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INSIDE:

Problems with process
monitors for extended
steam sterilization cycles

An infection control
perspective on patient
advocacy

Scabies outbreak:
A case study

The Canadian Journal of Infection Control

Revue canadienne de prévention des infections

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User Alert: Problems with process monitors for extended steam sterilization cycles _____	122
An infection control perspective on patient advocacy _____	129
Scabies outbreak: A case study _____	133
Editor's Message _____	116
President's Message _____	118
Message de la Présidente _____	119
Association News _____	142
CA-MRSA Guidelines _____	144
Public reporting and inter-hospital comparison of health care-acquired infections _____	148
National Infection Control Week _____	149
CHICA-Canada Annual Conference _____	152
Reach Our Advertisers _____	156

VISION

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

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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, HBScN, CIC
Clinical Editor,
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Kudos to CHICA-Canada authors!

On behalf of the *Canadian Journal of Infection Control* I would like to acknowledge and congratulate the numerous authors who have submitted articles for publication in our journal over the past few years.

Over the past year we have seen a dramatic increase in the number of scientific articles as well as case reports and resource documents from our members. There is now a queue of articles awaiting publication in future issues of *CJIC*! This is a credit to the dedication and support of the members of CHICA-Canada. We are also receiving articles from international authors.

I would also like to acknowledge our editorial board members who have kept up with the flow of articles for review and provided timely and helpful comments to our authors to assist in readying the articles for publication.

At the *CJIC* meeting that was held in London, Ontario at the 2006 National Education Conference, participants acknowledged and supported a move towards increasing the scientific content in *CJIC* and moving some of the newsletter items to another format.

In meeting with our publisher, we decided that we would increase the number of pages available for scientific content by moving some of the newsletter items such as chapter news to our website. The website is updated regularly and will allow members more timely and ready access to news items from chapters, whereas *CJIC* is published four times per year.

We look forward to many more excellent submissions for publication in *CJIC* in the future. These articles serve to increase our knowledge in infection prevention and control and highlight the works of our members and others in the field. ●

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Beyond borders

Over the last few months I have had the great privilege of representing CHICA-Canada at both the APIC and IFIC annual conferences. While attending allowed me to network with international colleagues and absorb stimulating new ideas, it also reinforced my own belief that when it comes to infection prevention and control, there are few borders.

The 33rd APIC Annual Conference was held June 11-15 in sunny Tampa, Florida and hosted over 3,000 enthusiastic delegates from across the globe. The conference offered a whirlwind of networking opportunities and presenta-

tions, spanning topics from mandatory influenza vaccination of HCWs to every ICP's proverbial favourite, pet therapy. Kathy Arias, the 2006 APIC President, continued a tradition initiated in 2005, ably presiding over the President's Breakfast, a forum for presidents and representatives from several organizations including CHICA-Canada, ICNA, IFIC, and CBIC to discuss issues of mutual importance.

One of the main topics discussed was the increasing interest in some form of international certification. To explore the feasibility of the concept, the group recommended going ahead

with a Global Infection Prevention Practice Analysis to determine how practice differs throughout the world and whether the development of a standard international certification process is feasible. An initial survey developed by Linda Laxson, CBIC President, following the meeting, was piloted at the IFIC Congress to ensure wording and presentation made sense to a wide international audience. The survey will be further refined and taken to future international conferences for testing.

A second initiative, which was endorsed by the APIC Practice Advisory Committee, was a review of the 1999 *APIC/CHICA-Canada infection control and epidemiology: Professional and practice standards*. A task force will be reestablished, including representation from CHICA-Canada to review a document that has provided both our associations with a framework for defining professional competency. It is clear that these collaborative meetings are highly productive and it was agreed that a similar forum for discussion should be included in future CHICA conferences as well.

At the Spier Estate located in the heart of wine country in South Africa, the 7th IFIC Congress was held from July 3-5. Over 320 delegates from 42 countries attended and benefited from a vibrant scientific program chaired by Professor Shaheen Mehtar. The theme of the congress was "First Do

continued on page 121

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Karen Hope, BSc, MSc

Au cours des derniers mois, j'ai eu le privilège de représenter CHICA-Canada aux congrès annuel de l'APIC et de l'IFIC. Ma présence m'a permis de tisser des liens avec des collègues de l'étranger et de recueillir de nouvelles idées stimulantes, mais cela a également renforcé ma conviction selon laquelle lorsqu'il est question de prévention des infections et de lutte, il y a peu de frontières.

Le 33^e congrès annuel de l'APIC a eu lieu du 11 au 15 juin sous le soleil de Tampa, en Floride, et il a accueilli plus de 3 000 participants enthousiastes venus de toute la planète. Le congrès a offert une multitude d'occasions de réseautage et les présentations ont porté sur des sujets aussi variés que la vaccination antigrippale obligatoire des travailleurs de la santé et la zoothérapie, sujet fétiche de tout professionnel de la prévention et de la lutte contre les infections. Kathy Arias, présidente de l'APIC en 2006, a poursuivi la tradition instaurée en 2005; de main de maître, elle a présidé le petit déjeuner du président, activité à laquelle les présidents et représentants de plusieurs organismes, notamment CHICA-Canada, l'ICNA, l'IFIC et CBIC, échangent sur des enjeux importants et d'intérêt mutuel.

L'un des principaux sujets abordés a été l'intérêt accru à l'égard d'une certaine forme d'accréditation internationale. Afin d'explorer la faisabilité d'un tel projet, le groupe a recom-

mandé de procéder à une analyse de la pratique de la prévention des infections à l'échelle mondiale pour déterminer comment la pratique varie selon les diverses parties du monde et si la définition d'un processus d'accréditation internationale standard est réalisable. Une enquête exploratoire préparée à la suite de la réunion par Linda Laxson, présidente de CBIC, a été l'objet d'un essai pilote à l'occasion du congrès de l'IFIC; il s'agissait de vérifier si la formulation et la présentation convenaient à des destinataires de pays très divers. L'enquête sera ajustée encore davantage et mise à l'essai à de futurs congrès internationaux.

Une deuxième initiative, qui a reçu l'aval du comité consultatif sur la pratique de l'APIC, portait sur l'analyse des normes professionnelles et normes de pratique définies dans le document de 1999 intitulé *APIC/CHICA-Canada infection control and epidemiology: Professional and practice standards*. Un groupe de travail sera recréé, comprenant des représentants de CHICA-Canada, afin de revoir ce document qui a fourni aux deux associations un cadre de travail pour définir les compétences professionnelles. Il est clair que ces réunions de collaboration sont très productives et il a été convenu que de telles discussions devraient également

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être inscrites dans les futurs congrès de CHICA.

Au domaine Spier, situé au cœur des régions vinicoles de l'Afrique du Sud, le 7^e congrès de l'IFIC s'est déroulé du 3 au 5 juillet. Plus de 320 participants venus de 42 pays se sont enrichis grâce à l'excellent programme scientifique, sous la présidence de la professeure Shaheen Mehtar. Le thème du congrès était « Avant tout, ne pas nuire » et puisqu'un grand nombre de participants provenaient de pays africains, il était opportun que de nombreuses conférences portent sur le VIH et le sida, la sécurité relative aux objets pointus et les pratiques d'injection. En outre, il y a eu plusieurs présentations stimulant la réflexion sur des sujets allant du rôle du cuivre dans la réduction de la biocontamination des surfaces aux défis que pose la lutte contre les infections en présence de personnes déplacées à la suite de catastrophes naturelles de grande envergure.

Comme dans tout congrès, les séances que je trouve les plus utiles sont celles qui sont préparées par des professionnels de la prévention et

de la lutte contre les infections, et le congrès de l'IFIC n'a pas fait exception à cette règle. J'ai été renversée par l'enthousiasme dont ont fait preuve les délégués provenant de pays pauvres en ressources aux prises avec des défis apparemment insurmontables lorsqu'ils présentaient leurs solutions originales aux dilemmes liés à la lutte contre les infections. Une fois de plus, cela me rappelle que même s'il existe des différences dans les normes culturelles, l'accès aux ressources et les possibilités, l'essentiel de la prévention des infections se ramène au principe d'agir pour faire changer les comportements, défi qui est le même dans le monde entier.

Puisque j'étais parmi les deux seuls Canadiens présents, c'est avec fierté que je me suis levée pour CHICA-Canada lorsqu'on a fait l'appel des sociétés membres. Je crois que nous pouvons être assurés que notre appui indéfectible à l'IFIC est profitable aux deux organismes.

Pour terminer, j'aimerais de nouveau vous parler du congrès CHICA-Canada 2007, qui aura lieu à Edmonton en juin prochain. À l'instar du thème choisi,

« Changer, Évoluer, Améliorer », le modèle de planification du congrès a lui aussi changé; il n'est plus dirigé par la section locale, mais plutôt par un comité national responsable du programme scientifique. À cause des difficultés imprévues au moment des premières négociations en vue de tenir un congrès conjoint et des retards qui en ont découlé, il a été décidé qu'il n'était pas raisonnable de demander à la section locale d'agir dans des délais aussi serrés.

