Greater action needed against resistant infections in Canada

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While Canadians have been working diligently to battle the impact of COVID-19, the pandemic has drawn attention to the need for greater action against infectious diseases that have the potential for pandemics and other health care threats, such as antimicrobial resistance (AMR), whereby infections are no longer responsive to the drugs we use to treat them.[1] In Canada, AMR continues to pose a significant threat to individuals and the health care system. If swift and systemic action is not taken, AMR could cost the Canadian health care system $8 billion annually and result in up to 140,000 preventable deaths by 2050.[2]

To combat AMR, our Canadian health care system must be well equipped to identify resistant infections, track trends, and report in a timely manner in order to develop and implement appropriate infection prevention and antimicrobial stewardship interventions. Surveillance of infections and of antimicrobial use can play a pivotal role in meeting that objective. Fortunately, Canada has recognized the critical components of combatting AMR in the Pan-Canadian Framework for Action on Antimicrobial Resistance, which identifies surveillance and stewardship as two of the four components in a coordinated approach to combating AMR, alongside infection prevention and control, and research and innovation.[3]

Surveillance is critical for both tracking infectious disease, including resistant organisms, as well as tracking trends in prescribing of antimicrobials. Surveillance can help inform antimicrobial stewardship, the aim of which is to ensure appropriateness of antimicrobial use, as their overuse can lead to the development of new resistant infections, exacerbating the existing threat.

In the Chief Public Health Officer of Canada's Spotlight Report 2019, Antibiotic use in Canada: Preserving antibiotics now and in the future, the Chief Public Health Officer of Canada reported Canadians filled over 24 million antibiotic prescriptions in 2017 alone.[4] However, due to a lack of data, there is limited understanding of what percentage of these prescriptions were necessary, and how many were prescribed inappropriately for viral infections, such as influenza or the common cold. Improvements in surveillance aim to solve challenges like this by creating a more complete picture of how often antibiotics are prescribed and where opportunities exist to improve practices.

Within various health care settings, emerging technologies can support both surveillance and stewardship. Tools that can automate data collection and synthesis can be used to identify and manage resistant infections as early as possible, facilitate timely interventions, as well as monitor spread and prescribing patterns.

Diagnostic tools can also play a key role in ensuring antibiotics are preserved for use only when necessary. According to the Chief Public Health Officer's report, diagnostic uncertainty is among the most frequent reasons for inappropriate prescribing. However, fast and accurate diagnostic tools can help address this diagnostic uncertainty. Delayed prescribing is also a tactic which can allow time for lab tests to confirm whether a prescription is needed, and patient education is a critical component to this approach.[5]

"As a patient and primary care provider, I have an appreciation that we need to include the patient in the equation to address antimicrobial resistance," said John Llaguno MN:NP (Family), MD. "We, as health care providers, need to educate our clients and families on whether antibiotics

are the right course of treatment. In turn, patients should not always expect that going to their medical practitioner will result in a prescription. There may be self-care interventions, and/or 'watch and wait'. Some conditions resolve on their own, but we all have to do our part to reserve the use of abx, antivirals and antifungals."

A well-coordinated, multi-stakeholder approach can enable Canadian health systems to continue to implement and improve tools and programs to track the spread of resistant infections. Antimicrobial medications continue to be a powerful tool in the health care system's arsenal, so protecting their effectiveness is critical. Surveilling infections and stewarding treatments will support this goal, preventing the further spread of AMR and preserving the usefulness of antimicrobials for the future.

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3. Government of Canada. Tackling Antimicrobial Resistance and Antimicrobial Use: A Pan-Canadian Framework for Action. 2017. Accessed at: https://www.canada.ca/en/health-canada/services/publications/drugs-health-products/tackling-antimicrobial-resistance-use-pan-canadian-framework-action.html
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5. Chief Public Health Officer of Canada. HANDLE WITH CARE: Preserving Antibiotics Now and Into the Future. Canada. June 2019. Accessed at: https://www.canada.ca/content/dam/phac-aspc/documents/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/preserving-antibiotics/Final_CPHO_Report_EN_June6_2019.pdf.