In Collaboration with the University of Manitoba the Health Sciences Centre Winnipeg presents

THE 26th ANNUAL BUG DAY Abstracts

Overall Program Objectives:

By attending this program, the attendee will be able to:
1. State the names of the key pathogens that have been clinically and socially relevant over the past 26 years.
2. State how the determinants of health influence a person's risk for infection
3. State how to modify risk factors for the acquisition of infection

Tuesday, October 18, 2022
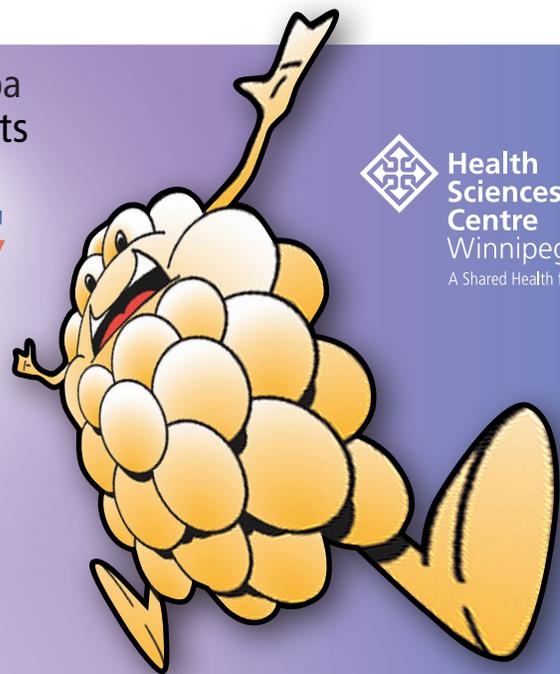
Health Sciences Centre Winnipeg
A Shared Health facility

Join us digitally by registering before Oct 17, 2022
at: **www.hsc.mb.ca/Bugday.html**

Bug Day Agenda

0753 - 0755 Greetings from Shared Health
Adam Topp, CEO, Shared Health

0755 - 0800 Introduction to Bug Day / Grand Rounds
John Embil, MD, Winnipeg Regional Health Authority

0800 - 0900 Medical Grand Rounds:
Tuberculosis Surveillance and Management: Looking into the Future
Zulma Rueda, MD, University of Manitoba

0900 - 0915 Monkeypox: Everything You Need to Know in 15 Minutes
Darrel Tan, MD, University of Toronto

0915 - 0930 COVID Round Up
Brent Roussin, MD, Manitoba Health

0930 - 0945 Genomic Surveillance Systems
Gordon Jolly, PhD, Public Health Agency of Canada

0945 - 1000 Questions and Answers

1000 - 1015 Break

1015 - 1030 COVID-19 and Solid Organ Transplant Recipients
Armelle Perez Cortes Villalobos, MD
University of Manitoba

1030 - 1045 The History of the Canadian Healthcare System
Brian Postl, MD, University of Manitoba

1045 - 1100 The Future of Healthcare in Canada
Ronan Segrave, MSc Normia Consulting

1100 - 1115 Questions and Answers

1115 - 1130 Canadian Nosocomial Infection Surveillance Program: Keeping an Eye on Canada's Germs
Kelly Choi, MSc, and Linda Pelude, MSc
Public Health Agency of Canada

1130 - 1145 Canadian Rates of Antimicrobial Resistant Pathogens
Anada Silva, MSc and Jessica Bartoszko, PhD(c)
Public Health Agency of Canada

1145 - 1200 COVID-19 Trends during Waves 1-????
Robyn Mitchell MSc and Joelle Cayen, BSc
Public Health Agency of Canada

1200 - 1215 Questions and Answers

1215 - 1245 Lunch Break

1245 - 1300 Germ Phobia: Too Much of a Good Thing
Laine Torgrud, PhD, Shared Health

1300 - 1315 Leading with Courage through Crisis
Stephen de Groot, MSW, Brivea Consulting

1315 - 1330 Waste Water Surveillance for COVID-19
Anil Nichani, PhD, Public Health Agency of Canada

1330 - 1345 Questions and Answers

1345 - 1400 Vaccine Hesitancy
Sergio Fanella, MD, University of Manitoba

1400 - 1415 Update on Tuberculosis Infection and Preventative Therapy
Rachel Dwilow, MD, University of Manitoba

1415 - 1430 Pediatric COVID Vaccination One Year Later
Jared Bullard, MD, University of Manitoba

1430 - 1445 Questions and Answers

1445 - 1500 Break

1500 - 1515 Pre-exposure Prophylaxis for HIV Prevention: What You Need to Know:
Lauren MacKenzie, MD, University of Manitoba

1515 - 1530 The Pandemic Acid Test:
What We've Learned About How to Improve the Health Research System
David Patrick, MD, University of British Columbia

1530 - 1545 Supervised Consumption Spaces - Why Manitoba Needs Some
Pierre Plourde, MD
Winnipeg Regional Health Authority

1545 - 1600 Questions and Answers

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Tuberculosis Surveillance and Management: Looking into the Future

Zulma Rueda, MD
Department of Medical Microbiology and Infectious Diseases,
University of Manitoba

Abstract:

Mycobacterium tuberculosis (TB) which is an ancient disease that has killed at least one billion people. However, TB remains a significant public health problem fueled not only by poverty and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), but also by an insufficient understanding of the spectrum of TB pathogenesis.