Toutefois, la nécessité est mère de l'invention, dit-on, et même si nous avons été précipités par des circonstances moins qu'optimales, cette situation a permis de mettre à l'essai un modèle de planification du congrès différent, qui reflète la structure et la fonction actuelles d'autres organismes tels qu'AMMI Canada et l'APIC. J'aimerais particulièrement remercier la section nord-albertaine de CHICA, qui s'est montrée coopérative devant les changements et a aimablement offert son aide. Les professionnels de la prévention et de la lutte contre les infections ont une belle capacité d'adaptation! ●

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PRESIDENT'S MESSAGE

continued from page 118

No Harm", and as a large number of participants were from African countries, it was fitting that many lectures addressed the problem of HIV/AIDS, sharps safety and injection practices. In addition, there were many thought-provoking presentations dealing with topics ranging from the role of copper in reducing bioburden on surfaces to infection control challenges in geographically displaced persons following large-scale natural disasters.

As with any conference, the sessions I find most valuable are those prepared and presented by the ICPs themselves, and the IFIC congress was no exception. I was overwhelmed by the enthusiasm that delegates from resource-poor countries with seemingly insurmountable challenges demonstrated when presenting their innovative solutions to

infection control dilemmas. Once again I was reminded that while there may be differences in cultural norms, access to resources, and opportunity, the crux of infection prevention comes down to influencing human behaviour change, a challenge that is the same worldwide.

As one of only two Canadians in attendance, it was a proud moment to stand up for CHICA-Canada as the roll call of member societies was announced. I think we can be assured that our continued support of IFIC is mutually valuable to both organizations.

In closing, I would like to turn again to the upcoming 2007 CHICA-Canada conference, which will be held in Edmonton next June. Similar to the chosen theme, "Changing, Evolving, Improving", the conference planning model has also changed from one led by the local chapter to that of a

national scientific program committee. Due to unforeseen difficulties with the original negotiations for a conjoint conference and subsequent delay, it was deemed unfair to ask the local chapter to respond under such short timelines.

Necessity can lead to invention, however, and while precipitated by less than optimal circumstances, it has provided the opportunity for a different conference planning model to be tested, similar to the current structure and function of other organizations such as AMMI Canada and APIC. I want especially to acknowledge the CHICA Northern Alberta chapter, who have been supportive in the face of change, and have graciously volunteered to assist in any way they are able. Infection prevention and control professionals are nothing if not adaptable! ●



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User Alert

Problems with process monitors for extended steam sterilization cycles

ABSTRACT

Steam sterilization is the backbone of medical device reprocessing in healthcare facilities. Steam sterilization cycle parameters have been validated by the manufacturer to provide appropriate sterility assurance for medical device sterilization. There are only a small number of validated time and temperature settings for these cycles and these are rarely changed. Recently there has been a trend towards medical device manufacturers recommending prolonged steam sterilization cycles for medical devices that are beyond the routine cycle parameters available to healthcare facilities. In some instances the facility ignores these recommendations and processes the medical devices in their routine steam sterilization cycles. In other instances the facility adjusts their steam sterilizer to match the device manufacturer's recommendations, but they use the chemical indicators and biological indicator challenge packs that are used for the routine steam sterilization cycles. The objective of this manuscript is to demonstrate that if the device manufacturer's recommended cycles are not followed there may be inadequate steam penetration. Such failures indicate that the sterility assurance level has not been attained for devices processed in the load. Furthermore, the manuscript outlines actions that users can take in the absence of appropriate biological process challenge devices for extended steam sterilization cycles.

INTRODUCTION

Some manufacturers of medical devices are providing instructions for new medical devices that require steam sterilization cycle times that are outside the currently utilized healthcare steam sterilization cycles. This is being done for two basic reasons:

- 1) The device was manufactured in a European country where there are concerns regarding inactivation of variant Creutzfeld-Jakob disease (vCJD) which is a prion. Many of the medical device manufacturers are recommending cycles in pre-vac steam sterilization at 134°C for 18 minutes. This reflects the current World Health Organization (WHO) recommendations for steam sterilization that is most effective for inactivation of prion agents.
- 2) Orthopedic or other medical device manufacturers are recommending prolonged pre-vac steam sterilization cycles of 8, 10 or 20 minutes or longer. These recommendations are based on the manufacturer's testing that has demonstrated the packaged device load (e.g. orthopedic case tray set) or the medical device has poor steam penetration or heating characteristics. In order to ensure sterilization of the device, longer cycle times are needed.

Despite the requirement by the medical device manufacturer for longer cycles, there has not been the concurrent development of the appropriate chemical indicator (CI) and biological indicator (BI) challenge packs to adequately monitor these extended steam sterilization cycles. Examples of medical devices requiring extended steam sterilization times are given in Table 1. A primary objective of this manuscript is to ensure that users are made aware that use of existing CI and BI challenge packs that are designed for shorter steam cycles (e.g. 3 or 4 minutes in pre-vacuum steam sterilizers at 132°C to 135°C) should not be used to monitor cycles that are longer. The BIs and CIs designed for 3- to 4-minute cycles may not provide an adequate challenge when longer cycle times are used, as they were not

Table 1: Examples of medical devices where the manufacturer recommends extended steam sterilization cycle times

Device Name	Manufacturer	Cycle time recommended by manufacturer	Alternative cycle times also approved by manufacturer
Acetabular reamer system	Zimmer	18 minutes PreVac at 132°C	4 minutes PreVac at 134°C If Gripper handle made by Precimed is in set, then 18 minutes at 132°C is needed
Orthopedic set	Dupuy Moreland Revision Instruments	132°C for 40 minutes	None
OsteoMed Osteopower system	OsteoMed	5 minutes in PreVac at 132°C, 0 minutes dry minimum wrapped	15 minutes PreVac at 135°C, 25-minute dry time
Trigen™ Nail System Tray 1 and 2	Smith & Nephew	4 minutes in PreVac at 132°C, 15-minute dry time	18 minutes PreVac at 135°C, 25-minute dry time

Note: This table provides a few examples and is by no means exhaustive.

designed to monitor such extended cycles. This lack of appropriately qualified challenge packs presents a potentially significant patient risk, especially if some of the devices are implantable and the facility cannot be assured that the packaged medical device reached conditions adequate to provide reliable assurance of sterility. It should be noted that there are CIs

that have been validated for 18-minute pre-vac cycles.

BACKGROUND

Steam sterilization of reprocessed medical devices is an established practice that is performed in most acute-care health care facilities. Normally, the medical device manufacturer

is expected to provide the user with instructions regarding the appropriate steam sterilization cycle that can be used to sterilize the device safely. In order to obtain approval from the Medical Devices Division of Health Canada (or clearance from the Food and Drug Administration (FDA) in the USA), these instructions must be provided before the company offers

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to sell these devices in Canada, unless the device is deemed equivalent to an existing marketed medical device (some of these pre-date the requirement for manufacturers to provide validated steam sterilization cycles).

The CIs and BIs and the CI and BI challenge packs used in healthcare reprocessing facilities are designed, tested and qualified for use as process monitors with specific steam sterilization cycles such as those illustrated in Table 2. For instance, a BI qualified for use in a gravity displacement sterilizer at 121°C for 30 minutes *should not* be used in a pre-vacuum steam sterilizer cycle at 134°C for 4 minutes unless the BI manufacturer has validated its use and provides label claims for that cycle. There are a finite set of steam cycles that are routinely used in healthcare facilities. Indeed, the sterilizers are validated by the sterilizer manufacturer to provide adequate steam sterilization conditions for these specific cycles, and users do not usually alter these once the sterilizer has been installed. Examples of these cycles are given in Table 2. The users should follow the medical device

manufacturer's recommendations, as well as the instructions of the sterilizer manufacturer, for sterilization to ensure the device is safe to use on the next patient. However, the problem is that the medical device manufacturer's recommendations may call for extended cycle times that are not normally used in health care.

EXAMPLE OF THE PROBLEM

A set of orthopedic instruments was received by a site approximately two years ago with instructions from the manufacturer that indicated the five-layer set should be steam sterilized at 132°C for 40 minutes. The central processing department followed these guidelines and placed 15 BIs in the set. They used three BIs per layer, with a BI positioned in the right, left and middle, for each of the five layers. Of the 15 BIs tested, there were three BI failures. One of three BIs in each of the three middle trays failed. When the five-layer set was broken down into single layers and re-tested, all BIs passed. Subsequently, the site has

converted their steam sterilizers to 134°C. Retesting of the single layers at this temperature indicated that all BIs passed. The manufacturer still recommends 132°C for 40 minutes.

One might ask "How can a device be sold/marketed in Canada if no process monitors exist for the cycles recommended?" One of the problems is that these devices may not even have been reviewed by Health Canada. Some of the orthopedic instrument sets are provided free of charge by the implantable device manufacturer. The surgical equipment used to do the surgery for the implant is provided as an 'accessory' to the implantable device and therefore is not reviewed by Health Canada because it is not sold, it is provided free.

In other instances, the prolonged cycle requirements may be overlooked as the device by the implant manufacturer is claimed to be equivalent to a device already being sold in Canada, so it is approved because the reviewers may not realize that the new device has different sterilization cycle requirements that are not standard hospital cycles.

Table 2: Minimum cycle times for gravity-displacement and dynamic Air-removal steam sterilization cycles*

Item	Gravity Displacement steam sterilizer			Dynamic Air-removal steam sterilizer (e.g. Pre-vacuum steam sterilizer)	
	Exposure time at 250°F (121°C)	Exposure time at 270°F (132°C)	Exposure time at 275°F (135°C)	Exposure time at 270°F (132°C)	Exposure time at 275°F (135°C)
Wrapped instruments	30 minutes	15 minutes		4 minutes	
			10 minutes		3 minutes
Textile packs	30 minutes	25 minutes		4 minutes	
			10 minutes		3 minutes
Wrapped utensils	30 minutes	15 minutes		4 minutes	
			10 minutes		3 minutes
Unwrapped nonporous items (e.g. instruments)		3 minutes	3 minutes	3 minutes	3 minutes
Unwrapped nonporous and porous items in mixed load		10 minutes	10 minutes	4 minutes	3 minutes

*This table represents the variation in sterilizer manufacturers' recommendations for exposure at different temperatures. For a specific sterilizer, consult only that manufacturer's recommendations. Dry times have not been indicated as this varies substantially depending upon the sterilizer manufacturer, season and/or other site-specific issues.

