



### Also In This Issue:

- 2** Spring 2011 Virox Update
- 3** Productive Dissent – An Infection Control Heritage
- 4** Green Team Updates
- 4** Cleaning Agents and Asthma
- 5** Your Invitation to the First International Conference on Prevention & Infection Control
- 6** The CHICA-EO/Cameroon Twinning Project!
- 7** Book Review: Safe Patients, Smart Hospitals: How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out
- 8** CHICA Today

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## Variations in Healthcare Daily Cleaning Practices

JOHN M. BOYCE, HOSPITAL OF SAINT RAPHAEL, AND, YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN, CT.

Contaminated environmental surfaces in healthcare facilities can contribute to transmission of healthcare-associated pathogens. Although cleaning of environmental surfaces in hospitals has been demonstrated to be suboptimal, there are few quantitative data regarding the variations in cleanliness of environmental surfaces achieved by housekeepers responsible for daily cleaning of patient rooms. In a recent prospective study (Infect Control Hosp Epidemiol. 2010 Jan;31(1):99-101. Variations in hospital daily cleaning practices) we utilized direct observations and ATP bioluminescence assays to monitor variations in daily cleaning practices by housekeepers and the level of cleanliness of surfaces following daily cleaning procedures.

The study was conducted in a 500-bed university-affiliated hospital. Seven housekeepers were notified that they would be observed while performing daily cleaning, and that five high-touch surfaces in each room would be assessed for cleanliness after cleaning. The housekeepers selected were



believed to have good cleaning technique so that we could determine how often after-cleaning ATP readings met a proposed cutoff value for defining surfaces as “clean” in healthcare settings. We sampled several surfaces in each room including bedside rails, over-bed tables, television remotes, bathroom grab bars, and toilet seats.

After surfaces had been allowed to dry for at least 10 minutes, a defined area of each surface was sampled. Surfaces relatively free of excretions, secretions, food or other organic substances (which contain ATP) yield low relative light unit (RLU) values, whereas contaminated surfaces yield high RLU values. Median ATP readings and times spent cleaning surfaces were calculated for each of the five high-touch surfaces.

CONTINUED ON PAGE 8

## Congratulations 2010 CHICA Scholarship Winners!!

Virox and the Patron Members (Diversey, Deb Canada, STERIS and Webber Training) would like to congratulate the 2011 CHICA Scholarship winners. Nineteen Infection Prevention & Control Practitioners from across Canada were chosen by the CHICA-Canada Board of Directors. This year's winners are: Rhonda Brenton, Joan Cybulski, Carla Garton, Tricia Hutton, Barb Schmidt, Natalie Smith, Vi Burton, Myrna Dyck, Allana Ivany, Krista Maxwell, Shirley McLaren, Betty Scott, Catherine Walker, Kimberley Allain, Joanne Dow, Lori Jesome-Croteau, Paula March, Suzanne Rowland and Sheila Sheppard.

## 2011 Conference Update

### April

**April 7 to 8** - BC PICNET Conference

**April 19 to 20** - CSSA Can Clean Conference

### May

**May 12 to 13** - CIPHI (ON.Br) Communicable Disease Conference

**May 16 to 17** - AIPi Conference

**May 16 to 18** - 5th Annual Community Health Nurses Conference

**May 28 to June 2** - CHICA-Canada National Education Conference

### June

**June 9** - SickKids 7th Annual Paediatric Patient Safety Symposium

**June 17** - CHICA Manitoba Conference

**June 26 to 29** - 77th Annual CIPHI National Education Conference

**June 27 to 29** - APIC 2011 Annual Conference

### August

**August 9** - OC-APIC- "Day at the Beach" Conference

We are very excited about participating in each of these conferences & education days. We wish the best to all of the various organizers and would like to thank them for their dedication and effort in organizing these very important educational opportunities. We look forward to attending and talking to all of the participants.

