# Northern Health Physicians
## Partners in Wellness

*Public Health Newsletter for Northern Health Physicians*

*Volume 15. Number 1. February 2019 • Page 1 of 4*


## Influenza Update

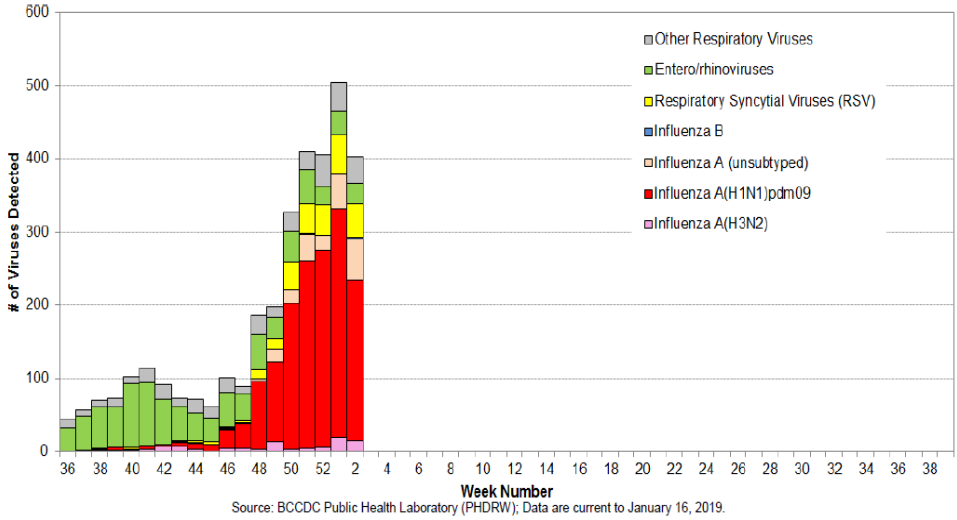
**Peak of A(H1N1) pdm09 epidemic likely passed in BC but activity remains elevated.**

During week 2, all surveillance indicators suggest that BC has likely passed the epidemic peak of influenza A (H1N1) pdm09 this season. However, influenza activity is likely to remain elevated for several more weeks, as expected following the epidemic peak and at this time of year more generally.

Among influenza viruses typed at the BCCDC PHL since week 40, virtually all have been influenza A and, among those subtyped, more than 90% this season so far have been A(H1N1)pdm09.

Children less than 10 years of age and non-elderly adults comprise 75% of all A (H1N1)pdm09 detections to date with children in particular disproportionately affected. Conversely, elderly adults are over-represented among A(H3N2) detections in BC, accounting for 67% of A(H3N2) detections thus far.

Since our last bulletin, 3 laboratory-confirmed influenza A outbreaks in long term care facilities (LCTF), have been reported. A total of 14 lab-confirmed LTCF outbreaks have been reported since the beginning of season (week 40). In contrast, between weeks 40 and 2 of the A (H3N2) dominant 2016-17 and 2017-18 seasons, 120 and 79 lab-confirmed LTCF outbreaks, respectively, had been reported. The lower number to date this season is consistent with fewer LTCF outbreaks expect during seasons of dominant A(H1N1)pmd09 compared to dominant A(H3N2) circulation.




Source: BCCDC Public Health Laboratory (PHDRW); Data are current to January 16, 2019.

**Source:** BC Centre for Disease Control Influenza Surveillance Bulletin: Report No. 8, January 6 to January 12, 2019

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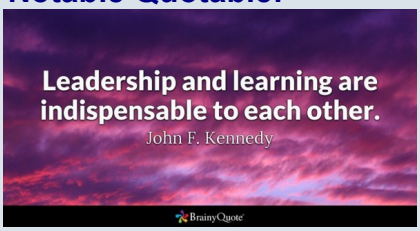


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# Poverty and Its Impact on Health: The Role of Clinicians

In the November issue of this newsletter, we discussed the new Cost of Eating in BC Report, which highlights that low-income households are most at risk for food insecurity. Household food insecurity is an indicator of poverty; it shows that a person's basic needs are failing to be met.

Poverty is the single largest predictor of health, more so than any behaviours or lifestyle "choices":

- Living in poverty causes chronic stress, in part due to coping with other determinants of health, such as unsafe housing, precarious work, fixed and low-income, gender discrimination, or racial oppression.
- The stigma, trauma, and social isolation that may precede or accompany poverty are strongly correlated with mental illness. As many as 90% of people with serious mental illness are unemployed.
- People living in deep poverty, (i.e. those living on social assistance and disability income), are affected more profoundly by adverse health conditions, such as cardiovascular disease, diabetes and mental health concerns. This is especially true for children and youth.

**What does this mean for clinical practice?**
When a person struggles to make ends meet, it becomes extremely difficult for them to eat well, engage in physical activity, and take other steps to support their health. Considering the determinants of health, rather than treating only a behaviour or symptom, means looking more deeply at how a patient's environment contributes to their overall health. While we can address the patient's immediate symptoms, we might feel powerless to improve the circumstances that are making them sick.

**How can you take action on poverty reduction?**
Understanding and addressing the determinants of health can happen at the individual, community, and societal levels. Decreasing poverty and increasing health equity is most effectively addressed at the public policy level (i.e. the macro level), but action can be taken at all levels of care.

*Individual/clinician*

- Challenge your and others' assumptions about what makes people sick
- Understand that a respectful and trusting client-provider relationship is critical for those who have been marginalized and stigmatized. People living with trauma, mental illness, substance use disorder or poverty often experience inequitable treatment within the healthcare system
- Screen for potential underlying social issues
  - Poverty: A clinical tool for primary care providers
  - Centre for Effective Practice: Poverty intervention tool
- Become familiar with local resources and community supports (e.g. low cost/free bus fare, childcare services, food programs, parenting programs, legal aid, etc.)
- Assist with navigating complicated social benefits programs (e.g. health supplement programs, disability services, income assistance)
- Adjust clinic hours to accommodate varying schedules Offer translation services or visual tools at your practice.

*Organizational/community level*

- Learn more about health equity, and the importance of providing culturally safe, and trauma informed care
- Engage the interdisciplinary team in patient care (e.g. social workers, Aboriginal Patient Liaisons, mental health clinicians, dietitians)
- Advocate for access to healthy food and safe drinking water, affordable and effective public transportation, mental health support and resources, etc.
- Foster community partnerships (e.g. with anti-poverty organizations)

*Societal level* - support healthy public policy:

- Take steps to address the social determinants of health (e.g. Health Providers Against Poverty).
- Lend your voice to poverty reduction efforts in BC.
- Advocate for income-based solutions to poverty (e.g. Basic Income Guarantee, expanded social safety nets).
- Explore how politicians at all levels of government can work to address income and health disparities.
- Advocate for safe and secure working environments, including affordable childcare.
- Support healthy housing policy (e.g. affordable, quality housing for all).

Northerners are resilient, knowledgeable, industrious and creative. Practicing upstream medical care means promoting health by working to improve the environments where people live, work, learn, play and are cared for. Engaging patients and communities can help support the development of safer, more inclusive, and health promoting environments, where Northerners can flourish; socially, mentally and physically.

*(Continued on page 3)*

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**Additional resources:**

- Canadian Benefits Finder
- Service Canada
- Canadian Family Physician: Practising social accountability
- The College of Family Physicians of Canada: Social Determinants of Health – member statistics
- Government of BC: What we heard about poverty in BC
- Bill C39 – Poverty Reduction Strategy Act
- BC Poverty Reduction Coalition: ABC's of poverty reduction
- Physicians for human rights
- Social Determinants of Health: The Canadian Facts

**Submitted by:** Laurel Burton, Population Health Dietician, Food Security Lead &
Dr. Jong Kim, Northeast Medical Health Officer

# AMS Topic of the Month: Issues regarding fluoroquinolone use

Fluoroquinolone antibiotics (ciprofloxacin, levofloxacin, moxifloxacin) have broad spectrum antimicrobial activity and are used for a wide range of infections; however, there are often more appropriate narrow spectrum antibiotic agents that should be considered before jumping to a fluoroquinolone (i.e. uncomplicated urinary tract infections and community-acquired pneumonia). Some issues to consider with regard to fluoroquinolone use:

**Resistance:**
Rising resistance rates continue to be an issue across Canada and around the world and overuse of broad spectrum antibiotics is one of the major contributors to this issue. Ciprofloxacin is our **ONLY** available oral option for treatment of infections caused by *Pseudomonas aeruginosa* and in many health regions ciprofloxacin has been removed as an empiric treatment option due to high rates of regional resistance. In Northern Health, we are fortunate to have ciprofloxacin as a good empiric option for *Pseudomonas aeruginosa* as overall susceptibility is greater than 80% (84% as per NH Antibiogram 2018). We need to work to preserve this as an option for our patients moving forward.

**Adverse Effects:**
Fluoroquinolones have been associated with clinically significant adverse effects such as:

- tendonitis and tendon rupture
- peripheral neuropathy (sometimes irreversible)
- abnormalities in blood glucose (hyper- or hypoglycemia)
- dose-dependent QTc prolongation
- central nervous system abnormalities (dizziness, insomnia,
- seizures, tremors, confusion, hallucinations, psychiatric re
- actions)

Though relatively rare, these side effects can occur after just one dose and may be more pronounced in elderly patients. Gastrointestinal side effects continue to be the most common adverse effects of this drug class and though all antibiotic classes come with a risk of causing *Clostridium difficile* infection, fluoroquinolones are considered higher risk.

**Oral versus IV Use:**
As a class, fluoroquinolones have excellent oral bioavailability and oral formulations are considered equally potent to IV formulations. If a fluoroquinolone is deemed appropriate and required for treatment, consider using the oral formulation unless the patient has a contraindication (unable to tolerate and absorb oral medications, NPO status, unconscious with no OG/NG available, presence of GI abnormality, persistent nausea/vomiting/diarrhea etc.). If the IV formulation is warranted, assess the patient frequently for the potential to step-down to oral therapy (signs of clinical improvement: afebrile, WBC trending down, hemodynamically stable, and able to tolerate and absorb oral medications). Timely conversion from IV to PO administration reduces risks associated with IV access, in addition to benefiting the healthcare system with cost savings. For more information on IV to PO step-down see NH clinical practice standard 1-20-6-1-010.

**References:**

1. Article, Continue to Avoid Quinolones When Possible, Pharmacist's Letter Hospital, September 2018.
2. Clinical Resource, *Adverse Reactions with Systemic Quinolones*. *Pharmacist's Letter/Prescriber's Letter.* September 2018.

For additional resources/information related to antimicrobial stewardship practices in Northern Health please visit the NH Physicians website or the AMS website on OurNH.

Submitted by: Ryan Doerksen, Interim Antimicrobial Stewardship Program Coordinator

# BC Centre on Substance Use Education, Discussion, and Planning Session for OAT and iOAT

Northern Health's Mental Health and Substance Use program and BC Centre on Substance Use would like to invite you to attend an information session about OAT and iOAT (Opioid Agonist Therapy and injectable Opioid Agonist Therapy).

