



Antibiotic Stewardship in Community Practice

Humber River Hospital's 21st Annual Clinical Day
Saturday, December 8, 2018; 08:15-09:00

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Objectives

- Overview of the Choosing Wisely Canada (CWC) *Using Antibiotics Wisely* campaign
 - Background (antibiotic overuse; barriers to practice change)
 - Clinical Practice statements re: respiratory infections
- Tips on antimicrobial stewardship
 - Evidence-based tools for Practitioners & Patients

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care.

History

- Choosing Wisely® 2012 in US; 80 medical societies; 500+ recommendations
- Choosing Wisely Canada 2014; 70 societies; 300+ recommendations
- Now over 25 countries

Family Medicine

Thirteen Things Physicians and Patients Should Question

by

College of Family Physicians of Canada

Last updated: January 2018



- 1 Don't do imaging for lower-back pain unless red flags are present.**
Red flags include, but are not limited to, severe or progressive neurological deficits or when serious underlying conditions such as osteomyelitis are suspected. Imaging of the lower spine before six weeks does not improve outcomes.
- 2 Don't use antibiotics for upper respiratory infections that are likely viral in origin, such as influenza-like illness, or self-limiting, such as sinus infections of less than seven days of duration.**

2

Don't use antibiotics for upper respiratory infections that are likely viral in origin, such as influenza-like illness, or self-limiting, such as sinus infections of less than seven days of duration.

Bacterial infections of the respiratory tract, when they do occur, are generally a secondary problem caused by complications from viral infections such as influenza. While it is often difficult to distinguish bacterial from viral sinusitis, nearly all cases are viral. Though cases of bacterial sinusitis can benefit from antibiotics, evidence of such cases does not typically surface until after at least seven days of illness. Not only are antibiotics rarely indicated for upper respiratory illnesses, but some patients experience adverse effects from such medications.

- Don't do Pap smears in women who have had a hysterectomy for non-malignant disease
The potential harm from screening women younger than 21 years of age outweighs the benefits and there is little evidence to suggest the necessity of conducting this test annually when previous test results were normal. Women who have had a full hysterectomy for benign disorders no longer require this screening. Screening should stop at age 70 if three previous test results were normal.
- 5 Don't do annual screening blood tests unless directly indicated by the risk profile of the patient.**
There is little evidence to indicate there is value in routine blood tests in asymptomatic patients; instead, this practice is more likely to produce false positive results that may lead to additional unnecessary testing. The decision to perform screening tests, and the selection of which tests to perform, should be done with careful consideration of the patient's age, sex and any possible risk factors.
- 6 Don't routinely measure Vitamin D in low risk adults.**
Because Canada is located above the 35° North latitude, the average Canadian's exposure to sunlight is insufficient to maintain adequate Vitamin D levels, especially during the winter. Therefore, measuring serum 25-hydroxyvitamin D levels is not necessary because routine supplementation with Vitamin D is appropriate for the general population. An exception is made for measuring Vitamin D levels in patients with significant renal or metabolic disease.



Unnecessary Care in Canada

April 2017

Choosing
Wisely
Canada

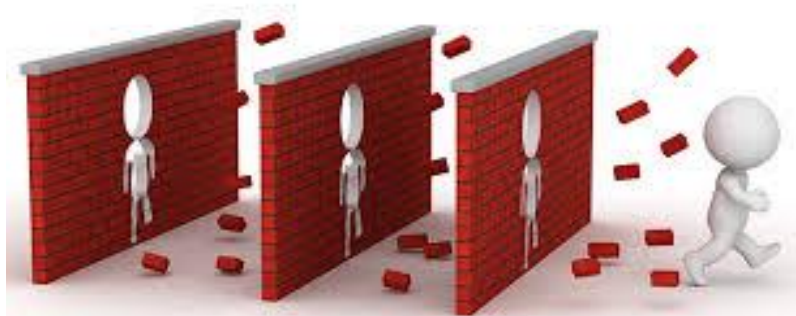



Canadian Institute
for Health Information
Crédit canadien
d'information sur la santé

The report found that up to
30% of the tests, treatments
and procedures associated
with the 8 selected CWC
recommendations are
potentially unnecessary.



What are the barriers to not prescribing
Antibiotics for viral URTIs in your practice?