Note: Extracted from AAMI DS2/ST79/2005-02-07.

WHAT SHOULD A USER DO?

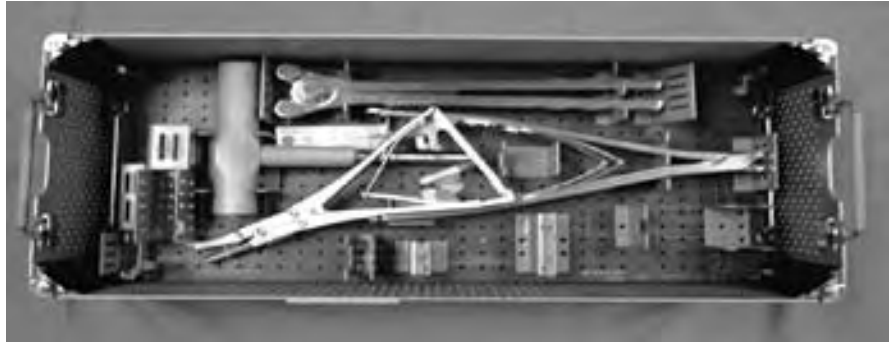
1) **Prior to the purchase/trial of any new equipment** users should require from the medical device manufacturer detailed information on the cleaning procedures and steam sterilization cycles appropriate for use with the device. If the cycle recommended is an 18-minute pre-vac cycle, the manufacturer should be asked to provide a statement in writing regarding whether or not a pre-vac four-minute cycle is adequate. If the manufacturer indicates that a pre-vac four-minute cycle is not adequate and extended processing is necessary, the user should request information from the manufacturer as to the means whereby the extended processing cycle should be monitored in order to ensure that effective sterilization of the device is assured. ***This process should be implemented for all medical devices, regardless of whether the device is purchased, leased or loaned.***

2) **For existing sets:** In the absence of appropriate BI and CI challenge packs that have been validated for use with these prolonged sterilization cycles, users can do some limited testing to ensure that steam penetration is achieved by placing regular BIs in various locations *inside* the case set (Fig. 1). This is done before the case tray set is used for the first time. Once the case set has been wrapped and sterilized in the appropriate prolonged steam sterilization cycle, the BIs are removed (and incubated as appropriate for that type of BI) and the tray is reprocessed. If any BIs fail (exhibit growth of the test organism), this means there is a high probability of inadequate steam penetration or poor heating since these BIs should be completely killed within 3-4 minutes of exposure. If possible, breaking down the tray to smaller tray sets and

Figure 1: Placement of BIs within containers to evaluate steam and heat penetration

For wrapped containers (A), three BIs were included per layer; one in each opposing corner and one in the middle of the tray (e.g. for three layers, this would involve nine BIs in total). For unwrapped containers (B), the same positioning of BIs would be used and, in addition, BIs should be placed on the underside of the lid away from the filter.

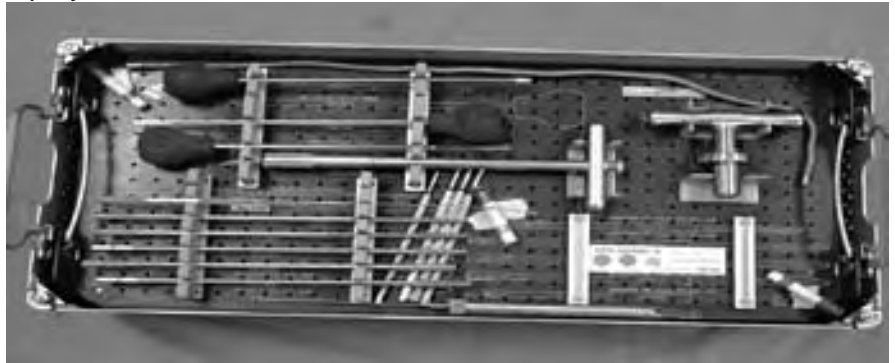
A) Wrapped container – Bottom layer



Middle layer



Top layer



Final wrapped package of three layers



B) Unwrapped container – Container shell



Tray with instruments



Fully assembled spine tray pan



then retesting can be done. If this is not possible or if BI failure still occurs then this would warrant immediate removal of this device from use and an incident report to both the device manufacturer and Health Canada.

For a rigid container system designed to be sterilized without wrapping, a BI should be positioned on the underside of the lid away from the filters as well as in diagonally opposite corners (one in a lower corner, and the other in the upper corner diagonally opposite). For a rigid sterilization container designed to be wrapped, the BIs should be positioned in the same locations as indicated above. Regardless of the container design, the testing should include three BIs placed in each layer of the set (Figure 1 A and B).

Once the cycle has been completed, the tray/container should be dismantled and the BIs tested. The loaded tray is serving as the test pack. Although user testing can be done for surgical sets, it is not possible to do this for individual devices where steam penetration is questionable (e.g. orthopedic devices or electrical equipment).

Even if the regular paper strip or self-contained ampule BIs are killed, this may not be a valid indication that the device has been adequately sterilized. Most BIs are typically inactivated within 3-4 minutes of steam exposure at 132°C-135°C (indeed in most pre-vac sterilizers, the spores are killed within the first 1-2 minutes of exposure). Another issue is that the growth media inside self-contained BIs may not function properly after processing through very long steam sterilization cycles. If the growth media is part of the challenge pack (e.g. as is the case for the self-contained BI) and if the growth-promoting ability of this media is detrimentally affected by the long exposure of the media to heat, then this too could negatively affect the ability of such a BI to perform properly. This again emphasizes why the BI manufacturer must provide validated data to confirm that the BI functions appropriately and can be used in extended cycles. What is needed is a challenge pack that provides a challenge to the sterilization process equivalent to that presented by the actual device or load.

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²NH Consensus Statement on Management of Hepatitis C 2002, NH Consensus and State of the Science Statements, Vol. 14, No. 3, June 10-12, 2002, National Institutes of Health, Office of the Director. Accessed at: <http://consensus.nih.gov> on January 28, 2004.
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This could be provided either by the BI manufacturer or the manufacturer of the device.

PRION CYCLE MONITORS

Users need to be aware that manufacturers may claim their indicators can be used for 'prion cycles' but users need to be cautious. Questions users should ask include:

- 1) Has the indicator device received clearance from either Health

Canada or the FDA (Food and Drug Administration of the USA) for use in extended cycles? If so, ask for a copy to verify claim. If there is no clearance for the indicator device it should not be used.

- 2) Which cycle parameter does the CI or BI monitor and which label claims does it have?

CONCLUSION

Users need to ensure that the medical device manufacturer's instructions

are followed for extended cycle times unless the manufacturer provides written documentation that the device can be properly sterilized for four minutes at 132°C-134°C or three minutes at 135°C. This will occur most frequently for the 18-minute prion cycle for medical devices manufactured in Europe. If no appropriate BI or challenge pack exists for the extended cycle, users need to require the device manufacturers to provide advice as to the appropriate BI or challenge pack to use or perform testing themselves to ensure adequate sterilization conditions are realized. This is critical to ensure adequate patient safety. ●

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An infection control perspective on patient advocacy

INTRODUCTION

Decisions made by Infection Control Practitioners (ICPs) are often multifaceted and require the consideration of factors related to the health and rights of individual patients as well as the health of the broader population. While the use of patient isolation as an effective infection control strategy is well supported^{1,2}, consideration must be given to the psychosocial and health consequences of these practices on the individual patient. This article discusses the impact that patient isolation practices can have on individual patients. It is incumbent on infection control professionals to work with other health care providers to ensure the best possible outcomes for patient care. Underpinning the discussion are challenges facing ICPs as they function both as patient care advocates and protectors of health for the population they represent.

THE IMPACT OF PATIENT ISOLATION

Evidence suggests that the use of isolation of patients with communicable diseases can prevent the spread of infection^{2,3,4}. Isolation measures vary depending on resources available, but usually include a private room or cohorting patients and/or staff and the use of personal protective equipment such as gowns, gloves and masks depending on the mode of transmission¹. Preventing infections saves health care costs by preventing prolonged lengths of stay in hospitals and the use of agency resources. Zoutman and colleagues (2003) demonstrated that greater investment in infection control programs were warranted in Canadian hospitals in order to prevent morbidity, mortality and the extensive

costs associated with the spread of nosocomial infections⁵.

As patient advocates, ICPs support the notion that patients have the right to the best possible health outcome. The challenge occurs when there is a struggle to balance the health and rights of the individual with the risk of infection transmission to other patients, health care workers and visitors.

The psychological impact isolation has on patients should be considered when implementing isolation practices. Shuldham and colleagues (1995) describe the negative impact hospitalization alone has on psychological functioning⁶. Patients isolated due to medical treatments, such as cancer, report significantly higher rates of depression and anxiety⁷. It is well recognized that hospitalization has a negative effect on psychological wellbeing^{6,7,8}.