- Content will include: clinical management of Opioid Use Disorder, iOAT and transitions between OAT, and capacity building and case discussions
- CME credits are available for the 1230-1430 education session on clinical management of Opioid Use Disorder
- There will be an opportunity to discuss local and Northern challenges and bring cases forward for discussion

**More information:**

**When:** Friday, February 22nd from 0900-1600
**Where:** Learning Center at UHNBC, Room 501
1475 Edmonton St., Prince George, BC
Videoconference and dial-in options are also available
(please RSVP with your site for VC arrangements)
**Lunch for on-site participants will be provided**

**Please RSVP by January 31 to** Heather Garfield, Administrative Assistant for the Mental Health & Substance Use and Child & Youth Health Programs
Heather.Garfield@northernhealth.ca
(250) 565-5989

## Distribution Update

**It has come to our attention that some physicians are not receiving this newsletter. If you would like to receive this newsletter by email please send an email to NHPhysiciansNewsletter@northernhealth.ca**

**As of January 1st, 2019 we are no longer distributing physical copies of newsletters to UHNBC.**

**All back issues of *NH Physicians, Partners in Wellness* newsletters and bulletins are located on the NH Physicians website: http://physicians.northernhealth.ca/physicianResources/PublicHealth.aspx**

# Northern Health Physicians
## Partners in Wellness

*Public Health Newsletter for Northern Health Physicians*

*Volume 15. Number 2. March 2019 • Page 1 of 4*


## Influenza Update

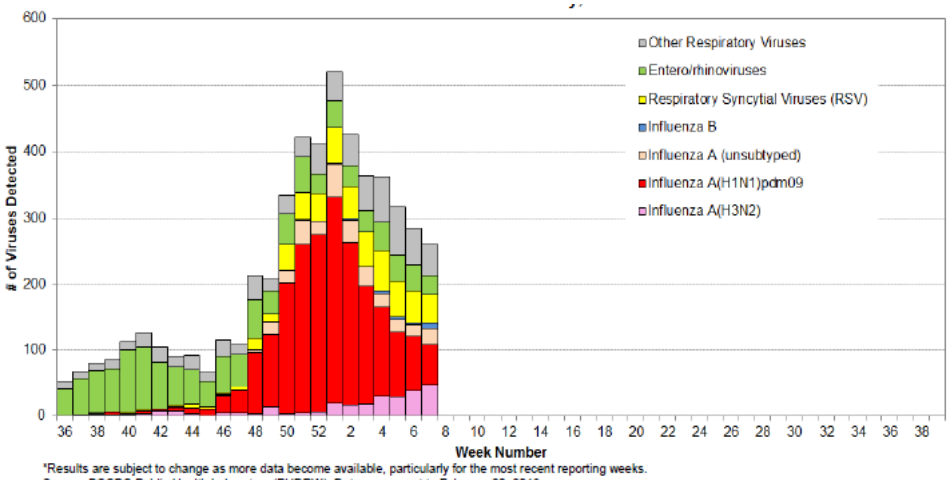
In BC, overall influenza activity levels in week 7 remain stable following a trend of gradual decline from A (H1N1)pdm09 epidemic peak around week 52. Influenza B remains at low levels but influenza A (H3N2) may be contributing more and warrants ongoing monitoring.

Among influenza viruses typed since week 40, virtually all have been influenza A and, among those subtyped at the BCCDC Public Health Laboratory, about 90% overall have been A(H1N1)pdm09. However, among influenza A viruses that were subtyped in week 7, the proportion that were A(H3N2) increased to 44% from 32% in week 6.

While children under 10 years of age and non-elderly adults have comprised 75% of all A(H1N1)pdm09 detections to date in BC, elderly adults comprise 60% of A(H3N2) detections thus far in BC.

In week 7, one laboratory-confirmed influenza A(H1N1)pdm09 outbreak in an acute care facility was reported. The cumulative tally of long-term care facility influenza outbreaks during the predominant A(H1N1)pdm09 epidemic 2018-19 is below that of prior A(H3N2)-dominant seasons in 2017-18 and 2016-17 (22, 127, and 169 outbreaks, respectively), but this also warrants ongoing monitoring.

On February 20th, the WHO announced the recommended components for the 2019-20 northern hemisphere influenza vaccine, changing the A(H1N1)pdm09 strain but retaining the same influenza B strain(s) for the trivalent and quadrivalent vaccines compared to 2018-19. Decision regarding the A(H3N2) component has been deferred to March 21st 2019 to enable an extended period of monitoring of the evolving A(H3N2) contribution.




*Results are subject to change as more data become available, particularly for the most recent reporting weeks.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to February 20, 2019.

**Source:** BC Centre for Disease Control Influenza Surveillance Bulletin: Report No. 12, February 10 to February 16, 2019

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### Notable Quotable:


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# Canada's Food Guide 2019: What You Need to Know

Health Canada released a new Food Guide in late January. The Food Guide reflects current evidence-based dietary guidance for Canadians ages 2 years and older (see the December 2018 issue of the Public Health Newsletter for Northern Health Physicians for dietary guidance for infants and toddlers). The update was supported by online public consultations and targeted consultations with experts and key stakeholders, including Indigenous organizations, to support a guide grounded in science and practicality.

### What's New?

### Key highlights of the updated Food Guide include:

- A **focus on the "how" of healthy eating**, including suggestions to practice mindful eating, cook more often, enjoy one's food (as an extension of culture and traditions) and eat together.
- An **updated visual**, a plate, that encourages an eating pattern focused on vegetables and fruit, whole grain foods, and protein foods. Protein foods include beans, peas, lentils, meat, fish, eggs, milk, yogurt, and cheese. Eating plant-based protein foods like legumes, tofu and nuts, more often, is clearly stated. This is a major departure from the old food guide, which included four food groups.
- A **focus on proportions** versus portions. The new Food Guide does not include serving sizes or recommended number of servings. Rather, it recognizes that many factors, including hunger/appetite, life stage, activity level, etc. impact how often and how much one might need to eat.
- Promotes **water** as the primary beverage. Unsweetened milk, fortified soy beverage, coffee and tea are also acceptable choices.
- Encourages **food literacy** through label reading and awareness of food marketing practices.
- Acknowledges that **inequitable access to the determinants of health** create barriers for Canadians to eat well. See the November 2018 and February 2019 issues of Public Health Newsletter for Northern Health Physicians for articles on food security and poverty.
- Suggests the services of a **registered dietitian** to support informed and tailored dietary modifications, positive relationships with food, avoidance of the risks associated with fad diets, and improved health. To access a registered dietitian, connect with your local hospital, health unit, or primary care team, or call 811 to speak to a registered dietitian, Monday to Friday, 9 am – 5 pm.

### What tools are available and how do I access them?

The foundation of the new Food Guide is an online suite of resources that focuses on actionable advice to support Canadians to implement dietary guidance. The website has many layers of information to match the needs of individuals.

Key client resources include:

- Snapshot – an at-a-glance presentation of food choices and eating habits.
- Educational poster – a high level look at the key dietary guidance.
- Healthy eating recommendations – a one-page review of the key dietary guidance.
- Recipes – a collection of more than 50 recipes to including breakfast, lunch, dinner and snack ideas.

Health Canada announced that they will make limited copies of the snapshot and poster available by the end of February. Orders may be made via nutrition@hc-sc.gc.ca . These two resources are also available to order from DocumentSource for Northern Health employees.

### When and how to use the food guide in your practice?

Physicians are highly trusted as providers of health advice. As such, it is important for physician to initiate conversation during a regular appointment on healthy eating and offer the best possible nutrition guidance to all patients:

- The food guide represents current evidence-based dietary guidance for all Canadians two years and older and can form the basis of your nutrition conversations.
- As nutrition surveys show that Canadians are challenged to implement dietary guidance, **all patients**, regardless of size, shape or weight[1] can benefit from discussion about their eating practices (inclusive of the how of healthy eating).
- Keep the focus on supporting healthy changes in behaviour that promote positive relationships with food.
- Refer patients with the need for tailored dietary guidance to a registered dietitian.

### More Guidance and Support Coming

Health Canada has made a number of commitments for the future:

- Later in 2019 a food guide **healthy eating pattern for health professionals and policy makers** will be released. It is anticipated that this will support tailored guidance to facilities, settings and

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programs that provide food and nutrition care to Canadians. This will support an update to BC guidance around food served in child care facilities, schools, public buildings, and residential care. Provincially and regionally, work is happening to update resources to reflect the new guidance.

- Health Canada will work with Indigenous peoples to support the development of healthy eating tools for First Nations, Inuit and Metis.
- More timely and regular updates to dietary guidance for Canadians.

This most recent update replaced a guide from 2007. Health Canada has proposed a 5-year cycle for updates.

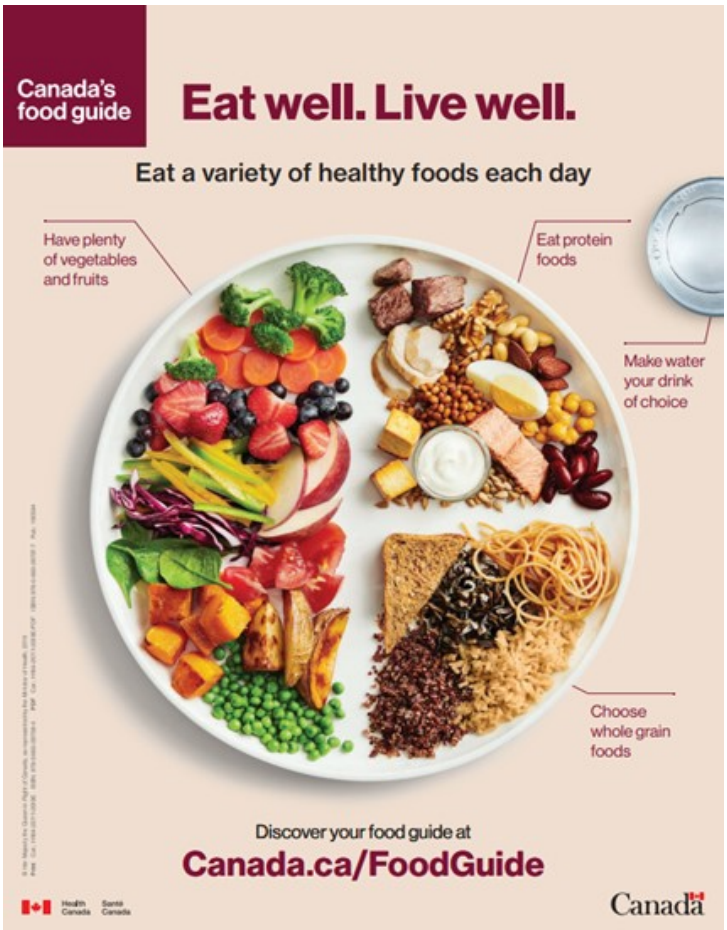
### Where Can I Learn More?

- Canada's Dietary Guidelines for Health Professionals and Policy Makers – this report explores each of the dietary guidelines in depth and integrates these with key findings and sources from the literature.
- Overview of the revision process – provides a succinct review of the process and includes links to the summary reports from the consultations, the Evidence Review for Dietary Guidance 2015 and Food, Nutrients and Health: Interim Evidence Update 2018.

[1] Statistics Canada (2017). Health Fact Sheets: Fruit and vegetable consumption, 2015. Accessed on February 20, 2019, at https://www150.statcan.gc.ca/n1/pub/82-625-x/2017001/article/14764-eng.htm .

