

Vol. 22 No. 3
Fall 2007



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Single-use device
reuse risks

Multi-drug resistance
in casualties returning
from Afghanistan

Paramedic
immunization

Identification badges:
A potential fomite?

Drama: A venue for
staff education

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Simor et al. ICHE 2002;23:696-703

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Fawley et al. J. Clin. Microbiol. 43:2685-2696



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

MISSION

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

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Pat Piaskowski, RN, HBScN, CIC
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The ICP: Infection Prevention and Control Practitioner or Infection Prevention and Control Professional?

Are we having an identity crisis as ICPs? Is there a difference between an infection control practitioner or infection control professional? In recognition of the true nature and scope of our roles should we not include the term “prevention” in our title?

In any health care setting or gathering of ICPs it is not uncommon to hear the term infection control practitioner being used. Although in many cases we are speaking to those who understand the role, there are many cases where we are speaking to those who may not clearly understand.

Does this “multiple branding” confuse our public and other health care partners?

As infection prevention and control practices continue to gain recognition as the foremost patient safety initiatives perhaps we should be clearer on who we are.

According to *Merriam-Webster's Medical Dictionary* (Retrieved Sep-

tember 18, 2007, from Dictionary.com website: <http://dictionary.reference.com/browse/>), a practitioner is “one who practices a profession and especially medicine” and a professional is “a person who is professional; *especially* : a person who engages in a pursuit or activity professionally.” Which of these definitions describes who we are and what we do?

The choice of title is clearly articulated in CHICA-Canada’s mission statement: “CHICA-Canada is a national multidisciplinary 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.”

In addition, there are the APIC\CHICA-Canada infection control and epidemiology: Professional and

practice standards which were first published in 1999 (AJIC 1999;27:47-51). The preface to these standards and the standards use the term “infection control professional” throughout. The document is in two sections and addresses both infection prevention and control practices as well as professional standards.

National Infection Control Week (October 15-19, 2007) may be a good time to promote and begin to use a clearer and more concise description of who we are and what we do... in other words our profession as Infection Control Professionals. We can all do this through consistent use of the term of “infection prevention and control professional” in our conversations, professional presentations and in our articles and submissions. Each chapter can also promote the terms to their individual members and encourage the use of the term in infection prevention and control works produced at the local, regional, provincial or national levels. ●



Joanne Laalo, RN, BSc N, CIC

Shaping the future of CHICA-Canada

alleged nosocomial MRSA infection in a patient. The challenges that await us most likely include public reporting of HAI's with performance on these indicators tied to healthcare funding and therefore a strong impetus for healthcare facilities to prevent as many HAI's as possible.

Our profession is in an accelerated state of evolution and what a great time for us (CHICA-Canada) to take the lead to move beyond our basic professional knowledge by demonstrating how we can create extraordinary value for our patients by anticipating and planning for these emerging issues.

One example of how CHICA is anticipating and planning for the future is with our partnership with the Canadian Federation of Infectious Diseases (CFID) and the Association of Medical Microbiology and Infectious Disease (AMMI). We are planning for a National Infectious Diseases Day to be held during Infection Control Week on October 18, 2007 in Ottawa, which

includes morning meetings with Members of Parliament, followed by a press conference. During the afternoon, CHICA is responsible for the content and facilitation of two workshops, one with the focus on HAI's and the second on community-associated infections with recommendations arising from each session that will form the basis of a National ID strategy. The goal of the day is to make politicians aware of the need for a National Infectious Diseases strategy of which infection prevention and control is an integral part. This will be a great opportunity for the voice of CHICA-Canada to be heard by politicians, civil servants, policy makers and many other invitees from union and Aboriginal groups.

By lobbying and educating government and various stakeholder groups who help to shape public policy, the hope is that we can position ourselves with these groups to be on their radar as "the" experts to contact when an IPAC issue is under consideration. As many of us know, poorly selected or uninformed methods of data collection and reporting can have a negative effect on our practice as less time is spent on those areas of our practice that we know are a priority.

This is definitely a very exciting and challenging time for our profession and organization as we move forward and there is a lot of work to do. I encourage you to become involved in a more active role with CHICA-Canada either by participation on a standing committee, interest group or by filling out the section of your annual membership form that asks about your willingness to serve. Think about nominating someone for the Board positions that will be available in 2008 and watch for upcoming opportunities for your participation as listed on the CHICA-Canada web page, www.chica.org. ●

As I enter the last quarter of my term as President, there are many themes emerging that have or may impact our practice as infection prevention and control professionals. In the last year we have seen an increased focus in the media from patient safety advocates and consumer groups on healthcare-associated infections (HAI's) and their deleterious effects to patients. More recently in the media, there a legal case occurring in a Canadian healthcare facility related to

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Façonner l'avenir de CHICA-Canada

A l'heure où j'entame le dernier trimestre de mon mandat de présidente, j'aimerais vous faire part de plusieurs thèmes nouveaux qui ont ou qui pourraient avoir des répercussions sur votre travail de professionnels de la prévention et de la lutte contre les infections. Au cours de la dernière année, nous avons constaté une plus grande présence dans les médias d'organismes de promotion de la sécurité des patients et de groupes de consommateurs qui s'expriment sur les infections liées aux milieux de soins de santé et leurs effets nocifs sur les patients. Plus récemment, il a été question de l'action en justice intentée contre un centre médical canadien au sujet d'un prétendu cas d'infection nosocomiale à SARM. Les défis qui nous attendent incluent fort probablement la déclaration publique des infections liées aux milieux de soins de santé. Le rendement de ces indicateurs sera tributaire du financement des soins de santé et, par conséquent, les centres médicaux seront incités à prévenir le plus possible ces types d'infections.

Notre profession évolue à un rythme accéléré et la conjoncture est très favorable pour que nous (CHICA-Canada) agissions en leaders. Nous pouvons aller au-delà de l'application de nos connaissances professionnelles de base en démontrant que nous pouvons créer de la valeur extraordinaire pour nos patients grâce à l'anticipation et à la planification.

Un exemple de la façon dont CHICA anticipe et planifie l'avenir est notre partenariat avec la Fondation canadienne des maladies infectieuses (FCMI) et l'Association pour la microbiologie médicale et l'infectiologie (AMMI). Nous planifions la tenue d'une journée nationale de l'infectiologie, le 18 octobre 2007, dans le cadre de la semaine de la prévention des infections, à Ottawa. Au pro-

gramme : des réunions dans la matinée avec des députés, suivies d'une conférence de presse. Dans l'après-midi, CHICA est responsable du contenu et de l'animation de deux ateliers. L'un porte sur les infections en milieux de soins de santé et l'autre, sur les infections acquises dans la communauté. Les recommandations découlant de chaque atelier serviront de base à l'élaboration d'une stratégie nationale relative aux maladies infectieuses. L'objectif de la journée est de sensibiliser les politiciens à la nécessité d'une telle stratégie, dont la prévention et la lutte contre les infections font partie intégrante. Ce sera là une occasion formidable pour CHICA-Canada de se faire entendre des politiciens, des responsables de l'élaboration de politiques ainsi que d'invités provenant du milieu syndical et de groupes autochtones.

Par le lobbying ainsi que la sensibilisation du milieu gouvernemental et des divers intervenants qui gravitent autour de l'élaboration de politiques, nous espérons que nous retiendrons l'attention de ces groupes, qui verrons

en nous « les » experts à consulter chaque fois qu'il sera question de prévention et de lutte contre les infections. Comme plusieurs d'entre vous le savent, les méthodes de collecte et de déclaration de données mal choisies ou mal informées peuvent avoir des effets néfastes sur l'exercice de notre profession, puisqu'elles nous empêchent de consacrer tout notre temps à des secteurs qui sont prioritaires.

C'est une période à la fois très stimulante et très difficile pour notre profession et notre organisme : nous continuons d'avancer et nous avons beaucoup de travail devant nous. Je vous encourage à jouer un rôle plus actif au sein de CHICA-Canada, par exemple, en participant à l'un de ses comités permanents ou de ses groupes d'intérêts. Vous pouvez remplir la section du formulaire annuel qui vous invite à signaler votre souhait de contribuer concrètement. Envisagez de proposer le nom de candidats aux postes à combler au conseil d'administration en 2008 et surveillez les activités à venir sur le site Web de CHICA-Canada, www.chica.org. ●

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Single-use device reuse risks

ABSTRACT

Efforts to reduce both costs and medical waste have led many health systems to start reusing single-use medical devices (SUDs) after cleaning and sterilizing (i.e. reprocessing). There is currently a wide range of SUD types being reused in many health systems. The objective of this paper is to provide a brief summary of risk issues associated with critical SUDs, based on a rapid review of the available literature. The specific focus is on risk issues, but includes discussion of economic and legal/ethical issues as well. The evidence in the literature regarding the safety of reuse of SUDs indicates that for certain devices (e.g. heart catheters) reuse can be safe (in terms of patient infection) and cost-effective as long as stringent reprocessing protocols are followed. However, potential risks associated with reusing SUDs are not just limited to infection of patients. There are staff and environmental risks, plus important legal, ethical, and financial issues to consider in a reuse policy. There are currently no Canadian guidelines on reuse or reprocessing SUDs, although a national Scientific Advisory Panel on Reprocessing of Medical Devices has made recommendations. Additionally, reuse of SUDs is interwoven with the issue of infection control and reprocessing procedures in general and as applied to multiple-use devices. With limited healthcare resources, there will always be a trade-off between the human resources and costs required to clean and sterilize reused devices with costs associated with purchasing and disposing of non-reused SUDs. Evaluation of complete operational pathways, especially for more expensive and commonly used SUDs, will be useful to properly determine the balance of benefits, risks, and costs under a reuse policy.

INTRODUCTION

In the 1970s and '80s, medical device manufacturers began to produce an increasing number of single-use medical devices (SUDs)^{1,2} in response to consumer demand and availability of new synthetic (e.g. plastics) technology. Efforts to reduce both costs and medical waste led many hospitals and health systems to start reusing SUDs after cleaning and sterilizing (i.e. reprocessing).

SUDs range from inexpensive basic equipment, such as disposable procedure gloves, to expensive and complex devices with electronic components, such as electrophysiology catheters. Some specialized SUDs with no reusable equivalents were developed specifically for new minimally invasive surgical techniques such as laparoscopies².

It is difficult to determine whether manufacturers began to label devices as single-use in order to avoid the additional costs needed to justify the multiple-use label, if it was a marketing strategy, or simply a way to limit liability³. In many cases it is difficult to determine whether there are appreciable differences between the original multiple-use device and an SUD⁴. Currently, there is no regulatory requirement in Canada regarding how many times a multiple-use device can be used. However, if a device is labelled multiple-use, it has been suggested that the manufacturer should be compelled to label how many times it is safe for reuse and should provide instructions for reprocessing and quality control³.

The following classification of device types developed by Spaulding⁵ is commonly used to describe SUDs:

- *Non-critical device*: equipment/device that comes in contact only with intact skin or does not touch the patient/client.

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- *Semi-critical device*: any device that comes in contact with mucous membranes or non-intact skin but does not penetrate them.
- *Critical device*: any device that enters sterile areas of the body or the vascular system.

There is currently a wide range of SUD types being reused in many health systems, and to our knowledge there are no published systematic reviews or health technology assessments (HTAs) that address the risk, benefit, or cost issues in a generic fashion. In Canada, HTAs have been published on single-use cardiac catheters^{3,6} and hemodialysis⁷. Most attention appears to have been placed on relatively expensive SUDs, for which the financial impact on health systems would presumably be larger. The Canadian Agency for Drugs and Technology in Health (CADTH) is in the process of conducting an HTA and economic analysis for informing Health Canada policy on reuse of SUDs; publication is expected in the next few years (personal communication: Dr. David Hailey).

At present there are no current Canadian regulations for reprocessing SUDs. However, the national Scientific Advisory Panel on Reprocessing of Medical Devices has made recommendations to Health Canada about the issue, and a letter from Health Canada to health systems and professionals was issued⁸. These recommendations include regulation of reuse of SUDs by Health Canada, with validated evidence for safe reprocessing. This panel has also provided a list of criteria for device design and materials that could be used to decide whether it is safe to consider reprocessing particular devices.