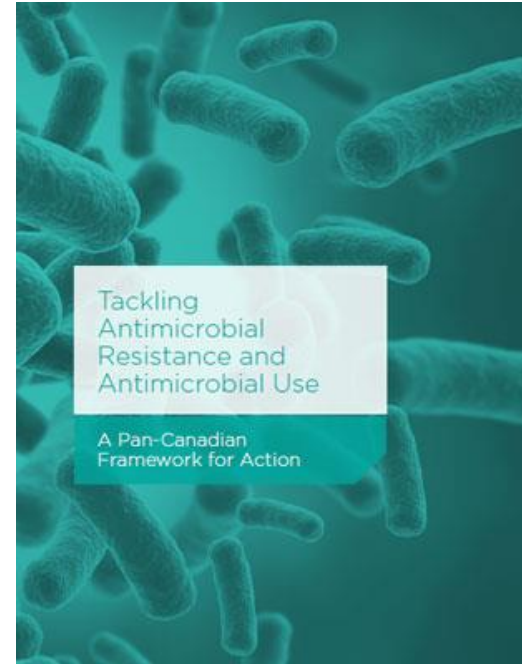
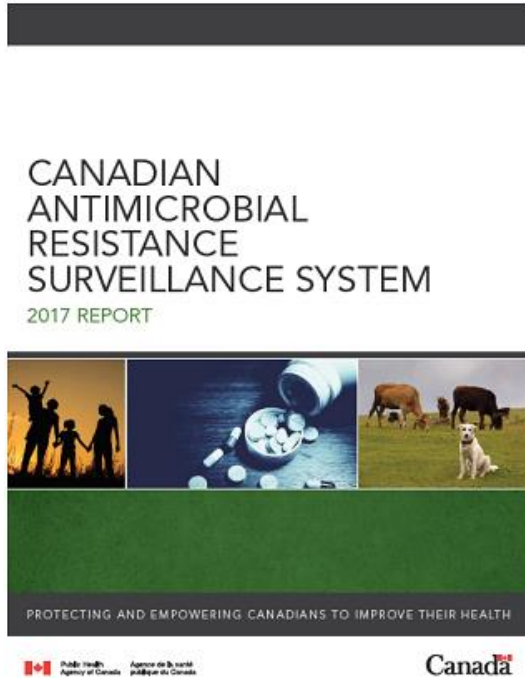
I've always
done this

The patient
wants it

Time
constraints

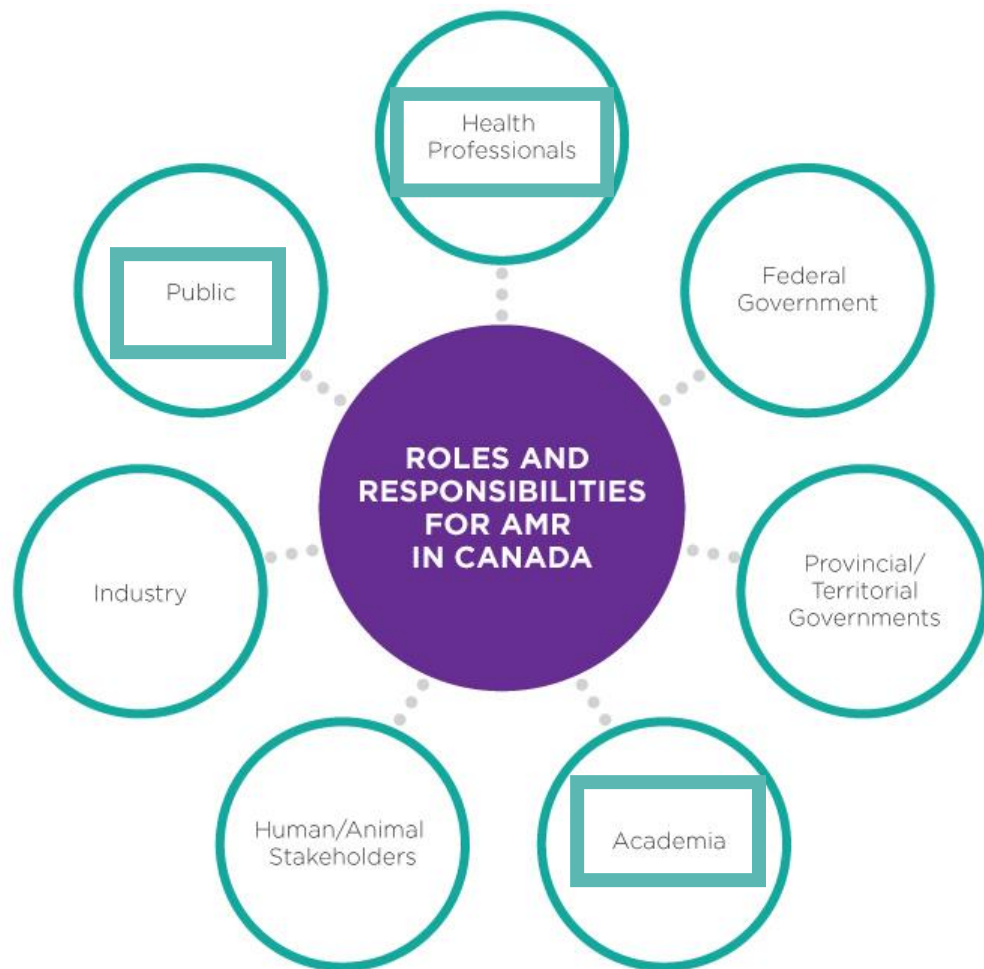
Better to do
something than
do nothing

Should we care about Antibiotic Overuse?



Should we care about Antibiotic Overuse?

