

Community Norovirus Outbreak – Lessons Learned

Lynda Davenport, Director of Student Health Services, University of Guelph

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norovirus was not isolated, it was suspected to be the causative agent.

Some important lessons were learned from our outbreak experience.

Communication

Have an outbreak management meeting ASAP with all stakeholders (assuming they are not ill). Assign someone to take meeting notes and circulate the notes after the meeting. Unfortunately, notes were not taken during our initial meeting, and in spite of good intentions there were some misunderstandings that would have been avoided had we been able to reference meeting notes. Make sure everyone knows their role and the role of others. Identify the spokesperson and resource people.

If the outbreak is in residence - meet with Residence Assistants and Managers quickly to ensure that the student leaders have accurate and correct knowledge and information and know whom to contact with questions or concerns. Supporting the student leaders and utilizing their direct access to students was very important for us. Communicate directly, via email (text), to all students providing accurate information and resource information about the virus and the self-care strategies that could be helpful to them if they become ill. Encourage individuals with symptoms to stay home or in their room for up to 48 hours after symptoms are finished. Provide the same information and advice to all employees.

Put information on the parent webpage if such one exists – everyone was fielding calls from upset parents once our outbreak information was circulated. In all communication use lay

On February 1, 2006, the University of Guelph issued a media release that stated it was working with the Wellington-Dufferin-Guelph Public Health Unit to contain a viral outbreak in a single student residence (population 1,850+). Although several ill students had eaten at one of the residence cafeterias, the cause of the outbreak was not confirmed as food related. By February 5, 2006, it was announced that although the University had provided hand sanitizer dispensers in residence washrooms, it was the students' responsibility to provide their own hand soap and towels, potentially amplifying the problem. In total, by the time that outbreak was officially declared over, 340 cases of gastroenteritis were reported to public health officials. Although no-

"The secret of success is constancy of purpose"

Benjamin Disraeli

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An Update on the Quality of Outbreak Descriptions

Karolin Graf MD and Ralf-Peter Vonberg MD

Institute for Medical Microbiology and Hospital Epidemiology Hannover Medical School, Germany

In 2007 the ORION (Outbreak Reports and Intervention Studies of Nosocomial Infection) statement called for greater clarity and uniformity in the description of nosocomial outbreaks. It provided a 22 item check list to ensure that all important features and characteristics of the event are noted. This includes the type of study design, data on affected patients and staff, the setting, interventions, microbiological sampling and culturing, clinical outcome (e.g., number and type of infections and/or deaths), costs, appropriate statistics, and many more. This kind of a standardized reporting of results had been suggested for other purposes before, e.g. in the CONSORT (Consolidated Standards of Reporting Trials), the TREND (Transparent Reporting of Evaluations of Nonrandomised Designs) statement, and the STROBE (Strengthening the Reporting of Observational studies in Epidemiology) statement.

As only little was known about the actual quality of the nosocomial outbreaks, we conducted a search of the Outbreak Database as the worldwide largest collection of nosocomial outbreaks (www.outbreak-database.com).

This web-based platform is accessible free of charge for all users. Outbreaks described in medical literature are filed in this database in a systematic manner similar to the categories as mentioned above in the ORION statement. A search filter allows the user to check for nosocomial outbreaks that show specific features or to compare groups of outbreaks in order to determine differences - the causative agent, the outbreak's source, the mode of pathogen transmission, the type of infection control measures, etc. In 2007, a total of 2,096 nosocomial outbreaks were filed in this database. Of those, 149 (7.1 %) were cohort studies (equivalent to a level of evidence "2b" according to the Oxford Centre of Evidence-based Medicine), 382 (18.2%) outbreak reports were case-control studies (evidence level "3b"), and 1,565 articles (74.7%) were only case reports (evidence level "4"). Thus, the vast majority of articles were rather unlikely to provide useful information for the detection of risk factors for the occurrence of nosocomial outbreaks at that time.

In January of 2010 we repeated the 2007

evaluation to determine the quality of nosocomial outbreak reporting. In that 3-year interval the overall number of outbreaks in this database had grown to 2,155. As we were only interested in the quality of outbreaks published from 2007 to present day we restricted our search accordingly. In the time frame of January 2007 through January 2010, 216 nosocomial outbreaks had been published in medical literature and filed in the database. Of those, 21 (9.7 %) were cohort studies, 42 (19.4 %) were case-control studies, and still 153 (70.8 %) remained on the low evidence level of a case report. Compared to our findings from 2007, we noticed only little improvement in outbreak reporting during the last three years. Therefore, once again, we would like to encourage outbreak investigators to provide as much data on the background of their event as possible. In this respect, the ORION statement might be a very useful tool.