**Submitted by:** Flo Sheppard, Chief Population Health Dietitian

Dr. Jong Kim, Northeast Medical Health Officer




# Antimicrobials - Handle with Care

## Azithromycin Duration for CAP - *Keep it Short!*

Azithromycin is a macrolide antibiotic often **added** to the empiric treatment regimen for community-acquired pneumonia (CAP) in patients with comorbidities present and/or requiring hospital admission. This is to cover atypical bacteria including *Mycoplasma pneumoniae*, *Chlamydophila pneumoniae*, and *Legionella* which may be more prevalent in this patient population (and are not covered by standard empiric treatment options such as amoxicillin, ampicillin, amoxicillin/clavulanate, and cefuroxime). Only treatment of *Legionella* is shown to be of clinical benefit, as the other atypical organisms generally cause self-limiting illness. Patients with *Legionella* pneumonia usually require treatment in the intensive care unit (ICU).

Azithromycin is **not recommended** as monotherapy due to increasing resistance from the most common (typical) bacterial pathogen causing CAP: *Streptococcus pneumoniae* (79% susceptibility in Northern Health as per the 2019 antibiogram).

Azithromycin comes with the convenience of once daily dosing for CAP (due to its long half-life):

- Azithromycin 500 mg PO/IV once daily x **3 days** ***OR***
- Azithromycin 500 mg PO/IV x **1 day**, then 250 mg PO/IV x **4 days**

****Treatment for *Legionella* is the only CAP indication for prolonged azithromycin (500 mg PO/IV once daily x 5-day duration; usually in ICU).**

Because of its long tissue half-life, the usual regimen of **three days of 500 mg azithromycin dosing** results in an exposure of approximately 10 days. Continuing longer than the standard duration could contribute to resistance, as well as increased risk of adverse effects such as GI upset, nausea/vomiting, diarrhea, QTc prolongation, and *Clostridium difficile* infection. Prolonged treatment also adds unnecessary costs to the health care system. Further cost savings can be achieved by restricting IV administration of azithromycin to patients who have a contraindication to oral therapy (i.e. unconscious with no OG/NG available, NPO status, unable to tolerate and absorb oral medications, severe/persistent nausea/vomiting/diarrhea), in addition to eliminating risks associated with IV access.

See the AMS program's Empiric Treatment Guidelines for further information on treatment of CAP, as well as the NH order set for Adult Community Acquired Pneumonia Management.

***NEW*** please check out the AMS program's second set of education modules on the Learning Hub: Pneumonia. Searchable under **NHA – AMS – Pneumonia**. The course consists of 3 modules, each taking approximately 20 to 30 minutes to complete with a short quiz at the end of each module. There is an opportunity to provide feedback at the end of each module as well.

**References:**

1. Azithromycin product monograph, Lexicomp online, Accessed January 2019.
2. Community-acquired pneumonia (CAP), ASP Handbook – Fraser Health Authority, August 2017.
3. Jensen, B & Regier, L, Community acquired pneumonia: empiric antibiotic selection (adult), RxFiles, March 2017.

For additional resources/information related to antimicrobial stewardship practices in Northern Health please visit the NH Physicians website or the AMS website on OurNH.

Submitted by: Ryan Doerksen, Interim Antimicrobial Stewardship Program Coordinator

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## Partners in Wellness
**Public Health Newsletter for Northern Health Physicians**
*Volume 15. Number 4. May 2019 • Page 1 of 2*


## Influenza Update

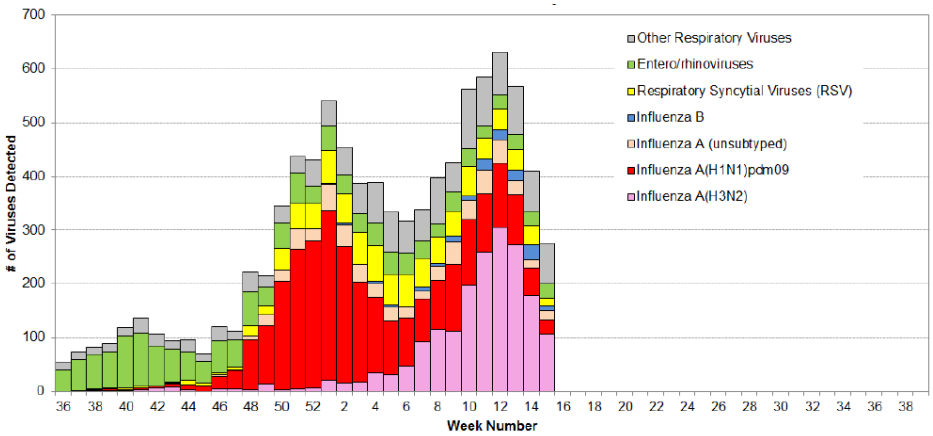
Most surveillance indicators suggest that the late-season wave of influenza A (H3N2) is subsiding, although influenza activity remains elevated above historical averages for this time of the year.

Among influenza viruses typed since week 40, virtually all have been influenza A. Influenza A(H1N1)pdm09 viruses predominated from October to mid-February, and have accounted for just over 60% of subtyped A viruses since season start. However, since week 7, A(H3N2) viruses have comprised a greater share of influenza A detections, accounting for 80% of subtyped A viruses in week 15.

Two laboratory-confirmed long-term care facility (LTCF) outbreaks of influenza A(H3N2) were reported in week 15, a decrease from week 14 (n=7) and in comparison to the peak number observed in weeks 10 and 12 (n=11).

Updated vaccine effectiveness (VE) estimates from the Canadian Sentinel Practitioner Surveillance Network (SPSN) suggest the 2018-19 northern hemisphere influenza vaccine has provided little or no protection against A(H3N2) viruses, particularly among working-age adults. These findings reinforce the importance of adjunct protective measures while the A(H3N2) epidemic is ongoing.

Published last week in *Eurosurveillance*, SPSN investigators also report that children under 10 years of age were more affected during the primary 2018-19 influenza A(H1N1)pdm09 epidemic compared to prior seasonal epidemics in Canada. The full report, which explores the potential reasons for this surveillance signal, can be read here.




*Results are subject to change as more data become available, particularly for the most recent reporting weeks.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to April 17, 2019.

**Source:** BC Centre for Disease Control Influenza Surveillance Bulletin: Report No. 20, Week 15 April 7 to April 13, 2019

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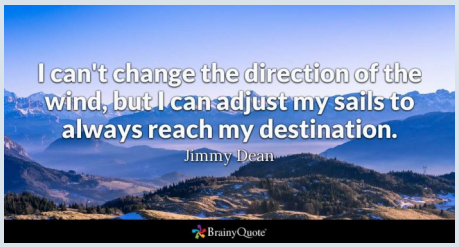


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# Measles Information

The intent of this memo is to clarify the current risk of measles faced by physicians and other health care workers (HCW) in NH, and priority actions recommended at this time.

**The overall risk of measles for people in Northern Health remains low.**
While it is possible that a traveler may import measles to the region, roughly 90% of people in BC are immune to measles. Any transmission is expected to be very limited.

**Groups at higher risk, who should be targeted for immunization in the short term, are as follows:**

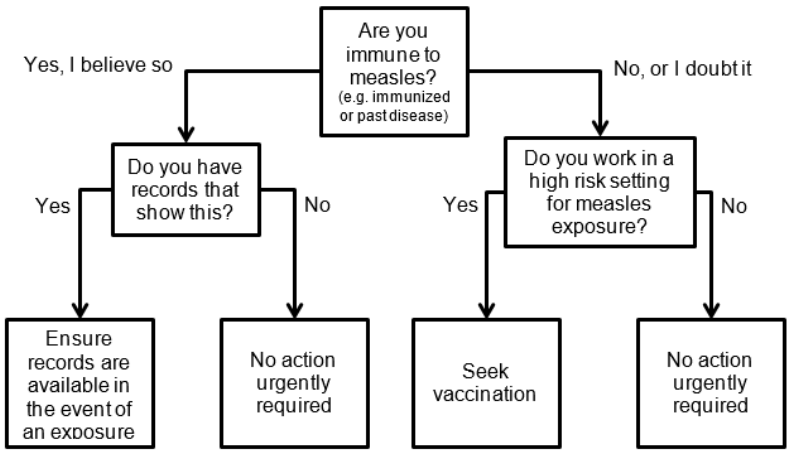
- Exposed susceptible contacts of measles cases (if any)
- Non-immune individuals planning travel to areas with active measles outbreaks
- Routine childhood immunizations at 12 months and 4-6 years
- K-12 students, in BC's school-age measles immunization catch-up campaign

**Most physicians and other health care workers (HCW) are not at high risk in the short term, and do not need urgent immunization.**

- A HCW who does not have access to their immunization records, but believes they have received all recommended vaccines, or has had measles, is likely immune and **does not need to be urgently re-immunized** at this time.
- In the rare event that a HCW is exposed to measles while airborne precautions are not in place, if no record of immunity is available, urgent serological testing will be requested. This will prove immunity in most cases, and exclusion from work will be unnecessary.
- Exposed HCWs will be considered **immune** if they were born before 1957, have had measles disease in the past, or have had one dose of measles vaccine. One dose provides 95% protection, and two doses provides 99% protection.
- Temporary exclusion from work is possible if a non-immune, unprotected HCW is exposed to measles. This is expected to be **very rare**.

**In the short term, HCW vaccination should be targeted towards those who have specific reason to believe they have received zero doses of measles vaccine and have never had measles disease, who work in a high risk setting (acute/urgent care) or have other special circumstances that place them at significant risk of unprotected measles exposure. Few HCWs in BC meet these criteria (likely <5%).**

Blood tests for measles immunity (serology) are not recommended, except in the event of a recent verified exposure.




**For further information**

- The latest provincial measles updates (BCCDC)
- NH's measles information page on ourNH (NH intranet)
- Workplace Health and Safety measles fact sheet for staff (NH intranet)
- Tips for locating immunization records (immunizeBC.ca)

**Relevant guidelines**

- BC guideline on measles control (BCCDC)
- BC guideline for use of measles vaccine (BCCDC)
- BC guideline regarding measles exposure among health care workers (PICNet)

Submitted by: Andrew Gray, Northern Interior Medical Health Officer

# New Infant Formula Resource

Perinatal Services BC (PSBC) and the Ministry of Health have released a new resource entitled Infant Formula: What You Need to Know. This resource was adapted from an Ontario resource with the same name. A PSBC webpage provides additional information and related resources: Infant Formula Resource.

**Content**

- This resource addresses a significant need, as there is little detailed information on formula use in other provincial parent resources, such as Baby's Best Chance.
- This comprehensive booklet includes unbiased information and best practices about safe preparation, transportation, and storage of infant formula, as well as responsive, cue-based feeding.
- Its content aligns with the recommendations in *Chapter 2: Human Milk Substitutes* of the Northern Health (NH) Infant-Toddler Nutrition Guidelines for Health Professionals.

**Alignment with the Baby-Friendly Initiative**

- This resource aligns with the principles of Baby-Friendly Initiative (BFI), which supports all mothers, families, and caregivers to effectively feed their infants.
- NH has a Perinatal Program goal to support implementation of the BFI Ten Steps and WHO Code Outcome Indicators, as outlined in the NH Clinical Practice Standard Baby-Friendly Initiative (BFI): Protect, Promote, and Support Breastfeeding.
- BFI protects, promotes, and supports breastfeeding, and also supports individual families regarding the safe preparation and responsive use of human milk substitutes.
- Provincial work is underway to develop additional health professional resources to support informed/shared decision making regarding infant feeding.