Historically it was considered as a binary disease, fixed into either TB disease or latent tuberculosis infection (LTBI). Between 2019 and 2021, published evidence supports a complex dynamic of the infection and clinical outcomes, after the initial contact with *M. tuberculosis.* Understanding and studying TB spectrum is essential to developing new diagnostic tests and creating more-adaptable treatment regimens.

Objectives

By attending this session, the attendee will be able to:
1. Review the current tuberculosis guidelines
2. State the new definitions of tuberculosis states
3. Review the impact of these definitions for program indicators, clinical management and performance of screening strategies

Multiple Choice Questions (Select the best answer)

1. What is the definition of sub-clinical tuberculosis?
    a. I don't know
    b. A disease due to viable *M. tuberculosis* bacteria that does not cause clinical tuberculosis-related symptoms but causes other abnormalities that can be detected using existing radiologic or microbiologic assays.
    c. All tuberculosis disease is symptomatic
    d. LTBI

2. What is the current tuberculosis treatment for people diagnose with drug susceptible *M. tuberculosis*?
    a. Isoniazid (INH), rifampin (RMP), pyrazinamide (PZA), and ethambutol (EMB) daily for the first two months, followed by INH, RMP, EMB, daily for 4 months
    b. INH, RMP daily the first two months, followed by INH, RMP 3 times per week for 4 months
    c. Daily rifapentine, INH, PZA and moxifloxacin for four months.
    d. None of the above

3. Treatment for drug susceptible tuberculosis disease requires:
    a. Antibiotic treatment and clinical follow-up for 6 months.
    b. Antibiotic treatment, patient support during therapy, investigations at treatment start and follow-up, including therapeutic drug monitoring and monitoring post TB-treatment (linkage with primary care for management of new and pre-existing comorbidities like post-TB lung disease, cardiovascular disease, malignancy, among others).
    c. Antibiotic treatment, laboratory and clinical follow-up for 6 months.
    d. Antibiotic treatment for 4 months.

Monkey Pox: Everything You Need to Know in 15 Minutes
Darrell H. S. Tan, MD PhD
Division of Infectious Diseases
University of Toronto

Abstract

Monkeypox is a virus that causes symptoms similar to smallpox, including a flu-like illness, swollen glands (lymph nodes) and characteristic skin lesions on any part of the body. It can be transmitted through close contact with infected animals or people, via contact with respiratory secretions, skin lesions or other body fluids. Although first identified in humans in the 1970s, this virus has caused increasing numbers of infections in several African countries over the past few decades. Since May 2022, a large global epidemic has emerged primarily in gay, bisexual and other men who have sex with men, and monkeypox has been declared a Public Health Emergency of International Concern by the World Health Organization. To date, reports of persons having infection with the monkeypox virus have been reported from most Canadian provinces. Most individuals have not required hospitalization and have recovered uneventfully but clinicians should remain vigilant regarding the potential for unusual or severe manifestations.

Objectives

By attending this session, the attendee will be able to:
1. Summarize the epidemiology of monkeypox in Canada
2. Recognize the clinical manifestations of monkeypox infection
3. Outline preventative strategies for monkeypox

Multiple Choice Questions (Select the best answer)

1. Which of the following is the optimal diagnostic test for confirming a diagnosis of monkeypox?
   a. Bacterial culture
   b. Polymerase chain reaction from blister fluid
   c. Clinical appearance of lesions
   d. Asking a dermatologist or Infectious Diseases physician for advice

2. How effective is vaccination with smallpox vaccine believed to be at preventing monkeypox?
   a. 35%
   b. 65%
   c. 85%
   d. >95%

3. In monkeypox outbreaks with human to human transmission, which of the following is the most effective means of preventing transmission?
   a. Surveillance and rapid identification of those who are infected
   b. Healthcare workers should use appropriate personal protective equipment when caring for those confirmed or suspected of having infection with monkeypox
   c. Self-isolation by those with active monkeypox infection
   d. All of the above

COVID Roundup
Brent Roussin, MD
Manitoba Health

Abstract:
COVID 19 has had significant effects on the health, health care systems and economies in most countries. Manitoba has dealt with multiple waves and variants placing significant strains on our health care system. A review of the epidemiology reveals disproportionate effects between many groups, which led to strategic changes in the public health response.

The *Public Health Act* provides authorities to the Chief Provincial Public Health Officer (CPPHO) and the Minister of Health to broadly limit many activities during a public health emergency. While necessary at the time, these restrictions also had significant unintended consequences and caused many divisions within society.
High levels of vaccination, especially amongst those at highest risk, altered the landscape of the pandemic. Widespread transmission of less virulent strains had a dramatic effect on seroprevalence.

These past years have forced Manitobans to cope with much uncertainty. Much of this uncertainty remains as jurisdictions are transitioning from a pandemic response to an endemic response.

Objectives:
By attending this session, the attendee will be able to:
1. State the epidemiology of the COVID-19 pandemic in Manitoba to date.
2. Discuss results and interpretation of seroprevalence studies.
3. Discuss principles of public health ethics.

Multiple Choice Questions: (Select the best answer)
1. Which of the following best describes the core principles of public health ethics?
   a. Harm principle, least restrictive means, reciprocity, transparency
   b. Beneficence, non-maleficence, autonomy, justice
   c. Informed consent, confidentiality, autonomy, least restrictive means

2. In general, what does a seroprevalence survey measure?
   a. The case fatality rate of a pathogen.
   b. The vaccine effectiveness against any specific variant.
   c. The proportion of individuals in a population that have antibodies to an infectious agent.

