

Health Sciences Centre Winnipeg presents

THE 23rd ANNUAL BUG DAY Abstracts

Tuesday, October 22, 2019

Join us at Frederic Gaspard Theatre, Theatres B & C,
University of Manitoba Basic Medical Sciences Building,
700 William Ave., Winnipeg, MB or by Manitoba Telehealth



Health
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Bug Day Agenda

0750 - 0800	Opening Remarks Fred Aoki, MD	1115 - 1145	What Just Happened? Medical Complications of Injection Drug Use Yoav Keynan, MD Section of Infectious Diseases University of Manitoba
0800 - 0855	Infection Prevention and Control: What are We Doing? John Embil, MD Infection Prevention and Control Unit Health Sciences Centre Winnipeg Regional Health Authority	1145 - 1245	Exhibits/Lunch on your own
0855 - 0900	Announcements Moderator	1245 - 1315	Living in a Bubble: How Do Infections and Hygiene Influence Allergies? Jennifer Protudjer, PhD Department of Pediatrics and Child Health University of Manitoba
0900 - 0930	Shingles Vaccination: Which One Do You Choose? Wayne Ghesquiere, MD Section of Infectious Diseases Vancouver Island Health Authority	1315 - 1345	Sepsis Simplified: Understanding Sepsis and Septic Shock Anand Kumar, MD Sections of Critical Care and Infectious Diseases Department of Medicine University of Manitoba
0930 - 0945	Exhibits/Nutritional break provided	1345 - 1415	Finding the Undiagnosed: "The Key to 90-90-90 Manitoba HIV Longterm Success" Ken Kasper, MD Section of General Internal Medicine and Infectious Diseases University of Manitoba
0945 - 1015	The Unwanted Souvenir: Infection in the Returning Traveler Wayne Ghesquiere, MD Section of Infectious Diseases Vancouver Island Health Authority	1415 - 1445	Untangling Active/Latent Tuberculosis Pierre Plourde, MD Integrated Tuberculosis Services Winnipeg Regional Health Authority
1015 - 1045	Climate Change and Longterm Evacuation in Canada: Public Health Implications Margaret Haworth-Brockman, MSc National Collaborating Centre for Infectious Diseases University of Manitoba	1445 - 1500	Closing Remarks Moderator
1045 - 1115	Microbiological Diagnosis Demystified: How to Get the Most out of Your Microbiology Results Andrew Walkty, MD Shared Health, Department of Clinical Microbiology Health Sciences Centre		



Infection Prevention and Control: What are We Doing?

John Embil, MD

Infection Prevention and Control Unit

Health Sciences Centre, Winnipeg Regional Health Authority

Abstract

There are many different types of healthcare associated infections. Any procedure which violates the patient's protective barriers such as the skin, respiratory and urogenital tract, may lead to an infection. Both healthcare workers and patients come in contact with infectious agents and material in hospital. The "super bacteria" which are frequently encountered in the community and in hospitals are methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin resistant enterococcus (VRE). The incidence of *Clostridium difficile* associated disease has been rising dramatically over the past few years.

An overview of hospital acquired infections and the situation in Winnipeg with the "super bacteria" will be reviewed.

Objectives

By attending this session the attendee will be able to:

1. Describe the current situation in Winnipeg with methicillin resistant *Staphylococcus aureus*, vancomycin resistant enterococcus, and *Clostridium difficile*.
2. Be able, as a healthcare worker, to protect oneself and your patients from acquiring the "super bacteria".
3. Have fun!

