Northern Health Physicians
Partners in Wellness

Public Health Newsletter for Northern Health Physicians

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Rotavirus Immunization Program: Transitioning to pentavalent rotavirus vaccine (RV5, RotaTeq®)

Beginning May 2018 BC will begin transitioning from the monovalent rotavirus vaccine (RV1, Rotarix®) to the pentavalent rotavirus vaccine (RV5, RotaTeq®) in the infant rotavirus immunization program. The National Advisory Committee on Immunization recommends routine infant rotavirus vaccination with either rotavirus vaccine product, without preferential recommendation for one over the other. As both products are live attenuated vaccines that are given orally, the main difference with this product change is the immunization schedule, as the schedule for RotaTeq® is **3 doses**, as compared to 2 doses for Rotarix®.

RotaTeq® vaccine is given orally at **2, 4 and 6 months of age**. The maximum age for dose 1 of RotaTeq® is 20 weeks less 1 day and the maximum age for the last dose is 8 months. Ideally, infants who begin their series with Rotarix® will be able to complete their series with the same product. In order to achieve this it is important to balance the remaining Rotarix® stock on hand to ensure completion of vaccine series started on this product whenever possible, while also minimizing vaccine wastage. If any dose of the series was RotaTeq® (or the product is unknown), a total of 3 doses should be administered.

Contraindications for the two products are the same.

For questions about RotaTeq® vaccine, please contact your local primary care nurse or refer to the following resources:

Resources for health care professionals

BCCDC's Q&A regarding this product change: http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Immunization/Vaccine%20Info/Rotavirus_QandA_Apr_2018.pdf

BC Immunization Manual: http://www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual/immunization

Resources for the general public
ImmunizeBC: www.immunizebc.ca

Submitted by: Dr. Andrew Gray, Medical Health Officer

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Antimicrobial Stewardship in Practice (Part 1)

By now most clinicians are familiar with the basic definition of Antimicrobial Stewardship (AMS). Which is defined as the collection of interventions used to promote the optimal use of antimicrobials (using the right drug at the right dose for the correct frequency and length of time). The goals of AMS are to limit unnecessary antimicrobial exposure and optimally treat infections while minimizing toxicities and adverse events. But for some clinicians the question still remains – How do I incorporate AMS principles into my daily patient care practices?

Here are some AMS principles that can be included in everyday patient care related activities:

1. Take thorough and complete antibiotic allergy histories
2. Monitor patients for adverse effects from antibiotics
3. Monitor and identify patients for oral antibiotic step down assessments
4. Limit urine analysis and culture collections
5. Proper wound culture collection

Antibiotic Allergy Histories

Patients report any reaction to medications as an allergy therefore it is important to educate our patients on the difference between a side effect and an allergy. Labeling patients with untrue antimicrobial allergies can lead to issues for prescribing and increases the risk of using broad-spectrum or expensive medications unnecessarily. A commonly reported antibiotic allergy that impacts future prescribing is penicillin which is reported by about 10% of patients when in fact less than 1% have a true allergy.[1] Of those patients that have a true allergy, 50% will lose their sensitivity after 5 years (80% after 10 years).[1] Often the concern with penicillin allergy is the potential for cross-reactivity with other antimicrobial agents. There is a common misconception that the risk of cross-reactivity is higher than in reality. Less than 3% of patients with confirmed penicillin allergy will have a cross reaction with cephalosporins with similar side chains. Cefazolin is NOT expected to cross-react with any penicillin or cephalosporin as it does not have a similar side chain to any other Beta-lactam antibiotic.[1] With regards to carbepenems (e.g. meropenem, imipenem) 4.3% of patients with a penicillin allergy will cross react.[1]

IV to PO Conversion

Conversion from IV to PO antimicrobials in select patients leads to positive clinical outcomes such as early discharge and reduced risk of IV line infections as well as cost savings for our healthcare system. Timely conversion from IV to PO antimicrobial therapy is an effective strategy for many infections and should should be considered as soon as a patient is placed on IV antimicrobials. Making the switch from IV to PO must be individualized based on the patient's clinical status and type of infection. Refer to the NH Clinical Practice Standard 1-20-6-1-010.