3. Which of the following best describes infection fatality rate?
   a. The proportion of individuals that die of a specific disease amongst all of those diagnosed with that disease.
   b. The proportion of those that are infected with a pathogen that die of that infection.
   c. A specific measure of vaccine effectiveness.

Genomic Surveillance Systems
Gordon Jolly, PhD
Genomic Surveillance Systems, Public Health Agency of Canada

Abstract:
'Variants of Concern', or VOCs, have been one of the defining characteristics of the COVID-19 pandemic. Through waves driven by the evolutionary changes in the SARS-CoV-2 virus since its emergence in Wuhan in 2019, public health has dramatically increased its use of whole genome sequencing (WGS) as a surveillance tool. The information available from WGS extends beyond the identification of the Greek-letter labels assigned by the World Health Organization. This presentation will explore the attributes of the genome sequences generated and their role within the spectrum of public health surveillance and operational information needs.

Objectives:
By attending this session, the attendee will be able to:
1. Identify the informational content of whole genome sequencing relevant to policy decisions
2. Identify the key drivers associated with effective genomic surveillance
3. Identify the practical considerations that constrain policy use of whole genome sequencing

Multiple Choice Questions (select the best answer)
1. How many sequences are required from a defined population with an estimated 10,000 cases per week to provide approximately 1% weekly detection resolution?
   a. 10,000
   b. 4,000
   c. 1,400
   d. 600
   e. 300

2. When designing a surveillance system to assess the significance of a new mutation to an existing variant circulating in the Canadian population, which of the following combinations of sources is likely to provide the most effective data to combine with epidemiological case reports?
   a. Hospital admissions testing, Border testing, Zoonotic testing
   b. Border testing, Zoonotic testing, Community testing
   c. Zoonotic testing, Community testing, Hospital admissions testing
   d. Community testing, Hospital admissions testing, Border testing

3. When designing a surveillance system to detect an emergent, high-consequence pathogen, which of the following combinations of sources is likely to provide the most effective early identification?
   a. Hospital admissions testing, Border testing, Zoonotic testing
   b. Border testing, Zoonotic testing, Community testing
   c. Zoonotic testing, Community testing, Hospital admissions testing
   d. Community testing, Hospital admissions testing, Border testing

COVID-19 and Solid Organ Transplant Recipients

Armelle Pérez-Cortés Villalobos MD

Section of Infectious Diseases, Department of Medicine, University of Manitoba

Abstract:

Solid organ transplant recipients (SOTr) are at increased risk for COVID-19 because they are immunosuppressed and are also less likely to mount effective immune responses to vaccination. The clinical features of COVID-19 among SOTr are variable and similar to those in immunocompetent patients, however some studies have suggested higher morbidity in SOTr probably associated to the immunosuppressive agents that modulate several aspects of the host immune response, therefore the severity of COVID-19 could potentially be affected by the type, combinations and intensity of immunosuppression. Also, many SOTr have medical comorbidities that have been associated with more severe disease.

Preventive measure includes the use of respiratory protection and avoid public spaces with poor ventilation, vaccination against SARS-CoV-2 including multiple booster strategies and the use of monoclonal antibodies.

Objectives:

By attending this session, the attendee will be able to:
1. Review the distinct clinical features of COVID-19 in solid organ transplant recipients.
2. Identify the risk factors for severe COVID-19 in solid organ transplant recipients.
3. Describe the preventive measures of COVID-19 in solid organ transplant recipients.?

Multiple Choice Questions (select the best answer)
1. How many doses of the COVID-19 vaccine should solid organ transplant recipients receive?
    a. 2 doses
    b. 3 doses
    c. 4 doses
    d. 5 doses

2. Which of the clinical features of COVID-19 is less prevalent in solid organ transplant recipients?
    a. Fever
    b. Cough
    c. Diarrhea
    d. Shortness of breath

3. Which of the following is a risk factor for having a lower response to vaccination in SOTr?
    a. Liver transplant candidates
    b. Hypertension
    c. Having recently received high doses of prednisone
    d. Malnutrition

The History of the Canadian Healthcare System
Brian Postl, MD
University of Manitoba

Abstract:
The Canadian health system is a polyglot of systems held together by federal contributions that support several single standards. It is highly political and though funded in the top third of the Organization for Economic Co-operation and Development (OECD) countries, appears to function in the bottom third.

Objectives:
By attending this session, the attendee will be able to:
1. State the historical sequence of the development of Canadian Health Systems
2. Define the relationship between federal and provincial governments
3. State the fiscal environment that supports the provincial health systems.

Multiple Choice Questions (select the best answer)
1. Is health care the responsibility of:
   a. Provincial government
   b. Federal government
   c. Both

2. What is the federal contribution to health systems?
   a. 25%
   b. 35%
   c. 50%

3. How many health systems exist in Canada?
   a. 1
   b. 10
   c. > 10

The Future of Healthcare in Canada
Ronan Segrave, MSc
Normia Consulting

Abstract

Healthcare Leaders across Canada now understand that we all need to think innovatively, and potentially radically, about how we redesign our health and care services for the future. **There are numerous reasons why "returning to the same old ways of doing things" – the status quo - is not a workable sustainable or affordable option.** The first is the fact that international and national evidence points to a Canadian health care 'system' that is highly variable and 'average' in quality, access, and value for money.