References for this article available on request
 – nicole@virox.com
 The original 2007 study is available at
<http://infection.thelancet.com> Vol 7 November 2007.

Canadian Scientist Receives Hygieia Medal

In mid December, 2009, the University of Ottawa proudly announced that Syed A. Sattar, emeritus professor of microbiology and founding director of the University of Ottawa Centre for Research on Environmental Microbiology (CREM), was awarded the Hygieia Medal of The Rudolf Schülke Foundation.

The Hygieia Medal is given once every two years to a scientist who has made significant contributions in the areas of hygiene science, infection prevention, and public health. Prof. Sattar is the first non-European scientist to receive this medal in its 33-year history.

The Rudolf Schülke Foundation recognized Professor Sattar as an "extraordi-

nary scientist" and honoured his long-standing achievements in unraveling how disease-causing bacteria and viruses behave when outside the human body. The organization also acknowledged his pioneering role in spearheading the more responsible use of chemicals to prevent the spread of infections in domestic and healthcare settings. Finally, Professor Sattar was praised for his unique contributions to the development of numerous national and international standards and guidelines for infection prevention.

The Rudolf Schülke Foundation promotes hygiene and microbiology with the focus on prevention and control of transmitted diseases. This means in particular the development and application of prevention



strategies and methods concerning anti-sepsis, disinfection and preservation as well as the worldwide dialogue between representatives of science and research. Its aim is to encourage interdisciplinary research and to strengthen co-operation with universities.

Source: University of Ottawa Media Centre

Virox Update

AHP Receives Another Patent!

Virox Technologies Inc. has received yet another patent for Accelerated Hydrogen Peroxide-based technology. The new patent (US 7, 632, 523 B2) protects our 1-minute intermediate level disinfectant formulation sold in Canada and the United States by JohnsonDiversey under the brand name Oxivir TB to the industrial and institutional market, and by SciCan in the dental market under the brand name OPTIM 33 TB. The patent also covers the 10-minute sporicidal surface product sold in Canada under the brand name RES-CUE, as well as the teat dip formulation sold by DeLaval to the dairy industry. This now brings the number of issued patents to nine with a further ten patents pending.

Virox Aides EMS in Haiti

In the aftermath of the January 12th earthquake in Haiti, and in response to an urgent request, we were honoured to contribute Accel TB wipes for use by emergency, rescue and medical staff. As you've undoubtedly heard, access to water was extremely limited in the days following this natural disaster, while the use of effective disinfectant products was essential to mitigate the risk of transmission from medical devices, stretchers and other rescue and recovery equipment. Virox Technologies Inc has also provided a monetary donation in the name of one of our employees, Carlos Jean Pierre who recently emigrated from Haiti.

2010 CHICA Cleaning, Disinfection and Sterilization Symposium

In line with our mandate to provide educational opportunities to the infection control community, the Virox team has partnered with CHICA-Canada to sponsor a pre-conference education day at the Vancouver 2010 CHICA National conference on cleaning, disinfection and sterilization. Our May 31 education day will feature leading-edge experts and data and will provide the most cutting edge information on: disinfection of the environment, medical device reprocessing, patient safety, audit tools, and occupational health and safety. The breadth of subject matter will undoubtedly lead to discussion on best practices, reflection on misconceptions, and lead us to search for responses in face of the challenges we face in our daily practice and research. It is in this sense

that Virox hopes to furnish information, practical skills and common ground for everyone who is actively in and interested in cleaning, disinfection and sterilization. For more information on the day please check out the CHICA-Canada website at www.chica.org.

2010 CHICA Scholarship

The Virox Patron Scholarship is in its 8th year and to date Virox and the Patron Members (JohnsonDiversey, Butchers, Deb, STERIS and Webber Training) have contributed over \$100,000.00 towards the annual scholarship, which has provided the opportunity for more than 60 infection control professionals to attend the annual CHICA-Canada Conference. As a result of this past success and an ever-increasing need for education funding, Virox and its partners have increased the annual scholarship from \$15,000 to \$20,000 for 2010. The scholarship is open to all Infection Control Professionals across Canada. The deadline close was January 31, 2010. Good luck to those who applied!

