

Improving Canadian Patient Safety with National ARO Surveillance

The Need for a National Surveillance System

The World Health Organization has recently declared antimicrobial resistance to be one of the greatest threats to global health in this decade. Despite its wealth, Canada continues to have gaps in its ability to understand national trends in antimicrobial resistance. The lack of a national, accessible database with up-to-date information on microorganisms that have become resistant to certain drugs, the factors that led to resistance and how to best combat them is leaving our healthcare professionals at a disadvantage to help Canadian patients. This is a problem that has to be solved proactively, because the development of antimicrobial agents is not keeping pace with the spread of antimicrobial resistance and we may not be able to mobilize a sufficient response in an emergency situation. Provincial governments and the Public Health Agency of Canada (PHAC) have been working to address the issue of antimicrobial resistance in Canada. Unfortunately, as PHAC has noted, “Ongoing surveillance gaps present a challenge to developing a comprehensive picture in both the community and hospital settings.”¹ We are proposing tangible solutions that will close these gaps in a cost-effective manner that will increase efficiency and improve patient safety.

Canadians are fortunate to have a modern, accessible healthcare system yet where they live continues to play a role in the resources available to them. It is imperative that the federal government play a role in Canada-wide surveillance to ensure that all Canadians, regardless of jurisdiction, are protected against the spread of infectious diseases. Antimicrobial resistance is not limited to one jurisdiction or care setting—We need a national solution.

- **According to the WHO, Antibiotic resistance causes people to be sick for longer and increases the risk of death. For example, people with MRSA (methicillin-resistant Staphylococcus aureus) are estimated to be 64% more likely to die than people with a non-resistant form of the infection. Resistance also increases the cost of health care with lengthier stays in hospital and more intensive care required.**
- **While rates of hospital-acquired Methicillin-resistant Staphylococcus aureus (MRSA) infection have declined 25% since 2008, incidence rates have not dropped to levels seen in the early 2000’s.**
- **The estimated annual hospital cost to combat MRSA is between \$42 million and \$59 million.**
- **Some bacteria (carbapenemase-producing Enterobacteriaceae or CPE) have become resistant to almost all, and in some instances all, known antibiotics, and these bacteria are increasing in Canada**
- **Since the United States created the National Healthcare Safety Network, which provides over 17,000 healthcare facilities with the data needed to treat and prevent healthcare-associated infections, there has been a drastic decrease in the number of infections. This decrease can best be identified in the 50 per cent decrease in central line-associated bloodstream infections between 2008 and 2014.**
- **In 2004, only five new antibiotics were listed as under development by the largest pharmaceutical companies.**

Some strides have been taken by the federal government to fight antimicrobial resistance as seen in the Federal Action Plan on Antimicrobial Resistance and Use in Canada: Building on the Federal Framework for Action. Despite this, recent roundtables have not yet resulted in action. It is time to act. A national surveillance system would help Canadian healthcare professionals combat the issue in proactive manner.

IPAC Canada Recommends that:

Health Canada collaborate with provincial health ministries to develop a National Surveillance System for Antibiotic Resistant Organisms, with consistent case definitions across the country. Currently, the Public Health Agency of Canada supports the Canadian Nosocomial Infection Surveillance Program (CNISP) which provides some level of surveillance on a national level; however, there are many gaps not the least of which is the small number of participating hospitals.

The creation of a national surveillance system will allow governments and healthcare providers to better understand the national breadth of antimicrobial resistance and regional patterns of resistance, which will assist in understanding risk factors and therefore support development of risk mitigation and preventive strategies. This will create a safer healthcare environment for all Canadians and contribute to the global accountability for decreasing resistance. Canada can't afford to leave health care workers, their patients, and the public at a disadvantage in the fight against antimicrobial resistance. Best practices and provincial initiatives continue to be valuable; however federal support needs to be mobilized to address one of the foremost health concerns of our time.

What you can do:

- **Help to advance the actions outlined in the Federal Action Plan on Antimicrobial Resistance**
- **Engage the Minister and Deputy Minister of Health to meet with provincial and territorial counterparts to develop a national reporting system for AROs, leveraging existing resources wherever possible.**
- **Consult regularly with Infection Prevention & Control Canada (IPAC Canada), the Association of Medical Microbiology and Infectious Diseases Canada (AMMI) and other national antimicrobial stewardship and research groups in the federal framework for action and on antimicrobial resistance and use in Canada.**



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