- Drug resistant infections
 - MRSA
 - VRE
 - Gonorrhea
 - C. diff
- Cost
- Adverse Drug Reactions – diarrhea, vomiting, candida infection, AKI, allergic reaction
- Continued loss of effectiveness → new drug development cannot keep up → less effective/more toxic alternatives being used → worse patient outcomes



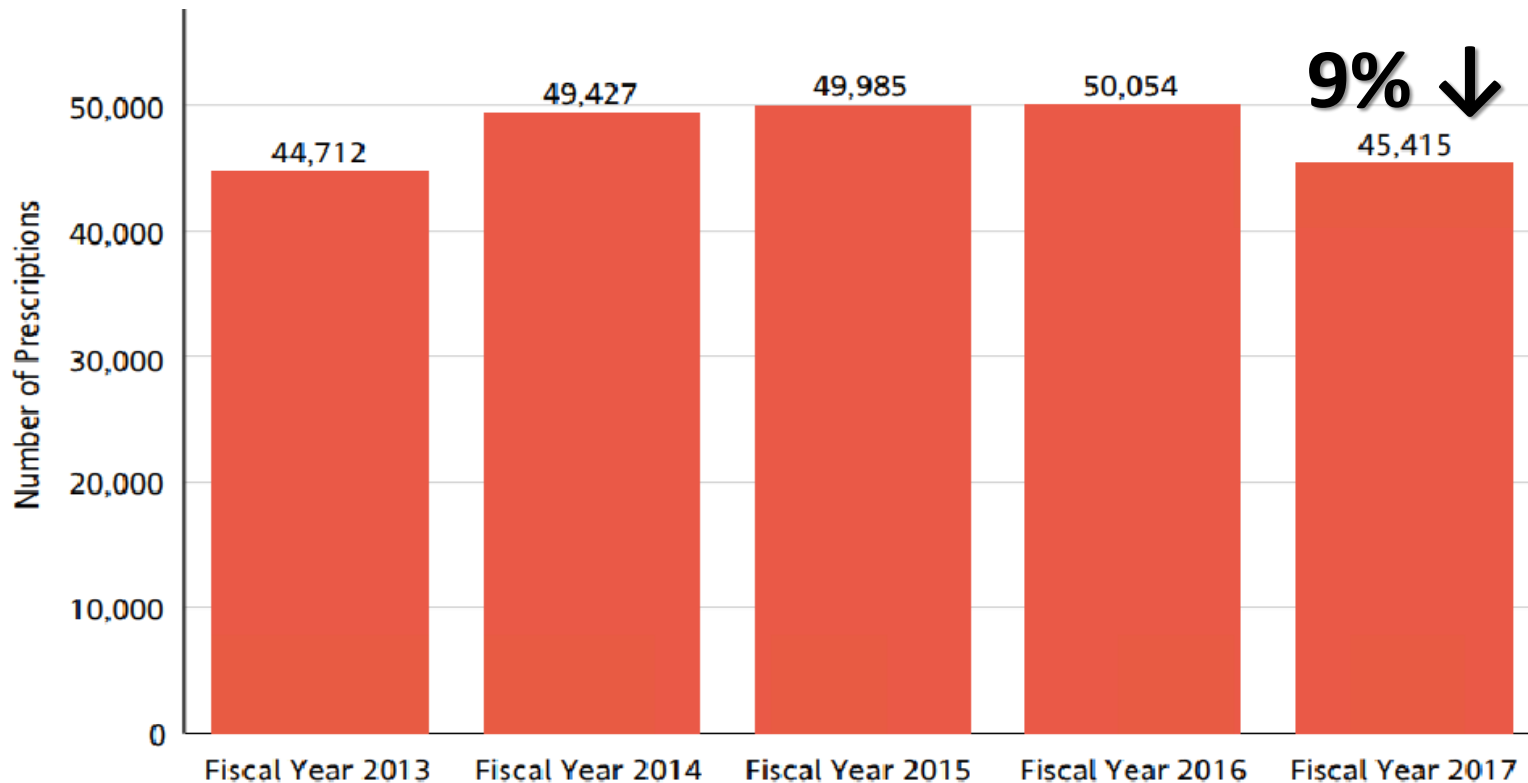
Who are the prescribers of antibiotics in Canada?

- Physicians prescribe 90% of the antibiotics among health care providers.
- 92% of antibiotics are prescribed/dispensed in the community (2016)
- Family physicians account for 65% of all antibiotic prescriptions dispensed by community pharmacies in Canada (2016)
 - Respiratory infections > genito-urinary infections > skin & soft tissue infections

Can we do something to improve this?



Family doctor ABX Rx ordering/year



Choosing Wisely Canada - Using Antibiotics Wisely Campaign

An illustration of a hand holding a white and blue pill. The hand is rendered in a dark red color with white outlines for the fingers and thumb. The background is a solid red color.

USING ANTIBIOTICS WISELY.

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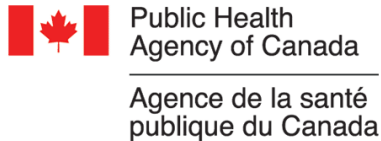
**UTILISATION JUDICIEUSE
DES ANTIBIOTIQUES.**

Using Antibiotics Wisely: a 'mini' campaign

Duration January 31, 2018 – March 31, 2019

Priorities:

- 1. Acute respiratory infection in primary care**
2. Urinary tract infection in long-term care



The work done to date...

