Technologies Partnership, 13 CHICA-Canada members were awarded scholarships to attend the 2005 National Education Conference in Winnipeg. CHICA-Canada and its members thank Virox Technologies and their partners for their initiative to make the national education conference accessible to those who may not have otherwise been able to attend.

2005 Scholarship Winners

Richard Bedard
Nancy Brown
Yasmine Chagla
Joanne Dow
Margie Foster
Linda Howard
Sharon Kelly
Alice Newman
Jacqueline (Jackie) Ratzlaff
Pamela Siddall
Merlee Steele-Rodway
Linda Stoddart
Marion Yetman



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Preconference Day

Winnipeg Convention Centre • Sunday, May 8, 2005

WINNIPEG, MANITOBA

Morning Sessions

Infection Prevention and Control in the Oncology Unit

8:30-9:15 am **Invasive Fungal Disease**
Eric Bow MD FRCPC,
CancerCare Manitoba, Winnipeg

- Identify the clinical signs and symptoms of invasive fungal infections in the immunocompromised
- Discuss the diagnostic challenges of these infections
- Review prevention measures for this group of infections

9:15-10:00 am **Being on the Lookout: Infections in the Immunocompromised Host**
Stuart Rosser MD FRCPC,
St. Boniface General Hospital, Winnipeg

- Review the common infections in the immunocompromised host
- Identify the risk factors for infections in this group
- Discuss endogenous and exogenous sources of infection

10:30-11:15 am **Demystifying Our "Sacred Cows": Infection Control in Oncology**
Brenda Dyck BScN CIC, Winnipeg
Regional Health Authority, Winnipeg

- Describe infection prevention and control practices in Oncology
- Discuss the infection control myths in this population

11:15-12:00 pm **Getting the Ball Rolling: Setting Up a New Program**
Karen Pauling-Shephard RN BScN CIC,
Foothills Medical Centre, Calgary

- Describe the role of the "Needs Assessment" and its importance in initiating an Infection Prevention and Control Program
- Identify how to determine what processes will work in your jurisdiction
- Identify individuals and programs key to the success of an Infection Prevention and Control Program in Oncology.

Afternoon Sessions

Infection Prevention and Control in Pediatrics

1:00-1:45 pm **The Heat is On: Pediatric Febrile Respiratory Illness**
Anne Matlow MD FRCPC,
Hospital for Sick Children, Toronto

- Identify the common pathogens causing pediatric febrile respiratory illness
- Discuss the clinical presentation of these illnesses
- Describe infection prevention and control measures related to pediatric febrile respiratory illnesses

1:45-2:30 pm **Give It a Shot! Pediatric Immunization**
Barbara Law MD,
Health Sciences Centre, Winnipeg

- Review the current Canadian Immunization Guide
- Discuss the risks and benefits of immunization
- Discuss the conundrum of non-compliance

3:00-3:45 pm **What's Wrong with This Baby? Infections in the Neonatal Intensive Care Unit**
Joanne Embree MD FRCPC,
Health Sciences Centre, Winnipeg
Karen Olekson BN CIC,
Health Sciences Centre, Winnipeg

- Identify the common infections acquired in the Neonatal Intensive Care Unit
- Describe the factors that contribute to infections in the Neonatal Intensive Care Unit
- Identify key factors to prevent infections in the Neonatal Intensive Care Unit

3:45-4:30pm **From Cradle to Graduation**
Margaret Fast MD FRCPC, Winnipeg
Regional Health Authority, Winnipeg

- Review common communicable infections from the cradle to adulthood
- Highlight prevention and health promotion strategies for this group
- Identify resources that are at your disposal

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Saturday, May 7, 2005

Winnipeg Convention Centre



7:30 am – 8:30 am – Registration
8:30 am – 4:00 pm – Education Sessions
Light lunch and refreshments provided

EDUCATION SESSIONS

A Finger in Every Pie: Infection Control in Action

Judy McLeod RN, St. Boniface Hospital, Winnipeg

- Identify key individuals and departments necessary for the success of an infection prevention and control program
- Discuss examples of expertise provided by infection prevention and control professionals
- Provide examples of situations where Infection Prevention and Control input is invaluable

What's the Bug? Interpreting Microbiology Reports

Paul Van Caeselele MD, Cadham Provincial Laboratory, Winnipeg

- Review the basic components of a microbiology requisition
- Discuss various examples of microbiology results and their interpretation
- Describe how to interpret reports for antimicrobial resistant organisms

Keeping It Clean! Hands and the Environment

Michelle Alfa MD, St. Boniface Hospital, Winnipeg

- Explain the use of role models in improving hand-hygiene
- Describe the role of the environment in nosocomial infections
- Identify problems related to inadequate disinfections

Knowing Your Stuff:

The Nitty Gritty of Routine Practices

Nila MacFarlane BN, St. Boniface Hospital, Winnipeg

- Describe routine practices
- Describe additional precautions
- Explain the practice applications of routine practices

Where's the Bug? Surveillance in Action

Faye Penner RN BHSn CIC, Deer Lodge Centre, Winnipeg

- Discuss the concepts of surveillance
- Identify the key components of a surveillance program
- Provide examples of surveillance monitoring

Who Let the Bug Out? Outbreak Management

Genevieve Thompson RN, Cadham Provincial Laboratory, Winnipeg

- Describe factors which alert infection prevention and control professionals of an outbreak
- Review the steps of outbreak management
- Explain the importance of post outbreak evaluation

Getting Down to Business:

Interactive Workshop on Outbreak Management

(Note: The style of this workshop will vary depending on attendance.)

- Review outbreak situation
- Develop a management strategy for the outbreak
- Prepare a summary of the investigation





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3:30 pm – 4:00 pm

TUESDAY, MAY 10, 2005

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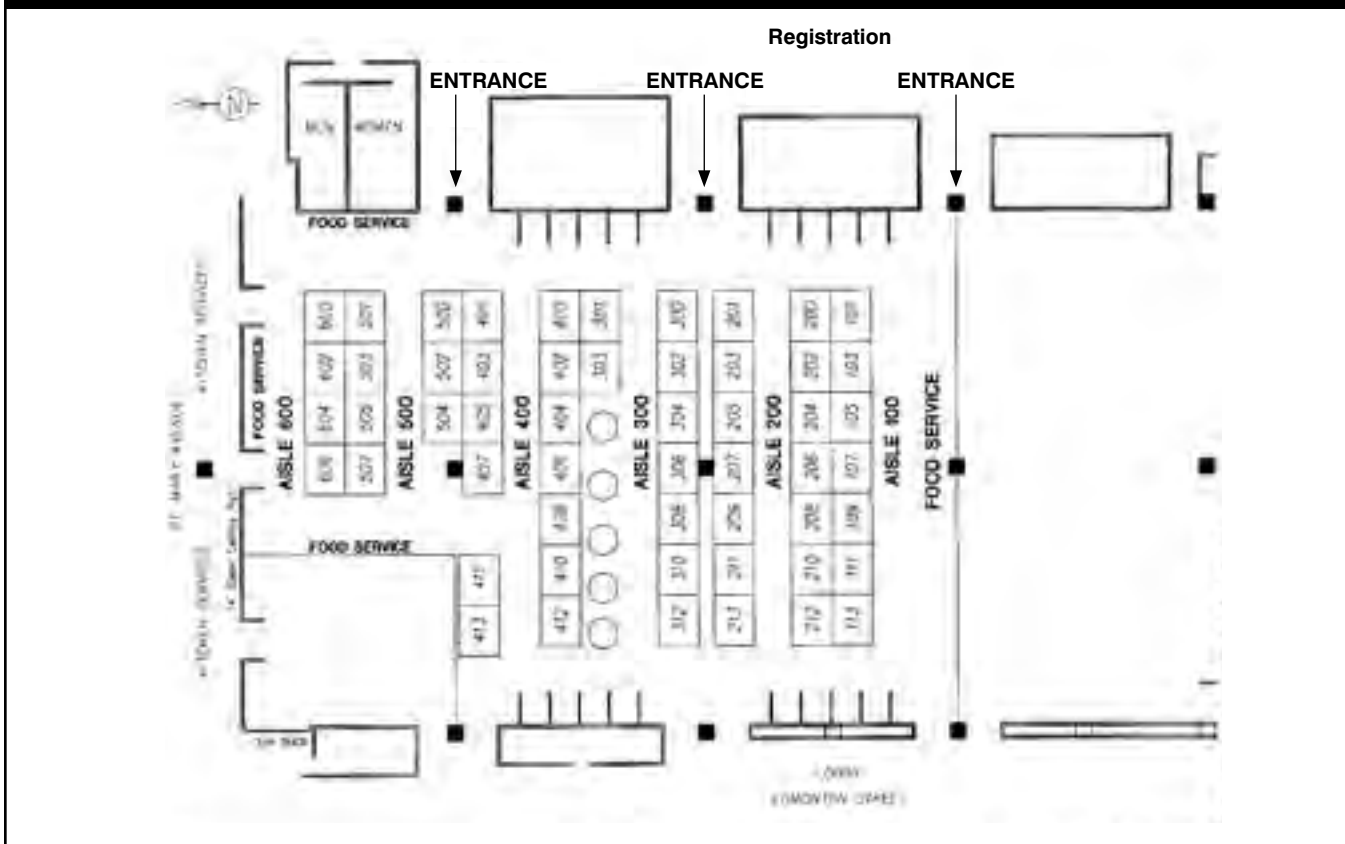
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Nominations are invited for the following positions:

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

These terms commence January 1, 2006. Position descriptions and nomination forms are found in the CHICA-Canada Policy and Procedure Manual or may be obtained from the Membership Services Office or downloaded from www.chica.org.

Signatures of two active members are needed 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:

Pearl Orenstein, RN, BA, DIA, CIC
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CLINICAL PHARMACOLOGY

Immunization against tetanus, diphtheria, and pertussis has been associated with a striking decrease in the incidence of morbidity and mortality from these diseases. Simultaneous vaccination with combination vaccines containing diphtheria and tetanus toxoids and pertussis vaccine has been a cornerstone of the Canadian immunization programs.

Tetanus is an acute and often fatal disease caused by an extremely potent neurotoxin produced by *Clostridium tetani*. The organism is ubiquitous and its occurrence in nature cannot be controlled. Immunization is highly effective, provides long-lasting protection, and is recommended for the whole population. Only 1 of 7 cases of tetanus were reported annually in Canada during the 1980s. Tetanus toxin is prepared by detoxification of tetanus toxin with formaldehyde.

Diphtheria is a serious communicable disease caused by toxigenic strains of *Corynebacterium diphtheriae*. The organism may be harboured in the nasopharynx, skin or other sites of asymptomatic carriers, making eradication of the disease difficult. Routine immunization against diphtheria in infancy and childhood has been widely practiced in Canada since 1930, resulting in a decline in morbidity and mortality. Fewer than 2 cases are now reported annually in Canada. The case-fatality rate remains at 5-10% with the highest death rates in the very young and elderly. The disease occurs most frequently in unimmunized or partially immunized persons. Diphtheria toxin is a cell-free preparation of diphtheria toxin detoxified with formaldehyde. The immunity conferred is antitoxic, not antibacterial, and thus protects against the potentially lethal systemic effects of diphtheria toxin but not directly against local infection.

Immunity of bacterial proteins such as tetanus and diphtheria toxoids results in the production of protective antibodies. A primary series consisting of two or more injections is required to cause the immune system and produce a satisfactory protective antibody level. Tetanus antitoxin levels of >0.05 IU/mL are generally accepted as good evidence of immunity from tetanus. Diphtheria antitoxin levels of >0.05 IU/mL are thought to be the minimal level required for protection. Levels >0.25 IU/mL are considered optimal for protection. After completion of a primary series, circulating antibodies to tetanus and diphtheria toxoids gradually decline but are thought to persist at protective levels for up to 10 years. Tetanus and Diphtheria Toxoid boosters are recommended every 10 years.

Pertussis (whooping cough) is a highly communicable bacterial disease caused by *Bordetella pertussis*. Severity and mortality are greatest in infancy, and even infants born to apparently immune mothers and highly susceptible to infection, particularly if maternal immunity was induced by whole-cell pertussis vaccine. The incidence of pertussis has declined by over 30% during the last 10 years, due to several childhood immunization programs using whole-cell pertussis combination vaccines. However, due to the limited effectiveness observed with some whole-cell vaccines and the greater likelihood of losing immunity with such vaccines, particularly in adolescents and adults, major outbreaks of pertussis continue to occur.^{1,2} Hospitalizations for pertussis are still common in Canada and several deaths from pertussis occur each year, particularly in unimmunized infants.³ Much of the resurgence of pertussis is related to the role played by susceptible adolescents and adults where pertussis is often unrecognized and is actually more common than realized. Adolescents and adults are in fact the main reservoir for pertussis infection in the general population and they act as the primary source of transmission to infants.⁴ While vaccination of the target group has been recognized as a potentially useful adjunct to routine pertussis (infant and child) vaccines, implementation has unfortunately with whole-cell pertussis vaccines. These were contraindicated in children over 7 years of age because of an unacceptably high rate of reactions.

Concerns regarding the safety of whole-cell pertussis vaccine during the 1970s led to several studies of the benefits and risks of the vaccination during the 1980s. The epidemiologic evidence clearly indicates that the benefits of a childhood pertussis immunization program outweigh the risks.⁵ Concerns about the safety of the whole-cell vaccines also accelerated research into potentially less reactogenic alternatives. Adjuvanted pertussis vaccines consisting of purified fractions of the *Bordetella pertussis* bacterium were used effectively to control pertussis in children 2 years of age or older in Japan since 1981.⁶ Acellular pertussis combination vaccines have subsequently been shown as being much less reactogenic than the whole-cell pertussis combination.⁷ A randomized controlled efficacy study also conducted in Sweden using TRIPACEL[®] (Component Pertussis Vaccine Combined with Diphtheria and Tetanus Toxoids Adsorbed), which contains higher

concentrations of pertussis toxin (PT) and diphtheria toxin than the adult formulation. In this study, 2,501 infants received TRIPACEL[®] and 2,529 infants received a control vaccine containing diphtheria and tetanus toxoids at 2, 4 and 6 months of age. TRIPACEL[®] demonstrated a clinical efficacy of 88.1% against pertussis disease (defined as 21 days of paroxysmal cough with culture or serologic confirmation of infection with *Bordetella pertussis*).⁸

Another formulation of TRIPACEL[®] containing twice the quantity of PT and four times the quantity of Nanomatrix haemagglutinin (NH) was used in the second phase of the Swedish efficacy study involving over 30,000 children. This study confirmed that the 5-component vaccine was as effective as a UK whole cell pertussis vaccine, and only equalled acute pertussis (paroxysmal cough with sleep) but against 60% of pertussis disease regardless of duration of cough.

Clinical Trial Data

In a clinical trial involving 789 persons ranging in age from 12-64 years who had not been immunized against tetanus, diphtheria, or pertussis within the previous five years, 349 received a single 0.5 mL dose of one of three clinical trial lots of ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine). The remaining 300 received a dose of Td Adsorbed and of Component Pertussis (CP) Vaccine, given separately, one month apart. One hundred and fifty-one persons received Td Adsorbed at visit 1 and CP Vaccine at visit 2 and 149 persons received CP and Td in the reverse sequence.⁹ Four weeks following the ADACEL[®] injection, of 349 persons tested, 100% had tetanus antitoxin titres >0.10 IU/mL with a geometric mean titre of 0.7-10 IU/mL, while over 84% had diphtheria antitoxin titres >0.10 IU/mL (over 97% >0.10 IU/mL) with a geometric mean titre of 0.02 IU/mL. Pertussis antibody responses were comparable to those seen after a full 3-dose primary series with TRIPACEL[®] (Component Pertussis Vaccine Combined with Diphtheria and Tetanus Toxoids Adsorbed), in infants (i.e., 2, 4 and 6 months of age), or after a fourth dose (18 months of age) of PENTACEL[®] (Haemophilus b Conjugate Vaccine (Rebunus Prephen-Dryugol) reconstituted with Component Pertussis Vaccine and Diphtheria and Tetanus Toxoids Adsorbed Combined with Inactivated Poliovirus Vaccine) (Table 1).

Table 1. Pertussis Antibody Responses Obtained After the Dose of ADACEL[®] Compared with a 3rd Dose of TRIPACEL[®] or a 4th Dose of PENTACEL[®]

Pertussis Antibody	Serum Mean Titre (IU/mL)			
	After 3 rd Dose with TRIPACEL [®] in Infants	After 4 th Dose with PENTACEL [®] in Infants	After 3 rd Dose with ADACEL [®]	After 4 th Dose with ADACEL [®]
Tetanus Toxoid (PT)	41.9	51.8	192	991
Diphtheria Haemagglutinin (NH)	32.7	52.2	245	221
Pertussis (PTxS)	110	138	215	362
Titre of agglutinating 2+ (3FU)	222	252	852	1,417
Agglutins	—	—	1,205	1,320

in a separate clinical trial with 269 participants aged 11 and 12 years old. ADACEL[®] was shown to induce booster responses that were comparable to those seen in the first trial with older adolescents. In addition, when ADACEL[®] was administered concomitantly with a dose of Hepatitis B vaccine, there was no evidence of immunologic interactions between the two vaccines.¹⁰ Adverse events following ADACEL[®] were generally comparable to those seen with Td Adsorbed (see ADVERSE REACTIONS).

INDICATIONS AND CLINICAL USE

ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine) is indicated for the prevention of tetanus, diphtheria and whooping cough in adolescents and adults aged 11 to 64 years.

ADACEL[®] may be administered concurrently with a dose of Hepatitis B vaccine in 11 and 12 year-olds at separate sites with separate syringes.¹¹

Because simultaneous administration of common vaccines is not known to affect the efficacy or safety of any of the routine recommended vaccines, if return of a patient for further immunization is doubtful, simultaneous administration of all vaccines appropriate for age and previous vaccination status (including 3FC, MMJ) or separate sites with separate syringes is indicated. Vaccines containing acellular pertussis may be administered simultaneously with other inactivated and live vaccines of different sites.

Human Immunodeficiency Virus (HIV) Infected Persons

HIV-infected persons, both asymptomatic and symptomatic, should be immunized against diphtheria, pertussis and tetanus according to standard schedules.¹²

Persons who have had tetanus or diphtheria should still be immunized since these clinical infections do not always confer immunity. Those who have had natural pertussis are immune to routine pertussis-containing vaccines.¹³

CONTRAINDICATIONS

General

Immunization with ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine) should be deferred in the presence of any acute illness, including febrile illness to avoid superimposing adverse effects from the vaccine on the underlying illness or mistakenly identifying a manifestation of the underlying illness as a complication of vaccine use. A fever illness such as mild upper respiratory infection is not reason to defer immunization.

Absolute Contraindications

Allergy to any component of ADACEL[®] (see components listed in PHARMACEUTICAL INFORMATION, Composition) or an anaphylactic or other allergic reaction to a previous dose of Td Adsorbed or another component pertussis combination vaccine are contraindications to vaccination.

WARNINGS

Immunocompromised persons (whether from disease or treatment) may not obtain the expected immune response. If possible, immunization should be given to immunized persons and after the completion of any immunosuppressive treatment.

The use of fractional doses in an attempt to reduce the severity of adverse reactions cannot be recommended because there is insufficient evidence on the safety or efficacy of such smaller doses. As with any vaccine, immunization with ADACEL[®] may not protect 100% of susceptible persons.

PRECAUTIONS

General

For instructions on recognition and treatment of anaphylactic reactions see the current edition of the Canadian Immunization Guide or visit the Health Canada website.

The possibility of allergic reactions in persons receiving all components of the vaccine should be evaluated. (anaphylactic Hypersensitivity Solution (1:1,000) and other appropriate agents should be available for immediate use in case an anaphylactic or acute hypersensitivity reaction occurs. Health-care providers should be familiar with correct resuscitation for the initial management of anaphylaxis in non-hospital settings, including proper airway management.¹⁴

Before administration take all appropriate precautions to prevent adverse reactions. This includes a review of the patient's history concerning possible hypersensitivity to the vaccine or vaccine vehicle, previous immunization history, the presence of any contraindication to immunization, and current health status.

It is extremely important when a patient returns for the next dose in the series that the patient, parent or guardian should be questioned concerning any symptoms and/or signs of an adverse reaction after the previous dose of vaccine. (See CONTRAINDICATIONS and ADVERSE REACTIONS).

Frequent booster doses of tetanus or diphtheria toxoids in the presence of adequate or excessive serum levels of tetanus or diphtheria antibodies have been associated with increased incidence and severity of reactions and should be avoided. Do not inject into a blood vessel.

Contra

Use a separate clinical needle and syringe, or a sterile disposable unit, for each individual patient to prevent disease transmission. Needles should not be recapped and should be disposed of properly.

Before administration of ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine) health-care providers should inform the patient or parent in-charge of the patient to be immunized of the benefits and risks of immunization, explain about the recent health status of the patient and comply with any local requirements with respect to information to be provided to the patient before immunization.

Pregnancy and Lactation

The effect of ADACEL[®] on the development of the embryo and fetus has not been assessed. Vaccination in pregnancy is not recommended unless there is a definite risk of acquiring pertussis. As the vaccine is inactivated, any risk to the embryo or fetus is highly improbable. The benefits versus the risks of administering ADACEL[®] in pregnancy should carefully be evaluated when there is a high probability risk of exposure to a household contact or during an outbreak in the community.

The effect of administration of ADACEL[®] during lactation has not been assessed. As ADACEL[®] is inactivated, any risk to the mother or the infant is highly improbable. The benefits versus the risks of administering ADACEL[®] during lactation should carefully be evaluated by the health-care provider, particularly when there is a high probability risk of disease transmission through exposure to a household contact, or during an outbreak in the community. The risks of disease transmission from the infected mother to the infant who may not have been fully immunized should also be evaluated.