Watch for the Antimicrobial Stewardship article next month for more information on limiting urine analyses and culture collection as well as the principles of proper wound culture collection.

You can access resources created and or provided by the AMS program by visiting the NH physician's website or OurNH.

Reference: 1. Bugs and Drugs online reference. Beta-Lactam allergy. Updated: Jan 25, 2018. URL: http://www.bugsanddrugs.org/Home/Index/bdpageAC6F582CF1A24A71AB998B52DD7F60F9

Submitted by: Alicia Rahier, Antimicrobial Stewardship Program Coordinator

New e-learning course: BC Pediatric Nutrition Guidelines

In early 2017, the Provincial Health Services Authority (PHSA) released the BC *Pediatric Nutrition Guidelines (Six Months to Six Years) for Health Professionals*. The guidelines assist health professionals to identify nutrition issues and support consistency in nutrition messaging among health professionals throughout BC. You may have read about these guidelines in an article in the BC Medical Association Journal, as well as in a previous issue of this Physician's Newsletter.

This BC resource is organized by age (i.e. 6-9 months, 9-12 months, 12-24 months, and 2-6 years) and includes:
Relevant milestones related to feeding.

- Guidelines for food and fluids.
- Nutrition risk indicators that warrant additional investigation, intervention and/or referral.
- Additional information related to: parental influences on eating habits, growth monitoring, informed decision making about infant feeding, food allergy prevention, iron and food safety.

PHSA has developed an e-learning course to support orientation to these BC guidelines, and this course is now live on the LearningHub. The course consists of 5 modules and quizzes, which require about 2.5 hours to complete. The course is entitled "BC Pediatric Nutrition Guidelines for Health Professionals – using the Guidelines with your Clients" and can be accessed at:

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https://learninghub.phsa.ca/Courses/17179. There is no cost; you simply need to create an account and login to access Learning Hub courses.

Health professionals in northern BC will find the above guidelines and e-learning modules to be a useful complement to existing Northern Health (NH) resources. Specifically, the NH Infant Toddler Nutrition Guidelines for Health Professionals provide additional depth and tools related to many pediatric nutrition topics. NH staff and physicians can access these guidelines and an orientation to these guidelines via the OurNH Population Health Nutrition all-staff page.

For more information about any of the above resources, please contact Lise Luppens, MA RD, Population Health Dietitian at Lise.Luppens@northernhealth.ca.

Submitted by: Lise Luppens, Population Health Dietitian

New Population and Public Health Resource Hub

We've developed a Resource Hub on OurNH to improve access to high quality, evidence-based prevention and health promotion information and resources.

The content is relevant for:

- Primary and community care interprofessional teams and those who support them (Team Leads, Community Service Managers, etc.)
- Health care practice across settings and disciplines.

You can easily access information, guidance, expertise and best practices on:

- Preventing chronic diseases, communicable disease and injuries; and
- Improving health and wellness where people live, work, learn and play.

Topics include:

- Communicable Disease
- Dental Health
- Harm Reduction
- Healthy Communities
- Healthy Schools
- Healthy Start
- Immunizations
- Injury Prevention
- Mental Wellness and Prevention of Substance Harms
- Physical Activity
- Population Health Nutrition
- Sexual and Reproductive Health
- Tobacco Reduction
- Vaccine Stewardship
- Vision Screening

Also find:

- Memos send to IPTs from Population and Preventative Public Health
- Contact information for Public Health Professionals who can support your practice
- General contact information if you are unsure where to start

The Resource Hub will continue to develop, so check back for new content. An evaluation is planned that will gather end-user input and inform improvements.

Explore the Resource Hub on OurNH: https://ournh.northernhealth.ca/ClinProgServ/phealth

Submitted by: Hilary McGregor, Knowledge Implementation and Evaluation Coordinator

The Truth and Reconciliation Commission

The Truth and Reconciliation Commission's report was released in December 2015. The report details 94 Calls to Action (recommendations) for Canadians to redress the legacy of residential schools (Actions 1-42) and advance the process of reconciliation (Actions 43-94). This newsletter series will walk through the 94 Calls to Action to support Northern physicians and other providers to learn about the legacies and take actions towards reconciliation in their practices, relationships, and communities.