As many health systems are in a position of having to make interim policy decisions regarding reuse of SUDs before Health Canada issues regulations are implemented, we undertook a review of the readily available literature to provide an evidence basis for such decisions. Thus, the objective of this brief report is to provide a summary of risk issues asso-

ciated with critical SUDs. This report only discusses the reuse of critical devices as, given the ability to properly clean the device, there appears to be minimal risk of disease transmission involved with reuse of non-critical or semi-critical devices⁹. The specific focus is on risk issues, but includes discussion of economic and legal/ethical issues as well.

METHODS

A literature search was performed for published peer-reviewed journal articles, using the Internet search engine PubMed®. The search strategy used the following search terms (using the “and” operator in all cases): Disposable device cost reuse (224 references); disposable device cost reuse review articles (22 refs.); disposable device risk reuse (111 refs.); medical device reuse (20 refs.); reprocessing device (289 refs.); reprocessing medical device (14 refs.); single-use device reuse safety (58 refs.); single-use device reuse economic (72 refs.); resterilization medical devices (32 refs.).

Additionally, Google® and Google Scholar® were employed to identify relevant government and non-peer-reviewed literature sources of information. The following search terms were used (again using the “and” operator): Medical device reprocessing cost; single-use device reuse; single-use medical device; single-use device reuse economic; single-use device costs; single-use device reuse costs; single-use device reuse safety.

Results were combined into a Reference Manager database (available upon request), with a resulting total of 646 references after duplications were removed. Much of the literature in this area dates back to the 1980s, therefore no date restrictions were placed on the search strategy. Specific references in this report were chosen as to relevance to the objective.

RESULTS

Examples of medical risk issues are summarized in Table 1. No systematic reviews or health technology assessments that addressed reuse of SUDs in general were found, however, a number

of studies that have addressed specific devices have been published. These studies are summarized in Table 2. The typical focus of literature studies and policies is on cross-patient infection (bacterial, viral, and prion related), which is obviously a concern. However, we were unable to find specific information on cross-infection rates. Such rates, compared to other sources of infection in hospitals, are likely to be low. However, there are many non-infection risk issues as well. Pyrogenic reactions can occur in patients as a result of endotoxins, and toxicity to staff as a result of exposure to reprocessing chemicals is a concern. Additionally, compromised integrity and/or function of devices as a result of reprocessing are of concern with some devices. Health systems may be introducing generic patient safety issues if there are health risks that can be attributed to the fact that a SUD is being reused as compared to a device labelled as multiple-use³. Common sense dictates that SUDs should only be reused if there is evidence to show that the risks to the patient and staff are no higher than using an equivalent multiple-use device. This premise is that of the U.S. Federal Drug Administration.; i.e. reprocessors must demonstrate and submit evidence to substantiate this¹⁰.

In addition to medical risk issues, there are appreciable organizational risks from a legal/ethical perspective^{11,12}. For example, by using medical devices in a way contrary to the manufacturer’s instructions, health systems potentially expose themselves to increased liability under civil law in the event of cross-patient infection or equipment malfunction related to a reused SUD². According to the Ontario Best Practice Guidelines for Cleaning Disinfection and Sterilization (PIDAC), a facility reusing SUDs will bear the brunt of legal responsibility when deciding what can be safely reprocessed. Managing this legal risk involves “written policies, extensive testing of reprocessing protocols and strict adherence to quality assurance investigations”¹³.

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An example of an ethical issue involves distributive justice in allocating available resources. “Wastefulness” may not be justifiable if a patient may be denied a service because of a lack of resources; e.g. if reusing single-use heart catheters does not negatively affect their effectiveness and the risk to the patient has not been increased, the practice of reusing these devices may

be ethical. Disclosure and allocation issues arise when some patients receive new devices and some reused devices. If a patient asks for only new devices, the health region will need to decide how to proceed³. Health systems and hospitals will need to determine whether patients will be informed that an instrument used for their procedure was a reused SUD²⁴. If reprocessing

occurs, the health region’s policy on reprocessing should be public knowledge; and providers should be prepared to answer patients’ questions on the issue.

Risks of SUD reuse must be balanced against the benefits. The benefits largely relate to potentially decreased aggregate device costs, and perhaps

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Table 1: Medical Risk Issues

Risk	Issue	Findings	Risk Management
Cross-patient infection	Incomplete cleaning and/or sterilization could cause biofilms, biological material, pathogens, etc. left on the device which in turn could transmit infection in the next patient recipient. Infection can occur even if new SUDs are used in conjunction with other improperly sterilized instruments (e.g. in endoscopy) ¹⁵ . Transmission of prion-based disease is also a concern because prions are not destroyed by normal sterilization processes.	While various studies have found that cleaning and sterilization of cardiac catheters, sphincterotomes, coagulation probes, etc. is effective ¹⁶⁻¹⁹ , other studies have found, particularly for laparoscopic dissection devices, that typical sterilization is not effective ²⁰ . The risk of iatrogenic infections has been estimated as low for some procedures (e.g. cross-contamination of endoscopes: 1 in 8 million ¹⁵); however, considering study limitations it is impossible to determine the true transmission rates ²¹ .	Critical devices that come in contact with brain and lymphoreticular tissue (including tonsils) are typically not reused ²² . A stringent reprocessing protocol should be in place. Regular quality control inspections should be conducted for cleaning and sterilization procedures. Standard sterilization procedures have been shown to be ineffective in situations where blood dries on a device (e.g. heart catheters ³).
Pyrogenic reactions	Devices can be contaminated with endotoxins (toxins associated with certain bacteria) that can cause pyrogenic reactions.	Wash water is often a source of endotoxins. Pyrogenic reactions can also occur in new devices due to residues remaining after sterilization.	Pyrogenic reactions can be avoided with specific actions such as using pyrogen-free water ^{3,23}
Compromised integrity or function of devices and clinical effectiveness	Deterioration of materials from use, exposure to chemicals, or heat could cause breakage and/or leaks; loss of flexibility of tubing, etc.	Effectiveness of devices should not be compromised by re-use. Devices should be checked for attributes that could affect effectiveness prior to reuse (e.g. a cardiac catheter should have the original shape, be free of debris and be inflatable to the original diameter ^{3,24-26}). Comparisons should be made with failure rates of new devices; e.g. heart catheter breakage occurs infrequently and can also happen with new catheters ³ .	Visual and mechanical inspections of devices prior to reuse is necessary; e.g. blades should be checked for sharpness and the presence of “barbs”, tubing for flexibility. Devices should be rigorously tested for integrity after multiple uses prior to a reprocessing protocol being approved.
Toxicity of reprocessing chemicals	Chemical residues left on the devices after reprocessing could cause toxic reactions. As well, reprocessing staff are exposed to more chemicals with increased volume of sterilization. Many new devices (e.g. heart catheters) have also been sterilized with ethylene oxide EtO so this is not just a reuse issue ³ .	A detoxification period after sterilization or a 14-day waiting period reduces residual toxicants such as ethylene oxide to acceptable levels ²⁷ .	Testing for residual toxicant levels should be done prior to approval of a reprocessing protocol for each device type.
Medical waste	Disposable equipment creates considerable medical waste, resulting in additional costs as well as potential public health concern. Environmental costs include plastic incineration (with resulting air pollution), and landfill charges.	A high volume of waste is generated from disposable instruments and medical devices, including plastics and cardboard ²⁸ . This should be balanced with the energy used in the reprocessing of reusable devices (e.g. heat, water, cleaning agents).	Multiple-use devices can be used instead of SUDs where feasible. This can be balanced with use of SUDs where safe and cost effective.



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decreased medical waste. In a publicly funded health system such as Canada's, in which resources are limited, cost is an important issue as well. There

are appreciable costs associated with reprocessing, which include¹⁴:

- Direct labour for cleaning and sterilizing

- Testing for device integrity and effectiveness of sterilization
- Cleaning agents, sterilants, monitors, etc.
- Staff education on reprocessing
- Cleaning, sterilization, and other reprocessing protocol development
- Possibly increased liability insurance
- Amortization of capital equipment
- Disposal
- Increased inventory/storage of reprocessed devices due to long turnaround time for reprocessing

Table 2: Examples of SUD Reuse Studies

Medical Device	Conclusions
Single-use cardiac catheters ²³ ; cardiac electrode catheters ^{23,24,27,29-31}	With appropriate testing, cleaning/sterilizing, and record-keeping procedures, cardiac catheters can be reused without increased risk to the patient. HTA ³ reviewed safety, economical, ethical and legal issues; and concluded that with effective cleaning, sterilization, and quality control procedures, diagnostic and angioplasty catheters can be reused without putting patients or staff at risk.
Hemodialysers ³²⁻³⁴	Hemodialyser reuse for the same patient was found to be cost-saving and safe assuming rigorous quality assurance and quality control during reprocessing. Reuse only should be considered in centres that use automated reconditioning equipment ³³ .
Perfusion cannulas ³⁵	Limited reuse (5 times) was safe and cost-effective using a comprehensive approach. Testing included sterilization efficacy, device structural and function assessment, biocompatibility assessments, and an <i>in vitro</i> study.
Endoscopic/laparoscopic instruments ^{15,17,18,20,36-38} e.g. sphincterotomes, papillotomes, retrieval baskets, biopsy forceps	Accessories such as papillotomes and retrieval baskets were found to be safe, reliable and cost-effective with reuse. Small, complex instruments such as harmonic scalpels could not be effectively cleaned or sterilized and reuse was not recommended.
Pacemakers ³⁹	Heart pacemakers can be safely reused with rigorous technical control program and sterilization processes in place, with substantial economic advantages.
Argon plasma coagulation (APC) probes ¹⁶	<i>In vitro</i> study demonstrated that APC probes could be consistently sterilized and safely reused with the potential for appreciable cost savings over single use.

The magnitude of such costs will obviously be facility- or health system-specific.

In terms of regulatory context, as previously mentioned at present there are no current Canadian regulations for reprocessing SUDs. Provincial positions on reuse of SUDs include²:

- Manitoba hospitals were ordered to stop using “critical contact” SUDs in 1999.
- Quebec Minister of Health and Social Services has banned the reuse of cardiac catheters¹¹ but allows some other devices if the patients they were used on were not considered at risk of being a vector of prion caused disease; e.g. Creutzfeldt-Jakob Disease (CJD).
- British Columbia's Patient Safety Task Force has a short-term provincial task force to review current reuse policies and to make recommendations for a single process at the provincial level.
- The Northwest Territories is planning to revise their hospital standards regulations so that a SUD would not be used more than once on a patient and should not be used on another patient.
- Ontario Best Practice Guidelines¹³ state that “critical and semi-critical medical equipment/devices labelled as single-use must not be reprocessed and reused unless the reprocessing is done by a licensed reprocessor”. This is a more stringent requirement than the Health Canada recommendations⁸. These guidelines are also much more

Table 3: Examples of SUD Regulations/Policies in Other Countries²

Country	SUD Reprocessing Permitted?	Reprocessor Regulations
United States	Yes	FDA requires that all reproducers of SUDs are subject to the same regulatory requirements as the original equipment manufacturers.
France	No	
Germany	Yes	Reprocessors must be registered.
Australia	Yes	Reprocessors are considered to be “manufacturers” and must comply with the legislation related to medical device manufacturing. If a hospital reuses SUDs, they must either become a “manufacturer”, or use a third-party reprocessor.
United Kingdom	Yes	No regulatory ban at present, but a strong statement by the Medical Devices Agency (MDA) against the practice was issued in 2000.
Sweden	Yes	Hospitals that reuse are considered “manufacturers” and must comply with Medical Devices Directive of EU. Hospitals must obtain informed consent of patient.

detailed than the Health Canada recommendations.

Table 3 summarizes regulations in other countries.

DISCUSSION

The evidence in the literature regarding the safety of reuse of SUDs indicates that for certain devices (e.g. heart catheters) reuse can be safe (in terms of patient infection) and cost-effective as long as stringent reprocessing protocols are followed. The U.S. Food and Drug Administration has developed criteria for reprocessing¹⁰ but Canada (at neither the national nor the provincial level) has not to date. However, potential risks associated with reusing SUDs are not just limited to infection of patients. There are staff and environmental risks and risks associated with functionality of devices, plus important legal, ethical, and financial issues to consider in a reuse policy. An important operational issue is that of the appreciable staff resources necessary for reprocessing, even if a third-party reprocessor is employed. With limited healthcare resources, there will always be a trade-off between the human resources and costs required to clean and sterilize reused devices with costs associated with purchasing and disposing of non-reused SUDs. Evaluation of complete clinical

and operational pathways, especially for more expensive and commonly used SUDs, will be useful to properly determine the balance of benefits, risks, and costs under a reuse policy. A blanket policy of no reuse may be risk-averse, but may not be cost-effective.