ADVERSE REACTIONS

In a clinical trial with 149 adolescents and adults given ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine) (n = 448 or Td Adsorbed (n = 155),

adverse events following ADACEL[®] were primarily localized to the site of injection. Pain was the most common local reaction (88.6%), while systemic and swelling were reported by 13.8% and 16.7%, respectively. These local adverse events were generally mild and transient in duration. Systemic adverse events that were reported after vaccination with ADACEL[®] were fever (3.4%), vomiting (2.4%), headache (2.8%), diarrhea (18.0%), rash/ra (14.7%), chills (12.5%), generalized bodyache (21.2%), decreased energy (23.4%), and sore or swollen joints (3.1%). Of the 38.8% that reported headache, 72.8% were mild and less than 5% were categorized as severe by the vaccinee. While decreased energy was common (23.4%), only 8.8% of vaccinees considered it as significant. The adverse event rates observed with ADACEL[®] were comparable to those seen with the group that received Td Adorbed[®] (Table 2).¹

Table 2: Rate (%) of Adverse Events Reported After Vaccination with ADACEL[®] Compared to Td Adorbed[®]

ADVERSE EVENT	SEVERITY	Adverse Event Rate %	
		ADACEL [®]	Td Adorbed [®]
Local Pain	Any	88.6	88.7
	Severe	0.4	0.7
Swelling	Any	16.7	16.4
	Severe	3.1	2.7
Redness	Any	11.8	8.8
	Severe	0.2	2.0
Systemic Headache	Any	2.4	2.4
	Severe	1.2	0.7
Fever	Any	3.4	6.0
	Severe	0	0
Decreased Energy	Any	23.4	21.8
	Severe	2.2	2.0
Bodyache	Any	21.2	12.9
	Severe	1.1	0
Chills	Any	12.5	2.3
	Severe	0.7	0.7
Rash	Any	14.7	11.3
	Severe	0.9	0
Diarrhea	Any	18.0	11.3
	Severe	0.2	0.7
Sore Joints	Any	3.1	8.8
	Severe	0.4	0
Vomiting	Any	2.4	0.7
	Severe	0.0	0

In a separate clinical trial with 269 adolescents aged 11 and 17 years-old, ADACEL[®] was shown to have a safety profile that was comparable to that seen in the first trial in older adolescents. In addition, when ADACEL[®] was administered concurrently with a dose of Neisseria B vaccine, the adverse events rates were not affected.²

Localized reactions consisting of discomfort, pain, swelling and redness at the injection site may be associated with tetanus and diphtheria toxoids.^{3,4} Following tetanus doses, local erythema and swelling are not uncommon and Arthus-type sensitivity may occur. Severe local reactions are often associated with high levels of circulating antibodies, usually resulting from over-immunization due to boosters being given too frequently.^{5,6}

Very rarely, large local reactions, consisting of redness around swelling >50mm, some with circumferential swelling of the injected limb, have been reported following the fourth and fifth tetanus doses of available pertussis-containing vaccines. These local reactions are usually not associated with significant pain and resolve spontaneously.⁷

Systemic reactions, such as generalized urticaria, are uncommon. Influenza-like symptoms have been reported and usually occur within 12 hours of vaccination with some diphtheria and tetanus toxoids.⁸

Neurological complications such as peripheral neuropathies^{9,10} and demyelinating diseases of the central nervous system (CNS)¹¹ following tetanus toxoid or diphtheria toxoid have been documented but are rare.¹² The U.S. Institute of Medicine has concluded that the evidence is inadequate to accept or reject a causal relation between tetanus toxoid, DT or Td and demyelinating diseases of the CNS (acute demyelinating encephalomyelitis, transverse myelitis, optic neuritis) or peripheral neuropathies other than those caused by direct intraneural injection.¹³

The following neurologic diseases have been reported as temporally associated with some vaccines containing tetanus toxoid: neurological complications¹⁴ including cochlear lesions,¹⁵ Arthus plasma mononuclear¹⁶ paralysis of the radial nerve,¹⁷ paralysis of the recurrent nerve,¹⁸ accommodation paralysis, and IED disturbances with encephalopathy (with or without convulsions) associated with or after (acute hepatitis)¹⁹ In the differential diagnosis of polyradiculoneuropathies following administration of a vaccine containing tetanus toxoid, tetanus toxoid should be considered as a possible etiology.²⁰ The Institute of Medicine concluded that the evidence favouring acceptance of a causal relation between tetanus toxoid and brachial neuritis.²¹

On the basis of a case report and evidence that a vaccine-induced immunologic response can cause Guillain-Barre Syndrome (GBS), the Institute of Medicine concluded that tetanus toxoid-containing vaccines can trigger GBS in adults. No increased risk for GBS has been observed with the use of DTT in children.²²

Postvaccination at the site of injection have occurred following

the use of an antiseptic swab, but the combination is unusual. All may be related to subcutaneous administration. Some allergic at the site of injection has been reported following use of some adsorbed vaccines (0 - 10 per million doses).²³

Rare cases of anaphylactic or anaphylactoid reaction (i.e. hives, swelling of the mouth, difficulty breathing, hypotension, or shock) have been reported after receiving some preparations containing diphtheria, tetanus and/or pertussis antigens.²⁴ Death following vaccine-caused anaphylaxis has been reported.²⁵

As with any vaccine, there is the possibility that boosters of the vaccine could reveal rare adverse reactions not observed in clinical trials.

Physicians, nurses, and pharmacists should report any adverse reactions temporally related to the administration of the product in accordance with legal requirements and to the Senior Product Safety Officer, Pharmacovigilance Department, Aventis Pasteur Limited, 1755 Steeles Avenue West, Toronto, ON, M2H 3T4 Canada, 1 800 621-1146 (phone) or 416 667 2425 (fax).

DOSSAGE AND ADMINISTRATION

For persons who have previously been immunized against tetanus, diphtheria, and pertussis a dose of 0.5 mL should be administered as a reinforcing dose.

There are currently no data upon which to base a recommendation for the optimal interval for administering subsequent booster doses with ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine).

Tetanus Prophylaxis in Wound Management

The table below summarizes the recommended use of immunizing agents in wound management. It is required to ascertain the number of doses of tetanus toxoid previously given and the interval since the last dose. When a tetanus booster dose is required, a combined preparation of tetanus and diphtheria toxoid formulated for adults (Td) is preferred. Appropriate cleansing and debridement of the wound is imperative, and use of antibiotics may be considered.

For individuals planning to travel to developing countries, it may be prudent to offer an early tetanus booster, even to those if more than 5 years have elapsed since the last dose.

History of tetanus immunization	Clean, minor wounds		All other wounds	
	Td	TIG*	Td	TIG
Uncertain or <7 doses of an immunization series**	Yes	No	No	Yes
>7 doses received in an immunization series**	No	No	No	No

* Adult type tetanus and diphtheria toxoids. If this patient is <7 years old, a tetanus toxoid-containing vaccine such as QUADRIACEL[®] or PENTACEL[®] is given as part of the same childhood immunization.

** Primary immunization is at least 3 doses at age appropriate intervals.

- Tetanus immune globulin, given at a separate site from Td.
- Yes, if >10 years since last booster.
- No, if <10 years since last booster. May be used as booster with tetanus and can be associated with increased adverse events. The booster toxoid, Td, is not considered to be significantly more reactogenic than Td alone and is recommended for use in this circumstance. The patient should be informed Td has been given.
- Yes, if individuals are known to have a significant humoral immune deficiency state (e.g. HIV, agammaglobulinemia) since tetanus response to tetanus toxoid may be suboptimal.

ADMINISTRATION

Inspect for extraneous particulate matter and/or discoloration before use. If these conditions exist, the product should not be administered.

For information on correct administration see the current edition of the Canadian Immunization Guide or your Health Canada website.

SHAKE THE VIAL WELL to distribute uniformly the suspension before withdrawing each dose. When administering a dose from a stoppered vial, do not remove either the stopper or the metal seal holding it in place. Aseptic technique must be used for withdrawal of each dose. (See PRECAUTIONS.)

Before injection, the skin over the site to be injected should be cleaned with a suitable germicide.

Administer the vaccine **intramuscularly**. The preferred site is into the deltoid muscle.

After insertion of the needle, aspirate to ensure that the needle has not entered a blood vessel.

DO NOT INJECT INTRAVENOUSLY

Needles should not be recapped and should be disposed of properly.

Give the patient a permanent parental immunization record. In addition, it is essential that the physician or nurse record the immunization history in the permanent medical records of each patient. This permanent office record should contain the name of the vaccine, date given, dose, manufacturer and lot number.

PHARMACEUTICAL INFORMATION, Composition

ADACEL[®] (Tetanus and Diphtheria Toxoids Adsorbed Combined with Component Pertussis Vaccine) is supplied by Aventis Pasteur Limited, a sterile, clear, uniform suspension of tetanus and diphtheria toxoids adsorbed on aluminum phosphate, combined with component pertussis vaccine and suspended in water for injection. Component pertussis vaccine (i.e. acellular pertussis vaccine composed of five purified pertussis antigens). Each dose (0.5 mL) contains:

tetanus toxoid (T)	6 IU
diphtheria toxoid (d)	3 IU
pertussis toxoid (PT)	25 µg
filamentous haemagglutinin (FHA)	5 µg
fractional agglutinin 7 - 8 (FAM)	5 µg
pertactin (PRN)	2 µg
aluminum phosphate (Aluminum)	15 mg
	0.22 mg/ml
2-phenoxylethanol as preservative	0.01% (0.1% v/v)

STABILITY AND STORAGE

Store at 2° to 8°C (36° to 46°F). DO NOT FREEZE. Thawed product is intended for immediate use.

AVAILABILITY OF DOSSAGE FORMS

Vial 1 x 0.5 mL (Single Dose)

Vial 5 x 0.5 mL (Single Dose)

REFERENCES

- Canadian National Report on Immunization, 1991. *Public Health Canada*, Ottawa, 1992.
- Adapted Product Monograph, Aventis Pasteur (Canada), 2001.
- Health Canada, Canada Communicable Disease Report 2002, 201-6.
- Canadian Pediatric Society. Acellular pertussis vaccine for adolescents: position statement. *Paediatr Child Health* 2003;9:427.

Full Product Monograph available on request.

Product Information as of September 2002

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POSTER PRESENTATIONS: MONDAY, MAY 9, 2005

CHARACTERISTICS OF PROGRAMS INVOLVING CANINE VISITATION OF HUMAN HOSPITAL PATIENTS IN ONTARIO.

Lefebvre S,^{1*} Weese JS,² Waltner-Toews D,¹ Peregrine A,³ Reid-Smith R. ¹Depts. of Population Medicine¹, Clinical Studies² and Pathobiology³, University of Guelph, ON. Animal visitation programs are a source of comfort, motivation and socialization to people in healthcare facilities. Despite this, few details are known about the backgrounds of these animals. Because institutionalized populations are often more vulnerable than others to infections, such information is crucial to understanding any potential health risks associated with these otherwise beneficial activities. The purpose of this study was to: 1) enumerate hospitals in Ontario that permit dogs to visit their patients and the source of these dogs and 2) obtain details about these visitation programs and the participating dogs.

All Ontario hospitals listed with the Ontario Hospitals Association were surveyed by mail to request the information specified in 1) above. Of the 231 surveyed, eight failed to reply. Ninety percent of the 223 respondents indicated that dogs were permitted in their facilities. Five hospitals owned their own dogs; national therapy dog programs such as St. John Ambulance or Therapeutic Paws provided 35% of the dogs. The sources of all dogs reported in the hospital surveys were invited to participate. All members that volunteered were included if their dogs actively visited hospitals, for a total of 102 dogs and 90 owners. Owners were interviewed using a standardized questionnaire. Ten dogs (10%) were associated with community-based groups (including kennel clubs), 73 (73%) with national agencies, 14 (14%) with hospital volunteer programs, and 5 (5%) with a humane society.

The screening protocols that dogs were required to pass in order to participate in their respective visitation programs were highly variable. The most common requirement was "core" vaccinations (defined as distemper, hepatitis, parainfluenza and parvo-viruses, plus rabies). Only 16 of the 90 owners (18%) reported that annual fecal flotation was compulsory. Less than 50% of dogs (47) needed to pass a structured temperament test to qualify. The same number required annual veterinary health certification. Preparations for hospital visits also ranged widely, with the most common practice being grooming (53%). Eighteen owners (20%) said they were unaware of any preparatory requirements, and did not practice any. Sixty-six owners (73%) allowed their dogs on patients' beds, and 71 (79%) let their dogs lick the patients. Eighty (89%) had advised their veterinarians that their dogs visited hospitals, but only 13 (14%) reported that their veterinarians had discussed zoonoses with them. Thirty-six owners (40%) were unable to name one disease that people can catch from dogs.

Visitation of hospitalized patients by dogs has become the norm rather than the exception. These programs are highly variable in their screening requirements and infection control practices, leaving room for potential problems. With the exception of rabies vaccines, the core vaccinations do not protect against zoonotic pathogens and should not be viewed as an absolute barrier to potential human infections by dogs. Hospitals, visitation groups, and veterinarians need to work together to reach some common understanding for the protection of both people and pets. This project was made possible by the Pet Trust research fund of the Ontario Veterinary College.

HCHSA- PROTECTING HEALTH CARE WORKERS FROM INFECTIOUS DISEASES: A SELF ASSESSMENT TOOL

Sikorski J, Swerhun P*, Lawrie C*, Macpate F. Health Care Health and Safety Association of Ontario (HCHSA)

Issue: HCHSA recognizes that health care organizations face increased challenges post-SARS to ensure they have adequate programs in place to protect the health and safety of their staff. The Ontario Ministry of Health and Long Term Care made a number of observations and recommendations in their report "For the Public's Health: A Plan of Action". Recommendations include the need to review current practices in occupational health and safety and to identify and disseminate best practices, particularly with respect to the interface between occupational health and infection control.

Project: The authors developed a self-assessment tool to assist health care organizations in identifying strengths and providing opportunities to enhance their occupational health infection control program. With the aid of the assessment tool, an action plan and implementation strategy may include a review and revision of existing occupational health related infection control policies and procedures, an action plan to implement new policies, procedures and programs and identification of infection control training requirements for health care workers. The tool references the Ontario Occupational Health and Safety Act, Ontario statutes and regulations and Canadian infection control guidelines and standards pertaining to occupational health. The assessment tool is divided into 12 sections. Each section has a number of elements that should be included in an occupational health infection control program. Also included are suggestions and rationale for the implementation of each element. A multidisciplinary approach is recommended for completing the assessment tool. Appropriate managers, staff, the joint health and safety committee and the infection control committee should be involved in the process.

Results: A number of health care professionals, organizations (acute and long-term care), government agencies, associations and unions participated in the review and field test of the assessment tool. Leaders in the hospital sector, long term care and public health endorsed the document. A copy of the tool was sent to all hospital CEOs in Ontario. The document is available as a free download from the HCHSA web-site, www.hchsa.on.ca.

Lessons Learned: We learned that it is important to involve key stakeholders during all phases of product development. Since the field of occupational health infection control is always changing the tool will have to be updated regularly. It would be useful to have a method of evaluating the effectiveness of the tool in changing infection prevention practices. This should be considered in the future.

HANDS ON FOR HEALTH INITIATIVE: PROMOTION OF RESPIRATORY ETIQUETTE IN HEALTHCARE AND COMMUNITY SETTINGS

James M, Meyer D*, Tyrrell J,* Turnbull E. Capital Health, Edmonton, AB

The continued spread of respiratory pathogens such as influenza, the emergence of SARS and the threat of pandemic influenza, amplify the need to address the transmission of respiratory illness in health care settings and the community. Observations reveal that people do not consistently employ simple infection control measures such as covering their mouths when they cough and practicing correct hand hygiene, thereby increasing the risk of exposure to respiratory pathogens (Miranda, Falcao, Dias, Norbrega, Rebello, Pimenta & Salide, 1994; Gwangpyo, Burge, Nardell & Thompson, 2001). Studies also show that most people are aware of the importance of hand hygiene, yet this knowledge may not be transferred into practice. (Perry, 2001). The project goal is to promote the use of "Respiratory Etiquette" (use of a tissue to contain respiratory secretions when coughing/sneezing, disposal of tissues in the waste receptacle, hand hygiene after contact with respiratory secretions and contaminated objects, and use of a mask by persons with respiratory infection symptoms) which is supported as a tool to reduce transmission of respiratory infection (CDC, 2004; Health Canada, 2003).

This one-year (April, 2004 – April, 2005), Capital Health funded initiative, encompassing target populations in Suburban / Rural communities of Redwater, Fort Saskatchewan, Leduc, Devon, Stony Plain, and Evansburg, includes use of a respiratory etiquette video in waiting rooms and distribution of respiratory etiquette kits to those patients with cough and fever. Students in grades four to six and staff in healthcare facilities will also be targeted for education. The secondary target audience is the general public, which will be exposed to the information via posters, newspaper articles, and through influence of primary targets.

Utilization-focused evaluation of the project, using both quantitative and qualitative methods, will measure short-term outcomes (one year) and will document lessons learned about program implementation. Data collection will include before-after testing of optimal samples of target populations for changes in knowledge, attitude and behaviours. If evaluated positively, the program may be expanded to the greater Capital Health population as well as to other health regions in the province. Health promotion requires a proactive approach to prevent illness. This project provides an opportunity to promote health through simple, evidence-based practice.

HOW CLEAN IS YOUR HOSPITAL? ENVIRONMENTAL SURVEILLANCE CULTURES OF INPATIENT HOSPITAL ROOMS AFTER DISINFECTION

AL-Kaabi N*, Chan F, Suh KN. Children's Hospital of Eastern Ontario, Ottawa, ON.

Background: Pathogenic organisms surviving on inanimate objects and surfaces in the hospital environment have the potential to cause nosocomial infections. This has been demonstrated with RSV and influenza viruses. The role of the environment as a reservoir for pathogenic bacteria other than *C. difficile* is less well studied. Environmental disinfection is an important component of infection prevention strategies, but the effectiveness of these practices is not well known.

Objectives: To study the effectiveness of terminal environmental cleaning in eliminating potentially pathogenic bacteria from inanimate surfaces at the Children's Hospital of Eastern Ontario, a 156 bed acute care pediatric facility in Ottawa, Canada.

Methods: Terminal disinfection of patient rooms was performed using a hospital-approved quaternary ammonium compound and following standard procedure. Environmental swabs were obtained from 18 empty patient rooms following patient discharge, and after terminal disinfection of the rooms. Six swabs were obtained from each room. Three were obtained from the patient room (door handle, call bell, and bed or crib rail); the other three were taken from the patient washroom (faucet handle, toilet flush handle, and door handle). Specimens were inoculated onto blood and MacConkey agar and processed using standard laboratory methods.

Results: A total of 106 samples were obtained, yielding a total of 177 organisms. In total, 81% of specimens had bacterial growth. All rooms yielded at least 3 positive samples. Washrooms were the most heavily colonized sites; 89-100% of samples from each of the three washroom sites yielded bacteria. Organisms considered to be of low pathogenic potential (e.g. coagulase-negative staphylococci) accounted for 72% of all isolates. Lactose fermenting and non-lactose fermenting gram negative bacilli accounted for 14% of isolates. Faucet handles harboured 38.4% of the total number of organisms isolated, and 84% of potentially pathogenic bacteria. In contrast, 67% of specimens from the three patient room sites were positive, and only 3.6% of these isolates were considered potential pathogens. No nosocomial infections were attributed to this environmental contamination.

Conclusions: Bacteria can be detected in the environment after terminal cleaning of patient rooms. Patient washrooms were the most heavily colonized areas and could potentially serve as reservoirs for nosocomial infection. Improved attention should be paid to procedures used for environmental disinfection in healthcare settings.

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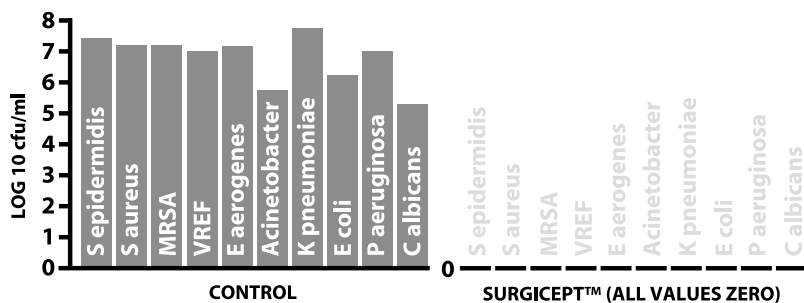
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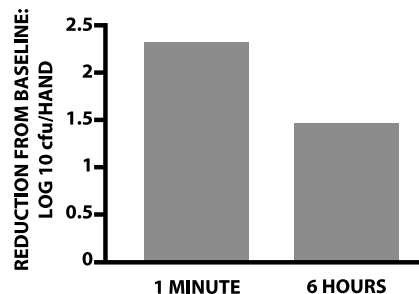


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EMERGING PROBLEMS OF PARATYPHOID FEVER IN INDIA: AN EXPERIENCE OVER THE LAST 10 YEARS

Arti K*, Renuka K, Srujana M, Seema S, Das BK. Department of Microbiology, All India Institute of Medical Sciences, New Delhi, India.

Objective: Enteric fever continues to be a major community acquired infection in our country. Until recently *Salmonella paratyphi A* was thought to be responsible for only a small percentage of cases of enteric fever and has traditionally been associated with a mild clinical illness. The present vaccine for control of enteric fever is mainly targeted against the *Salmonella typhi* infections. We present the retrospective analysis of the culture positive cases of enteric fever over the last 10 years to look for the disease burden of paratyphoid fever due to *S.paratyphi A* and the emergence of antimicrobial resistance in these strains

Methods: The blood culture positive cases of enteric fever were analyzed from the records of the clinical bacteriology laboratory of our hospital from the year 1994 to 2004 to study the etiological agent responsible for these infections. The *S.paratyphi A* strains were tested for antimicrobial susceptibility (to chloramphenicol, amoxicillin, cotrimoxazole, nalidixic acid and ciprofloxacin) by disc diffusion method as per the NCCLS guidelines. Ciprofloxacin MIC was determined by the E-test method for the strains showing reduced susceptibility to ciprofloxacin which was determined by the resistance to nalidixic acid.

Results: The total numbers of clinical samples received in the laboratory from the clinically suspected cases of enteric fever each year were not significantly different during 1994 to 2004. However, the proportion of the disease caused by *S.paratyphi A* gradually increased over the years – from 6% in 1994 to 30% in 2004. During 1996 there was an outbreak due to paratyphoid fever when *S.paratyphi A* accounted for 50% of the total isolates from the cases of enteric fever. Also, there has been an increase in the number of MDR *S.paratyphi A* (multidrug resistant strains showing resistance to chloramphenicol, ampicillin and cotrimoxazole) over these years from < 5% till 1999 to > 24% during 2000-2004. The number of NAR strains also showed an increase to 93.6% in 2004, which was much higher than the incidence of NAR strains of *S.typhi* (73.7%) during the same period. The MIC of ciprofloxacin amongst the *S.paratyphi A* strains (median 0.25 ug/ml, absolute range 0.023-1.0 ug/ml, interquartile range 0.19-0.38 ug/ml) was significantly higher than that of the *S.typhi* strains (median 0.125 ug/ml, absolute range 0.002-1.0 ug/ml, interquartile range 0.023-0.19 ug/ml). This was responsible for more number of patients showing clinical failure to treatment with ciprofloxacin, which is the first line of treatment in case of enteric fever and thus more severe disease needing hospitalization.

Conclusions: The incidence of *S.paratyphi A* infections has gradually increased over the years with the increase in its antimicrobial resistance. This infection is no longer a mild disease. The available vaccine against *S. typhi* infections only might have been responsible for the shift. In this changing scenario there is a need to revise the strategies for the prevention of enteric fever..