# Spring 2011 Virox Update

## Partnerships in Pediatric Patient Safety Corporate Sponsor



**7th Annual Paediatric Patient Safety Symposium**  
A New Decade: Safer Healthcare for Kids



**Save The Date** **Thursday June 9, 2011**

Location: SickKids, Daniels Hollywood Theatre, Toronto  
Contact: Miriam Wexler  
m.conferences@sickkids.ca  
416-813-7654 ext. 28120

[www.sickkids.ca/learning](http://www.sickkids.ca/learning)

In partnership with:



In our continued support of facilities dedicated to patient safety, Virox is the corporate sponsor for the SickKids Foundation 7th Annual Partnerships in Pediatric Patient Safety Symposium: "A New Decade: Safer Healthcare for Kids" that will be taking place on June 9th SickKids Hospital (Hollywood Theatre). This year's symposium will focus on Paediatric Patient Safety and the measurement

strategies available to answer the question: "How will we know that paediatric health care is getting safer?" For more information on this event please contact the Miriam Wexler, the Patient Safety Symposium organizer at 416-813-7654, ext. 28120.

## Third Annual Virox Future Forum – Sheridan School of Business

The Virox Future Forum is an opportunity for Sheridan School of Business student leaders and successful business leaders to discuss the future needs of employment, and to help Sheridan graduates launch their successful careers in business. The forum featured top speakers including Sean Wise of Wise Mentor Capital, David Foot of Boom Bust and Echo fame, and Trevor Bodogh, extreme athlete and performer and a graduate of the Sheridan College Business Administration – Finance program. "The Virox Future Forum was insightful, informative and interesting. I am so glad I went as I definitely learned a lot. My plans for the scholarship are to use it toward university in the Fall. I am currently contemplating going to either Ryerson University or Nipissing University. I want to thank Randy Pilon again for his generosity and let him know that his money will be going to good use in furthering my education in the Human Resources field," said Jennifer Peddle.

## Aid to those in need

Virox has donated 350 cases of Accel TB Cleaner & Disinfectant to Health Partners International of Canada. Health Partners International of Canada is a not-for-profit relief and development organization that works through partnerships to increase access to medicine and improve health in the developing world. Through our donation, we hope to provide medical staff with much needed disinfectant products in order to mitigate the risk of transmission from medical devices, stretchers and other patient care equipment.

## Three Tier Response for Environmental Infection PREvention & Control:

The next-generation of Accelerated Hydrogen Peroxide (AHP) disinfectant cleaners are here!! These new products, under the Accel brand, represent the leading edge in the development of the AHP technology. Providing the best balance of speed and spectrum of germicidal effectiveness and preferred safety and environmental profiles, the Accel Next-Gen products will set a new standard for environmental infection prevention and control.

GREEN TEAM UPDATE ON PAGE 4

# Productive Dissent – An Infection Control Heritage

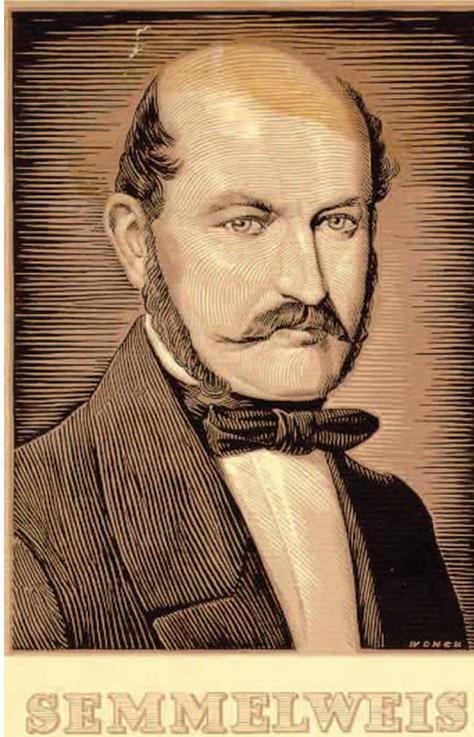
NICOLE KENNY, VIROX TECHNOLOGIES INC.

“Dissenters benefit others while conformists benefit themselves. Diversity, openness and dissent reveal actual and incipient problems”. The quote, attributed to University of Chicago professor Cass Sunstein, highlights the value of free-thinking, and there is much truth in the sentiment. Consider the history of infection prevention and control. Specifically, consider the contributions of quintessential dissenter Ignaz Semmelweiss. He challenged the conformists’ accepted wisdom and sought answers to problems that, in his minds, had not been suitably well explained. He was ostracized, condemned, and driven to a state of near insanity that led to an early death. His positive dissent benefited patients in his lifetime, and has been essential to patient safety ever since.