The categories to redress the legacy of residential schools include; child welfare, education, language and culture, health, and justice. This issue we highlight 8 Reconciliation Calls to Action. Others will be shared in upcoming newsletters.

To learn more about the Truth and Reconciliation Commission and the Calls to Action, visit http://nctr.ca/

Commemoration

79. We call upon the federal government, in collaboration with survivors, Aboriginal organizations, and the arts community, to develop a reconciliation framework for Canadian heritage and commemoration.
80. We call upon the federal government, in collaboration with Aboriginal peoples, to establish, as a statutory holiday, a National Day for Truth and Reconciliation to honour Survivors, their families, and communities, and ensure that public commemoration of the history and legacy of residential schools remains a vital component of the reconciliation process.
81. We call upon the federal government, in collaboration with survivors and their organizations, and other parties to the Settlement Agreement, to commission and install a publicly accessible, highly visible, Residential Schools National Monument in the city of Ottawa to honour Survivors and all the children who were lost to their families and communities.
82. We call upon provincial and territorial governments, in collaboration with Survivors and their organizations, and other parties to the Settlement Agreement, to commission and install a publicly accessible, highly visible, Residential Schools Monument in each capital city to honour Survivors and all the children who were lost to their families and communities.
83. We call upon the Canada Council for the Arts to establish, as a funding priority, a strategy for Indigenous and non-Indigenous artists to undertake collaborative projects and produce works that contribute to the reconciliation process.

Media and Reconciliation

84. We call upon the federal government to restore and increase funding to the CBC/ Radio-Canada, to enable Canada's national public broadcaster to support reconciliation, and be properly reflective of the diverse cultures, languages, and perspectives of Aboriginal peoples, including, but not limited to …
85. We call upon the Aboriginal Peoples Television Network, as an independent non-profit broadcaster with programming by, for, and about Aboriginal peoples, to support reconciliation, including but not limited to …
86. We call upon Canadian journalism programs and media schools to require education for all students on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations.

Submitted by: Dr. Sandra Allison, Chief Medical Health Officer

Summer Exposures-Animal Bites

Warmer weather is upon us and with that a tendency for northerners to spend time in the beautiful wilderness options northern BC has to offer. We felt it might be useful to provide local physicians with some up to date information relevant to common exposures/presentations you may see in your office over the coming months.

Animal Bites in BC

My patient was bitten or scratch by an animal - now what?

1. Irrigate and treat the wound
2. Provide tetanus booster if needed
3. Assess the risk of rabies, If you believe the rabies risk is significant, or are uncertain, contact the MHO on-call to discuss the need for rabies post -exposure prophylaxis (RPEP). Note that MHO approval is needed to release RPEP in BC.

Rabies is essentially 100% fatal and 100% preventable. RPEP should always be given promptly when a significant risk of rabies exposure is identified.

However, RPEP as with any medical treatment does have some associated risks and thus the appropriate provision of RPEP must align with a risk-benefit assessment. RPEP should not be provided in situation where risk is negligible. RPEP should generally be provided when both the following conditions are met:

- The exposure was significant: a bite, a scratch, or a mucous membrane or broken skin exposed to the animal's saliva: **and,**
- There is a non-negligible risk that the animal had rabies.

Could the animal have rabies? Generally, rabies is a virus of bats and terrestrial mammals (dogs, cats, raccoons, foxes, etc.).

- There are many different strains of rabies virus, and each strain generally only infects specific species of mammals . Different strains are present in different parts of the world.
- **In BC, rabies is only known to circulate among bats**, (estimated prevalence <0.5%). It is very rate for bat-variant rabies to "spill over" into other animals (approximately 10 documented instances in BC history).
- Other Canadian provinces have different rabies epidemiologic profiles, with mammalian variants also being potential hosts for rabies virus (e.g. raccoon, skunk, fox, etc.).

Elsewhere in the world, other mammal species are at risk of rabies, especially in Asia and Africa where dog variant rabies causes the most human cases.