Multiple Choice Questions (Select the best answer)

1. The best method for preventing the spread of healthcare associated infection is to:
 - a. Use potent antibiotics
 - b. Keep every hospitalized person in a private room
 - c. Wash hands or use a waterless antiseptic handrub before and after touching patients
 - d. Give chronic antibiotic therapy to persons with in dwelling devices
2. Which of the following is true about methicillin-resistant *Staphylococcus aureus*?
 - a. It does not routinely spread easily through healthcare facilities
 - b. It has legs and can walk from room to room
 - c. It's spread in a facility can be minimized if not stopped by adhering to established infection control precautions
 - d. It is easily killed by cloxacillin
3. When entering/exiting the room of a patient in isolation, which of the following is correct?
 - a. Upon entering, read the sign on the door and do exactly as suggested
 - b. Upon entering, read the sign, and interpret according to your needs
 - c. Upon exiting, immediately wash your hands, if you have time
 - d. When in the room, take off your gloves and mask to better communicate with the patient

Shingles Vaccination: Which One Do You Choose?

Wayne Ghesquiere, MD
Section of Infectious Diseases
Vancouver Island Health Authority

Abstract

One in four Canadians will develop shingles some time in their life. This is a direct result of reactivation of the varicella zoster virus. Varicella zoster virus is responsible for chickenpox and therefore, anyone who has had chickenpox at some point in their life is at risk of reactivation of the chickenpox virus leading to shingles. Shingles typically manifests with a chickenpox like eruption in a single dermatome, however, there are those individuals who may be immunocompromised who can have multiple dermatomal involvement with shingles. Shingles is associated with pain and potentially prolonged discomfort. Some individuals may go on to develop a prolonged aching/burning discomfort in the area where the eruption occurred. This is known as post-herpetic neuralgia. It is impossible to predict who may develop shingles in their lifetime. There are now two vaccines available to prevent the development of shingles. Discuss who and when to vaccinate patients.

Objectives

By attending this session the attendee will be able to:

1. Describe the pathophysiology of shingles
2. State the advantages and disadvantages of the 2 different vaccines
3. State who and when to vaccinate

Multiple Choice Questions (Select the best answer)

1. Before vaccinating a patient with the shingles vaccine they need to have a blood test to see if they were exposed to the varicella virus in the past :
 - a. True
 - b. False
2. Only patients over 60 should receive the shingles vaccine:
 - a. True
 - b. False
3. Patients who have had shingles in the past are not at risk of shingles in the future hence they do not need to receive the vaccine:
 - a. True
 - b. False

The Unwanted Souvenir: Infection in the Returning Traveler

Wayne Ghesquiere, MD
Section of Infectious Diseases
Vancouver Island Health Authority

Abstract:

Travel is associated with increased risk of infections whether it's due to air flight or the destination. Health care workers need to be aware of a patient's travel history, destination, activities, contact with locals as well as previous vaccinations and adherence to prophylactic medications. Infections that are seen in exotic destinations can be at our front door in 24 hours. An awareness of the most common serious infections and how to diagnose them is essential.

Objectives:

By attending this session the attendee will be able to:

1. Formulate a differential diagnosis for fever in a return traveler
2. Recognize common cutaneous manifestations of infections arising from tropical locations
3. State how to protect oneself while traveling to exotic locations

Multiple Choice Questions (select the best answer)

1. What is the most urgent infection you need to rule in a patient with fever who is returning from a two month backpacking trip through Indonesia?
 - a. Infection with the human immunodeficiency virus
 - b. Chikungunia
 - c. Malaria
 - d. Cellulitis
 - e. Typhoid Fever
2. A couple has just returned from a Zika endemic area in the Caribbean. They want to start a family. How long must they wait before they start conception?
 - a. 1 month
 - b. 2 months
 - c. 3 months
 - d. 6 months
 - e. No need to wait at all
3. A 55 year male returned one month ago from a two month trip visiting his family home in Nigeria. He now has headaches and fever with chills over the past 2-3 days. What infection is the least likely?
 - a. Malaria
 - b. Typhoid Fever
 - c. Dengue
 - d. Amebic liver abscess
 - e. Pyelonephritis

Climate Change and Longterm Evacuation in Canada: Public Health Implications

Margaret Haworth-Brockman, MSc
National Collaborating Centre for Infectious Diseases
University of Manitoba