The General Hospital in Vienna boasted quite favorable conditions for its time. Unusual for the early part of the 19th century the hospital’s policy was one patient per bed, compared with 3 or 4 patients per bed for many of its contemporaries. There were 3 classes of care - one section of the hospital, indeed the largest section, received patients who were unable to pay for their care. Another section was for patients who could pay at least a small sum, and the third section for wealthy patients. Indigent patients were permitted free care with the understanding that some of that care would be seen to by medical students and midwives in training.

There were two maternity clinics in the indigent section of the hospital; patients being admitted to one or the other on alternate days. One clinic was largely for training of midwives, and the other for the training of physicians. When Semmelweiss, a shy and talented Hungarian physician, was appointed assistant to Professor Klein at the First Obstetrical Clinic he would have arrived in Vienna to a frightening scene. Pregnant women desperately weeping and begging on their knees at the hospital entrance, anxious to be admitted to the Second Obstetrical Clinic rather than the First. It was not uncommon for women to prefer a sidewalk as a birthing place rather than be admitted to the First clinic. This was for a very good reason - the First clinic had a deadly reputation.

Childbed Fever (aka, Puerperal Fever, a form of septicemia) was rampant in healthcare facilities of the day, but few places more so than in the teaching hospitals such as Vienna General Hospital. In the First clinic, maternal mortality rates rarely dipped below 10% of admissions, and some months climbed as high as 30%. Conversely, in the clinic to train midwives, the mortality rate rarely climbed above 2%. Physicians and governmental authorities were aware of the ravages of Childbed Fever. Public documents of the day referred to the maternity clinics as “houses of death”. Causes were variously attributed to miasmas (foul



air), improper diet, strong liquors, violent mental emotions, among many other things. Therapy often involved bloodletting with leaches.

Semmelweiss, haunted by the by the higher rate of puerperal fever in the first clinic, was unwilling to accept the conformist view. The only major difference between the two clinics was the people who worked there. He eliminated environmental causes and foul air since these were the same in both clinics. Eventually he concluded that the medical students would carry “cadaverous particles” (i.e. microbes) from the autopsies of patients who had died of childbed fever to the birthing rooms of waiting patients, a single cause for all cases. When his best friend, another physician at the clinic, died having been cut by a student during an autopsy of an infected patient, Semmelweiss was compelled to act to prevent what he was convinced was the cause of transmission – contaminated hands of physicians and students.

Semmelweiss demanded that students and physicians clean their hands with a chlorinated lye solution before attending to patients in order to remove

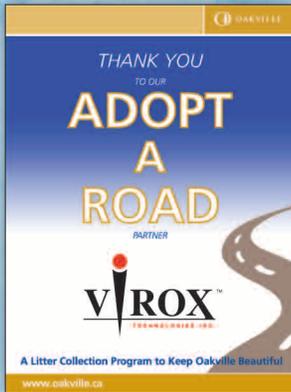
or destroy the invisible cadaverous particles. Remember that this was years before the germ theory, and Semmelweiss’s ideas dissented radically from common wisdom. The strategy worked, however, and deaths attributable to Childbed Fever rapidly dropped to a level below that of the Second clinic, where midwives had always kept their hands clean and did not attend autopsies. One would think that there would be great celebrations, publications, and change in practice. Unfortunately the culture of conformity triumphed and Semmelweiss was forced to resign his position, at which time the mortality rate returned to pre-intervention levels.

Solomon Asch once observed, “life in society requires consensus, but when the consensus comes under the dominance of conformity, the social process is polluted.” By bearing the mental and physical stress of resisting orders or group pressure, positive dissenters freed others from the chains of blind obedience. The irony, of course, is that instead of being rewarded for this service, dissenters were unfailingly punished by conformist groups. The only way to encourage productive dissent is by nurturing an environment in which free-thinking is safe.

Semmelweiss’ ideas were eventually accepted as common wisdom, however, and he has come to be widely recognized as the “father of hand hygiene”. On July 1, 2011 we will celebrate Semmelweiss Day, the 193rd birthday of the man who, through his positive dissent from accepted wisdom in the introduction of antiseptic hand hygiene, has saved the lives of millions of patients.

