### Bug Day Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0750 - 0800</td>
<td>Opening Remarks</td>
<td>Fred Aoki, MD</td>
<td></td>
</tr>
<tr>
<td>0800 - 0855</td>
<td>Infection Prevention and Control: Inspiring Change!</td>
<td>John Embil, MD</td>
<td>Department of Restorative Dentistry, University of Manitoba</td>
</tr>
<tr>
<td>0855 - 0900</td>
<td>Announcements</td>
<td>Moderator</td>
<td></td>
</tr>
<tr>
<td>0900 - 0930</td>
<td>Preparing for the Plagues… Whatever They May Be</td>
<td>Joanne Embree, MD</td>
<td>Department of Pediatrics, University of Manitoba</td>
</tr>
<tr>
<td>0930 - 1000</td>
<td>Exhibits/Nutritional break provided</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000 - 1030</td>
<td>The Adventure Never Ends: Case Histories in Infection Control</td>
<td>Jen Tomlinson, RN, Kristy Bigelow, RN, and John Embil, MD</td>
<td>Winnipeg Regional Health Authority</td>
</tr>
<tr>
<td>1030 - 1100</td>
<td>Construction Everywhere! Keeping a Level Head in Protecting our Patients</td>
<td>Craig Doerksen, P Eng</td>
<td>Facility Management, Health Sciences Centre</td>
</tr>
<tr>
<td>1100 - 1130</td>
<td>What’s in my Antibacterial Soap? Demystifying Environmental Antimicrobials</td>
<td>Ayush Kumar, PhD</td>
<td>Department of Microbiology, University of Manitoba</td>
</tr>
<tr>
<td>1130 - 1200</td>
<td>What Goes on Behind the Scenes: Infection Prevention and Control in the Dental Office</td>
<td>Nita Mazurat, DDS</td>
<td>Department of Restorative Dentistry, University of Manitoba</td>
</tr>
<tr>
<td>1200 - 1300</td>
<td>Exhibits/Lunch on your own</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300 - 1315</td>
<td>Announcements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1315 - 1345</td>
<td>Shingles Vaccination: Giving it a Shot</td>
<td>Fred Aoki, MD</td>
<td>Section of Infectious Diseases, University of Manitoba</td>
</tr>
<tr>
<td>1345 - 1415</td>
<td>Unwanted Trade Offs for Promising Results: Risk of Infection with Immuno-Modulator Cancer Therapies</td>
<td>Eric Bow, MD</td>
<td>Section of Infectious Diseases and Haematology/Oncology, University of Manitoba</td>
</tr>
<tr>
<td>1415 - 1445</td>
<td>Exhibits/Nutrition Beak provided</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1445 - 1515</td>
<td>Unravelling the Mysteries of Sepsis: Could the Answers be in the Blood?</td>
<td>Ryan Zarychanski, MD</td>
<td>Section of Critical Care and Haematology/Medical Oncology, University of Manitoba</td>
</tr>
<tr>
<td>1515 - 1545</td>
<td>Zika Virus: What’s the Buzz One Year Later</td>
<td>Pierre Plourde, MD</td>
<td>Winnipeg Regional Health Authority</td>
</tr>
<tr>
<td>1545 - 1600</td>
<td>Closing Remarks</td>
<td>Moderator</td>
<td></td>
</tr>
</tbody>
</table>
Infection Prevention and Control: Inspiring Change
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
Abstract
A major component in preparedness for pandemic influenza or other outbreaks/epidemics of significant infectious diseases is immunization as it has resulted in elimination or mitigation of multiple epidemics over the past century. Its use has eliminated smallpox and hopefully soon polio as well. There are limitations to the success of immunization when the epidemic involves a novel infection as it takes time for vaccine development (e.g. H1N1 influenza epidemic in 2009). With good surveillance and anticipation of the potential of emerging pathogens to cause problems, we can get a head start and have a vaccine almost ready for use (e.g. National Microbiology Laboratory’s development of the Ebola vaccine). Immunization success though is limited by the need for an effective, safe vaccine that is acceptable to the population at risk and that provides long term immunity. While there are still outbreaks of diseases such as measles, mumps, chickenpox and pertussis, all part of the routine childhood immunization schedule, these illnesses no longer cause major epidemics in Canada. These outbreaks of vaccine preventable diseases such as mumps are usually the result of infections among individuals who were not immunized or who were immunized but not completely protected when they were exposed.