As an example of a framework for reuse decision-making, we developed the flow diagram shown in Figure 1. This process includes prioritization of SUD issues assuming a risk-neutral organization. Of course, if an organization is particularly risk-averse, then such a diagram will not be useful. In the absence of regulation, each organization needs to carefully evaluate any policies and actions.

This review has a number of limitations. A complete and systematic review of the tremendous variety of individual SUDs and corresponding literature was not conducted. As previously mentioned, CADTH is in the process of conducting an extensive review; publication of this is not expected for several years. Many health systems and hospitals have internal policies and procedures that are not readily accessible. Additionally, much of the published literature in this field is dated (e.g. from the 1980s). Technologies and processes have likely changed considerably since these studies were conducted

(e.g. changes to use of ethylene oxide sterilization and development of new sterilization technologies such as Steris™ and Sterrad™).

The regulatory environment in this area is in flux. Additionally, the degree of provincial and/or health region control under the new regulations is unclear. Thus, Canadian health systems are in a position of determining interim policies (potentially including business as usual) until the new regulations are promulgated. Of course, reuse of SUDs is interwoven with the much larger issue of infection prevention and control and reprocessing procedures in general and as applied to multiple use devices. It may be counterproductive to place an undue focus on reuse of SUDs in a health system that does not have clear and evidence based infection prevention and control policies and procedures.

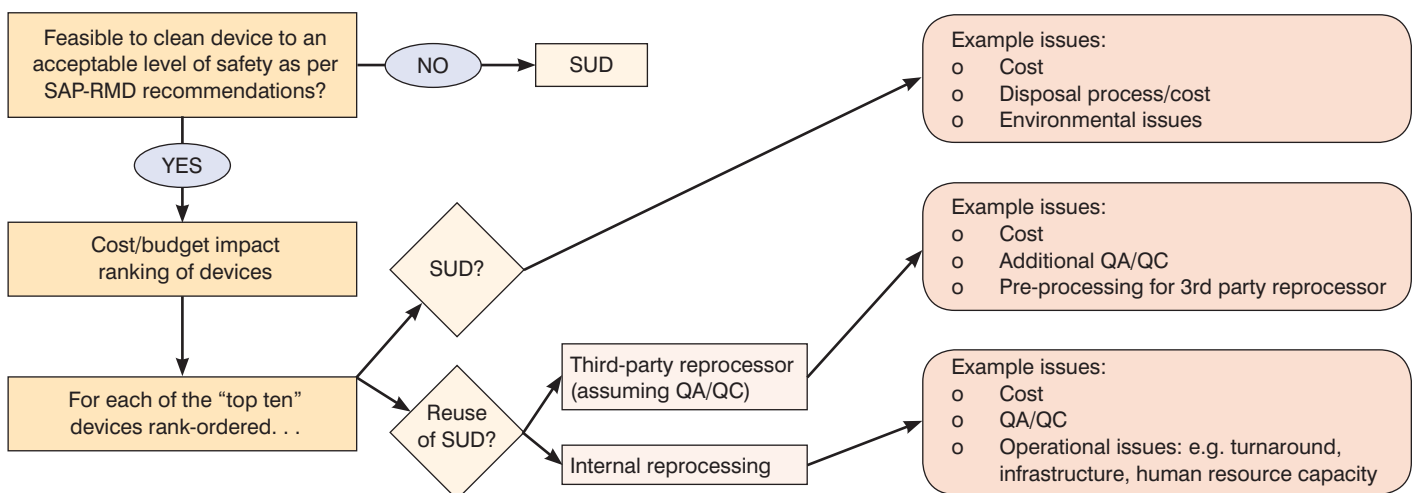
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Figure 1: Example flow diagram for reuse of critical SUDs



Notes: SAP-RMD: Scientific Advisory Panel on Reprocessing of Medical Devices, Health Canada; (Feb 10-11, 2005)

SUD= single use medical device, QA/QC= quality assurance/quality control

Please note that according to most regulatory agencies, if a patient has possible prion disease, critical SUDs used on that patient should never be reused.

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Acinetobacter baumannii in casualties returning from Afghanistan

ABSTRACT

Military personnel returning from Afghanistan and entering Canadian hospitals may be infected with multi-drug resistant *Acinetobacter baumannii*. The Public Health Agency of Canada, in conjunction with the Canadian Forces, have developed an alert to inform hospitals of the potential for importation of *Acinetobacter baumannii*, and the appropriate precautionary measures that should be taken to prevent secondary spread within hospitals.

BACKGROUND

Acinetobacter baumannii is a gram-negative bacterium that is typically multi-drug resistant and capable of surviving within the environment for significant periods of time. It can cause a wide range of infections including pneumonia, sepsis, meningitis, cellulitis and urinary tract infections¹. This organism presents a threat to immunocompromised patients and has become an emerging healthcare-associated infection that is of particular concern within intensive care units². *A. baumannii* is also a common cause of war wound infections³. In war settings, infection with this organism may occur due to contamination of trauma wounds in the field environment, as it is known to be found in water and soil. However, infection may also occur within the hospital setting where colonized and/or infected patients are the source and *Acinetobacter* is transmitted from patient-to-patient via healthcare providers or through contaminated environmental surfaces⁴.

Military experience with drug-resistant *Acinetobacter*

A. baumannii has been known to cause hospital-associated outbreaks⁴⁻⁷. Recently, this organism has received attention due to increased reports of infection and/or the colonization of

injured soldiers who have returned to the United Kingdom (UK) and the United States (US) from Iraq and Afghanistan⁸. Between January 1, 2002 and August 31, 2004, medical facilities that treat wounded soldiers returning to the US from Iraq and Afghanistan, reported 102 patients with *A. baumannii* bloodstream infections. The majority of these cases came from the Landstuhl Regional Medical Center (LRMC) in Germany and the Walter Reed Army Medical Center (WRAMC) in the District of Columbia, US. At both facilities a significant increase in the number of such infections was seen in 2003 and 2004 compared to previous years⁹. A paper published in October, 2005 indicated that since May 2003 the WRAMC had 53 cases of nosocomial transmission, resulting in four deaths, in their facility³. Since March 2003, wounded soldiers returning to the UK from Iraq have been entering UK National Health Service (NHS) hospitals⁸. An article published in July 2006 reported that within the UK, 10 different strains have been linked to individuals returning from Iraq¹⁰.

The source of *A. baumannii* infections in wounded soldiers has been a contentious issue. It remains unclear as to whether infections have occurred due to contamination at the time of injury or following hospital admission. One study was conducted to determine if common source(s) of infection existed between infected individuals from the UK and the US with links to Iraq. Isolate DNA fingerprints using pulsed-field gel electrophoresis (PFGE) were compared revealing three outbreak strains that were common to both, indicating a potential common source. These strains included the T-strain, a strain called OXA-23 clone 2 and a minor outbreak strain referred to as H1AC-2, H3AC-1 or USAC-3. The T strain in particular has been highly

associated with soldiers returning to the UK from Iraq. It is also responsible for the greatest number of *A. baumannii* infections within the UK¹⁰.

Canadian situation

The experiences of the US and UK warn of the threat of both importation of specific strains of *A. baumannii* and the potential for secondary transmission within hospital settings³. The Canadian military transfers seriously injured soldiers from field hospitals in Afghanistan to the US Landstuhl Regional Medical Center hospital in Germany prior to transferring the patients into Canadian hospitals. In general, Canadian personnel requiring hospitalization after returning from Afghanistan are admitted to a local hospital based on where the individual is stationed. Therefore, there is the potential for nosocomial spread of imported *A. baumannii* strains across Canada. As of April 2007, a reported 108 military personnel have returned from Afghanistan and entered Canadian hospitals. The Public Health Agency of Canada's (PHAC) National Microbiology Lab (NML) in Winnipeg, Manitoba has already identified similar MDR-strains reported by the UK, US, Afghanistan and Iraq among returning Canadian troops. To our knowledge, no nosocomial transmission of these strains has been seen in Canadian hospitals. This can be attributed both to infection control practices already in place in Canadian hospitals and to the proactive steps taken by PHAC and the Canadian Forces as described below.

Actions and recommendations

In order to prevent the importation and possible secondary spread of MDR-*A. baumannii* in Canadian hospitals PHAC, in conjunction with the Canadian Forces, has implemented precautionary measures. An alert was created to monitor the spread of imported *Acinetobacter* spp. in Canadian hospitals. It describes the infection prevention and control precautions and provides information on what actions to take should an individual

test positive for *A. baumannii*. This form is included in the medical files of all personnel injured in Afghanistan and transferred to Canadian hospitals. A recently updated version of the alert can be found in Appendix 1. Hospitals are asked to contact the Nosocomial and Occupational Infections Section, PHAC if any patient returning from Afghanistan is tested for *A. baumannii*. If positive, completion of an epidemiological questionnaire will be requested. The PHAC also requests that hospitals

forward any *Acinetobacter* isolates to the NML for further molecular typing.

A. baumannii can be transmitted through direct or indirect contact. Therefore, there is a risk of nosocomial transmission if direct contact occurs between an infected or colonized individual and a susceptible patient. Transmission can also occur via the hands of health care providers or through contact with contaminated instruments and fomites¹¹. Recommendations to prevent secondary transmission include

Appendix 1: Copy of the Multi-drug resistant *Acinetobacter baumannii* alert instructions

Alert: Multi drug resistant *Acinetobacter baumannii*

Canadian Forces soldiers returning to Canada who have been treated in Afghanistan or at Landstuhl Regional Medical center (LRMC) in Germany may be infected or colonized with multi-drug-resistant *Acinetobacter* (MDRA) and may be sources of introduction of this organism to Canadian health-care institutions. In order to prevent secondary transmission of this organism, the following is recommended for patients admitted to Canadian hospitals following treatment in Afghanistan or LRMC:

1. Place on contact precautions according to PHAC Infection Control Guidelines: *Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care*, pending results of screening cultures (pages 45-51). <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/99vol25/25s4/index.html>. If pneumonia is suspected with productive sputum individuals should be placed on both contact and droplet precautions.
2. Screening cultures for *Acinetobacter* should be taken from: groin, wounds or medical device exit sites, urine, and sputum or endotracheal secretions.
3. The microbiology laboratory should test the screening specimens submitted from these soldiers for multi-drug resistant *A. baumannii* (MDRA). Tests for other antibiotic resistant organisms (AROs) including methicillin resistant *Staphylococcus aureus* (MRSA), vancomycin resistant enterococcus (VRE) and extended-spectrum beta-lactamases (ESBLs) should also be done.
4. If screening cultures are positive and/or the patient is known to be colonized or infected with MDRA upon arrival a consult with an infectious disease physician is recommended. If screening cultures are negative, contact (and droplet if applicable) precautions may be discontinued.
5. Patients with positive screening cultures should remain on contact (and droplet if applicable) precautions until they have three sets of negative specimens taken at least one week apart for all previously positive sites. If a patient tests positive in Landstuhl they still would require three negative tests in Canada before being taken off contact precautions. If they test negative in Landstuhl they still need to be tested in Canada.
6. In order to monitor the situation at a national level, the National Microbiology Laboratory would like to examine the molecular epidemiology of strains identified in these individuals. Please submit any organisms you identify (*A. baumannii* or other AROs) from these individuals (infections or colonization) to:
Dr. Michael Mulvey Email: Michael_Mulvey@phac-aspc.gc.ca
National Microbiology Laboratory
1015 Arlington St., Winnipeg, Manitoba R3E 3R2
Tel: 204-789-2133 Fax: 204-789-5020
7. Please contact the Nosocomial and Occupational Infections Section if you receive a patient from Afghanistan and test for *A. baumannii*. **It is important that you contact us regardless of the test results so that we can keep track of the number of individuals tested.** We will also provide you with a one page questionnaire to complete at that time.
Contact: Ms. Shirley Paton Shirley_Paton@phac-aspc.gc.ca
Phone: 613 957-0326
8. If a soldier tests positive for MDR *Acinetobacter* within your facility you should monitor for *A. baumannii* within the facility for at least six months post identification of the organism to determine if there has been any secondary transmission.



the screening of all returning soldiers entering Canadian hospitals for MDR-*A.baumannii*. The groin, wounds, and medical device exit sites should be swabbed and urine, sputum/endotracheal secretion samples taken for *A. baumannii* screening cultures. These patients should be placed on contact precautions (and droplet if necessary) on admission as outlined in the Health Care Infection Control Guideline series entitled "Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Health Care"¹¹. Precautions should be maintained until screening cultures are found to be negative as described in appendix 1. If a patient is known to be infected or colonized prior to arrival, or the screening cultures for *Acinetobacter* spp. are found to be positive, an infectious disease physician should be consulted and the patient should remain on contact precautions. In addition, hospitals receiving these patients should be screening for other multi-drug-resistant organisms such as Vancomycin-resistant Enterococci or Methicillin-resistant *Staphylococcus aureus*.