Abstract

The movement of populations within the country is associated with specific public health needs. Many Canadians experience a major emergency or disaster at some point in their lifetime and a significant number of those affected are evacuated from their homes or communities. Most evacuations are of short duration, but in some instances, displacement is prolonged. The public health needs and approach to reintegration in healthcare system will be examined

Objectives:

By attending this session the attendee will be able to:

1. State the effects of climate change on the likelihood of environmental disasters and displacement.
2. State the health consequences of prolonged evacuation.
3. State the public health responses, particularly gaps and opportunities for those facing evacuation

Multiple Choice Questions (Select the best answer)

1. The following statements deal with the effects of Climate change, choose the correct one:
 - a. Climate change is fake news
 - b. Climate change can lead to increase in forest fires and flooding events
 - c. Climate change is good, as it provides more favorable living conditions in cold Manitoba
 - d. All of the above
2. Long Term evacuation is associated with the following effects:
 - a. Significant mental health impacts
 - b. It necessitates planning for public health responses and coordination of services
 - c. It has been shown to lead to poor health outcomes
 - d. Data is not regularly collected hence there is a gap in the knowledge of the outcomes and optimal responses to prolonged evacuation
 - e. All of the above
3. Which of the following statements is correct about long-term evacuation in Canada
 - a. This is a theoretical concern, with no clear examples
 - b. Longterm evacuation occurs frequently and it is up to communities to mount a response
 - c. The emergency response is better defined than the subsequent approach to evacuations that become prolonged
 - d. All of the above

Microbiological Diagnosis Demystified: How to Get the Most out of Your Microbiology Results

Andrew Walkty, MD

Shared Health, Department of Clinical Microbiology, Health Sciences Centre

Abstract

The microbiology laboratory assists clinicians in diagnosing infectious diseases, and provides guidance on appropriate patient treatment through antimicrobial susceptibility testing. The clinical utility of results provided by the microbiology laboratory is highly dependent on the laboratory receiving an appropriate specimen. If poor quality specimens are submitted to the laboratory and/or specimens are obtained from patients without a clear clinical indication, the results provided will be difficult to interpret (i.e., garbage in = garbage out). Good communication with the laboratory, either over the phone or via the specimen requisition, is also critical to ensure an optimal microbiological evaluation is performed. Finally, in order to use information provided by the microbiology laboratory, clinicians need to have an appreciation of why certain recovered bacteria may not be worked up and how to interpret data provided in the final report. The goals of this presentation are to review specimen collection and transport procedures (including consideration of when a specimen is not necessary), describe in brief laboratory decision making in organism work up, and provide guidance on how to interpret microbiology laboratory reports.

Objectives:

By attending this session the attendee will be able to:

1. Describe how to appropriately obtain common specimens (e.g., blood, urine, fluids, tissue) for culture to ensure optimal pathogen recovery by the microbiology laboratory
2. Gain an understanding of how the microbiology laboratory decides what bacteria should be worked up in a culture, and the turn-around-time for results
3. Interpret the data presented in a microbiology report

Multiple Choice Questions (Select the best answer)

1. Describe how to appropriately obtain common specimens (e.g., blood, urine, fluids, tissue) for culture to ensure optimal pathogen recovery by the microbiology laboratory
 - a. A urine culture on an 85 year-old female in a personal care home who is noted to have cloudy, foul smelling urine but is otherwise completely asymptomatic
 - b. Blood cultures from an afebrile, hemodynamically stable, otherwise healthy patient presenting to a community hospital emergency department with an uncomplicated cellulitis
 - c. Aseptically obtained synovial fluid from a patient presenting with a possible septic arthritis
 - d. Stool for bacterial culture from a patient who develops diarrhea while in hospital (admitted for over one week)
 - e. A wound swab for bacterial culture from a patient who goes to the operating room to have surgical drainage of an epidural abscess
2. Which of the following information must be included on the requisition that accompanies specimens submitted to the microbiology laboratory for culture?
 - a. Patient's name, date of birth, and personal health information number
 - b. Practitioner's name and contact information
 - c. The specimen type
 - d. The test that is requested
 - e. All of the above
3. Which of the following is not true regarding the microbiology report?
 - a. A Gram stain result will be automatically provided, when applicable to the sample type
 - b. The laboratory will provide an identity for bacteria recovered on culture that are most likely to be clinically important given the sample type
 - c. Bacterial isolates that are considered members of the normal flora (depending on the sample type) may not be fully identified
 - d. Every bacterial isolate recovered on culture will automatically have antimicrobial susceptibility testing performed and reported
 - e. When a report is copied to infection control, this is clearly indicated on the report