- ✓ Input from broad group of stakeholders in primary care across Canada
- ✓ Review by professional societies including Canadian Thoracic Society and Canadian Society of Otolaryngology - Head and Neck Surgery
- ✓ Review and endorsement by the College of Family Physicians of Canada

Framework for *Using Antibiotics Wisely*

- Describe drivers of overuse and barriers to change
- Articulate prescribing practices we hope to change
 - Develop practice statements
- Select nationally useful AMS tools
 - Assess how tools need to be adapted to ensure uptake
- Determine how tools are best disseminated to front-line prescribers

Don't routinely prescribe antibiotics for acute respiratory infection in primary care settings

- Otitis Media – vaccinated patients older than 6 months
- Pharyngitis – modified Centor score
- Sinusitis – PODS symptoms
- Pneumonia – objective evidence
- AECOPD – inhalers
- Bronchitis/Asthma - inhalers
- URTI - “common cold”
- ILI – Influenza-Like Illness



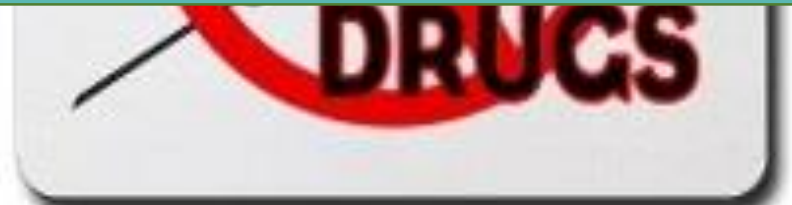
Don't routinely prescribe antibiotics for acute respiratory infection in primary care settings

- Otitis Media – vaccinated patients older than 6 months

MYTH: All patients coming to clinic with an URTI want antibiotics

FACT: Most patients want a diagnosis and a way to relieve their symptoms

- URTI – common cold
- ILI – Influenza-Like Illness



Uncomplicated Otitis Media

- Vaccinated individuals 6 months and older
- Do not prescribe unless:
 - Perforated TM with purulent d/c; or
 - Bulging TM with 1 of fever $\geq 39^{\circ}\text{C}$, moderately/severely ill, symptoms lasting > 48 hrs.
- Think symptom control & access to f/u










Uncomplicated Otitis Media

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Uncomplicated Pharyngitis

- Do not prescribe unless:
 - Centor score > 2 AND
 - Throat swab culture (or rapid antigen test) confirms GAS
- Don't even perform a throat swab if:
 - Centor score ≤ 1 or
 - Symptoms of a viral infection are present (rhinorrhea, oral ulcers, hoarseness)
- Think symptom control & access to f/u

Modified Centor Score for Streptococcal Pharyngitis (M-CENTOR)		
Yuchen (Richard) Tang MD Candidate 2018, McMaster University		
For Patients presenting with: 1) Sore throat/pharyngitis 2) URTI symptoms		
	M	Must be older than 3 years
	C	Cough Absent (+1)
	E	Exudative or Swollen Tonsils (+1)
	N	Nodes -- adenopathy in anterior cervical chain (+1)
	T	Temperature -- $>38^{\circ}\text{C}$ (+1)
	O	Often Young, <15 years old (+1)
	R	Rarely Old > 45 years old (-1)

Uncomplicated Sinusitis

- Do not prescribe unless:
 - Symptoms persist 7-10 days
 - No improvement
- At least 2 PODS symptoms:
 - Facial **P**ain/**P**ressure
 - Nasal **O**bstruction
 - Purulent nasal **D**ischarge
 - Hyposmia/anosmia (**S**mell)
- Severe; or
- Mild to moderate w/ no response to 72 hr. trial of nasal steroids

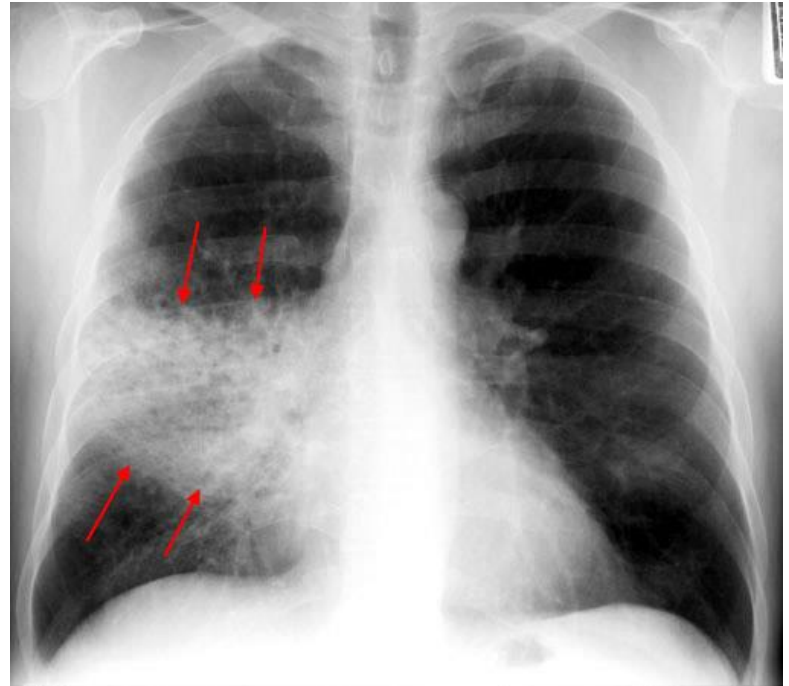


"It's my sinuses, Doctor - I wake up but I don't smell the coffee."