Several studies have documented the impact of isolation for infection control reasons. A study of patients with HIV and tuberculosis co-infection described the experience of respiratory isolation as depressing and giving rise to feelings of loneliness and abandonment⁹. In one study, 42 per cent of hospital patients identified negative feelings related to isolation practices¹⁰. The stressful effect of hospitalization combined with isolation for infection control reasons can affect the coping skills of patients and challenge their psychological functioning¹¹. Patients isolated due to SARS (Severe Acute Respiratory Syndrome) reported feelings of fear, sadness, loneliness, boredom and anger during isolation. Others reported feeling guilty for exposing friends and family who would subsequently require quarantine. In addition, many reported being adversely affected by the fear of contagion of family and friends and felt sadness related to miss-

ing their loved ones^{12, 13}. Catalano and colleagues (2003) compared the anxiety and depression scores of patients hospitalized and isolated due to methicillin-resistant *Staphylococcus aureus* or vancomycin-resistant *Enterococcus species* to patients who were hospitalized for infectious diseases that did not require isolation. Patients who were isolated had significantly higher scores on both anxiety and depression scales than patients who were not isolated¹⁴.

Negative experiences related to isolation practices are not limited to the acute care environment but also are seen across the continuum of care. Patients and residents in long-term care agencies, mental health facilities and the community at large also experience negative consequences from isolation. Long-term care facilities are generally considered to be the resident's home, thus making the use of isolation precautions even more disheartening for those on precautions for extended periods of time. Ambulation, socialization and participation in group and therapeutic activities are necessary for patient

wellbeing¹⁵ and are sometimes limited or cancelled to control the spread of infection. Patients who are deprived of family visits report greater insomnia, anxiety and friction with health care providers¹³. If followed rigorously, the implementation of isolation precautions for patients requiring rehabilitation may limit that individual from ambulating, thus limiting them in achieving rehabilitation goals¹⁶. Qualitative studies have reported serious adverse effects from the isolation of patients with mental illness¹⁷ and may be seen as punitive rather than necessary for care.

In the community setting, cystic fibrosis (CF) patients with chronic *Burkholderia cepacia* are excluded from CF conferences, camps and support groups. Pulmonary colonization of *B. cepacia* can lead to a progressive pneumonic illness termed 'cepacia syndrome' which is invariably fatal. CF patients colonized with this organism must be segregated from the CF population as a means to prevent cross infection¹⁸. Segregation of *B. cepacia* positive patients from *B. cepacia* negative patients has demon-

strated fewer patients with CF becoming infected^{18, 19, 20}. However, such isolation strategies increase feelings of isolation and anger^{21, 22}.

BALANCING QUALITY PATIENT CARE AND INFECTION CONTROL

For professionals working in the field of infection prevention and control, it is critical to collaborate with front-line staff to ensure an appropriate balance between providing quality patient care and ensuring that suitable precautions are in place.

Professionals in infection control and front-line health care providers can use their skills to assist isolated patients to adapt to their situations. The most important consideration for isolated patients is improving the amount of human interaction²². Nurses and physicians are responsible for providing direct care to patients and possess the skills needed to assess the impact isolation practices are having on their wellbeing. Patients



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who are identified as being emotionally distressed by isolation may be able to access further psychosocial support services including social work, pastoral care or volunteer visiting services. In addition, family members can be provided with education regarding the use of personal protective equipment in order to encourage family contact and support where appropriate.

Infection control practitioners are also able to assess each individual case to determine the extent that precautions should be applied. For instance, a patient who is able to understand and comply with infection control practices may not be required to stay in their room. Infection control practitioners in all settings should play an active role in supporting health care staff to strategize creative ways to ensure excellent individual care while at the same time adhering to the principles of infection prevention and control.

Decisions surrounding the management of 'isolated' patients depend on many factors. Health care agencies should review their policies and decisions with key stakeholders within their institution to consider the needs of the individual patient, staff members and the available resources. Health care workers who aim to improve communication with isolated patients will identify any concerns related to isolation and facilitate patient empowerment¹⁰. Strategies aimed at preventing boredom may also be helpful. The ICP can play an important consultative role in helping to establish patient interventions, which can minimize the negative effects of isolation precautions.

There is no doubt that the use of isolation precautions is necessary in the control of infectious diseases and terminating isolation is not usually an option. However, the intent of this paper is to provoke some consideration regarding the role the infection control practitioner plays in the care of individual patients and that of protecting the health of the broader population. As mentioned earlier, this

concept is one that spans the continuum of health care. Vulnerable groups rely on infection control services to ensure a safe environment, which can be a challenge when balancing all the variables involved. Central to infection control is the need to work collaboratively with nurses, physicians, laboratory technologists, epidemiologists and public health officials in order to best meet the needs of the patient. Each member of the multidisciplinary team has a distinct contribution to make and should be respected across the continuum of health care agencies for the expertise they offer. Ethical decision-making surrounding the prevention of infection takes place in all health care settings. The needs of the individual patient must be carefully balanced against that of the 'greater good'. Peer consultation and making use of epidemiologic principles to determine the degree of actual risk may also be helpful in this regard. Further research is required to identify the interventions that can be utilized to lessen the negative effects of isolation. ●

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Members of CHICA-Canada have generously shared their unique offerings and stories from the field. These offerings and stories include brief reports on unique initiatives in infection prevention and control. It is hoped that all members of CHICA-Canada will benefit from these shared resources and items from the field.

Scabies outbreak: A case study

B. Kim Scott, RN, BScN, MPH, COHN(S), CRSP

Background information

A medium-sized (135-bed) long-term care facility has experienced several scabies outbreaks over the past five years. One was identified when a resident was admitted from another facility, and one was identified when a staff member was diagnosed by her personal physician as having scabies. Initial sources were not identified in the other three outbreaks.

The facility had recently undergone significant expansion, and at the time of this current outbreak there were two acting Infection Control Designates (ICD), one with responsibility for residents and one for staff. The Staff ICD had more experience and training in the role of infection control than the Resident ICD.

Considerations

Residents of long-term care facilities are frequently immuno-compromised. They often manifest diverse and multiple diagnoses and are on a variety and significant number of pharmaceuticals to control the signs and symptoms of the disease and aging processes.

The skin of the elderly is typically drier than that of younger individuals. It is commonly mottled, exhibiting cherry angiomas, freckling, age spots, and scarring. Other lesions both raised and flat and of varying colours are common. Air in long-term care facilities is climate-controlled to maintain heat and is subsequently drier than in private dwellings. In spring and fall, heating systems struggle to keep draughts at

a minimum. Indoor air in temperate climates becomes drier as the outside air cools. The desire to humidify the air must be balanced with the risks of air contamination by microbes that thrive in humidifiers, both individual and those attached to heating systems. Dry air predisposes to dry skin, itchy skin, and susceptibility to skin infection.

Skin treatments involving creams and lotions are commonplace. They promote relief from skin dryness and the opportunity for staff to provide the resident with much-needed caring touch in the form of massage and skin care.

Regular personal hygiene involving soap and water is a normal and valued activity of daily living, but can also dry skin. Full tub or shower bathing in long-term care facilities occurs on a weekly basis and as necessary, however, full viewing of a resident by a licensed nurse does not usually occur unless the health care aide caring for the resident specifically requests it.

Laundry products and the laundering process face the twin challenges of adequate cleansing for infection control and personal hygiene, with rinsing to remove the chemicals used to clean, rinse, and soften the garments and linens. Allergic and reactive skin responses can come on suddenly or gradually in response to traces of detergents or fabric softeners, especially those with added perfumes.

Dry skin, pharmaceutical reactions, response to trace chemicals, soaps, creams and lotions and the common discolorations found on elderly skin all contribute to the challenge of identifying scabies in this population.

Scabies is under-diagnosed and frequently misdiagnosed. Residents are often treated symptomatically for new rashes or itching, and the signal signs and symptom may be masked.

Scabies is rarely considered by medical personnel initially, because of misperceptions related to socioeconomic status, hygienic condition of the host, and transmission mechanisms. Scabies is *not* limited to the poor, or those with less adequate personal hygiene. The *only* requirement for infestation is physical contact with an infested resident sufficient to allow transmission of a mite to the new host.

Literature review

A review of the literature on *Sarcoptes Scabiei* indicates several key points to consider.

Scabies is caused by a mite, barely visible to the human eye, whose life cycle involves mating, the female burrowing into the stratum corneum epidermis of skin where she feeds on intracellular lymph-like fluid, lays two to three eggs per day, defecates and dies. Life span is 30 days. Ten days after the eggs hatch, the mature nymphs seek out mites of the opposite sex, mate, the males die within two days and the females again burrow to lay eggs. Mites can travel across the skin surface at a rate of about 2 cm a minute. They are translucent in colour with eight legs and somewhat turtle-shaped.

The prevailing and signal symptom is intense itching during the night or after a hot bath, when the skin is warmed by blankets or warm water.

However, *the itching may not manifest in the immuno-compromised, those taking antipruritic medications, those with neuropathies.* The intense itching is reactive to the mite body, the fecal matter (called scybala) and the egg casings and in persons with no previous infestation takes from two to four weeks to manifest while the body develops the allergic reaction. The previously infested will frequently begin itching within days of reinfestation.

The burrows are the other distinctive feature of infestation, being straight, S- or C-shaped, and from 5-20 mm long. They are easily broken by scratching. The burrows can be highlighted by coating with a water-soluble non-toxic marker (black, brown, or dark blue is preferred) and removing surface ink with an alcohol swab. The ink will fill the burrow to make it more visible. A typical infestation involves only about 10-15 live mites on the person.