Website Update: www.virox.com

We pride ourselves on being a resource tool to the infection control community. One of the most frequently accessed section of the website are the product pages. In order to help facilitate navigation though the products that are available on the North American market we have launched new product pages that organize all the relevant information for each product together by market and country of sale. The product pages now include product marketing material, MSDS, CFIA approvals, and efficacy reports for each commercialized product.



Conference Schedule

Virox representatives will be participating in the following functions during the upcoming months:

February

February 23, 2010 - TPIC / RICN Education Day

March

March 12, 2010 - APIC Chapter #118 Annual Teaching Day

March 15 to 18, 2010 - Seatrade Cruise Shipping Convention

April

April 15 to 17, 2010 - Pacific Dental Conference

April 17 to 19, 2010 - AIPI Annual Conference

April 21, 2010 - CHICA Eastern-Ontario Education Day

May

May 13 to 15, 2010 - Ontario Dental Association Conference

May 29 to June 3 2010 - CHICA Canada National Conference

May 31 2010 - CHICA Canada National Conference

VIROX SPONSORED PRE - CONFERENCE DAY ON CLEANING, DISINFECTION AND STERILIZATION

June

June 17, 2010 - CHICA - HANDIC & RICN Education Day

July

July 11 to 15 2010 - APIC National Conference

We are very excited about participating in and/or sponsoring 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.



**World Health
Organization**

Patient Safety

A World Alliance for Safer Health Care

Inaugural Infection Control Webinar Series

WHO First Global Patient Safety Challenge *Clean Care is Safer Care*

19 January 2010, 9am Eastern

The global burden of health care associated infections
(B. Allegranzi, Geneva, Switzerland)

16 February 2010, 9am Eastern

The modern approach to infection control
(D. Pittet, Geneva, Switzerland)

16 March 2010, 9am Eastern

Epidemiology and prevention of bloodstream infection
(W. Zingg, Geneva, Switzerland)

13 April 2010, 9am Eastern

Proven strategies to control influenza virus transmission, with special focus on H1N1
(HW Seto, Hong kong SAR, China)

Special hand hygiene focus to celebrate SAVE LIVES: Clean Your Hands, 5 May 2010

03 May 2010, 9am Eastern

5 May, are you ready?
(C. Kilpatrick, B. Allegranzi, Geneva, Switzerland)

05 May 2010, 9am Eastern

Improving hand hygiene worldwide
(D. Pittet, Geneva, Switzerland)

07 May 2010, 9am Eastern

Impact of hand hygiene improvement on healthcare-associated infection
(L. Grayson, Melbourne, Australia)

15 June 2010, 9am Eastern

Principles of environmental cleaning and monitoring the adequacy of practices
(J. Boyce, New Haven, USA)

29 June 2010, 9am Eastern

Impact of the 5 May global initiative
(C. Kilpatrick, B. Allegranzi, Geneva, Switzerland)

13 July 2010, 9am Eastern

Infection control in developing countries
(N. Damani, Craigvon, UK)

17 August 2010, 9am Eastern

Hospital sterilization and disinfection procedures
(S. Mehtar, Cape Town, South Africa)

23 September 2010, 9am Eastern

Highlights on antimicrobial resistant pathogens in healthcare settings
(S. Harbarth, Geneva, Switzerland)

19 October 2010, 9am Eastern

Epidemiology and prevention of urinary tract infection
(A. Voss, Nijmegen, Netherlands)

16 November 2010, 9am Eastern

Epidemiology and prevention of surgical site infection
(A. Widmer, Basel, Switzerland)

15 December 2010, 9am Eastern

Epidemiology and prevention of hospital-acquired / ventilator-associated pneumonia
(speaker to be confirmed)

www.who.int/gpsc/5may/news/webinars/en/index.html

GREEN TEAM UPDATES

As introduced in the Fall 2009 Newsletter (issue 20), an interdisciplinary team was established to focus on Virox's environmental impact in all that we do in order to meet our corporate vision of sustainability. Year 2010 promises to be a busy and exciting time for the Green Team as several projects get underway. Virox recently awarded EmTerra the waste and recycling management contract for our facilities. One of the key elements that attracted us to EmTerra was their single-stream recycling program. This means that, similar to how we recycle at home, all recyclable materials (glass, plastic, tin and paper) can be placed in the same box. This simplifies recycling for all employees but also for our Environmental Services team. We look forward to sharing how much waste we were able to redirect from the landfill at the end of the year.