## GREEN TEAM UPDATES

Springtime green is bursting out all over - trees budding, grass growing. Unfortunately the remnants of Winter still linger in the litter and trash blowing around the streets. The garbage on Coventry Road won't be around for long. Virox is participating with the City of Oakville in their Adopt-A-Road program and the Green Team is busy organizing a Spring Clean Up day.



More exciting is our first big update for our LEED certification project. Energy utilization was a concern. Under the LEED-EB system an Energy Star audit must be completed to measure a building's energy performance compared to buildings of similar characteristics. A score of 50 represents an average building performance, and for certification a rating of at least 69 must be achieved. The energy audit for our building provided an Energy Star Rating of 71! This means that we use 28% less energy than most office buildings of equivalent size!

We have also implemented a new recycling program for the waste product of our product labels. The backing paper and corrugate cores that the labels are wrapped around account for 30 – 40% of the total weight of a self-adhesive label. These waste by-products are collected and converted to material to be used for outdoor decking. We are the first company to enter into this program and within just one month we have been able to divert 192 cubic feet or 5677.5 lbs of what would have been destined for a landfill. The next time you walk on an engineered deck you may just be walking on the backing paper and cores collected from Virox!

## Cleaning Agents and Asthma

**DR. SANTIAGO QUIRCE**, ALLERGY DEPARTMENT, HOSPITAL LA PAZ HEALTH RESEARCH INSTITUTE, MADRID, SPAIN



Although cleaners represent a significant proportion of the working population worldwide, they remain a relatively understudied occupational group. Cleaners undertake diverse tasks, ranging from domestic cleaning to cleaning in offices, hospitals, kitchens, public buildings, and industrial plants. It has been reported that 3% of the female workforce in Finland and 4% in the United States have a job in this field. And in my country, Spain, approximately 10% of women over 16 years old worked as cleaners in the year 2000. Exposure to substances in the workplace is thought to cause more than 10% of all cases of adult-onset asthma, and cleaning has been described as a particular occupational risk due to an increased incidence of asthma and asthma-like symptoms among cleaning workers. In a recent article (Quirce S, Barranco P. Cleaning agents and asthma. *J Investig Allergol Clin Immunol.* 2010;20:542-50) we explored this risk.

In the USA, the states of California, Massachusetts, Michigan, and New Jersey conduct work-related asthma surveillance as part of the Sentinel Event Notification System for Occupational Risks (SENSOR). The Californian surveillance system showed that janitors and cleaners had the highest incidence of work-related asthma. Rosenman et al reviewed reports on work-related asthma associated with cleaning products and found that a cleaning product was 1 (or more) of the 3 suspected agents identified in 236 (12%) of the 1,915 confirmed cases. Of the products identified, bleach was the most frequent.

### Cleaning Agents

A cleaning product is defined as any material used for cleaning or disinfecting surfaces in general work environments. These products have become an indispensable part of modern life, as they are used on daily basis in nearly all workplaces and homes. A wide array of cleaning agents has been developed to facilitate dust and dirt removal, and for disinfection and surface maintenance.

The cleaning products used for common janitorial tasks are mixtures of many chemicals, which are usually classified in product categories according to their application. The main chemical components of cleaning products include detergents, disinfectants, alkaline agents (eg. sodium hydroxide, ammonia), acids, complexing agents (water softeners), solvents, corrosion inhibitors (eg.

monoethanolamine), film formers and polishes (eg. acryl polymers, polyethylene), preservatives (eg. benzalkonium chloride, isothiazolinones, formaldehyde), and perfumes or scents.

### Detergents

Detergents, such as fatty acid salts (soap) and organic sulphonates, reduce the surface tension of water. More aggressive and effective detergents are increasingly used and may cause irritation of the skin and mucous membranes. Only sparse data exist in relation to surfactants and allergic sensitization. It has been hypothesized that the strong surfactant properties of some ingredients of modern detergents may interfere with various intricate cellular interactions taking place along immunological pathways, including formation of type 2 helper T cytokines.