**Intended Use**

- To avoid violations of BFI and to prevent unintended harm to families, it is important that this resource is used as intended.
- This resource is intended to support **one-on-one conversations** between health care providers and families with healthy, term infants who have made an informed decision to use infant formula.
- This booklet should be provided in its entirety - single pages should not be photocopied.
- **This resource is not for all families. As such, care should be taken that it is not put on public display; not used in group settings; and not added to standard prenatal or postpartum information packages.**

**Access**

- This booklet can be accessed electronically via the PSBC website: Infant formula resource.
- The province has provided a limited number of print copies to NH, which have been distributed to primary and community care teams and maternity care facilities.
- Additional print copies can be ordered from NH Document Source (order # 21101).

**Suggested Actions**

**With your patients:**

NH staff and physician partners are encouraged to use the Infant Formula: What You Need to Know booklet as the standard resource to support families who have made an informed decision to use infant formula.

- After having a supportive conversation with individual families, and ensuring their questions are answered, provide the family with a hardcopy of the booklet.
- Depending on the family, these conversations might happen in the prenatal period, or at any point in the infant's first year of life.

**In your clinic:**

Consider replacing any older educational resources in your office, related to infant formula, with this new PSBC booklet. This resource complements other existing resources that support families to safely and effectively feed their infants, including:

- HealthLink BC resources (short 1-2 page resources):
  Breastfeeding (BC Health File #70)
  - Feeding Your Baby Formula: Before You Start (BC Health File #69a)
  - Feeding Your Baby Formula: Safely Making and Storing Formula (BC Health File #69b)
- Baby's Best Chance – available at local health units or online
- Toddler's First Steps – available at local health units or online

**For More Information**

If you have any questions, please contact either:

- Vanessa Salmons, Executive Lead, Perinatal Program, at Vanessa.Salmons@northernhealth.ca
- Lise Luppens, Population Health Dietitian; Regional Lead, Early Years Nutrition at Lise.Luppens@northernhealth.ca.

Submitted by:
- Dr. Kim Jong, Northeast Medical Health Officer
- Vanessa Salmons, Executive Lead, Perinatal Program
- Lise Luppens, Population Health Dietitian, Regional Lead, Early Years Nutrition

# AMS Topic of the Month-Managing Uncomplicated skin and soft tissue infections-Preventing Hospital Admissions

Skin and soft tissue infections are a common reason for physician office and emergency department visits. Depending on the severity at presentation initiation of oral therapy may not be desirable and a few days of intravenous therapy prior to conversion to oral therapy may be required. In attempts to reduce the number of admissions, physicians often turn to outpatient administration of IV antimicrobials.

Previous practices in NH for outpatient IV management of uncomplicated skin and soft tissue infections (uSSTI) relied on the use of cefazolin plus oral probenecid. In 2011, probenecid was removed from the Canadian Market. At that time, ceftriaxone replaced cefazolin plus probenecid in the outpatient setting for uSSTI. This is not an ideal practice because ceftriaxone has suboptimal activity against S. aureus, has a higher risk for developing *C. difficile* infection and provides unnecessary gram negative coverage promoting antimicrobial resistance.

Probenecid (a uricosuric agent that inhibits kidney tubular secretion of cefazolin) given orally prior to a once daily dose of cefazolin 2g IV has been shown to increase serum concentrations and extend the half-life of cefazolin in a manner that achieves clinical resolution of cellulitis and related soft tissue infections compared to treatment with ceftriaxone 2g IV daily. Prescribing cefazolin 2g IV q24h plus probenecid 1g PO daily **(given 10 to 30 min prior to cefazolin)** in outpatient treatment settings for uSSTI will minimize use of ceftriaxone for uSSTI in outpatient treatment settings. However there will still be situations that warrant use of ceftriaxone in the outpatient setting (e.g. complicated infections such as: bone and joint infection, endocarditis, moderate/severe diabetic foot ulcers and animal bites)

NH is now able to obtain a compounded product through a Canadian manufacturer in Quebec. These capsules are not available via community pharmacies (manufacturer will only sell to hospital pharmacies), therefore NH facilities are required to provide patients with this oral medication daily (when patient returns for cefazolin dose).

Probenecid is contraindicated in patients with renal dysfunction and should not be used in patients with a creatinine clearance (CrCl) of less than 30 mL/min. Patients with CrCl of less than 30 mL/min could be treated with cefazolin at a reduced frequency (see below).

| Creatinine Clearance (mL/min) | Cefazolin dosing |
|---|---|
| 10 – 30 | Cefazolin 2 g IV q 12h (no probenecid) |
| Less than 10 | Cefazolin 2g IV q 24h (no probenecid) |
| Hemodialysis | Cefazolin 2 g IV after dialysis 3 x/week (no probenecid) |

**Points for practice**
Use of cefazolin + probenecid for uSSTI allows sparing of ceftriaxone for more complicated infections and allows for convenient daily dosing for outpatients
Assess response to initial antibiotic therapy at 3 days and consider conversion to oral therapy if appropriate
Keep in mind that an increased redness/extension of cellulitis may occur after initiation of antibiotic therapy (due to release of toxins from bacteria) therefore NOT a reliable marker of clinical status if otherwise improving

See NH's IV Antimicrobial Therapy for Outpatients and Home IV order set.

**Other topic: Pneumonia**
Are you looking for some online learning about pneumonia? Northern Health's AMS program has created a new course on the learning hub, consisting of 3 separate modules (a. community-acquired pneumonia, b. hospital-acquired and ventilator-associated pneumonia and c. aspiration pneumonia). Once logged into the learning hub search for course title: NHA - AMS - Pneumonia. Each module will take approx. 20 to 30 minutes and includes a quiz and simple evaluation for future improvements. Your feedback will be reviewed!

Visit the NH Antimicrobial Stewardship program's pages on the NH physicians' website or OurNH for links to AMS information and resources.

Submitted by: Ryan Doerksen, Interim Antimicrobial Stewardship Program Coordinator

# Northern Health Physicians
## Partners in Wellness

*Public Health Newsletter for Northern Health Physicians*

*Volume 15. Number 5 June 2019 • Page 1 of 4*


## Wildfire Smoke and Health

Wildfire season has already started in BC; as you know, wildfires can have significant impacts to Northern communities. Experts predict that climate change will continue to worsen their frequency and intensity. As another hot season approaches, it is important to prepare your patients ahead of time so they can stay healthy during this season.

Exposure to wildfire smoke can have many effects including inflammation and increased oxidative stress. As such, it is known that common conditions likes asthma, COPD, heart disease, and diabetes can be acutely affected by the smoke from wildfires. Physicians can take steps to help patients through smoky times:

**Asthma and COPD**

- Ensure all patients have access to up-to-date medications such as rescue inhalers.
- Counsel patients to ensure they know the importance of always having their medications easily accessible and that symptoms may be worse or more easily triggered during forest fire season.
- If patients use an asthma action plan, encourage them to follow it and to be aware that they may find themselves in the yellow or red zones more frequently with exposure to wildfire smoke

**People who use tobacco**

- People who smoke or vape may experience shortness of breath during wildfire season fire season and smoky conditions. Encouraging smoking cessation or reduction during wildfire season which can help reduce symptoms.

**Heart Disease**

- Levels of cardiovascular and cerebrovascular events have been found to increase during times of forest fire smoke exposure. Before and during forest fire season, follow guidelines regarding hypertension and hypercholesterolemia management to reduce risk.
- There has also been a link between air pollution and arrhythmias; patients with risk factors for arrhythmias should be counselled on symptoms associated with arrhythmias and when to go to the emergency department

**Diabetes**

- Emerging evidence is showing that hypoglycemic episodes are more frequent with exposure to particulate matter in the air. Encourage diabetic patients to more closely monitor glucose levels and have fast sugars readily available. Try to control glucose levels and achieve an optimal A1C level prior to especially stressful times such as wildfire season

**Pregnant women**

- Current research suggests that exposure to wildfire smoke while pregnant may lead to pre-term birth or low birth weight. Pregnant women should be advised to reduce their exposure to wildfire smoke.

*Continued on page 2*

## Inside this Issue:

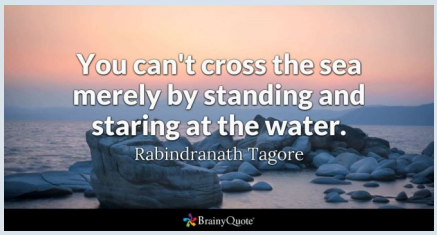

Wildfire Smoke and Health ------*pp.1-2*

Measles immunization catch up campaign ----------*pp.2-3*

Bed Bugs ----------*p.3*

AMS Topic of the Month: C Diff. infection management----------*p. 4*


### Notable Quotable:

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*After hours calls to UHNBC Switchboard 250-565-2000 and ask for the MHO on-call*

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**Mental Health**

- Wildfires can have detrimental effects on mental health. Staying indoors can be isolating - encourage patients to prepare indoor activities in advance and to use poor air quality times as an opportunity to spend time with others indoors.
- Consider proactively sharing counselling resources with patients prior to or during a forest fire. The Canadian Mental Health Association and Coping through a natural disaster emergency both provide resources to help foster positive mental health during emergencies.

**Reducing symptoms from Wildfire Smoke**

Physicians can also advise patients on steps they can take to further reduce symptoms during wildfires. Preparing for this can help people cope with the smoke for longer periods of time.

Reducing exposure to smoky air is our best defense. This can be done in many ways:

- Reducing or avoiding time spent outdoors
- Reducing the amount, intensity or frequency of exercise outdoors or consider exercising indoors
- Spend time indoors ideally in a well-ventilated area (home with air conditioning, mall, movie theatre, library, etc.)
- Advise that purchasing a portable air cleaner is an important way to help reduce symptoms; the portable air cleaner should be one that uses high-efficiency particulate air (HEPA) filtration. Portable air cleaners can help everyone but are particularly important for those with chronic diseases and pregnant women.

**Masks**

N95 masks can be helpful in reducing particulate matter exposure; however, ensuring proper fit is very important. Surgical masks are not recommended and they can provide a false sense of security.

**Air Quality Information**

Air Quality Advisories are issued when pollutant concentrations approach or exceed limits, or when degraded-air-quality episodes are expected to worsen. These advisories provide information, help people make decisions about reducing exposure, affect emission reduction actions, and provide health advice.

Smokey Skies Bulletins are issued when areas of the province are being impacted or have reasonable potential to be impacted by wildfire smoke within 24-48 hours.

The Air Quality Health Index provides hourly air quality readings and related health messages. These are great resources to check before heading off to work or play; however, advisories and the AQHI are not available in all northern communities.

**Resources:**

**Staying Healthy in the Heat**

Wildfire smoke and heat events often coincide. HealthLinkBC provides excellent information for patients about mitigating the effects of extreme heat.

**Wildfires and Your Health**

This HealthLinkBC website contains a variety of resources from trusted sources on topics such as emergency preparedness, what to do during a wildfire, and what to do during an evacuation.

**BCCDC Wildfire Smoke Response Planning**

The Wildfire Smoke Response Planning website provides a collection of guidance related to best practices for health and wildfire smoke planning, including evidence reviews regarding clean air shelters and evacuations.