Visual identification of scabies

Classic scabies is identified by the presence of burrows, symmetric eruptions or red papules, vesicles or pustules, crusted lesions, nodules, or eczematous patches located in body folds, on shoulders, nipples, genitalia.

Nodular Scabies exhibits reddish-brown hardened pruritic bumps.

A variation of conventional scabies is **Norwegian Scabies** where the mites number in the tens of thousands and are harboured and protected by scaling and crusting of the skin. Up to 7000 mites per day can be shed onto linens, clothing, and caregivers by a single case of Norwegian Scabies.

Norwegian Scabies manifests as hyperkeratotic lesions usually on the hands, face, feet, ears, under fingernails, and on the scalp.

Transfer of the mites is through close personal contact, (usually of at least 10 minutes duration) but occasionally on linen or clothing. The sort of contact caregivers would have with residents is ideal for transfer.

Typical areas of infestation on the body include finger webbing, elbow, knee, waistline creases, areas under and between breasts, the axillae, and in the elderly, areas of warmth and pressure such as shoulders, waistbands of clothing, groin areas, buttocks, genitalia, (especially the penis and scrotum).

Definitive diagnosis

Definitive diagnosis of scabies involves skin scrapings where the mite, eggs,

or fecal pellets can be seen under microscope. Scrapings are suspended in oil when taken and transferred to the microscope slide.

Treatment

While treatment is simple, it must be well orchestrated and extensive. It involves use of a scabicide, formerly lindane 1% (to which the scabies mite is developing resistance) and now more typically permethrin 5% cream [NIX] applied to the entire body, left on for a minimum of 8-12 hours and then removed by thorough bathing. To ensure eradication, a repeat application is usually done within 7-14 days to address any unhatched newly laid eggs that might have missed being killed by the initial treatment. *All contacts* should be treated as well, as they may be in the initial asymptomatic phase of infestation and could reinfest the treated person immediately post treatment.

This standard treatment will *not* successfully eradicate Norwegian Scabies. Treatment for Norwegian Scabies requires successive scrubbing and removal of crusting involving physical debridement or the use of keratolytic agents such as salicylic acid in petrolatum cream (3-10% depending on the cited article) or 40% urea cream followed by the use of scabicide until all signs of infestation have been eradicated.

Ivermectin oral tablets (1-3 doses) are also used with effect in the United States for Norwegian Scabies but are not approved for use in Canada.

The itching can last for several weeks post effective scabicide treatment. Antipruritics can be prescribed to address the post-treatment itching but a close watch for new signs of infestation should be maintained.

Case study

Day 1

On Thursday during a meeting, a care manager reported in passing that several residents on a single unit of the facility were noted to have rashes. Notes were left for their physicians

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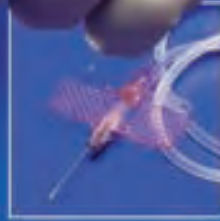
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over a weekend, however, the rashes were not similar in appearance, and a change in soap or laundry product was believed to be the cause. The Staff Infection Control Designate (ICD) with scabies experience worked the night shift on Thursday night and was off Friday and the weekend.

Day 5

On Monday, 17 residents were reported to have rashes to the Acting Director of Care (ADOC)/Resident ICD. The Staff ICD (who was familiar with scabies) was contacted by one of the LPN staff and asked to please come and look at a resident with a rash. She noted characteristic burrows on the shoulders of the wheelchair-bound woman who complained of severe itching, especially at night. She had been examined the preceding Thursday by the Resident ICD who reported no observed burrows. The Staff ICD told the Resident ICD/ADOC to please call the physician, as she was sure that the resident had scabies. Carts were set up for contact precautions, and physicians were contacted for orders.

A 20-minute in-house education session with photographs was developed and presented by the Staff ICD to all care staff at shift change the following day so they would be aware of the different forms scabies lesions take and know how to recognize infestation. All residents were to be inspected for lesions and any suspect cases reported to the RN or either ICD.

A staff member from that unit presented with a rash that the experienced ICD believed was scabies. She was advised to treat immediately. Later that evening, still another staff member was assessed for apparent scabies lesions and advised to treat immediately. Total *known* staff with probable scabies lesions: three.

Days 6-7

The physician in charge of infection control for the facility ordered permethrin cream for all residents on the unit. Pharmacy supplied the cream over three days and residents were

treated over the three-day period as the cream was delivered.

The cream was to be left on for 8-12 hours then removed by bathing. Beds were stripped after removal of the cream, all linens changed and washed, all clothing worn in the preceding three days laundered, and beds carbolized. Treatment was to be repeated two weeks later for all residents on the unit.

Several of the residents were bathed by PCAs after only 4-7 hours' contact with the treatment.

Permethrin cream was reapplied to those residents two days later for the full 12 hours to ensure kill.

Two staff members were noted to have rashes, one on the leg, and one on the upper arm. Both were referred to their physicians, but neither was diagnosed as scabies by the family doctor.

A resident's family member contacted Public Health, who contacted the facility and spoke with the Care Manager. The public health nurse requested that the entire floor be treated and that staff be confined to only work in that area. She also asked that staff be managed as well, not just the residents.

Day 8

Three days after the initial resident was identified by the Staff ICD, the two ICDs started an internal line listing and together examined several of the reported 12 original residents, as the Resident ICD admitted she did not know what scabies looked like. The rashes were not consistent, but several were suspicious. The Resident ICD left at change of shift, and the Staff ICD interviewed incoming staff regarding the rashes as to onset, signs and symptoms. Most of the physicians had not attended to assess the rashes. The Infection Control Physician had issued the order for mass treatment based on his own past experience with a resident in the facility and a previous scabies outbreak.

Charting indicated that there were several residents with long-standing rashes over months to years, some of whom were on various prescribed treatments for their rashes. Many of the resi-

dents initially reported in the internal line listing to have had rashes had no supportive charting. Dates of onset were missing, some had orders and some did not. Corticosteroids and antipruritics/anxiolytics were commonly prescribed. One resident had been admitted to the facility five years before and had had her rash since admission and been continually treated. She was not inspected. Several others displayed petechial rashes, some had slight raised rashes, and many had only one or two possible lesions. One reported rash was a clear example of a diabetic foot lesion. Other than the first identified resident, of the 10 examined, three appeared to have lesions consistent with scabies infestation, three days post treatment.

Only one of the two staff who reported a rash was treated for scabies infestation.

The Staff ICD called Public Health and the regional health authority contacts for long-term care to update them on the action taken, and on findings to date.

Phase II: Day 12

A week later, a staff member called the Staff ICD and advised that one of the treated residents had scales and crusting on her hands and asked if she should send a sample to the lab. She was advised to contact the lab re: obtaining the specimen and to please submit, and to maintain contact precautions on that resident.

The following day, the lab results confirmed presence of mites in the scrapings. The resident had Norwegian scabies. This particular resident had *not* been one of the residents assessed *because she had been admitted with her rash five years previously, and was not itchy.*

When the other nurses learned of the lab results they mentioned three residents on another wing who also had rashes. These were assessed by the Staff ICD and the Executive Director, Care Services and all were found to have clear signs of scabies infestation. The Infection Control Physician had already been called by the RN and had

ordered for the resident with the Norwegian Scabies the treatment he had used in a prior Norwegian Scabies case three years before: salicylic acid cream applied thickly and left on for several hours followed by bathing and application of permethrin cream overnight followed by bathing in the morning and application of salicylic acid cream again. This treatment was to continue for seven days.

The three new cases on the other floor confirmed that aggressive action was necessary. The Infection Control Physician was re-contacted by the Staff ICD and Executive Director, Care Services, and ordered treatment for all residents in the facility and agreed that treatment of all staff was also appropriate. He also confirmed that a second treatment of all residents and staff was to be repeated on the 14th day following this current treatment.

Additional staffing was arranged so that all could be treated and bathed within a 24-hour period.

Pharmacy was notified and although hard-pressed to get enough of the cream for all residents and staff to be treated, contacted the manufacturer and managed to deliver it that same evening.

An information sheet was prepared for staff, visitors, and family.

Information packages were prepared for staff re: treatment of scabies.

All current staff were required to be treated during the same 24-hour period. A form to be given to the staff member along with a tube of permethrin cream and returned the next day was prepared. A single nursing station was responsible for all permethrin cream distribution to staff.

All residents, including those who had been treated during the previous week, were retreated, and were to be treated again on the 14th day following this new treatment.

All families were telephoned to advise of the outbreak, the treatment, and to answer questions about scabies.

A script was prepared with answers to frequently asked questions so that the callers would be giving consistent information.

A single meeting was held for all RNs and LPNs at shift change to go over the new orders and ensure everyone understood exactly what was to happen.

Signs about the outbreak were put up just inside the front door with info sheets for visitors.

Days 12-13

All staff and residents were treated, and bathed. The resident with Norwegian Scabies was treated as required and all scaly areas were removed over the week and skin cleared.

Day 26

Fourteen days following the mass treatment, when the second treatment was to be applied to all residents and staff, pharmacy failed to deliver adequate cream. Public Health was notified and

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the Regional Health Authority was contacted for guidance. The Regional Health Authority Pharmacy Consultant assisted the facility pharmacy in obtaining the required number of doses and the second mass treatment was conducted on the 16th day following the first mass treatment.

Day 28

Again a single meeting for all RNs and LPNs was held at shift change to ensure everyone understood what to do and how.

