

Infection Control Connection

An information newsletter for Infection Control Professionals

Opening Remarks

Introducing a new look for our infection control newsletter. We welcome any comments or suggestions to enhance the usefulness of this publication.

The Ministry of Health and Long-Term Care (MOHLTC) recently released the Febrile Respiratory Illness (FRI) guidelines for all non-acute care facilities. All long-term care facilities, physician offices, and public clinics are to implement a surveillance system to track these types of illnesses in your facility to prevent outbreaks of respiratory illnesses. These Ministry protocols are directed at your organization and it is your responsibility to ensure implementation. Provincial baseline standards for FRI infection control and surveillance in non-acute healthcare settings can be found at www.health.gov.on.ca/english/providers/program/pubhealth/sars/sars_mn.html. "Each facility will need to review these standards against existing practices in their setting and make changes as necessary. These standards represent the **minimum requirements** of the Ministry of Health and Long-Term Care (MOHLTC) for non-acute healthcare settings." These are now the "new normals".

Contents:

- Preparing for Pandemic Influenza
- West Nile virus (WNV) & the Elderly
- Did Alexander the Great Die of WNV
- Methicillin-resistant Staphylococcus aureus (MRSA) – Community Acquired
- Vancomycin Resistant Enterococci (VRE)
- Tuberculosis – An "old" Disease
- Cold Chain
- Pneumococcal Vaccine
- Chasing the Chains of Infection Conference
- Influenza Vaccination Coverage Rates

Enclosures

- Safety Tips on Using Personal Insect Repellents
- Infection Control – Guidelines for Healthcare Workers
- Facts – Pandemic Influenza

West Nile virus (WNV) human surveillance and collection of birds and mosquitoes will begin in the spring in Grey and Bruce Counties. Check out the West Nile virus section on our website for local statistics.

We are pleased with the response to our outbreak website. We hope it has facilitated decision-making around issues like staffing, placement and transfers.

Preparing for Pandemic Influenza

The recent outbreaks of Avian bird flu have heightened the concern that a pandemic strain of influenza is just around the corner. Surveillance and contingency plans are being developed globally, nationally, provincially and locally. Developing an action plan for the arrival of this most virulent strain of influenza is **essential** for your facility. It can happen anytime during the year, not just the winter season. Illness estimates predict that at least one third of your staff and clients will become ill from this strain. Unlike the usual circulating flu viruses, pandemic strains can cause severe illness and rapid death in a healthy adult population, between 18-45 years of age.

Things to plan around:

If 1/3 of your staff are ill, how will you provide the patient care required? How will you feed your residents? Do you have a pool of staff that can be called in? How will you manage your ill clients? Hospitals will be overwhelmed with cases and long term care facilities will probably have to treat their own residents in the nursing home. Who will receive antivirals and eventually the vaccine? How will you administer antivirals to your high-risk groups? Who will administer the vaccine when it becomes available? Will you have enough supplies for a pandemic outbreak? e.g. syringes, masks, gowns eye protection etc. How will you manage ill staff? How will you manage emotional and psychological stresses?

Infection Control Connection is published twice yearly by the Infectious Disease Team of the Grey Bruce Health Unit. We encourage you to contribute articles or submit questions that we can share with your colleagues. Contact us at: 920 1st Avenue West, Owen Sound, Ontario N4K 4K5 519-376-9420 or 1-800-263-3456. Fax: 519-376- 0980. www.publichealthgreybruce.on.ca



Baghdad, he developed progressive fever and chills, transient back pain and abdominal pain. Over the next 2 weeks, he developed increasing thirst, progressive delirium, aphonia, and gradually slipped into coma with flaccid paralysis. Some historians have speculated that he may have been poisoned, (although it is not likely to result in sustained fever for 2 weeks) while other literature has suggested various infectious etiologies, such as typhoid fever, schistosomiasis, bacterial sepsis, pneumococcal pneumonia, malaria, etc. Of those proposed, influenza A, polio or a viral encephalitis seem most plausible. These authors point to a passage in *Plutarch* for a possible clue: "Upon entering the gates of the city, a flock of ravens were seen flying about and pecking one another, and some of them fell dead in front of him." Considered a bad omen at the time, the birds may have been more than a harbinger, but an actual vector.