Given this epizoology, animals that are considered potentially at risk of rabies in BC are limited to bats, and terrestrial mammals that meet one of the following conditions:

- Have displayed abnormal neurological behaviour and/or other signs of rabies, such as abnormal gait, paralysis, erratic movement, hyper salvation, excessive docility, or clearly unprovoked aggressiveness;
- Have tested positive for rabies;
- Are known to have interacted with a bat in BC in the preceding 6 months; or
- Are known to have been recently imported in the preceding 6 months from, or travelled to, a region endemic for rabies virus strains that may infect that type of mammal.

An apparently unprovoked attack by an otherwise physically well, terrestrial animal, that does not meet the above criteria, is generally **not** considered indicative of rabies.

If a domestic animal meets one or more of these criteria, the risk to human health can be evaluated further through either a 10-day observation period, or through laboratory testing for rabies virus. (Testing requires euthanasia of the suspect animal.)

Given our local epizoology, most animal (non-bat) exposures that occur in BC do not require RPEP. There has only been one document case of rabies in a human in recent BC history; this case was due to exposure to a bat. **The risk of rabies should be assessed differently for animal exposures that occur outside of BC.**

Animal bites are not reportable in BC. However, physicians and veterinarians that become aware of an animal bite or other animal exposure scenario that meets any of the above-listed criteria, should inform Northern Health Authority.

For further details on how rabies risk is assessed by public health professionals, RPEP schedules and dosing, and other background information, please see the BCCDC's rabies guidelines in Chapter 1 of the Communicable Disease Control Manual at http://www.bccdc.ca/health-professionals/clinical-resources/communicable-disease-control-manual.

The guidance provided to BC veterinarians can be found here: http://www.bccdc.ca/Documents/BC%20Rabies%20Guidance%20for%20Veterinarians_Nov%202017.pdf

Article Credit: Interior Health Authority: Medical Health Officers Update for Physicians (May 24, 2017) https://www.interiorhealth.ca/AboutUs/Leadership/MHO/MHO%20Updates/MHO%20Update%20-%20May%2024,%202017.pdf

Summer Exposures - Tick Bites

Background on Ticks in northern BC: Ticks with Lyme disease carrying **potential** (*Ixodes pacificus* and *Ixodes angustus*) are known to be present in low levels in the north. **The most common ticks found in the Northern Health region are Rocky Mountain Wood Ticks** (*Dermacentor andersoni*). Rocky Mountain Wood Ticks have not been implicated with Lyme disease, however, they also could cause tick paralysis and have the potential to carry rickettsial pathogens. In Canada, the only rickettsial disease observed to occur via tick transmission is Rocky Mountain Spotted Fever.

Tick Paralysis: This rare disease does occur in B.C., though it is not reportable.

- Characterized by an acute, ascending, flaccid paralysis resulting from exposure to a neurotoxin released by tick salivary glands during feeding.
- Mostly occurs in younger children and elderly early in the spring.
- Ticks can be attached to the scalp or neck and concealed by hair.
- In patients presenting with tick paralysis, examination often reveals an attached tick.
- Once the tick is removed, paralysis usually resolves within 24 hours.
- There is no test to confirm tick paralysis as the neurotoxin produced by the tick and its mechanism of action are not fully understood.
- Patients presenting with initial signs and symptoms of acute paralysis should have a physical exam searching for a tick.

BCCDC information on Tick paralysis: http://www.bccdc.ca/health-info/diseases-conditions/tick-paralysis

Rocky Mountain Spotted Fever:

- The causative agent of RMSF is Rickettsia rickettsia. In northwestern US and western Canada, it is spread by the Rocky Mountain wood tick-Dermacentor andersoni.
- The incubation period ranges from two to 15 days.
- Symptoms may include: fever, rash, a scab at the bite wound, inflammation of the blood vessels and/or lymph system.
- More serious forms of illness can include: hepatosplenomegaly, bleeding, renal failure, heart failure, neurological problems.
- Overall, the fatality rate varies and is generally low, especially with treatment. It increases with age, and can reach 30 per cent or more if left untreated.
- **Laboratory Diagnosis**
  - BCCDC Public Health Laboratory Offers testing for RMSP. Serologic assays are the most frequently used methods for confirming cases of RMSF. A 5-7 ml mlood sample in a serum separator tube should be collected after 7-10 days after the onset of illness. Eighty-five percent of patients will not have detectable antibody titers during the first week of illness, and a negative testing during this time does not rule out RMSF. For that reason a convalescent-phase samples should be collected 2-4 weeks after first sample or after the resolution of illness.
  - PCR detection of R. rickettsii in whole blood in EDTA tube is possible but less sensitive because low numbers of rickettsiae circulate in the blood. Furthermore early antibiotic intervention may decrease the sensitivity further.
- **Treatment**
  - For details around appropriate antibiotic treatment please see Do Bugs need Drugs http://www.bugsanddrugs.org/