NOSOCOMIAL CLOSTRIDIUM DIFFICILE ASSOCIATED DISEASE (CDAD): A FUNCTION OF PATIENT DENSITY?

Ouellet CD,* Belanger D, Garber G, Roth, VR. The Ottawa Hospital, Ottawa, ON.

Issue: Patient overcrowding and aging hospital infrastructure are common problems in Canada but few studies have assessed patient risk related to inadequate facilities. At our hospital, two surgical units were designed with shared toilet closets and no hand washing facilities. This set-up fails to meet American Institute of Architects (AIA) standards. Infection Control attempted to compensate by blocking beds so no more than two patients shared a toilet closet, and providing alcohol hand gel for patient hand hygiene after toilet use. In July 2004, patients were concentrated onto one of these units to allow renovation of the other. Limiting to two patients per toilet was not possible. The death of a patient with recurrent CDAD led to a comparison of CDAD rates and risk factors by surgical unit.

Project: Pre-amalgamation, (period one: April to June 2004), 29 vascular surgery and ENT patients were separated on two units. Post-amalgamation (period two: July to September 2004), 23 of these patients were concentrated on a single unit. This unit has only two single rooms with dedicated toilets. The 12 remaining rooms shared seven toilets. CDAD rates and risk factors were compared pre and post-amalgamation.

Results: The CDAD rate in period two was significantly higher than in period one (11.1 vs 5.0 /100 admissions; $p < 0.01$). There were no significant differences in patient population, patient days, attending staff and physicians, procedures performed, or severity of illness (CIHI Resource Intensity Weight and complexity measurement). Use of all classes of antibiotics was similar in both periods, except for penicillins, which had significantly higher use during period one (7.5 versus 5.1 defined daily doses per 100 patient days, $p < 0.01$). The only identifiable change was related to density of the patient population. In period two, that patient:toilet ratio increased from 2:1 to 3:1, although in some cases, six patients shared two toilets through common closets, which could be accessed from multiple rooms. There was no change in CDAD rates on other surgical wards.

Lessons learned: Crowding patients from two units onto a single poorly designed unit led to a significant increase in CDAD rates. Possible mechanisms include sharing of toilets by patients experiencing diarrhea, and increased environmental contamination due to lack of sinks. Canada is plagued with aging healthcare facilities that are too small and are under-appointed by present standards. Although hospital renovation is costly, the economic and clinical consequences of infection transmission by failing to meet AIA standards also must be considered.

PROVIDING CARE FOR SARS PATIENTS IN TORONTO ACUTE CARE FACILITIES DURING THE 2003 OUTBREAK

Gravel D,* Paton S, Perkins P, Henry B, McGeer A, Vearncombe M, Christian M, Barry C, Simor A, Ofner M, Mederski B, Koch J, Nicolle LE, Canadian Public Health Agency, Winnipeg; Toronto Public Health, Sunnybrook and Womens Hospital, Mount Sinai Hospital, North York Hospital, Toronto; University of Manitoba, Winnipeg.

Objective: To review some aspects of the facility level experience relevant to infection control and occupational health in providing care for SARS patients during the Toronto outbreak (March to July 2003).

Methods: Qualitative and quantitative data were collected through interview with individuals at eight facilities. A standardized questionnaire was used and information entered electronically.

Results: Response at the facility level was characterized by continuing evolution of practices, limitations in expertise and resources, and inter-facility variability in application of Provincial Operating Centre (POC) directives. All facilities provided care in airborne isolation rooms in critical care units and seven facilities developed and managed patients in specific SARS units. From 2 – 47 staff members were diagnosed at these units with SARS. The number of beds per ICP prior to the outbreak varied from 173 – 500. Initial directives required the use of N95 masks, eye protection, gowns, and gloves as well as intense hand hygiene. Subsequently, directives were escalated to require use of gowns whenever on SARS units, double-gloving, eye shields and fit testing. There was no scientific basis for the intensified use of multiple layers of PPE, and there were concerns that the donning and removing have become so complex that contamination risk was increased. The requirement for universal fit testing for N95 masks could not be completed in a timely manner because of limited resources. There were substantial initial problems with high fit testing failure rates, which complicated patient care at some facilities.

Consistent areas of frustration contributing to high levels of stress were identified across all facilities with the major themes being resource limitation, restrictions in patient care, inconsistent directives, inadequate communication both within and outside the facility, deficiencies in emergency preparedness and interaction between facilities and regions, limitations in staff knowledge and training, and excessive stress. Lack of any regional cooperation prior to the outbreak hampered response and led to duplication across facilities.

Conclusion: The response to the SARS outbreak was chaotic and directives were frequent and often conflicting and not knowledge based. This outbreak response highlights the importance of infection control training and expertise. The SARS experience identifies systemic issues that can be addressed to facilitate patient care and occupational safety in future public health emergencies

REGIONAL INFECTION SURVEILLANCE: IMPROVING RESIDENT CARE ONE BUG AT A TIME

Taylor B.* Winnipeg Regional Health Authority, Personal Care Program, Deer Lodge Centre, Winnipeg, MB.

Issue: Nosocomial infections in the elderly significantly impact quality of life and costs within personal care homes. Efforts to decrease nosocomial infections first require the standardized tracking of infection rates. A lack of consistent definitions and processes limited the ability to benchmark infection rates across the 39 personal care homes in Winnipeg.

Project: The Winnipeg Regional Health Authority Personal Care Home Program implemented a regional infection surveillance program to standardize infection control processes, to minimize the number of nosocomial infections, to prevent outbreaks within the region, and to identify opportunities for quality improvement.

Results: Shared definitions of nosocomial infections have been developed, data collection processes have been centralized, information sharing and benchmarking has been enhanced across the entire region.

Lessons Learned: Interpretation of the definitions varied across the region. Infection surveillance education is essential to ensure a standardized tracking of infection rates.

INFECTION PREVENTION AND CONTROL AND CARDIAC SURGEONS – HOW TO ACHIEVE SURGICAL SITE INFECTION IDENTIFICATION HARMONY

Orenstein P,* Consolacion N, Larouche S, Amihod B, Miller M. Infection Prevention and Control Unit, SMBD-Jewish General Hospital, Montreal, QC.

Issue: The SMBD-JGH is a 638-bed acute-care, tertiary hospital. Our medical-surgical hospital-wide surveillance system has been in place since 1993. This program is based on the NNIS criteria. The surgical nosocomial surveillance program (SNSP) is based on bi-weekly unit visits that include discussions with nurses and attending physician (when present) and selected chart review. The data is entered into a computer program. Analysis and feedback are provided to stakeholders, CQI committees and the hospital board every six months.

When the surgical site infection (SSI) rates were sent to the cardiac surgeons the Infection Prevention and Control unit (IPCU) was often called upon to defend the SSI designation, case-finding and the entire SNSP. In order to overcome the adversarial situation, a collaborative approach to identify and validate SSIs was developed.

Project: The IPCU evaluated various methods that could be used to objectively validate SSIs and communicate same to the cardiac surgeons. A review of the literature and networking with colleagues did not provide us with a usable solution. We developed a case-finding form defining the SSI criteria as per CDC. When the IPCU identified a SSI, the applicable criteria are checked-off and the form signed by IPCU personnel. The completed form is then submitted to the cardiac surgeons for review

and co-signature indicating their agreement. These forms are returned to IPCU for entry into the databank and filing.

Results: Since September 18, 2004 a total of 21 forms have been completed with 90% agreement between IPCU and the cardiac surgeons (10% are awaiting review).

Lessons learned: A successful SNSP requires the collaboration and education of all participants. In order for stakeholders, including surgeons, to buy into the process they must be involved in all phases including the validation of results. The case-finding forms, as a means of communication, served as the vehicle to simplify agreement and congruency among all parties.

A TUBERCULOSIS IN A CHEMOTHERAPY CLINIC – “GONE WITH THE WIND?”

White D,* Wallington T, Loutfy M, Mederski B, Rampersad B, Futter J, Johnson E, Katz K. North York General Hospital, Toronto Public Health Dept., University of Toronto.

Background/Objectives: The chemotherapy clinic at North York General Hospital treats patients with solid organ tumours, multiple myeloma, and lymphomas. A patient with asymptomatic (smear-negative, culture-positive) active pulmonary tuberculosis, detected on staging CT scan, attended the clinic on eight occasions prior to diagnosis. An investigation of contacts was conducted to determine TB exposure/transmission in this immunocompromised population.

Methods: Subjects investigated included all patients with two or more exposures to the index case (each exposure averaged two to four hours), and all staff who worked in the chemotherapy clinic. Staff was followed by the Occupational Health Department as per standard guidelines. Patient contacts who were still enrolled in the clinic were assessed by an Infectious Diseases specialist and underwent Tuberculin Skin Testing (TST) and chest x-ray. Follow-up TSTs were undertaken as indicated. Detailed histories, including cancer diagnosis, previous TB exposure, country of birth were conducted. Patients discharged from the care of the clinic were followed by the Toronto Public Health Department.

An environmental assessment was conducted, consisting of traffic patterns and air exchange determination.

Results: Twenty six patients were assessed. Four patients (two colon CA, one breast CA, one multiple myeloma) were found to have baseline positive TST (range 12mm-29mm), and one patient had a known history of positive TST. Four of the five patients with baseline positive TST were foreign-born. No staff converted their TST.

The environmental assessment revealed that there were 17 air exchanges per hour.

Conclusions: Patients with solid tumors undergoing chemotherapy still appear able to mount a cell-mediated immune response to TST antigens, making TST a useful part of TB exposure follow-up in this population. Despite multiple exposures, there were no Mantoux conversions. High air exchange rates may have played a protective role.

TO BE OR NOT TO BE... FOCUS TESTING OF HEALTH CARE WORKERS TO DETERMINE FACTORS INFLUENCING IMMUNIZATION DECISIONS

Batenburg J, Gaughan J, Iovanovic K, Zivkovic S, Smith B, van Horne L* Peel Public Health, Brampton, ON.

Issue: Annual influenza immunization coverage rates among health care professionals in Peel acute care settings have been declining since 2000. Poor influenza coverage rates result in transmission of infection, increase in morbidity and mortality, increase in institutional outbreaks, higher rates of staff absenteeism and misinformation about risks of annual influenza vaccine. The declining immunization coverage rates prompted Peel Public Health to take a closer look at the issues impacting declining rates.

Project: Focus groups were conducted by Peel Public Health Staff with health care workers from acute care, community care (CCAC) and local emergency responders in summer 2004. The purpose of the focus testing was to gain an understanding of the factors that influence health care workers' decision to be or not be immunized. Responses were elicited in three categories: perceptions of the flu vaccine, community practices, and barriers to receiving vaccine. Focus group results were summarized and presented back to the Infection Control Practitioners and Occupational Health staff from participating facilities. Short and long term goals were collaboratively developed to improve coverage rates.

Results: Feedback from participants indicated that the focus testing was a useful process for better understanding the barriers to vaccination. Participants indicated that a negative immunization experience vocalized by a colleague impacts willingness to receive vaccine. Other negative factors were misinformation available through the Internet and ease of access to clinics. Participants clearly indicated that physicians influence immunization decisions and need to be involved with unit champions in staff immunization campaigns.

Lessons Learned: The focus groups promoted education and awareness among participants and provided an opportunity to engage and develop partnerships with our target group. The decision to be immunized is affected by a number of factors. Influenza immunization campaigns for health care workers must be collaborative and address barriers to immunization on an on-going basis.

INFECTION CONTROL PRACTICES FOR ANTIMICROBIAL RESISTANT ORGANISMS (AROS) IN CANADIAN NOSOCOMIAL INFECTION SURVEILLANCE PROGRAM (CNISP) HOSPITALS: A SURVEY OF PRACTICE

Varia M,¹ Johnston L,² Ofner-Agostini M,¹ Gravel D,¹ Green K,³ Elizabeth Bryce E,⁴ Simor A,⁵ Paton S.¹ Canadian Hospital Epidemiology Committee (CHEC), CNISP.

¹Health Canada, Ottawa, ON, ²Dalhousie University, Halifax, NS, ³Mt. Sinai Hospital, Toronto, ON, ⁴University of British Columbia, Vancouver, BC, ⁵University of Toronto, Toronto, ON.

Background: Amidst debate regarding whether screening should be conducted routinely to limit the spread of AROs, it was recognized that there is lack of data about what infection control (IC) practices are actually used among Canadian hospitals.

Objective: To describe the screening and barrier precautions used by CNISP hospitals to control the cross-transmission of methicillin resistant *S. aureus* (MRSA), vancomycin resistant enterococci (VRE), and extended spectrum- lactamase (ESBL) and ampicillin C (AmpC) producing *E. coli* and *K. pneumoniae*.

Methods: Separate questionnaires for MRSA, VRE and ESBL/AmpC were sent by e-mail in January 2003 to 25 healthcare centers representing 37 hospital sites. Questions regarding IC practices and screening policies for MRSA, VRE and ESBL/AmpC, 2002 screening results, and hospital antimicrobial restriction policies were included. Data were entered into an MS Access database and data analysis conducted in MS Excel.

Results: Twenty-eight questionnaires were returned, providing data for 36 /37 (97.3%) hospital sites. The majority conduct admission screening for MRSA (96.4%) and VRE (89.3%), but only 1 for ESBL/AmpC (3.6%). While all hospitals screened patients with a previous admission history, other groups that were screened varied by site. Very few (MRSA: 14.3%; VRE 10.7%) record the number of patients screened. Regular prevalence surveys were done for MRSA (17.9%), VRE (32.1%), and ESBL/AmpC (3.6%). Preemptive precautions were applied for MRSA and VRE by 67.9% of facilities. No facilities started precautions for patients unless confirmed as ESBL positive. All facilities "flag" patients previously identified with MRSA and VRE but only 50% for ESBL and 14% for AmpC. Barrier precautions vary for ARO and patient care setting. In the inpatient non-ICU setting, >90% wear gowns and gloves for MRSA and VRE, but only 75% for ESBL; and 64% wear masks for MRSA. Attempts to decolonize MRSA patients have been made by 82%, largely to place them in another facility. Policies restricting antimicrobial prescribing were reported by 18 facilities (64.3%) but varied by facility.

Conclusion: While all sites institute screening and precautions for VRE and MRSA, there is variation in practice. Additionally, transmission of AROs still occurs despite the use of screening and precautions. Further studies examining hospital IC practices and corresponding rates of transmission of AROs would help in identifying and refining 'best practice' guidelines.

HOSPITAL INFECTION (NOSOCOMIAL) IN NICU AT LOGHMAN TEACHING HOSPITAL, TEHRAN, IRAN

Ehteshami Z, Academic Member of Medicine, Shahid Beheshti University, Tehran, Iran.

Objective: To implicate the rate of nosocomial infection and to identify the most common sites of nosocomial infection and the most common pathogens that are the cause of nosocomial infection in newborn service and the newborn NICU.

Methods: The approach for this study was in the form of a retrospective review consisting of 308 case files documented for patients in newborn service and newborn NICU that were admitted to the Loghman Teaching Hospital during the year 2002 through year 2003. Diagnostic criteria in this study were derived from clinical studies, laboratory, and radiography data.

Results: The rate of nosocomial infection was 6.8% with a mortality rate of 33%. The rate of nosocomial infection in newborn NICU was 14%. The most common sites of nosocomial infection found were blood stream (33%), urinary tract (24%), respiratory tract (24%), gastrointestinal (14%), and skin (5%). The most common germ of cause septicemia is also Klebsiella (60%). Concerning the site of infection obtained the following sites of infection existed: Septicaemia (36%), Pneumonia (14.9%), Urinary Tract Infection (4.2%), surgical-site infection (1.8%), all other infections (43.1%).

Conclusions: The nosocomial infection occurrence, based on these studies, in the Neonatal Ward and Newborn Service (14%) is lower than the occurrence rate observed in the Internal, Cancer, Burn, Cardiac, Ortho, Ophthalmology, Paediatric, and OB/GYN Wards included in this study. For patients affected to Nosocomial Hospital Infections, the most common site found for infection was the bloodstream, followed by urinary tract and respiratory tract sites (24%). The most common pathogen of cause of septicemia and surgical-site infections is found to be organisms of Gram Positive (bacteria). Most common pathogen of cause of pneumonia and urinary tract infections are organisms of Gram Negative (51%) (cocci).

COMPLIANCE IN HAND HYGIENE AFTER IMPLEMENTING AN E-LEARNING PROGRAM IN SUFFICIENT HAND HYGIENE, BASED ON AUDITS (OBSERVATION STUDIES) AND QUESTIONNAIRES

Due D*, Skejby Hospital, Aarhus, Denmark

Background: A clinical guideline in sufficient hand hygiene was implemented in 2003 at a Danish Hospital. Audits were made showing that compliance in hand hygiene six months after implementing the guideline, was: 21% use jewels in contact with the patients, 50% use non sterile gloves in an unclean procedure, 43% use disinfection before a clean procedure, 59% use disinfection after an unclean procedure. To increase focus of hand hygiene we made an e-Learning program based on the clinical guideline.

Strategy: An introducing programme was offered four times in plenum within two weeks.

Every key person in hygiene from every staff-group was invited along with their leaders. They were introduced to the background of doing the program and the program was demonstrated. The implementation strategy is based on teaching and motivation of the staff.

Along with the program they got a written instruction.

Method: To show if compliance increased, I made a questionnaire. The questionnaire contains questions about information about the program, if you did the test and

how the test affected your every day hand hygiene. It also contains questions about behavior. For example; "Are you ready to comment on your colleagues insufficient hand hygiene" might show us some effect of the program and might basically show us if we are ready to change our behavior.

Hypothesis: Compliance in hand hygiene after implementing the clinical guideline in sufficient hand hygiene, did not live up to our expectations of increasing compliance. I have great expectations that compliance in hand hygiene will increase when an e-Learning course within the same area as the clinical guideline is implemented.

Results: Within the next couple of months the results will be ready. They are based on these questionnaires and compared to audit-results (staff-observations in the wards) I wish to present these results at the congress in May 2005.

Conclusion/discussion: I wish to show that an e-Learning program makes a difference in an implementation strategy. e-Learning is flexible, effective, productive and up-to-date

ESTABLISHMENT OF A HEPATITIS A AND B COMMUNITY IMMUNIZATION CLINIC FOR HIGH RISK CLIENTS

Earl S,* Cosentino C,* Saraza N. Region of Peel Public Health Brampton, ON.

Issue: Peel Public Health works closely with the Peel Works Needle Exchange Program to provide information, education and awareness regarding harm reduction and hepatitis within Brampton's downtown marginalized community. Two public health nurses are assigned to this project. During such outreach initiatives, the public health nurses gained a level of trust and established relationships with clients in this community. Recognizing the many risk factors encountered daily including communal living, intravenous drug use, multiple sex partners and homelessness, Peel Public Health staff feel that it is important for this community to know their hepatitis status, as well as be immunized against hepatitis A and B. Through this collaboration, the marginalized community members expressed difficulty accessing health services due to a number of barriers that face them daily. As a result of this need, the process of developing a hepatitis A and B High Risk Community Immunization Clinic began.

Project: As recommended by the National Advisory Committee on Immunization (NACI) and the Provincial Advisory Committee on Communicable Diseases, the Ministry of Health and Long Term Care (MOHLTC) implemented a hepatitis A vaccine program for high risk populations.

Individuals who were eligible for publicly funded hepatitis A vaccine included: individuals with chronic liver disease including those with hepatitis C, Intravenous drug users, and men who have sex with men.

In accordance with the MOHLTC guidelines, Peel Health started planning community based hepatitis A immunization clinics for high risk individuals. Phase one of the clinics was initiated, offering both hepatitis A and B vaccine, to those meeting eligibility criteria. An agreement was sought between The John Howard Society and Peel Public Health to operate the clinic during a free weekly breakfast program which targeted this high risk marginalized population. The program was launched in March 2004. The first phase of the program was completed in January 2005.

Phase two of this program includes the addition of a hepatitis B and C testing component and is scheduled to begin in winter 2005.

Results

Hepatitis A	First Dose	Series	% of people who completed entire series
# Completed	33	17	5

Hepatitis B	First Dose	Second Dose	Series	% of people who completed entire series
# Completed	34	28	18	53

Total clinic clients = 37

5 of 37 clients did not receive hepatitis A vaccination due to previous immunization
3 of 37 clients did not receive hepatitis B vaccination due to previous immunization

The program was deemed successful despite the low numbers of vaccinated clients. This community is very transient in nature. It was difficult to maintain communication with all members of the community for the six month vaccine schedule. It is not unusual to lose clientele due to relocation, incarceration, recent employment and changes in daytime schedules.

Lessons Learned: In an effort to provide continued equal access to public health services, the hepatitis high risk clinics have proved to be valuable despite working with a challenging and transient community. The initiation of the clinic was a stepping stone for fostering trust and support for those individuals that possess numerous barriers to accessing health services.

CLOSTRIDIUM DIFFICILE ASSOCIATED DIARRHEA AT A NON-ACADEMIC COMMUNITY REFERRAL CENTRE: RESULTS OF AN EPIDEMIOLOGICAL INVESTIGATION

Roston B,¹ Chandran AU,² M. Jay*,³ Humphreys G,⁴ Lior L,² Winter AL,¹ Gravel D,⁵ Zoutman D,³ Brien S,³ Memar P,¹ and Chan ES.¹ Ontario Ministry of Health and Long-Term Care, Toronto, ON¹, Canadian Field Epidemiology Program² and Nosocomial and Occupational Infections Section⁵, Health Canada, Ottawa, ON; Peterborough Regional Health Centre³, Peterborough, ON; and Peterborough City County Health Unit⁴, Peterborough, ON

Background/Objectives: An epidemiological investigation of a possible cluster of deaths thought to be related to *Clostridium difficile*-associated diarrhea (CDAD) was initiated at Peterborough Regional Health Centre (PRHC). PRHC Infection Control staff observed an apparent increase in CDAD, and suspected that this may have been associated with the addition of gatifloxacin (Tequin, Bristol-Myers Squibb, Montreal, PQ) to the hospital formulary in November 2002. The objectives of the investigation included (1) to determine the rate of CDAD at PRHC, (2) to determine if there was an association between gatifloxacin and recent deaths of CDAD patients, and (3) to provide recommendations regarding the local management of this nosocomial infection. Methods: A retrospective chart review of all patients diagnosed with CDAD between November 1, 2002 (introduction of gatifloxacin to the hospital formulary) and September 15, 2003 was conducted. A data extraction form was developed which included demographic, admission, laboratory, clinical (nosocomial or community acquisition, comorbidities, risk factors, symptoms, complications, treatment), previous antibiotic use and infection control measures.