**Wildfire Smoke Prediction System**

From April to October, Firework issues twice daily air quality predictions that indicate how smoke from wildfires is expected to move across the country over the next 48 hours.

Submitted by:
Dr. Rakel Kling, Northwest Medical Health Officer
Alexis Sharp, Medical Student

## Measles immunization catch-up campaign for school-aged children

All health authorities in BC are currently conducting a voluntary measles immunization catch-up campaign for school-age children.

This may involve additional immunization clinics in schools, special immunization clinics in other public settings, or simply additional clinics at Health Units, depending on the community. Primary and Community Care teams are in contact with local schools. Information and consent forms have been distributed to families. Children who attend home school can be immunized at a Health Unit.

This memo is intended to enable you to answer your patients' questions about this campaign, the current risk of measles, the need for measles vaccine, or the safety and effectiveness of the measles vaccine. Thank you for your assistance in promoting immunization among your patients.

**Campaign details**: Public information on this campaign, including clinic dates and locations, is available at https://www.northernhealth.ca/health-topics/measles.

**Current risk level**: The risk of measles for people in Northern Health remains low. In the event that a traveler imports measles to the region, any transmission is expected to be very limited, since roughly 90% of people in BC are immune to measles.

*Continued on page 3*

*Continued from page 2*

**Assessing immunity**: If immunization records are not available, and there is not a convincing history of measles immunization or disease, immunization is recommended. Serological testing is not recommended, except in the event of a recent verified exposure, to determine the need for exclusion.

**Do not test for measles symptoms post-MMR vaccination with no other exposure:** In <10% of MMR vaccine recipients, the live attenuated viruses in the vaccine can cause viral symptoms (fever, rash, parotitis, malaise, lymphadenopathy, arthralgia, cough, conjunctivitis) starting 5–30 days following the vaccine, and lasting up to 3 days. If a patient presents with these symptoms within 5–30 days of receiving MMR vaccine, and does not have a known exposure or recent travel history, testing for measles, mumps, or rubella infection is not recommended.

**Communicating with vaccine-hesitant families**: Principles of effective communication, and responses to common concerns about vaccine safety, are provided in Part 1 of the Canadian Immunization Guide, at https://www.canada.ca/en/public-health/services/publications/healthy-living/canadian-immunization-guide-part-1-key-immunization-information/page-5-communicating-effectively-immunization.html.

**For further information**:

- Current measles situation in BC (BCCDC)
- BC guideline on measles control (BCCDC)
- BC guideline for use of measles vaccine (BCCDC)
- Tips for locating immunization records (ImmunizeBC.ca)

Submitted by:
Dr. Andrew Gray, Northern Interior Medical Health Officer

## Bed Bugs

Physicians might be seeing bed bug bites more often than they realize. With stigma and denial attached to bed bug issues, it is often overlooked missing the opportunity to identify and address the issue.

Unfortunately, many people deny they have an infestation thinking that having them in your home is a sign of dirtiness. Bed bugs live solely on blood, add that bed bugs are not effectively removed by household pesticides and require proper intervention, and you have a recipe for this pest to prosper. Over the years these persistent creatures have made a steady recovery. They are now more common than head lice and body lice put together. They cross all social lines and have even been seen in some of Canada's best hotels. This means they are in homes throughout North America. Unlike most other biting insects, the bed bug does not have a season and remain active as long as they have a food source.

### Bed bug, Risk and Stigma

Bed bugs are small, oval, brownish insects that live on the blood of animals or humans. Adult bed bugs have flat bodies about the size of an apple seed. After feeding, however, their bodies swell and are a reddish color.

There is no evidence that bed bugs spread disease to people. Bites can be so itchy they cause people to break the skin while scratching, this can increase risk of infection which is when patients tend to seek medical advice. Bites can also cause an allergic reaction in some people. The most serious problem with bed bugs is the negative stigma and the psychosocial stress that can manifest.

### Signs and What to Do

The first sign of bed bugs may be red, itchy bites on the skin, usually on the arms or shoulders. Bed bugs tend to leave straight rows of bites close to each other, unlike some other insects that leave bites here and there. A picture is attached below:

When you see a patient with possible bed bug bites, talk with the patient and explain there could be an infestation of bed bugs in their home. The patient might deny the infestation but they can still be directed to inspect their home and take needed measures.

Bed bugs do not have nests like ants or bees, but tend to live in groups in hiding places. Their initial hiding places are typically in mattresses, box springs, bed frames, and headboards where they have easy access to people so they may bite in the night. Over time, they may scatter through the bedroom, moving into any crevice or protected location, they may also spread to nearby rooms or apartments. Patients should inspect these places for signs of bed bugs.

The first choice to treat a bed bug infestation should be to get help of the professionals such as pest control companies. There are non-chemical options (ie. sticky traps, mattress covers, heating/hot stream, vacuum, etc.) and chemical options (various aerosol sprays, liquids and dust products, non-professional household insecticides are less effective) available. Often, getting rid of bed bug requires combining multiple means.

**More Information:**

- Healthlink page: https://www.healthlinkbc.ca/healthlinkbc-files/bed-bugs
- 'Bed bug Apocalypse' Documentary on bed bug issue, from Animal Planet: https://www.youtube.com/watch?v=PSlNeOwvegs
- 'Bite Me: the Bed Bug Invasion' CBC documentary on the bud bug issue, including how to get rid of them: https://www.cbc.ca/doczone/episodes/bite-me-the-bed-bug-invasion

Submitted by:
Dr. Jong Kim, Northeast Medical Health Officer
Brian Steeves, Environmental Health Officer

# AMS Topic of the Month: C. diff Infection Management

*Clostridioides* (formerly *Clostridium*) *difficile* infections (CDI) remain the primary cause of healthcare associated diarrhea and are a major and often preventable threat to patient safety. A retrospective chart review of CDI risk factors and management at UHNBC found the compliance rate with provincial and national standards for CDI management during the study period of April 2010 to March 2016 to be low at only 32% (see OurNH for full study manuscript). Based on the results of this study, a NH CDI order set is in the works to assist prescribers with appropriate management of CDI.

While some antibiotics appear to have a higher risk of CDI (i.e. fluoroquinolones, cephalosporins, carbapenems, clindamycin), all antibiotics are associated with CDI risk and CDI can result from just **one dose** of an antibiotic. The highest risk of CDI is during and within 4 weeks of completing antibiotic treatment; however, risk continues up to 12 weeks after completing antibiotic treatment.

Metronidazole has been a mainstay of CDI treatment for mild/moderate cases; however, in 2018 the Association of Medical Microbiologists and Infectious Diseases Canada (AMMI) and the Infectious Disease Society of America (IDSA) published new guidelines for CDI that no longer include metronidazole as a first line option. These guidelines now support the use of oral vancomycin for all severities and episodes of CDI. The NH AMS program, including Dr. Hamour, would like to remind prescribers that these new guidelines are based on resistance patterns found primarily in the USA (virulent strains) and that in Canada we continue to have successful treatment with oral metronidazole for non-severe CDI. The NH order set will encourage the use of oral metronidazole for 1st episode non-severe CDI, reserving oral vancomycin for all severe cases, mild cases with no improvement by day 4 on metronidazole and all recurrent episodes. At this time fidaxomicin (2nd line after oral vancomycin) is a non-formulary medication in BC and is a highly cost prohibitive agent.

Other important considerations for CDI management include:

- Discontinuing unnecessary/inciting antibiotics asap
  - **Consult infectious disease if concurrent antibiotics are necessary**
- Discontinue antidiarrheals stat (loperamide, diphenoxylate-atropine etc.)
- Discontinue laxatives and promotility agents (metoclopramide, domperidone)
- Discontinue acid suppressing agents unless absolutely necessary (PPIs, H2RAs)
  - Stomach acid suppression may be associated with a 2-3 fold increased CDI risk
  - Acid suppression should be reassessed regularly and discontinued unless there is an indication for long term use (i.e. Barrett's esophagus, severe esophagitis, GI bleed). See deprescribing.org for PPI deprescribing guidelines and algorithm.
- Treat for at least 10 days (consider extending to 14 days if symptoms unresolved by day 10)
- Do not repeat stool testing for *C. difficile* if positive within the last 30 days
  - *C. difficile* may continue to shed in stool for several weeks after treatment
- Probiotics are not recommended as adjunctive treatment or prevention of recurrent CDI as evidence is unclear (potential for bacteremia/fungemia in immunocompromised patients)

See Bugs&Drugs website for more info: bugsanddrugs.org

You can access resources created and or provided by the AMS program by visiting the NH physician's website or OurNH or by contacting the AMS program coordinator at 250-565-5956.

Submitted by: Ryan Doerksen, Interim Antimicrobial Stewardship Coordinator

# Northern Health Physicians
## Partners in Wellness

*Public Health Newsletter for Northern Health Physicians*

*Volume 15. Number 6 July 2019 • Page 1 of 4*


## 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 scratched 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.

*Continued on page 2*

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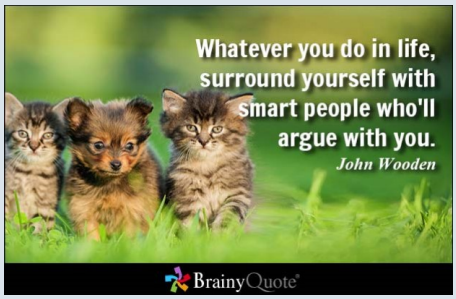
Summer Exposures:
Animal Bites——————*pp.1-2*
Tick Bites——————*-pp.2-3*
Drinking Water in the Wilderness *-p.3*

AMS Topic of the Month: Helicobacter Pylori Treatment in NH——————*p. 4*


### Notable Quotable:

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***After hours calls to UHNBC Switchboard 250-565-2000 and ask for the MHO on-call***

*Continued on page 2*

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*Continued from page 1*

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 sensitivi-

*Continued on page 3*

*Continued from page 2*

- **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 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.

**Source:**
**Dr. Raina Fumerton,** Medical Health Officer
**Dr. Eleni Galanis,** Public Health Physician
**Dr. Erin Fraser,** Public Health Veterinarian
**Dr. Muhammed Morshed,** Clinical Microbiologist

# AMS Topic of the Month: Helicobacter Pylori Treatment in NH

Guidelines now recommend quadruple therapy regimens over clarithromycin triple therapy (proton pump inhibitor + clarithromycin + either amoxicillin or metronidazole) for first-line treatment of *H pylori* infection due to increasing rates of resistance with clarithromycin.[1,2,3]

The recommendation in the guidelines around clarithromycin triple therapy is to restrict this regimen to geographical areas with known or expected low clarithromycin resistance rates (less than 15%) or proven high local eradication rates (greater than 85%), and only to be used in patients with no recent history of macrolide antibiotic exposure.[1,2,3] *H pylori* resistance data and eradication rates are difficult to obtain as culture and susceptibility testing is not typically performed (not done routinely anywhere in BC). It is also important to note that guidelines are often based on resistance data from the US and/or other geographical areas which may not be reflective of our local resistance rates.

**Antimicrobial Stewardship Recommendations:**

From an antimicrobial stewardship perspective, a triple therapy regimen is preferred due to easier compliance (less pills to take), as well as less potential for adverse effects and potential lower costs associated with only having to take three medications rather than four.