Acute Lyme disease: None of the Lyme disease cases that have been diagnosed in Northern Health were exposed locally (i.e. they were either exposed elsewhere in BC, Canada or internationally).

- Most people do not notice the tick bite or attachment when it occurs.
- About 60-70% of all newly infected patients with Lyme disease will develop an expanding circular red (erythema migrans) rash from 3-10 days after the bite.
- Laboratory tests support clinical care when used correctly and are performed using validated methods in an accredited laboratory.
- In B.C., laboratory testing to diagnose Lyme disease is done by the BCCDC Public Health Laboratory (PHL).
- Routine antibiotic prophylaxis is not indicated for tick bites in BC, as harm is more likely than benefit**.** Reassure patients who present with tick bite that Lyme disease is currently extremely uncommon in northern BC, but counsel patients to return for assessment if symptoms consistent with Lyme disease occur. Outcomes are generally very good when Lyme disease is treated early.

BCCDC information on Lyme disease: http://www.bccdc.ca/health-info/diseases-conditions/lyme-disease-borreliaburgdorferi-infection

Health Canada/Public Health Agency of Canada: https://www.canada.ca/en/public-health/services/diseases/lymedisease.html

How to remove a tick

Grasp the tick by its mouth as close to the skin as possible with tweezers or other device and pull outwards, avoiding injecting the tick's stomach contents into the

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Summer Exposures - Tick Bites cont..

skin. Smothering methods for tick removal are ineffective and increase risk of injection of infected material into the client.

Testing
NOTE: Physicians wishing to test ticks are to contact BCCDC PHL's Parasitology Laboratory at (604) 707-2629.

For questions regarding testing of humans, call BCCDC PHL's Zoonotic Diseases and Emerging Pathogens Laboratory at (604) 707-2628. Ticks are not forwarded from Public Health (PH) Offices and patients should not be directed to PH offices with ticks.

Drinking Water in the Wilderness

Parasites and certain bacteria are common in any surface water source, such as: lakes, streams and rivers, and can contaminate water that humans use for both drinking, eating, and recreation. Patients should be advised not to drink untreated water in the wilderness. Adequate treatment requires either boiling (for at least 1 minute) or filtering (1 micron or smaller). Bleach alone does not work well in killing Giardia ("beaver fever") or Cryptosporidium parasites.

Clinical illness for Giardia is characterized by diarrhea, abdominal cramps, bloating, weight loss, or malabsorption. Although generally not a serious illness, it can have some long lasting side effects if left untreated - an issue primarily for people whose immune systems are weakened.

Clinical illness for Cryptosporidium is characterized by frequent watery diarrhea, abdominal cramps, loss of appetite, low-grade fever, nausea, and vomiting. The illness may be prolonged and life-threatening in severely immunocompromised persons due to severe dehydration.

Treatment:
People with healthy immune systems normally clear Giardia and Cryptosporidium infections over the course of a few weeks without treatment. Giardiasis does also respond fairly well to anti-parasitic medication. Cryptosporidium is usually self-limiting in immunocompetent patients. If diarrhea is severe or prolonged, treatment with Nitazoxanide can be considered (see http://www.bugsanddrugs.org/), however, it has to be requested through Health Canada's Special Access Program. For immunocompromised patients, consult an Infectious Disease specialist.

Testing:
Requisitions for submitting clinical specimens (Microscopic examination of stool sample) can be found under the "parasitology" section
http://www.bccdc.ca/health-professionals/professional-resources/laboratory-services

Useful links:
information, see HealthLinkBC File #49b Disinfecting Drinking Water, HealthLinkBC File #10 Giardia Infection, and HealthLinkBC File #48 Cryptosporidium Infection.

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