Results: A total of 189 patients with 217 CDAD episodes were identified, giving an incidence of 12.4 episodes per 1,000 patient days. 187 (86%) cases were nosocomial. Of these, 157, (84%) were primary episodes. The mean age of the patients was 76 years. In the eight weeks prior to symptom onset, 151 (96.2%) of primary nosocomial cases had used antibiotics. Fluoroquinolones were the most used class. A total of 17 (10.4%) of patients died during the study period either directly or indirectly due to CDAD. There was known gatifloxacin use in 64.7% of the CDAD attributable deaths. All primary deaths due to CDAD occurred in patients 65 years or older, who had received antibiotics within the previous eight weeks. CDAD patients were older and had longer hospital stays than the general hospital population. Many had multiple pre-existing comorbidities. Contact precautions were started an average of 4.0 days after symptom onset, and usually on the same day as the notification to the ward of a positive *Clostridium difficile* toxin assay.

Conclusions: Several recommendations were put forward following this investigation many of which have been, or are in the process of, being implemented. This included on-site *Clostridium difficile* toxin testing to improve turnaround time of laboratory testing, increased infection control staff, and improved antibiotic stewardship. Although this descriptive study suggests that gatifloxacin may play some role in primary deaths due to CDAD, the numbers are small and causation is likely multifactorial. Further study is warranted.

AN INVESTIGATION OF POST CRANIOTOMY/DURAPLASTY SURGICAL SITE INFECTIONS CAUSED BY PROPIONIBACTERIUM ACNES: A CASE FOR SHERLOCK HOLMES!

Yetman M,¹ Hutchinson J,^{1,2} Hewitt S,¹ Manuel C,¹ Moralejo D.² ¹Health Care Corporation, St. John's; ²Memorial University of Newfoundland, NL

Issue: *Propionibacterium acnes* (*P. acnes*), a common skin commensal, is rarely implicated as the cause of severe neurosurgery surgical site infections (SSIs). This report describes an investigation of 14 cases of epidural abscess following craniotomy/duraplasty in the past four years.

Project: An astute neurosurgical operating room (OR) nurse noticed an unusual increase in the number of cases of neurosurgery SSIs. The Infection Control Practitioner initiated a review of all neurosurgical procedures for a two-year period and confirmed that there had been an increase in infections caused by *P. acnes*, not surgeon specific.

Results: Initially, environmental or procedural faults were suspected. Meetings were held with the OR staff, including surgeons, and an audit of OR procedures and postoperative care was done. This failed to identify a probable cause. A literature review revealed a paucity of reports of *P. acnes* as a cause of neurosurgical infections. During this time more cases were identified. Frustration was mounting. Implants such as the Gelfoam, Surgicel, and synthetic duraplasty used in the cases were cultured. *P. acnes* was recovered from a single sample of new non-implanted Gelfoam. This isolate and clinical isolates from five patients were typed using pulse field gel electrophoresis (PFGE) by the National Microbiology Laboratory. Isolates from Gelfoam and three patients were found to have identical PFGE patterns suggesting Gelfoam as a common source. However, this was not supported by the observance of no similar infections in non-neurosurgical procedures using Gelfoam or by a poll of colleagues reporting no increase in *P. acnes* neurosurgical SSIs in their institutions. Interestingly a case of epidural abscess caused by *P. acnes* was identified in a patient who had the initial surgery in a hospital outside of Newfoundland. Changes were initiated; the use of Gelfoam was discontinued and the shave/clipping technique was adjusted.

Lessons learned: Keep looking. The answer is not always obvious. Actions may have to be taken based on less than perfect evidence. Deductive skills have been tested....if only Sherlock was here to help.

POSTER PRESENTATIONS: TUESDAY, MAY 10, 2005

PREVALENCE OF ZOOONOTIC PATHOGENS IN DOGS VISITING HUMAN HOSPITAL PATIENTS IN ONTARIO

Lefebvre S,^{1*} Weese JS,² Waltner-Toews D,¹ Peregrine A,³ Reid-Smith R¹. Depts. of Population Medicine¹, Clinical Studies² and Pathobiology³ University of Guelph, ON. Visitation of hospitalized humans by dogs and other companion animals is becoming commonplace. While the therapeutic value of such practices has been investigated, the potential health hazards, both to the patients and the dogs, has not. This information is especially important in light of increasing concerns about nosocomial infections in healthcare facilities.

This cross-sectional study measured the prevalence of potential zoonotic pathogens in a group of 102 healthy dogs actively involved in visitation programs in Ontario. A standardized questionnaire was administered to each of the dogs' owners to obtain dog and program information. Fecal samples, aural, nasal, oral, pharyngeal and rectal swabs, as well as hair-coat brushings, were collected from all dogs. *Salmonella* spp was isolated from 6 fecal samples, vancomycin-resistant enterococci from 5, extended-spectrum beta lactamase (ESBL) and/or cephalosporinase *E. coli* from 6, and *Clostridium difficile* from 58. *Pasteurella multocida* was isolated from 29 oral swabs. Fecal flotation found 2 dogs to be shedding *Toxocara canis* and 1 other to be shedding *Ancylostoma caninum*. Enzyme immunoassays detected *Giardia* spp antigen in 7 fecal samples, but failed to detect any *Cryptosporidium* spp. With *C. difficile* excluded, no one dog was found to carry more than 1 enteric pathogen. Methicillin-resistant *Staphylococcus aureus* was not isolated from any nasal or pharyngeal swabs or from feces. Similarly, *Pseudomonas aeruginosa*, group A streptococci and *Microsporium canis* were not isolated from any aural, pharyngeal or hair samples, respectively. Only spaying/neutering was identified as a statistically significant protective factor against shedding *Salmonella* (OR 0.10, 95% C.I. 0.29 – 0.69, p = .001). None of the other factors, such as antimicrobial history, animal's diet or degree of interaction with patients, were significant for any organism, quite possibly due to low power in some cases; however, a few patterns are worth noting. None of the 11 dogs that tested positive for multidrug-resistant bacteria had been hospitalized for anything other than sterilization, and only 6 of these had prior antimicrobial exposure. In addition, all dogs interacted with other dogs on a regular basis, whether during exercise or as part of a multi-dog household. Follow-up with the ESBL *E. coli*-positive dogs showed at least half of the other dogs (6 out of a total of 10) in the multi-pet households were also infected - further evidence of the potential for dog-to-dog spread at the very least. The significance of these findings, particularly the high prevalence of *C. difficile*, warrants cautious consideration. At this point, all that can be said with certainty is that dogs can carry many organisms of potentially pathogenic consequence without displaying clinical signs. In light of this, veterinarians are in a unique position to protect the health of their patients, the owners, and the people they visit through certification and education programs. Further, veterinarians and physicians should work together to better evaluate the risks of these potential pathogens and develop objective criteria for screening of hospital visitation dogs. This project was made possible by the Pet Trust research fund of the Ontario Veterinary College.

THE INVESTIGATION OF A CASE OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS FOUND IN A BONE SPECIMEN TAKEN DURING A TOTAL HIP ALLOGRAFT

Churchill E,* McGeer, A, Beaudry-Clouatre M, Willey, B. Department of Microbiology, Infection Control Mount Sinai Hospital, Toronto, ON

Issue: Methicillin-Resistant *Staphylococcus aureus* (MRSA) was found isolated from a bone specimen from a patient having a total hip allograft. The allograft sample, obtained in the operating room just prior to implantation, was sent to the laboratory for testing and was found to be positive for MRSA. The patient received both oral and intra venous antibiotic medications. Due to the long-term risks associated with MRSA within the allograft, the patient eventually had to have a peripherally inserted central catheter (PICC line) to facilitate his long term antibiotic use. A number of additional factors contributed to the severity of this case including, the multidisciplinary teams which had to be consulted for this patient, the financial costs of the patient's added stay in the hospital as well as the emotional stress inflicted on the patient.

Intervention: A thorough investigation by the Infection Control team included: a review of the procedures in the bone bank and the microbiology laboratory, a screening of the patient and staff present in the operating room (n=15) to rule out carriage and shedding of MRSA.

Results: The investigation revealed no deficiencies in bone bank procedures and no apparent opportunities for contamination. Screening of operating room and microbiology staff identified no carriage of MRSA. MRSA was isolated from 19 specimens received in the lab on the same day as the bone specimen. Only one specimen was received within three hours of the specimen in question. This specimen, a wound swab, was received approximately thirty minutes after the operating room specimen was received. The MRSA isolated from this specimen was indistinguishable by pulse field gel electrophoresis and Scheck typing to the isolate from the bone graft. No other MRSA of this type have been identified in our laboratory within the last year.

Lessons Learned: Laboratory contamination of specimens has been reported with *Mycobacterium tuberculosis* and vancomycin resistant *Enterococci* but has not been reported with other organisms. Laboratories should routinely audit their procedures for handling sterile site specimens. Infection control practitioners should be aware that

laboratory contamination of sterile site specimens requiring complex handling may occur. Episodes of laboratory contamination may be associated with significant costs and negative impacts on patient care. As a result of this incident, samples from bone allografts from the operating room are now sent as swabs rather than bone fragments.

ESSENTIAL INFECTION CONTROL COMPETENCIES NEEDED BY HEALTH CARE WORKERS INVOLVED IN PATIENT CARE: A CANADIAN CONSENSUS

E. Henderson.* CHICA-Canada Education Committee and members from CHICA-Canada Chapters

Issue: Since the SARS outbreak, significant concerns have been raised about the education of Health Care Workers (HCWs) in Infection Control. A comprehensive package needs to be developed for the education the HCWs in Infection Control. While different competencies are needed for different kinds of health care workers, the first step in developing an education package would be to develop a set of common core competencies that apply to all health care workers. The basic core competencies would then serve as a platform for adding occupation specific competencies.

Project: To develop a Canada-wide consensus on the health care worker core competencies in infection Control, we asked each CHICA-Canada Chapter to identify and define a set of competencies they feel are essential information that a health care worker needs to protect themselves from acquiring infections and also to prevent transmission of organisms in their institution. A comprehensive list of competencies from all the Chapters was compiled from those submitted. Competencies that were identified by 80% of the Chapters were automatically included in the core competencies.

Results: Responses were received from the members of six (32%) of the 19 CHICA-Canada Chapters. Eleven broad areas of competency were identified including: understand the basics of microbiology and transmission of infections; understands activities of routine practice/standard precautions; understands the importance of hand hygiene; understands transmission-based/additional precautions; knows and selects appropriate personal protective equipment (PPEs); demonstrates appropriate use of PPEs; knows appropriate manage of sharps and body and body fluids including exposures; knows the difference between regular, confidential and biohazard wastes; understands the role of vaccine in the prevention of infections including influenza; understands that reusable equipment that has been in direct contact with patients must be cleaned and reprocessed before using on another patient; and critical thinking. Consensus (100%) was obtained for 10 of the 11 competencies. Critical thinking was the only competency for which consensus was not reached. Details for each competency will be presented.

Lessons Learned: There is a high level of consensus among Infection Control professionals about essential competencies needed by HCWs involved in patient care. The depth of knowledge and understanding within these competencies may vary for different types of HCWs.

FAILURE TO REPROCESS RE-USEABLE BREAST PUMP KITS

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Setting: Mount Sinai Hospital is a 472-bed patient care, teaching and research hospital in downtown Toronto. The Labour and Delivery (LD) unit, of the Women's and Infants Health program, performs 7,000 deliveries per year. The program is comprised of the LD unit, the Mother and Baby Unit (MBU – 50 beds), the Level 3 Nursery (NICU – 33 beds), the Level 2 Nursery (L2 – 20 beds) and the High Risk Antenatal Unit (HRAU – 34 beds). Post partum patients (PPP) intending to breast feed are supported through the MBU nursing staff and Lactation Consultants (LC). PPP are given breast pumping kits (BPK) to stimulate breast milk production. The reprocessed BPK package consists of the breast shell, reservoir, tubing and valve. Once the package is handed to the patient, the patient is instructed on and is responsible for cleaning of the BPK during her stay. On discharge, the BPK are collected for cleaning and sterilization. Because of concerns about loss of parts in central sterilization department (CSD), MBU service assistants (SA) were responsible for cleaning and packaging of BPK; packages were then sent to CSD for steam sterilization.

Issue: In mid-April 2004, it was reported that a partially-used batch of BPK was found in the clean supply room without visual activation of the sterilization tape. This batch of BPK had been cleaned, packaged and delivered to CSD on a weekend, and picked up again without sterilization.

Investigation: Seven cleaned but unsterilized BPKs from this batch of 10 had been distributed to patients. Three had not yet been opened by patients; the remaining four had been used. Reprocessing logs could not be used to identify individual kits or patients. There were 18 kits reprocessed on that weekend, any 4 of which could have been the four that were not sterilized. Ten patients were identified who had used one of these 18 kits; the remainder of patients could not be identified with confidence. The 10 known potential source patients were contacted and asked for consent for screening for bloodborne pathogens; all agreed. To obtain the most accurate risk estimate, all other patients on the unit who were potential sources (N=169) had charts reviewed and data collected regarding bloodborne pathogen screening results during pregnancy. Estimates of risk of acquisition of bloodborne infection for difference scenarios were calculated. The four recipients were notified of the failure and the potential risk of transmission, and offered post-exposure testing.

Results: All 10 patients were seronegative for hepatitis B, hepatitis C and HIV. Review of other charts identified that all mothers had hepatitis B screening performed during pregnancy; 1 hepatitis B antigen positive mother who had not used a BPK was identified. Only 50% of mothers had HIV screening during pregnancy. The final estimated risk of infection for patients was 1 per million for hepatitis B, 1/10 million for hepatitis C and 1/3.5 billion for HIV. All potentially exposed mothers accepted and completed post-exposure screening, with negative results. The investigation identified numerous critical handling points where errors in reprocessing could lead to such an incident. Storage sites of cleaned but non-sterile, and sterile equipment in CSD were not consistent. Inconsistencies in practice and training among unit cleaning staff, particularly part-time staff working only weekends were identified.

Conclusion: The review of the handling of used BPK identified the necessity for a streamlined "minimal touch" process. The reprocessing now relies on CSD staff to clean, package and sterilize used BPK. Efforts must be directed towards the development of a tracking mechanism to identify individual reprocessed devices given to or used on patients. The investigation also revealed that pre-natal screening for HIV did not meet provincial standards. Transparency dictated the need for full disclosure: further studies are needed to determine appropriate methods of disclosing incidents associated with very low numeric risks.

INFECTION CONTROL AND A NURSING INTERNSHIP PROGRAM

Ashcroft B,* Stevenson A, Tomiczek A. Toronto East General Hospital, Toronto, ON.

Issue: During SARS, TEGH recognized the lack of qualified infection control staff to deal with critical issues during a crisis. Post SARS Govt. of Ontario guidelines stipulate an increased ratio of ICP to patient population served. MOHLTC had made funds available to nursing education through a Nursing Enhancement fund for nursing education. Funds would need to be applied for, and this was done under the directive of the VP People Strategies and Chief Nursing Officer of TEGH.

Project: Reflecting on the Benner Novice to Expert Model, relying on the current resource of an ICP, an infection control coordinator and the infection control officer, two positions as Infection Control Interns were advertised internally to all RN staff of the hospital. Principles of adult education were utilized in the intern's learning experience. With a timeframe of five months for the internship predetermined, a process of education both formal and informal, structured and self-directed learning were encompassed. Each intern in addition to their learning objectives and the department learning goals, had a research project to undertake that would benefit the institute. The project progressed with increasing responsibilities for the interns towards the role of a full-fledged infection control practitioner. The goal was to have interns prepared for future secondment should an epidemic or pandemic event occur that required increased qualified infection control practitioners at the front of any crisis. Equally, these interns would be available as future resource if there was sick time relief or long-term replacement required within the infection control department.

Results: This project was successful in developing highly qualified interns who alleviated the work load of the current infection control department, and are prepared for future secondment to the department on an as needed basis. The interns rolled out successful research projects. They were instrumental in increasing educational sessions to hospital staff and taking over general orientation classes. They made significant contributions to the monthly hospital newsletter. The internship paved the way for future internships in other departments and offer of a second internship program in the IC department.

Lessons Learned: Recognition from the interns was that having two interns to share their experience with each other was a valuable asset and decreased amount of reliance on current Infection Control Departmental staff. Variances in delivery of educational material with respect for the Principles of Adult Learning were most beneficial to both interns. As the Intern position was a secondment from their current positions, and, as both had been in leadership roles, frequent call back as a resource to their original role, created a tax on the Interns time for educational experience. Future Internships will clarify the secondment. Space issues are equally important to the Interns experience as sharing with 4 persons in one office was distracting to the learning environment. Equally it is realized that selection process for Interns is important with consideration for prior critical thinking skills, and teaching learning skills. We learned the value of recognizing nurses currently in leadership roles to take on new roles through a concentrated mentoring and precepting manner, with reflection of Adult Principles of Learning.

INFECTION CONTROL WORKS: SPREADING THE WORD, NOT THE GERMS

Schmeisser A, Jessome L,* (Special recognition: Staff nurses Varghese S, Lowthers T.) Capital District Health Authority, Halifax, NS..

Issue: Following analysis of infection control surveillance data and unit specific transmission rates of nosocomial Methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile*, it was noted that cross-transmission of bacteria was an ongoing problem on one of our surgical wards. Rates continued to climb despite traditional education efforts with staff. A fresh approach was required, and encouraging bedside nurses to become actively involved in the infection control and prevention activities on their unit was considered the key to improving the issue. Active participation would translate into increased awareness and valuing of infection control guidelines.

Project: The development of a strategy to assist nursing staff to change attitudes toward compliance with infection control practices was needed. A surgery unit with demonstrated nosocomial transmission of MRSA and frequent occurrences of *C. difficile* associated diarrhea was chosen for a six month pilot project. Staff nurses were invited to be actively involved in assessing, planning, implementing and evaluating infection control based initiatives in their area of clinical practice. Two

Registered Nurses (volunteers) partnered with two Infection Control Practitioners (ICPs), received enhanced education and exposure to infection control concepts by means of education sessions (local area conferences), laboratory observation and shadowing during routine surveillance activities. These volunteers then acted as a link between the Infection Control Department and their co-workers. The project volunteers communicated project plans and lessons learned by giving updates to co-workers at regular staff meetings. A display room was located in the immediate work area and was accessible 24 hours per day for one week. An enhanced ICP presence was available at specified times each day for consultation and feedback. Attendance was good and represented members of the multidisciplinary team.

January display: Topics included *C. difficile*, hand hygiene, and pulmonary tuberculosis. February display: Topics included antibiotic resistant organisms and appropriate infection control practices. This was developed by the staff participants and planned to remain in place for one week. March presentation: Drop in education day for the involved unit, with planned presentations by the nursing staff involved in the project, as well as medical staff, including infectious disease, general surgery and vascular surgery. Funding for the project was provided by the Nova Scotia government's Improving Nursing Practice Grant.

Results: Surveillance to determine the effectiveness of the project will be ongoing and evaluation will be completed after each initiative and at the termination of the project (March 31, 2005).

Lessons Learned: (to date of submission) Greater appreciation for the challenges faced by ICPs and the unit staff has resulted in an enhanced rapport and more effective communication. Increased compliance with Infection Control policies has been noted. Project successes will be evaluated and applied to other nursing units within Capital Health facilities. The potential for a pilot project regarding the implementation of a designated infection control liaison nurse per unit may be undertaken at a future date.

A SURVEY TO REVIEW PRACTICES AROUND THE PREVENTION AND MANAGEMENT OF SELECTED INFECTIONS IN HEMODIALYSIS UNITS IN CANADA

Newman A,* Lam-Li D, and the CHICA-Dialysis Interest Group. Department of Microbiology and Infection Control, London Laboratory Services Group, London, ON and Infection Prevention and Control, Calgary Health Region, Calgary, AB.

Background/Objectives: Since there are no published Canadian Infection Control Guidelines for the prevention of infection transmission among chronic hemodialysis patients, a questionnaire based survey was done of hemodialysis programs listed in the *Directory of Participating Dialysis Centres, Transplant Centres and Organ Procurement Organizations in Canada, 2004*.

Design and Methods: A broad-based self-administered questionnaire was distributed by email to hemodialysis units and associated Infection Control Practitioners. Practices on prevention and management of Methicillin-resistant *S. aureus* (MRSA), Vancomycin-resistant Enterococci (VRE), extended spectrum beta-lactamase resistance (ESBL), Hepatitis B virus (HBV), Hepatitis C virus (HCV), Tuberculosis (TB), Varicella (CP), *C. difficile* associated diarrhea (CDAD), febrile respiratory illness (FRI) and diarrhea illnesses (DI) were compared for in-centre, pediatric and community based units.

Results: Overall 44% (48/108) of hemodialysis programs participated in this survey representing 89 individual hemodialysis units within the programs. Reported practices at these units were:

Table 1: Percentage of units reported use of isolation practices or additional precautions

	MRSA	VRE	ESBL	HBV	HCV	TB	CDAD	CP	FRI	DI
In-center (n=51)	80	80	50	69	10	57	84	57	22	22
Pediatric (n=6)	67	67	50	50	17	33	0	50	33	33
Community based (n=32)	59	63	34	63	0	12	66	6	22	19

Table 2: Percentage of units reported availability of screening and vaccination programs

	Screening Programs						
	MRSA	VRE	HBV	HCV	TB	HBV	Pneumococcal
In-center (n=51)	90	86	100	94	47	98	80
Pediatric (n=6)	67	50	83	83	17	100	83
Community based (n=32)	94	94	97	97	53	100	50

Conclusions: Community-based units share the same screening protocols as their in-center counterparts. The practice of isolation depends on the availability of isolation rooms. Some community based units tend to have the policy of not accepting patients requiring isolation. Fewer community based units had vaccination programs. Pediatric units tend to do less screening.

EFFECTIVE ADMISSION SCREENING AS A COMPONENT OF NOSOCOMIAL METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) IDENTIFICATION AND CONTROL

Williams V,* Barry C, Vearncombe M, Simor A, Nyog Inn N. Sunnybrook and Women's College Health Sciences Centre (SWCHSC), University of Toronto, Toronto, ON.

Background: SWCHSC is a 1,100 bed tertiary care teaching hospital, fully affiliated with the University of Toronto. In 2004, 191 cases of MRSA were identified in

acute care inpatients through admission screening, clinical isolates, prevalence and discharge/transfer screening and contact tracing. Screening for MRSA on admission is important in identifying imported cases and is one component in controlling nosocomial transmission.

Objective: To evaluate the current admission screening process and its role in identifying colonized patients and controlling the transmission of MRSA.