WNV is an important cause of death in wild birds, especially crows and diseased birds often exhibit bizarre behaviour, such as circling, disorientation, abnormal posturing, and impaired vision. WNV, therefore, appears a likely candidate for Alexander's demise. During the outbreak of WNV infection in Israel, which affected more than 400 individuals, encephalitis occurred in more than half of the recognized cases. Fever, cognitive changes, abdominal pain, and flaccid paralysis are common symptoms. Human illness generally follows natural infection in mosquitoes and birds. Hence, the possible importance of *Plutarch's* ravens.

Source:

1. Marr J, Callsher CH. *Emerging Infectious Diseases*, 2003; 9:1599-1603
2. *Infectious Disease Alert*, Volume 23, Number 4. January 2004

Methicillin-resistant Staphylococcus aureus (MRSA) – Community Acquired

Acquisition of MRSA in the community has exploded in frequency. The USA estimates that one half of MRSA isolated from patients with systemic infections in 2002-03 was community acquired. A retrospective study of 60 children with community-acquired *S. aureus* infection admitted to a tertiary

hospital found that 45% of the isolates were methicillin resistant. MRSA was also more likely to be associated with deep-skin infections from methicillin sensitive *S. aureus* (MSSA), while MRSA was more often associated with respiratory infection. The length of stay was 3 days longer in MRSA-infected patients, who were also more likely to have received inappropriate initial antimicrobial therapy (IDSA 799, 801).

Vancomycin Resistant Enterococci (VRE)

Handwashing is, of course critical to prevention of VRE transmission. VRE carriage on the hands of health care workers is transient or intermittent, but not persistent. Environmental contamination may also be important in the epidemiology of VRE. One VRE study looked at VRE contamination by patient carriers in an outpatient hemodialysis unit. It was frequently detected on chairs or couches, the gowns of health care workers, and on patients hands. Bathing ICU patients with a 2% chlorohexidine-impregnated washcloth was associated with decreased patient skin, environmental and health care worker hand VRE contamination when compared with soap and water bathing.

Tuberculosis – An “old” disease

Tuberculosis is believed to have afflicted mankind for hundreds of centuries. A Neolithic skeleton found in Heilleberg in 1904 revealed deformities typical of tuberculosis of the spine.



The same deformities were found in Egyptian king Tutankhamen and Peruvian mummies. In 400 B.C., Hippocrates gave the classic description of the disease which he called ‘phthisis,’ from the Greek word meaning ‘to dry up or to waste.’ In the 19th century, the disease was often referred to as “consumption”.

Tuberculosis was a major cause of morbidity and mortality in Canada throughout the first half of the 20th century. With improvements in general living conditions, the mandated requirement to pasteurize



milk, public health measures to interrupt transmission (quarantine) and the advent of antibiotic therapy, Canadian TB disease and death rates declined rapidly after the mid-1940's.

After the introduction of treatment for tuberculosis in the late 1940's, there was hope that the disease would soon be eliminated. However, in 1993, the World Health Organization (WHO) declared tuberculosis a "global emergency". In 1997 WHO estimated the global burden of TB as:

- 1.86 billion people infected (about 1/3 of the world's population)
- 8 million new cases annually
- 3 million deaths annually

The greatest burden of disease occurs in developing areas of the world including Asia, Africa and Latin America. Canada has one of the lowest rates of tuberculosis in the world with a rate of 5.78 per 100,000 in 2001. Rates of tuberculosis are disproportionately higher among Aboriginal Canadians and foreign-born persons, especially from Asia and Africa.

1882: Dr. Robert Koch announces his discovery of the *tubercule bacillus* and demonstrates that the organism causes disease in animals.

1885: The sanatorium movement begins in the US and in 1897 the Canadian sanatorium is built in Muskoka. Sanatorium care consisted of bed rest, good food, and fresh air. Removing tuberculosis cases from the community reduced spread.

1895: William Roentgen discovers a new type of radiation, soon to be known as x-ray, a process by which the disease can be visualized in the lungs.

1921: BCG vaccine was developed by the men for whom it is named. (Bacille Clamette-Guerin)

1935: Florence Seibert introduces tuberculin purified protein derivative (PPD), an antigen from killed culture filtrate, which provided a test for detecting tuberculosis infection.