Due to reports of continued clinical success with clarithromycin triple therapy in NH, the NH Antimicrobial Stewardship program under the medical leadership of Dr. Abu Hamour endorses **clarithromycin triple therapy for 14 days** as a first line option for treatment of *H pylori* in NH patients without a contraindication (i.e. allergy, intolerance, recent macrolide antibiotic exposure, significant drug interactions).

If quadruple therapy is preferred, we recommend using the regimen of **proton pump inhibitor + bismuth + metronidazole + tetracycline** as this regimen has been shown to have good eradication rates in the literature while still limiting antibiotic exposure to just two agents.[1,2,3]

The importance of **completing the full 14 days of treatment** needs to be stressed to the patient even if symptoms resolve prior to treatment completion, and other important aspects of eradication such as smoking cessation should be encouraged as well.

You can access resources created and or provided by the AMS program by visiting the NH physicians' website or OurNH or by contacting the AMS program coordinator at 250-565-5956.

**References:**

1. Chey, W D et al. ACG Clinical Guideline: Treatment of *Helicobacter pylori* Infection. Am J Gastroenterol 2017; 112:212-238.

2. Fallone, C A et al. The Toronto Consensus for the Treatment of *Helicobacter pylori* Infection in Adults. Gastroenterology 2016; 151:51-69.

3. Clinical Resource, *Helicobacter pylori*: From Diagnosis to Eradication. Pharmacist's Letter/Prescriber's Letter. March 2017.

Submitted by: Ryan Doerksen, Interim Antimicrobial Stewardship Coordinator

# Not just a prescription pad: A multimodal approach to chronic pain management

Interested in learning more about best practices in treatment of non-cancer pain?

WorkSafe BC is hosting accredited events throughout B.C. The learning objectives of this session are designed to help you:

- Incorporate the College's Standards for the safe prescribing of opioids into clinical practice
- Apply key principles for tapering of opioids and initiating substitution and exit strategies
- List risks and benefits of non-opioid treatment modalities for chronic non cancer pain and gain confidence in recommending them
- Identify community and regional resources and supports, including WorkSafeBC programs
- Develop confidence in engaging patients in the difficult conversations related to tapering opioids, exiting opioids, and/or refusing to prescribe opioids
- Screen and identify coexisting substance use disorder, mood disorder, and sleep disturbances.

**Dates**

Terrace– July 2019
Haida Gwaii– September 2019
Vernon-Salmon Arm-September 2019
Cranbrook-October 2019
Kelowna– October 2019
Vancouver-November 2019

Register online through https://events.eply.com/NotJustaPrescriptionPad

# NH Physicians, Partners in Wellness

Vol.15, No.7 – September 2019

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**After hours calls to UHNBC Switchboard**

- 250-565-2000
- Press 7
- Ask for the MHO on-call

## Vaccination Status Reporting Regulation

The Vaccination Status Reporting Regulation came into effect July 1, 2019 in BC. With the implementation of this new regulation, school-aged children's vaccination records will be collected and reviewed, and physicians and public health officials will be given an opportunity to connect with families that may be under immunized or unimmunized. This increases public health's ability to respond during an outbreak, as it allows health officials to quickly identify those who are under immunized and unimmunized.

Parents may request that their child's physician provide the immunization record of vaccines they gave to their child. As noted in the August 1st Doctors of BC communication, this is not an MSP funded service. Although physicians are free to charge parents a reasonable cost, Doctors of BC encourages physicians to recognize that not providing the record may be a barrier to school attendance. For more information on this policy, please see the Immunize BC or the HealthLink BC website.

**Medical exemptions to vaccines:**

As part of the Vaccination Status Reporting Regulation, parents may also request vaccine exemptions for their children. Physicians must know that **there are very few true contraindications to receiving publically funded vaccines** and should only attest for valid medical exemptions. Circumstances that may warrant a medical exemption for the MMR vaccine include:

- Severe allergic reaction (anaphylaxis) after a previous dose or to a vaccine component
- Known severe immunodeficiency (e.g. primary or secondary immunodeficiency, hematologic and solid tumors, chemotherapy, long-term immunosuppressive therapy, HIV infection with severe immunocompromised)
- Active, untreated tuberculosis
- Pregnancy
- Family history of congenital or hereditary immunodeficiency

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## Vaccination Status Reporting Regulation continued

Additional details and precautions for individual vaccines can be found in the Canadian Immunization Guide, or consult your local Medical Health Officer with questions about medical exemptions.

Common parental concerns that do NOT warrant a medical exemption:

- Fear of potential adverse consequences (e.g. autism).
- Siblings who have experienced adverse events.
- Family history of adverse event in association with an immunization.

If there are no contraindications, physicians should advocate that it is in the child's best interest to receive the vaccine.

While it can be hard navigating conversations about vaccine hesitancy, the "ASK" approach is one way to effectively facilitate the conversation:

- **A**cknowledging parental concerns.
- **S**teering the conversation.
- **K**nowing the facts so that questions can be answered confidently with evidence.

While not every style of communication works for every parent or physician, additional methods that have worked to reassure parents include:

- Listening and acknowledging parental concerns in a non-confrontational manner.
- Providing important information and check understanding.
- Clarifying misbeliefs and reaffirm correct beliefs.
- Discussing the benefits of vaccines and the possibility of adverse events. Be open about what is known and what is not.

If the family continues to refuse consent for vaccination, document the discussion and prompt them that the topic of vaccination at each subsequent visit will be revisited. Ensure to provide accurate resources so that the family can review them privately.

For more information on addressing vaccine hesitancy, see the recent Canadian Family Physician article.

## Important Information on Ebola Virus Disease

On July 17, 2019, the World Health Organization declared a **Public Health Emergency of International Concern regarding the Ebola outbreak in the Democratic Republic of the Congo (DRC).** This letter is to ensure regional health authorities and emergency departments are aware that Ebola remains a threat globally and we must be prepared to safely evaluate and care for someone who might have been exposed.

A protocol has been established in BC for all physicians to **immediately notify their local Medical Health Officer (MHO) if they suspect EVD in any patient**. Note that at this time **the risk is limited to those who have travelled to the DRC**. If the patient is in a hospital, the hospital infection control/medical microbiologist should also be immediately contacted. While a risk assessment is being discussed with the

MHO, the patient should be placed in a single room with the door closed or in an isolation room if available. Physicians must not send a patient suspected of having EVD to a community laboratory. The BC Ambulance Service is prepared to transport patients to emergency departments. If the patient is able to travel by private vehicle, the emergency department must be notified ahead of time.

National and provincial guidance documents related to infection control, laboratory work-up, clinical guidance, public health management and notifications are posted on the BC Ministry of Health website.

Detailed protocols for primary care physicians: Primary care guideline for the management of people concerned about/potentially exposed to Ebola.

Detailed protocols for Emergency Departments: Emergency department Ebola virus disease (EVD) risk assessment algorithm.

Details on public health follow up and management of contacts including returning healthcare workers BC Ebola virus disease (EVD) contact investigation and management guideline.

Additional national documents can also be found on the Public Health Agency of Canada website.

**Ebola virus disease (EVD)**
Ebola virus disease is a severe disease that causes hemorrhagic fever in humans and animals. Diseases that cause viral hemorrhagic fevers, such as Ebola, are often fatal as they affect the body's vascular system and can lead to significant internal bleeding and organ failure.

Information on Ebola virus disease, including symptoms, prevention and treatment, is available at the BC Centre for Disease Control (BCCDC) and the Public Health Agency of Canada. The Ebola virus does not spread easily from person to person. It is spread through direct contact with infected bodily fluids, particularly blood, vomitus, and feces. It is not spread through casual contact. An infected individual is contagious only once symptoms appear. Other illnesses are much more prevalent in this region and should also be considered (e.g., Malaria). Ill patients require intensive supportive care and early treatment appears to improve survival significantly. For detailed information on the situation in Africa refer to the World Health Organization updates .

**There have not been any cases of Ebola in Canada and the risk to people in BC remains very low.** There are airport screening measures in place in all affected countries. It is possible, however, that a traveler may present to a physician's office or to the emergency department with fever and other symptoms of EVD within the 21-day incubation period.

The Office of the Provincial Health Officer, the BCCDC, and regional health authorities will continue to collaborate within BC and both nationally and internationally as the EVD situation evolves. It is expected to take many more months before the situation in DRC is controlled. Until that happens, the risk of importation of a case of EVD into BC remains a possibility, although remote. Physicians are encouraged to

remain vigilant and connect with their health authority leads and their local MHOs if they have any concerns.

## Antimicrobial Stewardship Topic of the Month: New Regional Order Sets

The Northern Health (NH) Antimicrobial Stewardship Program has developed **two new regional order sets for initial dosing of vancomycin and aminoglycosides for adult inpatients**.

These order sets can be used at all inpatient facilities in NH to assist with initial dosing and monitoring until a pharmacist is available. NH pharmacists will provide follow-up for ongoing maintenance dosing and monitoring following procedures outlined in NH clinical practice standard 1-20-6-1-100.

For sites without weekend and holiday pharmacist coverage, the UHNBC pharmacy can provide service through the dispensary (250-565-2317), or the pharmacist on call if required outside of the UHNBC pharmacy hours of operation.

The order sets include the following information:

**Initiation of Vancomycin for Adult Inpatients (Order Set 10-111-5335):**

- Dose banding table for loading dose and initial maintenance dose based on total body weight.
- Initial dosing interval based on estimated (calculated) creatinine clearance.
- Orders for initial labs for monitoring.

**Initiation of Aminoglycosides for Adult Inpatients (Order Set 10-111-5336):**

- Information on high-dose extended-interval dosing and conventional (multiple daily dose) dosing.
- Calculations for dosing based on patient weight (usually based on ideal body weight, but see order set for additional information on patients who are underweight or obese).
- Initial dosing interval based on estimated (calculated) creatinine clearance.
- Orders for initial labs for monitoring.

The order sets can be printed from Document Source and are also posted on the NH physicians website in the Antimicrobial Stewardship section.

## Interim guidelines for use of the rabies vaccine

Following the fatal case of rabies in B.C. on July 14th there has been a considerable increase in the provision of Rabies Post Exposure Prophylaxis (RPEP), which includes both rabies vaccine and rabies immunoglobulin, across the province. This had led to a province wide shortage of rabies immunoglobulin and especially rabies vaccine. The Provincial Health Officer (PHO) and the BC Centre for Disease Control (BCCDC) are asking for cooperation in following updated guidelines created to conserve both rabies vaccine and rabies immunoglobulin (RIG). Rabies immunoglobulin conserving guidelines

advise that any area of exposure or wound be infiltrated, and **that no additional RIG be given via the IM route** as this has been shown to be of limited effectiveness.

Now that Health Authorities have successfully implemented rabies immunoglobulin conserving guidelines the PHO and BCCDC are asking that Health Authorities (HA) implement new rabies vaccine conserving guidelines (attached), which advise for the **preferential use of intradermal rabies vaccine administration**. This will allow for fewer doses of vaccine to be used as well as less volume of vaccine, therefore multiple clients can receive vaccine from the same vial within 6 hours of opening it.