Issues

Recognition of the infestation

With few exceptions, physicians and nurses do not know what scabies looks like and how to recognize it. Once a physician has 'named' a rash, his/her diagnosis is not questioned further. The infestation can continue to progress and can infest others, both staff and residents. If the infestation progresses to the form known

as Norwegian Scabies, it spreads very rapidly due to the high mite shed. Use of anxiolytics and antipruritic medication masks the intense itch that might cause re-evaluation. Although the first case was evaluated by one of the Infection Control Designates, definitive diagnosis can only be done by lab confirmation. This remains the province of the physician and treatment was delayed. Had the specimen not been sent, a cycle of reinfestation and another outbreak is almost certain.

Resident inspection was not conducted systematically on *all* residents, in both units. Some residents with long-standing rashes were not inspected. Only those with severe pruritis were, and one of these appeared to have nodular scabies. This was not confirmed. The resident subsequently diagnosed with Norwegian Scabies was not inspected because her 'rash' had been present and being treated for five years.

Communication

- The Executive Director, Care Services was not notified that there was a cluster of rashes, or a possible outbreak of scabies until after Public Health had been contacted by a resident's family member.
- The facility Infection Control Designate function was being shared between two ICDs due to recent staff changes and high workloads. Each thought the other was taking appropriate action as outlined in the Facility Infection Control Manual. Both the experienced Staff ICD and the Executive Director, Care Services were off site at the start of the outbreak. Although off site due to shift work and training commitments, both were still in the city, but the Resident ICD did not call and indicate she needed help.
- Initial notification of physicians was by a note left on the charts, not by a phone call. As a result, few of the physicians assessed the resi-

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dents, as physician attendance in long-term care is less frequent than in active treatment.

- Resident families were not notified initially of the outbreak, the treatment, their own risk and what to do, or changes in visiting, etc.
- No notification was posted at the entrance to the facility initially to signal an outbreak to visitors, family, and staff.
- Public Health was notified by a family member, and then Public Health contacted the facility. Subsequent to this, both Public Health and the Regional Health Authority were kept in the loop on progress of the outbreak.
- Resident Health Record documentation in progress notes was sketchy or non-existent. Such documentation as was present was not clear or well defined as to nature of rash, etc. The caregivers' understanding of the term 'rash' was not consistent, as evidenced when a diabetic foot lesion was described as a 'rash.'

Infection control response

- As the number and nature of rashes rose, internal line listing was not initiated in Phase I until after the treatment had been applied.
- A consistent clinical approach to inspection of *all* residents was not conducted. This resulted in *missing* the resident subsequently diagnosed as Norwegian Scabies. In hindsight this particular resident *may* have been the trigger case in at least two of the previous outbreaks. Norwegian Scabies is not eradicated by a single topical application of permethrin cream unless scales are removed through debridement.
- The severity of the outbreak was underestimated initially by both ICDs and the physicians who did visit.
- Some of the visiting physicians did not diagnose scabies, confusing the outcome.

- There is not a standardized Regional Health Authority approach to scabies outbreaks despite the high risk of occurrence, especially in long-term care facilities in the spring and fall.
- Much attention has been paid to other infection control concerns such as influenza and pneumonia, but this too can cause great suffering among the elderly and compromise health and well-being.

Staff management

- An in-service education session was prepared by the educator and provided to all staff as soon as possible, and prior to the initiation of Phase II of the outbreak, but should have been available to be given sooner after the first case was confirmed. A prepared in-service program available to all Regional Health Authority affiliates would be an excellent resource.
- Staff treatment was not included in Phase I.
- Written instructions and information packages were not prepared for staff in Phase I, so staff were free to interpret. As a result, several residents were bathed too early and had to be retreated.
- Several members of staff who had no direct physical resident care responsibilities self-selected not to receive treatment despite the request that all staff be treated. These did not self-identify to the ICDs but just did not participate. They were identified weeks later when the documentation was being reviewed. They were reported to the Director of Care at that time, who felt it was pointless to pursue the issue.

Pharmacy

Although the first delivery of medication was accomplished, the second round was not. Pharmacy was unprepared to provide the needed quantity at the required time.

To obtain the required amounts the facility pharmacy called all pharmacies in the region to access the few tubes each had, and finally had to call the manufacturer.

Since treatment of *all contacts* within a prescribed 24-hour period is the treatment of choice to prevent a carousel of re-infestation, a mechanism for obtaining the needed supplies for a public health outbreak could be coordinated at the regional level, to be accessed when necessary.

Successes

Despite the lessons to be learned and followed, much went very well. The in-service education package was assembled in only a few hours but was detailed and very well attended. It did much to allay fears, address issues of how and why and what to do, and return the outbreak to a more 'normal' part of resident care.

Although there were incidents of staff non-compliance, once clear on the expectations, staff were for the most part responsive, displayed a positive matter-of-fact attitude and accomplished the incredible volume of work entailed in 132 applications and baths in a single day. Staff willingly stayed over and worked extra hours, did their own treatments and signed indicating compliance without a grumble.

When the unthinkable happened and we found ourselves in Phase II, the care team worked as a finely oiled machine. In only hours the doctor had been contacted, treatment orchestrated, scripts written for family contact, signage developed and posted, info sheets developed, printed and made available, workload divided, assigned and communicated in the meeting with RNs/LPNs. Practice makes perfect, or at least a superior performance!

Summary

The scabies outbreak experienced at the facility serves as a reminder that we can always improve what we do and how we serve. We cannot afford to be complacent, to not carefully think

about what we are doing, and to fail to dot every 'i' and cross every 't'. The infection control process is a team process. The value of an experienced Infection Control Designate cannot be understated. Where the ICD does not have experience or knowledge, resources must be available and be accessed to mentor or support the development of the ICD in the role.

Involving and communicating with all members of the team, both internally and externally, can only help us to do better what we are committed to: the best of care for the resident.

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Influenza Prevention

By Rita Moryski, Chinook Health Infection Prevention & Control

*Influenza Season 2006-07 is rapidly approaching
Be on the defence and stop the virus from encroaching*

*Respiratory Etiquette is a given
Cover the cough and prevent being stricken*

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By those who have done their best not to share
A deadly virus such as Influenza A
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"I've had my flu shot for ultimate protection
You can depend on me for health and prevention"*

*Preparation will soon be commencing; that's smart!
Chinook Health will have, a good head start.*

*Creatinine levels are being drawn each year
In the event of an outbreak, antivirals will be near*

*Influenza A strikes very quickly
Leaving those in its path very sickly*

*Symptoms of fever, cough, chills and aches
Can be spread very readily for heaven's sake*

*Influenza virus loves the very young and the very frail
Seniors are certainly a target to hail*

*80% is the target rate for the employee
Education, awareness and vaccination is free*

*The cost of illness to family, friends and clients rests on me
For an ounce of prevention is worth so much more for you and me*

*There are checklists and protocols already in place
To help organize influenza preparedness just in case*

*Control measures will also be in place
To prevent spread from face to face*

*Acute, Continuing and Community Care
Require the same due diligence everywhere*

*To protect, prevent and maintain good health
Means so much more than all the wealth*

*Infection Prevention will help make this year's campaign a success
To offer education, consultation and communication without undue stress*

*Vaccination is the ONLY means for me and you
To PREVENT the morbidity and mortality from the FLU*

*'Tis that time of year again – it's Flu Season
Keep in mind that your health and wellness is the reason!!!*

The mandate of the *Canadian Journal of Infection Control (CJIC)* is to provide readers with access to published scientific research and expertise, as well as updates on information relating to infection prevention and control to assist Infection Control Professionals in their practice. *CJIC* is an opportunity for members to discover what is occurring in their association and how member benefits are being enhanced.

Because of the increase in submissions of articles of a scientific nature, the editor and publisher have revamped the organization of *CJIC* to allow more room for the publication of scientific information. This new *Association News* section will provide readers with first announcements of CHICA-Canada initiatives and opportunities. Readers are invited to visit the CHICA-Canada website for follow-up information and updates.

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Virox Technologies Partnership Scholarship

Through the financial support of the Virox Technologies Partnership, 10 CHICA-Canada members were awarded scholarships to attend the 2006 National Education Conference in London, ON. 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.

Applications for the 2007 Scholarship are to be submitted in writing to the Secretary/Membership Director of CHICA-Canada no later than **Jan. 31, 2007**. Please mail applications to CHICA-Canada, PO Box 46125 RPO Westdale, Winnipeg MB R3R 3S3, fax to 1-204-895-9595, or email to chicacanada@mts.net.

For more information and the application form, visit the CHICA-Canada website at www.chica.org or the Virox website at www.virox.com, or contact CHICA-Canada.

3M Canada Infection Prevention Research Grant

As part of an ongoing initiative to promote innovative infection control and prevention practices in Canadian healthcare, 3M Canada has created a research grant through its Infection Prevention Platform. The research grant is targeted to individual members of the Community and Hospital Infection Control Association – Canada (CHICA-Canada) for use in research studies. The research grant will be a one-time payment offered on an annual basis.

One research grant of \$6,000 to the Principal Investigator of the successful application will be presented at the 2007 CHICA-Canada National Education Conference (Edmonton, Alberta - June 9-14, 2007) (travel, accommodations and meals will be provided by 3M Canada Company for the successful recipient).

An application form is available at www.chica.org. Deadline date for applications: March 1, 2007.