### Disinfectants

The main chemical classes of disinfectants are alcohols (eg. ethanol, isopropanol), aldehydes (glutaraldehyde, orthophthalaldehyde), oxidizers (eg. sodium hypochlorite, H<sub>2</sub>O<sub>2</sub>), phenolics (phenol, thymol, o-phenylphenol), and quaternary ammonium compounds. Disinfectants have been identified as the most hazardous group of cleaning agents.

Bleach, whose active compound is sodium hypochlorite, and ammonia are among the most common chemicals used in cleaning products. Chlorine is a very toxic gas and exposure to levels as low as 1 ppm for a few minutes can irritate the eyes, nose, and throat. Chlorine also has a strong irritant effect on the airways.

Quaternary ammonium compounds, which are also known as quats, are widely used in cleaning products as antiseptics, disinfectants, detergents, and preservatives. Bernstein et al described a case of occupational asthma caused by prolonged workplace exposure to a cleaning solution containing benzalkonium chloride. Exposure to quats can occur either by inhalation of aerosolized liquid particles generated during application or by inhaling these liquid particles absorbed into the dust particles that are re-suspended in the air.

### Perfumes and scents

Perfumes and scents are common components of many cleaning products. Pine scent containing terpenes can act as a sensitizer, as can limonene, eugenol, and other fragrances. Terpenes can cause secondary emissions due to reactions of the primary exposures with oxidizers present in indoor air. These reactions can release secondary ultrafine particles that may be responsible for respiratory irritation symptoms.

The airborne concentrations of glycol ethers (regulated toxic air contaminants) and terpenoids (including d-limonene) were measured during and after the application of 5 different cleaning products and air fresheners in a 50-m<sup>3</sup> room ventilated at 0.5 m<sup>3</sup>/h. The results indicated that some cleaning agents can yield high levels of VOC, including glycol ethers and terpenes, which can react with ozone to form a variety of secondary pollutants including formaldehyde and ultrafine particles.

### Summary and Conclusions

Cleaning agents are used in large quantities throughout the world. Epidemiological studies have shown an association between cleaning work and asthma, but risk factors are uncertain. Exposure to cleaning products is a function of both product formulations and product application. Factors inherent to the environment where cleaning is done or the type of cleaning agents used may explain the differences observed between the different types of exposure. For instance, the use of cleaning products in spray form facilitates inhalation, and sprays may contribute to the burden of asthma in adults who do the cleaning in their homes. The ingredients of cleaning products should be systematically evaluated, and exposure in the workplace and at home should be assessed. A combination of product evaluation and exposure data is necessary to develop strategies for protecting exposed individuals from cleaning hazards.

## ICPIC 2011

### Your Invitation to the First International Conference on Prevention & Infection Control



**Dr. Didier Pittet**

Prof. Didier Pittet, University  
of Geneva, ICPIIC Chair

During the last decade the prevention of health-care-associated infections (HAI) has become increasingly important. This change is demonstrated by the choice of an infection control topic by the World Health Organization on its first Global Patient Safety Challenge.

Furthermore, major companies in the fields of diagnostics and biomedical products are focusing their attention on HAI prevention and control of antimicrobial resistance.

In the past, research and continuing education were driven by only a few North American and European centres while today, a growing number of centres from around the globe join an ever-increasing effort to seek measures for the prevention of HAI.

There is a need to share knowledge and experience in HAI prevention and control of antimicrobial resistance from the numerous countries and cultures around the world. This need and the worldwide nature of HAI-prevention and antimicrobial resistance control are the reasons to initiate a global conference on this important topic. It is my pleasure to invite you to Geneva, Switzerland, for the 1st International Conference on Prevention & Infection Control (ICPIC) to be held from 29 June to 2 July 2011.

