

Antimicrobial Utilization (AMU) and Antimicrobial Resistance (AMR):

As part of the Community Antimicrobial Stewardship (formerly Do Bugs Need Drugs?) program evaluation, trends in antimicrobial utilization and antimicrobial resistance are routinely analyzed using anonymized PharmaNet BC Ministry of Health database and isolate-level antimicrobial susceptibility testing data from LifeLabs (and formerly BC Biomedical Laboratories), respectively. These surveillance findings are available in a web-based interactive data visualization platform: "BCCDC Antimicrobial Surveillance Tools" (<http://www.bccdc.ca/health-professionals/data-reports/antimicrobial-resistance/antimicrobial-surveillance-tools>).

Antimicrobial Resistance highlights in 2016 –

- Non-susceptibility of both methicillin-resistant *Staphylococcus aureus* (MRSA) and Methicillin-sensitive *Staphylococcus aureus* (MSSA) to clindamycin and erythromycin remains high, whereas non-susceptibility to trimethoprim-sulfamethoxazole in MRSA and MSSA continues to remain low.
- The proportion of *E. coli* isolates non-susceptible to ciprofloxacin remains stable at 20.4%. Susceptibility to cefotaxime; gentamicin and trimethoprim/sulfamethoxazole remain fairly steady. The non-susceptibility rates of *E. coli* to nitrofurantoin remain low.
- In 2016, Group A *Streptococcus* (GAS) continues to be fully susceptible to penicillin. *Klebsiella pneumoniae* non-susceptibility to nitrofurantoin decreased from 59.9% to 54.2% and to meropenem continues to decrease.

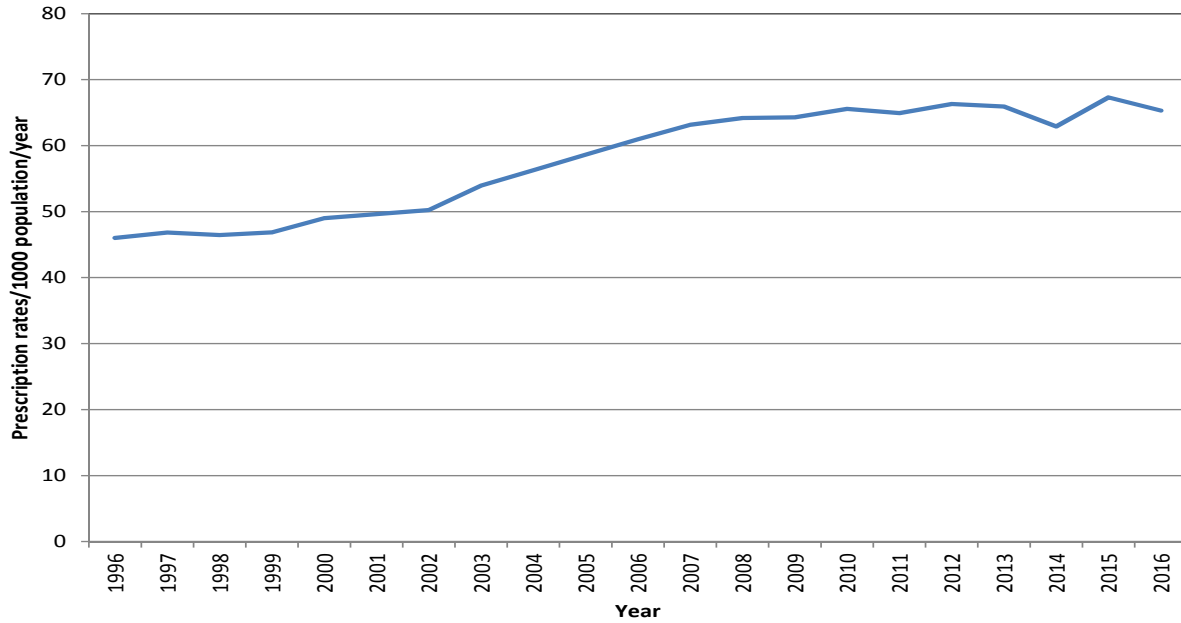
Carbapenemase producing organisms (CPOs) refer to some strains of bacteria such as *Klebsiella*, *E. coli*, *Acinetobacter* and *Pseudomonas* that are resistant to most of the antibiotics including carbapenems. The emergence of CPOs is a medical concern and public health threat. To know more about the CPO surveillance program please visit at: <https://www.picnet.ca/surveillance/cpo/>

Antimicrobial Use highlights in 2016 –

- Overall, rates of prescription and antimicrobial utilization continue to decrease in 2016. Reductions in prescriptions and utilization for respiratory tract infections continue to decrease, with a 30.8% decrease in prescription rate since 2005.
- Prescribing rates for urinary tract infections were previously increasing but have leveled off in recent years. We need to continue efforts to avoid treatment of asymptomatic bacteriuria, especially in the elderly.
- Amoxicillin was the most prescribed and most consumed drug overall in 2016.

These decreasing trends in prescribing may be contributing to the relative stability in most resistance patterns observed over the last half decade.

4.1 Prescription rates for urinary tract infection in BC, 1996 - 2016



For healthcare-associated infections (e.g., MRSA, CPO, and C. difficile), please visit the Provincial Infection Control Network of British Columbia (PICNet) at: <https://www.picnet.ca/surveillance/latest-surveillance-reports/>