Search ID: phan232

Pneumonia – need objective evidence

- Do not prescribe unless:
 - CXR confirms presence of new consolidation
- Physical exam alone not sufficient
 - Presence of respiratory crackles
- Normal vital signs & no findings on physical exam
 - Unlikely to be pneumonia
 - No CXR needed



Pneumonia – Long-Term Care

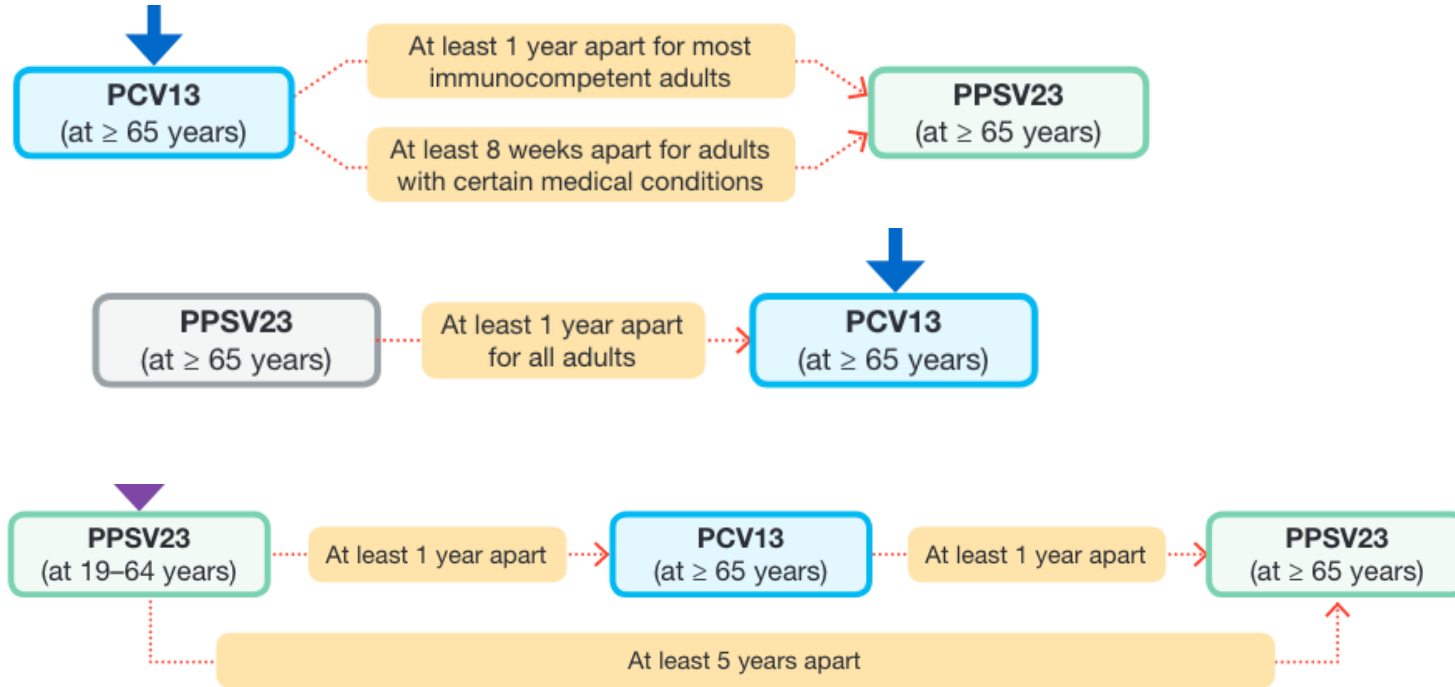
- Do not prescribe unless:
 - Temperature $>38.9^{\circ}\text{C}$) AND
 - RR > 25 breaths/min. or productive cough

OR

- Temperature $> 37.9^{\circ}\text{C}$ (or 1.5°C above baseline) AND cough
- 1 of the following symptoms:
 - HR > 100
 - Delirium – acute fluctuating LOC
 - Rigors/shaking chills
 - RR > 25 breaths/minute



Pneumococcal Vaccination – Long-Term Care



AECOPD

- Do not prescribe unless:
- Clear increase in sputum purulence
AND
- Increase in sputum volume
AND/OR increased dyspnea
- Consider steroids and SABD



“I’m prescribing a patch to help you quit smoking. Wear it over your mouth.”

Asthma/Bronchitis/Bronchiolitis

- Do not prescribe antibiotics for exacerbations
- Consider steroids and SABD for asthma; SABD for bronchitis



URTI – The Common Cold

- Do not prescribe antibiotics unless clear evidence of secondary bacterial infection
- Complicated cases of OM/Pharyngitis/Sinusitis/Pneumonia



Influenza-Like Illness

- Symptoms can include:
 - Fever
 - Cough
 - Sore throat
 - Runny nose
 - **Myalgia**
 - **Headache**
 - **Chills**
 - **Malaise**
- Do not prescribe antibiotics unless clear evidence of secondary bacterial infection

Get the
FLU  **SHOT**
not the flu!