To learn more about the scientific program to be covered during the conference please visit the website: [www.icpic.eu](http://www.icpic.eu)

[www.icpic.eu](http://www.icpic.eu)

# The CHICA-EO/Cameroon Twinning Project!

SHIRLEY MCDONALD, CHICA-EASTERN ONTARIO

Cameroon is a country in West Africa that has a population of 18 million. It is very beautiful and lush, but poor, corrupt, and lacking many public health services. The Cameroon Baptist Convention Health Board (CBCHB) is a non-profit health care organization that started over 50 years ago and has expanded into six of Cameroon's ten provinces. One of the members of the Eastern Ontario chapter of CHICA-Canada has had an on-going relationship with CBCHB, and at the November 17, 2010 chapter meeting there was agreement to look at ways to "twin" with the Infection Prevention (IP) program there. Our intent is to provide whatever resources needed, where possible, to improve infection prevention and control in that country. The CBCHB Infection Prevention department was contacted and there was enthusiastic support from them, their physicians, and their CEO for this project



The services of the CBCHB range from primary healthcare in rural villages, to highly specialized hospital-based care, with an integration of other social services. It comprises five hospitals, 24 integrated Health Centres, 43 primary Health Centres, a Private Training School for Health Personnel, and other critical health services. Major infectious diseases programs include the AIDS Care and Prevention Program and a TB control program. The CBCHB works in partnership with national and international governmental and non-governmental health care organizations in Africa and the rest of the world and with funding agencies.

## Infection Prevention Nurses

Jacob Nkwangobte was the IP nurse for Bansa Baptist Hospital and is currently attending university. He plans to return to the CBCHB after he graduates to expand the Infection Prevention and Control (IPAC) program to include training of more infection prevention nurses, with the aim of eventually developing a national IPAC program. Amos Ndichia is the IP nurse at Mbingo Baptist Hospi-

tal. Amos and Jacob received IPAC training from the AWARE Project of USAID. One of their many tasks is to inspect satellite CBCHB clinics for IPAC practices. Jacob recently collaborated with the administrator of CBCHB's Life Abundant Primary Health Care Program (LAP) to train LAP nurse field supervisors and health promoters and trained birth attendants in remote villages in principles of IP, especially as related to obstetric delivery and newborn care, which are done in these primary health centers. They gave pre- and post-tests in IP to these staff and documented that many staff improved in knowledge after completing the curriculum. Training included the production and use of alcohol-based hand rub, surface decontamination with 0.5% chlorine bleach, and many other critical IP practices.

## The Twinning Project

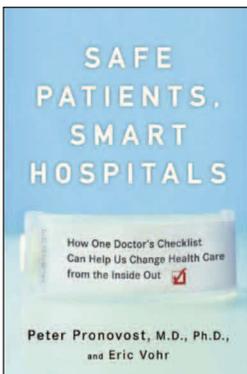
As an initial step, the members of CHICA-Eastern Ontario sponsored Jacob in joining CHICA-Canada. This will give Jacob access to the Canadian Journal of Infection Control and other resources available to members, such as the Audit Toolkit and CHICA CHAT forum. CHICA-EO is also setting up an electronic mentoring program, putting interested chapter members in touch with the Cameroon IPs for dialogue, and assistance in problem-solving. We plan to send some of our chapter members to Cameroon in coming months to visit Jacob, to obtain a better understanding of the challenges facing our West African colleagues. We have asked the Cameroon group to provide a list of items and resources that would be most useful to them. Requests will follow after a needs assessment is completed. Ongoing fundraising will be required to purchase hardware, software and training equipment, and to bring Cameroon IPs to CHICA-Canada conferences and other international educational sessions. We are very excited about this twinning initiative and are grateful to CHICA-Canada and the corporate sponsors who have provided support.



Congratulations, CHICA-EO, on your foresight and compassion.  
John VanDyke, Virox Technologies Inc.

## Book Review: Safe Patients, Smart Hospitals: How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out

JULIE STORR, VICE PRESIDENT, INFECTION PREVENTION SOCIETY, PROJECT MANAGER, WHO AFRICAN PARTNERSHIPS FOR PATIENT SAFETY



This book is the story of a simple device (a checklist) that the authors suggest is universally making health care safer. It is told by the pioneer of the checklist approach, one who has been acknowledged officially as a genius. That man is Peter Pronovost, an anaesthesiologist and critical-care specialist at Johns Hopkins, Baltimore. Pronovost's name is synonymous with the international patient safety movement and this book is the perfect introduction to his transformational work. The book is coauthored by Eric Vohr, a former communications executive at Hopkins, and together the authors build a convincing case for urgent and radical change of western health care systems. A powerful narrative runs through the book centred on the main author's personal account of the death of Josie King and how this catalysed everything that followed on the checklist journey. In addition,