What Just Happened? Medical Complications of Injection Drug Use

Yoav Keynan, MD
Section of Infectious Diseases
University of Manitoba

Abstract

Injection drug use (IDU) has been associated with a myriad of infectious complication including transmission of blood-borne pathogens, bloodstream infections and skin and soft tissue manifestations. The infectious complications are frequent reasons for Emergency Room visits, admissions and are associated with significant morbidity, mortality and costs to health care system. We will review trends in IDU related admissions and common presentations.

Objectives:

By attending this session the attendee should be able to:

1. State the common infectious complication of IDU
2. State the epidemiology of infectious complications of IDU in Manitoba
3. State the trends in causes for hospital admissions due to IDU related complications

Multiple Choice Questions (Select the best answer)

1. Which of the following infections have been described in IDU
 - a. High rates of skin and soft tissue infections
 - b. High incidence of blood borne viral pathogens
 - c. High rates of bacteremia and infective endocarditis
 - d. Reports of cutaneous Anthrax
 - e. All of the above
2. Which of the following statements is correct about the trends in IVDU related infections in Manitoba?
 - a. Blood stream infections attributed to IDU are decreasing in Manitoba
 - b. Substances frequently used in IDU have remained the same over the last 20 years
 - c. High incidence of skin & soft tissue infections have been seen in the past but are decreasing
 - d. Blood stream infections caused by staphylococcus aureus are commonly seen in IDU
3. Which of the following may be related to infections associated with IDU?
 - a. Highest rates of HIV new infections in Saskatchewan
 - b. Contributing to HCV spread in the prairies
 - c. Contribution to high rates of syphilis
 - d. Concerns about decreasing linkage to care as part of the HIV 90-90-90 strategy
 - e. All of the above

Living in a Bubble: How Do Infections and Hygiene Influence Allergies?

Jennifer Protudjer, PhD

Department of Pediatrics and Child Health, University of Manitoba

Abstract

The prevalence of allergic diseases, including atopic dermatitis, asthma and food allergy, is at an all-time high. Amongst Canadian children, as many as 25% of children have atopic dermatitis, 13-14% have asthma, and 7-8% have food allergy. All three of these diseases impact healthcare resources and quality of life, and thus are substantial public health concerns. Risk factors for these diseases have received considerable attention. Included in these risk factors are hygiene factors, which have been associated with allergic diseases, such as respiratory syncytial virus and asthma; skin infections and, atopic dermatitis and food allergy; and, and antibiotic exposure for all these diseases. This presentation will include a discussion of the public health burden of allergic disease, highlight findings from epidemiological studies and provide a high level overview of possible mechanisms by which infections contribute to allergic disease.

Objectives

By attending this session, the attendee will be able to:

1. State the public health burden of allergic disease
2. Describe the association between respiratory and skin infections, and allergy
3. Describe the association between antibiotic use and allergy

Multiple Choice Questions

1. What is the name of the infection most commonly described in association with damage to the airways that promotes airway obstruction and recurrent wheeze?
 - a. Respiratory syncytial virus
 - b. Norovirus
 - c. Varicella zoster virus
2. What is the temporal trend of the burden of allergic disease in Canada?
 - a. Stable over the past 3 decades
 - b. Increased in the past 3 decades, now at an all time peak, but stabilized
 - c. Increased in the past 3 decades, but continuing to increase
 - d. Widely variable with no consistent pattern
3. Skin infection and microbial colonization are important comorbidities in atopic dermatitis, which can lead to increased disease severity. Aside from antibiotic treatment, how can such infections be treated?
 - a. Dilute bleach baths
 - b. Moisturisation
 - c. Avoidance of triggers
 - d. Sedating antihistamine