Applications must be sent to:
Secretary/Membership Director
CHICA-Canada
PO Box 46125 RPO Westdale
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NEW GUIDELINES AVAILABLE TO ASSIST MEDICAL COMMUNITY IN FIGHT AGAINST CA-MRSA

Recognizing that the recent emergence of community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) has the potential to inflict significant impact in Canada, an expert panel of Canadian infectious disease, infection prevention and control, and public health specialists has developed guidelines to assist Canadian health care practitioners. With a dramatic increase in the rate of methicillin resistance among community isolates of *Staphylococcus aureus* recently observed in the United States, experts in Canada are warning that only vigilance and determined prevention and control efforts will stem the emergence of infection due to this strain in Canada. As articles in the *Canadian Medical Association Journal* have been highlighting recently, these guidelines come at a very critical time.

The Guidelines (*Guidelines for the Prevention and Management of Community-associated Methicillin-Resistant Staphylococcus aureus (CA-MRSA): A Perspective for Canadian Health Care Practitioners*) will be published (in both English and French) in the September/October edition of the *Canadian Journal of Infectious Diseases and Medical Microbiology* (CJIDMM) and the October issue of *Paediatrics and Child Health* through funding made available by the Public Health Agency of Canada (PHAC), the Canadian Committee on Antibiotic Resistance (CCAR), and the Ontario Ministry of Health and Long-Term Care (MOHLTC). A final draft version is being distributed over the next month through numerous websites and association membership advisory notices.

In addition to conveying basic information about the epidemiology and microbiology of CA-MRSA, the Guidelines provide recommendations related to the clinical management, and prevention and control of CA-MRSA infections. "The goal of this document is to assist frontline physicians in the treatment of CA-MRSA infections but also highlight the preventative measures that can be implemented in a variety of settings – home, daycare centres and schools, sports settings, pet owners, prison and homeless shelters as well as neonatal care facilities," noted Dr. Michelle Barton-Forbes, who, along with Dr. Michael Hawkes, co-authored the report in conjunction with experts from across Canada and the US. "We are very pleased with the results of such a collaborative effort and we would like to thank all those who contributed. We feel the Guidelines will have a very positive impact in fighting CA-MRSA."

The Guidelines are the result of a year-long process, including a working group meeting in October, 2005 in Toronto, Ontario, where 70 Canadian experts, including representatives from paediatric and adult infectious disease, infection prevention and control, microbiology and public health, as well as US experts in CA-MRSA from Texas and the Centers for Disease Prevention and Control. The PHAC, CCAR and MOHLTC coordinated and supported the process of development and distribution of the Guidelines.

The Guidelines were approved for publication by the Association of Medical Microbiology and Infectious Disease of Canada (AMMI Canada), the Canadian Paediatric Society (CPS) and Community and Hospital Infection Control Association-Canada (CHICA-Canada). The Guidelines will be reviewed annually by the CA-MRSA expert panel to ensure they are kept up to date.

A copy of the Guidelines can be obtained through *CJIDMM* (September/October, 2006 issue) as well as *Paediatrics and Child Health* (October, 2006 issue) or via numerous websites, including: www.ccar-ccra.org, www.amm.ca, www.cmaj.ca, and www.chica.org. Reprints can be requested through CCAR (jmcivor@ccar-ccra.org) after the publication date.

For additional information, please contact:

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Professor of Medicine, Foothills Hospital
403-944-8222
john.conly@calgaryhealthregion.ca

CHICA – MANITOBA

2006 has been a busy year in Manitoba. Monthly meetings have covered a variety of educational and business topics including TB, AROs, and the management of ARO screening and surveillance issues in rural and urban Manitoba facilities.

An education conference entitled 'Bugs in Motion' was held on June 2 in Winnipeg with 101 attendees from a variety of practice settings including acute, long-term care, and community. Topics included Guidelines for ARO Management, IP&C and Patient Safety, Equipment Cleaning, *C difficile*, and Stress Relief to finish the day. As always, we were well supported by our corporate members and exhibitors.

In June we were proud to have two ICPs, who are CHICA Manitoba members, honoured with 'Excellence in Professional Nursing' awards at the annual College of Registered Nurses of Manitoba awards dinner. Congratulations to Betty Taylor and Judy McFadden.

A 'Members only' retreat day has been planned for the fall and the title 'Bug Ladies (& Lads) Picnic' has members looking forward to a rejuvenating day of networking, relaxation and learning.

The Manitoba Chapter of CHICA is excited to have our Chapter added to the CHICA Canada website. Please visit us as we build our website.

An annual event that ICPs in Manitoba have come to rely on is scheduled to kick off infection control week at the Winnipeg Health Sciences Centre. 'Bug Day' is in its 10th year and everyone is invited to this education day on Tuesday, October 17. Speakers include:

Dr. Fred Aoki, Dr. John Embil, Dr. Barbara Law, Dr. Lindsay Nicolle, Dr. Ethan Rubenstein, Guy Corriveau, Marilyn Kilpatrick, Taz Stewart, Dr. Greg Hammond, and Dr. Pierre Plourde.

Bug Day is FREE – no registration required. Please bring a non-perishable food or cash donation for Winnipeg Harvest.

CHICA – HANDIC

As summer draws to a close, it is a time to look back and review the activities of our chapter and membership since our last report.

CHICA-HANDIC annually sponsors a one-day educational conference in the spring. Due to the success of our previous conferences and the demand for space, we opted to move to a larger venue, Liuna Station located in Hamilton, Ontario. The move proved to be very successful, 385 participants registered to attend this year's conference. The membership worked hard to ensure that all attendees had a positive experience. The new venue was well received, with great speakers in a beau-

tiful setting, and the evaluations were very positive.

Tamara Johnston opened her home to us for our summer meeting. Once the business of the chapter was completed, we enjoyed lunch catered by a local company and took some time to enjoy the sunshine and Tamara's pool. Thank you, Tamara, for a fun day!

Congratulations are in order for one of our members, Anne Bialachowski. Anne is the successful candidate for the position of Network Coordinator for the Central South Infection Control Network. Anne is assuming the position that was left vacant by the retirement of Adrienne Brown. Best wishes to Adrienne and welcome to Anne.

With the return of fall, the membership will begin plans for Infection Control Week. We look forward to sharing information regarding infection prevention and control with our partners in the community, the healthcare sector and the local Regional Infection Control Networks.

Be an author for the Journal

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



Pat Piaskowski
807-683-1747
piaskowp@tbh.net

Ecolab Poster Contest

An Annual Poster Contest is sponsored by Ecolab and supported by a Chapter of CHICA–Canada to give ICPs an opportunity to put their creative talents to work in developing a poster which visualizes the Infection Control Week Theme.

The winner of the Annual Poster Contest is announced at the annual CHICA-Canada Conference. Winners receive full registration at the next CHICA–Canada conference. **Deadline Date: January 30, 2007**

Send submissions to:

Director of Programs and Projects,
c/o CHICA–Canada
PO Box 46125 RPO Westdale,
Winnipeg MB R3R 3S3.

Courier address:

67 Bergman Cresnet,
Winnipeg MB R3R 1Y9
Fax: 204-895-9595
E-mail: chicacanada@mts.net.

Include your name, address and phone number on the back of your entry.

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You are invited to design a poster that will be used for
Infection Control Week 2007 using the following theme:

“Infection Prevention and Control – Practice and Participate”

- Your entry should be informative, eye-catching and applicable to both healthcare and community settings.
- Your entry will be judged on overall content.
- Artistic talent is helpful but not necessary.
- The winning entry will be submitted to a graphic designer for final production.
- Your entry will become the property of CHICA–Canada.

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Public reporting and inter-hospital comparison of health care-acquired infections

Association of Medical Microbiology and Infectious Diseases – Canada May 2006

This statement has been reviewed and endorsed by CHICA-Canada.

Health care-acquired infections are a significant public health problem and patient safety issue. In Canada an estimated 220,000 infections acquired in health care facilities and 8,000 deaths attributable to these infections occur annually (1). Collection, analysis, and interpretation (surveillance) of these infections are essential elements in their control. All hospitals should carry out surveillance for health care-acquired infections. The primary purpose of surveillance is to allow frontline health care providers to understand the frequency and distribution of infections, including emerging and changing pathogens, and take steps in their control and prevention.

The general public, in recent years, has rightly begun to expect more information on risks that patients may be exposed to in the health care setting. Given the interest in and importance of this issue, the Association of Medical Microbiology and Infectious Disease (AMMI) Canada has developed this position statement on the public reporting of health care-associated infections.

In summary, no evidence was identified that decision-making by patients with respect to health care-acquired infection risks is improved by public reporting of health care-associated infection rates from individual institutions, nor is there evidence that the rate of these infections will fall if individual hospitals' infection rates are publicly reported.

Background

In February 2005, the Healthcare Infection Control Practices Advisory Committee (HICPAC) in the United States published guidance on public reporting of healthcare-associated infection, providing a number of recommendations to guide and assist

in this process (2). The Society for Healthcare Epidemiology of America (SHEA) published a position paper on public disclosure of healthcare-associated infections (3). In their documents, both groups discuss the forces driving public disclosure and the potential drawbacks of mandatory reporting of healthcare-associated infections. The major concerns relate to the choice of valid indicators, accuracy and consistency of data collection, and lack of validated risk adjustment methods to allow interfacility comparisons. Given these significant limitations, there is considerable concern regarding any conclusions that may be drawn from comparison of publicly reported surveillance results. HICPAC and SHEA also point to the success of the National Nosocomial Infections Surveillance (NNIS) System in the United States. A critical success factor of the NNIS Program has been the ability to provide confidential data on hospital-associated infections back to participating facilities. This principle of confidentiality has given more than 300 hospitals the confidence to participate in NNIS, with demonstrable reductions in infection rates (4). HICPAC is very careful to point out that, on the other hand, there is no evidence that public reporting systems reduce these infections. Thus, in keeping with evidence-based guidelines, at this time there is insufficient evidence to recommend for or against public reporting of health care-associated infections.