As military personnel continue to be injured in Afghanistan and to enter Canadian hospitals, it is critical that infection control professionals and microbiologists are aware of this issue and the appropriate precautionary measures that should be taken. ●

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Paramedic services workplace program improves influenza immunization rates among paramedics

ISSUE

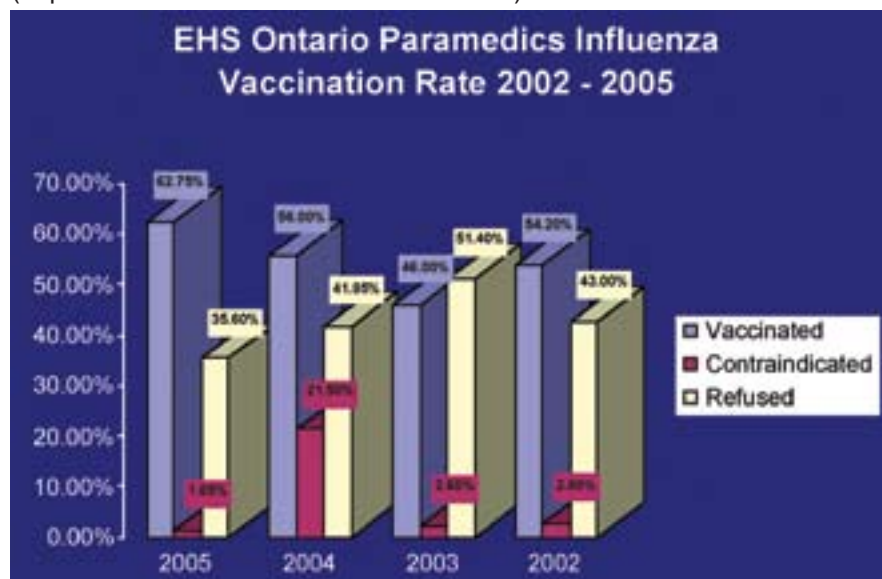
The National Advisory Committee on Immunization (NACI) and the Advisory Committee on Immunization Practices (ACIP) have identified healthcare workers (HCW) as individuals capable of transmitting influenza to patients at high risk for influenza-related complications^{1,2,3}. Influenza is easily transmitted from person to person and a HCW infected with influenza can transmit the disease one day prior to the onset of symptoms^{1,2,4}. It has been shown HCWs can experience subclinical infections⁵ and, in addition, many continue to work while they are sick⁶. As a result, HCWs can unknowingly transmit influenza to high-risk patients and they have been epidemiologically linked to transmission of influenza leading to outbreaks in hospitals and long-term care facilities,

which has resulted in increased morbidity and mortality⁷.

HCW influenza transmission risk to high-risk individuals has led to strong recommendations from NACI and ACIP for all healthcare workers to receive annual influenza vaccination^{1,2,3}. NACI considers HCW influenza vaccination a high priority and has stated influenza vaccination is part of the standard of care for protection of patients and “*refusal to be immunized for influenza implies a failure in their duty of patient care*”¹. Despite strong recommendations, annual vaccination rates of HCWs remain low, ranging from 26% to 61%^{1,8-10}.

Paramedics represent a unique segment of the healthcare population because they provide care in the community, long-term care facilities, and hospitals. Paramedics frequently

Figure 1: Ontario paramedic influenza immunization rates 2002-2005 (unpublished statistics from MOHLTC EHS).



respond to healthcare facilities experiencing influenza outbreaks and to homes in the community where the residents may be ill with influenza. While providing pre-hospital care, paramedics often care for elderly or chronically ill patients considered to be high risk for developing severe complications from influenza. Paramedics are HCWs capable of transmitting influenza to patients at high risk of complications¹.

The Emergency Health Service Branch (EHS) of the Ontario Ministry of Health and Long-Term Care (MOHLTC) considers annual influenza immunization of paramedics to be very important and policy was created to ensure paramedic vaccine receipt. In 2000, EHS released the Communicable Disease Standard, which included annual influenza vaccine on the list of mandatory immunizations for paramedics¹¹. This initiative was met with considerable resistance by unions representing paramedics and resulted in a human rights challenge being filed in the courts. As a result, the Communicable Disease Standard was revised in 2002, removing influenza vaccination from the mandatory list of immunizations¹² and an Influenza Control Policy was introduced in the Patient Care and Transportation Standard¹³. This policy has an annual requirement for each paramedic to review an influenza educational bulletin provided by EHS and sign a declaration stating they read the educational review, and declaring their influenza immunization status. In addition to the educational component and declaration, the policy states a paramedic who has not been vaccinated cannot provide patient care in the area of a declared outbreak unless they have chosen to take antiviral medication.

Despite recommendations, policies and the availability of influenza vaccine free of charge from the province, annual influenza vaccination rates remain low with rates for Ontario paramedics, ranging from 46% to 62.75% (Figure 1) during the period covering 2002-2005 (unpublished statistics from Ontario Ministry of Health and Long-Term Care, Emergency Health Services Branch). It was necessary to

review County of Simcoe Paramedic Service vaccination rates and identify methods to improve the rate in order to meet recommendations.

PROJECT

Paramedic immunization rates at the County of Simcoe Paramedic Services (CSPS) were reviewed and a program was designed to improve immunization rates in 2005. The goal was to increase influenza immunization rates to 100% of those eligible to receive and raise the standard of patient care delivered in the County of Simcoe while maximizing paramedic protection against influenza. To achieve this CSPS designed a multifaceted program to educate the paramedic and

provide easy access to influenza vaccination.

An educational program was developed by the infection control officer and delivered as part of mandatory continuing medical education (CME) sessions in October/November 2005. The educational session consisted of a PowerPoint presentation split in two sections. The first half was a didactic session covering the facts about influenza including; severity of illness, signs and symptoms, mode of transmission, communicability, risk populations, and severe complications of the disease. The second half of the presentation was interactive and focused on 13 common facts and myths about influenza immunization

Figure 2: Influenza Vaccine: Fact or Myth?

1. Influenza vaccine can give me the flu.
2. I did not get vaccinated last year and I did not get sick; obviously I do not need to get vaccinated this year.
3. I received influenza vaccination last year, so I do not need to this year.
4. I am young and healthy and do not get sick; I do not need the flu vaccine.
5. Influenza is not a serious disease, it is just a bad cold.
6. Influenza vaccine is not effective, so I am better off getting the flu.
7. Creating the influenza vaccine is just a guessing game.
8. I can still get influenza if I am vaccinated.
9. The side effects of the influenza vaccine are worse than getting the flu.
10. Some people cannot receive the flu vaccine.
11. The vaccine contains mercury and mercury causes Alzheimer's disease.
12. Receiving influenza vaccine each year will weaken my immune system.
13. Pregnant and breastfeeding women cannot receive the influenza vaccine.



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(Figure 2). The entire session focused on delivering accurate information about influenza and the vaccine and the importance of HCW vaccination as a standard of patient care. The Infection Control Officer facilitated both parts of the educational program providing a knowledgeable source capable of answering questions during the session.

In conjunction with the delivery of the educational component of the CME, a workplace influenza immunization clinic was held. The local health unit was approached and provided support to the paramedic services clinics by providing the vaccine and support services. The CSPPS medical director developed a standing order allowing

paramedics to administer influenza vaccine to other paramedics. In order to administer the vaccine in a timely fashion, four paramedics were trained to screen vaccine candidates and administer vaccine to paramedic colleagues who wished to be immunized. Immediately following the completion of the educational session all paramedics were invited to receive the vaccine from one of their peers and declarations of immunization status were completed to ensure compliance with EHS policy. Declarations were collected and used to determine the number of paramedics who received vaccination.

Figure 3: CSPPS influenza immunization rates 2004.

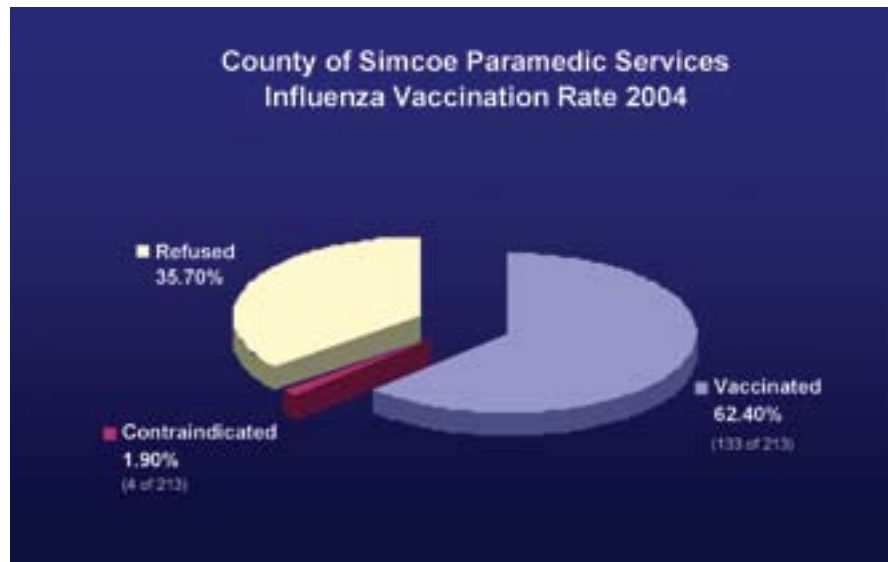
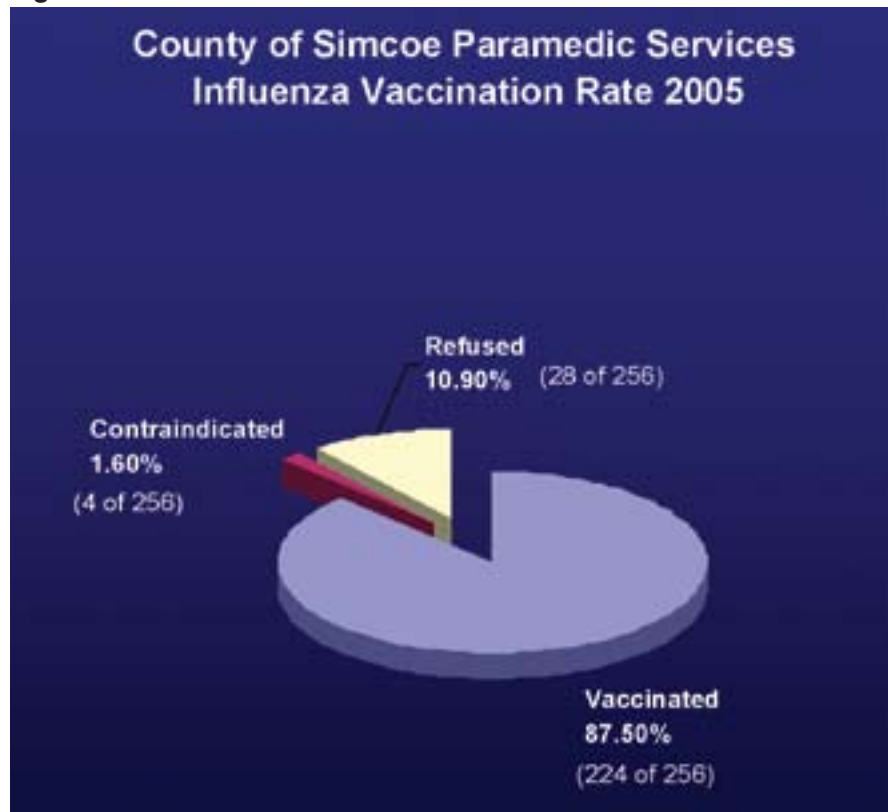


Figure 4: CSPPS influenza immunization rates 2005.



RESULTS

In 2004 the total number of paramedics eligible to receive influenza vaccination was 213: 62.4% (133 of 213) received vaccination, 1.9% (4 of 213) vaccination was contraindicated and 35.7% (76 of 213) refused vaccination (Figure 3). In 2005 the total number of paramedics eligible to receive vaccination was 256: 87.5% (224 of 256) received vaccination, 1.6% (4 of 256) vaccination was contraindicated and 10.9% (28 of 256) refused vaccination (Figure 4). The 2005 numbers represent a significant increase of the influenza vaccination rate from 62.4% to 87.5%, a 25.1 percentage point increase.