Sepsis Simplified: Understanding Sepsis and Septic Shock

Anand Kumar MD

Sections of Critical Care and Infectious Diseases, Department of Medicine

University of Manitoba

Abstract

In current terminology, sepsis is a systemic, deleterious host response to infection associated with acute organ dysfunction secondary to documented or suspected infection. Septic shock occurs when sepsis manifests with hypotension not reversed with fluid resuscitation. Sepsis and septic shock are major healthcare problems, affecting millions of people around the world each year with a case fatality rate as high as 60% in some groups. Similar to polytrauma, acute myocardial infarction, or stroke, the speed and appropriateness of therapy administered in the initial hours after severe sepsis develops are likely to influence outcome. All clinicians should be aware of basic concepts of sepsis particularly as related to emergency pharmacologic therapy particularly antimicrobials as well as resuscitative measures.

Objectives

By attending this session the attendee will be able to:

1. Understand the basic elements of sepsis diagnosis
2. Appreciate various pathophysiologic concepts related to the development and progression of sepsis and septic shock
3. Recognize key aspects of therapy of sepsis and septic shock

Multiple Choice Questions (Select the best answer)

1. What is sepsis?
 - a. A local infection, such as cellulitis or appendicitis.
 - b. Your body's deleterious response to a severe infection.
 - c. An infection in the blood.
 - d. A contagious disease.
2. All of the following are common signs of sepsis EXCEPT:
 - a. Confusion/difficult to rouse.
 - b. Localized pain or discomfort
 - c. Tachypnea.
 - d. Fever or hypothermia
 - e. Bradycardia
3. When someone has septic shock, their chances of survival drop by almost 8% for every _____ that goes by without microbially-appropriate antimicrobial treatment.
 - a. Hour
 - b. Day
 - c. Minute
 - d. None of the above

Finding the Undiagnosed: “The Key to 90-90-90 Manitoba HIV Longterm Success”

Ken Kasper, MD

Sections of General Internal Medicine and Infectious Diseases
University of Manitoba

Abstract

Cases of infection with the Human Immunodeficiency Virus (HIV) in Manitoba continue to persist despite multiple new initiatives. Manitoba continues to have one of the highest rates of HIV in Canada. The unprecedented rise in other sexually transmitted infections and blood borne infections have certainly raised concern that the number of cases of infection with HIV could further escalate in the future. It is imperative that we all make HIV testing a part of our routine sexual health assessment and we again ask all health care providers to make sure that HIV testing is part of their routine practice. We continue to find HIV patients with low CD4 counts and obviously those patients potentially have had missed opportunities in the health care system of getting diagnosed and have put other people at risk for secondary transmission. It is imperative going forward that we continue to keep finding the undiagnosed HIV as this is very important in finding for the long term success of our HIV Program. It also gives us the best chance of fulfilling the UNAIDS 90-90-90 strategy.

Objectives

By attending this session, the attendee will be able to:

1. State the effect of crystal amphetamine use on infection with HIV
2. State what lies ahead in Manitoba with regards to HIV
3. State what groups are at highest risk of acquiring and transmitting HIV

Multiple Choice Questions (Select the best answer)

1. It is estimated that a patient with acute HIV has the potential to transmit the HIV virus to what percentage of the yet diagnosed?
 - a. 1%
 - b. 5%
 - c. 20-50%
 - d. 75%
2. The most common risk factor for HIV transmission in Manitoba is:
 - a. Men with sex with men
 - b. Needle use
 - c. Heterosexual transmission
 - d. Arriving from an endemic country
3. The goal of the UNAIDS strategy is to get what percentage of a population of HIV patients diagnosed?
 - a. 50%
 - b. 75%
 - c. 90%
 - d. 100%

Untangling Active/Latent Tuberculosis

Pierre Plourde, MD

Integrated Tuberculosis Services

Winnipeg Regional Health Authority

Abstract

Active tuberculosis (TB) disease frequently presents like common conditions such as community acquired pneumonia or can be difficult to identify if it is non-respiratory TB. Delayed diagnosis of active TB disease worsens prognosis for the individual and increases the public health risk to others the longer that an individual with infectious respiratory TB is able to spread their infection. It is critical to have a high index of suspicion when diagnosing TB, including taking risk factors into consideration, initiating timely laboratory investigations, and timely referrals to TB specialists and public health.