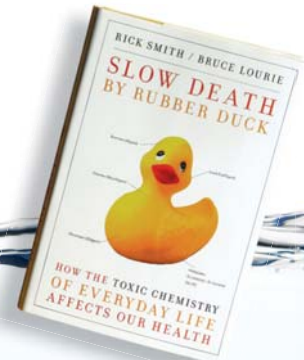
Our second project will get underway in the next few weeks - to replace the lighting system currently used in the production and warehouse areas. Our current lighting system uses metal halide bulbs which are not known for efficiencies in either energy consumption or provision of light. We will be moving to electronic ballasts and the use of T5 and T8 bulbs. This move will realize close to a 20% reduction in energy consumption!

In perhaps one of the loftiest and most exciting projects of 2010, the Green Team will be working toward LEEDs certification. To get us on our way we have hired Antonio and Denise Santini from Redstudio Architects to conduct a full audit our facility and bench mark us against LEED compliance. The Santini's company was chosen because of their holistic approach to design. Their company maxim is "creating innovative building that respect the environment" which marries itself well with our corporate stance - "Virox is committed to innovating, developing and improving peroxide based environmentally sustainable cleaners and disinfectants that allow our affiliates to reduce their environmental impact when consuming such necessary products. A focus on health and environmental sustainability is a legacy we will pass on to future generations."

We'll keep you updated on our initiatives!

Review: Slow Death by Rubber Duck

Nicole Kenny, Director of Technical Services, Virox Technologies Inc.



One of the benefits that a stretch of Christmas holidays affords is extra hours to spend with a good book (a precious commodity with a 1 year-old in the house). My most recent read came highly recommended by a highly recommendable person - "Slow Death by Rubber Duck", by Rick Smith, with Bruce Lourie and Sarah Dopp. It is an excellent, although by times exasperating, book.

The full title is "Slow Death by Rubber Duck: How the Toxic Chemistry of Everyday Life Affects Our Health" (Knopf). The easy-to-digest tone of the book, and the lighthearted title might lead one to misjudge the seriousness of the message, but make no mistake that the core of the book is very serious indeed even to the extent that the researching of it became a real threat to the wellbeing of its author.

Author Rick Smith is the executive director of the Canadian group Environmental Defense, a special interest group created for the purpose of "protecting the environment and human health"; not an insignificant objective. If judged by the lofty campaigns and recent victories claimed on their web site (environmentaldefense.ca) the organization and executive director are indeed committed to their mission. Smith's commitment becomes clearly evident in the reading of his book.

"What kind of logic is it to put a registered pesticide in underwear?"

While taking a pause from the process of stuffing a child's Christmas stocking

Smith read the fine print on a package of socks. The label identified that Triclosan - a broad-spectrum antibacterial agent registered with the US-EPA as a pesticide, and linked to human health effects and antibiotic cross-resistance - was a component of the sock fabric. In fact Triclosan showed up in many of his child's stocking-stuffers from rubber ducks to underwear, and the discovery of its ubiquity launched Smith on an unnerving adventure.

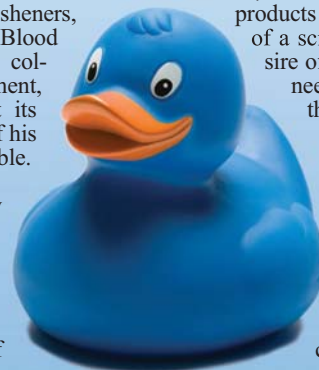
The book describes in detail an experiment in which the author turned himself into a human guinea pig. Having identified potentially hazardous pesticides, preservatives, and other known toxins (to humans and/or the environment) Smith purchased scores of brand-name products in which these agents appeared and resolved to use them exclusively over a 4-day period. The products included stain removers, shower gel, shaving cream, soap, microwavable plastic containers, toothpaste, air fresheners, canned foods, and more. Blood and urine samples were collected before the experiment, regularly during, and at its conclusion. The results of his experiment were remarkable.

In the course of the 4-day experiment, Smith's phthalate level, which is believed to cause testicular dysfunction in children, went up by 22 percent; the amount of

BPA in his blood, linked with breast and prostate cancer, climbed 7.5 percent; and the level of Triclosan shot up by 3,000 percent. Triclosan is believed to interfere with thyroid function and is not metabolized by the human body nor even by the sewage waste process, making it an almost ubiquitous environmental chemical in water.

Two conclusions are reached by Smith and his colleagues. "What we do in our everyday lives really matters in terms of the level of pollution affecting us". And, "It doesn't seem to matter where you live or what you do for a living; we're all united by pollution."