In order to most efficiently follow these guidelines and conserve vaccine, HA's are being asked to centralize the provision of RPEP in order to batch doses of vaccine together. At this time, central sites for the provision of RPEP will be the sites that RPEP is currently stored in – Prince George, Fort St. John, Dawson Creek, Terrace and Smithers. Further sites may be considered based on demand. This will require clients who live in other communities to travel to receive RPEP. Clients from remote communities will not be required to travel and the Medical Health Officer will review individual requests to not travel for RPEP.

We appreciate that these changes may be less convenient for patients; however, we need to manage vaccine supply efficiently to be able to continue the timely provision of RPEP when indicated. As before, please continue to consult with a Medical Health Officer before beginning an RPEP series.

For questions specific to the interim guidelines for the use of rabies vaccine, please consult your local Public Health Resource Nurse, the Northern Health CD HUB (250-565-2990) or Medical Health Officer. After hours and weekends, the MHO on call can be reached at 250-565-2000.

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# NH Physicians, Partners in Wellness

Vol.15, No.9 – November 2019

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**After hours calls to UHNBC Switchboard**

- 250-565-2000
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- Ask for the MHO on-call

## Breastfeeding: The Primary Care Provider's Role

Breastfeeding Week is celebrated in Canada annually from Oct 1-7. This is an opportunity to reflect on how to protect, promote, and support breastfeeding. This year's theme is: "Empower parents, enable breastfeeding."

**Why protect, promote, and support breastfeeding?**

For many reasons, breastfeeding and human milk are important for the health of babies, mothers, families, and populations. Encouragement and support from primary care providers influences the initiation and duration of breastfeeding.

Below are a few steps primary care providers can consider.

2. **Start a conversation.**

   The prenatal period is a key time to create space for discussions about infant feeding. Consider a simple opener: "Tell me about your plans for feeding your baby."

   This is an opportunity to:

   - explore your client's goals, concerns, and information needs,
   - provide information to support informed decision making about infant feeding, and
   - let her know that you are there to support her whatever her decision is.

   Continue to create space for these discussion in the post-partum period.

   Health professionals can build their skills and confidence in guiding conversations about infant feeding decisions with the help of this tool: Informed Decision Making: Having Meaningful Conversations Regarding Infant Feeding

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2. **Learn more.**

   Additional online education opportunities and tools include:

   - Latching On: How Family Physicians Can Support Breastfeeding Patients (1-hour module, UBC Faculty of Medicine)
   - Breastfeeding Essentials for Physicians (4-hour course, Step 2 Education)
   - Breastfeeding Protocols for Health Care Providers (Breastfeeding Resources Ontario)
   - But I Don't Do Maternity Care! Specialist Physician Management of the Breastfeeding Patient (15-minute module, UBC Faculty of Medicine)

3. **Refer when needed.**

   Women need prompt support to manage challenges that may arise when breastfeeding. In addition to the support you provide, what additional resources are available in your community?

   Resources may include other physicians, lactation consultants, primary care or maternity nurses, midwives, La Leche League leaders/groups, and others.

4. **Create breastfeeding-friendly spaces**.

   The right to breastfeed is a human right in BC. It is discriminatory to ask a mother to cover up or move elsewhere to breastfeed.

   Demonstrate a positive attitude to breastfeeding and welcome clients to breastfeed in waiting rooms and during consultations - any time, anywhere.

   Consider displaying one or more of the following:

   - Window decal – We welcome you to breastfeed any time, anywhere
   - Poster – We welcome you to breastfeed any time, anywhere

**Further reading:**

- BC Lifetime Prevention Schedule: Behavioural Counseling Interventions – Promotion of Breastfeeding (March 2018 update, pages 26-35)
- Position paper: Breastfeeding, Family Physicians Supporting (American Academy of Family Physicians)
- Series Papers - Breastfeeding (The Lancet)
  - Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect
  - Why invest, and what it will take to improve breastfeeding practices?

## Antimicrobial Stewardship topic of the month: IV versus PO antimicrobials

IV to PO antimicrobial conversion continues to be a focus area for antimicrobial stewardship (AMS). Timely conversion of antimicrobials from IV to PO maintains efficacy for many infections while preventing adverse effects associated with IV administration (i.e. line-related infections, IV-related mobility restrictions). In addition, it may provide the benefit of cost savings to the healthcare system (i.e. medication cost savings, nursing administration time,

and potentially shortened hospital stays).

When considering the oral route, it is important to evaluate the properties of potency and bioavailability. Bioavailability is the amount of drug that is absorbed into the body and available for biological effect after being taken by mouth. Potency refers to the bioavailability plus the amount of drug that the body is exposed to after administration of each dose (the area under the plasma drug concentration-time curve (AUC)).

Based on these properties, antimicrobials can be classified into three different categories:

1) **Equally potent IV and oral formulations:** fluoroquinolones (moxifloxacin, ciprofloxacin, levofloxacin), metronidazole, clindamycin, fluconazole
2) **Less potent oral formulations:** cefuroxime, cloxacillin, penicillin G
3) **No direct oral agent available:** ampicillin, ceftazidime, ceftriaxone, piperacillin-tazobactam

Making the switch from IV to PO when the oral agent is less potent than the IV, must be individualized based on the patient's clinical status (is the patient improving clinically?), ability to tolerate meds (are we able to use the gut?) and type of infection (do we have a bug with known sensitivity to an oral agent? Is the infection appropriate for oral management?). If the agent being used is an equally potent/high bioequivalent agent, the threshold for using the oral route is much lower in that the patient does not have to be showing signs of clinical improvement before the change is made, as long as all other parameters (i.e. gut and infection/pathogen) are met. Some infections should never be treated with oral agents (i.e. staphylococcus aureus bacteremia). For more information on the criteria to consider for oral conversion of antimicrobials, please refer to the NH Clinical Practice Standard 1-20-6-1-010.

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

## Medical Health Officer Contacts

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# NH Physicians, Partners in Wellness

Vol.15, No.10 – December 2019


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Immunization Campaign Quality Improvement Debrief……p.3-4


**After hours calls to UHNBC Switchboard**

- 250-565-2000
- Press 7
- Ask for the MHO on-call

## Lead in Drinking Water

As you may be aware, there has been recent National, Provincial, and local media coverage around lead in drinking water. As a result of increased awareness of this issue, you may see an increase in patients with concerns around lead exposure.

The overall exposure of children to lead from drinking water sources is likely to be low in Northern BC. However, coastal communities in particular tend to have corrosive water, and as such exposure may be occurring through people's home tap water if they have older pipes/pipe fixtures, due to leaching of lead from those fixtures. We hope that the following information might be useful to you in conversations with your patients.

**Questions Clinicians may be asked by their Patients**

**1. Is the drinking water in northern BC causing lead poisoning?**

No. Overall blood lead levels in children have gone down significantly and steadily over the past decades, owing to the removal of leaded indoor paint, and leaded gas in Canada. Canadian blood lead levels are among the lowest in the world. However, we know that there is no "safe" amount of lead, particularly for the high-risk groups of pregnant women and young children. As such, we always strive to reduce exposure to lead from all sources (including small amounts sometimes found in drinking water) to as low as reasonably achievable, wherever we can.

**2. What are the health effects of lead?**

Absorption of even very low levels of lead into the blood may have harmful health effects on the intellectual and behavioral development of infants and young children. This is why efforts are made to decrease all sources of lead exposure (including very low level exposures through drinking water), to as low as reasonably achievable.

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Children are at greater risk of ingesting lead due to their frequent hand-to-mouth activity, and normal tendency to mouth or chew objects they come into contact with (especially non-food products such as paint chips, furniture or toys). In B.C.. it is this type of exposure that tends to cause more significant elevations in blood lead levels in children (vs. drinking water). Blood lead levels in the range of 10 to 15 micrograms per deciliter in fetuses, infants, and children have been associated with adverse neurobehavioral and cognitive changes. At high levels (above 40 micrograms per deciliter), anemia can occur. See https://www.nlm.nih.gov/medlineplus/ency/article/002473.htm for further detail regarding symptoms of lead poisoning. In northern B.C., lead poisoning is NOT due to the consumption of drinking water.

**3. What are other potential exposures to lead, besides drinking water?**

Potential sources of lead other than drinking water include:

- Paint – including leaded paint in homes, as well as certain lead-containing painted toys, furniture and toy jewelry.
- Workers in smelters, refineries, and other industries that use lead may be exposed to high levels of lead. For example, the recycling of automotive batteries, which are crushed and melted down, can release lead into the work environment. Another example is equipment repair work (e.g., radiator repair)
- The families of people working in these industries may be exposed to high levels of lead from workers' clothing, shoes, and equipment that are covered with lead dust.
- Lead shot in game hunting, particularly in communities where game is regularly consumed, such as those in northern regions. People can be exposed to lead when they eat animals hunted with lead shot, breathe in lead fumes at shooting ranges, or when a lead shot is manufactured at home
- Pewter pitchers and dinnerware
- Some candles have wicks with a metallic core which may contain lead, that can vaporize during burning
- Hobbies which involve working with leaded glass or pottery glaze, brass, or bronze objects
- Food and liquids stored or served in lead crystal or lead-glazed pottery or porcelain can become contaminated (as lead can leach from these containers into the food or liquid).
- Horizontal PVC (plastic) mini-blinds made in Asia or Mexico
- Some folk remedies contain dangerous levels of lead, and can cause serious and irreversible illness e.g.
    - "greta" and “azarcon” to treat an upset stomach; and
    - "nzu", "poto" and "calabash chalk" to treat morning sickness.

**4. Who should be tested for blood lead levels?**

Anyone who shows up at your offices with symptoms of lead poisoning, or who is believed to be exposed to one or more of the exposures listed above should be tested. In BC, consumption of drinking water alone does not warrant blood lead testing.

**5. How can you determine if a patient's home has lead paint?**

If their home was built before 1978, there is a good chance it has lead-based paint (under the layers of applied paint). In 1978, the federal government banned consumer uses of lead-containing paint, but some provinces banned it even earlier. Lead from paint, including lead-contaminated dust, is one of the most common causes of lead poisoning in children. Because children tend to put things in their mouths, dusting, vacuuming and wet-mopping will all help reduce exposure to lead-contaminated dust.

**6. What can people do about lead in tap water at home?**

Please reinforce that the easiest solution to this exposure is simply to run the taps until cold before drinking the water (commonly referred to as 'flushing' their taps). Point of use filters are also an option. (More detail around longer-term mitigation options is included in the FAQ for patients).

**We have also provided you with a separate FAQ, intended for distribution to patients. Please consider providing this FAQ to pregnant women and those caring for young children.**

I hope this helps with your communication to your patients about this issue. Please contact me if you have any questions. I can be reached at 250-631-4261, or via email at raina.fumerton@northernhealth.ca.

## Immunization Campaign Quality Improvement Debrief

Have you helped with a Mass Immunization Campaign that was focused on increasing immunity rates in the north? **This is your opportunity to inspire quality improvement for future campaigns!**

**Purpose:**

Collated learnings from the debrief will be used to inform:

- The Vaccine Status Reporting Regulation (VSRR) and the Childhood Immunization critical priority projects.
- Future immunization and NH system-wide integrated quality improvement endeavours.

By December 31th, please follow this link: Immunization Campaign Quality Improvement Debrief to share what worked really well with the campaigns you've been a part of, and what issues need to be addressed next time. Input is sought from all NH staff and physicians who have been involved in Immunization

Campaign governance, planning, coordination and/or delivery. Please fan out this invitation to those you feel might be interested.
In best health, Mass Immunization Campaign Quality Improvement Project Team Members: Megan Ellis, Andrew Steele, Ashley Craft

**Additional Information:**

Please connect with Ashley Craft at ashley.craft@northernhealth.ca or 250-645-6568.