Mid 1930's: Mobile mass chest x-rays of the adult population are introduced to find tuberculosis cases. Surveys are discontinued in 1960's because of low yield.

1944: Streptomycin, the first anti-tuberculosis agent is discovered.

1950's: Isoniad (INH), Pyrazinamide and PAS are introduced. With the introduction of multiple drug treatment, tuberculosis has become a treatable and curable disease.

1960's: Ethambutol is added to the anti-tuberculosis agents.

1970: Rifampin is used to treat TB.

1980's & 90's: Link between HIV is recognized as one of the factors in rising TB rates. Multi drug resistant strains begin to emerge.

Source: Myrene Couves, Manager, TB Clinic Capital Health Region, Edmonton, Alberta

Cold Chain



Who cares if those temperatures are recorded twice a day! Who cares if the fridge temperature stays between +2°C and +8°C! Who cares if you report to Public Health! You Should!

Potency and Protection

- Lets imagine that you have a new resident, who has a deep cough. The doctor suspects TB. The resident is tested and now you are worried. Have you, your staff, your family been exposed? Is the tubersol test result accurate?
- Flu season has just passed. How well did the flu vaccine do in protecting your residents and staff?



Helpful Hints

1. Call the Public Health Unit as soon as possible when readings go outside of the recommended range. We have voicemail and do check it often.
2. Date all multi dose vials at the time of entry. Most have only a 28-day shelf life once opened.
3. Temperature readings are now required twice a day for all facilities and physicians offices.
4. Fill the fridge with water bottles, in the door and any empty shelves. This will reduce temperature spikes and help even out over all temperatures.
5. Like milk, the more often a vaccine is taken in and out of the fridge, the more likely it is to spoil. The more often there are small temperature increases, the more likely the vaccine is to spoil.
6. Make sure the fridge door closes tightly.

Both you and your staff need to be assured that every vial of vaccine at your facility is viable so that each vial will provide you with the maximum amount of protection.

If you are uncertain or have any questions we would be pleased to hear from you. We are also available to provide training or information sessions to your facility. For Owen Sound and area contact Lynda Raynsford, RPN, (519) 376-9420, ext 250. For Walkerton and area contact Carol Patterson, RPN, (519) 881-1920, ext 225

Pneumococcal Vaccine

*Sylvia Brooks and Cathy Coburn,
Public Health Nurses, Vaccine
Preventable Diseases Program*

Pneumococcal disease is caused by the bacterium *Streptococcus pneumoniae*. Infection is spread from person to person through close contact and can result in pneumonia, infection of the blood, and meningitis.



Pneumococcal infection affects thousands of North Americans annually and can result in hospitalization or death.

Anyone can get pneumococcal disease, but certain groups are at higher risk including those 65 years of age or older, and those with certain medical conditions. Pneumo 23® is indicated for the prevention of invasive infection such as meningitis or pneumonia for those over the age of 65 or those in a high-risk medical group.

Recent surveys indicate that less than 5% of the high risk population have received this vaccine, despite the fact that this immunization is a safe and effective way of preventing pneumococcal infection in those at increased risk of serious illness or death.*

Strategies to improve delivery of the pneumococcal vaccine to high-risk persons include:

- Ensuring that all recipients of influenza vaccine are also immunized with the pneumococcal vaccine, since the risk groups are similar.
- Implementing standing orders for the vaccination of residents upon admission for those who have not already been immunized with this vaccine.

Booster doses of this vaccine are only recommended for those at highest risk of invasive infection, including persons with:

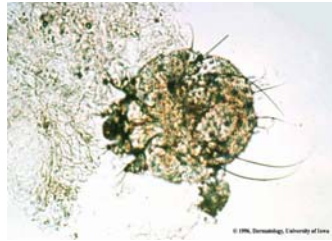
- ◆ Asplenia or sickle cell disease
- ◆ Hepatic cirrhosis
- ◆ Chronic renal failure or nephrotic syndrome
- ◆ HIV infection
- ◆ Suppressed immune system related to disease or therapy.

A single re-immunization is recommended after 5 years for adults who fall into these high-risk categories.