Objectives
By attending this session the attendee will be able to:
1. Appreciate the effectiveness of immunization to prevent epidemics
2. Learn the limitations of vaccines
3. Understand the reasons for the mumps outbreak in Manitoba college age students this past year

Multiple Choice Questions (Select the best answer)
1. What percentage of the population needs to be immune to prevent a measles epidemic?
   a. 99%
   b. 95%
   c. 80%
   d. 40%

2. How effective is one dose of mumps vaccine?
   a. 99%
   b. 95%
   c. 80%
   d. 40%

3. The lowest percentage of the population needed to be immune influenza so that suspending elective hospital admissions is unlikely during an influenza outbreak.
   a. 99%
   b. 95%
   c. 80%
   d. 40%
Abstract
Infection Prevention and Control is a field that has broad reaching implications in patient care. The goal of infection prevention and control is to provide a safe patient care environment. Invariably, there will be situations where there will be occurrences out of everyone’s control that require immediate attention. The staff of the Infection Prevention and Control Program interacts with all services in the healthcare environment. The cases that will be presented will allow for a dynamic interaction with the audience and will highlight the broad nature of incidents that have an impact upon Infection Prevention and Control.

Objectives:
By attending this session the attendee will be able to:
1. State common situations where infection prevention and control is of vital importance.
2. State what simple measures can be taken to prevent the transmission of infectious agents in the healthcare environment.
3. State the names of pathogens about which we are concerned in healthcare environments.

Multiple Choice Questions (Select the best answer)
1. During a dialysis treatment, a patient is found to have a bed bug on his coat. Which course of action would be the most appropriate?
   a. Shut down the Dialysis Unit for full decontamination
   b. Acknowledge the bed bug and carry on with dialysis treatment
   c. Inform the patient of what has been found, place double sided tape on the floor and ask the patient to inform his landlord of the bed bug.
   d. Ask the patient to give you his clothes so we can send to the laundry.

2. In an outpatient clinic, a mouse runs past the reception desk. What action should be taken?
   a. Close the clinic for the afternoon while the exterminator looks for the mouse
   b. Notify your facility manager
   c. Call the Infection Prevention and Control Department
   d. Try and catch the mouse

3. A nurse on an orthopedic ward is found to have an outbreak of shingles on her left anterior thigh. What action needs to be taken?
   a. Remove the worker from the workplace and send him home until the lesions are completely resolved
   b. The worker can remain in the workplace provided that the lesions are covered and she is not working with persons who have never had chicken pox.
   c. Immediately give all patients that the nurse worked with, intravenous immunoglobulin to prevent an outbreak of chickenpox.
   d. Start all patients on oral acyclovir
Construction Everywhere! Keeping a Level Head in Protecting our Patients
Craig Doerksen, P.Eng
Facility Management, Health Sciences Centre

Abstract
Whether you work in a small standalone clinic or the oncology transplant unit of a tertiary care facility, change is everywhere. Maintaining these facilities on a day to day basis regularly involves opening up the interior ceilings and walls to perform preventive and demand maintenance activities. Clinical practice and standards are also changing and so is the facility in which you provide this care. Adapting to your new workflow and technology demands installation of new systems like power, data, wifi, millwork, sinks. Lucky ones get capital redevelopment, but without being able to relocate current clinical practice we often “renovate in place” and it can seem like construction is everywhere!