Methods: All patients are screened within the first 24 hours after admission for risk factor(s) for MRSA colonization/infection. Risk factors include direct transfer from another facility, admission to any healthcare facility in the last year, receiving home health care, living in a communal living situation and a previously identified antibiotic resistant organism (ARO). If any risk factor is identified or if a patient is unable to provide the appropriate information, cultures are obtained from the anterior nares, perianal area, open wounds/lesions/incisions, and the exit sites of indwelling devices. Any positive patients are investigated further to determine source. Isolates are typed by pulsed field gel electrophoresis (PFGE).

Results: 104 of 191 (54%) MRSA cases in acute care patients were first identified at the time of admission either through routine admission screening, 95 (91%) or clinical specimens obtained within 48 hours of admission, nine (9%). 39 (37%) cases were colonized in the nares only. 29 (28%) cases were colonized in the nares and another site. 17 (16%) were colonized only in the perianal area upon admission. Clinical isolates included blood, urine, sputum and wounds. MRSA was determined to be nosocomial, acquired during a previous admission to SWCHSC, in 25 (24%) cases, from another acute care hospital in 28 (27%) cases, from a long term care facility in 28 (27%) cases, community acquired in four (4%) cases and unknown source in 19 (18%) cases.

Conclusion: Admission screening remains an important factor in identifying new cases of MRSA and controlling nosocomial transmission. It is essential to culture all indicated sites, including the perianal area, in order to ensure maximum identification of colonized patients; culturing only the anterior nares is insufficient. Previous admission to or residence in a health care facility, including the facility's own, continues to be an important risk factor for MRSA colonization/infection.

MANAGEMENT OF PATIENTS WITH EXTENDED-SPECTRUM BETA-LACTAMASE (ESBL) PRODUCING ORGANISMS DURING NON-OUTBREAK CONDITIONS

Shymanski J,* Bruce N, Ramotar K, Roth V. The Ottawa Hospital, Ottawa, ON.

Objectives: Several outbreaks due to ESBL producing organisms have been reported, however data on management of patients colonised or infected with ESBL during non-outbreak conditions are scarce. The objective of this study was to evaluate the feasibility of implementing a policy aimed at preventing the spread of ESBLs during non-outbreak conditions and to measure its impact on incidence of ESBL.

Methods: Chart review was completed for all inpatients identified with ESBL at our hospital from January 1 1999 to December 31 2003. As of December 1 2001, all inpatients identified with ESBL were placed in a private room. In addition, contact precautions were used for patients in critical or semicritical care areas, and for patients with uncontained drainage, diarrhea or incontinence. Incidence of ESBL for the pre and post implementation phases was compared.

Results: A total of 68 inpatients were identified with ESBL; 33 in the first phase and 35 after policy implementation. Overall incidence increased from 0.32 per 10,000 patient days in phase one to 0.49 per 10,000 patient days in phase two ($p=0.05$ OR 1.54 95%CI 0.42-1.02). Regional ESBL incidence was noted to increase during this time period. The proportion of nosocomial cases was lower in phase two as compared to phase one (69% vs 87%, $p=0.06$). Three clusters involving three to five patients each were identified during phase one; two of the clusters took place in the ICU. No clusters occurred in phase two. During phase two, 381 private room days were utilised over two years, of which 220 were also contact precaution days.

Conclusions: Despite a trend towards increasing ESBL incidence, a lower proportion of nosocomial cases and the absence of clusters following policy implementation suggest our policy may have limited opportunities for transmission. Our data suggests increased risk of transmission in critical care areas in the absence of isolation precautions. The value of using contact precautions for all patients who are carriers of ESBL, as is the current approach with other multidrug resistant organisms, has yet to be determined.

EXPOSURE PREVENTION FOR EMERGENCY RESPONDERS – DEVELOPMENT OF A TRAINING VIDEO FOR FRONT LINE EMERGENCY RESPONDERS

Van Horne L,* Smith B. Peel Public Health, Region of Peel, Brampton, ON

Issue: Peel Public Health is responsible for liaising with Designated Officers (DOs) for Communicable Diseases, in each of the emergency response programs (police, fire, ambulance) within the Region of Peel. Emergency Responders are often required to provide basic healthcare to the public in settings that contain a high degree of risk. Most of the emergency responders have received little education on preventing infections and this was identified as an issue in reducing risk to employees. A goal for this group was to provide employees with information on exposure prevention and management in a format that would be easy to deliver. Several of the DOs had utilized a video as part of the training process. Unfortunately this video provided no information on infection prevention and the information on exposure management was out of date. The DOs felt that this format was an excellent way of delivering education but needed something that reflected current information and practice.

Project: Several of the DOs volunteered to work with the Infection Control Specialist (ICS) at Peel Public Health to draft a script for a video. Work began in February 2003 with an estimated timeline of six months to completion. Unfortunately, the project

had to be placed on hold with the advent of Severe Acute Respiratory Syndrome (SARS) and the project did not get re-started until October 2003. Development of the script was accomplished through a consultative process. The ICS drafted a script and this was reviewed and revised by the Designated Officers. The entire process took approximately five months to arrive at a finished project. Once the script was finalized the Designated Officers and Public Health staff researched options for video production. Peel Regional Police and Peel Public Health both had video production units. It was decided that the Health department would take the lead and the police department would provide a cameraman to shoot the footage. One of the Designated Officers approached a local well-known news reporter to provide assistance with the voice over segments of the video. With the production components in place, taping was done over a three-day period in August. Post production editing was done by the Video Specialist from the Region of Peel with assistance from the ICS. A rough copy was viewed by the Designated Officers and changes to the video were made based on their feedback. The final video was ready in January 2005 and is being distributed to emergency services throughout the region for use in training.

Results: The project was successful on several fronts. It achieved the goal of providing basic infection prevention education in an easy to use format and also increased the knowledge of the Designated Officers in infection prevention and control. In addition, it created partnerships between the public health unit and the emergency services.

Lessons Learned: The use of a collaborative approach created a better end product that met the needs of the emergency responders. Compromises were required to ensure that the video reflected actual practice but this was needed to ensure that the emergency responders would see the video as credible. Additional projects and training are being planned to assist the Designated Officers in fulfilling their role.

SURVEILLANCE OF CATHETER-RELATED BLOODSTREAM INFECTIONS IN THE HEMODIALYSIS PROGRAM

Trowbridge S,* Stevenson R, Griffiths-Turner M, Lee C. St. Joseph's Healthcare, Hamilton, ON.

Issue: Hemodialysis patients are at increased risk of acquiring infections, including Catheter-Related Bloodstream Infections (CRBSI) due to their immunocompromised state, prolonged vascular accesses, invasive procedures, poor nutrition and frequent hospital exposures. Hemodialysis accesses may include fistulas, grafts and/or central lines. In approximately 25 percent of hemodialysis patients, the only means of treatment is through a central line as grafts or fistulas cannot be created due to poor veins. Development of CRBSI can be life threatening directly due to the infection and/or loss of access for hemodialysis. Persistent bacteremia despite appropriate antibiotic therapy requires removal of the infected catheter to control the infections. At times, it is not possible to insert another catheter, as that may be the last site of catheter access. In 2001 Infection Prevention and Control at our institution, recognized an increase in the use of central lines in the hemodialysis program. Short-term catheters were being replaced with long-term catheters and an audit demonstrated that lines are in place from several weeks to years. This prompted the program to conduct surveillance of CRBSI among hemodialysis patients.

Project: Routine surveillance was initiated for the hemodialysis program. The Infection Control Practitioners produced a daily epidemiology report. This report was generated via a computerized laboratory system. From this report the Practitioners identified any blood and catheter exit site cultures obtained from a hemodialysis patient. These reports incorporated both out patient and in patient specimens. For any positive cultures the following patient information was acquired: type and date of access insertion, clinical evidence of septicemia at the time of specimen collection, type of exit site care, and topical or systemic antibiotic therapy. Based on Centre for Disease Control and Prevention definitions, surveillance results were categorized as Primary/Secondary Blood Stream Infections, Catheter-Related Bloodstream Infections and Exit Site Infections. A team approach was taken to improve the safe longevity of central lines. Infection Control worked in collaboration with an Infectious Disease Physician, Hemodialysis Program Director, Nurse Manager, Vascular Access Coordinator and Nurse Educator to implement changes in the program. This consisted of changing providine solutions to chlorhexidine, introduction of the no touch technique dressing protocols and prompt removal of central lines by the Nephrologist when infected.

Results: In 2002 there were 59,163 central line days in the dialysis program. During this period of time there were 32 CRBSI for a rate of 0.5/1,000 line days. In 2004 there were 72,420 central line days, with nine reported CRBSI for a rate of 0.1/1,000 line days ($P<0.0001$)

Lessons Learned: A collaborative effort between Infection Prevention and Control and the Hemodialysis Program resulted in significant reduction in CRBSI. Surveillance heightened everyone's awareness of infectious complications. Appropriate recommendations in the change of the hemodialysis catheter care protocol, improved the quality of care provided to the hemodialysis patients.

VANCOMYCIN RESISTANT ENTEROCOCCI (VRE) IN CANADIAN HEALTH CARE FACILITIES: FIVE YEARS OF PROSPECTIVE SURVEILLANCE (1998-2003)

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Background: VRE are important nosocomial pathogens in many US hospitals. Two VRE period prevalence surveys in CNISP hospitals (1995 and 1997) suggested that VRE were uncommonly isolated organisms.

Objective: To describe the incidence and epidemiology of VRE in CNISP hospitals.

Methods: Beginning in October 1998, CNISP hospitals began collecting clinical and epidemiological data on patients identified by their laboratories as colonized or infected with VRE (*E. faecium* or *faecalis* MIC > 8 µg/ml). Number of enterococcal isolates, patient admissions, and patient days were provided by each facility. Incidence rates were calculated and compared using Chi-square for trends.

Results: From 10/01/1998 to 10/01/2003 there were 1764 new cases of VRE (85% VanA *E. faecium*) identified with a rate increase from 5.18/100,000 – 7.82/100,000 patient days ($p < 0.001$) and 0.15 to 0.26/100 enterococcal isolates ($p < 0.001$). Rates were higher from western than central and eastern Canada (0.47 vs 0.15 vs 0.04/100 enterococcal isolates; $p = 0.02$). 1174 (66.5%) patients were > 65 years of age and 52% were male. 82% received care in an acute care facility in the year prior; 71% in a Canadian hospital. The patient's own facility was felt to be the source for 69% of cases. The culture was obtained as part of a screening process in 81% (35% outbreak investigation, 25% admission screen, 21% prevalence survey) and from a clinical specimen in 19%. 61% of cases were epidemiologically linked (same ward 52%, shared room 18%). Infection with VRE was diagnosed in 150 patients (8.5%:29 bloodstream, 22 surgical site, 57 urinary tract, and 42 other. Coinfection with MRSA was identified in 218 (15.4%).

Discussion: The incidence of colonization and infection with VRE is very low in Canada. There are regional variations and evidence that the rate is slowly increasing in western Canada. The epidemiology is similar to that reported elsewhere, involving primarily elderly medical patients. Most patients have colonization rather than clinical infection.

IMPLEMENTATION OF A UNIT BASED RESOURCE NURSE FOR INFECTION PREVENTION AND CONTROL

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Issue: The infection prevention and control (IPAC) program in a 750 bed tertiary care community hospital lacks the resources to provide hospital wide education when outbreaks such as SARS occur or new protocols are implemented.

Project: A unit based infection control resources nurse (UNICORN) program was initiated to provide a unit role model; a unit accessible resource for IPAC practices, issues and education; and an additional unit liaison for the ICP. The project provided a focus on teamwork, learning and service excellence and provided the participant an opportunity for personal and professional growth. After successfully obtaining administration's support for the project, a two-day training program was developed. The training program was developed and delivered by the IPAC team. Clinical leaders and at least one front line staff member from each in-patient clinical area attended the training sessions. Program objectives were established. Pretests, posttests and program evaluations from participants were used to assess the program learning. Program feedback will be elicited from participants on an ongoing basis.

Results: A group learning gain of 59% was achieved and individual learning gains ranged from 32 to 100%. Participant feedback was highly favorable and supportive. The UNICORN program has provided the IPAC team with knowledgeable and keenly interested healthcare workers in infection control practices to assist in hospital wide education and implementation of new protocols.

Lessons Learned: Teamwork and involving staff as role models is essential for a successful infection control program. Administrative support is a key component to launching a large-scale program, such as the UNICORN.

E-LEARNING: A TOOL IN TEACHING AND IMPLEMENTING A CLINICAL GUIDELINE IN SUFFICIENT HAND HYGIENE.

Due D.* Skejby Hospital, Aarhus, Denmark

Background: An e-Learning program in sufficient hand hygiene has been developed in Denmark at Skejby Hospital. It contains questions and answers within four areas – disinfection, handwashing, non-sterile gloves, and handcare. This program is based on a Clinical Guideline within the same area.

Method: The clinical guideline will be implemented by using: a campaign focusing on sufficient hand hygiene; instruction of keypersons; audit to increase compliance in hand hygiene; and implementing a e-Learning program in sufficient hand hygiene e-Learning is: *Flexible* as you can do the test anytime; *Effective* because each individual uses only the time needed to complete the test; *Productive* as you reach all staff members – without gatherings; *Up-to-date* with new teaching methods; *Expensive* during development of programs and templates.

Conclusion/discussion: Verbal feedback showed that introduction of keyperson in implementing the clinical guideline along with the e-Learning program, has been very useful. Useful as they could use the introduction material and successfully implement the e-Learning program in their own ward. Depending on the success of the implementation of the e-Learning program as a tool in teaching, will hopefully show that e-Learning is an educational tool. This particular program has images, videos, text and different kinds of educationally questions. It is impossible to fail the test, the only possibility is to continue until the correct answer is revealed (demo version of the program will be presented and some demo versions will be given).

INCIDENCE OF CARDIAC SURGICAL SITE INFECTIONS IN CANADA, 1998-2004

Varia M,¹ Zoutman D,² Henderson E,³ Johnston L,⁴ McGeer A,⁵ Taylor G,⁶ Gravel D.¹ Canadian Hospital Epidemiology Committee (CHEC), CNISP. ¹Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, Ottawa, ON, ²Kingston General Hospital, Kingston, ON, ³Peter Lougheed Centre, Calgary, AB, ⁴Dalhousie University, Halifax, NS, ⁵Mount Sinai Hospital, Toronto, ON, ⁶University of Alberta Hospital, Edmonton, AB.

Background: Surgical site infections (SSI) account for up to 40% of nosocomial infections and are a major source of morbidity following operative procedures. However, there is a lack of reliable data on SSI rates in Canada due to lack of standardization of case definition and data collection across hospitals.

Objective: To conduct a pilot study for cardiac SSI to collect the first national incidence data on SSI and to test the feasibility of a national SSI surveillance program.

Methods: National Nosocomial Infection Surveillance (NNIS) System definitions for infections were used. We included six facilities that were able to provide complete data on patients undergoing surgery between 1998 and 2004. Data included demographics, procedure duration, class and infection type. Sources of identification of SSI were clinical signs of infection observed by hospital staff supported by laboratory reports. Cases were patients with SSI within 30 days of surgery. Preliminary data are presented here.

Results: Data were collected on a total of 11851 operations. Almost all surgeries (n=11744; 99.1%) were classified as clean procedures. Most patients (n=10005; 97.3%) had an ASA severity score of three or above. The procedure duration ranged from 0.3-16.3 hours (median 3.4 hours). A total of 530 cardiac SSI were reported; the overall SSI rate was 4.5%. Of these, 355 (67.0%) were superficial, 58 (10.9%) deep and 117 (22.1%) organ/space infections. The rate of SSI increased with duration of surgery.

Conclusion: Cardiac SSI rates in our study have remained stable since 1998 and are comparable to that reported by NNIS system. This is the first report of national SSI surveillance data in Canada. Based on the availability and quality of SSI data, nosocomial surveillance for SSI is feasible. However, further analysis and the inclusion of data from other hospitals with similar characteristics is needed for a more accurate picture of the SSI rates in Canada.

A METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) OUTBREAK IN A REGIONAL BURN UNIT: LESSONS LEARNED

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Background: The Ross Tilley Burn Centre at Sunnybrook and Women's College, a tertiary care teaching hospital, is a regional referral centre for adult burn patients with 14 intensive care beds. Between April 2003 and October 2004, 31 burn patients were identified as being MRSA positive. 20 of the 31 became colonized/infected as a result of nosocomial transmission.

Objective: To examine the role of MRSA screening and pulsed field gel electrophoresis (PFGE) in the investigation and management of an MRSA outbreak in a burn unit.

Methods: Patients were screened for MRSA on admission, weekly, and on transfer/discharge until the last MRSA positive patient was discharged. MRSA isolates were typed by PFGE. Environmental cultures were taken after patient transfer/discharge.


Results: The 31 MRSA positive patients had 10 MRSA types by PFGE. Further analysis of the epidemiologic data in conjunction with the MRSA typing results confirmed that 20 patients became colonized/infected with MRSA as a result of nosocomial transmission on the burn unit and 11 acquired MRSA in other healthcare facilities, some from other countries. MRSA isolates were identified as follows: admission screening (three cases), prevalence screening (10 cases), transfer/discharge screening (two cases), and 16 from a clinical isolate. Environmental cultures showed that MRSA persisted in the environment even after thorough discharge cleaning.

Conclusions: A combination of screening methods and PFGE is essential in an outbreak investigation on a burn unit to determine transmission of MRSA. Admission screening for MRSA failed to identify eight of 11 patients, showing the importance of prevalence, transfer and discharge screens. In recent publications, the time until the first MRSA positive culture could vary between one and 23 weeks depending on length and type of patient exposure, antibiotic usage and other factors. PFGE is critical when investigating any MRSA outbreak in a healthcare facility. PFGE proved that we were dealing with 10 different MRSA clones during the outbreak thus changing the management of the outbreak. The increased levels of fluid and protein in the burn patient environment may have played a role in transmission of MRSA as it promoted persistence of organisms in the environment. There is a need for further studies to look at the role the environment plays in MRSA transmission on a burn unit. Without continued surveillance and PFGE, incorrect assumptions about MRSA transmission would have prolonged unit closure, impacted staff moral and increased nosocomial rates.

LEARNING TO CONSTRUCT A SURVEY QUESTIONNAIRE

Lam-Li D,* Newman A. Infection Prevention and Control, Foothills Medical Centre, Calgary Health Region, Calgary, AB, and Department of Microbiology and Infection Control, London Laboratory Services Group, London, ON.

Issue: Survey questionnaires are an applicable measurement tool for Infection Control studies. However, constructing a questionnaire is a difficult skill to acquire and each questionnaire we create should be used as an opportunity to learn more about designing and constructing a survey questionnaire. We use our experience from the Hemodialysis Unit Survey to illustrate some of the lessons we learned from conducting this type of utility survey.



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Project: The questionnaire was created using questions selected from previous chat room discussions of the CHICA-Dialysis Interest Group. The questions were grouped under related subject headings and presented as a five-page self-administered questionnaire. A mixture of open-ended and closed-ended questions were asked about the design of the Hemodialysis unit, cleaning and disinfection of the dialysis machine, water treatment and waste management, Hemodialysis access management and infection surveillance, isolation and screening of antibiotic resistant organisms, airborne diseases and hepatitis viruses, immunization program and antibiotic utilization. Questions relating to statistics are being asked. Pre-testing of the questionnaires was not done.

Results: Since the respondents are not from a homogenous discipline, knowledge level and familiarity with common terminology would be different than assumed. This is translated to skipped or erroneous answers. Some questions failed to deliver clear meaning leading to misinterpretation of the questions and thus, invalid answers. Fortunately, there were sufficient checks in the questionnaire to warn about inconsistency in the answers. The use of open-ended questions in the question design required extensive follow-up clarification and validation of the answers provided. Questions asking the respondent to provide statistical data had a poor response rate and were considered too demanding to complete.

Lessons Learned: Wording of questions is the primary key in maximizing the validity in the question-asking process. Providing clear definitions for common terminology and avoiding the use of acronyms reduce the number of skipped or erroneous answers. Pre-testing the questionnaire would reduce these problems. To ensure accuracy in response, specific in-depth questions should be directed to the person most knowledgeable about the subject matter. Statistical questions should be limited. Limiting the number of open-ended questions in a general survey also facilitates the data analyses.

INTRODUCTION OF NEW ISOLATION SIGNS IN AN ACUTE CARE FACILITY

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Issue: The outbreak of Severe Acute Respiratory Syndrome (SARS) in Toronto in 2003 caused tremendous anxiety among healthcare staff at Toronto East General Hospital concerning the management of patients requiring barrier precautions. Many staff did not have adequate knowledge of isolation procedures or awareness of when to use precautions.

Project: The author developed new isolation signs to assist staff in knowing which illnesses required barrier precautions, and which precautions to use. A staff survey was done to assess the learning needs of the hospital staff about Routine Precautions. The survey results showed that several problems needed to be addressed in order for the staff to feel confident and safe while caring for patients with potentially infectious diseases. One medical unit was selected to pilot the new isolation sign project. The pilot project went on for five weeks, during which time input was sought from multiple stakeholders. Due to our diverse staffing population and the diverse community that the TEGH serves, a "Level" system was developed. Level 1 corresponds to contact precautions, Level 2 to contact/droplet, Level 3 corresponds to contact/airborne. Each isolation level had signage with two parts to it. The first sign was designed to target any staff member entering the room, and the second sign was designed to target anyone that needed to remove the patient from the room for transport. The new isolation signs had symbols, which visitors that did not have English as a first language appeared to find easier to understand. After the pilot project was completed, all feedback was reviewed the final version of the new signs was developed. The signs were made and laminated in the TEGH print shop. Once printed and laminated, the Infection Control Service distributed the new isolation signs throughout the hospital.

Results: Staff quickly mastered using the new signs and indicated verbally on many occasions that they felt the new signs to be much easier to understand and to use. The introduction of the new signs allowed the ICPs a place to start with the education program around the "new normal. An additional bonus was the high visibility of the new ICPs during the period of institution of new signs, which helped the staff become familiar with the new team members. This project was completed in a cost effective manner.

Lessons learned: The most important lesson learned from this changing of isolation signs is that there is no amount of communication in a hospital setting that can be considered adequate. Communication regarding the changing of the isolation signs took place in a variety of formats: broadcast e-mails, newsletters, team meetings and a hospital newspaper, yet some staff remained unaware of the changes happening. Language barriers, shift work and weekend work can leave staff feeling "out of the loop."

OUTBREAK OF MRSA DETECTED THROUGH OCCUPATIONAL HEALTH

Gauthier J*, Campbell D, Zoutman D, Lloyd L. Providence Continuing Care Centre, Kingston, ON.

Background: Over one year, methicillin resistant *Staphylococcus aureus* (MRSA) infections were detected in three nurses (two nurses working on the same nursing unit) of a 149-bed Complex Continuing Care/Rehabilitative/Geriatric/Palliative Care hospital. An investigation was conducted on the linked ward.