*Source *Canadian Immunization Guide, Sixth Edition, 2002.*



Scabies: A creepy bug strikes fear in workers



Forget antibiotic-resistant pathogens and even blood borne infections. If you want to strike fear in the heart of health care workers, mention scabies.

Scabies is a transmissible infestation of the skin with a real bug, the burrowing microscopic mite *Sarcoptes scabiei*. Even after you kill them, they stay under your skin until it sloughs off.

Infection control professionals who have dealt with a scabies infestation describe staff fears as near panic. Even though employees care for patients with highly infectious diseases or antibiotic resistant organisms, this little pest can cause unbelievable panic and anxiety among staff.

According to information from the Centers for Disease Control (CDC): "in recent years, there has been an increase in the occurrence of crusted scabies among immunocompromised patients especially people with HIV, which has led to the transmission of scabies among personnel, patients and their families."

In October 2002 a New York City hospital admitted two patients through the emergency department with skin rashes that were not initially recognized as scabies. However, the hospital had received a general warning from health officials that scabies outbreaks were occurring in long-term care facilities.

The index case was an elderly, immunocompromised female nursing home resident who came in with what eventually would be diagnosed as Norwegian scabies, a particularly dastardly presentation of the mite. It has more flaking and scales and a very heavy mite infestation. The problem was that it was not originally recognized as scabies. She was immunocompromised and had gone through various treatments. The elderly,

because of their skin, can have other things going on, and they did not recognize it as scabies. Unrecognized, the bug and its burrowing friends found their way under the skin of 27 health care workers, including those in nursing, housekeeping, engineering, physical therapy and physicians. There was spread to various departments and to different areas of the hospital.

As the infected patients scratched their skin, flakes containing mites traveled and alighted on other surfaces. Skin flakes were on linens, clothing, floors, furniture; flakes that might be in the linen, when pulled off the bed, go flying and land on the bedrail or the furniture. Rigid infection control measures were instituted, including contact isolation of known or suspected patients and education of health care workers.

Intensive skin assessments were done in outpatients, looking for any other incoming cases. Patients who had been in contact with the index cases were treated empirically with permethrin. No other patient developed infection, but workers were suffering as the wave of initial transmission-gradually emerging from an incubation period of up to six weeks- began to create pruritic rashes. In some cases, the mites found their way to uncovered skin between gloves and clothing. They noticed that right above the glove line between the sleeve of the scrubs the demarcation of where the glove ended and the rash began. Workers were advised to wear long sleeved gowns with all suspect cases. Health care workers were treated, which was effective, but did not immediately end the torment of the itching. The treatment did kill the mites, but the skin has to keep sloughing off, so it remains very itchy. The mites are dead but still under your skin.

Unfortunately, before the outbreak was contained, some workers spread scabies to family members, who were also treated. The outbreak was disturbing and disruptive, with almost 240 health care workers being evaluated for possible infestation. The outbreak went on for weeks. It started in October and the last employee was diagnosed in December.

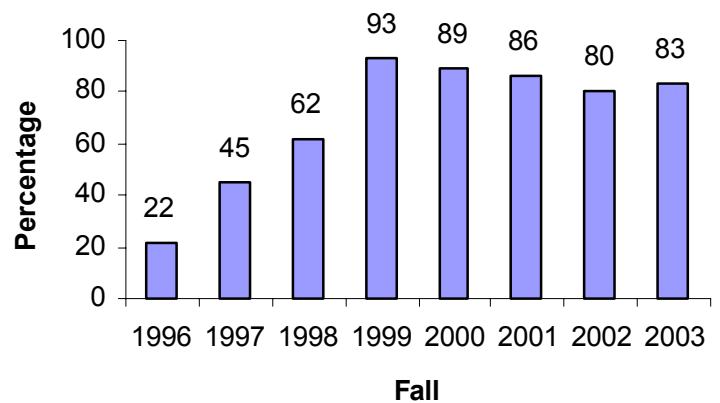
Source: *Hospital Infection Control*, Vol. 30, No. 8



