

# Antimicrobial stewardship at a distance:

## How telepharmacy is fighting superbugs in hospitals across Canada

By Eli Tran and Tina Thomas

**A**ntimicrobial resistance develops when bacteria no longer respond to the drugs we use against them.

This is a growing concern both globally and in Canada, with Public Health Ontario identifying it as a major public health issue. If antibiotics are used inappropriately, bacteria can adapt to them and become harder to treat. In today's global community, that puts everyone at risk, including patients in smaller and remote hospitals in Canada.

In many parts of our country, especially in the north, hospitals often face staffing shortages, including limited access to antimicrobial stewardship pharmacists, who are trained in how to best use antibiotics. This poses a major challenge for treating infections safely and effectively, particularly in hospitals where resistance is high.

However, telepharmacy (pharmacy services delivered remotely) can narrow the divide, allowing many hospitals to receive the support they need to optimize antibiotic use through a growing practice in Canada called telestewardship. It's one way healthcare teams are working together, even across long distances, to protect patients and improve healthcare quality.

The expansion of North West Telepharmacy Solutions' Antimicrobial Stewardship Program (NTS ASP) includes the management of hospital pharmacy operations throughout Canada, including remote areas where on-site antimicrobial stewardship expertise may not always be available. Remote pharmacists are helping to bridge that gap.

Originally launched in 2013 and implemented at over a dozen small hospitals, the program was revitalized and reintroduced in late 2024. The updated program now coordinates antimicrobial stewardship initiatives at three new hospitals of varying sizes across Canada. While each site is at a different stage for stewardship, all



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are benefiting from consistent guidance on using antibiotics wisely and safely, with strategies tailored to each hospital.

At Norfolk General Hospital, one of the participating sites, the collaboration has already shown early success. "the program has been a transformative step forward for our hospital," says Roger Ma, Director of Pharmacy. "As a community-based acute care facility, we face the common challenge of balancing limited resources with growing expectations for robust stewardship practices. NTS has provided a high-impact, collaborative solution to that problem."

What's sometimes overlooked is that smaller and remote hospitals can face just as much pressure from resistant organisms. In fact, in some underserved communities, such as First Nations populations in northern regions, infection-related illnesses are a leading cause of hospitalization. After

accounting for the number of patients and how long they stay, antibiotic use at these hospitals can actually match or even exceed rates at larger Canadian teaching hospitals.

That's where telestewardship comes in. Remote pharmacists support on-site staff by reviewing antibiotic use and helping ensure they are selected, dosed, and timed as effectively and safely as possible. This might mean suggesting more targeted antibiotic options, reviewing lab results, or deciding when a drug is no longer needed. For smaller hospitals, stewardship might translate to more customized strategies, like stocking the right drugs, and using the right treatment guidelines. But stewardship is more than just numbers and drugs. It's also about communication and teamwork.

Even while working remotely, remote pharmacists can stay closely connected with local hospital staff. They collaborate daily with doctors, nurses,

and on-site pharmacists, providing recommendations and making care decisions together. That partnership helps ensure that high-quality care is delivered, regardless of where the pharmacist is located. In fact, over 90 per cent of the program's care recommendations are accepted by on-site physicians at participating hospitals, speaking to the existing degrees of trust and collaboration. And involving and educating on-site staff helps make stewardship efforts more sustainable, building local capacity so that hospitals can carry this work forward, with stronger teams on the ground.

Roger Ma shares this sentiment towards the program: "brings a collaborative culture that strengthens our internal team's confidence and capacity. They deliver both value and vision. Their pharmacists are not just external consultants – they are trusted members of our extended care team."

The program's team is also broadening their stewardship efforts beyond hospitals, working with primary care providers to share guidance on antibiotic use with family health teams. Since the majority of antibiotics are prescribed in outpatient settings, this kind of early intervention can play a key role in preventing resistance before it starts.

Antimicrobial stewardship pharmacists wear many hats: they fine-tune drug therapy, educate healthcare providers, develop institutional policies, collaborate with infectious disease doctors, and analyze antibiotic trends to improve quality of care. It isn't flashy work, but it makes a real difference, quietly improving patient outcomes and protecting antibiotics for the future.

And thanks to telepharmacy, this kind of expertise can now stretch to patients in places that once seemed out of reach. Because good care doesn't depend on where you are – it depends on working together, wherever you are. ■

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