Methods: A point prevalence survey of all patients on that complex continuing care nursing unit was undertaken in June. The survey was expanded site-wide, and was repeated in August. Staff swabbing for detection of colonization was offered.

Results: Four of 28 patients were colonized with MRSA. The site wide survey detected four additional patients as colonized. Pulsed field gel electrophoresis typing was performed on the isolates. Five of the patients identified had the same strain as the three nurses. Seven of the eight patients identified as colonized were determined

to be nosocomially colonized. The second point prevalence study detected seven new colonized patients, with three of these patients colonized with the same outbreak strain. Upon review, four of these seven cases were determined to be nosocomial. Only 12 of 265 nursing staff presented for screening and of those none were identified as colonized or infected. Interventions initiated included posting of contact precaution signs advising that gloves and gowns were to be worn by all persons entering the patient's room. Family and visitors had not been required to wear gowns or gloves if they were just visiting in the room. Education sessions on MRSA and Contact Precautions were conducted for various staff groups including housekeeping, rehabilitative therapy and nursing.

Conclusions: The use of contact precautions by everyone entering patient's rooms in this complex continuing care hospital, routine admission screening of anyone who had an overnight stay in any healthcare facility, additional education for staff and other interventions initiated at the time have helped to stop the nosocomial spread of MRSA. No further staff infections have been identified.

REDUCTION OF CORONARY ARTERY BYPASS SURGERY SURGICAL SITE INFECTIONS USING PERIOPERATIVE INTRANASAL MUPIROCIIN

Rybacki-Anisko T*, Bhatnagar G, Ahmed S, Cutrara C, Sarabia A, Ostrowska K, Trillium Health Centre, Mississauga, ON

Background: Trillium Health Centre is a 750 bed tertiary care community hospital. Trillium is a regional cardiac care centre and is the leading centre in Canada for performing "beating heart" cardiac surgery. Seventy to 80% of cardiac surgery patients are done off pump.

Objectives: Several studies have shown that intranasal Mupirocin (INM) applied perioperatively significantly reduces surgical site infections (SSIs) after open heart surgery. Other studies have shown no such benefit. The objectives of our study were to determine if overall SSIs were reduced in coronary artery bypass graft (CABG) surgery patients after implementation of perioperative INM and to determine compliance with INM administration.

Methods: 1215 INM patients who had CABG only and "CABG plus" (CABG with other procedures such as valve replacement or repair) from November 11, 2003 to January 31, 2005 were prospectively followed. The INM protocol was included in the appropriate preprinted order sets as follows: INM one day before surgery, the day of surgery and for three post operative days for a total of 5 days. A historical control group consisted of 1053 patients who had CABG only and "CABG plus" surgeries from October 1, 2002 to Nov 10, 2003.

Results: There was a significant difference in overall SSIs between the control group and the INM treated group: 4.8% (50 of 1053) versus 3% (36 of 1215) ($P=.034$) respectively. Ninety eight percent of patients successfully completed the INM protocol.

Conclusion: The results of this study indicate that prophylactic intranasal Mupirocin may significantly reduce the SSI rate in CABG surgery patients. The inclusion of the INM regimen in preop and postop cardiac surgery order sets ensures that patients receive treatment. Since historical controls were used in this study, other confounders which were not measured may have had an influence on SSI rates.

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ORAL PRESENTATIONS: MONDAY, MAY 9, 2005

USE OF AICE® MILLENNIUM PDA MANAGER TO COLLECT INFECTION PREVENTION AND CONTROL SURGICAL SITE INFECTION DATA

Plante-Jenkins C,* Trillium Health Centre, Mississauga, ON.

Issue: Surgical site infection (SSI) manual data collection and manual data entry is a labour intensive process that is prone to transcription errors.

Project: This project facilitated electronic bedside data collection for Infection Prevention and Control (IPAC) and permitted Infection Control Practitioners (ICP) to collect data on patient units, in health records, and throughout the organization via a personal digit assistant (PDA) synchronized with AICE® Millennium surveillance software. The AICE® Millennium software is maintained on a local area network (LAN). The objectives of the project were to: eliminate the need for ICP to manually collect data onto paper forms; eliminate the need for support staff to manually enter data into software; permit support staff to perform other functions with time saved; prevent transcription errors; allow each ICP to manage their surveillance data.

Results: User satisfaction surveys completed at three months and six months evaluated issues such as use of the PDA, use of software, data entry to PDA and data transfer to AICE® Millennium. A user survey evaluated project objectives.

Lessons Learned: The technology for electronic data collection is acceptable to users. Workflow changes required may be more difficult to adjust to than technology changes.

MANAGEMENT OF A MEASLES EXPOSURE IN A PAEDIATRIC EMERGENCY DEPARTMENT

Freeman R*, Streitenberger L, Wray R, Goldman C, Malloy P, Matlow A. The Hospital for Sick Children, Toronto, ON.

Issue: An unvaccinated transplant patient presented to the Emergency Department (ER) with a history of cough, conjunctivitis, runny nose and rash. The patient had a known travel related exposure to measles. The patient was apparently isolated appropriately in the ER and measles serology was sent to the laboratory. Infection control notification was delayed and on review, it was determined that the patient had not been appropriately isolated. An investigation was commenced when the serology results confirmed a diagnosis of measles.

Investigation: All patients, staff members and visitors present in the ER during the index patient's stay and for two hours afterward were identified and considered exposed. An investigation, notification and follow-up process was undertaken in collaboration with Infection Prevention and Control, Occupational Health and Safety and Toronto Public Health.

Results: There were 67 staff members exposed and all were immune. One hundred and seventeen patients were exposed and 63 patients were immune. Sixteen exposed, susceptible, high risk patients were given immune globulin. Exposed family members and visitors were contacted and followed up by the appropriate Public Health jurisdiction. There were no known secondary infections resulting from this exposure.

Lessons Learned: The ER required a larger, negative pressure isolation room to manage complex patients requiring airborne precautions. Prompt notification of Infection Prevention and Control for sentinel events may have averted this exposure. Ongoing communication and collaboration between our facility and Toronto Public Health could have facilitated more efficient exposure management. Since measles has not been eradicated worldwide, emergency departments should be aware of vulnerable populations, particularly after recent travel to endemic regions, and be vigilant with screening and isolation precautions.

A NOSOCOMIAL S. AUREUS CELLULITIS/SCALDED SKIN SYNDROME (SSSS) OUTBREAK IN NEONATES AT A COMMUNITY HOSPITAL: USE OF PULSE FIELD GEL ELECTROPHORESIS (PFGE) TO IDENTIFY A STAFF RESERVOIR

Rau NV, Lanza S, Matthews F, Gilland J.

Background: Up to 50% of neonates become colonized with *S. aureus* strains of nursery origin in the first few days of life. These strains are usually transmitted via hands of personnel and hand hygiene is therefore emphasized during outbreaks. Random staff screening is not recommended, as nasal carriage is often transient. In October 2003, the Infection Prevention and Control Service (IPCS) was informed of four cases of umbilical stump soft tissue infections involving healthy term infants delivered at Halton Healthcare Services (HHS) from October 3-10. One of these infants had SSSS. Despite a hand hygiene campaign to paediatric / neonatal staff, along with active inpatient surveillance for skin / soft tissue infections presenting in neonates, three further cases of SSSS were identified in neonates delivered at HHS on November 28th. Two required readmission for treatment.

Method: The incidence of *S. aureus* in clinical isolates from newborns in the preceding two years was reviewed. Antibiotypes and biotypes of outbreak related *S. aureus* isolates were reviewed; where available, strains were sent for PFGE for analysis. A search for an epidemiologic link was undertaken and led to screening of all staff who cared for more than one outbreak case.

Results: Only one *S. aureus* clinical isolate was identified in the newborn age group over the preceding two years. In all seven outbreak cases, *S. aureus* isolates demonstrated a unique resistance profile to penicillin and clindamycin. Biotypes of all strains were identical. PFGE analysis of the two available outbreak isolates were identical. 17 staff underwent screening (nares); 14 were negative and three were positive for *S. aureus* with antibiograms to the outbreak cases. However, only one of these had

the same PFGE isolate as the outbreak strain. All carriers have received a decolonization regime. Active surveillance for new cases continues.

Conclusion: PFGE is more precise than a unique antibiogram in the identification of a staff reservoir of *S. aureus*.

PROVINCIAL TASK FORCE ON THE PREVENTION AND CONTROL OF COMMUNICABLE DISEASES IN HEALTH INSTITUTIONS AND AMBULANCES SERVICES: "BACK TO BASICS"

Bowmer I,^{1,4} Yetman M,¹ Baird J,² Griffiths B,³ Ryan A.⁴ ¹Health Care Corporation, St. John's, ²Central Newfoundland Regional Health Center, ³Department of Health and Community Services, ⁴Memorial University of Newfoundland, NL.


Background: In response to the global havoc wreaked by SARS, the Government of Newfoundland & Labrador gave the Provincial Task Force on Infection Control the mandate to access the preparedness of the province to deal with an outbreak of this magnitude.

Objective: To elicit the views of participants on vigilance for communicable disease outbreaks and to review the standards, policies, procedures and resources related to control and prevention of communicable diseases.

Methods: A qualitative study utilizing focus group sessions was undertaken to gather information from participants in the 14 Institutional Boards throughout the Province. Fifty-nine discussion groups were held with over 500 participants. Extensive notes were taken by the researchers at each session and later transcribed. Transcriptions were analyzed through the qualitative software, Ethnograph®, for main issues and themes.

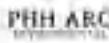
Results: Several key issues were identified under six critical focus areas: infection control resources, policies and procedures within the organization; planning processes and committees in place to develop an institutional awareness/response team; assessment of surveillance, screening and evaluation strategies; availability of infrastructure and resources to meet an infectious disease threat; staffing needs in the event of a crisis; and communications strategies.

Conclusion: There is a critical need to move "Back to Basics" in the endeavor to be prepared for an outbreak of a communicable disease. Principles of hand hygiene, segregation of the infectious, and high standards for environmental cleanliness must be instilled in health care worker so that in time of crisis these principles are not onerous. This can be accomplished by significant resource allocation for infection control professionals in institutions and infection control leadership at the provincial level.





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THE DEVELOPMENT OF AN INTERACTIVE METHOD FOR TEACHING INFECTION PREVENTION AND CONTROL TOPICS IN A CONTINUING CARE ENVIRONMENT IN THE CALGARY HEALTH REGION

LeBlanc ME,* Valadka T. Carewest, Calgary, AB.

Objective: To develop an interactive method for teaching infection prevention and control topics and to make learning fun during National Infection Control Week 2004 at a 1,094 bed (eight sites) continuing care organization in Calgary.

Method: The Infection Prevention & Control Team (IP&C Team) developed six separate sets of questions on a broad scope of IC topics. The questions ranged from easy to hard (1- 6 levels) in power point format. The format was based on the TV Millionaire game. The IP&C Team issued an invitation to Carewest leaders including the medical leader to sit on the "hot seat" for the game - *Who wants to be an Infection Control Specialist?* The hot seat participant had two life-lines. The IP & C Team dressed in black & red ladybug attire, complete with antennas. Each "hot seat" participant was given a ladybug hat to wear. The IP&C Coordinator alias "Meredit" was the hostess. The PowerPoint presentations made it more interesting with animation to reveal the final answer after the "hot seat" participants had decided on their Final Answer. The IP&C Secretary designed "fun money" for all levels of questions and the Hot Seat participant was given a \$1,000,000 laminated coupon as a souvenir. The coupon had the IP&C Coordinator's picture as the queen

Results: The education sessions were held during National IC Week in October 18 - 22, 2004. The game was played nine times across the eight sites. The "hot seat" participants were leaders in our organization, including the Medical Leader, Program/Site Leaders/Managers and Educators. The audience consisted of Staff, Clients and Family members who posed as life-lines and enjoyed the interactive learning. Positive feedback was received from all sectors stating that the sessions were indeed a fun and novel way to learn.

Conclusion/Lessons Learned: Feedback illustrated that learning took place in a fun and interactive way. Some leaders initially were hesitant about being on the "hot seat". The IP&C Coordinator circulated a sample of six questions to alleviate anxiety of failing in front of the audience. Following the game, the leaders stated the game was a positive, enjoyable experience and had worried unnecessarily. The IP&C Team had put a lot of extensive effort into the project and was pleased to receive the positive feedback. The authors will present a set of questions to illustrate the game to the conference attendees.

CARING HANDS ON HARMS' WAY: WHO, WHERE, HOW?

Shah, S*, Rozina K. Department of Community Health Sciences and Epidemiology, Saskatoon, SK

Objectives: To characterize needlestick injuries (NSIs) among nurses in hospital and non-hospital settings.

Methods: Descriptive study of all accepted workers' compensation claims for a needlestick injury filed between 1995 and 2001 by nurses in Washington State.

Results: There were a total of 4,695 accepted State Fund health care worker NSI claims. In non-hospital settings, the overall rate of injury was 71.8 per 10,000 full-time equivalent employees (FTEs) per year, with the rate increasing from 61.5 claims per 10,000 FTEs in 1995 to 85.1 claims per 10,000 FTEs in 2001. Trend analysis showed an annual average increase of 6.3% (95% CI = 4.82%, 7.73%; p-value < 0.0001). In hospital settings, the overall rate of injury was 147.8 per 10,000 FTEs, with the rate increasing from 111.4 claims per 10,000 FTEs in 1995 to 139.1 per 10,000 FTEs in 2001. Trend analysis showed an annual average decrease of 0.36% (95% CI = -6.70, 6.41; p-value < 0.9136). Nurses accounted for the largest (32.5%) proportion of health care workers involved, both in hospital (45.8%) and in non-hospital (28.7%) settings. Majority of injuries in non-hospital settings occurred in physician offices (47.8%), skilled nursing care facilities (35.1%) and home health care services (6.5%). Devices causing injury include syringe (59.9%), winged steel-needle (12.1%), a lancet (9.7%), IV tubing needle (5.6%), suture needle (3.9%), vacuum-tube phlebotomy set (2.9%), stylet (2.5%) and others (3.3%). The most common mechanisms of NSI were: administering an injection (18.3%); disposal related (21.7%), recapping (10.9%) unexpected movement of patient (8.2%) and drawing blood (7.4%). Nurses were exposed to HBV (n=11), HCV (n=63), HIV (n=15), both HBV and HCV (n=6) and HCV and HIV (3). The direct cost per claim was US \$546 on average. The average cost of claims with exposure to HCV or HBV or HIV was \$2118.

Conclusions: There is a difference in NSI claim incidence rate, and mechanisms of needlestick injury when reviewing worker compensation claim records for health care workers in non-hospital settings relative to hospital health care workers. Nurses accounted for the majority of injuries in hospital and non-hospital settings.

TRAINED BIRTH ATTENDANTS (TBAS)

PREVENT PERINATAL HIV TRANSMISSION

Fombe JN*, Mitchell P, Kakute P, Wanyu B, and Kegham E. Cameroon Baptist Convention Health Board, (CBCHB) NWP, Pome, Cameroon

Background: Cameroon Baptist Convention Health Board's Life Abundant Program(LAP), the primary health care department for this organisation, works with rural communities that have no access to any other health care in four of Cameroon's 10 provinces. Amongst other things, LAP trains rural TBAs to offer antenatal care, low-risk delivery, and triage of high-risk mothers to larger health facilities. HIV prevalence rate in Cameroon is 11.5%. The use of HIV rapid tests, which are >97% sensitive and 98% specific, allow for pre- and post-test counselling, and giving of results in a single visit. A Ugandan study revealed that a single-dose peri-natal Nevirapine to mother and another to baby do reduce vertical transmission of HIV by 47%.

Methods: In 2002, LAP started training TBAs in voluntary counselling and testing, and

use of Oraquick tests on saliva, and administering Nevirapine to pregnant women. TBAs offer VCT to all women registering for prenatal care and when they test positive, Nurse Supervisors who visit the TBAs once a month perform confirmatory rapid HIV tests as per protocol. Women with low obstetrical risk are delivered by TBAs in the village but, when referred, the staff at centres receiving the clients, recognise them as mothers that need nevirapine in labour and treat them accordingly. We started out with four villages in July 2002, and reached 19 by September 2004. Positive women are counselled to breast feed their infants for three to six months and wean them abruptly to formula.

Results: From July 2002 to November 2004, TBAs in 19 villages counselled and tested >1020 pregnant women with 99.2% acceptance rate, 35 received nevirapine as per protocol. Seroprevalence in the rural areas is about 3.4% and is expected to rise in the main time. Supervisors confirmed all 35 positive cases, seven had high OB risk scores and were referred, and 28 delivered by TBAs; four were still born. Seven babies have been weaned to household diet and three have reached 15 months or older and have been screened, two of the three are negative while one is positive. The babies are just beginning to reach this age so we expect to get more babies tested subsequently.

Conclusion: TBAs in remote areas in Cameroon have demonstrated that prevention of vertical HIV transmission in women (in resource poor settings) who have no access to regular health care can be done, not only by scarce, highly trained health workers but by TBAs with a high level of success.

IMPLEMENTATION OF INFECTION CONTROL PRACTICES TO PREVENT THE TRANSMISSION OF HEPATITIS B INFECTION AMONG CHRONIC HEMODIALYSIS PATIENTS

Trowbridge S,* Stevenson R, Lee C, St. Joseph's Healthcare, Hamilton, ON.

Issue: Hemodialysis patients are at high risk for acquiring and transmitting blood-borne pathogens due to the nature of the dialysis treatment. Dialysis patients are at risk of attaining infection due to their immunocompromised state, prolonged vascular accesses and opened spaced environments they share with several patients receiving concurrent treatments. These factors provide increased opportunities of person-to-person transmission of infectious agents, either directly or indirectly via contaminated equipment and surfaces or via the hands of hemodialysis healthcare workers. Comprehensive Infection Prevention and Control practices based on current guidelines must be initiated to prevent the transmission of Hepatitis B infection among the chronic hemodialysis patient in their vulnerable setting.

Project: Initially all chronic hemodialysis patients were tested for HBV and HCV to establish a baseline. The results of the serologies were promptly reviewed to minimize potential transmission of viral hepatitis B in the hemodialysis setting i.e. isolation practices for HBV positive patients. Hepatitis B vaccinations were recommended to all susceptible patients. Patients who tested positive for anti-HBc (anti-body to hepatitis B core) negative for HBsAG (hepatitis B surface antigen) and anti-HBs < 10 mIU/ml (hepatitis B anti-bodies) were segregated and dialyzed on dedicated machines until detailed analysis could be performed. A core group was established to maintain communication with all key stakeholders. The group consisted of Infection Prevention and Control, Infectious Disease Physician, Hemodialysis Program Director, Nurse Manager, Charge Nurses, Nurse Educator, Nephrology Technical Department, Manager of Virology Department and Environmental Services.

Results: Policies and procedures to prevent transmission of hepatitis B were developed according to the Centers for Disease Control and Prevention (CDC) and Health Canada guidelines. These policies included the following: Admission Screening to the Hemodialysis Program; Administration of the Hepatitis B Vaccine Series; Measure Follow-up Hepatitis Bs AB titre; Dialysis Machine Disinfection; Environmental Cleaning with Effective Virocidal Agent. These policies were extended regionally to assist with fluid movement of patients between programs and ensure the safety of both patients and staff members.

Lessons Learned: A major change occurred in the hemodialysis program in order to implement infection control practices to prevent transmission of Hepatitis B. Staffing and dialysis times for a number of patients were adjusted to accommodate isolation rooms and dialysis machines; education of environmental services prior to the implementation of change in cleaning practices of the environment; education and communication with the virology lab to ensure understanding of the new protocol and ability to accommodate the influx of lab specimens. Infection Control spearheaded the change in practice but effective implementation required a multi-disciplinary team approach.

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ORAL PRESENTATIONS: TUESDAY, MAY 10, 2005

USING THE EMERGENCY PREPAREDNESS MODEL TO CONTROL A NOROVIRUS OUTBREAK IN A TERTIARY CARE CARDIAC PROGRAM

Curtin J,* Shimokura G, McNaughton M. Providence Health Care, Vancouver BC.
Issue: The large Norovirus outbreak ever seen at St. Paul's Hospital, Vancouver occurred in December 2004 in the cardiac medical, surgical and catheter labs. It involved 85 staff, 78 patients and lasted 24 days.

Project: For the first time, members across multiple hospital departments and contracted services, which included Emergency Preparedness, Nursing, Housekeeping, Infection Control, Occupational Health and Safety, Communications, Microbiology Laboratory, Cardiac Medical, Surgical and Catheter Labs Programs, Nutrition, Security, Materials Management and Purchasing, Linen Services, Central Supply Services, Administration, and Public Health came together as a working group to help control the gastroenteritis outbreak. The initial reaction to the outbreak was to close the cardiac programs to contain the spread but we quickly realized that this action was impractical, as it would have life threatening implications and impact cardiac services across the province.

Results: Once the Norovirus Outbreak Management Team (NORT) was formed, the management of the outbreak shifted to a multidisciplinary approach with each service focusing on their area or expertise and coordinated by the Emergency Preparedness leader. By using the Emergency Preparedness model, which worked within the Hospital Emergency Incident Command System (HEICS) guidelines, we ensured that the outbreak was lead with one leader and one voice and offered consistency and predictability. NORT met daily over the course of the outbreak which ensured that all disciplines articulated their concerns, participated in the decision-making process, helped one another accomplish tasks, and collectively evaluated the progress of the outbreak.

Lessons Learned: NORT was instrumental in controlling the outbreak. A permanent NORT team is now in place at Providence Health Care whose responsibility is to respond to any hospital-wide outbreaks quickly and effectively. We are also updating our gastroenteritis outbreak protocol to include acute care needs and more specific specimen collection protocols. Our most ambitious plan involves having infection control "Champions" on every clinical unit to help us mobilize our hospital for our next major outbreak. Other lessons learned will be discussed.

REDUCING ORTHOPEDIC SURGICAL INFECTIONS

Shea B,* Lloyd A, Loeb M. The Hamilton Health Sciences Orthopedic Six Sigma Team and 3M.

Issue: Recent events in Canada have highlighted the need for healthcare institutions to initiate focused and proactive patient safety initiatives. Increased awareness by the public of infection control issues has been fueled by the SARS outbreak, by media reports of the use of improperly sterilized equipment and by reports such as that of Baker and Norton outlining the incidence of adverse events among hospitalized patients in Canada.

Hamilton Health Sciences (HHS) in conjunction with 3M, as part of a patient safety initiative undertook a Six Sigma project aimed at reducing surgical infection rates among patients having primary total knee and total hip replacement surgery. Six Sigma, more commonly used in industry, is a data driven approach, focusing on process improvement and variation reduction. Use of the Six Sigma methodology allowed us to implement an improvement process that involved and was supported by senior management, orthopedic surgery, anesthesia, hospital education and infection control.