Whilst there are pockets of excellence and international best practice that we can be proud of, there is a compelling case for change. Although the following is in no ways ubiquitous, in the main Canadian health and care services face the following structural challenges:

- The $265 bn (latest data) spend on Canadian health care sector is becoming increasingly expensive and therefore poorer value for money (less affordable or sustainable) for taxpayers.
- Performance is variable and timely access (as measured by waiting times and lists) is no longer the norm.
- Workforce and Health Human Resources capacity and capability is not resilient, both in the short and long term and across services sectors and specialties.
- Our culture of risk taking, expeditious decision making and ability to embed and scale up innovation is less responsive to transformation and change (for example digital care, patient and citizen engagement, and local non-hospital non-bed-based services) compared to our international peers.
- Access to Family Practitioners is challenging especially in rural and first nation communities. This inevitably leads to increasing morbidity and mortality and inequalities, disproportionate Emergency Department admissions which in turn lead to greater 'hallway health' which in turn exacerbates waiting times and lists, and suboptimum use of limited taxpayer resources.
- There a few incentives for delivering integrated person-centered team based holistic care especially at scale.

To compound these challenges, the COVID-19 pandemic has created new demands across acute/hospital, family practitioner care and long-term care especially chronic conditions and mental health. With these additional new pressures and challenges impacting an already challenged 'sector', the case for change is compelling.

Objectives
By attending this session, the attendee will be able to:
1. Define the systemic issues that were impacting Canadian Healthcare prior to the COVID-19 pandemic which impacted our resilience and our recovery from the pandemic
2. State the impact – both stress tests and innovation the pandemic had on Canadian Healthcare
3. Formulate thoughts and a personal opinion on how Canadian healthcare needs to transform itself and increase its resilience in the event of a future pandemic

Multiple Choice Questions (Select the best answer)
1. In the top 28 Organization for Economic Co-operation and Development (OECD) countries, where does Canada rank on highest spend per Gross Domestic Product (GDP)?
   a. 14th?
   b. 2nd?
   c. 20th?
   d. 28th?

2. In the top 28 OECD countries, where does Canada rank on doctors per 1000 population?
   a. 26th?
   b. 10th?
   c. 1st?
   d. 5th?

3. In the top 10 OECD countries, where does Canada rank on specialist wait time <4 weeks?
   a. 1st
   b. 5th?
   c. 7th?
   d. 10th?

Canadian Nosocomial Infection Surveillance Program (CNISP): Keeping an Eye on Canada's Germs

Kelly Choi, MSc and Linda Pelude, MSc
Public Health Agency of Canada

Abstract:
CNISP conducts surveillance on healthcare associated infections (HAIs), antibiotic resistant organisms (AROs) and antimicrobial usage (AMU). It provides linked epidemiologic and resistance data to stakeholders, including hospital Infection Prevention and Control (IPAC) programs. CNISP is a collaboration between the Public Health Agency of Canada (PHAC), the Association of Medical Microbiology and Infectious Disease (AMMI) Canada and sentinel hospitals across Canada.

CNISP's main objective is to produce and monitor trends in national infection rates, organism strain types, antimicrobial resistance (AMR) and AMU. COVID-19 surveillance was added in 2020, aligning with our mandate to monitor emerging pathogens. Point prevalence studies of HAIs and AMU are periodically conducted by CNISP.

CNISP started with 18 hospitals (1994) and has since expanded to include 89 hospitals. CNISP infection rates are used as benchmarks by hospitals within Canada and internationally. In addition, CNISP data provides scientific evidence to inform infection prevention and control practices and public health action on AMR and HAIs.

CNISP is expanding to keep an eye on Canada's germs by introducing a standard dataset allowing all Canadian acute care hospitals to submit their HAI/ARO data. In addition, CNISP is preparing to launch surveillance in long-term facilities and to repeat national point-prevalence studies.

Objectives:
By attending this session, the attendee will be able to:
1. Describe CNISP
2. State the objectives of CNISP
3. State the future plans CNISP has to keep an eye on Canada's germs

Multiple Choice Questions (select the best answer)
1. CNISP conducts surveillance across a representative sample of acute-care hospitals in Canada. Approximately what percentage of all Canadian acute-care hospitals does CNISP capture?
   a. 10%
   b. 15%
   c. 30%
   d. 90%

2. CNISP is a collaboration between different parties. Choose the one that is **NOT** part of the CNISP collaboration
   a. National Microbiology Lab (NML)
   b. Association of Medical Microbiology and Infectious Disease (AMMI) Canada
   c. National Healthcare Safety Network (NHSN)
   d. Sentinel hospitals across Canada?

3. CNISP is planning to launch new surveillance projects to keep an eye on Canada's germs. Choose the one that is **NOT** one of the planned new initiatives
   a. Standard dataset collecting HAI/ARO surveillance data
   b. Point prevalence survey
   c. Long-term care surveillance
   d. Antimicrobial usage surveillance

Canadian Nosocomial Infection Surveillance Program (CNISP):
Canadian Rates of Antimicrobial Resistant Pathogens

Anada Silva, MSc and Jessica Bartoszko, PhD(c)
Public Health Agency of Canada

Abstract

Due to the increased morbidity, mortality and healthcare cost, healthcare-associated infections (HAIs) and antimicrobial resistance (AMR) are major threats to the health of Canadians. To inform infection prevention and control (IPC) practices, and antimicrobial stewardship programs and policies, CNISP conducts active surveillance of HAIs and AMR at sentinel acute-care hospitals across Canada. To provide actionable surveillance data regarding HAIs and AMR in Canada, CNISP further consolidates demographic and clinical data entered into standardized questionnaires by IPC professionals at participating acute-care hospitals via chart review with molecular and microbiological data generated by the National Microbiology Laboratory from isolates submitted by participating acute-care hospitals.