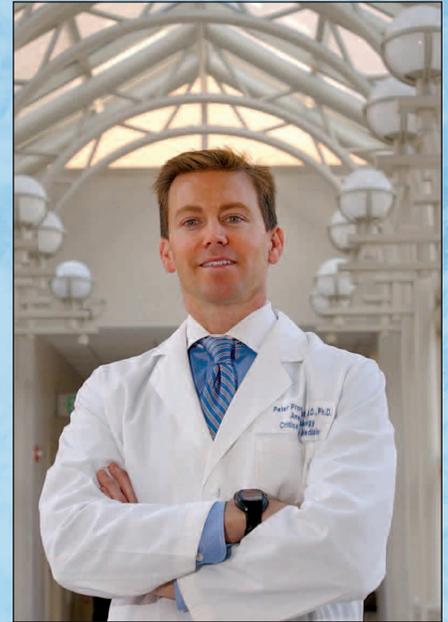
Pronovost relates a second experience of error through the story of his own father's death. These accounts illustrate perfectly how adept modern health systems are in harming patients unnecessarily. The use of narrative continues with an array of true stories of preventable error and how Dr. Pronovost has successfully addressed these.

To the relevance of this work to the science of infection prevention; Pronovost probably stands alongside a handful of international actors who have transformed patient safety and infection prevention. He has done so through the development, implementation and measurement of interventions like the checklist, that save lives. This book provides a fascinating insight into how it all happened and what might happen next. It reminds us that the first ever medical checklist was developed collaboratively with epidemiologists and infection preventionists at Hopkins. He talks about the checklist as a life saving device adds an interesting angle to the story, and should challenge every reader to reconsider how we position the things we do, the tools we use, the approaches we take in our day to day work in infection prevention and control and the language we use. At first the reader might be forgiven for thinking this is a little exuberant – is the checklist really akin to the discovery of penicillin or the double helix? Given that the checklist if implemented successfully and consistently could save lives on a monumental scale, the language might even be underselling this device. Applied universally across the US, Pronovost predicts it could eradicate 1 million cases of central line associated blood stream infections and save 50,000 lives. This is his long term intention. It's an interesting claim and the reader is left with no doubt it will be achieved in Pronovost's lifetime.

The book emphasizes how the checklist revolution can only be achieved alongside a parallel cultural revolution in our healthcare systems. The checklist effect is predicated on a collaborative culture and the need for a radical shift in the status of the physician. Success requires the status quo to be transformed beyond recognition and this book pushes the boundaries of convention throughout. It is this aspect that is of most interest.

We in infection prevention and control have much to learn from Pronovost's approach and we could certainly do with more of his ingenuity.

### Virox Sponsors Provonost Teleclass Lecture



The 2011 Teleclass Education lecture series features a lecture by Dr. Peter Pronovost – “Using Checklists to Prevent Healthcare Associated Infections”. Dr. Pronovost and his colleagues at Johns Hopkins University in Baltimore are on the leading edge of the integration of checklists and the necessary change in culture in healthcare environments to protect patients from avoidable harm. Dr. Pronovost's book, “Safe Patients, Smart Hospitals”, is a must-read for anyone working in infection prevention and control or patient safety. In his lecture he will discuss how realistic checklists are created, how they are implemented, and the barriers that you can expect to face when trying to initiate a checklist program.

We at Virox are proud to sponsor this Webber Training teleclass lecture and we would like you to be our guest. If you would like to access the live teleclass, or the slides, handouts, and on-line recording after the teleclass, let us know. We'll get you registered. For more information refer to [www.webbertraining.com](http://www.webbertraining.com).



CONTINUED FROM PAGE 1

## Results

The number of rooms in which housekeepers were observed was as follows: housekeeper A cleaned 22 rooms; housekeeper B cleaned 15; housekeepers C and D cleaned 8 rooms each; and housekeepers E, F, and G each cleaned 3 rooms. Median cleaning times for the high-touch surfaces were as follows: bedside rails - 86 seconds, over-bed tables - 66 seconds, television remotes - 12 seconds, bathroom grab bars - 22 seconds, and toilet seats - 75 seconds.