Science is not the villain here. Science responds to need (and/or want). In recent years the rapid reduction of toxic and persistent chemicals such as glutaraldehyde, Triclosan, and quaternary ammonium compounds from the healthcare environment, and the explosion of less toxic products or procedures are examples of a scientific response to the desire of the marketplace. Humans needn't fear science; indeed this is a book of optimism. To close with the words of the author, "We're very much at a watershed moment. The scientific evidence of human harm from these chemicals is overwhelming. It's driving different consumer buying habits and forcing companies to change."



Community Norovirus Outbreak – Lessons Learned

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language. Public health officials did not want us to use “stomach flu”, and instead preferred “gastroenteritis” and “enteric illness” in communications, which really scared students and their parents. In face-to-face meetings we opted to refer to the virus as the ‘stomach flu’ and anxiety levels quickly dropped. It also helped dispel the rumour that this was avian flu!

Cooperate with public health and other departments on campus. Share with public health any communication that is being circulated to ensure that they can be supportive of on-campus initiatives. Keep good records of all cases and their contact information and forward it to public health for follow up of symptoms to ensure that they matched the case profile.

Hygiene

Ensure easy and convenient access for students in residence to clear fluids and water. During our outbreak Food Services representatives delivered clear fluids and bottled water to the residence desks for students who were ill, which was a good plan, but we neglected to communicate the reason. Thus was borne the rumour that the water supply was contaminated!

Promote enhanced housekeeping. Housekeeping/Custodial Services workers were great about picking up the pace with cleaning of washrooms and common areas. They also encouraged students who were ill to contact them if they needed their rooms cleaned because of vomiting. They told students how to access more paper towels and soap if the residence washrooms. We were told by public health to use Virox™ for all cleaning.

Promote good personal hygiene. Through the circulation of email messages about hand hygiene and personal care we tried to promote the preventative benefits of good personal hygiene as the first strategy of protection against viruses. We had, since SARS, provided alcohol hand sanitizer in all residence washrooms. However due to the difficulty in keeping residence washrooms stocked with other hygiene products (soap, paper towels and garbage pails), these products had been removed years before.

In the Clinic

Make sure that all Student Health Services staff are regularly updated about the situation and feel comfortable and safe within the clinic. Promote good hand hygiene among all Health Services staff and make sure that throughout the clinic there is hand sanitizer readily available. Do extra cleaning in the clinic areas and waiting rooms – we used Virox™ here as well. No clinic staff became ill in the first wave, but as the illness became more prevalent in the community there were two staff who reported mild symptoms. Getting together after the initial crisis to debrief was key to determining what worked, what didn’t work, and what we would do differently in the future.

Discourage faculty from requiring Verification of Illness Forms for academic deferrals. Most of our faculty did respect that request but some required notes. With well over 250 students being ill this put an unnecessary burden on Health Services, and more importantly it was an inconvenience to the students who were asked to stay home when they were ill.

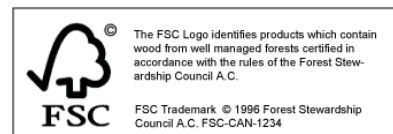
Be proactive in the identification of a potential outbreak. At the walk-in clinic, flags started to be raised the morning that we saw 5 students from residence before 10am, all with the same symptoms. We were compiling a list when public health contacted us about another 11 students from residence that had reported to Emergency at Guelph General Hospital the evening before with the same symptoms. Rapid identification of common symptoms led to quick identification of

a potential problem and thus an early starting point for outbreak investigation and management.

Final Thoughts

Although we had good cooperation we know that a number of people ignored our request to “please stay home for 48 hours after the symptoms are gone”, and continued to move about in the community. I guess this is a challenge to our work ethic - we regard as heroes those who walk while wounded, but in cases such as this it may prove to be troublesome and even dangerous. Getting the message out to so many people in a timely manner and controlling the rumours that spin off of every action that you undertake is also a huge challenge. Where and how do you communicate your messages? Certainly e-mail communication was an advantage, we had signs on buildings, and large signs on our web site home page, but at times that just added to the attention, curiosity, and rumours. Keep the messages simple and in common language, and deliver them in a calm matter-of-fact manner again and again. Don’t back away from being available. Know what you have to do, and what responsibilities are best left to someone else on campus or in the greater community.

Lastly, it is important to keep your sense of humour and a healthy perspective, and to the best of your ability exude calm thoughtfulness in all your actions. Yes, it may be challenging for a while, but there is an end point, and you’ll be wiser when you get there!



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