Using data collected from over 80 CNISP-participating acute-care hospitals between 2012 and 2021, we will present trends in case counts, rates, clinical outcomes, and microbiological and AMR profiles for the following HAIs and antibiotic-resistant organisms (AROs): *Clostridioides difficile* infection (CDI), methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections, vancomycin-resistant Enterococci (VRE), bloodstream infections (BSI), hip and knee surgical site infections (SSIs), cerebrospinal fluid shunt SSIs, paediatric cardiac SSIs, central line-associated bloodstream infections and carbapenemase-producing Enterobacterales (CPE).

Objectives:
By attending this session, the attendee will be able to:
1. Describe the HAIs and AROs under surveillance in Canadian acute-care hospitals participating in CNISP
2. Describe the epidemiological and molecular trends of HAIs in Canada from 2012 to 2021 based on data from CNISP-participating hospitals
3. Describe the key highlights and changes in Canada's AMR landscape over the last decade based on data from CNISP-participating hospitals?

Multiple Choice Questions (Select the best answer)
1. Between 2012 and 2021, CNISP observed the largest percentage decrease in incidence infection rate for which HAI or ARO?
   a. MRSA BSI
   b. CDI
   c. VRE BSI
   d. HK SSI

2. Which organism was most commonly identified among device and surgical procedure-related infections?
   a. *Streptococcus spp*
   b. *Enterobacter spp*
   c. Coagulase-negative Staphylococci
   d. *Escherichia coli*

3. In recent years, which carbapenemase is dominant in western and central Canada respectively?
   a. NDM, KPC
   b. KPC, NDM
   c. NDM, OSA-48
   d. NMC, NDM

Canadian Nosocomial Infection Surveillance Program (CNISP):
COVID-19 Trends During Waves 1-???
Robyn Mitchell, MSc, and Joelle Cayen, BSc
Public Health Agency of Canada

Abstract:
CNISP conducts surveillance for healthcare-associated infections (HAIs), including viral respiratory infections (VRI). In March of 2020, CNISP VRI surveillance was expanded to include all patients hospitalized with laboratory-confirmed COVID-19. One hundred and fifty-five acute care hospitals across 10 provinces and 1 territory collect weekly aggregate data on severe outcomes among adult and pediatric patients hospitalized with COVID-19. Understanding changes in severe outcomes is essential to informing Canada's pandemic public health response. In addition, the impact of COVID-19 on HAIs in Canada is concerning and data are limited. This presentation will explore national trends of severe outcomes among adult and pediatric patients hospitalized with COVID-19 and provide an initial look at the impact of COVID-19 on HAI rates in Canada.

Objectives:
By attending this session, the attendee will be able to:
1. State trends in severe outcomes among adult and pediatric patients hospitalized with COVID-19 in Canadian acute care facilities.
2. Summarize vaccination rates by severity indicators.
3. Describe the initial impact of COVID-19 on HAI rates in Canadian acute care hospitals.

Multiple Choice Questions (select the best answer)
1. Which wave did adult and pediatric hospitalizations peak among hospitals in the CNISP network?
   a. Wave 4
   b. Wave 5
   c. Wave 6
   d. Wave 3
   e. None of the above

2. Vaccinated patients hospitalized with COVID-19 were more likely to experience which of the following severe outcomes compared to unvaccinated patients?
   a. Intensive Care Unit (ICU) admission
   b. Mechanical ventilation
   c. All-cause in-hospital death
   d. None of the above

3. An initial decrease in incidence was observed for which HAI(s) during COVID-19 (2020)?
   a. Methicillin resistant *Staphylococcus aureus* (MRSA)
   b. *Clostridioides difficile* infection (CDI)
   c. Vancomycin resistant enterococci (VRE)
   d. Carbapenemase-producing Enterobacteriaceae (CPE)
   e. Both VRE and CPE

4. Healthcare acquisition of COVID-19 was higher in waves 5 and 6 compared to earlier waves
   a. True
   b. False

Germ Phobia: Too Much of a Good Thing
Laine Torgrud, Ph.D.
Clinical Health Psychology, Shared Health

Abstract:
It is prudent to take reasonable precautions against contracting a communicable disease. However, some individuals go to extremes to avoid being contaminated by germs, to the point that their efforts interfere significantly with their lives. When this occurs, a person may be diagnosed with a psychological condition called obsessive-compulsive disorder (OCD), a common manifestation of which is an excessive preoccupation with becoming ill through contact with sources of contamination. This talk will describe and discuss obsessive-compulsive disorder, with an emphasis on the extreme behaviors that can manifest from the desire to avoid contamination, and the devastating effects on the lives of some sufferers. The issue of distinguishing normal from excessive concern will be considered in light of the current pandemic. Finally, the treatment of OCD will be discussed, with an emphasis on exposure with response prevention (EXP/RP) therapy, the psychological treatment with the best empirical support. This form of treatment encourages patients to take the "risks" necessary to live full and meaningful lives, and to give up efforts to reduce the risk of contamination to unrealistically low levels.

Objectives:
By attending this session, the attendee will be able to:
1. Distinguish excessive concerns about contamination from those that would be termed "normal".
2. Recognize the presence of OCD in themselves or others through a discussion of some of the typical contamination-related obsessions and compulsions.
3. Acquire a basic understanding of effective psychological treatment for OCD and how to access information about treatment resources.