In Canada a surveillance network for hospital-acquired infections, the Canadian Nosocomial Infection Surveillance Program (CNISP) was established in 1994. This program is a collaboration between the Public Health Agency of Canada and the Association of Medical Microbiology and Infec-

tious Disease (AMMI) Canada. Its objectives are to provide national rates and trends on nosocomial infections in Canadian health care facilities, establish 'benchmark' data that will enable comparison of rates by Canadian health care facilities, and provide evidence-based data that can be used in the development of national guidelines on clinical issues related to nosocomial infections. CNISP data provide a very useful overview of nosocomial infections in Canada. However, differences in surveillance and laboratory detection methods and patient populations in individual CNISP hospitals preclude direct hospital-to-hospital comparison.

Pending evidence of effect on consumer choice or frequency of infection, AMMI – Canada neither recommends nor discourages public reporting of individual hospital infection rates, but if such reporting is carried out advocates that the following principles be followed:

- The goals, objectives, and priorities of a public reporting system are clearly specified, established and, where possible, validated
- public health and infection control surveillance methods are used consistently to collect, analyze, and report the data
- The processes and/or outcomes to be monitored are measurable
- The data (process and/or outcome measures) are useful to the public and the facility for its quality improvement efforts
- There is a multidisciplinary group composed of public health officials, consumers, health care providers, and health care infection control professionals to monitor planning and oversight of the system
- Publicly released reports convey scientific meaning in a manner

that is useful and interpretable to a diverse audience, with potential limitations of data and methodologies noted

- There is a mechanism to provide regular and confidential feedback of performance data to health care providers
- Patient privacy and confidentiality are maintained as per hospital policy and privacy legislation

Currently, infection control programs in Canada may be insufficiently resourced to allow for these principles to be met. At this time AMMI advises against using individual hospital-generated reporting of infection rates as a way of comparing or 'ranking' hospitals. Surveillance and laboratory detection methods are not standardized under such circumstances, making comparisons invalid.

References:

1. Zoutman, DE, Ford DB, Bryce E et al ; The state of infection surveillance and control in Canadian acute care hospitals; *Am J Infect Control* , 2003 ;31: 266-73.
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3. Public disclosure of healthcare-associated infections: the role of the Society for Healthcare Epidemiology of America. *Infect Control Hosp Epidemiol* 2005; 26:210-2.
4. Monitoring hospital-acquired infections to promote patient safety – United States, 1990-1999. *MMWR* 2000; 49:149-53.

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CHICA-Canada

Infection Prevention: Planning for Tomorrow

National Infection Control Week October 16-20, 2006

"Infection Prevention: Planning for Tomorrow" is the theme of this year's National Infection Control Week, October 16-20, 2006.

"Infection control is important to all of us and with the emergence of avian influenza and new diseases like SARS, infection prevention has never been more critical," says Karen Hope, President of the Community and Hospital Infection Control Association of Canada (CHICA-Canada). It is estimated that 220,000 health care-associated infections, including 8,000 deaths, occur in Canada every year. In health care facilities, infections with antibiotic-resistant bacteria add health care costs of between \$42-59 million each year. It is vitally important that we continually plan and reshape our responses to the challenge of communicable disease.

CHICA-Canada is a national, multi-disciplinary, voluntary association of Infection Control Professionals (ICPs) with 19 chapters across the country dedicated to the health of Canadians by promoting excellence in the practice of infection preven-

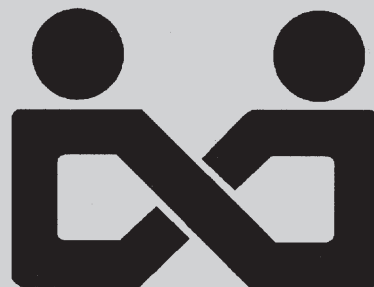
tion and control. Infection Control Professionals play a critical role in safeguarding the health of Canadians – patients in hospitals, residents in long-term care facilities, children in daycares, students in schools, and people in the community. They are involved in many activities from collecting data on infections in hospitals to providing advice to prevent infections in your doctor's office or in your child's day care or school.

The prevention and control of infections is everybody's business. Things you can do:

- Wash your hands frequently
- Cover your nose and mouth when you cough and sneeze
- Stay home if you have a fever
- Keep your immunizations up to date

Contact the Infection Control Professional in your hospital or community for further information on activities planned for National Infection Control Week.

Visit CHICA-Canada's web site (www.chica.org) for infection prevention and control information.



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ELECTIONS TO BE HELD ONLINE!

Elections for CHICA-Canada Board of Directors positions (for terms commencing January 1, 2007) will be held on-line for the first time. CHICA-Canada members are requested to go to www.chica.org to view the candidate profiles and submit your ballot. The deadline for submission of ballots is Monday, November 6, 2006.

CANDIDATES FOR BOARD OF DIRECTORS

There are two nominees for the position of Director of Programs and Projects (three-year term). Candidate profiles and ballot are available at www.chica.org.

Candidates:

Karen Clinker MEd BScN CCOHN CIC, Thunder Bay, Ontario
Denise Gravel-Tropper BScN MSc CIC, Ottawa, Ontario

The deadline for submission of ballots is Monday, November 6, 2006 (5:00 p.m. Pacific Time).

The successful candidate will be announced in the winter issue of the journal.

Profiles of the new Board members will be published in the winter issue of the journal.

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2007 National Education Conference

Shaw Conference Centre, Edmonton, AB – June 9-14, 2007

The Preliminary Program and Call for Abstracts is now available at www.chica.org. For printed information, please contact the Membership Services Office. The registration brochure will be distributed in January 2007. Look for the following information on the 2007 conference webpage:

2007 Preliminary Program – Professional continuing education proposed topics
Call for Abstracts – deadline date March 12, 2007
Call for Clinical Vignettes – deadline date April 9, 2007
“Silly Questions” – deadline date April 9, 2007

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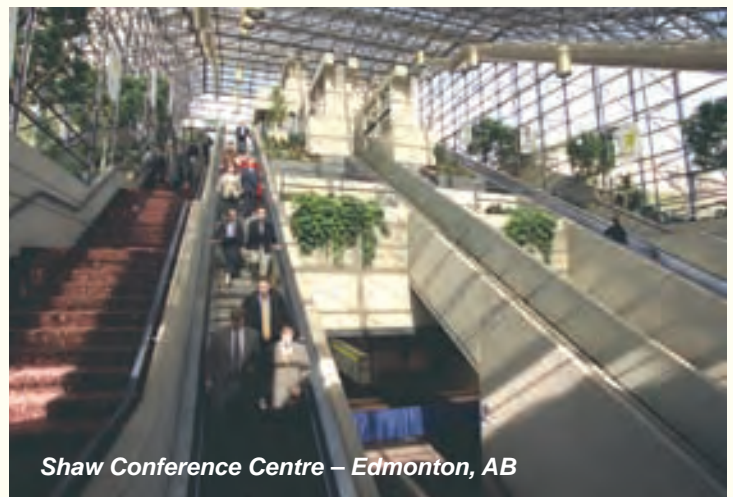
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Shaw Conference Centre – Edmonton, AB

An Industry Showcase will be held to give attendees the opportunity for further knowledge and education through viewing and discussion of products and services in the field of infection prevention and control. Exhibit Information packages will be available in the autumn of 2006. Booth Rentals are \$1,750 each (8'x10' booth) plus GST.

Guidelines for Sponsorship of the conference are available from CHICA-Canada. Sponsors of the conference benefit from additional promotion of their company as well as direct benefits through discounted booth fees, complimentary registration, and the opportunity to hold a Mini Symposium with specific product information. For more information, contact CHICA-Canada.

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1. Chaiyakunapruk N, Veenstra DL, Lipsky BA, Saint S. Chlorhexidine compared with povidone-iodine solution for vascular catheter-site care: a meta-analysis. *Ann Intern Med*. 2002;136:792-801.

2. Ostrandler RV, Boese PJ, Brage ME. Efficacy of surgical preparation solutions in foot and ankle surgery. *J Bone Joint Surg*. 2005;87:980-985.

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The Spectre of a Flu Pandemic: Is it Inevitable?

Dr. Lance Jennings of New Zealand is one of the world's leading respiratory virologists, a consultant to the World Health Organization as well as governments and NGOs around the globe. A Webber Training teleclass lecture by Dr. Jennings was recently broadcast live from the national infection control conference in Christchurch, New Zealand, marking the launch of the South Pacific Teleclass Series. In Dr. Jennings's lecture he shows how the three influenza pandemics of the last century, starting with the 1918 Spanish Flu, were all derivatives of the same avian flu virus. He identifies the pathogenic differences between the present H5N1 avian virus and normal flu viruses identifying the enhanced threat of this flu virus; he describes what is likely to happen in the event of a pandemic; and he describes some sample resources, programs, and other tools designed to minimize the potential risk.

In Canada this Webber Training CD is available exclusively through CHICA-Canada. Contact chicacanada@mts.net. Cost is \$55 plus GST (including shipping).

Membership fee formula changed

As of renewals for 2007, the annual CHICA-Canada Membership Fee will change to:

Individual	\$125.00
Institutional	\$175.00 <i>for the first representative;</i> \$75.00 <i>for each representative thereafter</i>
Silver/ Student	\$75.00

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