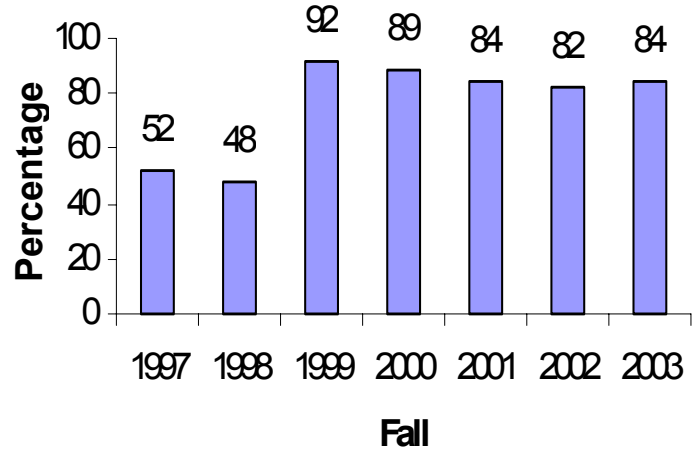
Influenza Coverage Rates for Fall 2003

The following charts include influenza vaccination rates from nursing homes / homes for the aged, hospitals, and retirement homes. The Ministry target is to have at least 70% of staff and 95% of residents vaccinated.

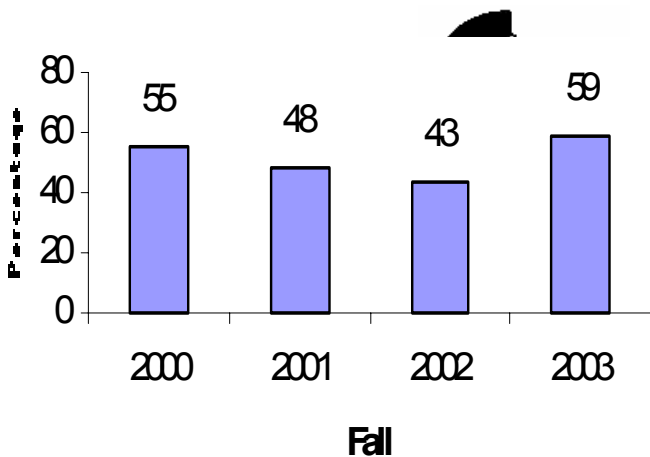
Nursing Homes / Homes for the Aged		
Facility	Resident %	Staff %
Brucelea Haven	87%	43%
Country Lane	100%	94%
Elgin Abbey	96%	97%
Errinrung	95%	88%
Gateway Haven	99%	89%
Georgian Heights	100%	88%
Grey Gables	98%	87%
Golden Dawn	86%	94%
Hanover Care Centre	98%	87%
Lee Manor	90%	73%
Mapleview	100%	89%
Meaford Nursing Home	100%	95%
Parkview Manor	88%	81%
Participation Lodge	100%	93%
Pinecrest Manor	95%	80%
Rockwood Terrace	99%	68%
Southampton Care Centre	95%	83%
Summit Place	94%	97%
Trillium Court	100%	90%
The Village Seniors	93%	53%
Average	96%	83%



Retirement Homes		
Facility	Resident %	Staff %
Central Place	95%	94%
Elgin Lodge	100%	95%
Hampton Court	100%	94%
Hannah Walker	94%	91%
Inglewood	100%	100%
John Joseph Place	95%	94%
Kelso Pines	95%	88%
Kelso Villa	94%	77%
Malcolm Place	83%	70%
Maple Breezes	78%	86%
Maple Court	86%	95%
New Horizons	100%	78%
Princess Court	38%	33%
R-Villa	100%	75%
Average	90%	84%

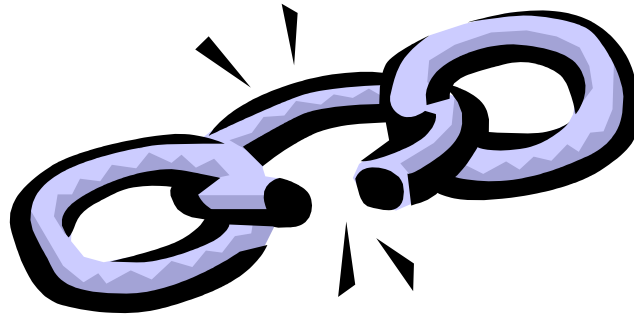


% of staff that Received Flu Shot (Hospitals)