Project: Key stakeholders, defined as those necessary to evaluate and assess every step in the process beginning with the patient's pre-operative appointment through to their stay in the post-anesthetic care unit (PACU), were assembled. Infection Control provided baseline and post-intervention surgical infection rates, identified factors contributing to surgical infections, and provided surgery specific data. Through regularly scheduled weekly meetings from September 2003 to December 2004, the team worked through the first steps of the Six Sigma DMAIC process (define, measure, analyze, improve, control). Process measurement involved mapping the process, identifying inputs and outputs, and creating a cause and effect matrix, from which a project "roadmap" was derived. Process mapping involved itemizing the major activities / tasks of the team as well as identifying the key input variables and output variables. This involved brainstorming with the team, using existing documentation, and observing the process. More than 70 steps/ inputs in the process were identified from the patient's pre-operative appointment to their stay in PACU. A cause and effects matrix was then used to rate the importance of the inputs or steps in the process. A failure modes and effects analysis (FMEA) was utilized to look at variation and effects for inputs to the process. The team worked through the DMAIC and chose the top five inputs that were determined using the Six Sigma methodology to have significant impact on infection rates. These top five were controllable inputs that could be changed or improved upon to reduce surgical infection rates.

Results: Improvement changes identified by the process were implemented in stages. The final change was implemented in January 2005. Infection rates specific to the Six Sigma project will be collected for twelve months after this last phase of implementation and compared to twelve months of baseline infection rates to measure impact on infection rates.

Lessons Learned: The Six Sigma project provided an excellent opportunity for the infection control department to be involved in a collaborative project aimed at reducing surgical infection rates. It provided a challenge and established a goal to improve patient safety, which is inline with HHS's corporate goals and objectives and is also

one of CDC's seven healthcare challenges. It enabled the infection control practitioner to foster better working relationships with surgeons and the orthopedic team and achieve "buy in" that alone would not have been possible. It allowed industry and healthcare to partner effectively in the interest of improved patient care.

SEVERE RESPIRATORY ILLNESS (SRI) SURVEILLANCE WITHIN ACUTE-CARE INSTITUTIONS PARTICIPATING IN THE CANADIAN NOSOCOMIAL INFECTION SURVEILLANCE PROGRAM (CNISP)

Gravel D,* McGeer A, Amihod B, Johnston L, Matlow A, McDonald S, Moore D, Close, R., Taylor, G., Wong, A., and the Canadian Nosocomial Infection Surveillance Program, Public Health Agency of Canada.

Objective: To describe the results of hospital based surveillance for severe respiratory illness in patients requiring hospital admission and nosocomial febrile respiratory illness (FRI) on medical and surgical units.

Methods: CNISP hospitals were recruited to perform surveillance for community-acquired SRI and nosocomial FRI on acute medical and surgical units (excluding intensive care units)

Results: Twelve CNISP hospitals from eight provinces including two pediatric hospitals participated in surveillance over a consecutive 13 weeks from January 5 to April 27, 2004. A total of 1,642 case patients were identified, 1,200 (73%) were adults and 442 (27%) were children \leq 18 years of age. 1,255 (76.4%) patients met the case definition for SRI for a rate of 44.3 per 1,000 non-elective admissions. Six of these (0.5%) had risk factors for SARS, 5 had recent travel to Asia and one was a laboratory worker handling live SARS CoV. No cases of SARS were identified. An additional, 225 (13.7%) patients had nosocomial pneumonia and 162 (9.9%) had FRI without pneumonia for a rate of 9.3 per 10,000 patient-days and 6.7 per 10,000 patient-days respectively. No clusters of illness occurred on any in-patient ward. Among the adult cases, 201 (16.7%) were admitted to the ICU, 170 (14.1%) were ventilated and 131 (10.9%) died. Among the children, 61 (13.8%) were admitted to the ICU, 35 (7.9%) were ventilated and five (1.1%) died.

Conclusions: SRI (pneumonia with fever) is a common reason for admission to Canadian hospitals; however, recent travel and risk factors for SARS in such patients are very uncommon. Identified rates of pneumonia on medical and surgical units in these hospitals were similar to those for US hospitals. Clusters of pneumonia in hospital are uncommon, and should be investigated. The surveillance was labour intensive requiring one FTE per facility. Lessons learned from this pilot will be useful in constructing long-term sentinel SRI surveillance in Canada

MRSA IN LONG TERM CARE AND ITS IMPACT ON ACUTE CARE

Davis L,* White D, Alexander D, Drews SJ, Pikula Z, Katz KC.¹ North York General Hospital, North York, ON and University of Toronto, ON.¹

Background/Objectives: North York General Hospital is a 430 bed community teaching hospital with a very busy Emergency Department (67,000 visits per year). It became apparent that Methicillin Resistant *Staph aureus* (MRSA) was frequently being isolated in patients transferred from Long Term Care Facility (LTCF) 'X'. Numerous roommate contacts required screening and contact precautions when admission screens were noted to be positive at 48-72 hrs. The Infection Prevention and Control Team decided to investigate the admission prevalence of MRSA colonization in in-patients transferred from LTCF 'X' and to implement control measures to reduce unexposed contacts and transmission.

Methods: Data was collected prospectively over a five month period on all admissions transferred from this facility. Every new admission was empirically placed on MRSA Contact Precautions in a single room. Swabs for MRSA were taken on admission, day 3 and day 7. Sites swabbed included nasal, rectal and any open wounds (to a maximum of two). Patients admitted from LTCF 'X' were placed on precautions until the admission screen and the day 3 screen were finalized as negative.

Results: As of January 2005, 54 patients were transferred from LTCF 'X' to NYGH. 8/54 (14.8%) were known to be MRSA colonized prior to transfer. An additional 11 patients were detected by this screening protocol, for an estimated overall MRSA-prevalence of 19/54 (35.2%) at LTC 'X'. Seven of 11 (63.6%) patients unknown to be previously MRSA-colonized were detected on the admission screen, two of 11 (18.2%) patients were detected on the Day 3 screen, and two of 11 (18.2%) were only detected at day 7. Of the 11 newly detected patients, 9/11 (82%) were colonized in the anterior nares, 3/11 (27.3%) were colonized in their rectum, 4/11 (36.4%) were colonized in their wounds, and 1/11 (9%) was infected with a positive clinical specimen (blood).

Conclusions: MRSA is reaching endemic levels in a long term care facility in Toronto. Further investigation of the prevalence of MRSA in other Long Term Care facilities and associated impacts on acute care facilities should be undertaken. A more sensitive test with a more rapid turnaround time would be beneficial in this setting.

EPIDURAL ABSCESSES POST CRANIOTOMY/DURAPLAST: A REPORT OF 13 CASES

Hutchinson J,^{1,2*} Yetman M,¹ Hewitt S,¹ Moralejo D,² Hayward B,¹ Kelly S,¹ Steele-Rodway M.¹ ¹Health Care Corporation, St. John's, NL; ²Memorial University of Newfoundland, NL.

Background: An increase in neurosurgical site infections (SSIs) caused by *Propionibacterium acnes* prompted a review of all neurosurgical cases for a four-year period.

Thirteen cases were identified. The objective of this study is to identify risk factors associated with these infections.

Method: A retrospective chart review was done on all infected patients. Preoperative data collected included: age, sex, diagnosis, co morbidity, emergency or elective procedure, and hair preparation. Intraoperative factors recorded included surgical team members, skin antiseptics, length of surgery, implants, wound classification, type of duraplasty and use of drains. Postoperative data focused on the cause of the craniotomy, time of removal of drains and the time to infection. The antimicrobial therapy prescribed was also noted.

Results: All cases were epidural abscesses. Classical features of infection were not present. In the first cases, the time between the initial surgery and infection was prolonged, (9 – 32 months); while in the most recent case the infection appeared in 11 days. Most craniotomies, 92%, were done, for tumors. Two patients, 15%, had previous neurosurgery. The operations were performed in the same room by different surgeons. Duraplasty was achieved with galea (autologous graft) in 62% of cases. Dura-Guard, composed of bovine pericardium, was used for the remaining cases. Antibiotic prophylaxis was used for all cases.

Conclusion: The exact cause of the epidural abscesses has not been revealed. Further investigation is indicated and is being implemented, including a case-control study and review of procedures related to duraplasty.

PROLONGED ENVIRONMENTAL SURVIVAL OF ENTEROCOCCUS AND NON-ENVELOPED VIRUSES COMPARED TO OTHER MICROORGANISMS

Howie R,* Coombs K, Alfa M. Medical Microbiology, University of Manitoba, Winnipeg, MB.

Background / Objectives: Despite concern that environmental contamination with microorganisms may facilitate infection transmission in healthcare, little is known regarding the length of survival of viruses compared to other organisms. The objective of this study was to determine the duration of survival for enveloped and non-enveloped viruses compared to a range of other microorganisms when dried in an organic matrix.

Methods: Organisms in this study were a representative range of microorganisms that could be associated with contamination of complex medical devices and/or healthcare environments including: *Mycobacterium chelonae*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Candida albicans*, *Reovirus* (non-enveloped) and *Sindbis virus* (enveloped). Teflon and PVC carriers were inoculated with $\sim 7 \text{ LOG}_{10}$ of each microorganism in an organic artificial test soil (ATS) and dried overnight. Survival was evaluated over 30 days by a quantitative viability assay (cfu or pfu counts).

Results: Microbial survival in the ATS was $\sim 1 \text{ LOG}_{10}$ higher compared to the test with no organic material. Non-enveloped *Reovirus* and *Enterococcus* survived 30 days; *Reovirus* with a 2 LOG_{10} reduction and *E.faecalis* with a $\sim 4 \text{ LOG}_{10}$ reduction in viable counts. *Mycobacterium chelonae* survived up to 12 days with a $\sim 6 \text{ LOG}_{10}$ reduction in organisms; and *C.albicans* survived 12 days with a $\sim 7 \text{ LOG}_{10}$ reduction. In contrast, drying had severe effects on survivability for the gram negative, *P.aeruginosa*, and for the enveloped *Sindbis virus*. Overnight drying caused a 4.5 LOG_{10} and a 7 LOG_{10} bioburden reduction for *P.aeruginosa* and *Sindbis virus* respectively. Furthermore, the duration of survival was only nine days for *P.aeruginosa* and one day for *Sindbis virus*.

Conclusion: This data indicates that non-enveloped viruses such as *Reovirus* can survive on surfaces (either medical devices or the patient-care environment) for prolonged periods similar to *Enterococcus faecalis*. Our data suggests that GI organisms such as small, round enteric viruses or VRE could have long-term environmental survival, particularly in bathroom areas. Such persistence could provide a significant reservoir for nosocomial transmission.

[Partial funding (graduate scholarship for RH) for this project has been provided by the Health Sciences Centre Foundation and the Manitoba Health Research Council.]

COMPLIANCE AND PSYCHOLOGICAL IMPACT OF THE QUARANTINE EXPERIENCE DURING SARS

Garay JR,* Reynolds DL, Deamond S, Moran K, Styra R, Devereaux S, Gold WL, McGeer A. Durham Region Health Department, Whitby, ON. University Health Network, Mt. Sinai Hospital, Toronto, ON

Background: Durham Region, east of Toronto, recorded the third highest number of SARS cases in Canada. From mid-March through June, nearly 5,000 people were placed into quarantine as a result of potential exposure to SARS. This study describes compliance behaviours and the psychological impact of the quarantine experience.

Methods: All adults aged 18+ who were placed into voluntary quarantine and followed for at least two days by the Durham Region Health Department were eligible for the study. From July through September, a standardized, structured mailed questionnaire was administered. Questions addressed understanding of the rationale for quarantine, behaviours during and after quarantine (including compliance), difficulties encountered, feelings experienced, and socioeconomic and psychological impacts. The Impact of Events Scale-Revised (IES-R) was used to assess symptoms of post-traumatic stress disorder (PTSD).

Results: Of 1,912 mailed questionnaires, 1,063 were completed (response rate 55.7%). Overall, self-reported compliance (combining all requirements of quarantine) was poor (15.8% \pm 2.3%). Compliance with requirements that would protect the community was significantly higher than those designed to protect household members (57.0% vs. 37.3%, $p < 0.001$). Feelings of boredom (62.2%), isolation (60.6%), frustration (58.5%), annoyance (54.3%), and worry (40.2%) were most commonly reported. On most measures, health care workers (HCW) experienced greater psychological distress, including greater symptoms of PTSD (mean IES-R: 12.5 vs. 7.6, $p < 0.001$). Increasing perceived difficulty with compliance, HCW status, longer quarantine duration and compliance with quarantine requirements were significant contributors to higher IES-R scores.

Conclusions: This study demonstrated a low rate of compliance with quarantine requirements and raises concerns about the effectiveness of quarantine as a public health measure for the control of infectious diseases such as SARS. Negative psychological impacts were reported by individuals placed into quarantine, especially among HCW. Improvements in compliance and reduced psychological distress may be possible by increasing understanding of the quarantine experience and providing enhanced education regarding the rationale for quarantine.

CLUSTER OF SARS IN TORONTO HEALTHCARE WORKERS DESPITE INFECTION CONTROL PRECAUTIONS: A CASE SERIES

Ofner-Agostini M,*¹ Gravel D,¹ McDonald LC,² Lem M,¹ Sarwal S¹ McGeer A,³ Green K,³ Vearncombe M,⁴ Roth V,⁵ Paton S,¹ Loeb M,⁶ Simor A.⁴ ¹Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, ²Centre for Infectious Disease Prevention and Control, Atlanta,GA; ³Mount Sinai Hospital, Toronto, ON; ⁴Sunnybrook and Women's College Health Sciences Centre, Toronto, ON; ⁵The Ottawa Hospital, Ottawa, ON; ⁶Hamilton Health Sciences Corporation, Hamilton, ON.

Objective: To review the demographics, co morbidities, symptoms, exposures, type of patient care activities for assigned SARS-patients, and infection control practices among those healthcare workers (HCW) who developed Severe Acute Respiratory Syndrome (SARS) in Toronto, Canada, after stringent infection control precautions (post-precaution) had been implemented.

Methods: A retrospective review of work logs and patient assignments, and comprehensive interviews with HCW that met the case definition for SARS in Toronto, Canada, post-precaution.

Results: Seventeen HCW were identified from six hospitals that met the case definition for SARS post-precaution. These HCW had a mean age of 39 ± 2.3 years. Two HCW could not provide an interview due to illness. Of the remaining 15, only nine of the HCW (60%) reported receiving formal infection control training. HCW use of masks, gowns, gloves, and eye wear was inconsistent. HCW reported fatigue from number and length of shifts. Seven HCW were involved in an intubation of a SARS-patient. One HCW died, the remaining 16 recovered.

Conclusion: Multiple factors were likely responsible for this cluster of SARS, including HCW performing high-risk patient care procedures, inconsistent wearing of personal protective equipment (PPE), fatigue, and lack of adequate infection control training.

PERSONAL PORTABLE ALCOHOL GEL DISPENSERS: A NOVEL APPROACH FOR IMPROVING HAND HYGIENE PRACTICES

Shoham S^{1,3}, Donegan N² and Shoham G³. ¹Section of Infectious Diseases, Washington Hospital Center, Washington, DC, ²Department of Infection Control, Washington Hospital Center, Washington, DC, ³Medonyx Inc.Toronto, ON.

Issue: Healthcare worker (HCW) hands are a major mode of transmission and spread of nosocomial infections. Proper hand hygiene is a fundamental element of infection control strategies in healthcare facilities. Ideally, hands should be decontaminated before and after contact with patients. Despite frequent and ongoing educational efforts, adherence to recommended hand cleansing practices among HCW remains poor (usually less than 50%). Adherence is associated with easy access to hand-rub solution, whereas high workload is associated with non-adherence. Compliance is particularly problematic in emergency departments and critical care units.

Project: To improve hand hygiene practices among HCW we introduced clip fastened personal portable alcohol hand rub dispensers (gelFast; provided as a gift by Medonyx Inc., Toronto, Ontario) to these settings. Dispensers were distributed to HCW at a surgical intensive care unit, neonatal intensive care unit and the emergency department of a large urban hospital. Thirty-five physicians, nurses and respiratory therapists were queried with a questionnaire about their experiences following use of the devices.

Results: All queried HCW responded to the questionnaires. Thirty one (89%) HCW found the product easy to use. Twenty five (71%) thought that use of the device made hand sanitizing easier, and 23 (66%) felt that they were likely to sanitize their hands more often when wearing this product. Overall, 74% of respondents said that they would use the product if it were distributed in their unit.

Lessons Learned: Personal portable alcohol gel dispensers are well accepted by HCW in a variety of patient care units and are expected to improve compliance with hand hygiene guidelines.

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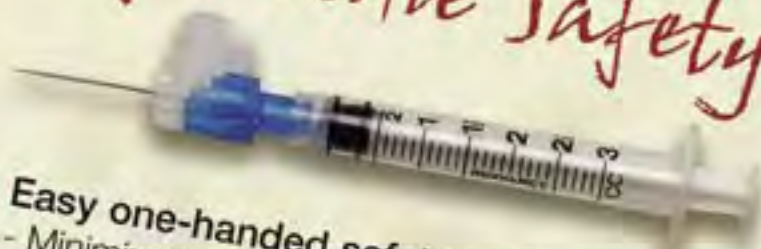
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By Dick E. Zoutman, MD, FRCPC, 1 B. Douglas Ford, MA, 2 Canadian Hospital Epidemiology Committee, and Canadian Nosocomial Infection Surveillance Program, Health Canada*
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The relationship between hospital infection surveillance and control activities and antibiotic-resistant pathogen rates

Background: Antibiotic-resistant pathogen rates are rising in Canada and the United States with significant health and economic costs. The examination of the relationship of surveillance and control activities in hospitals with rates of nosocomial methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile*-associated diarrhea (CDAD), and vancomycin-resistant *Enterococcus* (VRE) may identify strategies for controlling this growing problem.

Methods: Surveys were sent to infection control programs in hospitals that participated in an earlier survey of infection control practices in Canadian acute care hospitals.

Results: One hundred twenty of 145 (82.8%) hospitals responded to the survey. The mean MRSA rate was 2.0 (SD 2.9) per 1000 admissions, the mean CDAD rate was 3.8 (SD 4.3), and the mean VRE rate was 0.4 (SD 1.5). Multiple stepwise regression analysis found that hospitals that reported infection rates by specific risk groups ($r = 20.27$, $P < .01$) and that kept attendance records of infection control teaching activities ($r = 20.23$, $P < .01$) were associated with lower MRSA rates. Multiple stepwise regression analysis found that larger hospitals ($r = 0.25$, $P < .01$) and hospitals at which infection control committees or staff had the direct authority to close a ward or unit to further admissions because of outbreaks ($r = 0.22$, $P < .05$) were associated with higher CDAD rates. Multiple logistic regression analysis found that larger hospitals (OR, 1.6; 95% CI, 1.2-2.0; $P = .003$) and teaching

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hospitals (OR, 3.7 95% CI, 1.2-11.8; P = .02) were associated with the presence of VRE. Hospitals were less likely to have VRE when infection control staff frequently contacted physicians and nurses for reports of new infections (OR, 0.5; 95% CI, 0.3-0.7; P = .02) and there were in-service programs for updating nursing and ancillary staff on current infection control practices (OR, 0.2; 95% CI, 0.1-0.7; P = .01).

Conclusion: Surveillance and control activities were associated with MRSA and CDAD rates and the presence of VRE. Surveillance and control activities might be especially beneficial in large and teaching hospitals. (Am J Infect Control 2005;33:1-5.)

Incidence rates of methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile*-associated diarrhea (CDAD) are on the rise in Canada.^{1,2} The United States has seen an increase in the occurrence of a number of antimicrobial-resistant bacteria, including vancomycin-resistant *Enterococcus* (VRE).³ VRE is relatively uncommon in Canada, but can be reasonably expected to become an increasing problem.⁴ Patients infected with antimicrobial-resistant bacteria have significant morbidity and mortality and incur economic costs to health care facilities.⁵⁻⁷

Infection surveillance and control activities have been shown to be effective in reducing antibiotic-resistant pathogen rates in acute care hospitals.⁸ We recently assessed the infection surveillance and control activities in Canadian acute care hospitals and found that only two thirds of effective surveillance activities and 60% of effective control activities were being performed.⁹

Table 1. Surveillance and control activities tested by regression for association with nosocomial MRSA, CDAD, and VRE

Surveillance activities

- Specific statistics collected for infections by wards, units, or service
- Specific statistics collected for infections involving particular anatomical sites or medical devices
- Surgical site infection rates calculated and reported to surgeons
- Surgical site infection rates calculated for clean procedures
- Frequency that case finding methods used to detect new cases of nosocomial infections

Hospitalized patients are examined and charts reviewed by infection control staff

Infection control staff contact physicians or nurses for reports of new infections

Infection control report forms filled out by ward staff and sent to infection control staff

Discharged patients or their physicians contacted
Charts of discharged patients reviewed by infection control staff

- Computers used for tabulation of infection data and statistical software used to analyze data collected

Infection control activities

- Program for teaching nursing and ancillary staff current infection control practices
- Program for teaching medical staff current infection control practices
- Kept attendance records of teaching activities
- Monitored effectiveness of teaching activities
- Communicated hospital's infection data to patient care staff
- Direct authority to close wards or units to further admissions
- Policy for isolation precautions for patients with *Clostridium difficile*-associated diarrhea
- Policy for indications, drug choices, timing and duration of perioperative antibiotics
- Complete current Health Canada Guidelines on preventing nosocomial infections

The present study examined the relationship of surveillance and control activities in Canadian acute care hospitals with nosocomial MRSA, CDAD, and VRE.

METHODS

Survey

A one-page survey was sent by fax or e-mail to the infection control programs of all 145 hospitals that had participated in our earlier survey of infection control programs in Canadian acute care hospitals for which we have extensive infection surveillance and control activity data.⁹ Non-responders were sent a second and third survey, and surveys were returned by fax or e-mail. The infection control programs were asked to provide the number of any and all new nosocomial cases (colonized and infected) of MRSA, CDAD, and VRE for 1999. Information from the earlier survey provided admissions data that allowed for the calculation of infection rates.⁹ Hospital size, surgery rates, surveillance and control index scores, and individual surveillance and control activity values were also derived from the previous survey.⁹ The surveillance index was composed of 23 items related to the collection and dissemination of nosocomial infection and antibiotic resistance data, and the control index consisted of 44 items related to activities directed toward the reduction of nosocomial infections and patient colonization by resistant pathogens.⁹

Statistical analysis

Simple regression was used to test the association of hospital

size, hospital teaching status, surveillance and control index scores, and individual surveillance and control activities with MRSA and CDAD rates. The individual infection surveillance and control activity items chosen had sufficient variation in responses to test the association (Table 1). Variables found to be significant at the $<.05$ level were tested by multiple stepwise regression analysis with forward and backward selection for association with MRSA and CDAD rates. Separate multivariate models were developed for MRSA and CDAD. The forward selection procedure adds variables if the probability of F to enter was $\leq .05$, and the backward elimination procedure subtracts variables if F to remove was $\geq .05$. Because only one third of hospitals reported having any VRE cases in 1999, this dependent variable was dichotomized as hospitals with and without VRE.