Influenza-Like Illness

- Use of anti-virals beyond scope of this campaign
- Factors to consider:
 - Severity - ? Need admission
 - Risk factors/co-morbid conditions
 - Duration of symptoms (< 48 hrs.)
- AMMI Canada:
<https://immunize.ca/sites/default/files/resources/1860e.pdf>
- Canadian Pediatric Society:
<https://www.cps.ca/en/documents/position/antiviral-drugs-for-influenza>



Cough – dispelling the myths

- Can last up to 3 weeks in 50% of patients with a viral URTI
- Can last up to 1 month in 25% of patients




USING ANTIBIOTICS WISELY CAMPAIGN RESOURCES

- Information posters (CWC-CFPC)
- Viral prescription (Rx files-CWC-CFPC)
- Delayed prescription pad (CWC-CFPC)
- Patient resources (CWC)
- Tip sheet for prescribers (CWC)
- Practice statements (CWC-CFPC)
- Calculators (sore throat and sinusitis)

FOUR QUESTIONS TO ASK YOUR DOCTOR

- 1) Do I really need this test, treatment or procedure?
- 2) What are the downsides?
- 3) Are there simpler, safer options?
- 4) What happens if I do nothing?

POSTERS

An illustration of a hand in a dark red sleeve pouring a stream of white and black capsules from a small orange container. The background is a solid red color.

**Sorry,
but no
amount of
antibiotics
will get
rid of your
cold.**

The best way to treat most colds, coughs or sore throats is with plenty of fluids and rest. Talk to your health care provider.

Choosing
Wisely
Canada



THE COLLEGE OF
FAMILY PHYSICIANS
OF CANADA



LE COLLÈGE DES
MÉDECINS DE FAMILLE
DU CANADA

To learn more, visit: www.choosingwiselycanada.org/antibiotics

ANTIBIOTICS: THREE QUESTIONS TO ASK YOUR HEALTH CARE PROVIDER

1) Do I really need antibiotics?

Antibiotics fight bacterial infections, like strep throat, whooping cough and bladder infections. But they don't fight viruses – like common colds, flu, or most sore throats and sinus infections. Ask if you have a bacterial infection.

2) What are the risks?

Antibiotics can cause unwanted side effects such as diarrhea and vomiting. They can also lead to "antibiotic resistance" – if you use antibiotics when you don't need them, they may not work when you do need them in the future.

3) Are there simpler, safer options?

The best way to treat most colds, coughs or sore throats is with plenty of fluids and rest. Talk to your health care provider about the options.

Talk about what you need, and what you don't.

To learn more, visit www.choosingwiselycanada.org/antibiotics

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OF CANADA



VIRAL PRESCRIPTION

Available languages:

English, French, Arabic, Chinese
(Traditional and Simplified), Farsi
(Persian), German, Hindi,
Romanian, Russian, Spanish,
Ukrainian, Urdu

**Myth: patients want
antibiotics**

**Satisfaction linked to
reassurance, info, and
symptom relief**

R_x

Patient Name : _____ Date : _____

The symptoms you presented with today suggest a VIRAL infection.

- ☐ Upper Respiratory Tract Infection (Common Cold) : Lasts 7-14 days
- ☐ Flu : Lasts 7-14 days
- ☐ Acute Pharyngitis ("Sore Throat") : Lasts 3-7 days, up to ≤10 days
- ☐ Acute Bronchitis/"Chest Cold" (Cough) : Lasts 7-21 days
- ☐ Acute Sinusitis ("Sinus Infection") : Lasts 7-14 days

**You have not been prescribed antibiotics because
antibiotics are not effective in treating viral infections.**

Antibiotics can cause side effects (e.g. diarrhea, yeast infections) and may cause serious harms such as severe diarrhea, allergic reactions, kidney or liver injury.

When you have a viral infection, it is very important to get plenty of rest and give your body time to fight off the virus.

If you follow these instructions, you should feel better soon :

- ➔ Rest as much as possible
- ➔ Drink plenty of fluids
- ➔ Wash your hands frequently
- ➔ Take over-the-counter medication, as advised :

- ☐ Acetaminophen (e.g. Tylenol®) for fever and aches
- ☐ Ibuprofen (e.g. Advil®) for fever and aches
- ☐ Naproxen (e.g. Aleve®) for fever and aches
- ☐ Lozenge (cough candy) for sore throat
- ☐ Nasal Saline (e.g. Salinex®) for nasal congestion
- ☐ Other : _____

(e.g. Nasal decongestant if Salinex® does not work, for short-term use only!)

Please return to your provider if :

- ➔ Symptoms do not improve in _____ day(s), or worsen at any time
- ➔ You develop persistent fever (above 38°C, or _____ as directed)
- ➔ Other : _____

Prescriber _____



This "Viral Prescription Pad" has been adapted from the RQHR Antimicrobial Stewardship Program
www.colhealth.ca/antimicrobialstewardship, and is available in other languages.
<http://www.rxfiles.ca/rxfiles/uploads/documents/ABX-Viral-Prescription-Pad-1-Languages.pdf>
Visit www.RxFiles.ca/ABX for more information.