LESSONS LEARNED

There have been many studies examining the relationship between HCW knowledge about influenza vaccine and vaccine receipt¹⁴⁻¹⁸. These studies have shown the common reasons for refusal to receive influenza vaccine are related to misconceptions about the vaccine. Common misconceptions such as the vaccine will cause the flu, the vaccine is not effective, and the HCW or the patient is not at risk for influenza.

Discussions with paramedics revealed they were not reading the influenza educational review required by EHS. As a result, many paramedics held these common misconceptions to be true. This became apparent during the discussions at the educational session. By addressing the misconceptions

continued on page 160

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during CME, misconceptions were replaced with facts. The direct result was paramedics became more accepting of immunization and contributed to the success of the program.

Literature has also shown that multi-faceted approaches to influenza vaccination programs contribute to improving influenza vaccination rates among HCWs. Studies have also shown education alone may not be sufficient to increase rates,^{1, 2, 14-20} and factors such as convenient access to vaccine, peer mentoring and role modeling, peer vaccination, and management support were identified as important factors to successfully increase immunization rates of healthcare workers. Some of these factors were present in during the CSPS program and directly contributed to a significant increase in immunization rates. Recognition of these factors is important to ensure future success.

The second half of the educational portion covered the facts and myths about influenza vaccination and was designed to be interactive in order to accommodate a different style of learning and facilitate a strong learning environment. The interactive discussion which took place during this part of the session not only facilitated learning, it created a forum where the opinions of peers could be shared. Senior staff members perceived as leaders shared their opinions about vaccination, thereby creating an atmosphere of acceptance. This was particularly important because there were approximately 50 new paramedics attending their first CME and peer mentoring was very helpful in their learning process. Paramedic peers also administered the vaccine which, again, increased the level of peer mentoring during the workplace program and contributed to success.

Availability of the vaccine immediately following the educational session was integral to the success of the program. Information from the session was fresh in the mind of the paramedics and many were prepared to receive the vaccine as a means of protecting

their patients, themselves, and their families. They also saw peers receiving influenza vaccine and this positive peer role modeling contributed to overall vaccine acceptance. Paramedics were also less likely to refuse vaccination due to lack of time or opportunity because it was immediately available to them while they were being paid. There was no need to seek out vaccination on their time. An interesting note is although the vaccine was immediately available, some staff needed time to process the information and they had the freedom to do so. The vaccine was still available and convenient at the workplace when requested, an option a few paramedics took advantage of and received the vaccine a few days after completion of the CME.

Support from the management team cannot be overlooked. The management team in 2005 was completely new compared to the team in 2004. There was a new director, a new operations manager and some new supervisors in 2005. Previous management did not offer its support to an influenza immunization program and some were, in fact, vocal opponents of the vaccine. In contrast, the management team in 2005 was very supportive of paramedic influenza vaccination and recognized the patient care benefit. As a result, 2005 management staff were vaccinated by the paramedic staff at the CME and provided a positive role model for everyone who was present. Management has also supported the role of the infection control officer, resulting in having a trained and knowledgeable person available to provide leadership while implementing the program. Management support was important for the success of the program and the subsequent increase in immunization rates.

The multi-faceted approach to the CSPS Influenza Vaccination Program proved to be very successful and a substantial increase of the immunization rate was realized. Despite the success of the 2005 program, there are challenges to be met in the future. One of the key factors for influenza vaccine acceptance is vaccination in the previous year^{10, 14, 16, 18} and efforts

must be made every year to ensure the CSPS paramedic vaccination rate is maintained. There is also a small portion of staff refusing to receive the vaccine. Efforts must be made to determine the reason for refusal and to directly address these issues so they will understand the benefit of influenza vaccine and choose to be immunized in 2006. ●

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Identification badges: A potential fomite?

ABSTRACT

Background

Staff identification badges are mandatory in all hospitals. The purpose of this study was to assess microbial contamination of identification badges at a Canadian tertiary centre. Risk factors for badge contamination were also investigated.

Methods

Badges were cultured from 118 subjects including secretaries, physicians, nurses, and allied health workers. Subjects also completed a demographic questionnaire. Badge contamination was analyzed according to profession, workplace, duration of badge use, presence of a plastic cover, how the badge was worn, and cleaning frequency.

Results

13.6% of the badges were contaminated with significant pathogens. *S. aureus* was isolated in 6.8% of the badges, gram-negative bacilli in 5.9%. Contamination was highest in nurses (21.4% versus 9.4-14.3% in other professions) and in the ICU (22.6% versus 8.3%-14.3% at other locations). Neither association was statistically significant. Covered and non-covered badges had similar contamination rates (12% and 17.1%) as did badges worn around the neck compared with those worn clipped to clothing (13.0% versus 14.6%). Contamination of recently cleaned badges was not statistically different from those that had not.

Conclusion

Identification badges do not appear to be a major reservoir for pathogenic organisms. Badges can, however, harbour disease-causing organisms and should be cleaned regularly.

INTRODUCTION

Nosocomial infections cause significant morbidity and mortality in Canadian hospitals. These infections are estimated to account for 8,500 hospital deaths per year in Canada, costing the healthcare system an estimated \$750 million CDN yearly¹. To date, observational studies have suggested that stethoscopes²⁻⁵, neckties⁶⁻⁷ and white coats⁸ are frequently contaminated by a variety of micro-organisms. Concerns have been raised that these objects may play a role in spreading nosocomial infections.

Identification badges are mandatory in most hospitals. However, the issue of potential badge contamination is rarely raised. The purpose of this observational study was to determine the level and nature of bacterial contamination present on the identification badges of hospital staff at a Canadian tertiary centre and to investigate risk factors for badge contamination.

METHODS

Subjects

Hospital-based employees wearing identification badges were recruited over a five-month period at the McMaster University Medical Centre in Hamilton, Ontario. Subjects were recruited by a stratified sampling of four professional groups: physicians (attending physicians and residents), nurses, allied health professionals (occupational health workers, physiotherapists and respiratory therapists) and office personnel who served as controls. Subjects were recruited from four specific workplaces: two internal medicine wards, two general pediatric wards, the intensive care unit (ICU) and secretarial offices.

All study subjects completed a demographics questionnaire. Subjects

continued on page 165

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were asked if they had participated in the pilot portion of the study, the length of time their badge had been in use, their profession, their main workplace, their involvement in direct patient care, how they wore their badges (clipped to clothing or hanging from the neck), whether their badge had a plastic cover and whether their badge had been cleaned within the preceding week.

Potential study subjects were excluded if they had participated in the pilot study (as this may have altered their badge cleaning practices) and if their badge was in use for less than one month (to allow sufficient time for badge contamination).

To detect a 30% difference in contamination rate between professional groups with a power of 80% and type I error rate of 5%, a sample size of 30 MDs, 30 nurses, 30 allied health care professionals, and 30 office personnel was determined *a priori*.

Specimens

All badges were cultured by one of two study team members using the following technique. A cotton-tipped swab soaked in culture broth was rolled once over the entire front surface of each badge. The same swabs were then rolled over solid blood agar culture medium. Cultures were incubated for 48 hours at 37 °C. At 48 hours, the cultures were examined for colony growth. All gram-negative bacteria, yeasts and molds were initially considered potential pathogens and underwent further identification. Staphylococci were considered significant if they were coagulase-positive. All streptococci and enterococci were considered significant with the exception of viridans group streptococci. To ensure that badges and plastic covers were not contaminated before distribution to hospital staff, 20 new, unused badges and plastic covers were cultured.

Statistical analysis

Statistical analysis was performed using SPSS for Windows, version 11.5 software. The Chi-square test was

used to compare badge contamination frequencies among the demographic groups.

RESULTS

Of the 127 subjects initially recruited, nine met exclusion criteria. The demographic data of the remaining 118 subjects is summarized in Table 1. All of the physicians, nurses and allied healthcare personnel had direct patient contact. None of the office staff had patient contact.

Table 1: Demographics

	Frequency (n = 118)
Profession	
Physicians	32 (27.1%)
Nurses	28 (23.7%)
Allied health	30 (25.4 %)
Secretarial	28 (23.7%)
Workplace	
Internal medicine	23 (19.5%)
Pediatrics	36 (30.5%)
ICU	31 (26.3%)
Office	28 (23.7%)
Other	
Worn hanging (vs. clipped)	77 (65.3%)
Plastic cover (vs. no cover)	35 (29.7%)
Cleaned in previous week (vs. not cleaned)	7 (5.9%)

The unused badges and plastic covers yielded no significant bacterial growth. Of the 118 badges analyzed, 13.6% were contaminated with significant pathogens. *S. aureus* was the most frequently isolated pathogen with eight positive cultures (6.8%). Gram-negative bacilli were isolated from seven badges (5.9%). These included two *E. coli*, one *Klebsiella oxytoca*, one *Proteus mirabilis*, one *Pseudomonas aeruginosa*. One culture grew both *Vibrio spp.* and CDC group ED-2 gram-negative bacilli. *Candida albicans* was isolated from an office secretary's badge. The following bacteria were isolated but not considered pathogenic for the purposes of our study: viridans group streptococci, coagulase-negative *Staphylococcus*, *Micrococcus spp.*, non-pathogenic *Neisseria spp.*, *Bacillus spp.* and diphtheroids.

Table 2 shows the frequency of significant pathogens isolated according to profession, workplace, and badge characteristics. Among the professional groups, significant pathogens were detected most frequently among nurses (21.4%) but this was not statistically significant. *S. aureus* and gram-negative bacilli were isolated at similar frequencies across all professional groups. The overall badge contamination rates between personnel involved in direct patient care (13.3%) and those not involved in patient care (14.3%) were similar.

Badges cultured from the ICU had the highest contamination rate (22.6% versus 8.3%-14.3% at other locations). Gram-negative bacilli were also isolated with the greatest frequency in the ICU (12.9% versus 2.8-4.3% at other locations). Neither of these associations was statistically significant. *S. aureus* was isolated with similar frequencies in all locations.

Badges worn around the neck had similar contamination rates when compared with those clipped to clothing (13.0% and 14.6% respectively). Badges worn without a plastic cover had similar contamination rates to those worn with a cover (12% and 17.1%). Two of the seven badges (28.6%) that had been cleaned in the preceding week were contaminated.

Although not an *a priori* analysis, an additional analysis was carried out comparing viridans group streptococci contamination between demographic groups. There were no statistically significant differences (data not shown).

DISCUSSION

Although identification badges are mandatory in virtually all hospitals, to our knowledge there are no studies in the literature investigating badge contamination. In our study, the overall badge contamination rate was relatively low at 13.6%. Any potential influence of the pilot study in changing badge cleaning behaviours was minimized by excluding potential subjects if they had participated in the pilot study.

It is difficult to compare our overall badge contamination rate with that

Table 2: Frequency of positive cultures for significant pathogens including *S. aureus* and gram-negative bacilli according to profession, workplace and badge characteristics

Profession	Significant pathogens	<i>S. aureus</i>	Gram-negative bacilli
MD (n=32)	3 (9.4%)	3 (9.4%)	0 (0%)
Nurse (n=28)	6 (21.4%)	2 (7.1%)	4 (14.3%)
Allied Health (n=30)	3 (10%)	1 (3.3%)	2 (6.7%)
Secretarial (n=28)	4 (14.3%)	2 (7.1%)	1 (3.6%)
Overall contamination (n=118)	16 (13.6%)	8 (6.8%)	7 (5.9%)
WORKPLACE			
Internal Medicine Ward (n=23)	2 (8.7%)	1 (4.3%)	1 (4.3%)
Pediatric Ward (n=36)	3 (8.3%)	2 (5.6%)	1 (2.8%)
Intensive Care Unit (n=31)	7 (22.6%)	3 (9.7%)	4 (12.9%)
Office (n=28)	4 (14.3%)	2 (7.1%)	1 (3.6%)
BADGE CHARACTERISTICS			
Worn hanging (n=77)	10 (13.0%)	4 (5.2%)	5 (6.5%)
Worn clipped (n=41)	6 (14.6%)	4 (9.8%)	2 (4.9%)
No plastic cover (n=83)	10 (12.0%)	6 (7.2%)	4 (4.8%)
Plastic cover present (n=35)	6 (17.1%)	2 (5.7%)	3 (8.6%)
Not cleaned in previous week (n=111)	14 (12.6%)	7 (6.3%)	6 (5.4%)
Cleaned in previous week (n=7)	2 (28.6%)	1 (14.3%)	1 (14.3%)

of other fomites. Most studies in the literature have classified coagulase-negative staphylococci (CONS) as a significant pathogen. CONS was isolated in 96.6% of the specimens in our study. This is consistent with other studies investigating contamination of fomites²⁻⁴. While CONS can cause significant illness in vulnerable hosts, we felt that including such a ubiquitous skin organism in our analysis would lead to an overestimate of clinically relevant badge contamination.