So how do facility management/maintenance, construction, clinical services and infection control teams work together to protect our patients and keep a level head? Clinical and non-clinical teams must come together and understand the true work type, timeline and scope, then they identify patient risks. Utilizing their collective understanding of standards and guidelines they must further apply critical thinking to developing the best strategy to mitigate patient risk.

Objectives:
By attending this session the attendee should be able to:
1. Identify the types of maintenance and construction activities which present an infection risk
2. Outline several different options to mitigate risk
3. Identify who must collaborate to develop a healthcare facility’s team approach to infection control during maintenance and construction activity.

Multiple Choice Questions (Select the best answer)
1. What are some of the infection risks from maintenance and construction activity?
   a. Tuberculosis
   b. Aspergillus
   c. Legionella
   d. a and b
   e. b and c

2. Infection Control during construction and maintenance activity is only a risk to:
   a. Everyone in our facilities
   b. Oncology patients
   c. Transplant inpatients
   d. Immunocompromised patients
   e. b and c

3. Discussion about the plan for infection control on a project is best done:
   a. At the initial scoping of the project
   b. During the contractor walk thru when they are preparing their bids.
   c. During the startup meeting with the winning contractor
   d. By the clinical staff, infection control practitioner and contractor during construction
   e. All of the above
What’s in my Antibacterial Soap? Demystifying Environmental Antimicrobials
Ayush Kumar, PhD
Department of Microbiology, University of Manitoba

Abstract:
Antibacterial domestic products are more common than ever. These products contain antibacterials like triclosan and quaternary ammonium compounds. In spite of their widespread use, their effectiveness in domestic settings remains unclear. Further, there is a plethora of data that suggest that triclosan and quaternary ammonium compounds can select for mutant bacteria that display reduced susceptibility to antibiotics. As a result the Food and Drug Administration in the United States has recently banned antibacterial soaps. Mechanisms of triclosan and antibiotic cross-resistance will be discussed.

Objectives:
By attending this session the attendee will be able to:
1. Describe the impact antibacterial products may have on health
2. Understand the mechanisms of triclosan-antibiotic cross-resistance
3. Make conclusion about the utility of such products in our households

Multiple Choice Questions (select the best answer)
1. Use of antibacterial soaps is the best available option to clean our hands:
   a. True
   b. False

2. Triclosan in soaps:
   a. Can select for bacteria with reduced susceptibility to antibiotics
   b. Can pollute our water bodies
   c. Is a highly stable molecule
   d. All of the above

3. Which of the following counties recently banned antibacterial soaps?
   a. Canada
   b. United States
   c. France
   d. England
What Goes on Behind the Scenes: Infection Prevention and Control in the Dental Office
Nita Mazurat DDS, MSc
Department of Restorative Dentistry, College of Dentistry
University of Manitoba

Abstract
The challenges in delivering oral healthcare safely are the same as those faced when delivering all healthcare to patients in a safe environment: knowledge of what ‘safe delivery’ means, how to deliver care safely, and compliance with delivering care safely. However, there is a difference in that patients are directly responsible for the costs of their oral healthcare. This creates economic and socioeconomic challenges for our patients. In turn, direct responsibility to the patient results in added pressures on dentists to deliver safe and standardized care with high patient expectations that they are receiving maximum value for their healthcare dollars.

Objectives:
By attending this session the attendee should be able to:
1. State the source of Infection Prevention and Control guidelines for oral healthcare or ‘who said I have to use all this plastic?’.
2. Discuss current challenges in antibiotic stewardship faced by oral healthcare providers while balancing patient risks for developing potential infections.
3. Briefly describe how using two diagnosed dental conditions may be helpful for physicians to predict medical conditions.