DELAYED ANTIBIOTIC PRESCRIPTION

- Decreases antibiotic use
- No difference in satisfaction

Rx DELAYED PRESCRIPTION

About Your Delayed Prescription

WAIT. Don't fill your prescription just yet. Your health care provider believes your illness may resolve on its own. Follow the steps below to get better.

First, continue to monitor your symptoms over the next few days and try the following remedies to help you feel better:

- Get lots of rest.
- Drink plenty of water.
- For a sore throat: ice chips, throat lozenges or spray, or gargle with salt water.
- For a stuffy nose: saline nasal spray or drops.
- For fever and pain relief: acetaminophen or ibuprofen.
- Other: _____

Wash your hands often to avoid spreading infections.

If you don't feel better in _____ days, go ahead and fill your prescription at the pharmacy.

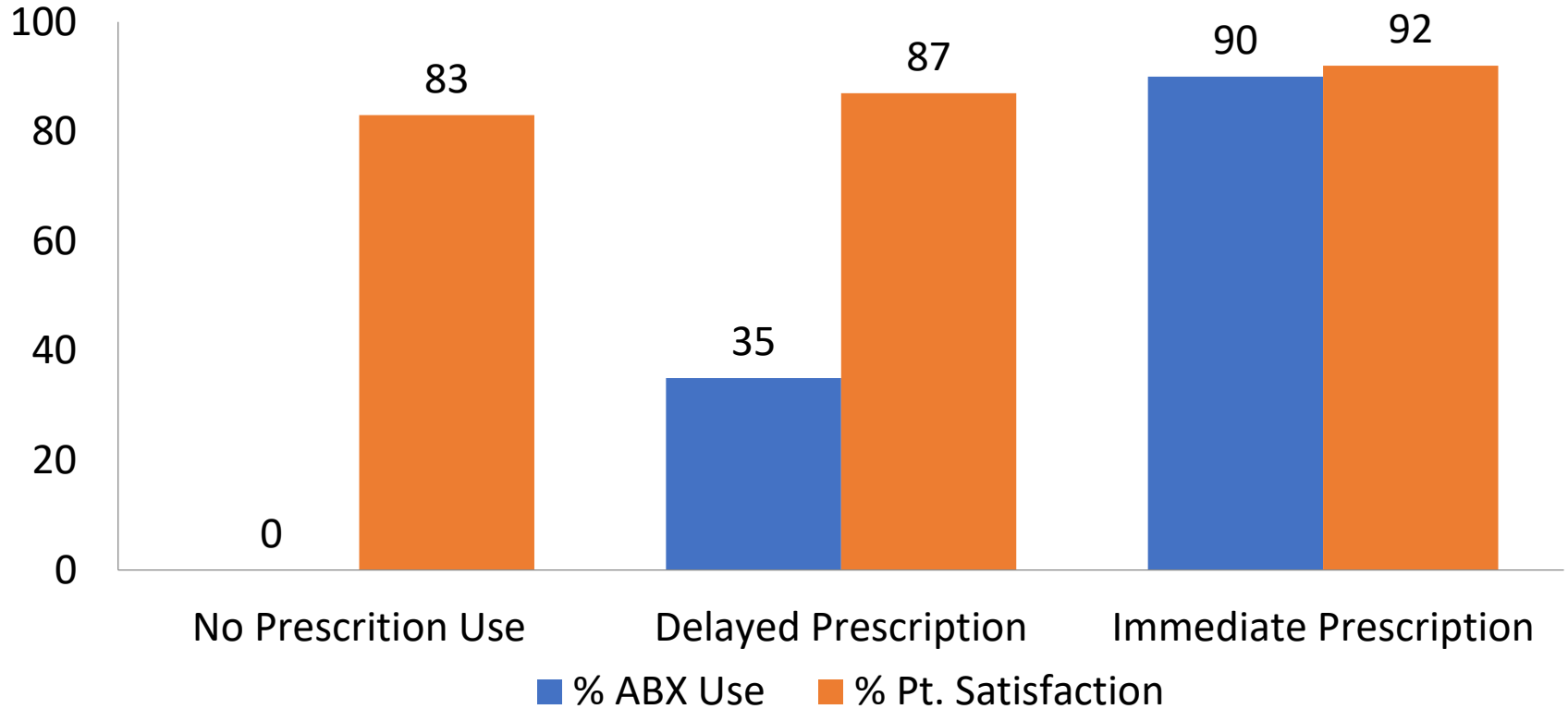
If you feel better, you do not need the antibiotic and the prescription can be thrown out.

If things get worse, please contact your health care provider.

Antibiotics should only be taken when medically necessary. Unwanted side effects like diarrhea and vomiting can occur, along with destruction of your body's good bacteria that can leave you more susceptible to infections.

To learn more, visit www.choosingwiselycanada.org/antibiotics

ABX Use & Patient Satisfaction



PATIENT RESOURCES

Treating Sinus Infections: Don't rush to antibiotics



Millions of people are prescribed antibiotics each year for sinus infections, a frequent complication of the common cold, hay fever, and other respiratory allergies. In fact, 15 to 21 percent of all antibiotic prescriptions for adults in outpatient care are for treating sinus infections. Unfortunately, most of those people don't need the drugs. Here's why:

The drugs usually don't help

Sinus infections can be painful. People with the condition usually have a stuffy nose combined with yellow, green, or gray nasal discharge plus pain or pressure around the eyes, cheeks, forehead, or teeth that worsens when they bend over. But sinus infections almost always stem from a viral infection, not a bacterial one - and antibiotics don't work against viruses. Even when bacteria are the cause, the infections often clear up on their own in a week or so. And antibiotics don't help ease allergies, either.