S. aureus was the most common pathogen isolated in our study. This is consistent with studies that have investigated the contamination of stethoscopes²⁻⁵. While a number of

studies have recently isolated methicillin-resistant *S. aureus* (MRSA) from fomites⁴⁻⁵, the *S. aureus* isolates in our study were all methicillin-sensitive. Some studies suggest that medical personnel tend to have higher *S. aureus* colonization rates than non-medical personnel⁹. Other studies have found the contrary¹⁰. This study did not show increased isolation of *S. aureus* in medical personnel (6.7% versus 7.1%, $p=1.00$).

Badges that were cleaned within the preceding week appeared to have a higher contamination rate when compared to those that had not been cleaned (28.6% versus 12.6%, $p=0.24$). This is likely to be an imprecise esti-

mate as only a small number of badges (5.9%) had been cleaned.

Our study shows that while identification badges do not appear to be a major source of contamination, they do have the ability to harbour potential disease-causing pathogens. Given the potential pathogenicity of the bacteria that we isolated in our study, we would recommend that badges be cleaned with an alcohol-based product at regular intervals to further reduce badge contamination. Whether identification badges play a role in the actual transmission of pathogens is a question that requires further investigation. ●

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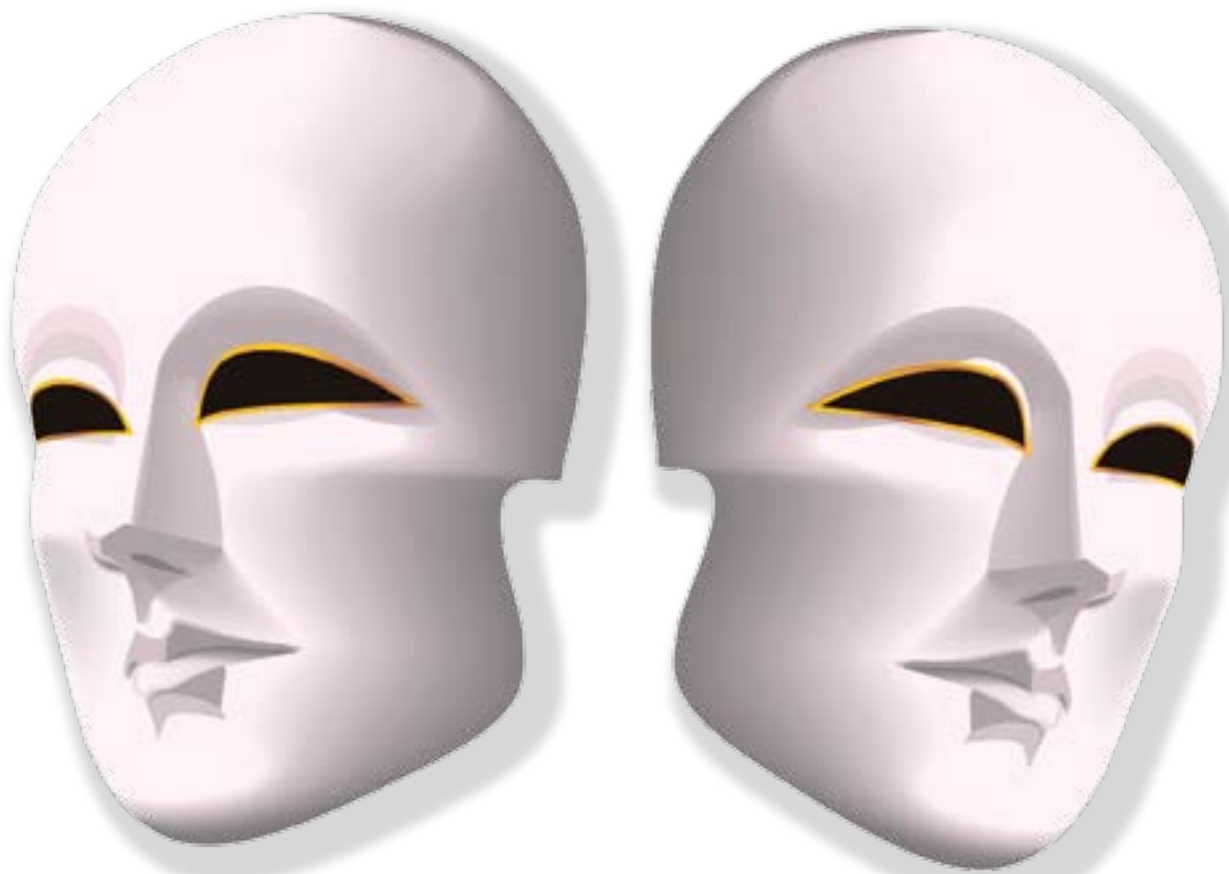


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Drama:

A venue for staff education

By Donna Ledgerwood, Gwyneth Meyers, Infection Prevention and Control, Calgary Health Region

Are you tired of using the same forms of staff education? Are you looking for interesting venues for staff education? If so, have you tried drama? We did and we will continue using it. Why drama? Drama, in the form of live performance, is a type of storytelling. Storytelling draws on aspects of our lives we are close to, but often unaware of as we perform our daily activities. We all have stories to tell based on our work experience. Storytelling engages both the intellect and emotions and therefore is a useful tool to educate healthcare workers¹.

Knowledge that staff use in their daily patient care activities such as hand hygiene is often unconscious and implicit (implied or understood, not directly expressed). Using drama as an educational method is an attempt to bridge the knowledge of how to do hand hygiene with the action of performing hand hygiene by engaging health care workers' imaginations and stimulating their intellects².

In the Calgary Health Region, Infection Prevention and Control (IPC) incorporated drama as one aspect of a multi-faceted campaign to promote hand hygiene and the use of an alcohol hand rub product. Initially, we wrote our own script but quickly decided we were not playwrights. A professional actor with experience in medical school patient simulations was hired to write a 10-minute play and to coach IPC staff in performing it. IPC was directly involved with the script-writer to ensure it portrayed accurate medical content. Plays were performed at various venues either by IPC staff or professional actors. Some plays were performed at seminars or in-services; others were performed on the nursing units in acute care settings, in continuing care facilities, as well as for home care staff and staff working in the rural setting.

What did we learn through this process? The plays were well received. Drama was an effective tool to capture health care workers' interest in an environment that competes for

their attention. Staff survey results indicated that 92% of staff who saw the play were more aware of hand hygiene as compared to 70-74% of staff who more aware of hand hygiene because of posters, computer screen savers, and written articles. Staff response was best when the play was brought to their workplace and in seminar settings rather than venues such as a cafeteria where staff are on their own time. Plays can be entertaining and energizing, they can help staff to understand a complex issue. As well, the play's message is easy to remember because it engaged their feelings. As the Chinese proverb says, quoted by Robert Steed (2005), "Tell me and I'll forget, show me and I may remember, but involve me and I will understand."³

There was a financial cost to this endeavour. However, once the script was written it was owned by the department of IPC and could be used at the IPC's discretion. Although we chose to have the script written by a professional, other lower-cost options include writing your own script or partnering with drama students in schools, colleges, or universities.

We videotaped the play for posterity and while this version loses the interactive element of the drama it is still an entertaining form of information transfer about the use of alcohol hand products. The video has been posted on our IPC internal website for all staff to view.

We plan to partner with University of Calgary drama students to develop new plays that focus on hand hygiene. These will be performed throughout the Calgary Health

Region to advocate and promote the proper use of the hand hygiene products. In conclusion, we tried drama and we found that it was effective in raising staff awareness. You too could give this innovative approach to education a try. In the process you may also find yourself energized and inspired. Try it and have some fun! ●

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CBIC News



By Sheila MacDonald,
RN, BN, CIC

As I write this report, it is hard to believe that the fall is already fast approaching and eight months of our year has passed. It has been a whirlwind year for CBIC – like many other organizations there is really no such thing as “summer slowdown”.

CHICA-Canada held a most successful conference in Edmonton, Alberta in early June. CBIC was acknowledged by CHICA-Canada on the occasion of our 25th anniversary with the presentation of a plaque at the opening ceremonies. On behalf of the Board I would like to thank CHICA-Canada very much for this honor and their long standing friendship and support. During the conference, a collaborative meeting was held with the current CHICA-Canada President, the Past-President, and the CHICA-Canada representative to IFIC to network and to discuss common themes, and to update one another on pertinent organizational activity.

CBIC once again had a booth at the CHICA Conference with steady activity on the display days. A 50% discount was offered to all Canadian ICPs attending the conference and considering writing their exam for the first time this fall.

At the end of June, CBIC held its second board meeting of the year in conjunction with the Annual APIC Education Conference in San Jose, California. On behalf of the CBIC Board, I would like to thank APIC

for their acknowledgement of CBIC’s 25th Anniversary – the presentation of the plaque at the opening ceremonies, the toasts given at the International Attendee Reception, at the Partners in Leadership Reception, and the opportunity to speak about certification at the International Attendees orientation. And as usual, we had the opportunity to do a session on the Value of Certification where the latest Practice Analysis was discussed and how it impacts on the exam content. A small but enthusiastic audience participated.

Our CBIC board members took turns manning the CBIC booth along with our Executive Director, Sheila O’Neal. The booth was very busy – in fact, we ran out of all our handouts - a good sign! With such things as mandatory reporting, and a requirement for certification in some states, there is much interest in the certification process. It’s a way of demonstrating to your organization and to the public that you meet the basic requirements of knowledge mastery in infection control. We do encourage all ICPs to apply for the examination as soon as they are eligible.

Several of our CBIC members along with representatives from APIC and CHICA-Canada participated

in the revision of the Professional and Practice Standards in Detroit in May/07. Infection Control Professionals can expect to see the revised version sometime in the late fall or early new year.

The Test Committee has done a tremendous amount of work on updating the certification examinations this year. For example, questions that are no longer relevant to our practice have been deleted, and others have been developed to address changes that have occurred in infection prevention and control practice. Hats off to this hard-working committee led by Sharon Krystofiak.

CBIC will again be supporting IFIC this year, and a representative will be attending their conference in October. CBIC is in the process of exploring an international practice analysis, and will be working in conjunction with IFIC and APIC during the conference to move this initiative forward.

Another busy quarter is behind us – we look forward to continuing our initiatives both at home and internationally. ●



2007 CBIC Board of Directors front row left to right: Jacquie Butler, Linda Laxson, Sheila MacDonald, Deanie Lancaster, Fran Feltovich Back row left to right: Glenda Schuh, Rita Tjoelker, Sharon Krystofiak, Rick Wray, Marie Kassai, Terrie Lee, Paul Field, and Sheila O’Neal



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Launch of the Infection Prevention Society: *A new era, a new outlook*

September saw a significant development in infection prevention and control, with the launch of the Infection Prevention Society (IPS). This exciting development completes the transformation of the Infection Control Nurses Association (ICNA) into an organisation that welcomes as full members all professionals working in the field of infection prevention and control. While full membership is open to those who live or work in the UK and Eire, associate membership is available for anyone who wishes to join, from anywhere in the world. All members will continue to receive the *British Journal of Infection Control* as a membership benefit at no additional cost.

ICNA was formed in 1970, to provide a network for infection control nurses to meet and share learning together. Over the past 37 years it has grown to become *the* leading nursing organisation in the UK in the field of infection prevention and control, and is an active supporter of the International Federation of Infection Control (IFIC). In 2006 the membership recognised that many other disciplines and roles have emerged within the field and that all would benefit from each other through membership in the same organisation.

While infection prevention and control nurses will, no doubt, remain the backbone of the new Infection Prevention Society (IPS), as they are within the infection control team in the workplace, it is hoped that many new members will join from other professions. For the first time, link practitioners, directors of infection prevention and control, infection control managers, infection control doctors, audit and surveillance practitioners, antimicrobial pharmacists, scientists, educators, and researchers can all join the IPS as full members. Combining such expertise in one organisation can provide benefits for all and facilitate the embedding of an infection prevention culture in health care.