ATP readings were obtained in 61 of the 62 rooms. The median ATP readings for these five high-touch surfaces varied significantly, with bedside rails having the highest median value, and over-bed tables the lowest. The median ATP readings achieved by the four housekeepers (A-D) who cleaned at least eight rooms varied considerably.

In the 14 patient rooms for which additional observations were made, the number of disinfectant-soaked wipes used per room varied from a high of five wipes per room, to a low of three wipes over 6 rooms. The first surface cleaned was the bedside rail in three rooms, the over bed table in one room, the television remote in two rooms, the bathroom grab bar in four rooms, and the toilet seat in four rooms. ATP readings were available for 13 of the 14 rooms. The median ATP readings in rooms cleaned with only two disinfectant wipes were higher than those obtained in the eight rooms cleaned with three, four, or five wipes.

## Discussion

Despite the fact that the seven housekeepers in our study were selected for their perceived effectiveness, the prospective observations and quantitative assay system used revealed substantial variations in the technique used by housekeepers during daily cleaning of patient rooms. The differences in time spent cleaning the five high-touch surfaces are due in part to the difference in size of the objects being cleaned. Of greater concern was the wide variation in time spent cleaning a single type of surface. Factors that may have influenced cleaning times include whether or not surfaces appeared dirty, and housekeeper attitudes regarding which objects are the most likely to be contaminated (e.g., toilet seats). The number of disinfectant wipes used per room also varied substantially. We found that high-touch items with smooth surfaces (e.g., over-bed tables and toilet seats) were cleaned more thoroughly than items with rough or irregular surfaces, a finding consistent with previous qualitative studies of cleaning performance.

Despite the obvious limitations of our study - it was conducted in a single hospital, the number of housekeepers included was small, and the number of wipes used per room was recorded in only 14 rooms - our findings suggest that a number of variables need to be considered when assessing hospital cleaning practices, and that providing housekeepers with continuing education and feedback is necessary to achieve compliance with recommended daily cleaning practices.

Visit Dr. Boyce's web site at [www.cleanhospitals.net](http://www.cleanhospitals.net)

## CHICA Today

The Community and Hospital Infection Control Association— Canada (CHICA) is a national, multi-disciplinary, voluntary association uniting those with an interest in infection prevention and control in Canada. CHICA has more than 1700 members and 21 corporate members in 21 chapters across the country. All our members and partners are dedicated to the health of Canadians by promoting excellence in the practice of infection prevention and control.



DONNA WEINS, 2011  
PRESIDENT, CHICA-CANADA

The provision of infection prevention and control services is rapidly evolving amid the increasing demand for scarce health care resources. Challenges to practice include decreased numbers of acute care inpatient beds and an increased demand for long-term care beds; expansion of home care services, increased patient acuity, increased numbers of ambulatory procedures, same day surgeries and advanced diagnostic procedures. Protection of clients and employees includes consideration of global travel, bloodborne pathogens, the resurgence of tuberculosis, and the explosive increase in antimicrobial resistant organisms.

In whatever healthcare setting you work, CHICA and its local chapters provide support as you address concerns in your area of practice. Support to our members is provided in many ways: initiating and developing effective communication among professionals (website, member & source guide, e-newsletters, chapter webpages and special interest groups); supporting the development of effective and rational practice (position statements, collaboration on national guidelines/standards); encouraging standardization and critical evaluation of practice (audit toolkit, professional and practice standards, e-learning modules); promoting research in practices and procedures (Canadian Journal of Infection Control); promoting and facilitating education (national and chapter education conferences/roadshows, endorsement & provision of basic infection prevention and control courses); promoting consumer awareness within the community (collaboration on national and global awareness campaigns).

CHICA collaborates with many national agencies on infection prevention initiatives such as STOP! Clean Your Hands Day, World Health Day, the Global Hand Hygiene Campaign, and Antibiotic Awareness Day. We work closely with our corporate sponsors who provide support to members through scholarships, awards and directly support education initiatives and the audit toolkit. Internationally, CHICA works with partner associations to support collaborative education efforts during International Infection Prevention Week, and promotes the advancement of infection prevention and control professionals through recognition and certification.

CHICA-Canada has a lot going on! Join us today [www.chica.org](http://www.chica.org)