They can pose risks.

About one in four people who take antibiotics have side effects, such as stomach problems, dizziness, or rashes. Those problems clear up soon after stopping the drugs, but in rare cases antibiotics can cause severe allergic reactions.

Overuse of antibiotics also promotes the growth of bacteria that can't be controlled easily with drugs. That makes you more vulnerable to antibiotic-resistant infections and undermines the good that antibiotics can do for others.



So when are antibiotics necessary?

They're usually required only when symptoms last longer than a week, start to improve but then worsen again, or are very severe. Worrisome symptoms that can warrant immediate antibiotic treatment include a fever over 38.6 °C, extreme pain and tenderness over your sinuses, or signs of a skin infection, such as a hot, red rash that spreads quickly.

When you do need antibiotics, the best choice in many cases is amoxicillin, which typically costs about \$4 and is just as effective as more expensive brand-name antibiotics. Note that some health care providers recommend CT scans when they suspect sinus infections. But those tests are usually necessary only if you have frequent or chronic sinus infections or you're going to have sinus surgery.

Colds, Flu, and Other Respiratory Illnesses: Don't rush to antibiotics



If you have a sore throat, cough, or sinus pain, you might expect to take antibiotics. After all, you feel bad, and you want to get better fast. But antibiotics don't help most respiratory infections, and they can even be harmful.

Antibiotics kill bacteria, not viruses.

Antibiotics fight infections caused by bacteria. But most respiratory infections are caused by viruses. Antibiotics can't cure a virus.

Viruses cause:

- All colds and flu.
- Almost all sinus infections.
- Most bronchitis (chest colds).
- Most sore throats, especially with a cough, runny nose, hoarse voice, or mouth sores.

Antibiotics have risks.

Antibiotics can upset the body's natural balance of good and bad bacteria. Antibiotics can cause:

- Nausea, vomiting, and severe diarrhea.
- Vaginal infections.
- Nerve damage.
- Torn tendons.
- Life-threatening allergic reactions.

Many adults go to emergency rooms because of antibiotic side effects.

Overuse of antibiotics is a serious problem.

Wide use of antibiotics breeds "superbugs." These are bacteria that become resistant to antibiotics.



They can cause drug-resistant infections, even disability or death. The resistant bacteria—the superbugs—can also spread to family members and others.

You may need an antibiotic if you have a respiratory infection. Some examples are:

You have a sinus infection that doesn't get better in 7 days. Or it gets better and then suddenly gets worse.

You have a fever of 39 °C, or fever over 38 °C for 3 days or more, green or yellow mucus, or face pain for three or more days in a row.

Bacterial pneumonia.

- Symptoms can include cough with coloured mucus, fever of at least 38 °C, chills, shortness of breath, and chest pain when you take a deep breath.
- The diagnosis is made with a physical exam and a chest x-ray.

Campaign approach

Clinicians

- Societies develop and disseminate lists

Patients

- Develop and disseminate patient materials

Medical education

- Mobilize students and trainees
- Integrate resource stewardship as a core competency

Implementation

- Support adoption of recommendations in care settings

Measurement

- Measure rates of overuse and build research capacity

A Strategy to Think About

Effect of Behavioral Interventions on Inappropriate
Antibiotic Prescribing Among Primary Care Practices
A Randomized Clinical Trial

Peer comparison

JAMA. 2016;315(6):562-570.

**Why not make one of these CW practice statements
the focus of a QI project ?**

Antimicrobial Stewardship CPD Opportunity: Prescribing Safely Canada

- <https://www.cfpc.ca/prescribing-safely-canada/>
- <https://rcportal.royalcollege.ca/mssites/prescribingsafely/EN/index.html>



2019
CHOOSING
WISELY CANADA
NATIONAL MEETING

MAY 27, 2019 | MONTRÉAL QUEBEC

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Wisely
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Choisir
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Acknowledgements

Name	Title
Dr. Jerome Leis	Infectious Disease Physician, Sunnybrook Health Sciences Centre
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Dr. Wendy Levinson	Chair, Choosing Wisely Canada
Dr. Olivia Ostrow	Paediatric Lead, Choosing Wisely Canada

www.choosingwiselycanada.org/antibiotics (EN)

Take Home Points

- Antibiotics are being overused for viral URTIs
- Antimicrobial stewardship needs to be a pan-Canadian effort (MDs, patients, etc.)
- Most patients want a proper diagnosis & advice on symptom management
 - as opposed to antibiotics

Take Home Points

- *CWC Using Antibiotics Wisely* campaign tools can:
 - Help educate patients about AMS
 - Save time for MDs
 - Increase ease re: practice/culture change
- Never treat colds/influenza/bronchitis/asthma with antibiotics unless super-imposed bacterial infection is present

Questions?



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