Latent TB Infection (LTBI) is asymptomatic and therefore even more challenging to identify. Determination and treatment of LTBI is an important primary care intervention to prevent active TB disease from spreading in the community. The highest priority for LTBI determination is in the setting of contact investigations following recent exposure to active infectious TB. In addition, persons with a high probability of past exposure to TB (e.g. refugees) and/or a high probability of progressing to TB reactivation (e.g. immunocompromised) should also be screened for LTBI, and offered treatment as indicated. Ongoing challenges to the diagnosis and treatment of LTBI in Manitoba will be discussed.

Objectives

By attending this session, the attendee will be able to:

1. Describe the epidemiology of TB and LTBI in Winnipeg and Manitoba
2. Determine who should be tested for and how to diagnose TB or LTBI
3. Outline the initial management steps for TB and LTBI

Multiple Choice Questions (Select the best answer)

1. A 47-year-old woman from a remote northern Manitoba community presents in the middle of influenza season in January with fever, drenching night sweats, and a productive cough of 3 weeks duration not responding to antibiotics. Prior sputum cultures revealed normal flora. CXR reveals a left upper lobe infiltrate. Which of the following investigations must be performed?
 - a. Blood testing for Interferon Gamma Release Assay (IGRA)
 - b. Repeat sputum for bacterial culture and sensitivity
 - c. Sputum for AFB smear*
 - d. Sputum for viral cultures
 - e. Tuberculin skin test
2. Which of the following is the most important initial step after confirming a diagnosis of infectious respiratory TB infection?
 - a. Admitting the patient to hospital for further investigations and initiation of TB treatment
 - b. Identifying close contacts and testing them for TB and/or LTBI
 - c. Instituting airborne respiratory precautions
 - d. Reporting the case to public health authorities
 - e. Starting administration of at least 4-5 TB medications*
3. Which of the following individuals is the highest priority for LTBI testing?
 - a. A health care provider who works on a ward where TB patients are treated
 - b. A person who lives in the same house as someone recently diagnosed with lymph node TB
 - c. An infant who lives in the same house as someone recently diagnosed with lung TB*
 - d. A person with HIV infection who has not yet started highly active antiretroviral treatment
 - e. A person who recently immigrated to Canada after spending 2 years in a refugee camp

Answers to Multiple Choice Questions

- 1. Infection Prevention and Control: What are We Doing?**
 1. c
 2. c
 3. a

- 2. Shingles Vaccination: Which One Do You Choose?**
 1. b
 2. b
 3. b

- 3. Travel Medicine: What to Watch Out for in 2019/20 in the Returning Traveler**
 1. c
 2. c
 3. c

- 4. Climate Change and Longterm Evacuation in Canada: Public Health Implications**
 1. b
 2. e
 3. c

- 5. Microbiological Diagnosis Demystified: How to Get the Most out of Your Microbiology Results**
 1. c
 2. e
 3. d

- 6. What Just Happened? Medical Complications of Injection Drug Use**
 1. e
 2. d
 3. e

- 7. Living in a Bubble: How Do Infections and Hygiene Influence Allergies?**
 1. a
 2. b
 3. a

- 8 Sepsis Simplified: Understanding Sepsis and Septic Shock**
 1. b
 2. e
 3. a

- 9. Finding the Undiagnosed : “The Key to 90-90-90 Manitoba HIV Longterm Success”**
 1. c
 2. c
 3. c

- 10. Untangling Active/Latent Tuberculosis**
 1. c
 2. e
 3. c