Hospitals	
Facility	Staff %
<i>Grey Bruce Health Services</i>	
Owen Sound	53%
Warton	57%
Tobermory	50%
Lion's Head	68%
Meaford	55%
Markdale	36%
Southampton	60%
<i>Hanover & District Hospital</i>	68%
<i>South Bruce Grey Health Services</i>	
Chesley	64%
Walkerton	57%
Durham	84%
Kincardine	53%
Average	59%

Canadian Institute of Public Health Inspectors,
Ontario Branch Inc.
Communicable Disease Division Presents:



Chasing the Chains of Infection

A 2-day educational conference for
Health Professionals working in
Communicable Disease and Infection
Control

April 29th and 30th, 2004

Holiday Inn Select, Toronto
Registration Deadline is April 16th, 2004

Agenda's and Registration Form is available at www.ciphi.on.ca

AGENDA

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Thursday April 29th, 2004

- 8:30-8:55 **Registration and Coffee**
- 8:55-9:00 **Opening Remarks**
- 9:00-10:00 **The Etiology of SARS**
Dr. Tony Mazzulli, MD, FRCPC
Deputy Chief Microbiologist & Infectious Diseases Specialist Mount Sinai Hospital & University Health Network, Toronto
Associate Professor, Dept. of Laboratory Medicine & Pathology University of Toronto
- 10:00-10:30 **BREAK and View Vendors**
- 10:30-12:00 **Discovering Health Canada Resources on Infection Control and Occupational Infections with a Review of the New Respiratory Guidelines**
Shirley Patton, R.N., M.N., Chief Divisions of Nosocomial & Occupational Infections Centre for Infectious Diseases Prevention & Control,
- 12:00-1:00 **LUNCH and View Vendors**
- 1:00-2:00 **From Immunization to Exclusion Infectious Disease Issues in Child Care Settings**
Dr. Lee Ford-Jones, MD, FRCP C, Infectious Diseases Specialist, Hospital for Sick Children, Toronto
- 2:00-2:30 **BREAK and View Vendors**
- 2:30-3:30 **Will that be Chicken or Beef? What's Going on Out There?**
Dr. Wise, MD, DTM & H
Pretravel Advice & Inoculation, Tropical & Parasitic Diseases, Bishop Cross Medical Centre, Thornhill, On
- 3:30-4:00 **A Parent's Care is Sometimes the Best Medicine ... Promoting Community Awareness of Antibiotic Resistance**
Susan Morrison, CPHI(C), Public Health Inspector, County of Lambton, Community Health Services Department
- 4:00-4:15 **Wrap Up of Day 1**

Friday April 30th, 2004

- 8:30-9:00 **Registration and Coffee**
- 9:00-10:00 **SARS – Lessons Learned from Toronto**
Dr. Allison McGeer, MD, FRCPC
Director, Infection Control, Mount Sinai Hospital
- 10:00-10:30 **BREAK and View Vendors**
- 10:30-11:30 **Understanding Chemical Disinfectants & Sanitizers from Label to Use**
Dr. Syed A. Sattar, MSc, Dip. Bact., MS, PhD, Adjunct Professor of Microbiology (Faculty of Medicine) Director of the Centre for Research on Environmental Microbiology (CREM), University of Ottawa
- 11:30-12:00 **Enteric Illness in Ontario from 1997 to 2001**
Marilyn B. Lee
Professor, School of Occupational and Public Health, Ryerson University, Toronto
- 12:00-1:00 **LUNCH and View Vendors**
- 1:00-2:00 **Inside Bug Bombs - Bioterrorism**
Dr. W. David Colby, Sc, MD, FRCP(C)
Acting Medical Director, Chatham-Kent Health Services Travel Clinic Director, London Health Sciences Centre
- 2:00-2:30 **BREAK and View Vendors**
- 2:30-3:30 **Managing Risk Infectious Disease Outbreaks**
Dr. Doug Powell, PhD
Associate Professor, Dept. of Plant Agriculture Scientific Director of Food Safety Network, University of Guelph
- 3:30-3:40 **Wrap up – Day Two**