Multiple Choice Questions (Select the best answer)
1. The major source of guidelines for infection prevention and control for Canadian dentists is:
   a. Infection Prevention Association of Canada (IPAC)
   b. Public Health Agency of Canada (PHAC)
   c. Centres for Disease Control (CDC)
   d. Canadian Standards Association (CSA)

2. The difference between guidelines for primary care in medicine and dentistry is:
   a. There are very few differences in concepts
   b. Dentistry uses more equipment barriers
   c. The source of the guidelines is different
   d. Manufacturers of medical instruments provide better instructions for use (MIFU’s) than manufacturers of dental instruments

3. A 2016 Canadian study that compared compliance for antibiotic use between physicians and dentists in British Columbia found that:
   a. They still prescribe approximately the same amount of antibiotics
   b. The use of antibiotics has decreased by physicians but increased by dentists
   c. The use of antibiotics has decreased by physicians and dentists
   d. The use of antibiotics has increased by physicians but decreased by dentists
Abstract
Vaccination to prevent shingles or zoster is worth considering because shingles is a common infection that causes significant morbidity. If a Canadian has had chickenpox, the lifetime risk of having shingles at least once is 28%. The incidence rises with age and is about 1% per year in 80-year-old adults. Two to four percent of individuals experience shingles twice. An episode of shingles does not protect against recurrent disease although exposure to varicella in children in the family, does. A single dose (‘shot’) of the licensed live attenuated vaccine reduces the incidence and severity of both shingles and its most common complication, post-herpetic neuralgia (PHN) in non-immunocompromised adults 60 years and older who have had chickenpox. Vaccine efficacy is 63% in adults 60-69 years and 38% in those > 70 years of age. The vaccine was well tolerated and safe. The duration of protection is eight years. A role for a booster dose is currently under investigation. The Canadian National Advisory Committee on Immunization currently recommends the vaccine for prevention of herpes zoster and its complications in persons 60 years and older without contraindications (immunodeficient individuals, pregnant women and those with anaphylactic allergy to any of its components).

Objectives
By attending this session, the attendee will be able to:
1. Understand the clinical problem posed by herpes zoster in non-immunocompromised elderly adults.
2. Understand the benefits and risks of immunization to prevent herpes zoster.
3. Appreciate that, with an 8-year duration of vaccine protection, the story of immunization to prevent shingles and its complications is still unfolding.

Multiple Choice Questions (Select the single incorrect answer)
1. Shingles:
   a. Is caused by reactivation of latent chickenpox infection in sensory nerve ganglia
   b. Only occurs in immunocompromised patients
   c. Can result in severe pain after the rash resolves (post-herpetic neuralgia; PHN)
   d. PHN is defined as pain that is still present in the shingles site > 90 days after rash onset

2. Herpes zoster vaccine:
   a. Consists of live attenuated varicella virus
   b. Requires only a single dose (‘shot’)
   c. Protects for 8 years
   d. Protection can be extended beyond 8 years if a booster dose is administered

3. Herpes zoster vaccine:
   a. Is recommended for all adults ≥ 60 years of age
   b. Is contraindicated in immunosuppressed patients
   c. Is generally safe and well tolerated
   d. Is less efficacious in adults > 70 years of age than those 60-69 years of age
Unwanted Trade Offs for Promising Results: Risk for Infection with Immuno-Modulator Cancer Therapies
Eric J. Bow, MD
Sections of Infectious Diseases and Haematology/Oncology
University of Manitoba

Abstract
Cancer chemotherapy (CT) increases the risks for bacterial, fungal and viral infections through cytotoxic effects on integumental progenitor cells and myeloid phagocytic progenitor cells, and through immunosuppressive effects on effector T- and B-lymphocytes. The alkylating agents directly affect DNA; the topoisomerase inhibitors, the antimetabolites, and the histone deacetylase inhibitors affect DNA proteins; the vinca alkaloids and taxanes affect the tubulin-related cell division mitotic spindle apparatus; tyrosine kinase inhibitors affect intracellular signaling pathways; proteasome inhibitors affect protein degradation; heat shock protein inhibitors affect the protection against unwanted protein degradation; and, more recently, monoclonal antibodies targeting tumour-related extracellular protein receptors may affect important aspects of the host innate and adoptive immune response of B- and T-lymphocytes. We will review examples of infections associated with newer targeted anti-cancer therapies based upon the mechanisms of action.