ICNA had achieved recognition as *the* leading nursing organisation in the field of infection prevention and control in the UK and its expertise was sought by government, voluntary and commercial bodies. This expertise will be further enhanced through the expanded membership of the IPS. We invite you to join us as a member of this exciting new society, and help us shape the future of infection prevention globally as we move into a new era.

Judy Potter, ICNA Chair/IPS President

Information on joining the IPS can be found at www.ips.uk.net

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- Local, regional, provincial, federal, global perspectives
- Nursing, medicine, laboratory, support services
- Microbiology, epidemiology, clinical expertise
- Change strategies, knowledge transfer, time management, risk management
- Surveillance, teaching, development and implementation of practice standards, consultation, outbreak management

Infection Prevention and Control Professionals (IPCPs) need to continuously strengthen their knowledge, skills and networks/relationships to capture the whole. The 2008 Education Program will address the different aspects of the Infection Prevention and Control mosaic in a forum that is beneficial to all Infection Prevention and Control Professionals. The objectives of the 2008 National Education Conference are:

1. To provide educational opportunities to improve practice for all Infection Prevention and Control Professionals, regardless of practice setting or level of experience.
2. To provide a forum for the exchange of ideas related to the practice and development of Infection Prevention and Control.

SIMULTANEOUS INTERPRETATION

Simultaneous interpretation will be provided for all education sessions. The original language of the session will be indicated on the final program. Poster presentations will be presented in the language of the presenter. Visual materials during education sessions will be provided in both languages.



CALL FOR ABSTRACTS

The preliminary program and call for abstracts are now available at www.chica.org and www.aipi.qc.ca. The registration brochure will be available in January 2008. Look for the following information on the 2008 conference webpage:

2008 Preliminary Program – Professional Continuing Education proposed topics

Call for Abstracts – Deadline date March 2, 2008

2008 EDUCATION CONFERENCE COMMITTEE

CHICA-Canada

Karen Hope BSc MSc
Calgary Health Region
Calgary, Alberta

Donna Moralejo PhD
Memorial University
School of Nursing
St. John's, Newfoundland Labrador

AIPI

Danielle Goulet, Inf. MSc
Hôpital Laval
Sainte-Foy, Québec

Lyne St-Martin RN BSc CIC
Montreal Children's Hospital
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Frédérica Gaspard
MSc(A) CFPCI
West Island Health and
Social Services Centre
Pointe Claire, Québec

Ramona Rodrigues
MSc(A) CIC
McGill University Health Centre
Montréal, Québec

CONFERENCE HOTEL

Hyatt Regency Montréal

1255, rue Jeanne-Mance
Montreal, Quebec H5B 1E5

Room rate: Traditional Room: \$186.00 single/double (plus 16.5% taxes). Includes Internet access.

Deadline for reservations: April 28, 2008 – do not wait to make hotel reservations. The room block will go quickly.

All reservations must be made individually through the hotel's Reservation Department by calling 514-982-1234, or toll free, 1-800-361-8234, or on www.Hyatt.com.

→ turn over for Exhibit & Sponsorship opportunities →



2008 Education Conference EXHIBIT & SPONSORSHIP OPPORTUNITIES

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 2007. Booth rentals are \$1,750 each (8'x10' booth) plus GST. **Set up: Monday, June 2; tear down Wednesday, June 4.**

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 Conference Planner.



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¹ Perry Jane, International Healthcare Worker Safety Center, "Preventing Sharp Injuries: Where Do We Stand in 2007?" Presented at B. Braun Medical, Orlando, FL, Feb 23, 2007. EPHER data: Of injuries from safety devices, 40% occurred after use and before disposal (potentially preventable if passive or if safety feature activated).

² Mendicino MA, Liu Chen BY, Finkelstein-Bland et al. Study of Introcan safety IV catheter (B. Braun Medical Inc.) for the prevention of percutaneous injuries in healthcare workers [abstract]. Presented at: 12th Annual Meeting of the Society for Healthcare Epidemiology of America (Arlington, VA), 2003.

³ Inuma Y, Igawa J, Takekita M, et al. Passive safety devices are more effective at reducing needlestick injuries [letter]. J Hosp Infect 2005 (Dec); 61 (4): 388-1.

CHICA-BD Road Show Seminars



CHICA-CANADA (Community and Hospital Infection Control Association-Canada) a multidisciplinary, professional organization for those engaged in the prevention and control of infections, will hold a series of “Road Show Seminars” in various provinces throughout the country, starting in November and continuing into 2008. The “Road Show Seminars” are designed to educate healthcare professionals and healthcare administrators on decreasing the rate of healthcare-associated infections with the focus on Methicillin Resistant Staphylococcus Aureus (MRSA), the antibiotic-resistant superbug impacting millions of patients worldwide.

Over the next eight months CHICA’s “Road Show Seminars”

will be held in Vancouver, Winnipeg and Montreal. In addition, CHICA-Canada will host a series of National Webinars (tentatively scheduled for January, March and April 2008). The programs will feature nationally recognized infection prevention and control professionals and physicians discussing the consequences of MRSA, an increasingly prevalent and deadly organism in healthcare facilities. More importantly, the panel will highlight successful, systems-wide approaches that have effectively combated the increasingly troublesome infection.

“CHICA-Canada is pleased to partner with BD (Becton Dickinson) for the MRSA educational initiatives as Infection Prevention and Control Professionals are continually faced with the

challenges that accompany a growing burden of MRSA in Canadian health-care facilities”, said CHICA-Canada President Joanne Laalo.

The “Road Show Seminars” program, sponsored by BD (Becton, Dickinson and Company), is aimed at both clinicians and healthcare executives faced with the clinical and financial impact of MRSA in their facilities.

“BD is proud to work jointly with CHICA-Canada on this important initiative” said James Glasscock, Country General Manager of BD “as it is central to our commitment at BD to prevent healthcare-associated infections and help all people live healthy lives.”

For further information, visit www.chica.org.

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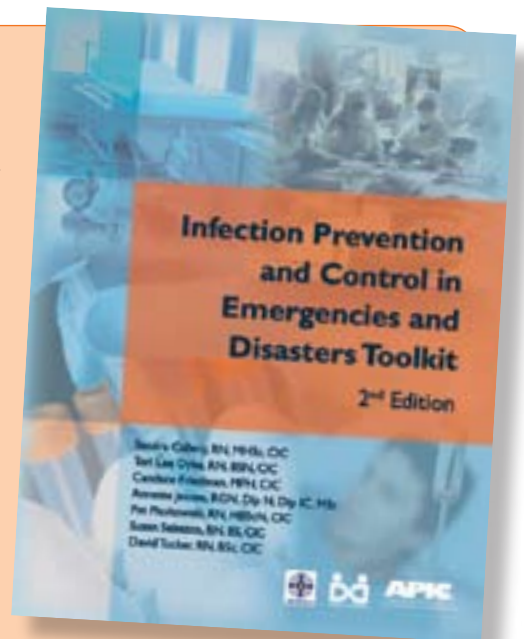
Did you know ...

The International Infection Control Council (I2C2) is a partnership of CHICA-Canada, APIC and ICNA (UK).

In 2002, it published the *Infection Control Toolkit: Strategies for Pandemics and Disasters*. With the advent of SARS and the H5N1 influenza virus, as well as other natural disasters and disease outbreaks since 2002, the I2C2 recognized the need to update and revise the previous toolkit.

The content has been updated and reformatted into the newest version *Infection Control Toolkit for Emergencies and Disasters*. The purpose of the toolkit is to assist IPCPs in the preparation and implementation of plans for emergencies and disasters.

The revised toolkit is now available at \$120.00 CDN (Member rate) plus shipping & handling and GST.



VIROX Technologies Partners 2007 Scholarship Winners Announced

Through the financial support of the Virox Technologies Partnerships, 10 CHICA-Canada members were awarded scholarships to attend the 2007 National Education Conference in Edmonton. CHICA-Canada and its members thank Virox Technologies and their partners Deb Canada, JohnsonDiversey, Steris Corporation, Virox Technologies, and Webber Training for their initiative to make the national education conference accessible to those who may not have otherwise been able to attend.

The Virox Technologies Partnership will again provide a scholarship to assist CHICA-Canada members with attending the 2008 Education Conference in Montreal. The 2008 Virox Technologies Partnership Scholarship application is available on www.chica.org.

The deadline date for applications is February 1, 2008.

2007 Scholarship Winners

- Nora Boyd, RN, Med, CIC (*Sarnia, ON*)
- Laurie Boyer, RN, BScN, CIC, CPN (C) (*North Bay, ON*)
- Nancy Brown, MLT, BSc, CHE (*Wingham, ON*)
- Judi Linden, RN, BN, COHN(C), CIC (*Portage la Prairie, MB*)
- Suzanne Rhodenizer Rose, RN, BScN, CIC (*Bridgewater NS*)
- Donna Ronayne, RN, BN, CIC (*Clareville, NL*)
- Allyson Shephard, RN, MScN (*Ottawa, ON*)
- Merlee Steele-Rodway, RN (*St. John's, NL*)
- Virginia Tirilis, MLT, CIC (*Hamilton, ON*)
- Elizabeth Watson, RN, BScN, CIC (*Bridgewater, NS*)





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1. Clinical evaluation of a flexible fecal incontinence management system. Phase II clinical results (n=10). July 2004. Data on File, ConvaTec.

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How to submit an article to the *Journal*

The Canadian Journal of Infection Control publishes member-supplied articles as feature technical article or as "News from the Field". All material submitted is reviewed by an editorial board consisting of CHICA-Canada members. If you are not sure about your writing skills, get your ideas down and ask a colleague or member of the editorial board for help. Full requirements for technical articles can be found at http://www.chica.org/inside_cjic_journal.html, but here are some tips for getting started:

- 1) The author of the content must be clearly identified by name, title and organization and both a telephone number and email address must be supplied for contact purposes.
- 2) The subject of the material must be relevant to the interests of infection control practitioners.
- 3) The material should be submitted electronically via email as a Word document.
- 4) Length of submitted material is to be limited to a maximum of 1,500 words.
- 5) No part of the submitted material is to include what can be construed as sales-oriented promotion of specific individuals, companies, products or services.
- 6) Any photographic images to be included with the material must be free and clear of any copyright and must be submitted electronically as JPGs or TIFFs that are high resolution (at least 300 dpi) and a minimum of 6" x 9" in size. Image files should be sent separately, not embedded in the Word document.
- 7) In the event that the material is accepted for publication in *CJIC*, the author agrees that the first publication rights for the material belong to *CJIC* magazine and that any subsequent publishing of the material can only be done after the author or publisher is granted reprint approval in writing from CHICA-Canada and *CJIC* magazine.

CHICA-Canada Editorial Award

The Board of Directors and the Editor-in-Chief of CHICA-Canada announce the creation of an Editorial Award.

The Editorial Award will acknowledge the author(s) of a selected scientific article that has appeared a 2007 issue of the *Canadian Journal of Infection Control*.

The winning author(s) will each receive one waived registration to the conference portion of the 2008 conference (Tuesday-Thursday only; does not include Novice or Advanced Practitioner Day or Pre-Conference Day). Applicable registration fee will be refunded if the registration has been paid before the award winner(s) are announced. A cash award may be presented in lieu of registration.

All papers will be judged by the CHICA-Canada Awards Committee according to:

- The author or at least one of the authors must be a member of CHICA-Canada.
- Papers must be relevant to Infection Prevention and Control in healthcare or in the community and must have appeal to the membership of CHICA-Canada.
- The paper must be original work.
- The paper must reflect clinical relevance and accuracy.
- There must be clarity, quality of organization, and grammatical correctness.
- The paper has current references, footnotes and bibliography.
- Manuscripts are prepared according to the *Canadian Journal of Infection Control* Guidelines for Contributors.

The award may not be presented to the same author(s) two years consecutively.

The Editor-in-Chief, members of the *Canadian Journal of Infection Control* Editorial Board, the CHICA-Canada Board of Directors, and the Awards Committee are not eligible.

The deadline for competition is December 31.

CHICA-Canada members to take board positions



The following candidates for the CHICA-Canada Board of Directors have been elected by acclamation. Each term is effective January 1, 2008. Profiles of the new board members will be published in the winter 2007 issue of the journal.