Multiple Choice Questions (select the best answer)
1. Which of the following behaviors might one see in contamination-related OCD?
   a. Washing each part of the hand an even number of times
   b. Not looking at one's hands while washing them
   c. Avoiding walking in an uncrowded outdoor park
   d. All of the above

2. Which of the following pairs include the two treatments most supported by research as effective for OCD?
   a. Selective serotonin reuptake inhibitors (SSRI) antidepressant medication and exposure with response prevention
   b. Benzodiazepine medication and exposure with response prevention
   c. Hypnosis and thought stopping
   d. Relaxation training and exposure with response prevention

3. What is the <u>central</u> goal of psychological treatment for OCD?
   a. To convince the person that their feared outcome (e.g., contracting a disease) will not come true
   b. To assist the person in developing a greater level of comfort with uncertainty about contracting a disease
   c. To help the person learn techniques to distract themselves from their thoughts about disease
   d. To help the person learn more effective strategies for avoiding situations where they might become contaminated

Leading with Courage through Crisis
Stephen de Groot, MSW
President and Cofounder Brivia Consulting

Abstract:

Leading people through constant change and points of crises, may possibly be one of the most difficult things Health Care Professionals (HCP) can face. Courageous leadership through such times, can make the difference between getting up and giving up. Courage as a concept, while monumental, can mean different things to different people. This inspiring and practical session will make the concept of courage, concrete and operational, so that HCPs and leaders can be confident in their capacity to lead courageously and effectively, through periods of massive disruption.

Objectives:
By attending this session, the attendee will be able to:
1. Simplify the 3 things humans need in crisis.
2. State the role of a leader during challenging times.
3. Define and apply 3 Keys to Courage in Crisis?

Multiple Choice Questions (select the best answers)
1. What do humans need in crisis?
   a. Trust
   b. Clear roles and expectations
   c. Calm
   d. All the above

2. What is/are the key role(s) of leaders in crises?
   a. Provide connection
   b. Provide direction
   c Provide protection
   d. All the above

3. What is/are the key elements in courage?
   a. Vulnerability
   b. Optimism
   c. Action
   d. All the above

Wastewater Surveillance for COVID-19

Anil Nichani, PhD

One Health Division, National Microbiology Laboratory, Public Health Agency of Canada

Abstract:

Since early 2020, wastewater surveillance has been used across the country as an early warning tool to inform pandemic response. The virus that causes COVID-19 infection (SARS-CoV-2) can be detected in the stool of infected people over a significant portion of their illness. This provides an opportunity to test and monitor wastewater (sewage) for the presence of COVID-19 in communities and institutional settings (e.g. long-term care facilities) without the need for individual testing and to determine if infections are increasing or decreasing with reduced clinical testing in communities. Wastewater surveillance can also be used to monitor the circulation of variants of concern (VOC) and, in some circumstances, can be used as an early indicator for the presence of COVID-19 infections not yet detected by traditional clinical surveillance. This presentation will identify how to monitor and detect the virus for COVID-19 in wastewater and how it has informed pandemic response.

Objectives:

By attending this session, the attendee will be able to:
1. State how wastewater has been used during the COVID-19 pandemic.
2. State how to sample and track COVID-19 in wastewater.
3. State how wastewater data can be used for predictive modelling and to information public health response and outbreaks.

Multiple Choice Questions (select the best answer)

1. Where can wastewater be collected?
   a. Airplane, ship, other
   b. Wastewater treatment plant
   c. Upstream (e.g. lift station, interceptor)
   d. All of the above

2. Used as an early warning system, how early can wastewater be detected prior to having cases in the community?
   a. 4-10 days
   b. 2 weeks
   c. 1-2 days
   d. None of the above

3. Data from wastewater testing are meant to complement existing COVID-19 surveillance systems by providing:
   a. A community sample where clinical testing is limited
   b. Information on community spread
   c. Early warning to prevent outbreaks
   d. All of the above

Vaccine Hesitancy
Sergio Fanella MD
Departments of Pediatrics and Child Health
Max Rady College of Medicine
University of Manitoba

Abstract:
Vaccine hesitancy (VH) can best be described as the refusal or delay in accepting some or all vaccines despite their availability. Vaccine hesitancy is a continuum, and not an all-or-none circumstance. Numbers vary but 20-25% of individuals could be considered vaccine hesitant. Only a very small percentage will decline all vaccines; more will decline certain vaccines but not others; some will consent to immunization but over a longer time frame, and some individuals with VH will consent to all routine vaccines but have substantial concerns that require attention. Many factors influence VH including confidence, complacency, and convenience.

Vaccine hesitancy has been identified by the World Health Organization as a major threat to global public health. There is no one size fits all approach to addressing VH, but can include spending additional time addressing concerns with a motivational interviewing style, addressing needle phobias, and not terminating the clinical relationship.

Objectives:
By attending this session, the attendee will be able to:
1. State the concept of vaccine hesitancy.
2. State how vaccine hesitancy can manifest during a routine clinical encounter.
3. State communication strategies to address vaccine hesitancy.