Objectives
By attending this session the attendee will be able to:
1. Be familiar with the mechanistic differences between conventional systemic chemotherapy and the newer targeted anti-cancer therapies and how they may enhance the risk for infections.
2. Understand the kinds of infections that might be expected with given targeted anti-cancer approaches among ambulatory oncology patients.
3. Be familiar with the preventive strategies available to mitigate these infection risks.

Multiple Choice Questions (Select the best answer)
1. Anti-CD 20 monoclonal antibodies target B-lymphocytes. What aspect of the host immune function is most impaired?
   a. Phagocytic function
   b. Complement-mediated damage to cell surfaces
   c. Seroconversion to new antigens
   d. Ability to respond to a tuberculin skin test

2. Bortezomib, a proteasome inhibitor, interferes with cytotoxic T-lymphocyte stimulation. What infection is most often observed as a consequence of this effect?
   a. Invasive pneumococcal disease
   b. West Nile Virus infection
   c. Invasive aspergillosis
   d. Shingles

3. TNFα inhibitors may be a useful in the treatment of steroid-refractory rheumatoid arthritis, inflammatory bowel disease, and graft-versus-host disease. Wherever possible, prior to initiating such therapy, it would be important to know what?
   a. Whether the patient has been exposed to North American Blastomycosis
   b. Whether the patient has been exposed to tuberculosis
   c. Whether the patient has active shingles
   d. Whether the patient is receiving concomitant triazole anti-fungal agents
Unraveling the Mysteries of Sepsis: Could the Answers be in the Blood?
Ryan Zarychanski, MD
Section of Critical Care and Hematology/Medical Oncology
University of Manitoba

Abstract
Infection remains one of the leading causes of preventable death worldwide. Globally, 19 million cases of septic shock occur on an annual basis and the incidence is steadily rising. Septic shock accounts for approximately 10% of admissions to the intensive care unit (ICU). Mortality ranges from 20-40%, and is generally in the context of multi-organ failure mediated by systemic inflammation and microthrombosis. Beyond antimicrobial therapy and supportive care, few effective treatments exist. Our understanding of the pathophysiologic mechanisms responsible for sepsis has evolved. With new knowledge has come new diagnostic paradigms from which new treatments will hopefully develop. The role of the ‘blood’ and how circulating molecules contribute to morbidity and mortality may not be entirely new, but is more completely understand. How blood-thinners, blood-products, and blood–purification might be used as a treatment for sepsis remains a hot topic of research.

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

1. Identify traditional and cutting edge risk factors for severe infection
2. Appreciate mechanisms that contribute to the life-threatening host inflammatory response that accompanies infection
3. Discuss cutting edge blood-based therapies that may improve survival for patients with life-threatening infection

Multiple Choice Questions (Select the best answer)
1. The incidence of sepsis (new cases of sepsis) in the general population is:
   a. Increasing
   b. Decreasing
   c. Staying relatively stable
   d. Not my concern

2. In patients with severe infection, empiric antibiotics should be administered within what time frame?
   a. Within 24 hours
   b. Within 12 hours
   c. Within 6 hours
   d. Within 3 hours
   e. Within 1 hour

3. Which of the following longterm sequelae are common to survivors of septic shock?
   a. Post-traumatic stress disorder
   b. Amputations
   c. Cognitive dysfunction
   d. Financial distress
   e. All of the above
Zika Virus: What’s the Buzz One Year Later
Pierre Plourde, MD
Winnipeg Regional Health Authority

Abstract
Until recently, almost no one had heard of Zika virus. First discovered in a monkey from the Zika forest of Uganda in 1947, it wasn’t until 2007 that it caused its first large outbreak in humans in Micronesia (Yap Island), and in French Polynesia in 2013-14. But Zika virus did not come to our attention until mid-2015 when an outbreak in northeastern Brazil was linked to a massive increase in severe congenital abnormalities including microcephaly.