President-Elect (*One-year term*)

Cathy Munford, RN, CIC
Victoria, British Columbia

Secretary/Membership Director (*Three-year term*)

Bern Hankinson, RN, BN, CIC
Wetaskiwin, Alberta

Director of Education (*Three-year term*)

Donna Moralejo, PhD
St. John's, Newfoundland Labrador

CHICA-Canada members retiring

Alberta CHICA-Canada members Bess Milligan, Margaret McKenzie and Mary LeBlanc are all retiring – we wish them all much happiness!



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 2008 CHICA–Canada National Education Conference (Montreal – May 29 - June 5, 2008) (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, 2008.

Applications must be sent to:

Secretary/Membership Director
CHICA-Canada, PO Box 46125 RPO Westdale
Winnipeg MB R3R 3S3

Or courier to:

Secretary/Membership Director
CHICA-Canada, 67 Bergman Crescent
Winnipeg MB R3R 1Y9

3M Innovation

The Registered Nurses' Foundation of Ontario Molson Canada SARS Memorial Fund providing grants to ICPs

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

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

The fund of \$175,000 is to be administered over three years, allowing for the allocation of approximately \$58,000 per year in support of individual pursuing formal education and certification in the area of infection control.

See www.rnfoo.org for details.



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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 31, 2008

Grand Prize: Full registration at 2008 Education Conference (Montreal, May 29-June 5, 2008 (including Novice or Advanced Practitioner Day and Pre-Conference Day). Or \$500 cash without registration.

HOST CHAPTER 2008:
Southwestern Ontario
Professionals in Infection
Control (SOPIC)

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You are invited to design a poster that will be used for **Infection Control Week 2008** using the following theme:

Antibiotic-Resistant Organisms – A Call to Action!

- 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.

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

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Infection Prevention and Control: Practice and Participate!

National Infection Control Week, October 15-19, 2007

“Infection Prevention and Control: Practice and Participate” is the theme of this year’s National Infection Control Week, October 15-19, 2007. Infection Prevention and Control has been widely recognized to be both clinically effective and cost-effective in preventing cross infection and controlling the spread of infectious organisms (germs) in healthcare settings

Hand hygiene is considered the most important and effective infection prevention and control strategy to prevent the spread of health care-associated infections and infections in general. While infection prevention and control is the responsibility of everybody through practice and participation, some are disinterested. Recognized sources indicate that compliance with hand hygiene protocols by healthcare providers has been, and continues to be, unacceptably low at 20% to 50%. October 15, 2007 will mark the launch of Canada’s Hand Hygiene Campaign in Ottawa. This campaign will heighten awareness and improve participation in hand hygiene activities.

The event of SARS, the outbreaks of *Clostridium difficile* in Quebec and Ontario, and the increasing number of infections with antibiotic-resistant organisms in the community and in health care settings, are indicators which highlight the need for ongoing reminders about using infection prevention and control measures to lower the risk of getting a disease and spreading it to others. Infection Prevention and Control Professionals in all practice settings strive to heighten awareness that the practice of infection prevention and control basics can make a difference in controlling infections. Through effective teaching, individuals can be motivated to learn and “practice and participate”.

CHICA-Canada is a national, multi-disciplinary, voluntary association of Infection Prevention and Control Professionals (IPCPs) with 20 chapters across the country dedicated to the health of Canadians by promoting excellence in the practice of infection prevention and control. Infection Prevention and Control Professionals 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 today is everybody’s business. Things you can do:

- Clean your hands frequently – alcohol hand rub **or** soap and water work well.
- Cover your nose and mouth when you cough and sneeze.
- Stay home from work if you have symptoms that may indicate infection such as fever, coughing, sneezing, or diarrhea.
- Keep your immunizations up to date.

Contact the Infection Prevention and 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. For additional information or to contact your local CHICA-Canada chapter:

CHICA-CANADA

1-866-999-7111

Fax: 1-204-895-9595

chicacanada@mts.net

<http://www.chica.org>



The 2007 Poster (English and French) is available for CHICA-Canada members to download from www.chica.org (Member Login).

The inclusion of an article under Industry News does not imply endorsement by CHICA-Canada of any products or services contained in the article.

Virox receives Canada's first registered EcoLogo disinfectant-cleaner

From its inception in 1998, Virox Technologies has been a firm believer in developing and manufacturing disinfectants that not only provide superior cleaning and efficacy claims, but that are also environmentally sustainable. The use of disinfectant-cleaners is a marketplace reality and these products are commonly used in the institutional and healthcare sectors. However, until February 2007 the Environmental Choice Program did not have a certification criterion that allowed for the registration of disinfectant-cleaners.

Recognizing the changing needs of the healthcare system and the reliance on Disinfectant-Cleaners by both Canadian and American infection control guidelines, TerraChoice felt there was a need to review the existing Certification Criteria Document CCD 146 for Hard Surface cleaners and subsection H for Disinfectants. As a result, in February 2007 a new Certification Criteria Document CCD 166 for Disinfectants and Disinfectant Cleaners was finalized.

Accelerated Hydrogen Peroxide has proven its superiority with respect to cleaning and disinfection properties and can now proudly display the EcoLogo as Canada's *first* registered disinfectant-cleaner.



Virox Introduces RESCUE Sporicidal Gel

Virox Technologies Inc. of Oakville, Ontario has received a Drug Identification Number (D.I.N) registration from Health Canada for *Accel RESCUE Sporicidal Gel*, a 4.5% Accelerated Hydrogen Peroxide formulation that achieves sporicidal disinfection in 10 minutes. The intended use is for toilet bowls and commodes as well as inside sinks and basins in the washrooms of *C. difficile* patients where the spore count has been shown to be the highest.

Clostridium difficile continues to be a difficult issue for many acute and long-term care facilities. *Clostridium difficile* associated diarrhea (CDAD) is a significant problem in healthcare facilities world-wide. Several studies have established that *C. difficile* can contaminate various surfaces in the hospital environment and it is well documented that the spores can survive in the environment on surfaces for up to 70 days, thus providing a difficult challenge for caregivers and environmental services staff. Additionally, the presence of *C. difficile* spores in toilets of patients with CDAD is thought to be a reservoir for the spread of the organism.

The introduction of RESCUE Sporicidal Gel along with Accelerated Hydrogen Peroxide 0.5% TB disinfecting and cleaning solutions allows facilities to have an alternative protocol to bleach when *C.diff* exists or is suspected. The use of bleach is not without disadvantages such as workplace safety concerns. RESCUE Sporicidal Gel maintains the excellent safety profile of the patented AHP technology.

For more information on the RESCUE product please visit http://www.virox.com/medical/acute_care.asp or call 1-800-387-7578.

Hand Hygiene Saves Lives

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Organism	Percent Reduction in 15 seconds	Log ₁₀ Reduction in 15 seconds	Percent Reduction in 30 seconds	Log ₁₀ Reduction in 30 seconds
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<i>E. faecium</i> (VRE)	>99.99	>4.59	>99.99	>5.45
<i>Listeria monocytogenes</i>	>99.99	>4.11	>99.99	>6.04
<i>Micrococcus luteus</i>	>99.99	>4.40	>99.99	>4.38
<i>Staph aureus</i>	99.96	3.48	>99.99	>3.96
<i>Staph aureus</i> (MRSA)	99.96	3.36	>99.94	>3.19
<i>Staph epidermidis</i>	99.97	3.48	99.96	3.46
<i>Staph haemolyticus</i>	99.93	3.15	>99.96	>3.40
<i>Strep pneumoniae</i>	>99.99	4.36	>99.99	>6.11
<i>Strep pyogenes</i>	>99.95	>3.34	>99.99	>4.37
Gram Negative Bacteria				
<i>Bacteroides fragilis</i>	99.90	2.99	99.97	3.48
<i>Escherichia coli</i>	>99.99	>6.04	>99.99	>6.18
<i>Haemophilus influenzae</i>	>99.99	>5.70	>99.99	>5.78
<i>Klebsiella pneumoniae</i>	99.85	2.82	>99.97	>3.51
<i>Proteus mirabilis</i>	>99.99	>5.25	>99.99	>6.15
<i>Pseudomonas aeruginosa</i>	>99.99	>6.53	>99.99	>6.58
<i>Salmonella choleraesuis</i> serotype enteritidis	>99.99	>6.04	>99.99	>6.23
<i>Salmonella typhimurium</i>	>99.97	>3.58	>99.99	>6.30
<i>Serratia marcescens</i>	>99.99	>5.83	>99.99	>6.26
<i>Shigella dysenteriae</i>	>99.99	>6.71	>99.99	>6.62
Anaerobic Bacteria				
<i>C. Difficile</i>	>99.68	>2.49	>99.98	>3.64
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<i>Candida albicans</i>	99.97	3.52	>99.99	>4.34
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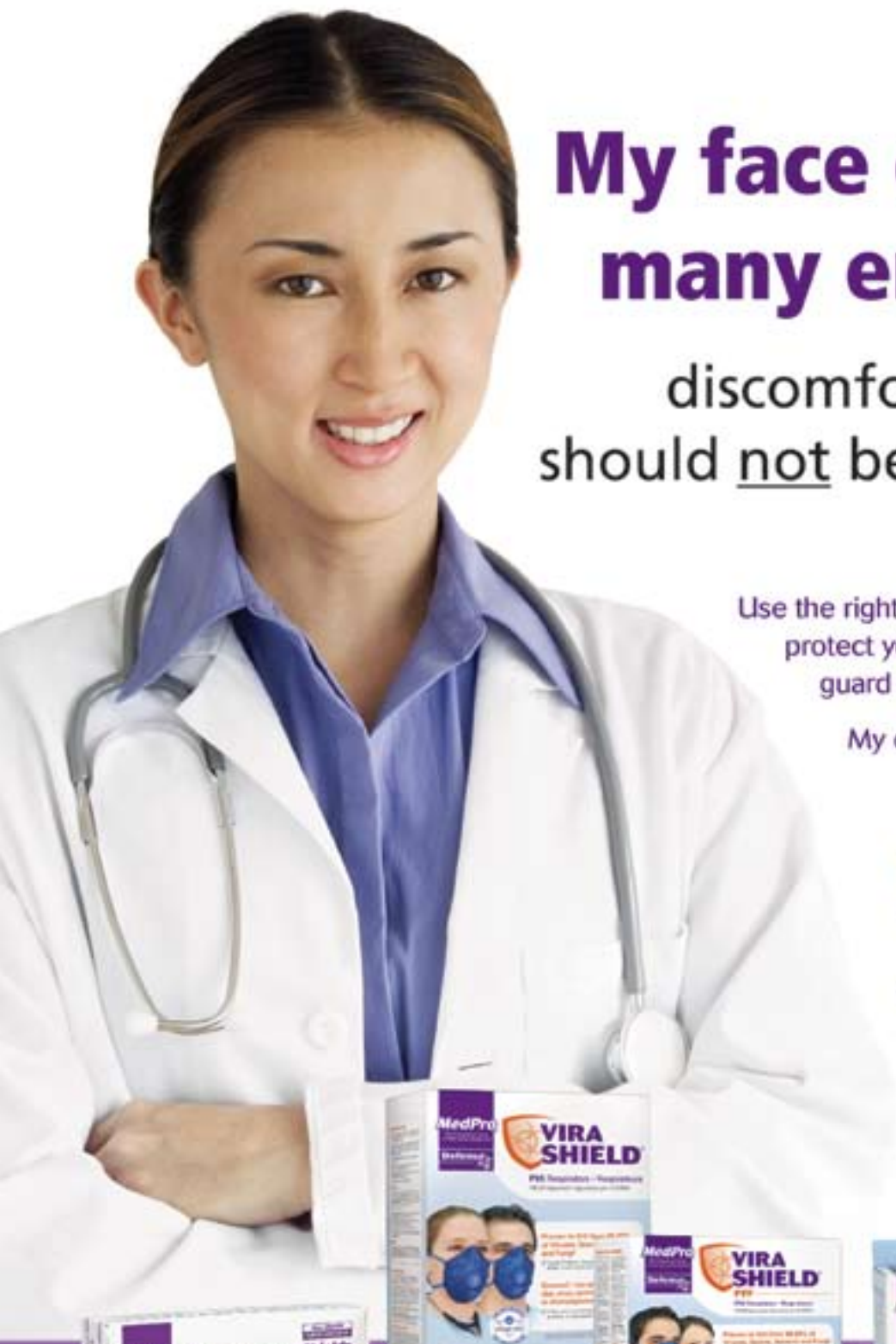


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