**Who is invited to participate?**

NH staff and physicians in the north involved in the governance, planning, coordination and/or delivery of the following Mass Immunization Campaigns:

- Measles School Catch-Up Campaign (K-12)
- Vaccine Status Reporting Regulation
- School Age Immunizations (K, 6, 9)
- Immunizations for BC Infants & Children (2 months – 4 years)
- Annual Influenza Campaign

**What will be asked?**

Six buckets of work common to all immunization campaigns have been identified: governance, planning, service delivery, internal/external communications and information systems. For each theme, participants will be asked 'What worked really well?' and 'What issues need to be addressed next time?

**Privacy?**

A guiding principle for this debrief is for you to feel comfortable saying what you want or need to say. With this in mind, please be welcome to make up a name when prompted as you sign in to participate in the survey. Your identity is not needed.
The online tool that will be used is called Poll Everywhere. This online survey company is hosted by a web survey company located in the USA and as such is subject to U.S. laws, in particular, the US Patriot Act which allows authorities access to the records of internet service providers. If you choose to participate in the survey, you understand that your responses to the survey questions will be stored and accessed in the USA. The security and privacy policy for the web survey company can be found at the following link:https://www.polleverywhere.com/privacy-policy.

**Who was involved in planning this debrief?**

This work is being led by three members of NH's Population and Public Health team (Megan Ellis, Ashley Craft and Andrew Steele), as a quality improvement project. The debrief was planned by a working group consisting of members from Primary and Community Care Services, Communications, Quality and Innovation, and Population and Public Health.

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# Lead Levels in Drinking Water

## Questions and Answers for Patients

You may have been made aware of recent media attention surrounding lead in drinking water. Drinking water generally does not contain lead, and if lead is present in water, the concentrations are usually very low. When elevated lead levels are found in drinking water it is due to a combination of water chemistry, plumbing materials (containing lead or brass), and extended contact time between the water and plumbing materials. Coastal communities tend to have water properties that leach lead from older piping infrastructure.

***What is lead?***

Lead is a metal that is found naturally in the earth's crust. Everyone is exposed to low levels of lead through food, tap water, air, dust, soil, and some consumer products. Lead was once used in products like toys, paint and plumbing materials, but the Government of Canada now restricts its use in many products.

***Why has lead been found in tap water in the north?***

The combination of (favorable) water chemistry, presence of lead containing plumbing materials, and (extended) contact time determine the amount of lead that leaches into tap water. Exposure to lead through tap water is expected to be low. Water samples (including those referred to in the media coverage) are usually tested in the using the first flush aka "worst case scenario"method. Water that has been siting stagnant in pipes overnight is reflective of the highest concentrations of lead in the drinking water for a 24 hour period. As water is run (showering, flushing the toilet, running taps etc.) throughout the day the concentration of lead also goes down.

***Should I be concerned about the levels of lead in the tap water in my home?***

When elevated lead levels are found in drinking water it is due to a combination of water chemistry, plumbing materials (containing lead or brass), and extended contact time between the water and plumbing materials. Coastal communities tend to have water properties that leach lead from older piping infrastructure. The overall exposure of lead through drinking water is generally low, relative to other sources of lead. Overall blood lead levels in children have gone down significantly over the past decades owing to the removal of leaded indoor paint and leaded gas in Canada. The health impacts of lead exposure depend on many factors including the frequency, duration, and dose of the exposures to a variety of lead sources, as well as individual factors such as age, previous exposure history, nutrition and health.

However, as there is no "good" amount of lead and as long term exposure could impact growth and development in young children, the aim is to reduce the amount of exposure to lead from all sources (including drinking water) to as low as possible, wherever we can. This is especially true for young children and pregnant women. Lead exposure is most of a concern for young children and developing fetuses because they absorb lead more easily than adults and are more susceptible to its harmful effects.
For more information on the health effects of lead, visit Health Canada website below:
http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/lead-plomb-eng.php

northern health
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***How can I find out if I have high lead in my tap water at home?***
Lead is less likely to be present in buildings constructed after 1989. If you decide to test your water, please contact an accredited lab (see Table 1) to arrange for water sample collection (bottles and forms), submission, and processing (testing for lead). Depending on the age of your home and plumbing materials, you may decide not to sample.
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***What can I do to reduce my family's exposure to lead?***
It is important to remember other sources of potential lead exposure for children that may be much more significant, such as lead paint.

- If your home was built before 1978 and has never been repainted, there is a good chance it has lead-based paint. Clean your house regularly to remove dust and particles that may contain lead. This is especially important for surfaces that young children might touch often.
- Do not keep food or drinks in lead crystal containers for any length of time. Do not serve pregnant women or children drinks in crystal glasses. Babies should never drink from lead crystal.
- If you own glazed glass or ceramic dishes bought outside of Canada, do not use them for serving food or drinks. They may contain higher levels of lead than are allowed in Canada.
- If you have children six years of age or under, remove any horizontal PVC (plastic) mini-blinds made in Asia or Mexico from your home.
- Discourage children from putting things into their mouths unless they are intended to be mouthed (like food and pacifiers).
- If you work in a smelter, refinery or any other industry where you are exposed to high levels of lead, shower and change your clothing before going home. Make sure you have your blood lead level checked regularly.
- Never burn waste oil, colored newsprint, battery casings or wood covered with lead paint in or near your home, because lead fumes may be released. Dispose of them through your city or town's hazardous waste program.
- If you use lead solder in a hobby (like making stained glass), use a good quality breathing mask, keep surfaces clean and keep children and pregnant women out of the area. Wash hands after handling lead solder.
- Avoid eating wild animals that have been shot with lead bullets. Use non-lead bullets and shots when hunting for food.

Lead exposure from tap water home settings vary. If lead contamination of drinking water is a concern based on the age of your plumbing (1989 or older) or water testing results there a number of actions that can be taken to mitigate risk. The options may include both short and long-term solutions. Long-term solutions include replacing old/lead containing plumbing components. Short-term solutions may include:

- **Flushing:** Flush their drinking water taps each morning until the water runs cold and you notice a temperature drop in the water. To conserve water jugs can be stored in the fridge. Use cold, flushed water for drinking and preparing food. Water from the hot water tap should not be consumed as it contain more (or higher level of) lead.
- **Bottled water**
- **Installing point-of-use lead filtration units**

***What is Northern Health's role?***

Northern Health is committed to ensuring that the water provided to northern BC residents is safe. If you have any questions, please call your local Environmental Health Officer (see Table 2).

Table 1 – List of Accredited Laboratories in British Columbia

| NAME OF LABORATORY | PHONE | FAX |
|---|---|---|
| AGAT Laboratories (Burnaby) | 778-452-4000 | 778-452-4074 |
| ALS Environmental (Kamloops) | 250-372-3588 | 250-372-3670 |
| ALS Environmental (Fort St. John) | 250-261-5517 | 250-261-5587 |
| ALS Environmental (Vancouver) | 604-253-4188 | 604-253-6700 |
| CARO Analytical Services (Kelowna) | 250-765-9646 | 250-765-3893 |
| EXOVA Canada Inc. (Surrey) | 604-514-3322 | 604-514-3323 |
| MAXXAM Analytics (Burnaby) | 604-734-7276 | 604-731-2386 |
| MAXXAM Analytics (Victoria) | 250-385-6112 | 250-382-6364 |
| MB Laboratories Ltd. (Sidney) | 250-656-1334 | 250-656-0443 |
| Northern Laboratories (2010) Ltd (Prince Rupert) | 250-627-1906 | 250-627-8214 |

Table 2 – Public Health Protection – Office Contact Numbers

| OFFICE LOCATIONS | PHONE | FAX |
|---|---|---|
| Prince Rupert | 250-622-6380 | 250-622-6391 |
| Smithers | 250-847-6400 | 250-847-5908 |
| Terrace | 250-631-4222 | 250-638-2209 |
| Prince George | 250-565-2150 | 250-565-2144 |
| Quesnel | 250-983-6810 | 250-983-6857 |
| Vanderhoof | 250-567-6900 | 250-567-6170 |
| Dawson Creek | 250-719-6500 | 250-719-6513 |
| Ft. Nelson | 250-774-7092 | 250-774-7096 |
| Fort St. John | 250-263-6000 | 250-263-6086 |

# Northern Health Physicians
## Partners in Wellness
*Public Health Newsletter for Northern Health Physicians*

*Wednesday, July 24, 2019 Page 1 of 1*


BULLETIN

# Rabies and Animal Exposures

**Chiefs of Staff, COOs and HSAs are requested to bring this to the attention of Northern Health's General Practitioners.**

A fatal case of rabies in BC has been confirmed. This is a rare and tragic event that followed direct contact with a bat. Despite many human interactions with bats, only two cases of rabies have occurred in BC since 1924. This case has increased public awareness of the risk of rabies, and many Individuals are now seeking care for animal exposures. In humans, rabies infection is nearly always fatal. When started promptly, post-exposure prophylaxis with rabies immunoglobulin and vaccine is nearly 100% effective at preventing disease.

***My patient was bitten or scratched by an animal – now what?***

1. ***Irrigate and treat wound***
2. ***Provide tetanus booster if needed***
3. ***Assess the risk of rabies, if you believe the rabies risk is significant, or are uncertain, contract the MHO on call.***

***The MHO Can:***

- **Assess the risk for rabies from the exposure**
- **Discuss the need for rabies post-exposure prophylaxis (RPEP). Note that MHO approval is needed to release RPEP in BC.**
- **Advise on the use of Rabies Immunoglobulin**
- **Arrange proper follow up for the client**

***Assessing the risk:***

Species and geography:

In BC, bats are the only animal that carry rabies. Less than 1% of bats in BC carry rabies, however 13% of bats submitted for testing after human contact were found to be infected. However in other provinces and other countries, various mammals have been reported to carry rabies including dogs, cats, and racoons.

Type of Contact & Rabies Transmission

Humans can contract rabies from percutaneous or mucous membrane exposures to the saliva or neural tissue/ fluid of an infected animal. Typically, this occurs through scratches or bites. However, some wounds are so small that percutaneous exposure can occur without a visible wound. For this reason, we treat all direct contact with a bat as a high-risk exposure.

Assessment of the Animal

If exposure to a bat occurs and it is available for testing, this can be arranged by public health. Testing of other animals is rarely required in BC. However, veterinary assessment of animals, or monitoring for symptoms in domestic pets, can sometimes enable patients to avoid unnecessary prophylaxis.

***General Advice***

To prevent exposure, we advise that people avoid contact with bats, dead or alive. Never touch a bat with bare hands. Travelers, especially in developing countries, should avoid contact with all mammals.

**If a patient presents with a history of contact with a bat in BC, or a bite from another mammal outside of BC, please the Northern Health CD HUB at 250-565-2990 to assess the need for vaccination (after hours and weekends 250-565-2000).**

For further details on how rabies risk is assessed by public health professionals, RPEP schedules and dosing, and other background information: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

The guidelines for tetanus prophylaxis in wound management can be found at: http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/CD%20Manual/Chapter%202%20-%20Imms/Part4/TetanusProphylaxis.pdf


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