Univariate logistic regression analysis was used to test the association of hospital size, hospital teaching status, surveillance and control index scores, and individual surveillance and control activities with the presence of VRE. Variables found to have P values $<.05$ were tested by multiple logistic regression for inclusion in the multivariate model by stepwise logistic regression using forward selection if the significance level of the logistic likelihood ratio test was $<.05$, with

backward elimination if significance was $>.05$.¹⁰ All statistical analyses were performed using the StatView 5 statistical package (SAS Institute, Cary, NC).

RESULTS

One hundred twenty of 145 (82.8%) hospitals responded to the survey and contributed data: 117 hospitals reported MRSA data, 81 CDAD, and 116 VRE. Eleven hospitals reported not being able to provide resistant pathogen data because it was not collected in 1999 or changes in computer systems prevented access. The mean MRSA rate (colonized and infected) was 2.0 (SD 2.9) per 1000 admissions, and the median was 0.8. Twenty-one hospitals reported having no MRSA cases. The mean CDAD rate (colonized and infected) was 3.8 (SD 4.3) per 1000 admissions, and the median was 2.3. Only three hospitals reported having no CDAD cases. The mean VRE rate (colonized and infected) was 0.4 (SD 1.5) per 1000 admissions, and the median was 0.0. Seventy-six hospitals reported no VRE cases, and 40 reported at least one case.

Univariate regression analysis

The mean number of acute care beds per hospital was 291 (SD = 200), and the median was 239. All hospitals had surgical services; the mean number of overnight and day surgeries per 250 beds per year was 11,148 (SD = 5371), and the median was 10,181. Larger hospitals were associated with higher rates of MRSA ($r = 0.22$, $P = .02$) and CDAD ($r = 0.31$, $P = .005$) and the presence of any VRE (OR, 1.8; 95% CI, 1.6-2.0, $P < .0001$). Teaching hospitals composed 24.2% (29 of 120) of the sample. Teaching hospitals were associated with higher rates of MRSA ($r = 0.20$, $P = .03$) and the presence of VRE (OR, 6.0; 95% CI, 2.4-14.8; $P = .0001$).

The surveillance index had a mean of 63 (SD = 16), and

the median score was 67 out of a maximum of 100. The surveillance index score was not associated with nosocomial MRSA and CDAD rates or VRE in hospitals.

The control index had a mean of 61 (SD = 14), and the median score was 62 out of 100. The control index score was not associated with nosocomial MRSA and CDAD rates or VRE in hospitals.

Simple regression analysis identified three individual surveillance and control variables in addition to hospital size and teaching status to be associated with MRSA rates. Conducting surveillance and reporting on infection rates by specific risk groups based on anatomical sites or medical devices (eg, ventilator-associated pneumonia) ($r = 20.24$, $P = .01$), calculating surgical site infection rates for clean procedures ($r = 20.19$, $P = .05$), and keeping attendance records when teaching infection control techniques and procedures ($r = 20.19$, $P = .04$) were associated with lower MRSA rates.

Simple regression analysis identified three individual surveillance and control variables in addition to hospital size to be associated with CDAD rates. Hospitals that reported infection rates by specific risk groups ($r = 20.23$, $P = .04$) and that calculated surgical site infection rates and reported them to surgeons ($r = 20.23$, $P = .04$) had lower CDAD rates. When infection control committees or staff had the direct authority to close a ward or unit to further admissions because of an infection control outbreak ($r = 0.29$, $P = .009$), this was associated with higher CDAD rates.

Univariate logistic regression analysis identified four individual surveillance and control variables in addition to hospital size and teaching status to be associated with the presence of VRE. VRE is less likely to be present when infection control staff frequently contact physicians or nurses for reports of new infections (OR, 0.6; 95% CI, 0.5-0.8; $P = .0009$) and when infection control report forms are frequently completed by ward staff and sent to infection control (OR, 0.3; 95% CI, 0.1-

0.8; $P = .02$). Hospitals that had programs for teaching nursing and ancillary staff current infection control practices (OR, 0.3; 95% CI, 0.1-0.9; $P = .03$) and that kept attendance records of infection control teaching activities were less likely to have VRE (OR, 0.3; 95% CI, 0.1-0.7; $P = .008$).

Multivariate regression analysis

Multiple stepwise regression analysis found two factors to be independently associated with MRSA rates in hospitals. Hospitals that reported infection rates by specific risk groups ($r = 20.27$, $P < .01$) and that kept attendance records of infection control teaching activities ($r = 20.23$, $P < .01$) reported lower rates of MRSA.

Multiple stepwise regression analysis found two factors to be independently associated with CDAD rates in hospitals. Larger hospitals were associated with higher CDAD rates ($r = 0.25$, $P < .01$). Higher CDAD rates were reported by hospitals at which infection control committees or staff had the direct authority to close a ward or unit to further admissions because of outbreaks ($r = 0.22$, $P < .05$).

Multiple logistic regression analysis found four factors to

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be independently associated with at least one case of VRE in hospitals. Larger hospitals (OR, = 1.6; 95% CI, 1.2-2.0; $P = .003$) and teaching hospitals (OR, 3.7; 95% CI, 1.2-11.8; $P = .02$) were associated with the presence of VRE. Hospitals were less likely to have VRE when infection control staff contacted physicians and nurses for reports of new infections more frequently (OR, 0.5; 95% CI, 0.3-0.7; $P = .02$). Hospitals that had in-service programs for updating nursing and ancillary staff on current infection control practices were also less likely to have VRE (OR, 0.2; 95% CI, 0.1-0.7; $P = .01$).

DISCUSSION

Overall surveillance and control index scores were not associated with nosocomial MRSA and CDAD rates and the presence of nosocomial VRE in Canadian hospitals; however, hospital characteristics and targeted surveillance and control activities had impacts on MRSA and CDAD rates and the presence of VRE. The response rate to our survey question permits generalization to acute care hospitals in Canada with more than 80 beds.

Larger hospitals and teaching hospitals were associated with higher rates of nosocomial resistant pathogens, and this has also been found in other studies.³ Case-mix factors such as antibiotic exposure and length of stay are associated with higher rates of nosocomial resistant pathogens in larger hospitals; however, these data were not collected in our study.¹¹

The Society for Healthcare Epidemiology of America guidelines for preventing the spread of resistant pathogens recommends active surveillance that is frequent and focused for patients at risk for carriage and colonization by resistant pathogens.⁸ The multivariate analysis found that hospitals reporting on infection rates by specific risk groups based on anatomical sites or medical devices reported lower rates of MRSA and that, when infection control staff contacted physicians and nurses more frequently for reports of new infections, hospitals were less likely to have VRE.

The protective effect of surveillance likely exists because of control measures taken, such as barrier precautions, isolation, and hand hygiene, to prevent further spread of identified resistant pathogens.⁸

An expert panel recommends the education and training of health care workers by knowledgeable infection control staff as a necessary component of hospital infection prevention and control programs.¹² The multivariate analysis found that lower rates of MRSA were reported when attendance records were kept of infection prevention and control teaching activities and that hospitals with programs for teaching and updating nursing and ancillary staff on current infection control practices were less likely to have VRE.

Higher rates of CDAD were associ-

ated with infection control committees or staff having the direct authority to close a ward or unit to further admissions because of an infection control outbreak. It is probable that this control policy was more likely a reaction to higher CDAD rates than a causal factor.

The MRSA and VRE rates reported by hospitals in our study are considerably lower than those reported in the United States.³ The relatively low rate of resistant pathogens in Canadian hospitals limits the ability to identify relationships between the various surveillance and control activities and MRSA, CDAD, and VRE rates.

Our results suggest that further investments in infection surveillance and control would help control the growing problem of resistant pathogens in hospitals.

Increasing the intensity of infection surveillance and control programs in larger and teaching hospitals would have the most effect on MRSA, CDAD, and VRE rates.

The authors thank the survey respondents for completing the survey and CHICA Canada and its chapters for their inputs. ●

References

1. Simor AE, Ofner-Agostini M, Bryce E, Green K, McGeer A, Mulvey M, et al. The evolution of methicillin-resistant *Staphylococcus aureus* in Canadian hospitals: 5 years of national surveillance. *CMAJ* 2001;165: 21-6.
2. Pepin J, Valiquette L, Alany M, Villemure P, Pelletier A, Forget K, et al. *Clostridium difficile*-associated diarrhea in a region of Quebec from 1991 to 2003: a changing pattern of disease severity. *CMAJ* 2004;171: 466-72.
3. Diekema DJ, BootsMiller BJ, Vaughn TE, Woolson RF, Yankey JW, Ernst EJ, et al. Antimicrobial resistance trends and outbreak frequency in United States hospitals. *Clin Infect Dis* 2004; 38:78-85.

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4. Zhanel GG, Laing NM, Nichol KA, Palatnick LP, Noredin A, Hisanga T, et al. Antibiotic activity against urinary tract infection (UTI) isolates of vancomycin-resistant *enterococci* (VRE): results from the 2002 North American Vancomycin Resistant Enterococci Susceptibility Study (NAVRESS). *J Antimicrob Chemother* 2003;52: 382-8.
5. Jarvis WR. Selected aspects of the socioeconomic impact of nosocomial infections: morbidity, mortality, cost, and prevention. *Infect Control Hosp Epidemiol* 1996;17:552-7.
6. Canadian Committee in Antibiotic Resistance. Antimicrobial resistance: a deadly burden no country can afford to ignore. "Can Commun Dis Rep" 2003;29:157-64.
7. Miller MA, Hyland M, Ofner-Agostini M, Gourdeau M, Ishak M. Morbidity, mortality, and healthcare burden of nosocomial *Clostridium difficile*-associated diarrhea in Canadian hospitals. *Infect Control Hosp Epidemiol* 2002;23:137-40.
8. Muto CA, Jernigan JA, Ostrowsky BE, Richet HM, Jarvis WR, Boyce JM, et al. SHEA guideline for preventing nosocomial transmission of multidrug-resistant strains of *Staphylococcus aureus* and enterococcus. *Infect Control Hosp Epidemiol* 2003;24:362-86.
9. Zoutman DE, Ford BD, Bryce E, Gourdeau M, Hebert G, Henderson E, et al. The state of infection surveillance and control in Canadian acute care hospitals. *Am J Infect Control* 2003;31:266-73.
10. Hosmer DW, Lemeshow S. Applied logistic regression. Toronto: Wiley; 1989.
11. Sax H, Pittet D. Interhospital differences in nosocomial infection rates: importance of case-mix adjustment. *Arch Intern Med* 2002;162: 2437-42.
12. Scheckler WE, Brimhall D, Buck AS, Farr BM, Friedman C, Garibaldi RA, et al. Requirements for infrastructure and essential activities of infection control and epidemiology in hospitals: a consensus panel report. Society for Healthcare Epidemiology of America. *Am J Infect Control* 1998;26:47-60.

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Effective January 1, 2005

Karen Hope, President Elect

Karen Hope, BSc, MSc has been part of the Calgary Health Region infection control team since 1990. After acquiring a Bachelors degree in Cellular and Microbial Biology in 1984, she worked in microbiology research for two years. In order to move beyond the bench she applied and was accepted into the Community Health Sciences graduate program at the University of Calgary. She was granted her Masters degree in 1990, following which she began her career at the Calgary General Hospital as part of the infection control team. Since then, and throughout the process of regionalization, she has worked at the Peter Lougheed Hospital and since 1998, the Foothills Medical Centre. Karen has served as president of the CHICA-Canada Southern Alberta chapter, and most recently acted as CHICA-Canada conference chair for the 2004 Conjoint Conference with AMMI.

Philosophy: During my time in infection control, I have seen the profile of the profession evolve through the expertise and extraordinary efforts of the CHICA-Canada board and membership. While widespread recognition of our body of expertise is partially dependent on the vagaries of microbiological phenomenon, respect can only be sustained by demonstrating strong leadership and providing direction based on sound principles and scientific evidence. As the role of the infection control professional has rapidly expanded, CHICA-Canada has been instrumental in ensuring that our organization is responsive to the changing needs of the health care system, addressing increased patient acuity, the movement of service to community settings, the explosive surge in new and complex technologies and the emergence of stealthy new pathogens. As we strive to meet the demands of relentless external forces, CHICA-Canada has also helped the membership face challenges within. The timely development of innovative education initiatives will ensure that we continue to supply a cadre of competent ICPs to resource newly created positions and replace a maturing workforce.

As president elect, I am pleased to be part of a team that so aptly represents its membership across the country. I hope to assist CHICA-Canada in meeting its upcoming goals, by further championing our profile as a leader in infection control and continuing to foster relationships with other like-minded organizations, agencies and industry; while ensuring that the organization continues to strengthen internally and remain responsive to its members. Although I have now been in the field for 14 years, this career continues to challenge and inspire me, and I hope that I bring some of that energy to my new position.

Dr. Elizabeth Ann Henderson, Director of Education

Elizabeth (Betty Ann) Henderson is Epidemiologist for Infection Prevention and Control for the Calgary Health Region and Associate Professor in the Department of Community Health Sciences at the University of Calgary. She is also the Program Co-ordinator for Graduate Program in Hospital Epidemiology in the Department of Community Health Sciences at the Uni-

versity of Calgary. Betty Ann obtained her PhD in Infectious Diseases and Hospital Epidemiology from the Department of Community Health Sciences, University of Calgary. She holds a M.Sc. Medical Sciences (Epidemiology and Health Care Research) from the University of Calgary and a B.Sc. in Microbiology from the University of British Columbia. Betty Ann has been a member of CHICA-Canada and of the Southern Alberta Chapter for 15 years.

Philosophy: Three fundamental principles form the backbone of my philosophy about education. These are: that the need for learning is life-long, that geographic location should not be a barrier to learning and that life experience is a wonderful teacher and we need to use and build on that experience and expertise of CHICA-Canada members. As professionals in infection prevention and control in Canada, we need to overcome the uniquely Canadian challenges of delivering quality health care in remote communities by integrating technology with multi-disciplinary teams of experts. The goal is to improve access to infection control knowledge and expertise. Communities of Practices for infection control professionals with mentored education and consultation among urban, rural and remote communities would be responsive to IC problems, would facilitate exploring innovative approaches to problem-solving and would promote program development using evidence-based practices and scientific principles.

Pearl Orenstein, Secretary/ Membership Director

Pearl Orenstein is Infection Prevention and Control Coordinator at Sir Mortimer G. Davis – Jewish General Hospital in Montreal. She graduated as an RN from the Jewish General School of Nursing, and has attained a BA in Community Nursing, a Diploma in Institutional Administration, and Certification in Infection Control. Pearl is a member of the Montreal P.I. Chapter of CHICA-Canada. She is a Board and Committee member of several organizations, including being Past President and Board member of the Jewish Support Services for Seniors; and has been a participant, presenter and moderator at several CHICA-Canada conferences. This is Pearl's second position on the Board of CHICA-Canada. Prior to restructuring of the Board, she held the position of Nurse Representative from 1993 to 1995.

Philosophy: The healthcare system is in a state of constant evolution, encompassing a magnitude of changes in technology, science and global resources. Now, more than ever, the ICP must be an advocate for the health and safety of our patients. The pressure to provide care in the most cost-efficient manner is a challenge to us all. We need to ensure that what we do is efficient, effective and is in the best interest of the individual patient. We must learn to balance the pressures from both within and outside our communities to ensure the highest quality of care for all.

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IFIC seeks help for ICPs in tsunami-affected areas

Dear Colleagues:

It was a pleasure to speak with so many of you recently and hear your support for those in the tsunami-affected areas. Some of you have already pledged funds both for the immediate relief effort and the long term goals that IFIC has set out for itself in providing communication, education and support for infection control persons in the devastated areas. The IFIC board is extremely grateful for this support.

We would like to outline some of our thoughts on how we should proceed. There is at the moment a large outpouring of grief, compassion and empathy for those affected by this tragedy. However, there are also long term implications: implications such as rebuilding and restoration of infrastructure including education. This is where we believe we should be drawing on the real strengths and abilities of IFIC and our member societies such as CHICA-Canada, APIC, ICNA and other infection control organizations. The rebuilding process will take a long time and the after effects will be felt for many years. Therefore, this is how we believe we should direct our efforts.

One of the aims of IFIC is to raise money for the IFIC Scholarship Fund in order to bring persons from the disaster areas to IFIC's annual conference which will be held this year in Istanbul, Turkey in October. IFIC has created this fund, which is separate and discrete from all other funds. It is not to be used for any other purpose. Last year in Porec, Croatia, IFIC was able to fully or partially fund 11 people from areas with scant resources to attend the conference and the year before in Malta to bring eight people from such areas. Further, in donating to causes such as this or other legitimate charities, we can be assured that the funds will not be diverted for the benefit of unscrupulous individuals.

We ask you to please share this urgent plea with your chapter members. Funds are acceptable in the form of a cheque, money order or bank draft. Please also include your e-mail address. Contributions can be made by societies, their chapters, individuals and corporations and may be sent to the Honorary Treasurer at this address:

Dr. Nizam Damani
Clinical Director & Consultant Clinical Microbiologist,
Craigavon Area Hospital,
68 Lurgan Road, Portadown,
Craigavon, Co. Armagh
N.Ireland, U.K. BT63 5QQ

Thank you again to those of you who have already donated so generously and spontaneously. It is so appreciated.

We appreciate your consideration of this letter.

Yours sincerely,
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An outbreak of viral gastroenteritis in a mental health facility: *You're not in acute care anymore, Toto!*

By Jim Gauthier

After spending four years working as an Infection Control Practitioner in acute care, I made the move to the non-acute care sector. Providence Continuing Care Centre (PCCC) is composed of four sites: three in Kingston and one in Brockville. I am responsible for Infection Control in the combined Complex Continuing Care, Geriatric and Rehabilitation hospital, and also the Mental Health hospital. My first outbreak in the Mental Health setting occurred in mid-January, 2004, and I discovered there were a few differences in outbreak management, compared to an acute care setting.

Outbreaks occur in healthcare facilities despite our best education and preventative measures, especially through the winter months. Influenza and Norovirus can take their toll in the acute care setting, but in facilities dedicated to longer-term care, the results can have very serious outcomes. Many interventions are used to limit the spread of the pathogen in these settings: limiting transfers and visitors, isolation of symptomatic patients and cohorting staff all work to shorten the outbreak period.

PCCC - Mental Health Services site is housed in a 1950s era building. The wards are constructed in a coed dormitory style with single, double, quad and six-bed rooms. None of the client rooms have sinks or toilets - there are common-use toilets and sinks (male and female), and communal bathing areas, with alternate days being available to the male and female clients on each floor. Staff have separate toileting areas, with sinks, behind keyed doors. Meals are generally taken by the clients in the sunroom at the end of each ward. Entry to six of the nine wards in

the facility is with a ward key. The clients on these secure wards may not be allowed off the floor at all, or only with supervision, depending on the stage of their illness.

Notification of a problem greeted me on a Monday morning. Clients had a variety of symptoms - vomiting, diarrhea, nausea and low-grade fever. The first cases had been detected the previous Wednesday, and by Monday 10 to 12 of the 24 clients had symptoms. Transfers to and from the floor were stopped, as were passes off the floor and the floating of casual staff was also curtailed. An outbreak management team meeting was convened, and other actions agreed upon included an extra housekeeper to clean high touch areas, especially the washrooms and eating areas.

Issues that were well removed from acute care quickly became evident. There was no way to isolate symptomatic clients, who were used to

being ambulatory. The majority of our clients are very independent with their day-to-day activities and do not need assistance with toileting, bathing, etc. The attention to 'ins and outs' seen in acute care is generally not necessary in Mental Health. Most of the illness for the first few clients was not witnessed, but was self-reported. Thus, detection of mildly ill clients was difficult.

The outbreak team did make some recommendations. Clients would have their hands sanitized before entering the sunroom for meals, if some refused to use the alcohol-based product, they could wash their hands the old-fashioned way at a sink. This increased the amount of time required to have clients ready for meals. I did not suggest to staff they wear masks, which was effective at stopping transmission to staff in a previous outbreak of Norovirus (in the acute care hospital), as I was not sure how the clients would react. I was glad to find that it was not

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an issue for the clients when the staff on the floor began to wear masks for all client contacts.

Clients quickly recognized me on the floor as being the one responsible for judging when the outbreak was over. I would discuss the outbreak with staff, and then hold an impromptu meeting with any assembled clients before leaving the floor. When the outbreak spread to the adjacent open ward, I had to designate that floor as a temporary secure ward and limit movement of 29 clients, who had

either always had the freedom to come and go, or had progressed to the open ward from a secure ward. They, too, wanted their own separate meetings, where I would hear about why they should be allowed to leave the floor. My explanation of the risk of transmission, incubation periods and the need to keep the outbreak from spreading in the facility allowed the clients to understand the need for movement restrictions. Support from the Leisure/Life Skills instructors - with big screen TV, numerous videos and popcorn

- helped to pass the time more quickly for the clients.

When I did 'open' the first outbreak ward, I received positive feedback—not only from the staff, but also from the clients who recognized the work done by everyone on the floor to limit the spread of our still un-named pathogen. Very seldom did one get input or feedback from the patients on an isolation ward when I was in the acute care setting!

The clients in mental health are working through illnesses that many of us in Infection Control do not have a great understanding and many Infection Control Practitioners have not worked in a facility that has a mental health ward. A change in routine can be very upsetting and difficult for both the client and staff member. My first outbreak, which saw a 50% attack rate on the one ward, was handled very well by both clients and staff.

A sense of humour and understanding made the process pass quickly. ●

Jim Gauthier is an Infection Control Practitioner for Providence Continuing Care Centre in Kingston, ON. He has organized an interest group for Infection Control Practitioners who provide services to Mental Health Facilities across Canada. He can be reached at: gauthij2@pccchealth.org.

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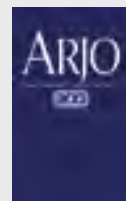


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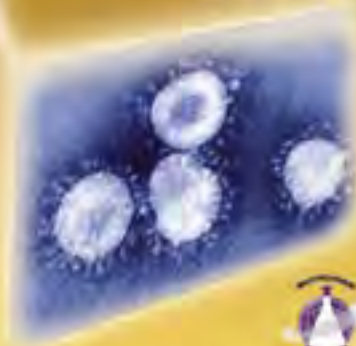
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