What makes this arboviral infection most intriguing and worrisome is its ever growing multiple other modes of transmission, including mosquito, sexual, blood transfusion, and possibly close contact with a highly viremic persons. Despite troubling facts and many unanswered questions, there are pragmatic approaches to the prevention and diagnosis of Zika infection.

Objectives
By attending this session, the attendee will be able to:
1. Describe the evolving epidemiology of Zika virus.
2. Describe the clinical manifestations and diagnosis of Zika virus.
3. Discuss the prevention of Zika virus and recommendations for pregnant women.

Multiple Choice Questions (Select the best answer)
1. A person who has recently returned from travel to the Caribbean who presents with fever, rash, myalgias and arthralgies most likely has which of the following infections?
   a. Chikungunya virus
   b. Dengue virus
   c. Typhoid fever
   d. Zika virus
   e. All of the above

2. Which of the following have been described as a mode of transmission for Zika virus?
   a. Male to female sexual transmission
   b. Male to male sexual transmission
   c. Mother to fetus transmission
   d. Mosquito transmission
   e. All of the above

3. Who should be tested for Zika virus infection?
   a. Asymptomatic pregnant woman with recent travel to a Zika-endemic area
   b. Asymptomatic man with recent travel to a Zika-endemic area
   c. Asymptomatic person who recently had sex with someone who recently travelled to a Zika-endemic area
   d. Asymptomatic woman with travel to a Zika-endemic area 1 year ago and now wants to get pregnant
   e. All of the above
Answers to Multiple Choice Questions

1. Infection Prevention and Control: Inspiring Change
   1. c
   2. c
   3. a

2. Preparing for the Plagues...Whatever They May Be
   1. a
   2. c
   3. d

3. The Adventure Never Ends: Case Histories in Infection Control
   1. c
   2. b
   3. b

4. Construction Everywhere! Keeping a Level Head in Protecting our Patients
   1. e
   2. a
   3. e

5. What's in my Antibacterial Soap? Demystifying Environmental Antimicrobials
   1. b
   2. d
   3. b

6. What Goes on Behind the Scenes: Infection Prevention and Control in the Dental Office
   1. c
   2. a
   3. b

7. Shingles Vaccination: Giving it a Shot
   1. b
   2. d
   3. a

8. Unwanted Trade Offs for Promising Results: Risk of Infection with Immuno-Modulator Cancer Therapies?
   1. c
   2. d
   3. b

9. Unraveling the Mysteries of Sepsis: Could the Answers be in the Blood
   1. a
   2. e
   3. e

10. Zika Virus: What’s the Buzz One Year Later?
    1. e
    2. e
    3. a
Bug Day 2017
Websites/Links for Specific Presentations

Infection Prevention and Control: Inspiring Change

Preparing for the Plague...Whatever They May Be
http://www.who.int/en/
https://www.cdc.gov/
http://www.gov.mb.ca/health/

The Adventure Never Ends: Case Histories in Infection Control

Construction Everywhere! Keeping a Level Head in Protecting our Patients
www.cdc.gov/hicpac/pdf/guidelines/eic_in_HCF_03.pdf
http://www.apic.org/Professional-Practice/Practice-Resources/Construction-Issues

What’s in my Antibacterial Soap? Demystifying Environmental Antimicrobials
http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm517478.htm
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4454990/

What Goes on Behind the Scenes: Infection Control in the Dental Office
https://www.cdc.gov/oralhealth/infectioncontrol/guidelines/
http://jada.ada.org/article/S0002-8177%2815%2901213-1/abstract
http://www.cda-adc.ca/en/about/position_statements/jointreplacement/

Shingles Vaccination: Giving it a Shot

Unraveling the Mysteries of Sepsis: Could the Answers be in the Blood
http://www.survivingsepsis.org/Pages/default.aspx

Zika Virus: What’s the Buzz One Year Later?