Multiple Choice Questions (select the best answer)
1. Vaccine Hesitancy can best be defined as patients/caregivers:
    a. Refuse all vaccine products, including both live and inactivated vaccines.
    b. Refuse some vaccines but consent to receiving others.
    c. Consent to receiving vaccines but request they be given out over longer time frame.
    d. Consent to all vaccines but have deep concerns about rare side effects.
    e. All of the above

2. Factors that contribute towards hesitancy of routine immunizations include:
    a. Confidence
    b. Complacency
    c. Convenience
    d. Cost
    e. a, b, and c

3. Effective approaches to deal with vaccine hesitancy can include:
    a. A one-size fits all model to ensure consistent messaging.
    b. Dismissal from the clinical practice if hesitancy does not improve.
    c. Motivation interviewing
    d. Addressing needle-phobia
    e. c and d

Update on Tuberculosis Infection and Preventative Therapy

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Abstract
In Canada tuberculosis (TB) does not affect all populations equally, and some groups are at much higher risk of exposure, infection, and disease than others. It is important to understand the concept of TB infection because medical treatment can be offered to prevent active TB. This talk will explore these concepts and the rationale for the latest Canadian recommendations in TB preventative therapy.

Objectives
By attending this session, the attendee will be able to:
1. State the epidemiology of TB in Manitoba and Canada
2. Define the concept of tuberculosis infection
3. Understand the latest recommendations for preventative therapy in the Canadian TB Standards and their rationale

Multiple Choice Questions (Select the best answer)

1. In 2016-2017 the highest rate of new active tuberculosis cases was in:
   a. Yukon
   b. Manitoba
   c. Nunavut
   d. Northwest Territories

2. Which of the following statements are true about a person who has tuberculosis infection:
   a. They may have a positive tuberculin skin test (TST) or positive interferon gamma release assay (IGRA)
   b. They will have no symptoms of active tuberculosis
   c. They will have a normal chest x-ray
   d. All of the above

3. The first drug widely used in TB preventative treatment was Isoniazid (INH) for 9 months. What advantages do newer rifamycin-based regimens have?
   a. They contain more total pills per prescription
   b. They have less side effects
   c. The prescription takes longer to complete
   d. They have less drug-drug interactions

Pediatric COVID Vaccination One Year Later
Jared Bullard, MD
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Abstract:
During the COVID-19 pandemic, vaccination has become an essential public health strategy. In May 2021, adolescents age 12-17 had Pfizer-BioNTech approved followed by approval for ages 5-11 in November 2021. In July 2022, ages 6 months to 5 years had the Moderna vaccine product available. Vaccination in these age groups has demonstrated efficacy in a number of ways including reduced clinical severity of COVID, reduced incidence of MIS-C and possibly long COVID and has virtually no serious adverse reactions.

This presentation will summarize the evidence used to approve the COVID vaccine in each age group and briefly review the clinical presentations of children with COVID.

Objectives:
By attending this session, the attendee will be able to:
1. Discuss the epidemiology and clinical manifestations of COVID in children
2. State vaccine efficacy related to variants of concern (VOC)
3. Discuss the long-term follow-up data in children for adverse reactions

Multiple Choice Questions (Select the best answer)
1. The variant of concern (VOC) most likely to cause MIS-C were:
   a. Omicron
   b. D614G
   c. Alpha
   d. Delta

2. COVID vaccination in children and adolescents is NOT associated with serious adverse events.
   a. True
   b. False

3. Children with COVID are less likely to become seriously ill and less likely to transmit SARS-CoV-2 to others.
   a. True
   b. False

Pre-exposure Prophylaxis for HIV Prevention: What You Need to Know

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Abstract:
Manitoba has the second highest incidence of HIV in Canada. From 2020 to 2021, new HIV cases in Manitoba increased by more than 150%. For people without HIV, pre-exposure prophylaxis (PrEP) is an evidence-based way to prevent new infections among those at greatest risk. PrEP uses some of the same antiretroviral medications used to treat HIV, but is taken as prophylaxis against acquiring HIV. In Manitoba, the medication used for PrEP is a generic fixed drug combination (Emtricitabine 200mg + Tenofovir disoproxil fumarate 300mg) taken once a day by mouth by persons at high and ongoing risk for HIV infection. In Fall 2021, PrEP was added to the provincial drug program formulary (for persons who meet the provincial eligibility criteria), helping to reduce financial barriers to access this HIV prevention tool. This talk aims to empower healthcare providers to help with HIV prevention efforts in Manitoba by familiarizing them with the basics of PrEP.

Objectives:
By attending this session, the attendee will be able to:
1. Recognize individuals in Manitoba that may benefit from PrEP
2. State how PrEP can be accessed for interested and eligible persons at high and ongoing risk for HIV infection
3. Define the basics of clinical monitoring for individuals using PrEP

Multiple Choice Questions (select the best answer)
1. Which of the following infections should be considered when determining an individual's eligibility for PrEP?
   a. Pneumonia
   b. Syphilis
   c. Bacteremia
   d. Cellulitis

2. Before an individual starts PrEP, which of the following tests must be checked to ensure it has a negative result?
   a. Blood cultures
   b. Influenza polymerase chain reaction (PCR)
   c. HIV serology
   d. COVID-19 PCR

3. Once an individual has been taking PrEP for one month, how frequently should they check-in with their PrEP prescriber?
   a. Every 3 months
   b. Every 9 months
   c. Every year
   d. Every 2 years

The Pandemic Acid Test:
What We've Learned About How to Improve the Health Research System
David Patrick, MD
University of British Columbia, School of Population and Public Health

Abstract:
Pandemics will occur again and will require a coordinated, rapid response research capacity. Successes aside, Canadian researchers encountered major obstacles to rapid response research during the pandemic. We will examine these lessons and discuss the opportunity of functioning as a more integrated learning health research system in Canada. There are clear implications for integrated public health service and research organizations.

Objectives:
By attending this session, the attendee will be able to:
1. State the successes and failures of research coordination during the COVID-19 Pandemic
2. Identify areas for improvement
3. Discuss implications for forward planning

Multiple Choice Questions (Select the best answer)
1. Why was the United Kingdome Recovery Trial able to launch and recruit more rapidly than other clinical research efforts during the pandemic?
   a. An adaptive trials protocol was pre-written and ready to activate
   b. Over 60 networked sites had a pre-existing plan to work together
   c. Research hubs could be located within National Health System (NHS) sites because of dedicated funding from National Institute for Health and Care Research (NIHR)
   d. One coordinated ethics review served for all sites
   e. All of the above?

2. Which of the following represented a critical Canadian contribution to vaccine availability.
   a. Canada had dedicated phase 1 ("first in humans") research facilities
   b. Canadian researcher originated the lipid nanoparticle technology that made the Pfizer vaccine work
   c. Canada had robust domestic manufacturing capacity ready to go
   d. Canadian trialists benefited from a "once and done" Institutional Review Board process

3. Real-time linked data cohorts that combine case reporting, diagnosis, immunization and clinical outcomes can be used in a pandemic to track:
   a. Vaccine effectiveness
   b. Vaccine uptake
   c. Clinical outcomes such as death and Intensive Care Unit (ICU) visits
   d. To better explore longer term symptoms associated with "Long COVID" by allowing direct comparison with a control group
   e. All of the above

Supervised Consumption Spaces – Why Manitoba Needs Some
Pierre Plourde, MD
Medical Officer of Health, Winnipeg Regional Health Authority
Professor, University of Manitoba

Abstract
Manitoba has among the highest rates of substance-related (both opioid and stimulant) overdose deaths in Canada, with only the provinces west of Manitoba having higher rates. Overdose deaths increased dramatically in 2020 and 2021 during the COVID pandemic. The Winnipeg Regional Health Authority (WRHA), the Manitoba Harm Reduction Network, the Canadian Medical Association, and a Winnipeg City Councilor have called for the establishment of supervised consumption spaces. Six provinces, including all western provinces currently support supervised consumption services, the notable exception being Manitoba. It is time for Manitoba to implement urgently needed supervised consumption services.

Objectives
By attending this session, the attendee will be able to:
1. Describe the escalating crisis of opioid and stimulant-related overdose deaths in Manitoba
2. Describe harm reduction approaches to addressing substance use harms
3. Advocate for supervised consumption services as an essential component of harm reduction options in Manitoba

Multiple Choice Questions (Select the best answer)
1. Which of the following are advocating for the establishment of supervised consumption services in Canadian urban settings like Winnipeg that are experiencing large outbreaks of substance-related overdose deaths?
   a. A Winnipeg City Councilor
   b. Canadian Medical Association
   c. Public Health Agency of Canada
   d. Winnipeg Regional Health Authority
   e. All of the above

2. Which of the following provinces currently does not support any supervised consumption facilities?
   a. Alberta
   b. Quebec
   c. Manitoba
   d. Ontario
   e. Saskatchewan

3. Which of the following is a demonstrated benefit of supervised consumption services?
   a. Elimination of overdose deaths within supervised consumption facilities
   b. Enhanced access to addictions rehabilitation and wrap-around programs
   c. Reduction in crime in neighborhood around supervised consumption facility
   d. Reduction in transmission of bloodborne pathogens Human Immunodeficiency Virus (HIV), and Hepatitis C Virus (HCV)
   e. All of the above

Answers to Multiple Choice Questions

1. **Tuberculosis Surveillance and Management: Looking into the Future**
   1. b
   2. a
   3. b

2. **Monkey Pox: Everything You Need to Know in 15 Minutes**
   1. b
   2. c
   3. d

3. **COVID Round Up**
   1. a
   2. c
   3. b

4. **Genomic Surveillance Systems**
   1. c
   2. d
   3. b

5. **COVID-19 and Solid Organ Transplant Recipients**
   1. d
   2. a
   3. c

6. **The History of the Canadian Healthcare System**
   1. c
   2. b
   3. c

7. **The Future of Healthcare in Canada**
   1. b
   2. a
   3. d

8. **Canadian Nosocomial Infection Surveillance Program: Keeping an Eye on Canada's Germs**
   1. c
   2. c
   3. d

9. **Canadian Nosocomial Infection Surveillance Program: Canadian Rates of Antimicrobial Resistant Pathogens**
   1. b
   2. c
   3. a

10. **Canadian Nosocomial Infection Surveillance Program: COVID-19 Trends during Waves 1-???**
    1. b
    2 d
    3. e
    4. a

11. **Germ Phobia: Too Much of a Good Thing**
    1. d
    2. a
    3. b

12. **Leading with Courage through Crisis**
    1. d
    2. d
    3. d

13. **Waste Water Surveillance for COVID-19**
    1. d
    2. a
    3. d

14. **Vaccine Hesitancy**
    1. e
    2. e
    3. e

15. **Update on Tuberculosis Infection and Preventative Therapy**
    1. c
    2. d
    3. b

16 **Pediatric COVID-19 Vaccination: One Year Later**
    1. b
    2. a
    3. a

17. **Pre-exposure Prophylaxis for HIV Prevention: What You Need to Know**
    1. b
    2. c
    3. a

18. **The Pandemic Acid Test: What We've Learned About How to Improve the Health Research System**
    1. e
    2. b
    3. e

19. **Supervised Consumption Spaces – Why Manitoba Needs Some**
    1. e
    2. c
    3. e